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

CABANATUAN BYPASS - CONTRACT PACKAGE IV (INITIAL STAGE) STA. 121+600.000 TO STA. 134+731.828



December 2002

KATAHIRA & ENGINEERS INTERNATIONAL YACHIYO ENGINEERING CO., LTD

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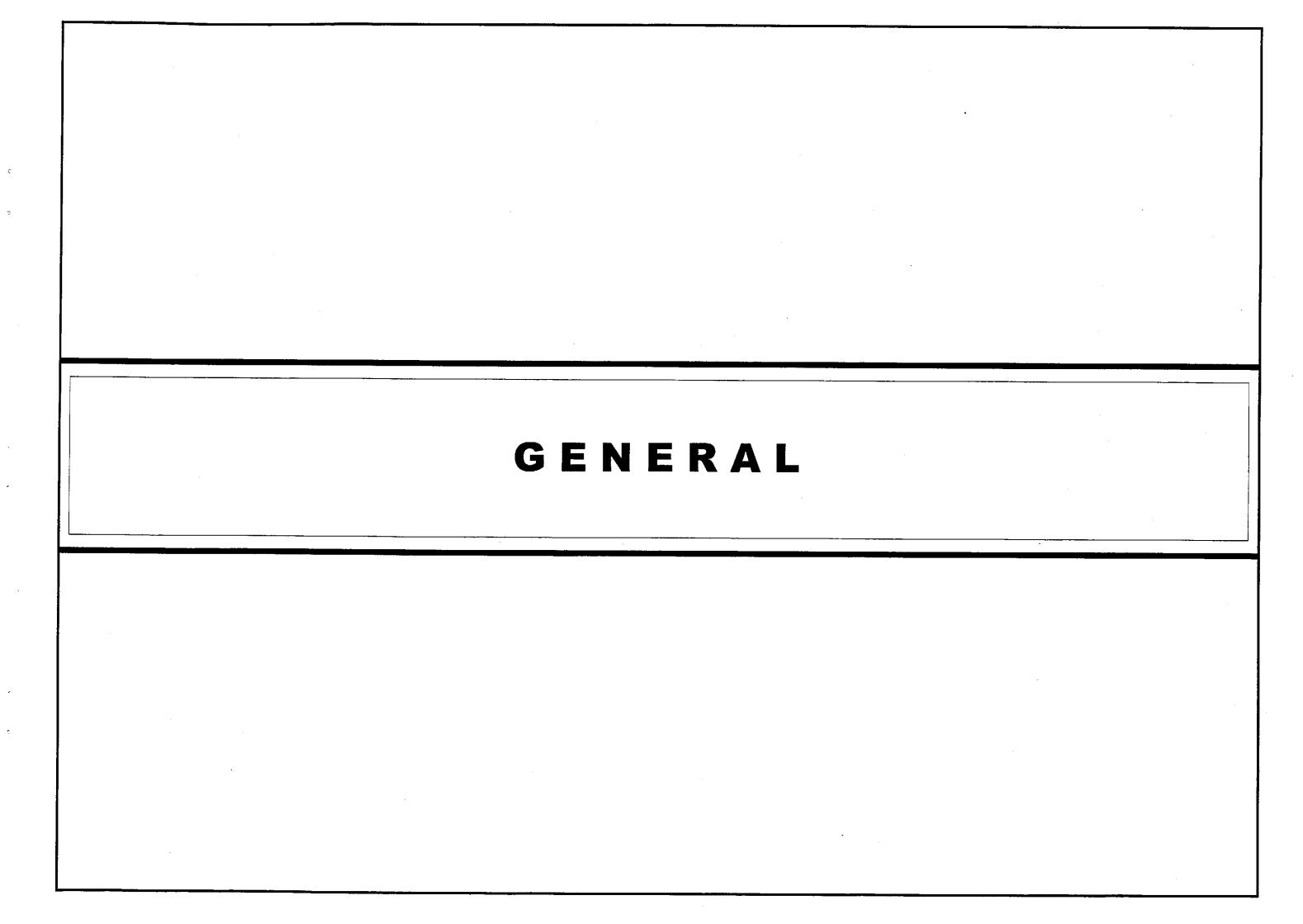
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THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY

CABANATUAN BYPASS - PACKAGE IV

(INITIAL STAGE)

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GC-08	HORIZONTAL AND VERTICAL CONTROL MONUMENTS - 1 OF 2		INTERSECTION A-24 (STA 125+647.978)		MALLIO GIOTAL LIGHT EATOU?
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DC 04	GENERAL ROADWAY	RI-11	TRAFFIC SIGNAL LIGHT LAYOUT	11 1	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
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	PLAN AND PROFILE	RI-15 RI-16		RM-09	LAYOUT PLAN, STA. 132 + 400,000 TO STA. 133 + 800,000
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RP-01	PLAN AND PROFILE, STA. 121 + 600.000 TO STA. 121 + 900.000	III KI-II	TRAFFIC SIGNS AND PAVEMENT WARRINGS DATOOT	1]	DI ANTINO CUADDDAIL AND DOW LAVOUT DI AN
RP-02	PLAN AND PROFILE, STA. 121 + 900.000 TO STA. 122 + 600.000		INTERSECTION A-30 (STA 129+921.679)	RM-11	PLANTING, GUARDRAIL AND R.O.W. LAYOUT PLAN LAYOUT PLAN, STA. 121 + 600.000 TO STA. 122 + 600.000
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RP-08	PLAN AND PROFILE, STA. 126 + 100.000 TO STA. 126 + 800.000	- }}	INTERSECTION A-31 (STA 131+634.031)	RM-17	LAYOUT PLAN, STA. 129 + 600.000 TO STA. 131 + 300.000
RP-09	PLAN AND PROFILE, STA, 126 + 800.000 TO STA, 127 + 500.000	RI-23	PLAN, CROSS-SECTION AND PROFILE	RM-18	LAYOUT PLAN, STA. 131 + 000,000 TO STA, 132 + 400,000
RP-10	PLAN AND PROFILE, STA. 127 + 500.000 TO STA. 128 + 200.000			RM-19	LAYOUT PLAN, STA. 132 + 400.000 TO STA. 133 + 800.000
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RP-18	PLAN AND PROFILE, STA. 133 + 100.000 TO STA. 133 + 100.000 PLAN AND PROFILE, STA. 133 + 100.000 TO STA. 133 + 800.000	RI-28	PLAN, CROSS-SECTION AND PROFILE	RS-04	STANDARD PORTLAND CEMENT CONCRETE PAVEMENT DETAILS
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· 		RI-32	PLAN, CROSS-SECTION AND PROFILE	RS-10	SIDE ROAD APPROACHES AND PRIVATE DRIVEWAY ACCESS
		10-52	, 5 an allogo-sea front Arab i Not like	RS-10 RS-11	STANDARD ROAD WORK SIGN AND PROJECT SIGN BOARD DETAILS
	DATE SHAFTURE	<u> </u>	REPUBLIC OF THE PHICIPPINES PROJECT AND LOCATION :		SCALE: SHEET CONTENTS: SHEET
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_	TERNATIONAL COOPERATION AGENCY CHECKED 10/19/10 5-5052 Submitted By: A & ENGINEERS VEO YACHIYO ENGINEERING	Bull Reviewed By:	REAU OF DESIGN OFFICE OF THE SECRETARY UPGRADING INTER-UP Recommended By: Recommended By: Approved By: ALONG THE PAN-	RBAN HIGHWAY SYSTE PHILIPPINE HIGHWAY and San Jose Bypasses	INDEX OF DRAFFINGS

KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.

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CABANATUAN BYPASS - CONTRACT PACKAGE IV

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CABANATUAN BYPASS - PACKAGE IV

(INITIAL STAGE)

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DD 42-	ADVANCE DIRECTION SIGN DETAILS - 1 OF 2	DS-07	STANDARD REINFORCED CONCRETE HEADWALL FOR RCPC	B12-05	AASHTO TYPE IV GIRDER (INTERIOR SPAN)
NO-138	ADVANCE DIRECTION SIGN DETAILS - 2 OF 2	DS-08	STANDARD DRAINAGE DITCHES	B12-06	CONC. POURING SEQUENCE AND DIAPHRAGM DETAILS
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DC-08	DRAINAGE CROSS-SECTION, STA. 125 + 864.000 TO STA. 126 + 434.000 DRAINAGE CROSS-SECTION, STA. 126 + 624.000 TO STA. 126 + 994.000	50.51	GENERAL	BS-04	TYPICAL STEEL H-PILE DETAILS
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B14U-41	AASHTO GIRDER TYPE VI-MODIFIED REINF, DETAILS (FIX-FIX SUPPORT)-10F 2	31			SYMBOLS AND GENERAL NOTES
B14U-42	AASHTO GIRDER TYPE VI-MODIFIED REINF, DETAILS (FIX-FIX SUPPORT)-1 OF 2		CONSTRUCTION WORKS	FE-03	ENGR'S FIELD OFFICE & LIVING QUARTERS - SCHEDULE OF LOADS AND
B14U-43	AASHTO GIRDER TYPE VI-MODIFIED PRESTESSING DETAILS (FIX-FIX SUPPORT)	B14C-101	TEMPORARY CRANEWAY BRIDGE AND DOFFERDAM LAYOUT		COMPUTATIONS & ELECTRICAL RISER DIAGRAM
B14U-44	AASHTO GIRDER TYPE VI - MODIFIED REINF, DETAILS (FIX-EXP. SUPPOR)-1 OF 2	B14C-102	DETAILS OF COFFERDAM AND CRANEWAY BRIDGE		PLUMBING
B14-U-45	AASHTO GIRDER TYPE VI-MODIFIED REINF, DETAILS (FIX-EXP. SUPPORT)-2 OF 2	B14C-103	TENTATIVE CONSTRUCTION PLAN, ELEVATION AND SCHEDULE	FP-01	
B14U-46	AASHTO GIRDER TYPE VI-MODIFIED PRESTRESSING DETAILS (FIX-EXP. SUPPORT)				ENGR'S FIELD OFFICE & LIVING QUARTERS - SEWER AND WATER LINE LAYOU
B14U-47	DECK SLAB TYPE VI-MODIFIED PRESTRESSING DETAILS (FIX-EXT. SUPPORT		ELECTRICAL	=====	AND ISOMETRIC DIAGRAM
B14U-48	DECK SLAB REINFORCEMENT DETAILS -10F 3		ELECTRICAL	FP-02	ENGR'S FIELD OFFICE & LIVING QUARTERS - SEPTIC TANK DETAILS
B14U-49	DECK SLAB REINFORCEMENT DETAILS 3 OF 3		ELECTRICAL STANDARD DRAWINGS AND DETAILS		EXTERNAL
B14U-50	END, INTERMEDIATE & CONTINUITY DIAPHRAGM REINF. DETAILS	ES-01	NOTES & LEGENDS, SCHEMATIC CONTROL DIAG. & DUCT SECTION	FX-01	ENGR'S FIELD OFFICE & LIVING QUARTERS - PLOT PLAN, ELEVATION OF FEN
	CURCIPILETURE REINFORCING RETAIL C	E\$-02	SERVICE POLE DETAILS		& GATE AND TYPICAL FOUNDATION DETAIL
B146.61	SUBSTRUCTURE REINFORCING DETAILS	ES-03	STREET LIGHT POLE DETAILS		
B14S-61	COLUMN REINF. DETAILS (PIERS P1 & P2 - FIXED PIER)		DOADWAY LIGHTING LAYOUT FOR INTEROPOTIONS		OTHERS
B14S-62	COLUMN REINF, DETAILS (PIERS P4, P5, P7 & P8 - FIXED PIER)		ROADWAY LIGHTING LAYOUT FOR INTERSECTIONS		
B14S-63 B14S-64	COLUMN REINF, DETAILS (PIER 3 - EXP. PIER)	Ei-01	LAYOUT PLAN AND LOAD SCHEDULE, INTERSECTION A-25 (STA 125+881.570)		ELECTRICAL
1	COLUMN REINF, DETAILS (PIER 6 - EXP. PIER)	EI-02	LAYOUT PLAN AND LOAD SCHEDULE, INTERSECTION A-30 (STA 129+921.679)		UTILITY RELOCATION REFERENCE LAYOUT PLAN
B14S-65	COPING REINF, DETAILS FOR FIX PIERS (PIERS PI, P2, P4, P5, P7 & P8)	EI-03	LAYOUT PLAN AND LOAD SCHEDULE, INTERSECTION A-35 (STA 134+231.098)	OE-01	LAYOUT PLAN, STA. 121 + 600.000 TO STA. 122 + 600.000
B14S-66	COPING REINF. DETAILS FOR EXP. PIERS (PIER & PIER 6)		ROADWAY LIGHTING LAYOUT FOR BRIDGE	OE-02	LAYOUT PLAN, STA. 122 + 600.000 TO STA. 124 + 000.000
B14S-63	COLUMN REINF, DETAILS (PIER 3 - EXP. PIER)	EB-01	LAYOUT PLAN AND LOAD SCHEDULE, BRIDGE NO.14	OE-03	LAYOUT PLAN, STA. 124 + 000.000 TO STA. 125 + 400.000
B14S-64	COLUMN REINF. DETAILS (PIER 6 - EXP. PIER)		TALAVERA RIVER BRIDGE CROSSING	OE-04	LAYOUT PLAN, STA. 125 + 400.000 TO STA. 126 + 800.000
B14S-65	COPING REINF. DETAILS FOR FIX PIERS (PIERS PI, P2, P4, P5, P7 & P8)		TALACTA MACA BINDOL ON COOLING	OE-05	LAYOUT PLAN, STA. 126 + 800.000 TO STA. 128 + 200.000
B14S-66	COPING REINF. DETAILS FOR EXP. PIERS (PIER & PIER 6)		ENGINEER'S FIELD OFFICE & LIVING QUARTERS	OE-06	LAYOUT PLAN, STA. 128 + 200.000 TO STA. 129 + 600.000
B14S-67	PILE CAP REINF. DETAILS FOR FIX PIERS (PIER P1 & P2) - 1 OF 2		ENGINEER 3 FIELD OFFICE & LIVING QUARTERS	OE-07	LAYOUT PLAN, STA. 129 + 600.000 TO STA. 131 + 000.000
B14S-68	PILE CAP REINF. DETAILS FOR FIX PIERS (PIERS P1 & P2) - 2 OF 2		ARCHITECTURAL	OE-08	LAYOUT PLAN, STA. 131 + 000.000 TO STA. 132 + 400.000
B14S-69	PILE CAP REINF, DETAILS FOR FIX PIERS (PIER P4, P5, P7 & P8) - 1 OF 2	FA-01	PERSPECTIVE AND TABLE OF CONTENTS	OE-09	LAYOUT PLAN, STA. 132 + 400,000 TO STA. 133 + 800,000
B14S-70	PILE CAP REINF, DETAILS FOR FIX PIERS (PIER P4, P5, P7 & P8) - 2 OF 2	FA-02	ENGR'S FIELD OFFICE - FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND	OE-10	LAYOUT PLAN, STA. 133 + 800.000 TO STA. 134 + 731.828
B14S-71	PILE CAP REINF, DETAILS FOR EXP. PIERS (PIER 3 & PIER 6) - 1 OF 2		REFLECTED CEILING PLAN		
B14S-72	PILE CAP REINF. DETAILS FOR EXP. PIERS (PIER 3 & PIER 6) - 2 OF 2	FA-03	ENGR'S LIVING QTRS - FLOOR PLAN, ELEVATIONS, CROSS-SECTIONS AND	11	CONE PENETRATION TEST (CPT)
B14S-73	REINFORCEMENT DETAILS FOR ABUTMENT A1 & A2 - 1 OF 2		REFLECTED CEILING PLAN	OC-01	PROFILE, STA. 121 + 634.000 TO STA. 126 + 334.000
B14S-74	REINFORCEMENT DETAILS FOR ABUTMENT A1 & A2 - 2 OF 2	FA-04	ENGR'S FIELD OFFICE / LABORATORY - ROOF PLAN, CROSS-SECTION AND	OC-02	PROFILE, STA. 126 + 534.000 TO STA. 131 + 134.000
B14S-75	BORED PILE REINF. DETAILS, Ø1000mm (ABUTMENT A1 &AZ)		SCHEDULE OF DOORS & WINDOWS	OC-03	PROFILE, STA. 131 + 334.000 TO STA. 134 + 534.000
B14S-76	BORE PILE REINF. DETAILS, °1500mm (PIER 1 & PIER 2)	FA-05	ENGR'S LIVING QUARTERS - ROOF PLAN, CROSS-SECTION AND SCHEDULE		
B14S-77	BORE PILE REINF. DETAILS Ø1500mm (PIER P4, P5 P7 & P8)		OF DOORS & WINDOWS		
B14S-78	BORE PILE REINF. DETAILS, Ø 15000mm (PIER 3)	FA-06	ENGR'S FIELD OFFICE & LIVING QUATERS - FOUNDATION PLAN, R.C. RAMP		
B14S-79	BORE PILE REINF, DETAILS Ø (PIER 6)	1	DETAIL DETAIL OF F-1, P-1, WF1 & DESIGN CRITERIA		
		FA-07	ENGR'S FIELD OFFICE / LABORATORY - FRONT & RIGHT SIDE ELEVATION OF	11	
n	MISCELLANEOUS DRAWINGS		STEEL STUD FRAMES AND SCHEMATIC DIAGRAMS		
B14M81	ANCHOR BAR AND BEARING DETAILS FOR FIX PIERS	FA-08	ENGR'S LIVING QTRS - REAR & LEFT SIDE ELEVATION OF STEEL STUD		
B14M-82	RISER REINFORCEMENT AND BEARING PAD DETAILS		FRAMES AND SCHEMATIC DIAGRAMS		·
B14M-83	RESTRAINING BAR DETAILS	FA-09	ENGR'S FIELD OFFICE - FRONT & RIGHT SIDE ELEVATION OF STEEL STUD		
B14M-84	EXPANSION JOINT DETAILS @ ABUTMENT AND PIERS		THE STATE OF THE PROPERTY OF STREET		•
B14M-85	REINF. DETAILS OF SHEAR KEY (ABUT. A1 & A2)		FRAMES AND SCHEMATIC DIAGRAMS		·
B14M-86	REINF, DETAILS OF SHEAR KEY (PIER P3 & P6, EXPEXP. PIERS)	FA-10	ENGR'S LIVING QTRS - REAR & LEFT SIDE ELEVATION OF STEEL STUD		
B14M-87	REINF. DETAILS OF SHEAR KEY (PIER 1 & PIER 2, FIX-FIX PIERS)		FRAMES AND SCHEMATIC DIAGRAMS		
B14M88	REINF. DETAILS OF SHEAR KEY (PIERS P4, P5, P7 & P8, FIX-FIX PIERS)	FA-11	ENGR'S FIELD OFFICE & LIVING QUARTERS - DETAILS OF CONNECTIONS, DETAILS 1 TO 15		
]	DETAILS ITO IS		
	DESIGNED DESIGNED DESIGNED	DEPARTI	REPUBLIC OF THE PHILIPPINES PROJECT AND LOCATION :		SCALE : SHEET CONTENTS : SHEET
		DEPART	MENT OF PUBLIC WORKS AND HIGHWAYS THE DETAILED	DESIGN STUDY ON	

JAPAN INTERNATIONAL COOPERATION AGENCY

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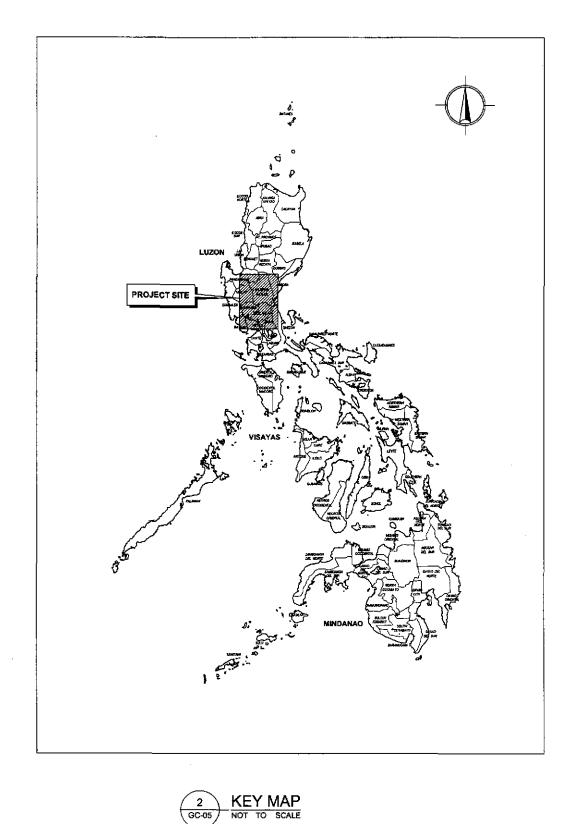
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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS OFFICE OF THE SECRETARY (See cover sheet for Signolum) MANUEL M. BONCAN Undersecretary

THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridet, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE IV

INDEX OF DRAWINGS (INITIAL STAGE) Sheet 3 of 3

FULL SIZE A1



1 VICINITY MAP
GC-05 NOT TO SCALE

PROJECT ROAD CABANATUAN BYPASS (L=34.25 KM.)

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS

YEO YACHIYO ENGINEERING CO., LTD.

DESIGNED ID IZ JOD DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

CHECKED DIP JOD Submitted By:

Recommended By:

Recommended By:

Recommended By:

(See cover sheet for Signature)

Submitted DANILO C. TRAJANO

JOSEFINA M. ALAGAR

GILBERTO S. REYES

MANUEL M. BONDAN

SIMEON A. DATUMANO

SIMEON A. DATUMANO

Secretary

TEAM LEADER

Project Director

Chief, Highwoys Division

OK. Director N. Undersecretary

Secretary

PROJECT AND LOCATION:

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

CABANATUAN BYPASS · CONTRACT PACKAGE IV

FULL SIZE A1

LEGEND AND SYMBOLS

EXISTING FEATURES							
ROAD	BARANGAY ROAD						
CONTOUR	56 77 66						
ORIGINAL GROUND							
CONCRETE FENCE	00						
BARBED WIRE FENCE	- * - * - * - * -						
HOUSE							
TREES	88 88 88						
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]						
TRAVERSE STATION POINT	Δ						
BENCHMARK	•						
FISH POND							
NATIONAL POWER CORP. TRANSMISSION LINE	NPC TOWER						

	NEW DE
PROJECT ROAD	
SERVICE OR FRONTAGE ROAD ALONG BYPASS	
CONTOUR	(60)
RIGHT-OF-WAY LIMIT	
OINT OF INTERSECTION	
OINT OF INTERSECTION NO.	PI-00
OF PROJECT ROAD	
INISHED GRADE ON PROFILE	9=2.500%
BRIDGE .	PLAN PROFILE
INGLE RC PIPE CULVERT	PLAN PROFILE
OUBLE RC PIPE CULVERT	PLAN PROFILE
OX CULVERT	PLAN PROFILE
ARTH DITCH FLOW	
RECTION OF FLOW	- -/
ANHOLE	→
UARDRAIL ON PLAN	
UARDRAIL ON PROFILE	LEFTRIGHT
ROUTED RIPRAP N SLOPE	
MBANKMENT	Siminamin
XCAVATION	
ECTION IN WATER	▼
ECTION IN EARTH	
ECTION IN CONCRETE	English Colonial (September 1987)

EATURES	
SECTION IN GRAVEL	1407-737-737-705-705-705-7
SECTION IN STRUCTURAL STEEL	
SOFT BED MATERIALS TO BE EXCAVATED	
STONE MASONRY RETAINING WALL / REVETMENT / REINF. CONCRETE RETAINING WALL	22222222
NORTH SIGN	
GRID COORDINATES	N1747600
AGGREGATE SOURCE	
LINE SYMMETRY	
SECTION TARGET	(B)
ELEVATION TARGET	1A 0044
TITLE TARGET	2 IDENTIFICATION SYMBOL RS-02 SHEET NO.
SUB-TITLE TARGET	(2) (B00)
DETAIL REF TARGET	(25) (R) 455
BOREHOLE	•
STREET LIGHTING POLE	ooo
KILOMETER POST	(Km)
STATION GRID	162+000
UNED IRRIG. CANAL	===
CHAIN LINK FENCE	O-*
SODDING ON PLAN	[
LOW TREES	
MIDDLE TREE	*
HIGH TREE	

SHEET NO. :

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			DATE	SIENATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	
	DESIGNED TAIL TO ACACIO					DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON			
- {	JAPAN INTERNATIONAL COOPERATION AGENCY		12/12/2	7 70	PUHL - PML	BUREAU	DF DESIGN	OFFICE OF T	HE SECRETARY	UPGRADING INTER-URBAN HIGHWAY SYSTEM	l .	
	KATAHIRA & ENGINEERS YACHIYO ENGINEERING	CHECKED	10/19/02	S. COSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for	Approved By: (See sover sheet for	ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	LEGEND AND SYMBOLS
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- 13	CO., LTD.	ZURNUTE	1421/02	M. KIUCHI TY	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG	CABANATUAN BYPASS - CONTRACT PACKAGE IV	1	
- 10		1	1 ~ / - / - /	I LAM LEADER	Project Director	Chief, Highways Division	OIC, Director IV	Undersecretory	Secretary	The state of the s	FULL SIZE A1	

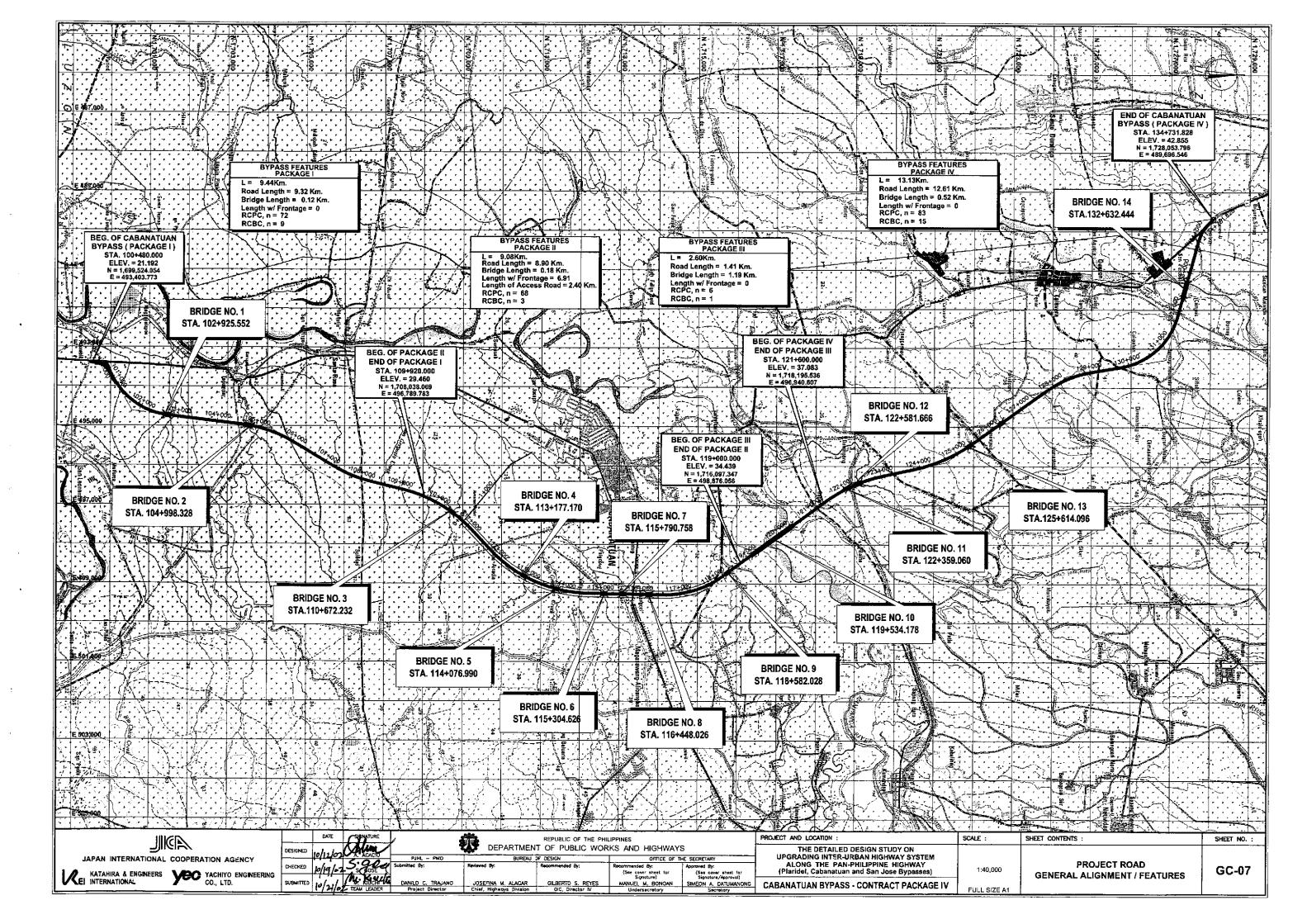
ABBREVIATIONS

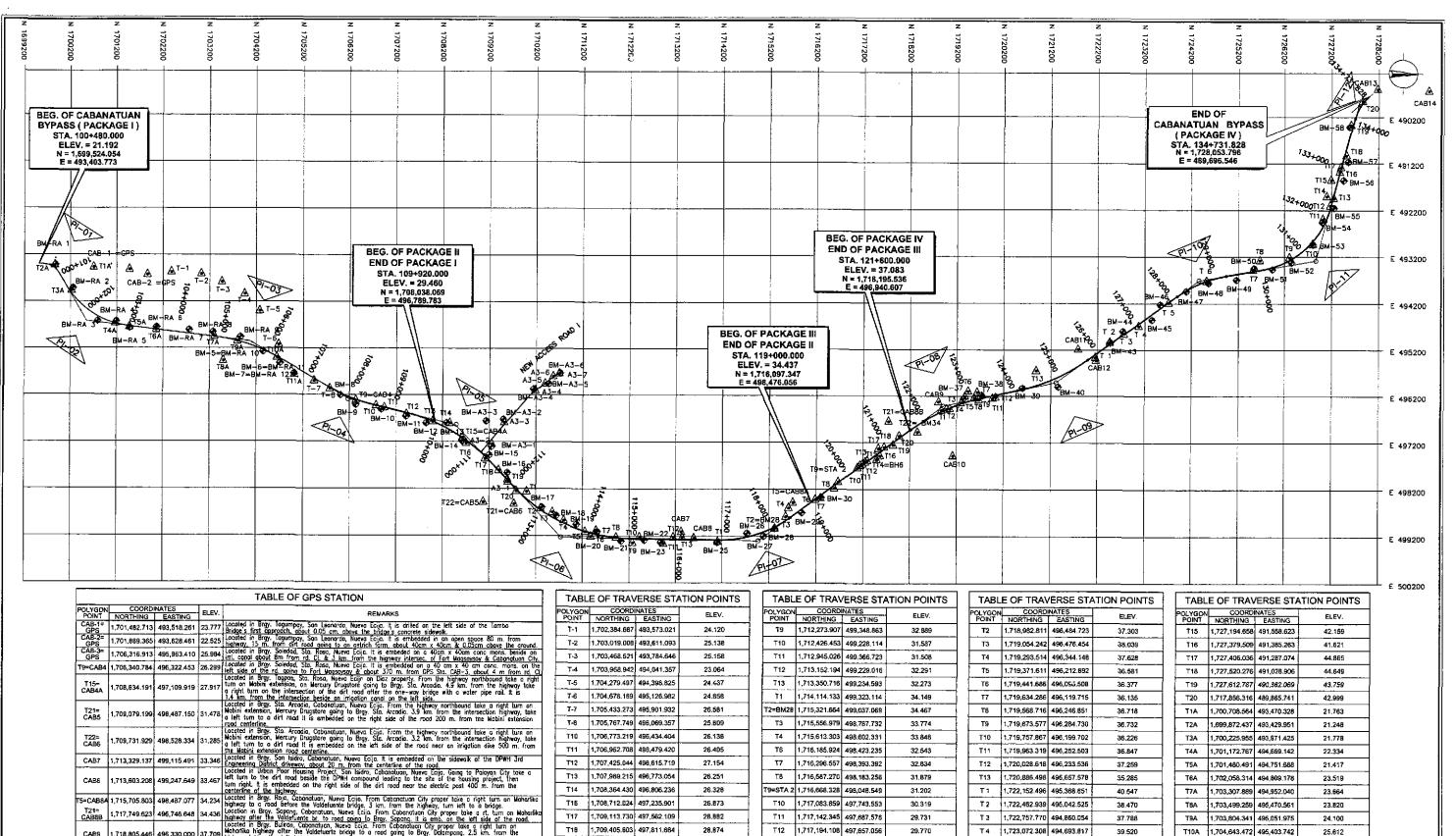
AHIRA & ENGINEERS	YEO YACHIYO ENGINEERING CO., LTD.	Submitted By: Reviewed B	r: Recommended By: Recommended 8 (Sea cover Signat		(Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	ABBREVIATIONS	GC
	P/(L/DA)A ACACIO	PUHL - PMO	BUREAL OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY			
يال ال	DATE SENATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND H	IIGHWAYS	PROJECT AND LOCATION :	SCALE : SHEET	CONTENTS :	SHEET
DIAPH.	DIAPHRAGM	Lc	LENGTH OF CIRCULAR ARC	RS	RIGHT SIDE			
DIA./DIAM	DIAMETER	L	LENGTH	ROW	RIGHT-OF-WAY	L	ANGLE SHAPE	
DET.	DETAIL	крн	KILOMETER PER HOUR	RET. WALL	RETAINING WALL	CP	CONTROL POINT	
DEPT.	DEPARTMENT	KM	KILOMETER	REP	RELOCATED ELECTRIC POST	z	SQUARE	
CTR	CENTER	FIX	FIX BEARING	REINF.	REINFORCED	+/- ø	DIAMETER	
CYL.	CYLINDRICAL	KPa	KILO PASCAL	RDWY.	ROADWAY	* +/-	PERCENT PLUS / MINUS	
C/WAY	CARRIAGEWAY	kg. K N	Kilogram Kilo Newton	RCPC RD	REINFORCED CONCRETE PIPE CULVERT ROAD	© <i>≥</i>	INFINITY	
CULV.	CURB AND GUTTER CULVERT	JT.	JOINT	RCDG	REINFORCED CONCRETE DECK GIRDER	Ę	CENTERLINE	
CP C & G	CROSS PIPE	iRRIG.	IRRIGATION	RCBG	REINFORCED CONCRETE BOX GIRDER	<u> </u>	BASELINE	
CORP.	CORPORATION	INTERM.	INTERMEDIATE	RCBC	REINFORCED CONCRETE BOX CULVER	•	AT	
CONT.	CONTINUOUS	INT.	INTERIOR	RC	REINFORCED CONCRETE	åc	AND	
CONST. JT.	CONSTRUCTION JOINT	IN. INV.	INLET INVERT	R	RADIUS		RESPECT TO TANGENT	
CONST.	CONSTRUCTION	INC.	INCORPORATED	QTY	QUANTITY	X,Y	COORDINATE OF BCC AND ECC V	/ITH
CONC. MON.	CONCRETE MONUMENT	IN.	INCHES	PVNT.	PAVEMENT	WT	WATER TANK	
CONC.	CONCRETE	!D	INSIDE DIAMETER	PVI	POINT OF VERTICAL INTERSECTION	WK	WALK	
COMB. CONC.	COMBINE CONCRETE	1	INTERSECTION ANGLE	PVC	POLYMNYL CHLORIDE	WEP	WOODEN ELECTRIC POST	
COL(S)	COLUMN(S)	HWY.	HIGHWAY	PROP.	PROPOSED	₩/o	WITHOUT	
CLR	CLEAR	HWL/HW	HIGH WATER LEVEL/HIGH WATER	PROJ.	PROJECT	₩/ ₩/	WITH	
CL	CENTERLINE	HTL	HIGH TIDE LEVEL	PRC	POINT OF REVERSE CURVE	17	WIDENING WIDTH	
CI	CURB INLET	HT.	HOUSE HEIGHT	PP PR	POWER POLE PROJECT ROAD	VOL W	VOLUME	
CIM	CONCRETE HOLLOW BLOCK CURB INLET MANHOLE	HOR. HSE	HORIZONTAL HOUSE	POT	POINT OF TANGENT	VERT.	VERTICAL	
Cu M/m ³ CHB	CUBIC METER	HFL	HIGH FLOOD LEVEL	POC	POINT ON CURVE	VER.	VERIFIED	
cm.	CENTIMETER	HDWL	HEADWALL	PMO	PROJECT MANAGEMENT OFFICE	VC	VERTICAL CURVE	
CEP	CONCRETE ELECTRIC POST	GRD.	GRADE	PLDT	PHILIPPINE LONG DISTANCE TELEPHONE COMPANY	VAR.	VARIABLE/VARIES	
CEM	CEMENT	GL	GROUND LEVEL	PL	PROPERTY LINE/ PLATE	V	DESIGN SPEED	
c / c	CENTER TO CENTER	GPS	GLOBAL POSITIONING SYSTEM	PJHL	PHILIPPINE-JAPAN HIGHWAY LOAN	TYP.	TYPICAL OR TYPE	
СВ	CATCH BASIN	GIP	GALVANIZED IRON PIPE	Pl	POINT OF INTERSECTION	Ts	TOTAL TANGENT DISTANCE	
CALC.	CALCULATED	GEN.	GENERAL	PHIL.	PHILIPPINE(S)	TRANS.	LONG TANGENT OF SPIRAL TRANSVERSE	
CAB	CRUSHED AGGREGATE BASE	g GALV.	GALVANIZED	PCC PEJ	PORTLAND CEMENT CONCRETE PREMOULDED EXPANSION JOINT	Tik TL	SHORT TANGENT OF SPIRAL	
C	CURVE	FWL	FLOOD WATER LEVEL GRADIENT IN PERCENT	OWL.	ORDINARY WATER LEVEL	THK.	THICK	
BM	BOTHWAYS	FH FWL	FIRE HYDRANT	OUT INV.	OUTLET INVERT	TEMP.	TEMPORARY	
BTC/TS	BITUMINOUS SURFACE TREATMENT BEGINING OF TRANSITION CURVE	FTG.	FOOTING	OGL	ORIGINAL GROUND LEVEL	TBM	TEMPORARY BENCHMARK	
BS BST	BACK STATION ; BOTH SIDES BITIININGUS SUBFACE TREATMENT	FPL	FINISHED PAVEMENT LEVEL	OD	OUTSIDE DIAMETER	T	TANGENT	
BRG	BEARING	FIN.	FINISHED	oc/o.c.	ON CENTER	SYMM.	SYMMETRY	
BR.	BRIDGE	FG	FINISHED GRADE	NO./No.	NUMBER	SURVY.	SURVEY	
BOT./BOTT	BOTTOM	FF	FAR FILL/FAR FACE	NF .	NEAR FACE	STRUC./S	RUCT STRUCTURAL	
BMSL	BELOW MEAN SEA LEVEL	EXTN.	EXTENSION	NC	NORMAL CROWN	STR.	STRAIGHT	
BM Statement	BENCH MARK	EXT.	EXTERIOR	N/A	NOT APPLICABLE	STIRR./ST	R STIRRUP(S)	
BLVD.	BOULEVARD	EXP.	EXPANSION BEARING	N	NORTH / NEWTON	STIFF.	STIFFENERS	
BLDG.	BUILDING	EXIST./EXTG.	EXISTING	MWSS	METROPOLITAN WATERWORKS & SEWERAGE SYSTEM	STD.	STANDARD	
BK	BACK	EXC.	EXCAVATION	DPWH	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	STA.	STATION	
ÐH	BOREHOLE	EW	EACH WAY	MT	METRIC TON	ST.	STREET	
BGY./BRGY.	BARANGAY	ETC/ST	END OF TRANSITION CURVE	MSL	MEAN SEA LEVEL	SQ.	SQUARE	
BET.	BETWEEN	ESMT	EASMENT	MO MPa	MIDDLE ORDINATE MEGA PASCAL	SPL SPECS.	SPECIAL SPECIFICATIONS	
BEG.	BOUNDARY LINE BEGINNING	EQ EQN.	EQUAL ; EQUATION EQUATION	MISC.	MISCELLANEOUS	SPCS.	SPACES	
BCC/SC/PC BDRY LN	BEGINNING OF CIRCULAR CURVE	EP	EDGE OF PAVEMENT	MIN.	MINIMUM	SPCD.	SPACED	
AZIM.	AZIMUTH	ENGR.	ENGINEER	MH	MANHOLE	SP	SPIRAL	
AVE	AVENUE	EMB.	EMBANKMENT	MFWL	MAXIMUM FLOOD WATER LEVEL	SMH	SEWER MANHOLE	
	& TRANSPORTATION OFFICIALS	ELEV./EL.	ELEVATION	MFL	MAXIMUM FLOOD LEVEL	SQ.M./m	SQUARE METER	
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY	EG	EDGE OF GUTTER	MAX	MAXIMUM	SL	SLOPE	
ASTM	AMERICAN STANDARD FOR TESTING & MATERIALS	EF	EACH FACE	mm	MILLIMETER	SHT.	SHEET	
ASPH	ASPHALT	E	EXTERNAL DISTANCE	m	METER	SDWK.	SIDEWALK	
APP	APPROACH :	ECC/CS/PF	END OF CIRCULAR CURVE	LT	LEFT	SECT.	SECTION	
AH	AHEAD	EA	EACH	LS	LUMP SUM : LEFT SIDE	s	SOUTH	
AGG	AGGREGATE	E	EASTING	LP	LIGHT POLE	RT.	ROCK SLOPE PROTECTION RIGHT	
AC .	ASPHALT CONCRETE	e%	DESIGN SUPERELEVATION	LONGIT.	LONGITUDINAL	RP RSP	REFERENCE POINT	
ABUT	ABUTMENT	DRWG./DWG. DWY.	Drawing Driveway	LLV LM	LONG LEG VERTICAL LINEAR METER	MC	MANHOLE COVER	
ABT	ABOUT	DIV.	DIVISION	LG	LONG	MPa	MEGA PASCAL	
AEIAN	ABANDON						MECA DICCH	

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CABANATUAN BYPASS - CONTRACT PACKAGE IV





τs					Located in Brgy. Roja, Cabanatuan, Nueva Ecijo. From Cabanatuan City proper take a right turn on Maharii highway to a road before the Valdefuente bridge, 3 km. from the highway, turn left to a bridge.
	T21= CAB8B	,717,749.623	496,746.648		Location in Bray. Sapang, Cabanatuan, Nueva Ecija. From Cabanatuan City proper take a rt. turn on Maharl Linghway after the Valdefuente br. to road aging to Bray. Sapang, it is emb, on the left side of the mod
	CAB9 1	,718,805.446	496,330.000	27 700	Methorikin highwy offer the Voldefuerts bridge to a root opportunity proper take a right run on Methorikin highwy offer the Voldefuerts bridge to a root going to Bry, Dolarypung, 2.5 km, from the highwy taking the left fork turn right of the intersection to a dirt root leading to Bryy, Balite. It is embedded near an irrigation file 800 m from the highes
	CAB10 1	,719,118.959	497,481.612	37.713	Located in Bray, Delampana, Cobandaran, Nueva Ecija. From Cobanatura City, proper take a right furn on Mohartika highway after the Yoldefuret bridge to a road going to Bray. Delampana, 2.5 km. from the highway taking the left fork turn right of the intersection to a drif road leading to Bray. Bolite, It is embedded near an irridgation after an time front side. 19 km. from the hidden.
	CAB11 1	,721,785.245	495,194.632	39.469	Located in Homestead I, Talayera, Nuevo Ecija. Taking the Mahartika highway to Muñoz, turn right on
1	CAB12	,722,164.049	495,433.809	37.949	Located in Homestead I, Talowera, Nuevo Ecija. Toking the Mahariko highway to Muñoz, turn right on Pinagpanoan intersection to the highway going to Panlobangan. 4.8 km. from the intersection on the right side 50 m. from the centerine of the hughway.
	CAB13 1	,718,173.536	489,601.897	44.230	Located in Brgy. San Pascual, Talavera, Nuevo Ecijo. It is embedded on the right side of the bridge 2.3 km. Irom San Pascual market going to San Jose.
•	CA314 1	,729,259.352	489,626.465	43.627	Located in Brgy. Bagong Silang, Talavera, Nueva Ecija. Take a right turn 3.4 km. from San Pascual market going to San Jose to a dirt road. It is embedded on a rice puddy dike on the right side of the road 500 m. from the highway.
			<u> </u>		DESIGNED LA LA CALLANDE

POINT	NORTHING	EASTING	ELEV.
T-1	1,702,384.687	493,573.021	24.120
T-2	1,703,019.008	493,611.093	25.138
T-3	1,703,468.521	493,784.646	25.158
7-4	1,703,958,942	494,041.357	23.064
T-5	1,704,279.497	494,398.825	24.437
T-6	1,704,678,169	495,126.982	24.858
T-7	1.705.433.273	495,901.932	26.581
T-8	1,705,767.749	496,069.357	25.809
T10	1,706,773.219	495,434.404	26.138
T11	1,706,952.708	496,479.420	26.405
T12	1,707,425.044	496,615.719	27.154
T13	1,707,989.215	496,773.054	26.251
T14	1,708,364.430	496,806.236	26.328
T16	1,708,712.024	497,235.901	26.873
T17	1,709,113.730	497,562.109	28.882
T18	1,709,405.603	497,811.664	28.874
T19	1,709,594.615	498,010,441	29.779
T20	1,709,784.151	498,252.284	30.803
T1	1,710,005.112	498,263.122	30.560
T2	1,710,312,116	498.622.485	31.125
13	1,710,565.610	498,702.707	30.008
T4	1,710,812.097	498,879.255	31.231
T5	1,711,258.554	499,111.169	31.156
T6	1,711,382.787	499,215.210	30.671
17	1,711,497.776	499,088.057	31.046
T8	1,711,921.739	499,233.113	32.252

POINT	NORTHING	EASTING	ELEV.	
79	1,712,273.907	499,348.863	32.889	
T10	1,712,426.453	499,228,114	31.587	
T11	1,712,945.026	499,366,723	31.508	
T12	1,713,152,194	499,229.016	32.291	i
T13	1,713,350,716	499,234.593	32.273	
Τ1	1,714,114.133	499,323.114	34.149	
T2=BM28	1,715,321.664	499,037.069	34.467	
тз	1,715,556.979	498,787,732	33.774	
T4	1,715,613.303	498,602.331	33.848	
T6	1,716,185,924	498,423.235	32.543	
77	1,716,296.557	498,393.392	32.834	
TB	1,716,587.270	498,183.256	31.879	
79=STA 2	1,716,668.328	498,048.549	31.202	
T10	1,717,083.859	497,743.553	30.319	
T11	1,717,142.345	497,687.578	29.731	
T12	1,717,194.108	497,657.056	29.770	
T13	1,717,249.207	497,618.454	29.818	
T14=B (3 6	1,717,292.610	497,589.139	29.351	
T15	1,717,492.542	497,567.432	31.652	
T16	1,717,566.385	497,485.342	31.662	
T17	1,717,532.758	497,327.722	31.782	
T18	1,717,656.358	497,304.011	32,472	
T19	1,717,849.166	497,254.912	32.957	ı
T20	1,717,977.354	497,061.014	35.155	
22=BM34	1,718,360.331	496,980.373	35,518	
T1	1,718,871,960	496,509.328	38.125	j

YGON	COORD		ELEV.	POLYGON				
TNIC	NORTHING	EASTING	ELEV.		POINT	NORTHING	EASTING	
T2	1,718,982.811	496,484.723	37.303		Ť15	1,727,194.658	491,558.623	
T3	1,719.054.242	496.476.454	38.039		Ť16	1,727,379.509	491,385.263	
T4	1,719,293.514	496,344.148	37.628		T17	1,727,406.036	491,287.074	
T5	1,719,371.611	496,212.892	36.581		⊤18	1,727,520.276	491,028.906	
T6	1,719,441.686	496,055.508	36.377		T19	1,727,612.787	490,382.069	
T7	1,719,634.286	496,119.715	36.135		T20	1,717,856.316	489,865.741	
T8	1,719,568.716	496,246.851	36.718		T1A	1,700,708.564	493,470.328	
Т9	1,719,673.577	496.284.730	36.732		T2A	1,699,872.437	493,429.951	
10	1,719,757.867	496,199.702	36.226		AET	1,700,225.955	493,971.425	
T11	1,719,963.319	496,252.503	36.847		T4A	1,701,172.767	494,669.142	
12	1,720,028.618	496,233.536	37.259	Į	T5A	1,701,480.491	494,751.688	
Г13	1,720,886.498	495,657,578	35.285		T6A	1,702,058.314	494,809.178	
Γ1	1,722,152.496	495,368.651	40.547	i	T7A	1,703,307.889	494,952.040	
Γ2	1,722,462.939	495,042.525	38.470		ТВА	1,703,499.259	495,470.561	
Т3	1,722,757.770	494,860.054	37.788		T9A	1,703,804.341	495,051.975	
Т4	1,723,072.308	494,693.817	39.520		T10A	1,704,643.472	495,403.742	
Г5	1,723,722.544	494,191.279	39.407	ĺ	T11A	1,705,012.234	495,771.069	
Т6	1,724,530.996	493,726.864	41.610		A3-1	1,709,604.105	498,057.325	
T?	1,725,515.859	493,486.477	43.192	Ī	A3-2	1,709,258.422	497,255.095	
TB	1,725,664.133	493,279.741	41.739		A3-3	1,709,521.785	496,792.013	
T9	1,726,312.522	493,216.325	42.257	ı	A3-4	1,710,182.293	496,102.911	
10	1,726,804.440	492,831.296	42.526		A3-5	1,710,393.491	495,956.847	
11	1,727,019.693	492,394.752	43.547	1	A3-6	1,710,571.283	495,803.951	
12	1,727,173.457	492,109.850	44.051	Ī	A3-7	1,710,701.618	495,743.236	
13	1,727,252.558	491,953,012	45.106	Ī				-
14	1,727,099.751	491,908.990	44.528	ſ				
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JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS YACHIYO ENGINEERING CO., LTD. RATAHIRA & ENG

DESIGNED	DATE	SIGNATURE A. ACACIC	4	DEPARTMEN	REPUBLIC OF THE PHI T OF PUBLIC WOR	LIPPINES RKS AND HIGHWAYS	6
CHECKED	10/19/01	5.90s	PJHL — PMO Submitted By:	Reviewed By:	2F DESIGN Recommended By:	OFFICE OF IT Recommended By: {See cover sheet for	E SECRETARY Approved By: (See cover sheet for
SUBMITTED	10/21/02	TEAM LEADER	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	Signature) MANUEL M. BONOAN Undersecretory	Signature/Approval) SIMEON A. DATUMANONO Secretary

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

1:40,000	HORIZONTAL AND VERTICAL CONTROL MONUMENTS
	Sheet 1 of 2
FULL SIZE A1	

SHEET CONTENTS .

GC-08

SHEET NO. :

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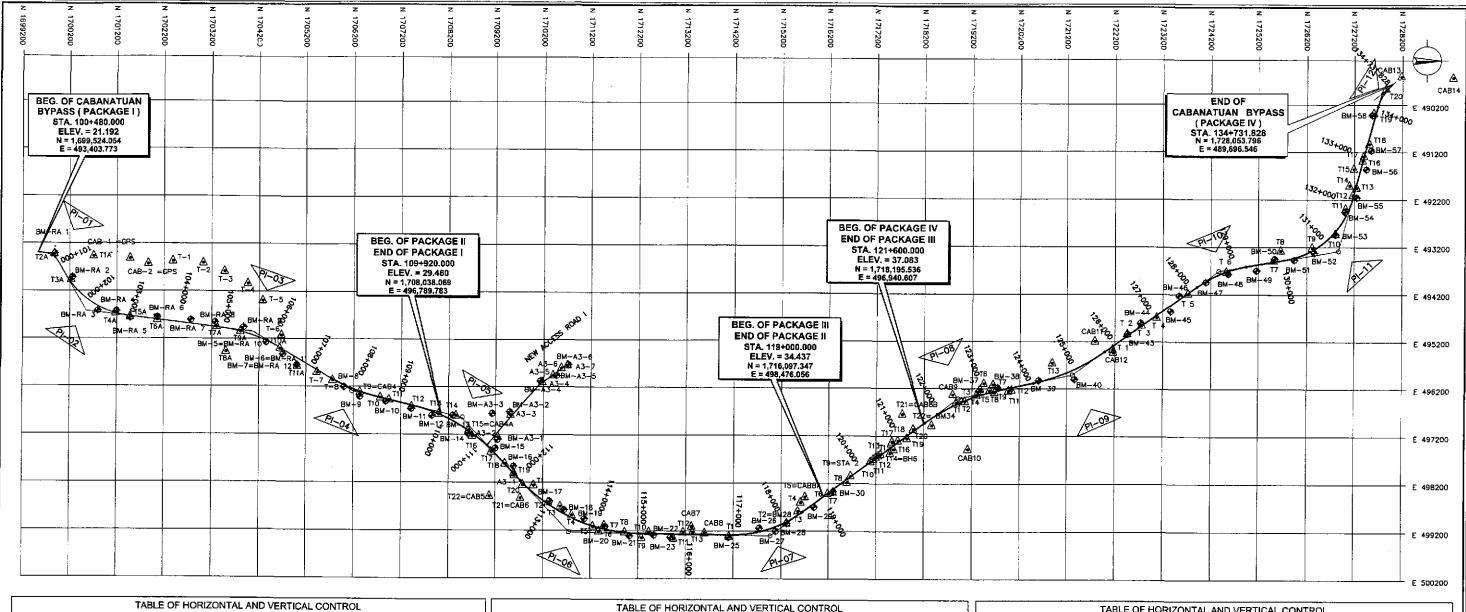


	TABLE OF HORIZONTAL AND VERTICAL CONTROL					
POLYGON COORDINATES POINT NORTHING EASTING			ELEV.	REMARKS		
BM-RA 1	1,699,880.470		21.773	It is located on the left side of the national highway going north at the beginning at the bypass re-alignment under an accia tree near the steel fence comer of a building in San Leonardo.		
BM-RA 2	1,700,254.842	493,913.436	21,932	It is located on the left side of the road diagrament placed on the side of a road (dirt) 1.50 m. from its centerline and approximately 3 m. away from the top back of an irrigation capacity beside on according to		
BM-RA 3	1,700,792.820	494,617.824	22.451	in the middle of a ricefield.		
BM-RA 4	1,701,192.044	494,624.849	22.645	It is located on the left side of the alignment placed on the top bank of a fishpond underneath two acadia (tree in Bray, Togumpay, Son Leonards,		
BM-RA 5	1,701,481,927	494,766.231	21.587	tree in Bray. Togumpay, Son Leonards. It is located on the left side of the alignment placed in the middle of a ricefield beside a nipo hut in Bray. Togumpay, Son Leonards.		
BM-RA 6	1,702,062.462	494,751.855	22.910	It is located on the left side of the road alignment placed on the side of a road 2 m. from its centerline beside on electric post in Bray. Tagumpay, San Leonardo.		
BM-RA 7	1,702,761.108	494,810.381	22.874	It is located on the right side of the road glignment placed on the top bank of a creek 3.50 m. from its centerline and under a duhat tree in Bray, Japampay. Son Leonardo.		
BM-RA B	1,703,271.267	494,855.750	23.741	it is located on the left side of the alignment placed on the side of a road (grave) 2 m. away from the centerline and 4 m. from the top bank of an impartian count in Bray Tabunting Sto. Roca		
	1,703,867.668	494,960.590	23.977	It is located on the left side of the alignment placed on the side of a road 1.70 m. away		
BM-5= BM-RA10	1,704,562.828	495,238.110	25.505	It is located on the left side of the alignment placed on the side of a dirt road 1.50 m. away from its centerline and 60 cm. from the toe of an imagine canal.		
BM-6= BM-RA11	1,704,703.014	495,521.310	25.723	It is located on the left side of the alignment placed on top of a rice puddy intersection in the middle of a ricefield in Bray, Fogurppy, Sta. Rosa.		
BM-7= BM-RA12	1,705,058.152	495,590.387	27.032	k is located on the right side of the alignment placed on top of a check gate of an irrigation canal in Bryx. Soledad, Sta. Rosa.		
B-MB	1,705,401.638	496,021.555	26.111	It is located on the right side of the alignment placed on top of a rice puddy intersection in the middle of a ricefield in Brgy. Soledad, Sta. Rasa.		
BM-9	1,706,337.897		27.188	It is located on the right side of the diagnment placed on the side of the concrete road 3 m. away from its centerline in Brgy. Soledad, Sto. Rosa.		
BM-10	1,706,881.482	496,511.250	26.538	It is located on the right side of the diagrament placed on the intersection of a rice puddy in the middle of a ricefield in Bray. Soledad, Sto. Rosa.		
BM-11	1,707,413.404	496,659.842	27.220	It is located on the right side of the road alignment placed on the top bank of irrigation canal 1.20 m. from its centerine under the shades of an acacia tree in Brgy. Soledad, Sta. Rosa.		
BM-12	1,707,844.454	496,802.502	27.148	It is located on the right side of the alignment placed on the side of a ricefield owned by Mr. Aleja Villareal in Brgy. Tagpos, Sta. Rosa.		
BM-13	1,708,291.751	496,799,903	26.656	It is located on the right side of the alignment placed on the side of a ricefield under a phakanx of trees in Brgy. Tappos, Sta. Rosa.		
BM-14	1,708,620.284		28.714	It is located on the right side of the road alignment placed on the top bank of irrigation canal 1.50 m. tram its centerline and 3 m. away the side of a road in Brgy. Tagpos, Sto. Roso.		
BM-15	1,709,200.415		28.668	It is recated on the right side of the alignment placed on the side of a dirt road 1.50 m. away from the centerline at Bray. Sta. Arcadia, Cabanshian City.		
BM-16	1,709,584.212	497,862.962	29.530	Il is located on the right side of the alignment placed on the side of a dirt road 1.50 m. away from the centerline at Brgy. Sta. Accadia, Cabangluon City.		
BM-17	1,710,336.115	498,592.643		It is located on the left side of the alignment placed on the side of road (grove.) 1.80 m. away from its centerline in Bray. Sta. Arcadia.		
BM-18	1,710,649.187			It is located on the left side of the alignment placed on the intersection of rice puddy in the middle of noefield in the side of Brgy. Valle Cruz.		
BM-19	1,711,076.165	498,651.653	31.218	It is located on the left side of the alignment placed on the side of a ricefield underneath two mango trees in Ergy, Yalle Cruz.		

			TABL	E OF HORIZONTAL AND VERTICAL CONTROL
POLYGON	COORD			
POINT	NORTHING	EASTING	ELEV.	REMARKS
BM-20	1,711,512.317	499,109.686	31.389	It is located on the left side of the alignment placed on a rice puddy intersection in the middle of a nicefield in Bray. Yalle Cruz.
BM-21	1,712,021.897	499,309.940	32.657	It is located on the rt. side of the alignment placed on the side of a road 1.80 m, away from its centerline & almost 3.50 m, away from the top bank of an irri, canal in Bray. Valle Cruz at the side of an elec. post
BM-22	1,712,529.312	499,291.424	32.692	It is located on the right side of the olignment placed on the higher portion on the side of a dirt road. 4 m. away from its centerline in Bray. Valle Cruz.
BM-23	1,712,881.166	499,335.652	32.766	It is located on the right side of the alignment placed on a bank of a creek approximately 3 m. away trom its top bank at Bray. San laidro, Cabanatuan City.
BM-25	1,714,097.795	499,338.845	34.013	It is located on the right side of the alignment placed on the side of a road (dirt) 1.50 m. away from its centerline and approximately 3 m. from the tap bank of an irrigation conal in Bray. San Isidro.
BM-26	1,714,739.668	499,138.544	33.408	It is located on the left side of the alignment placed on the side of a road intersection 2 m. away from its centerline adjacent to a subdivision known as Grand Victoria Estate. Bray Carz Roin
BM-27	1,715,085.051	499,202.403	33.926	It is located on the right side of the alignment placed on the intersection of a rice puddy in the middle of a ricefield in Brgy, Cruz Roja.
BM-28	1,715,321.664	499,037.069	34.467	it is located on the right side of the olignment placed on the side of the barangay road 2 m. away from its centerline at Brgy. Cruz Roja at the side of an electric post.
BM-29	1,715,891.768	498,699.775	34.622	It is located on the right side of the olignment placed on the side of a barangay road under an accordance 1.50 m. away from its centerline Bray. Cruz Roja.
BM-30	1,716,304.852	498,373.638	32.793	It is located on the right side of the alignment placed on the uppermost top bank of a canal at the side of a nipo hut in Bray, Obrero, Cabanatuan City.
BM-34	1,718,360.331	496,980.373	33.310	It is located on the right side of the alignment placed on the side of a dirt road 1.50 m. away from its CL between 2 camachile tree in Brgy. Sapang, Cabanatuan City 3 m. away from an irri, canal's top bank.
BM-36		-	[47.123	It is located on the left side of the alignment placed underneath a mango tree in the middle of a vegetable plantation at Bray. Pulo, Cabanatuan City.
BM-37	1,719,342.545	496,251.677	10	It is located on the left side of the alignment placed on the side of a ricefield underneath a mango tree near a house at Brgy. Pula, Cabanatuan City.
BM-38	1,719,727.496	496,175.032	36.238	It is located on the left side of the alignment placed on the side of a dirt road 1.50 m. away from its centerline and about 1/2 m. away from an irrigation canal's top bank at Bray. Pula, Cobanatuan City.
BM-39	1,720,595.956	496,023.421	36.396	it is located on the left side of the alignment placed on the intersection of a rice puddy in the middle of a ricefield at Bray. Pula, Cabanatuan City.
BM-40	1,721,353.720	495,998.525	36.993	It is located on the right side of the alignment placed underneoth a group of caconut tree in the middle of a nicefield at Brgy. Homestead I, Talavera.
BM-43	1,722,462.946	495,042.546	38.534	It is located on the left side of the alignment placed on the side of a road (dirt) 1.50 m. away from its centerline beside a concrete poles with marking : BM-43×1-8.
BM-44	1,722,735.654	494,806.172	38.406	It is located on the left side of the alignment placed on the side of a dirt road intersection 1.50 m. away from its centerline beside a barangay sidebaard Bray. Paludpad, Talavera.
BM-45	1,723,356.627	494,554.149	40.327	It is located on the right side of the alignment placed on the side of a dirt road 1.50 m. away from its centerline beside a pipa but at Broy. Polydood, Talayera
BM-46	1,723,535.448	494,225.815	39.229	It is located on the left side of the alignment placed on the side of a rood 2 m. away from its centerline beside a camachile tree.
BM-47	1,724,094.093	493,940.197	39.500	It is lacated on the right side of the alignment placed on the intersection of a rice puddy in the middle of a ricefield and about 50 m. away from the top bank of a creek at Bray, Dimasolong Sur, Talavera.
BM-48	1,724,565.996	493,762.388	72.040	It is located on the right side of the alignment placed on the side of a dirt road 2 m. away from its centerline and 4 m. away from the top bank of an irrigation conal. Bray, Dimessions Sur. Talayera
8M-49	1,725,157.190	493,693.946	72.110	It is located on the right side of the alignment placed on the side of a road 3 m, away from its centerline and 1 m, away from a conal. Bray, Gulod, Talovera.
BM-50	1,725,535.580	493,447.698	43.895	It is tocated on the left side of the alignment placed on the side of a mod 8 m. away from its centerline beside an electric post, Bray, Cutod, Talovera.

l	TABLE OF HORIZONTAL AND VERTICAL CONTROL							
	POLYGON POINT	COORD!	NATES EASTING	ELEV.	REMARKS			
	BM-51	1,725,936.648	493,468.459		It is located on the right side of the alignment placed in the intersection of a rice puddy in the middle of a ricefield 150 m. away from the Centerline of a concrete barangoy road, Bray, Gulod, Talavera.			
	BM-52	1,726,352.052	493,319.807	43.317	It is located on the night side of the alignment placed at the side of a dirt road 1.5 m, away from the centerline of the dirt road of 1.5 m, away from the centerline of the dirt road of 1.5 m, away from the centerline of the dirt road of 1.5 m, away from the centerline of the side			
	BM-53	1,726,804.440	492,931.296					
	BM-54	1,727,002.842		43.790				
	BM-55	1,727,251.355	492,153.D48	44.219	It is located on the right side of the alignment near the corner of concrete wall\fence. It is 3 m. away from the centerfine of an existing road 5 m. wide at Bray. Compos, Tolovera. It is located on the left side of the alignment 70 m. away undersected a mange tree			
	BM-57	1,727,557.279		45.294	under a coconut tree in Bray. Lamboy, lakavera.			
	BM-58	1,727,578.123	490,416.550	43.530	coconut trees in Bray. Lomboy, Talavera.			
		NE	EW ACCES	S RO	AD 1 - TABLE OF HORIZONTAL AND VERTICAL CONTROL			
	BM-A3-1	1,709,244.996	497,307.583	27.574	It is located on the right side of the access road placed on the side of the access road 60 m. away from its centerline between 2 occount trees along exte. form road in Broy Sta. Arcadia, Coharattura City			
	BM-A3-2	1,709,500.218	496,724.144	26.740	It is lictured on the right side of the access road placed on the side of the access road by m. away. If mit a Centreline between 2 coconst trees along exts, form road in Bray. Stb. Arcadia, Cobardian City. It is located on the leftt side of the access road placed on the side of a name tree 5 m. away that meeting irrigation road near a house in Bray. Stb. Arcadia, Cobarduan City.			
		1,709,133.419		26.389	from existing irrigation road near a house in Bray Sta. Arcadia, Cobonstum City. It is located on the right side of the access road placed on the top bank of an irrigation conal beside on jubicity and 40 m. away from its contentine in Bray. Sta. Arcadia, Cobonstum City.			
	BM-A3-4	1,710,136.779	496,074.308	26.388	it is incoded an the left side of the access road alignment beside an acacia tree placed on the side of a light road 4 m. away from its centerline in Bray. Arcadia, Cabonatuan City			
		1,710,471.747		20.000	It is located on the right side of the access road alignment placed on the intersection of a rice puddy near a barbed wire tence 30 m, away from the centerline of a dirt road in Bray.			
	BM-A3-6	1,710,716.368	495,728.826	28.696	It is located on the right side of the road alignment near Bato bridge on its gutter 15 m. away from its 1st approach in Bray.			
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JAPAN INTERNATIONAL COOPERATION AGENCY

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CHECKED	10/19/0	SCOSE	Submitted By:	Reviewed By:	Recommended By:
SUBMITTED	*	M Kilida	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. F
	P/2!/02	TEAM LEADER	Project Director	Chief, Highways Division	OIC, Director
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DEPARTMEN	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS							
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reienred By:	Recommended By:	Recommended By: (See cover sheet for	Approved By: (See cover sheet for					
JOSEFINA M. ALAGAR	GILBERTO S. REYES	Signature) MANUEL M. BONOAN	Signature/Approval) SIMEON A. DATUMANONG	_				
Chief, Highways Division	OIC. Director IV	Undersecretory	Secretory					

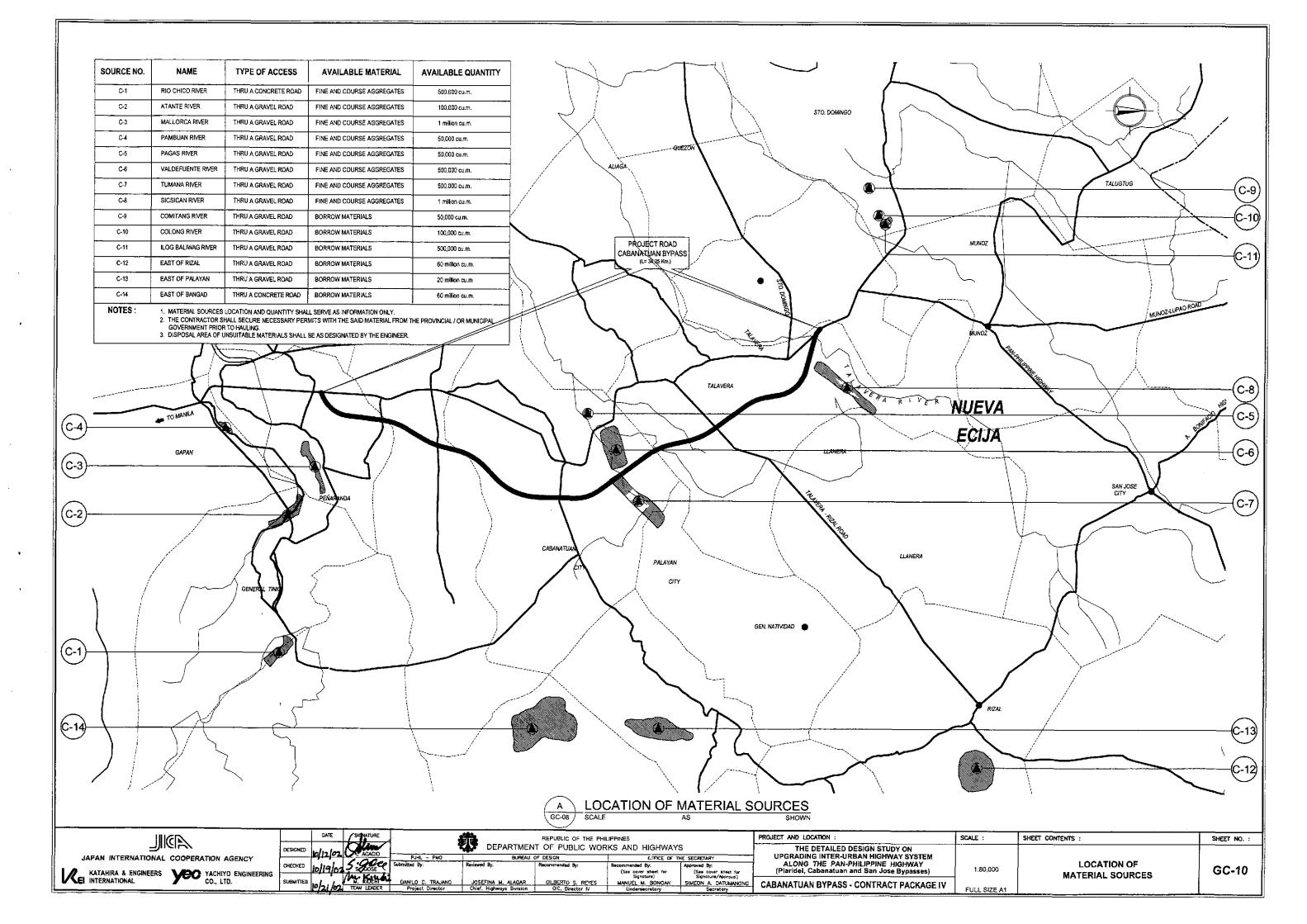
PROJECT AND LOCATION :	SCALE :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:40,000
CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1

LE: SHEET CONTENTS:

HORIZONTAL AND VERTICAL
CONTROL MONUMENTS
Sheet 2 of 2

GC-09

SHEET NO. :



SUMMARY OF QUANTITIES (INITIAL STAGE)

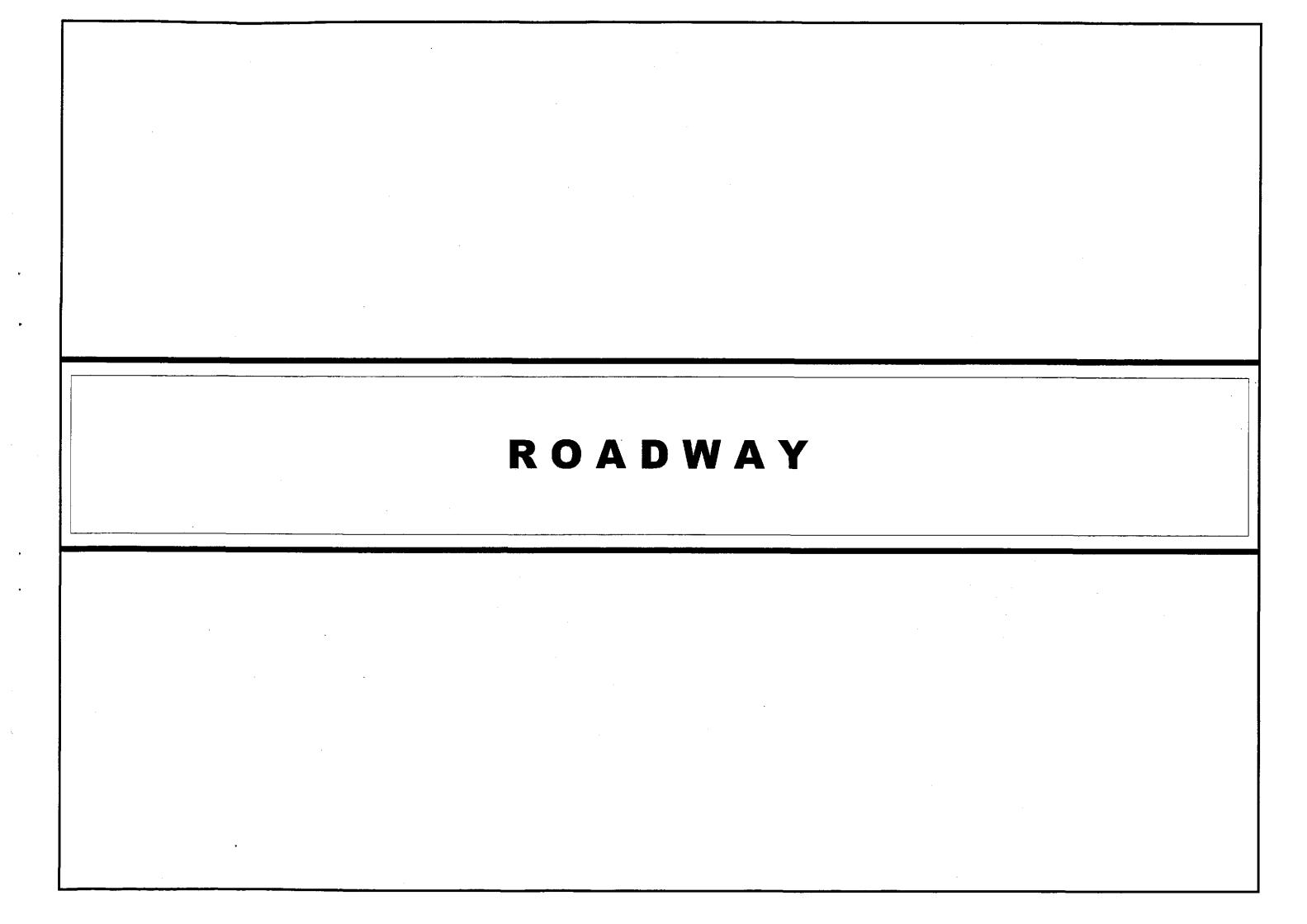
			Γ						QUA	NTITY(HIGI	HWAY AN	D DRAINA	GE)								QUANTI	TY(BRIDGE)		TOTAL	
ITEM NO.	DESCRIPTION	UNIT	BYPASS	RCBC	A-22	A-23	A-24	A-25	A-26	A-27	A-28	A-29	A-30	A-31	A-32	A-33	A-34	A-35	A-35a	BRIDGE	BRIDGE	BRIDGE	BRIDGE	QUANTITY	REMARKS
PART C - EART	HWORKS							L								1				#11	#12	#13	#14	<u>l</u>	
100(1)	Clearing and Grubbing	ha	44.35												- '		_					· · · · · · · · · · · · · · · · · · ·	<u> </u>	45.00	
100(3)	Individual removal of trees, small (150mm 2<900mm)</td <td>each</td> <td>219.00</td> <td></td> <td><u> </u></td> <td><u> </u></td> <td></td> <td>- 1</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>219.00</td> <td></td>	each	219.00		<u> </u>	<u> </u>		- 1		-				-										219.00	
100(4)	Individual removal of trees, large (Ø>900mm)	each	27.00		<u> </u>	<u> </u>		-				<u> </u>	-	:_	<u> </u>	<u> </u>				-			-	27.00	
101(1)	Removal of Existing Structures and Obstructions	L.S.	1.00	<u>.</u>			<u> </u>	ļ	,						<u></u> '			-	-			-	-	1.00	
101(3)a	Removal of Existing PCC Pavement	m2	2,357.25			732.00		915.00	اـــــــــا			لـــــا	600.00		<u> </u>			1,002.89	-		-	-	<u> </u>	5,608.00	
102(1) 103(1)	Unsuitable Excavation Structure Excavation	m3 m3	119,260.98		<u>. — — </u>	 			\vdash	·		احتا			 -	 								119,261.00	
103(1) 103(2)a	Bridge Excavation above OWL (Common Soil)	m3	765.33	2,574.75	+	\vdash	1.99	\vdash				1.99	1.99		\vdash	+-+	1.99	1.99					3,489.00	1 	<u>.</u>
103(2)e	Bridge Excavation below OWL (Common Soil)	m3	 			+-					$\overline{}$	$\overline{}$						-		219.00	322.00	188.00	2,126.43		
103(3)a	Gravel Foundation Fill	m3	87.09	231.42	.——	<u> </u>				- 1					[-	1					626.00		2,507.46	3,134.00 319.00	
103(6)	Pipe Culverts and Drain Excavation	m3	10,175.47	-	Ţ	-	28.96			- 1	-	39.82	39.82		-	-	39.82	83.26		-			-	10,408.00	
103(7)	Granular Backfill for Pipe Culvert	m3	5,409.00	-		-	16.01			-	_	22.01	22.01		-		22.01	46.02	-	,	-	-		5,538,00	
104(1)	Embankment from Roadway Excavation	m3	84.46		33.14	177.09	10.29	262.59	8.65	14.63	26.38	87.21	346.83	19,65	112.23	95.09	35.29	515.50	122.18		·		-	1,952.00	
104(3)	Embankment from Borrow Pit	m3	702,680.30		4,282.94	12.50	3,773.81	208.40	503.01	220.77	1,077.90	652.88	418.20	1,353.16	241.36	2,475.75	1,909.10	606.53	600.10	349.00	300.00	361.00	682.64	722,610.00	
104(4)	Embankment from Borrow (Selected Granular Material) for Bridge						[[i (. 1	. 1	Ì	, /	1 l	- 1	1 1	1 1	l i)					[
105(1)	Subgrade Preparation (Common Soll)	m3 m2	2,913.94	-	171.84		440.00	057.04	50.07	424.00	146.60		057.70		20101	200 00				440.00	296.00	429.00	681.40	1	
	AND SUBBASE COURSE		£,313.94		1/1.84	665.70	119.83	957.04	50.07	124.28	146.68	332.06	957.73	143.84	324.34	366.38	251.28	897.46	414.88					8,838.00	
200(1)	Aggregate Subbase Course	m3	47,735.43		Τ	315.82		342.22					448.48		$\overline{}$			898.03	391.51	30.00	30.00	30.00	30.34	50,253.00	
	Aggregate Base Course	m3	17.825.67															-	391.01	- 30.00	30.00	-	30.34	17,826.00	
PART E - SURFA	4CE COURSES																								
300(1)	Gravei Surface Course	m3	10,354.38		150.35	<u> </u>	114.84		58.52	55.78	114,31	151.43		115.15	116,39	225.03	237.28	_				-	-	11,694.00	
310(2)	Asphalt Mixture Wearing Course (t=50mm) for bridge payement, including tack coat	m2		-	_	. '	_	!	_	,	_	!	, .l		, . 7	ı . T	_	_	Ţ				2,970.00	2,970,00	
311(1)b	PCC Pavement (Plain), t=250mm	m2	107,594.83																	- :				107,595.00	
311(1)c	PCC Pavement (Plain), t=230mm	m2	- "			762.98	-	1,004.29	-	-	-	_	1,121.06	-		-		2,043.59	517.71			-	-	5,450.00	
311(2)	PCC Pavement (Reinforced) t=300mm Approach Slab	m2	317.60																	118.00	120.00	119.00	91.24	766,00	-
	CONSTRUCTION					,																			
400(3)a	Steel BH Pites (450mmx260mm), furnished	m			├ —'	<u> </u>	\vdash	,								, 					772.00			772.00	
400(4)b	Precast Concrete Piles (450mmx450mm), fumished	m			 '	\vdash	\vdash				\longrightarrow				, 					472.00		890,00	-	1,362.00	
400(10)a 400(13)b	Steel BH Piles (450mmx260mm), driven Precast Concrete Piles (450mmx450mm), driven	m m			 	-	-												-	- 1	772.00		-	772.00	
400(15)b	Test Piles (Concrete Pile 450mmx450mm), furnished &	m	-		 	\vdash	\vdash			+	-	-					- 1	-	-	414.00	•	840.00	-	1,254.00	
400(15)c	driven Test Piles (Steel BH Piles 450mmx260mm), furnished &				- -	-	-	-	-	-	\longrightarrow	-	-	-					-	24.50	-	48.50	-	73.00	
	driven	m_	· -		<u> </u>						-				-		-	- :-	-		39.00			39.00	
400(16)a	Cast-in-place Concrete Bored Piles Ø 1000mm	m			 -								:_								-	-	448.00	448.00	
400(16)c 400(19)b	Cast-in-place Concrete Bored Piles Ø 1500mm Pile shoes for 450mmx450mm Piles	m each	 		 	ļJ		,								,		-			-		1,155.00	1,155.00	
400(21)	Static Pile Load Test for Ø 1500mm Bored Piles	each			+			-	\longrightarrow					 +			-	-		48.00		42.00		90,00	
SPL 400(23)a	High Strain Dynamic Pile Test for Ø 1000mm Bored Piles	each												 +	\rightarrow						.		2.00	2.00	
SPL 400(24)	Pile Integrity Test for Bored Piles of various diameter	each	- 1						-											— <u>:</u>	 .		1.00 22.00	1,00	
401(1)a	Concrete Railing Type A (Concrete Posts and Precast	m													_								24.00		
401(2)	Beams) Steel Railing Type A for (Angat and Talavera Bridge, and		 		+	\vdash	 - 		-		\rightarrow		-	+		 +				70.00	204.00	40.00		314.00	 -
401(2)a	Approach of Pampanga Bridge)	m	 		<u> </u>	 	 										-	- 1		-			720.00	720.00	
spl 401(3)c	Bridge Name Plate, 1000 x 600mm for Talavera Bridge	each	 		 -'	├	 						\longrightarrow						·			.	2.00	2.00	
404(1) 404(2)	Reinforcing Steel (Grade 40) Reinforcing Steel (Grade 60)	kg ka	T	169,142.05		$\vdash \vdash \vdash$	137.84					137.84	137.84				137.84	137.84		24,006.00	69,044.00	16,521.00	230,497.00	521,486.00	
	Structural Concrete Class A (fc=21MPa, max. aggregate	kg	89,352.00			 	 							\longrightarrow		,			i	15,425.00	80,030.00	14,227.00	581,231.00	780,265.00	
405(1)a	38mm) for heavity reinforced structures	m3 _	1,065.58	1,762.54	<u> </u>	<u> </u>	3.10		<u> </u>			3.10	3.10				3.10	3.10					149.73	2,994.00	
405(1)b	Structural Concrete Class A (fc'=21MPa, max. aggregate 38mm) for small & medium bridges substructures	m3	-	7	1 7	1 7	1	1	Ţ	Ţ	Ţ	Ţ		T		, 7									
485/***	Structural Concrete Class A1 (fc'=21MPa, max. aggregate		 				\vdash		-	_ +			+		-		- 1	-	·	229.00	623.00	217.00		1,069,00	· · · · · ·
405(1)d	20mm) for small & medium bridges PCDG superstructures	m3													-		l			118.00	334.00	68.00		520.00	
405(1)e	Structural Concrete Class AA1 (fc'=28MPa, max. aggregate 26) for long bridge substructures	m3			1 7	'7	i T					-7				T									
400/115	Structural Concrete Class AA2 (fc'=28MPa, max.		 		┝─┤		\longrightarrow		+	-+				-+					- +	 -			2,160.28	2,161.00	
405(1)f	aggregate 20mm) for long bridge superstructures	m3											-										979.69	980,00	
405(2)	Structural Concrete Class B (fc'=17MPa, max. aggregate	m3	į T	7] _1	1 7	I		T			T			-										
	50mm) for plain or lightly reinforced structures		2,079.62		<u> </u>		5.85	•				8.04	8.04				8.04	16.81					173.19	2,300.00	
405(3)	Structural Concrete Class C (fc'=21MPa, max. aggregate 12rom) for thin reinforced members	m3	1	_ /	1 .7	ı . J	.	[. [. [. [. 1		_ [. T	Т	. 1			25.00	52.00	18.00	315.36	411.00	-
405(6)	Lean Concrete (fc'=17MPa, max. aggregate 38mm)	m3	43.56	115.70							-		- 1							12.00	65.00	13.00	70.87	321.00	
406(1)a	Precast Prestressed Structural Concrete Member (AASHTO Girder Type IV L=20m)	each					- :								;								,		
	Precast Prestressed Structural Concrete Member		 	 -	 	\vdash							 +				-	-			-	5.00	~	5.00	
405(1)d	(AASHTO Girder Type IV L=25m) Precast Prestressed Structural Concrete Member	each		<u>-</u> -		├	=														20.00	-		20.00	
406(1)j	(AASHTO Girder Type VI L≐35m)	each				ا _{ــــا}			-								. !	.	. !	5.00	. 1	_		5.00	
	Precast Prestressed Structural Concrete Member	each																					40.00		
406(1)	/AASHTO Girder Tune VI modified 1 = 20 4= 1			- ,		!		- 1	- 1	-	- 1	- 1	- 1	- 1	-	- 1	- 1	- 1	- 1			-	12.00	12.00	
406(1)i 406(1)m	(AASHTO Girder Type VI modified L=39.4m) Precast Prestressed Structural Concrete Member (AASHTO Girder Type VI modified L=39.55m)	each	 					T I	T																

							* : 					
		DATE	SIGNATURE	4		REPUBLIC OF THE PH			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	rolizioz		¥	DEPARTMEN	T OF PUBLIC WOF	RKS AND HIGHWAY	S	THE DETAILED DESIGN STUDY ON			
JAPAN INTERNATIONAL COOPERATION AGENCY		د با بعاد د	C Creat	PJHL - PMO Submitted By:	BUREAU (DESIGN Recommended By:	OFFICE OF T	HE SECRETARY	UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY		SUMMARY OF QUANTITIES	
KATAHIRA & ENGINEERS VACHIYO ENGINEERING	CHECKED	ע יין ניזויין	s. Øse	Jaconnices by.	Reviewed By:	Recommended by.	(See cover sheet for	Approved By: (See cover sheet for Signeture/Approval)	(Plaridel, Cabanatuan and San Jose Bypasses)		(INITIAL STAGE)	GC-11
KATAHIRA & ENGINEERS YACHIYO ENGINEERING CO., LTD.	SUBMITTED	6/21/02	MA MUCH WO	Panilo C. Trajano	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG	CABANATUAN BYPASS - CONTRACT PACKAGE IV		1 of 2	
		17-9	TEAM MEADER	Project Director	Chief, Highways Division	DIC, Director (V	Undersecretory	Secretory		FULL SIZE A1		1

SUMMARY OF QUANTITIES (INITIAL STAGE)

			т																				.,		
ITEM NO.	DESCRIPTION	UNIT		7000	7	T	T	T		7	SHWAY AN	l .	1 	·	1	т —	l l			BRIDGE	QUANTT	TY(BRIDGE) BRIDGE	BRIDGE	TOTAL QUANTITY	REMARKS
			BYPASS	RCBC	A-22	A-23	A-24	A-25	A-26	A-27	A-28	A-29	A-30	A-31	A-32	A-33	A-34	A-35	A-35a	#11	#12	#13	#14	QUARTITY .	
407(1)c	Elastomeric Bearing Pad, Duro 60 (600x350x50mm)	each	<u> -</u>	<u> </u>								-								10.00	40.00	10,00		60.00	
407(1)e	Elastomeric Bearing Pad, Duro 60 (600x400x50mm)	each			<u></u>					-		-	-	-	_	-						-	72,00	72.00	
407(2)a	Expansion Joint, (±40mm Movement)	m	<u> </u>	-		<u> </u>	-			-				<u> </u>			-	-		20.00	20.00	20.00	_	60.00	
407(2)6	Expansion Joint, (±50mm Movement)	m	<u> </u>	<u> </u>	-		-		-		<u> </u>			-		_							40.80	41,00	
407(2)g	Expansion Joint, 30mm for bridge sidewalk	m	<u> </u>	-				-			<u> </u>		-						-	3.00	4,00	4.00		11.00	
SPL 407(3)a	Restraining Bar Ø 32 x 1495mm	each	<u> </u>		-			<u> </u>	-	_		-		-			_		-			-	12.00	12.00	
SPL 407(3)b	Restraining Bar Ø 32 x 1900mm	each	'		<u> </u>		_	_				-	-				_		-				12.00	12.00	
407(4)	G.I. Drain Pipe Ø 150mm for Bridge Drainage	m					-					-	-			_	+			3.00	9.00	4.00	154.98	171.00	
SPL 407(5)c	Pier Protection Concrete Blocks for Talavera Bridge	m2	<u> </u>	<u> </u>		ļ			-		_		_	-		_	-						896.00	896.00	
SPL 420(4)c	Temporary Craneway for Talavera Bridge Construction	m.	<u> </u>			<u> </u>			-		_		-	-		_			_	-		1 - 1	80.00	80,00	•
SPL 420(5)e	Temporary Access Road (Causeway) for Talavera Bridge Construction	m																							
SPL 420(6)d	Temporary Cofferdam for Pier Construction (Talavera		 	<u> </u>	<u> </u>	 	<u> </u>	1	_	<u> </u>			-	<u>-</u> -	 	-				-	-		300.00	300.00	
	Bridge)	each		-		 	 							-	<u> </u>	-	_	-		-		, [3.00	3.00	
SPL 900(3)	Provisional Sum for Geotechnical Investigation	L.S.		<u> </u>			-	-		<u> </u>	<u> </u>		-		<u> </u>	-		[,			1.00	1.00	
	AGE AND SLOPE PROTECTION STRUCTURES				, .		,																		
500(1)06	RCPC Extra Strength (32MPa), Ø 910mm (36")	m.	1,861.00	_	<u> </u>		B.00					11.00	11.00			-	11.00	23.00				1		1,925.00	
500(1)c7	RCPC Extra Strength (32MPa), Ø 1070mm (42*)	- En	158.00	-	<u> </u>		-		-		_					-	-	-					,	168.00	
500(1)c8	RCPC Extra Strength (32MPa), Ø 1220mm (48")	m	457.00	<u> </u>	1	ļ	<u> </u>						_	_										467.00	····
500(1)c9	RCPC Extra Strength (32MPa), Ø 1520mm (60°)	m	104.00			_							-			-	-	_						104.00	•
502(4)a1	U-shaped Concrete Ditch W≠0.50m x H=0.50m	Е				125.00	-	172.00				-	440.00	_	260.00			.			T			997.00	
502(6)a	V-shaped Lined Ditch H=500mm, 1:1.50	£	170.00			_	-					_					. 1	.		_		1		170,00	
502(7)a	Trapezoidal Lined Ditch B=450mm, H=500mm, 1:1.00	m	3,527.00						-					. 1				_				T		3,527.00	
502(7)b	Trapezoidal Lined Ditch B=1900mm, H=500mm, 1:1.00	m	564.00		T							_										-		564.00	
504(5)	Grouted Riprap Class A	m3	204.50		T .										<u> </u>		 			138.00	34,00	141.00	14.05		
505(1)	Stone Mesonry	m3			Ī .	-										· · · · · · ·	 	-		130.00	37,00	141.00	386.99	532.00	
506(1)	Hand Laid Rock Apron (Loose Boulder Apron)	m3	1			<u> </u>					,——	-							— <u> </u>	-	-			465.00	
507(2)b	Steel Sheet Piles (400x85x8mm), furnished & driven	m	1			-					-					-	 		-=	- :		+ +	138.00	138.00	
509(1)	Gabions	m3	1	_	-	<u> </u>	١.				_										683.00	+ +	5,040.00	5,723.00	
510(1)	Rubble Concrete Slope Protection	m3	 		 	ļ —	 			-							<u> </u>			-	352.00	 	1,213.50	1,566.00	
	LANEOUS STRUCTURES				<u> </u>											٠	<u> </u>	:		•	71.00	-	124.42	196.00	
	Combination Concrete Curb & Gutter/Side Strip, Type A		T		_	т —	1				$\overline{}$,								
600(3)a	(675x364mm)	m	2,903.00	i -	_	l _	_	96.00	_	_			88.00			,		319.00	1			1 1		0.400.00	
602(1)	Right-of-Way Concrete Monuments	each	693.00	-	27.00	10.00	12.00	9.00	9.00	5.00	14.00	14.00	21.00	11.00	8.00	20.00					-	 		3,406.00	
	Maintenance Marker Posts for Drainage Structure	each	134,00	-	21.09	10.00	2.00	3.60	3.40	5.00	14.00	2.00	2.00	11.00	8.00	20.00		12.00				 		787.00	
	Cilometer Posts	each	13.00		 		2.00					2.00	2.00			-	2.00	2.00						144.00	
	7.0		13.00		 	 	 										-							13.00	
603(3)a	Metal Guardralls (Metal Beam) Type A (Embedded in soil)	m	3,894.00	1		l <u>.</u>	92,00		-	_		-			_	_ :	1 . 1	_	_ !	_	_		_	3,986.00	
605(1)a	Naming Signs (Triangular 900mm)	each	32.00	-	1	1	_					_						1.00						33.00	
605(2)b	Regulatory Signs (Octagonal 600mm)	each		-		2.00						2.00	_	_	2.00	2.00	2.00			-					
605(2)c	Regulatory Signs (Circular Ø 600mm)	each	17.00	-		1		2.00				2.00	2.00	<u>-</u> _		2.00	2,50	1.00	-				-	10.00	
605(2)d	Regulatory Signs (Rectangular 450x750mm)	each	7.00		<u> </u>	2.00		2.00	-	_		2.00	2.00		2.00	0.00			 -	· · · · · · · · · · · · · · · · · · ·		 		22.00	
605(3)c	nformatory Signs (Type B, double post)	each	2.00			2.00	<u> </u>	1.00				2.00	2.00		2.00	2.00	2.00	1.00		· ·		 		22.00	
605(3)d	nformatory Signs (Type C, double post)	each	1	-	 	· ·	-						2.00	-					-	-	-			5.00	
	Reflectorized Pavement Studs (Raised Profile Type, one		2.00		 	<u> </u>	+ -	1.00		 				•			 			-	-	-		3.00	
607(2)a	ace reflective)	each	10.00	-	<u> </u>		_	.	_	_		_	_	.	_	.	.		!	_ i	_ '	_	_ [10.00	
607(2)b	Reflectorized Pavement Studs (Raised Profile Type, two	ggeb		,	T										<u> </u>		-	-						10.00	
	aces reflective)	each	120.00		 - -		ļ	10.00		-			10.00	-		-		10.00		_	-			150.00	
607(3)	Chatter Bars (one face reflective)	each	516.00	-	 - -		<u> </u>	36.00	-	- 1			32.00			-		34.00						618.00	
	umishing and Placing Top Soll	m3	39,187.43	,	198.66	16.90	167.39	37.39	47.59	29.47	95,99	85.63	43.99	108.00	62.22	165.87	150,01	67.96	86.25	-	_	1		40,571.00	
610(1)	Godding	m2	195,937.17	-	1,986.65	169.00	1,673.87	373.93	475.87	294.74	959.88	856.28	439.94	1,079.98	622,19	1,658.74	1,500.06	879.64	862.48			-		209,771.00	
611(1)c	rees (Furnishing and Transplanting) High Tree (Young	each]				I												$\overline{}$	İ					
	ree) 1.5m < H < 3.0m		1,186.00		ļ	-	ļ ·	-		-			-	-		-						ļl		1,186.00	· ·-···
	Reflectorized Thermoplastic Pavement Markings (White)	m2	4,488.1		<u> </u>	104,22		84.89	-			121.79	107.85	-	121.40	122.98	137.37	103.80						5,393.00	
	Reflectorized Thermoplastic Pavement Markings (Yellow)	m2	269,17		-	-	- :			-						-						<u> </u>		270.00	
-	raffic Signal Pole Type A (Mast Arm Post H=6.0m)	each	5.00			· .]							<u>-</u>	-	<u>_</u> I	-						5.00	
	raffic Signal Pole Type B (Ø 114.3mm x 4.2m)	each	12.00		<u> </u>	-	-		-	_]		I		-				_				12.00	
SPL 620(1)d	raffic Signal Pole Type C (Ø 114.3mm x 3.4m)	each	11.00			-					T				_	-	_	-		-				11.00	
SPL 620(1)e	raffic Signal Pole Type D (Ø 114.3mm x 3.0m)	each	7.00												-	-				-				7.00	
SPL 620(2)a	raffic Signal Lamps Type A (6 vehicle lamps)	each	4.00					-						-		-	.		$\neg \neg$			İ		4,00	
SPL 520(2)b	raffic Signal Lamps Type B (3 vehicle lamps)	each	34.00	-		_	_		_												_	_		34.00	
	raffic Signal Lamps Type C (2 pedestrian lamps)	each	16.00	-		_	_					_									<u>-</u>	<u>-</u>	- [16,00	
		each	- ''			T .	_	4.00					2.00									 	 +		
SPL 520(2)c	Street Lighting Poles (Single Lamp)				-	 			-						 -			6.00	\rightarrow			 		6.00	
SPL 520(2)c SPL 620(4)a	Street Lighting Poles (Single Lamp) Street Lighting Poles (Dual Lamp)	each	48.00	1	١ .	_		2001																	
SPL 620(2)c SPL 620(4)a SPL 620(4)b	Street Lighting Potes (Dual Lamp)	each	48.00	<u> </u>		-		2.00	- 1	-			4.00						$\overline{}$		-	 		60.00	
SPL 520(2)c SPL 620(4)a SPL 620(4)b SPL 620(4)c			48.00	-		-	-	1.00			==		1.00	-	<u>-</u>	- -		1.00		-	-	-	12.00	12.00 4.00	

	DATE	SIGNATURE		DEPARTMEN	REPUBLIC OF THE PHI				SCALE :	SHEET CONTENTS :	SHEET NO. :
JAPAN INTERNATIONAL COOPERATION AGENCY	CHECKED 10/12/02	S. GOSE	PJHL - PMO Submitted By:	DEI MITTIE	T OF PUBLIC WOR OF DESIGN Recommended By:	Recommended By: (See cover sheet for	THE SECRETARY Approved By: (See cover_sheet for	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY {Plaridel, Cabanatuan and San Jose Bypasses}		SUMMARY OF QUANTITIES (INITIAL STAGE)	GC-12
INTERNATIONAL CO., LTD.	SUBMITTED D/2/02	TEAM LEADER	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	Signature) MANUEL M. BONDAN Undersecretary	Signature/Approval) SIMEON A. DATUMANONG Secretary	CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1	2 of 2	1



GENERAL NOTES

HIGHWAY / CIVIL AND DRAINAGE

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, 1995 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
CAB-1	1,701,482.713	493,518.261	23.777	Located in Brgy. Tagumpay, San Leonardo, Nuevo Ecija. It is drilled on the left side of the Tambo Bridge's first approach, about 0.05 cm. above the bridge's concrete sidewalk.
CAB-2	1,701,869.179	493,628.408	22.525	Located in Brgy. Tagumpay, San Leonardo, Nueva Ecija. It is embedded in an open space 80 m. from highway, 15 m. from dirt road going to an ostrich form, about 40cm x 40cm & 0.05cm abovs the ground.
CAB-3	1,706,316.913	495,983.410	25.984	Located in Brgy. Soledad, Sta. Rosa, Nueva Ecija. It is embeded on a 40cm x 40cm conc mons. beside on irri. canal about 8m from rd. CL & 3 km. from the highway intersec. of Fort Magazysay & Cabanatuan City.
CAB-4	1,705,340.784	498,322.453	26.299	Located in Brgy. Soledad, Sta. Rosa, Nueva Ecija. It is embedded on a 40 cm x 40 cm conc. mons. on the left side of the rd. going to Fort Magsaysay & about 370 m. from GPS Sta. CAB-3, about 4 m from rd. CL.
CAB-4A	1,708,633.059	497,110.500	27.917	Located in Brgy. Tagpos, Sta. Rosa, Nueva Ecija on Diaz property. From the highway northbound take a right turn on Mabini extension, on Mercury Drugetore going to Brgy. Sta. Arcadia. 4.9 km. from the highway take a right turn on the intersection of the dirt road after the one—way bridge with a water pipe rail. It is 1.4 km. from the intersection beside an irrigation canal on the left side.
CAB- 5	1,709,079.199	498,487.150	31.478	Located in Brgy. Sta. Arcadia, Cabanatuan, Nueva Ecija. From the highway northbound take a right turn on Mabini extension, Mercury Drugstore going to Brgy. Sta. Arcadia. 3.9 km, from the intersection highway, take a left turn to a dirt road it is embedded on the right side of the road 200 m. from the Mabini extension road centerline.
CAB-8	1,709,731.859	498,528.332	31.285	Located in Brgy. Sta. Arcadia, Cabanatuan, Nueva Ecija. From the highway northbound take a right turn on Mabini extension, Mercury Drugstore going to Brgy. Sta. Arcadia. 3.2 km. from the intersection highway, take a left turn to a ditt road it is embedded on the left side of the road near an irrigation dike 500 m. from the Mabini extension road centerline.
CAB-7	1,713,329.143	499,115.186	33.346	Located in Brgy. San Islaro, Cabanatuan, Nueva Ecija. It is embedded on the eldewalk of the DPWH 3rd Engineering District driveway, about 20 m. from the centerline of the road.
CAB-B	1,713,603.208	499,247.649	33.467	Located in Urban Poor Housing Project, San Isidro, Cabanatuan, Nueva Ecija. Going to Palayan City take a isft turn to the dirt road beside the DPWH compound leading to the site of the housing project, then turn right. It is embedded on the right side of the dirt road near the electric post 400 m. from the centerline of the highway.
CABBA	1,715,705.603			Located in Brgy. Roja, Cabanatuan, Nueva Ecija. From Cabanatuan City proper take a right turn on Mahariika highway to a road before the Valdefuente bridge. 3 km, from the highway turn left to a bridge.
CAB8B	1,717,749.623	495,746.648	34,436	highway to a road before the Valdefuente bridge. 3 km. from the highway, turn left to a bridge. Location in Bray. Sapang, Cabanatuan, Nueva Ecija. From Cabanatuan City proper take a rt. turn on Mahariika highway after the Valdefuente br. to road going to Bray. Sapang. It is emb. on the left side of the road.
CABS	1,715,805.446	496,330.000	37.709	Located in Brgy. Buliran, Cabanatuan, Nueva Ecija. From Cabanatuan City proper take a right turn on Maharlika highway after the Vaklefuerts bridge to a road going to Brgy. Dalampang. 2.5 km. from the highway taking the left fork turn right at the intersection to a dirt road leading to Brgy. Balite. It is embedded near an irrigation dike 800 m. from the bridge.
CAB10	1,719,118.959	497,481.612	37.713	Located in Brgy. Dalampang, Cabanatuan, Nueva Ecija. From Cabanatuan City proper take a right turn on Maharlika highway after the Valdefuerte bridge to a road going to Brgy. Dalampang. 2.5 km. from the highway taking the left fork turn right at the intersection to a dirt road leading to Brgy. Balite. It is embedded near an irrigation dike on the right side, 1.9 km. from the bridge.
CAB11	1,721,785.048	495,194.942	39.469	Located in Homestead I, Talavera, Nueva Ecija. Talang the Maharilka highway to Murioz, turn right on Pinappanaan intersection to the highway going to Pantabangan. 4.3 km. from the intersection turn right to a distribution can be right beside an irrigation canal 70 m. from the centerline of the highway.
CAB12	1,722,163.770	495,433.939	37.949	Located in Homestead I, Talavera, Nueva Ecija. Taking the Maharilka highway to Mufloz, turn right on Pinagpanaan Intersection to the highway going to Pantabangan. 4.5 km. from the intersection on the right side 50 m. from the centerline of the hughway.
CAB13	1,718,173.662	489,601.903	44.230	Located in Brgy. San Pascual, Talavera, Nueva Ecija, it is embedded on the right side of the bridge 2.3 km. from San Pascual market going to San Jose.
CAB14	1,729,259.352	489,626.465	43.627	Located in Bray. Bagong Silang, Talavera, Nueva Ecija. Take a right turn 3.4 km. from San Pascual market going to San Jose to a dirt road. It is embedded on a rice puddy dike on the right side of the road 500 m. from the highway.

2.2 VERTICAL CONTROL IS REFERRED TO BM DEJ-7 ESTABLISHED BY THE CAB'S WITH ELEVATION 46.695m. ABOVE MEAN SEA LEVEL, LOCATED IN THE BARRIO OF CABU, CABANATUAN CITY, IN THE PROVINCE OF NUEVA ECUA, ALONG THE ROAD TO LAUR. IT IS A DRILLED HOLE ON THE NORTH SIDE OF THE BRIDGE FROM THE SW ENTRANCE OF THE ROAD. STATION MARK IS A BRASS ROD ABOUT 1 CM. DIA. SET IN A DRILLED HOLE MARKED DEJ-7 1982.

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 CABANATUAN BYPASS
 - FLOODING OCCURENCE ALONG PAN-PHIL HIGHWAY FROM KM POST 102 TO KM POST 104. (LEFT SIDE, KM 100+480 TO KM 102+000)
 - NATIONAL POWER CORPORATION TRANSMISSION TOWER (NEAR BEG. AND END OF BYPASS)
 - EXISTING LANDFILL AREA (LEFT SIDE, KM 115+700 CENTERLINE)
- 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 FLOOD LEVEL, 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 POST STATION ALONG THE PAN-PHILIPPINE HIGHWAY WHICH IS KM.100 NEAR THE START OF BYPASS.
- 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 ARE TOP OF CROWN ALONG THE CENTERLINE.
FINISHED GRADE AS SHOWN IN THE TYPICAL SECTION WILL BE REFERRED FROM TOP OF CROWN AND 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 CONNECTIONS AND PRIVATE ENTRANCES SHALL BE AS SHOWN IN THE DRAWING OR AS DETERMINED 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 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

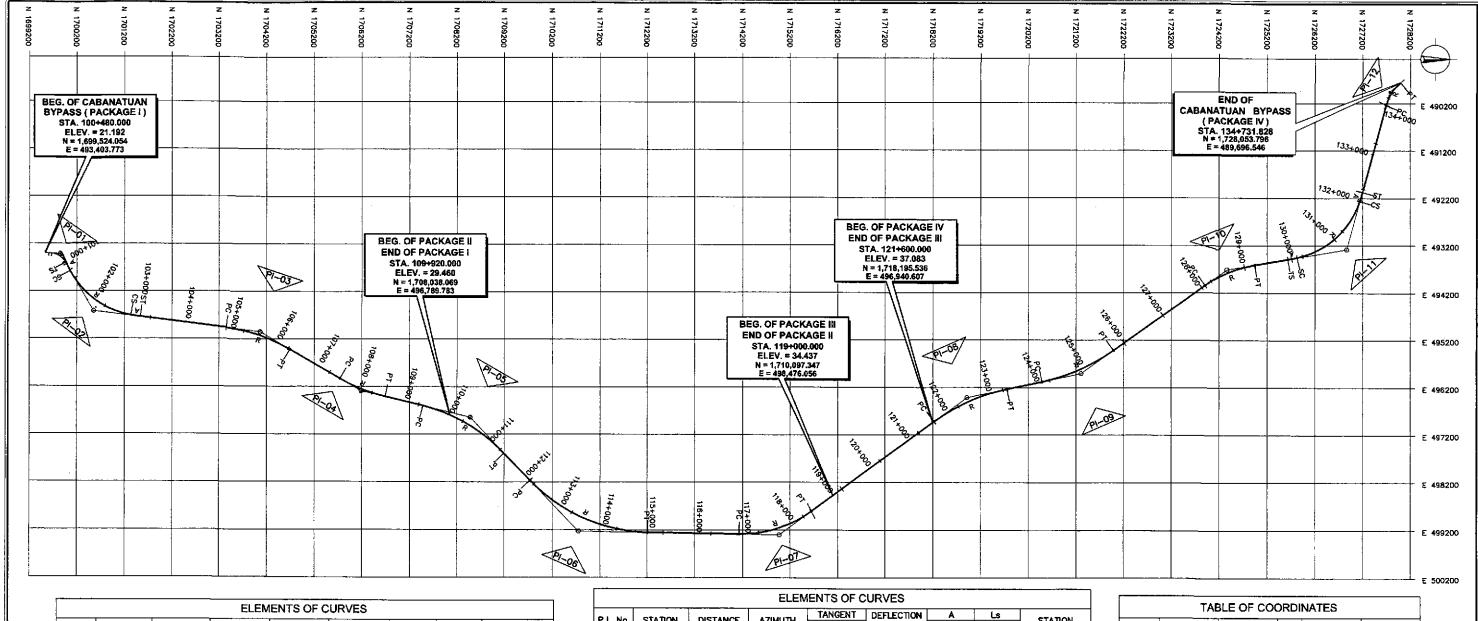
14.1 REPORTS

- 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.

JIKA	DATE SIGNATURE			REPUBLIC OF THE PHIL			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
11	DESIGNED JO/12 /02	₹4		OF PUBLIC WOR			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM			
JAPAN INTERNATIONAL COOPERATION AGENCY	NEWED 1 5. 9021	PJHL - PMO	BUREAU OF	F DESIGN	Recommended Br.	THE SECRETARY Approved By:	ALONG THE PAN-PHILIPPINE HIGHWAY		GENERAL NOTES	
KATAHIRA & ENGINEERS VGC YACHIYO ENGINEERING	\(\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinc{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinc{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tetx{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\tint{\text{\text{\text{\texi}\text{\text{\text{\text{\text{\texi}\text{\text{\text{\text{\text{\text{\text{\text{\tet	Sanitability.	Walter Ly.	racommanded by:	(See cover sheet for Signature)	(See cover sheet for Sinceture (Assessed)	(Plaridel, Cabanatuan and San Jose Bypasses)		HIGHWAY/ CIVIL AND DRAINAGE	RG-01
KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.	SUBMITTED / M. (KIUCH)	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG	CABANATUAN BYPASS - CONTRACT PACKAGE IV			
	0/2 /07 TEAN LEADER	Project Director 0	Chief, Highways Division	OIC, Director IV	Undersecretory	Secretary	CALLAND CALLED CONTINUE CALLED	FULL SIZE A1	1	



			ELEN	MENTS OF C	URVES			
P.I. No.	STATION	DISTANCE	AZIMUTH	TANGENT	DEFLECTION	A	Ls	STATION
F.I. 110.	31711011	DISTANCE	AZIMOTA	⊕s	ANGLE	R	Lc	STATION
BEG.	100+480.00							
		326.146	183'25'21"	246,146		160.000	64.000	TS=100+560.000
01	100+806.146			210.110	5616'36"	1001000	01.000	SC=100+624.000
				4"35"01"		400.000	328.886	CS=100+952.886 ST=101+016.886
		1,385.199	239*41*57*		 			TS=101+164.756
02				147.870	Famelack	600.000	200.000	50=101+364.756
UZ	102+155.940	_		310'59"	52"39"26"	1,800,000	1,454.277	TS=102+819.034
		3,544,720	187'02'31"			1,500.000	1,404.277	SC=103+019.034
		3,3 1 24		720.109		_	-	PC=104+852.462
03	105+572.571				2315'08"			PT=106+272.858
		2,451,020	21017'39"	-		3,500.000	1,420.397	- 1 1001 - 1000
		2,431.020	2101739	514.528			_	
04	108+003.769				16'43'34"			PC=107+489.241
		2,363,853	193"34"05"	-		3,500.000	1,021.737	PT=108+510.979
		2,363.853	193,34.02	1,035.121		_	_	
05	110+360.304			1,000.121	32'57'04"			PC=109+325.183
		7 000 DVA		-	020,04	3,500.000	2,012.865	PT=111+338.048
		3,288.872	226'31'09"	1,469.788		_	_	55 410 400 844
06	113+591.799				45°33'32°			PC=112+122.011 PT=114+905.046
		4,225.526	180'57'37"			3,500.000	2,783.035	F1=1147303.040
		7,220.020	100 07 07	840.295		_	-	PC=116+820.490
07	117+660.785	4 995 451	* * ***********************************		37'09'25"			PT=118+441.763
	[4,885.881	143'48'12"	-	1	2,500.000	1,621.273	1 1=1.101 441.700

			ELEN	ENTS OF C	CURVES			
P.I. Na.	CT4 TICN	DISTANCE	470447	TANGENT	DEFLECTION	Α	Ls	
P.I. NO.	STATION	DISTANCE	AZIMUTH	⊖s	ANGLE	R	Lc	STATION
OB		4,885.881	143'48'12"	856.992		_	-	PC=121+630.356
UB	122+487.349			-	2471'07"	4,000.000	1,688.459	PT=123+318.815
	454 . 202 722	2,447.505	167"59"20"	837.385		4	-	PC=124+071.944
09	124+909.328	7 777 540	4.4. ample of F		23"38"52"	4,000.000	1,650.927	PT=125+722.871
10	128+658.998	3,773.512	144"20"28"	577.297	26'00'20"		-	PC=128+081.701
	120 / 000,000	2.530.124	170"20'47"	-	28 00 20	2,500.000	1,134.704	PT=129+216.405
		2,550.124	1702047	1,250,689	1	600.000	200.000	TS=129+918543
11	131+169.232			1,250.005	65'09'11"	800.000	200.000	SC=130+118.543
	1317108,232			310'59"	1	1.800.000	1.846.841	CS=131+965.384
	<u> </u>	3,450,454	105'11'37"	0.000			.,	ST=132+165.384
12	134+365.149	.,	100 (11 \$7	292.954	32'39'23'	-	-	
	ĺ	382.627	137'50"54"		1 4 55 20			PC=134+072.196
		302.027	137 30 34			1,000.000	569.960	PT=134+642.155
END	134+731.823							

	TAE	BLE OF CO	ORD	INATES	
P.I. No.	NORTHING	EASTING		NORTHING	EASTING
BEG.	1,699.524.054	493,403.773			
			TS	1,699,603.912	493,408.549
Ot	1,699.849.619	493,423,243	sc	1,699,667.655	493,414.070
01	1,033.043.013	790,720,270	cs	1,699,940.066	493,581.402
			ST	1,699,973.809	493,635.763

	TAE	BLE OF COO	DRD	INATES	
P.I. No.	NORTHING	EASTING		NORTHING	EASTING
			TS	1,700,048.415	493,763.432
02	1,700,548,505	494,619,209	SC	1,700,152.489	493,934.189
02	1,700,546.505	494,019.209	CS	1,701,334.236	494,712.538
]		ST	1,701,532.212	494,740.724
03	1,704,066,486	495,053.779	PC	1,703,351.810	494,965.496
	1,104,000.400	483,033.779	P	1,704,688.262	495,417.031
			PC	1,705,738.544	496,030.623
04	1,706,182.811	496,290.171	PŤ	1,706,682.980	496,410.880
05	1,708,480,693	495,844,734	PC	1,707,474.461	496,601.893
-	1,700,400.000	480,044.754	PT	1,709,192.973	497,595.822
06	1,710,743,806	499,231,154	PÇ	1,709,732.427	498,164.670
-	1,710,740,000	435,ZJI.IJ4	PT	1,712,213.387	499,255.786
07	1,714,968,738	499,301,970	PC	1,714,128.561	499,287.887
Ų,	1,717,800.730	+85,301.570	PT	1,715,646.852	498,805.727
80	1,718,911,622	100 110 570	PC	1,718,220.033	496,922.679
00	1,718,911.022	496,416.576	PT	1,719,749.852	496,238.234
09	1 701 705 514	105 007 014	PC	1,720,486.493	496,081.506
08	1,721,305.544	495,907.244	PT	1,721,985.920	495,419.082
			PC	1,723,902.473	494,043.979
10	1,724,371.527	493,707.438	PT	1,724,940.649	493,610.632
			TS	1,725,632,845	493,492,891
11	1,726,865,824	493,283,164	SC	1,725,829.332	493,455.713
•••	1,720,000.024	+93,263.164	CS	1,727,137.632	492,268.171
	[ST	1,727,193,605	492,076.192
	4		PC	1,727,693.343	490,236.031
12	1,727,770.121	489,953.318	PT	1,727,987.313	489,756.723
END	1,728,053.796	489,696.546			

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

	DATE	SIGNATURE	Γ
DESIGNED	0/2/02	ALACIE .	L
CHECKED	10/19/02	3.900E	5
SUBMITTED	10/21/02	Ma Kalandi Team Leader	

E	SIGNATURE	
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1	5. 90cm	Submi
07	/ SCROSE	
02	TEAM LEADER	D

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-4	PJHL - I
7(Submitted By:
ı,	DANKO C. T

REPUBLIC OF THE PHILIPPINES REPUBLIC OF THE PHILIPPINES

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN

	41.1.0E 41.1.	C OLOVIIIIOVI
	Recommended By:	Approved By:
	(See cover sheet for Signature)	(See cover sheet for Signature/Approvel)
	MANUEL M. BONDAN	SIMEON A. DATUMANONO
ï	Undersecretory	Secretary
-		

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

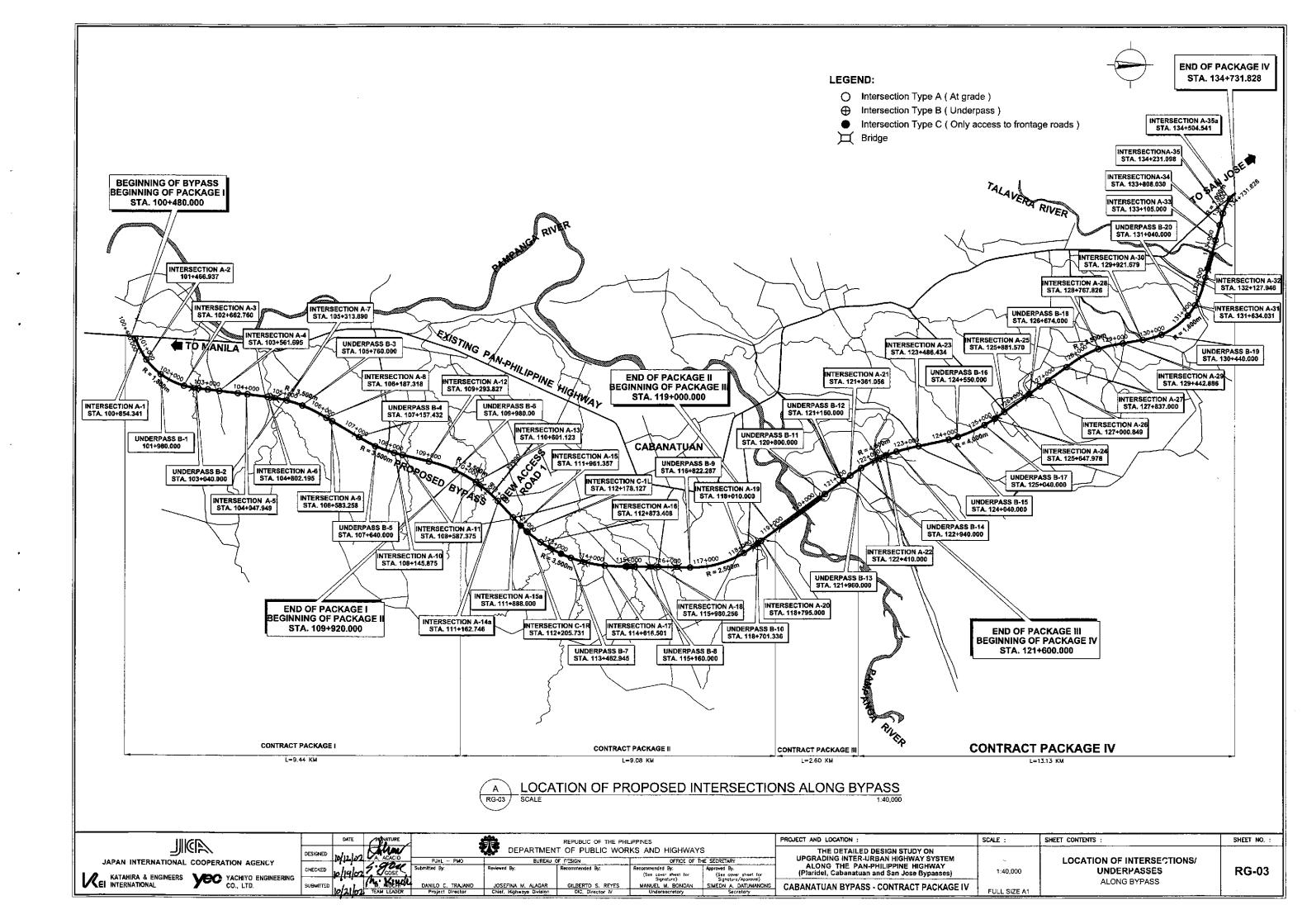
PROJECT AND LOCATION :

SCALE :	SHEET CONTENTS :
1:40,000 FULL SIZE A1	ALIGN

ALIGNMENT TECHNICAL DESCRIPTION

RG-02

SHEET NO. :



SCHEDULE OF TRAFFIC SIGNS CONTRACT PACKAGE IV (INITIAL STAGE)

SCHEDULE OF ROADSIDE PLANTING (HIGH TREE) GROUTED RIPRAP, ROADSIDE PLANTING AND UNSUITABLE EXCAVATION CONTRACT PACKAGE IV (INITIAL STAGE)

11 EM 609 (1)	TYARNING SIG	NS (TRIAGULAR 900mm)	11EM 605 (2)	C REGULATOR	Y SIGNS (RECTANGULAR 450x750mm)			SUARDRAIL SC	HEDULE			E PLANTING (HIGH TI	<u> </u>	
STATION	REF. NO.	REMARKS	STATION	REF. NO.	REMARKS		ATION	LENGTH	LOCATION			STATION	LENGTH (
123+380	W2-8	RIGHTSIDE MAIN BYPASS	00+982	R3-6P	RIGHT SIDE INTERSECTION A-33	122+689	122+810	(m) 121	RIGHT SIDE OF BYPA	ec.	FROM 121+200	121+900	LEFT	RIGHT
123+600	W2-8	LEFT SIDE MAIN BYPASS	01+027	R3-6P	LEFT SIDE INTERSECTION A-34	123+950	124+130						300	300
125+760	W3-1		-	 	† · · · · · · · · · · · · · · · · · · ·		_	180	RIGHT SIDE OF BYPA		121+900	122+600	540	540
		RIGHTSIDE MAIN BYPASS	00+980	R3-6P	RIGHT SIDE INTERSECTION A-34	124+430	124+630	200	RIGHT SIDE OF BYPA		122+600	123+300	600	600
126+140	W1-4(R)	LEFT SIDE MAIN BYPASS	134+216	R2-7(L)	CENTER ISLAND MAIN BYPASS	124+920	125+140	220	RIGHT SIDE OF BYPA	\$\$	123+300	124+000	620	600
126+000	W3-1	LEFT SIDE MAIN BYPASS	00+017	R2-7(L)	CENTER ISLAND INTERSECTION A-35	125+460	125+610	150	RIGHT SIDE OF BYPA	SS	124+000	124+700	700	700
125+800	W1-4(L)	LEFT SIDE MAIN BYPASS	134+417	R3-1PA	RIGHT SIDE PAN-PHIL HIGHWAY	125+637	125+750	113	RIGHT SIDE OF BYPAS	SS	124+700	125+400	660	560
129+320	W2-8	RIGHTSIDE MAIN BYPASS	134+457	R2-6	LEFT SIDE PAN-PHIL HIGHWAY	126+550	126+750	200	RIGHT SIDE OF BYPA	ss	125+400	126+100	580	580
129+580	₩2-8	LEFT SIDE MAIN BYPASS	134+488	R2-7(L)	CENTER ISLAND MAIN BYPASS	130+320	130+480	160	RIGHT SIDE OF BYPA	SS	126+100	126+800	600	600
129+800	W3-1	RIGHT SIDE MAIN BYPASS				132+400	132+628	228	RIGHT SIDE OF BYPA	SS	126+800	127+500	660	640
130+180	W1-4(L)	LEFT SIDE MAIN BYPASS	ITEM OOF (O)		Walana (alballi ab asa an an an	132+997	133+100	103	RIGHT SIDE OF BYPA		127+500	128+200	640	660
130+050	W3-1	LEFT SIDE MAIN BYPASS	II EM 605 (2)	A REGULATOR	RY SIGNS (CIRCULAR 600mm DIA.)	133+110	133+190	80						
129+820	W1-4(L)	LEFT SIDE MAIN BYPASS	STATION	REF. NO.	REMARKS		 		RIGHT SIDE OF BYPAS		128+200	128+900	660	660
		****				122+686	122+760	74	LEFT SIDE OF BYPAS		128+900	129+600	640	660
132+020	W2-8	RIGHT SIDE MAIN BYPASS	122+354	R6-4	RIGHT SIDE MAIN BYPASS	124+000	124+080	80	LEFT SIDE OF BYPAS	SS	129+600	130+300	640	660
132+240	W2-8	LEFT SIDE MAIN BYPASS	122+400	R6-4	LEFT SIDE MAIN BYPASS	124+500	124+590	90	LEFT SIDE OF BYPAS	SS	130+300	131+000	700	700
133+000	W2-8	RIGHT SIDE MAIN BYPASS	122+577	R6-4	RIGHT SIDE MAIN BYPASS	125+000	125+070	70	LEFT SIDE OF BYPAS	SS	131+000	131+700	660	660
133+220	W2-8	LEFT SIDE MAIN BYPASS	122+685	R6-4	LEFT SIDE MAIN BYPASS	125+560	125+612	52	LEFT SIDE OF BYPAS	55	131+700	132+400	620	620
133+690	₩2-8	RIGHT SIDE MAIN BYPASS	125+609	R6-4	RIGHT SIDE MAIN BYPASS	125+639	125+680	41	LEFT SIDE OF BYPAS	SS	132+400	133+100	300	300
133+920	W2-8	LEFT SIDE MAIN BYPASS	125+640	R6-4	LEFT SIDE MAIN BYPASS	126+620	12+720	100	LEFT SIDE OF BYPAS	is	133+100	133+800	660	640
134+110	W3-1	RIGHT SIDE MAIN BYPASS	125+860	R3-15	CENTER ISLAND MAIN BYPASS	132+998	133+020	22	LEFT SIDE OF BYPAS		133+800	134+500	500	580
134+350	W3-1	LEFT SIDE MAIN BYPASS	125+905	R3-15	CENTER ISLAND MAIN BYPASS	0+940	0+954	14						·
00+085	₩5-3		+	<u> </u>	**************************************				LEFT SIDE OF A-24		134+500	134731.82	140	140
		RIGHT SIDE INTERSECTION A-35	00+980	R3-15	CENTER ISLAND INTERSECTION A-25	0+940	0+954	14	LEFT SIDE OF A-24			TOTAL	8540	8560
134+173	₩2-10(L)	CENTER ISLAND PAN-PHIL HIGHWAY	01+020	R3-15	CENTER ISLAND INTERSECTION A-25	1+008	1+040	32	RIGHT SIDE OF A-2	4				
134+175	₩4-2(R)	LEFT SIDE MAIN BYPASS	129+895	R3-15	CENTER ISLAND MAIN BYPASS	1+008	1+040	32	RIGHT SIDE OF A-2	4				
134+457	W8-3A	LEFT SIDE PAN-PHIL HIGHWAY	129+944	R3-15	CENTER ISLAND MAIN BYPASS		TOTAL	2,376.00						-
			00+974	R3-15	RIGHT SIDE INTERSECTION A-30				· · · · · · · · · · · · · · · · · · ·					
TEM ORE /2\L	DECILIATOR	V CICHE (OCTACONAL COO)	01+022	R3-15	LEFT SIDE INTERSECTION A-30	1	·		·					
EM 005 (2)0	REGULATUR	Y SIGNS (OCTAGONAL 600mm)	132+627	R6-4	RIGHT SIDE MAIN BYPASS	_								**
STATION	REF. NO.	REMARKS	132+998		· · · · · · · · · · · · · · · · · · ·							-		
011070.00	B1 14	LETT FIRE INTERCENTION A GT	-	R6-4	LEFT SIDE MAIN BYPASS	- -{	GROU	JTED RIPRAP	(RIGHT SIDE)			<u></u>		
01+030.00	R1-1A	LEFT SIDE INTERSECTION A-23	134+204	R3-13A	CENTER ISLAND PAN-PHIL HIGHWAY		ATION	LENG	TH VOLUM	E /m3\				
00+974.00	R1-1A	RIGHT SIDE INTERSECTION A-23	134+216	R3-15	CENTER ISLAND MAIN BYPASS	FROM	TO	LENG	n) VOLDIM	ic (m -)				
01+023.00	R1-1A	LEFT SIDE INTERSECTION A-29	134+246	R3-15	CENTER ISLAND MAIN BYPASS	121+290	121+356	60	65.4	12		UNSUITABLE	EXCAVATION	
00+977.00	R1-1A	RIGHT SIDE INTERSECTION A-29	00+017	R3-15	CENTER ISLAND INTERSECTION A-35	122+691	12+827	13	6 53.0	04		STATION		
01+022.00	R1-1A	LEFT SIDE INTERSECTION A-32	134+460	R3-15	CENTER ISLAND MAIN BYPASS	132+464	132+626	16	2 68.0)4	FROM	TO	LEN	GTH m)
00+978.00	R1-1A	RIGHT SIDE INTERSECTION A-32	134+488	R3-15	CENTER ISLAND MAIN BYPASS	133+000	133+060	60	18.0	10	121+034.23	121+634.32		0.2
01+022.00	R1-1A	LEFT SIDE INTERSECTION A-33					GRAND TOTA				121+634.23	122+024.23		0.5
00+982.00	R1-1A	RIGHT SIDE INTERSECTION A-33	-			 					122+024.23		···	
01+027.00	R1-1A	······································	 			 	····-				·	122+354.23).3
		LEFT SIDE INTERSECTION A-34	 			 					122+394.23	122+604.23		0.2
00.089+00	R1-1A	RIGHT SIDE INTERSECTION A-34	-	<u> </u>	<u></u>						122+724.23	123+924.23		.2
<u> </u>											123+924.23	128+524.23		.3
TEM 605 (2)c	REGULATOR	Y SIGNS (RECTANGULAR 450x750mm)	ITEM 605 (3)	INFORMATOR	Y SIGNS						128+524.23	129+334.23).5
STATION	REF. NO.	REMARKS	STATION	REF. NO.	REMARKS				· · · · · · · · · · · · · · · · · · ·		129+334.23	131+324.23		.4
01+030	R3-6P	LEFT SIDE INTERSECTION A-23	a. 260	6 x 1630mm	·						131+324.23	132+614.23	——————————————————————————————————————).3
00+974	R3-6P	RIGHT SIDE INTERSECTION A-23	125+705	GS-24	RIGHT SIDE MAIN BYPASS	1				<u> </u>	132+984.23	134+214,23		0.2
125+860	R27(L)	CENTER ISLAND MAIN BYPASS	126+090	GS-25	LEFT SIDE MAIN BYPASS	 					134+214.23			
125+905	R2-7(L)	CENTER ISLAND MAIN BYPASS			WELL SIDE MAIN DIFFAGO	+					1047414.23	134+614.23	<u>'</u>).3
		····	-	7 x 1630mm	DOG 627	-								· · · · · · · · · · · · · · · · · · ·
00+980	R2-7(L)	CENTER ISLAND INTERSECTION A-25	00+940	GS-26	RIGHT SIDE INTERSECTION A-25							<u> </u>		
01+020	R2-7(L)	CENTER ISLAND INTERSECTION A-25	c. 257	6 x 1630mm										
01+023	R3-6P	LEFT SIDE INTERSECTION A-29	01+070	GS-27	LEFT SIDE INTERSECTION A-25									
00+977	R3-6P	RIGHT SIDE INTERSECTION A-29	d. 198	4 x 1630mm										
129+895	R2-7(L)	CENTER ISLAND MAIN BYPASS	129+740	GS-28	RIGHT SIDE MAIN BYPASS	 								
129+944	R2-7(L)	CENTER ISLAND MAIN BYPASS	130+140	GS-29	LEFT SIDE MAIN BYPASS	1			W-1-1-					
00+974	R2-7(L)	RIGHT SIDE INTERSECTION A-30	-	3 x 1630mm		 			·- ·· ·			, ,		
01+022	R2-7(L)	LEFT SIDE INTERSECTION A-30			BIOLET PIDE INTERPRETATION	+					· · · · · · · · · · · · · · · · · · ·			
			00+920	GS-30	RIGHT SIDE INTERSECTION A-30	- 	 							
01+022	R3-6P	LEFT SIDE INTERSECTION A-32	· 	4 x 1630mm										
00+978	R3-6P	RIGHT SIDE INTERSECTION A-32	01+070	GS-31	LEFT SIDE INTERSECTION A-30									
01+022	R3-6P	LEFT SIDE INTERSECTION A-33												
	IBLED	DATE	SIGNATURE	<u> </u>	REPUBLIC OF THE PHILIPPINES		F	ROJECT AND LOCATI	ON:		SCALE :	SHEET CONTENTS :		SHEET N
		ODERATION ACENCY 10/12/02	S. LUNA P. Submitted	IHL - PMO By: Review	DEPARTMENT OF PUBLIC WORKS AND HIC BUREAU OF DESIGN 0 Red By: Recommended By: Recommended By:	FFICE OF THE SECRETAL	RY	THE DE UPGRADING I ALONG TH	TAILED DESIGN STUDY ON NTER-URBAN HIGHWAY SYS E PAN-PHILIPPINE HIGHWAY	STEM AY		SCHEDU		RG-0
	TERNATIONAL CO	OPERATION AGENCY CHECKED 19/2/02/ CHECKED 19/2/02/ CHECKED 19/2/02/ SUBMITTED 1/2/02/ SUBMITTED 1/2/02/		By: Review		FFICE OF THE SECRETAL THE SECRETAL Approved B Approved B Signal BONDAN SIMEON A	By: cover sheet for ture/Approval)	UPGRADING I ALONG TH (Plaridel, Cab	NTER-URBAN HIGHWAY SYS	AY sses)	FULL SI7F A1	SCHEDU GUARDRAIL, TRAFF PLANTING & UNSUIT	IC SIGNS,	

SCHEDULE OF PAVEMENT MARKINGS

CONTRACT PACKAGE IV (INITIAL STAGE)
ITEM 612(1) - REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS

EDGE LINE				1.2 RIGHT SIDE, OUTE	R EDGE		2.0 CENTERLINE			5.0 CHEVRO	N		
1.1 LEFT STATIO	SIDE, OUTE			STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATI	ON LENG	TH RE	MARKS
FROM	TO	LENGTH (m)	REMARKS	FROM TO	(m)		FROM TO	(m)	,	FROM	TO (m)		
	123+469.19 00+984.85	1869.19 16.99	MAIN BYPASS	133+116.55 133+784.15 133+784.16 01+027.74	667.61	MAIN BYPASS	D1+055.25	94.75	A-33: 100mm x 3.0m © 4.50m GAP	132+180.37	132+285.37 105.0		F MAIN BYPASS
	00+984.85	84.85	MAIN BYPASS TO RT OF A-23 RIGHT OF A-23	133+784.16 01+027.74 01+027.74 01+090.00	17.80 62.26	MAIN BYPASS TO RT OF A-34 RIGHT OF A-34	00+770.00 00+949.81 00+949.81 00+979.81	179.81 30.00	A-34: 100mm x 3.0m 6 4.50m GAP A-34: 100mm UNBROKEN LINE	132+988.17 133+157.00	133+053.17 65.0 133+262.00 105.0		OF MAIN BYPASS OF MAIN BYPASS
	00+988.04	88.04	LEFT OF A-23	01+021.14 01+090.00	68.86	LEFT OF A-34	01+026.64 01+056.64	30.00	A-34: 100mm UNBROKEN LINE	133+650.35	133+755.35 105.0		F MAIN BYPASS
	123+501.86	22.85 2360.08	LT OF A-23 TO MAIN BYPASS	01+021.14 133+817.47	20.94	LEFT OF A-34 TO MAIN BYPASS	01+056.64 01+090.00	33.36	A-34: 100mm × 3.0m © 4.50m GAP	133+863.31	133+908.41 45.1	CENTER O	F MAIN BYPASS
	00+977.95	16.96	MAIN BYPASS MAIN BYPASS TO RT OF A-25	133+817.47 134+731.83	914.36 EDCE	MAIN BYPASS	2 CLANE LINE		<u> </u>	134+168.85 134+484.63	134+175.50 6.65 134+504.54 19.9		PAN-PHIL HIGHWA PAN-PHIL HIGHWA
00.00	00+977.95	77.95	RIGHT OF A-25	1.3 LEFT SIDE, INNER			3.0 LANE LINE			134+642.16	134+722.16 80.0		PAN-PHIL HIGHWA
	00+982.24	82.24 14.45	LEFT OF A-25	STATION TO	LENGTH (m)	REMARKS	STATION	LENGTH (m)	REMARKS	00+921.58	00+961.58 40.0	CENTE	R OF A-25
	125+896.22 129+428.86	3532.64	LEFT OF A-25 TO MAIN BYPASS MAIN BYPASS	125+742.17 125+865.07	122.90	APPROACH TO A-25	FROM TO 123+436.07 123+471.07	35.00	(RS) LANE LINE 150mm UNBROKEN	01+038.42 00+920.00	01+078.42 40.0		R OF A-25
9+428.86	00+989.78	18.85	MAIN BYPASS TO RT OF A-29	125+898.05 126+065.98	167.93	APPROACH TO A-25	123+501.95 123+536.95	35.00	(LS) LANE LINE 150mm UNBROKEN	01+042.00	00+957.98 37.9 01+080.00 38.0		R OF A-30
	00+989.78	99.78	RIGHT OF A-29	129+732.99 129+903.90		APPROACH TO A-30	125+803.59 125+833.59	30.00	(RS) LANE LINE 150mmx3.0m @ 4.50m GA		00+219.69 79.1		R OF A-35
	00+987.00 129+457.87	97.00 16.02	LEFT OF A-29 LEFT OF A-29 TO MAIN BYPASS	129+939.45 130+111.17 133+908.41 134+221.91	171.72 313.50	APPROACH TO A-30 APPROACH TO A-35	125+833.59 125+863.59 125+899.55 125+929.55	30.00 30.00	(RS) LANE LINE 150mm UNBROKEN (LS) LANE LINE 150mm UNBROKEN	6.0 BARRIER	RLINES		
9+457.87	129+891.80	433.93	MAIN BYPASS	134+237.66 134+474.15	236.49	APPROACH TO A=35	125+929.55 125+960.04	30.49	(LS) LANE LINE 150mm UNBROKEN (LS) LANE LINE 150mmx3.0m @ 4.50m GA	STATI	ON LENG	TH	
	00+968.47	20.63	MAIN BYPASS TO RT OF A-30	134+486.29 134+642.15	155.86	APPROACH TO A-35c	00+960.05 00+980.05	20.00	(RS) LANE LINE 100mm UNBROKEN (A-25)	FROM	TO (m)	RE	MARKS
	00+968.47 00+985.48	128.47 145.48	RIGHT OF A-30	00+961.58 00+984.30 01+015.70 01+038.42	22.72	INTERSECTION A-25	01+019.95 01+039.95	20.00	(LS) LANE LINE 100mm UNBROKEN (A-25)	121+600.00	121+795.36 195.3		FT SIDE
	129+931.55	12.92	LEFT OF A-30 TO MAIN BYPASS	01+015.70 01+03B.42 00+957.98 00+981.42	22.72 23.44	INTERSECTION A-25 INTERSECTION A-30	129+389.52 129+429.52 129+456.25 129+496.25	40.00 40.00	(RS) LANE LINE 150mm UNBROKEN (LS) LANE LINE 150mm UNBROKEN	123+121.07 123+641.95	123+331.07 210.0 123+851.95 210.0		THE SIDE
	132+112.71	2181.16	MAIN BYPASS	01+018.54 01+042.00	23.46	INTERSECTION A-30	129+839.41 129+865.91	26.50	(RS) LANE LINE 150mmx3.0m @ 4.50m GA	125+493.61	125+703.61 210.0		CHT SIDE
	00+988.23	20.45	MAIN BYPASS TO RT OF A-32	00+012.30 00+140.59	128.29	INTERSECTION A-35	129+865.91 129+895.91	30.00	(RS) LANE LINE 150mm UNBROKEN	126+104.55	126+314.55 210.0	O LE	FT SIDE
	00+988.23 00+988.59	78.23 78.59	RIGHT OF A-32 LEFT OF A-32	1.4 RIGHT SIDE, INNER			129+943.93 129+973.93 129+973.93 130+003.91	30.00 29.98	(LS) LANE LINE 150mm UNBROKEN (LS) LANE LINE 150mmx3.0m © 4.50m GA	129+074.52	129+284.52 210.0		HT SIDE
+988.59	132+141.63	15.14	LEFT OF A-32 TO MAIN BYPASS	STATION	LENGTH	REMARKS	00+952.35 00+972.35	20.00	(RS) LANE LINE 100mm UNBROKEN (A-30)	129+601.25 130+148.95	129+694.41 186.3 130+358.95 210.0		TH SIDE
	133+093.45	951.82	MAIN BYPASS	FROM TO	(m)		D1+024.37	20.00	(LS) LANE LINE 100mm UNBROKEN (A-30)	131+760.66	131+970.66 210.0		HT SIDE
	00+991.25 00+991.25	13.35 111.25	MAIN BYPASS TO RT OF A-33 RIGHT OF A-33	125+742.17 125+865.07 125+898.05 126+065.98	122.90 167.93	APPROACH TO A-25 APPROACH TO A-25	132+075.66 132+115.66	40.00	(RS) LANE LINE 150mm UNBROKEN	132+285.37	132+495.37 210.0		FT SIDE
+880.00	00+991.25	111.25	LEFT OF A-33	129+732.99 129+903.90	167,93	APPROACH TO A-25 APPROACH TO A-30	132+145.37 132+180.37 133+053.17 133+088.17	35.00 35.00	(LS) LANE LINE 150mm UNBROKEN (RS) LANE LINE 150mm UNBROKEN	132+778.17 133+262.00	132+988.17 210.0 133+472.00 210.0		HT SIDE FT SIDE
	133+116.55	13.35	LEFT OF A-33 TO MAIN BYPASS	129+939.45 130+111.17	171.72	APPROACH TO A-30	133+122.00 133+157.00	35.00	(LS) LANE LINE 150mm UNBROKEN	133+440.35			HT_SIDE
	133+793.10	676.55 20.94	MAIN BYPASS MAIN BYPASS TO RT OF A-34	133+908.41 134+221.91 134+237.66 134+474.15	313.50 236.49	APPROACH TO A-J5 APPROACH TO A-J5	133+755.35 133+790.35	35.00	(RS) LANE LINE 150mm UNBROKEN	7.0 ARROWS			
	00+989.92	219.92	RIGHT OF A-34	134+486.29 134+642.15	155.86	APPROACH TO A-35 APPROACH TO A-35a	133+823.31 133+863.31 134+072.19 134+186.41	40.00 114.22	(LS) LANE LINE 150mm UNBROKEN (RS) LANE LINE 150mmx3.0m @ 4.50m GA	ARROW TYP		ows 100	CATION
+770.00	00+983.23	213.23	LEFT OF A-34	00+961.58 00+984.30	22.72	INTERSECTION A-25	134+186.41 134+216.41	60.00	(RS) 2-LANE LINE 150mm UNBROKEN	A	2		INTERSECTION A-
	133+826.42	17.80	LEFT OF A-34 TO MAIN BYPASS	01+015.70 01+038.42	22.72	INTERSECTION A-25	134+156.41 134+186.41		(RS) LANE LINE 150mmx3.0m 🗣 4.50m GA	В	2		INTERSECTION A-
	134+200.39 00+035.70	373.97 32.99	MAIN BYPASS MAIN BYPASS TO LT OF A-35	00+957.98 00+981.42 01+018.54 01+042.00	23.44 23.46	INTERSECTION A-30 INTERSECTION A-30	134+156.41 134+216.41 134+245.78 134+430.00		(LS) LANE LINE 150mmx3.0m 6 4.50m GAP	<u> </u>	4		INTERSECTION A-
	00+219.69	183.99	LEFT OF A-35	00+012.30 00+140.59	128.29	INTERSECTION A-35	134+430.00 134+460.00	184.22 30.00	(RS) LANE LINE 150mmx3.0m © 4.50m GAR (RS) LANE LINE 150mm UNBROKEN	1	4 2		INTERSECTION A-
	00+219.68	114.68	LEFT OF PAN-PHIL TO RT OF A-35	2.0 CENTERLINE			134+245.78 134+275.78	30.00	(LS) LANE LINE 150mm UNBROKEN	В	2		INTERSECTION A-
	134+256.68 00+070.78	40.91 24.43	RIGHT OF PAN-PHIL HIGHWAY RIGHT OF PAN-PHIL TO RT OF A-35	STATION	LENGTH		134+275.78 134+460.00	184.22	(LS) LANE LINE 150mmx3.0m @ 4.50m GAF		4		INTERSECTION A-3
	00+070.78	46.26	RIGHT OF A-35	FROM TO	(m)	REMARKS	134+487.16 134+642.16 134+487.16 134+517.16	155.00 60.00	(RS) LANE LINE 150mmx3.0m @ 4.50m GAF (LS) 2-LANE LINE 150mm UNBROKEN	B A	4		INTERSECTION A-3
	00+108.21	24.86	RIGHT OF A-35	121+600.00 121+795.36	195.36	150mm x 3.0m @ 4.50m GAP	134+517.16 134+642.16		(LS) LANE LINE 150mmx3.0m @ 4.50m GAF		2		INTERSECTION A-3 INTERSECTION A-3
	134+250.32	23.24	RIGHT OF A-35 TO MAIN BYPASS	121+795.36 123+121.07	1325.71	150mm x 3.0m © 9.0m GAP	00+017.75 00+047.75	60.00	(LS) 2-LANE_LINE_100mm_UNBROKEN(A-35		2		INTERSECTION A-3
	134+484.63 134+204.82	234.31 29.32	MAIN BYPASS RIGHT OF PAN-PHIL HIGHWAY	123+121.07 123+331.07 123+436.07 123+471.07	210.00 35.00	150mm x 3.0m © 4.50m GAP 200mm UNBROKEN UNE	00+047.75 00+140.60 00+047.75 00+095.61		(LS)LANE 100mm×3.0m @ 4.50m GAP(A-35	8	2		INTERSECTION A-3
	00+083.35	16.95	RIGHT OF PAN-PHIL TO RT OF A-35	123+501.95 123+536.95	35.00	200mm UNBROKEN LINE	4.0 CONTINUITY LINE	47.86	(LS)LANE 100mmx3.0m © 4.50m GAP(A+35	A R	2		INTERSECTION A=3 INTERSECTION A=3
	134+416.59	58.70	RIGHT OF PAN-PHIL HIGHWAY	123+641.95 123+851.95	210.00	150mm x 3.0m @ 4,50m GAP		LENGTH		Ä	7		INTERSECTION A-3
	134+731.83 134+484.63	373.94 68.04	LEFT OF PAN-PHIL HIGHWAY RIGHT OF PAN-PHIL HIGHWAY	123+851.95 125+493.61 125+493.61 125+703.61	1641.66 210.00	150mm x 3.0m © 9.0m GAP 150mm x 3.0m © 4.50m GAP	STATION TO	LENGTH (m)	REMARKS	В	1		INTERSECTION A-3
2 RIGHT SID			Maria of The The Indiana	126+104.55 126+314.55	210.00	150mm x 3.0m Q 4.50m GAP	123+391.07 123+436.07	45,00	(RS) 150mm × 1.0m ♥ 3.0m GAP	C A	3		INTERSECTION A-3
STATIO		LENGTH		126+314.55 129+074.52	2759.97	150mm x 3.0m @ 9.0m GAP	123+536.95 123+581.95	45.00	(LS) 150mm x 1.0m © 3.0m GAP	Ĉ	4		NTERSECTION A-3
FROM	то	(m)	REMARKS	129+074.52 129+284.52 129+389.52 129+429.52	210.00 40.00	150mm x 3.0m 9 4.50m GAP 200mm UNBROKEN LINE	125+758.59 125+803.59	45.00	(RS) 150mm x 1.0m © 3.0m GAP				
	123+474.57	1874.57	MAIN BYPASS	129+456.25 129+496.25	40.00	200mm UNBROKEN LINE	125+960.04 126+005.04 129+344.52 129+389.52	45.00 45.00	(LS) 150mm x 1.0m @ 3.0m GAP (RS) 150mm x 1.0m @ 3.0m GAP	N	OTE: A - LEFT/RIGHT A	POW	
+474.57		24.64	MAIN BYPASS TO RT OF A-23	129+601.25 129+694.41	93.16	150mm x 3.0m @ 4.50m GAP	129+496.25 129+541.25	45.00	(LS) 150mm x 1.0m @ 3.0m GAP			OF STRAIGHT AND LEFT AR	ROWS OR
	01+080.00	57.51 50.80	RIGHT OF A-23 LEFT OF A-23	130+148.95 130+358.95	210.00	150mm x 3.0m @ 4.50m GAP	129+794.41 129+839.41	45.00	(RS) 150mm x 1.0m @ 3.0m GAP		STRAIGHT AND	RIGHT ARROWS	
	123+511.21	18.55	LEFT OF A-23 TO MAIN BYPASS	130+358.95 131+760.66 131+760.66 131+970.66	1401.71 210.00	150mm x 3.0m © 9.0m GAP 150mm x 3.0m © 4.50m GAP	130+003.91 130+048.91 132+030.66 132+075.66	45.00 45.00	(LS) 150mm × 1.0m © 3.0m GAP (RS) 150mm × 1.0m © 3.0m GAP	0.0 ======	C — STRAIGHT ARR		
3+511.21 1	125+866.93	2355.72	MAIN BYPASS	132+075.66 132+115.66	40.00	200mm UNBROKEN LINE	132+030.66 132+073.66	45.00 45.00	(LS) 150mm x 1.0m @ 3.0m GAP	8.0 PEDEST	RIAN AND STOP LIN		
	01+017.75	14,45	MAIN BYPASS TO RT OF A-25	132+145.37 132+180.37	35.00	200mm UNBROKEN LINE	133+028.17 133+053.17	25.00	(RS) 150mm x 1.0m @ 3.0m GAP	LOÇAT		AREA (m²)	REMARKS
	01+090.00 01+090.00	72.24 67.95	RIGHT OF A-25 LEFT OF A-25	132+285.37 132+988.17 133+053.17 133+088.17	702.80 35.00	150mm x 3.0m @ 4.50m GAP 200mm UNBROKEN LINE	133+157.00 133+202.00	45.00 45.00	(LS) 150mm × 1.0m @ 3.0m GAP		PEDEST		
-022.05 1	125+901.19	16.96	LEFT OF A-25 TO MAIN BYPASS	133+033.17 133+088.17 133+122.00 133+157.00	35.00	200mm UNBROKEN LINE	133+710.35 133+755.35 133+863.31 133+908.31	45.00 45.00	(RS) 150mm x 1.0m @ 3.0m GAP (LS) 150mm x 1.0m @ 3.0m GAP	INT. A-23	MAIN BYPASS 42.86 A-23 31.22		UNSIGNALIZED
	129+424.81	3523.62	MAIN BYPASS	133+262.00 133+650.35	388.35	150mm x 3.0m @ 4.50m GAP	134+011.42 134+072.19	60.77	(RS) 150mm x 1.0m © 3.0m GAP	INT 4 22	MAIN BYPASS 12.82		mp
	01+022.94 01+110.00	16.02 87.06	MAIN BYPASS TO RT OF A-29 RIGHT OF A-29	133+755.35 133+790.35	35.00	200mm UNBROKEN LINE	134+111.42 134+156.41	44.99	(RS) 150mm x 1.0m © 3.0m GAP	INT. A-25	A-25 18.15	4.27	SIGNALIZED
	01+110.00	89.89	LEFT OF A-29	133+823.31 133+863.31 00+900.00 00+954.31	40.00 54.31	200mm UNBROKEN LINE A-23: 100mm x 3.0m © 4.50m GAP	134+111.42 134+156.42 134+642.16 134+731.83	45.00 89.67	(LS) 150mm x 1.0m © 3.0m GAP (RS) 150mm x 1.0m © 3.0m GAP	INT. A-29	MAIN BYPASS 61.92		UNSIGNALIZED
-020.11 1	129+453.82	18.85	LEFT OF A-29 TO MAIN BYPASS	00+954.31 00+984.31	30.00	A-23: 100mm X 3:0m & 4:30m GAP	134+642.16 134+731.83	89.67	(LS) 150mm x 1.0m © 3.0m GAP		A-29 34.36 MAIN BYPASS 9.27		
	129+911.78	457.96	MAIN BYPASS	01+029.20 01+059.20	30.00	A-23: 100mm UNBROKEN LINE	00+095.61 00+138.68	43.07	(LS) 100mm x 1.0m@3.0mGAP (A-35)	INT. A-30	A30 19.91		SIGNALIZED
	01+014.47	12.94 85.53	MAIN BYPASS TO RT OF A-30 RIGHT OF A-30	01+059.20 01+080.00 00+890.00 00+957.21	20.80	A-23: 100mm x 3.0m @ 4.50m GAP	00+140.60 00+219.69	79.09	(LS) 100mm x 1.0m@3.0mGAP (A-35)	INT. A-32	MAIN BYPASS 20.56	5.95	UNSIGNALIZED
-031.48	01+100.00	68.52	LEFT OF A-30	00+890.00 00+957.21 00+957.21 00+987.21	67.21 30.00	A-29: 100mm x 3.0m © 4.50m GAP A-29: 100mm UNBROKEN LINE	5.0 CHEVRON				A-32 39.60 MAIN BYPASS 20.26		
031.48 1	129+951.35	20.62	LEFT OF A-30 TO MAIN BYPASS	01+022.73 01+052.73	30.00	A-29: 100mm UNBROKEN LINE	STATION	LENGTH	REMARKS	iNT. A-33	A-33 28.26		UNSIGNALIZED
	132+112.08	2160.73	MAIN BYPASS	01+052.73 01+110.00	57.27	A-29: 100mm x 3.0m @ 4.50m GAP	FROM TO	(m)		INT. A-34	MAIN BYPASS 34.72	7.53	UNSIGNALIZED
	01+021.33 01+080.00	15.20 58.67	MAIN BYPASS TO RT OF A-32 RIGHT OF A-32	00+840.00 00+920.00 01+080.00 01+100.00	80.00 20.00	A-30: 100mm x 3.0m @ 4.50m GAP A-30: 100mm x 3.0m @ 4.50m GAP	123+331.07 123+436.07	105.00	CENTER OF MAIN BYPASS	,,,, A 04	A-34 31.20		CHONNACIZED
021.33	D1+080.00	58.67	LEFT OF A-32	00+910.00 00+959.54	49.54	A-30: 100mm x 3.0m @ 4.50m GAP A-32: 100mm x 3.0m @ 4.50m GAP	123+536.95 123+641.95 125+703.61 125+742.17	105.00 38.56	CENTER OF MAIN BYPASS CENTER OF MAIN BYPASS	INT. A~35	MAIN BYPASS 10.53 A-35 8.33		SIGNALIZED
	132+140.90	20.26	LEFT OF A-32 TO MAIN BYPASS	00+959.54 00+989.54	30.00	A-32: 100mm UNBROKEN LINE	125+065.98 126+104.55	38.57	CENTER OF MAIN BYPASS	INT 4 TE	MAIN BYPASS 29.28		(1610/05/1/ :===
	133+113.45 01+018.25	972.55	MAIN BYPASS	01+021.33 01+051.33	30.00	A-32: 100mm UNBROKEN LINE	129+284.52 129+389.52	105.00	CENTER OF MAIN BYPASS	INT. A-35a	A-35a		UNSIGNALIZED
	01+150.00	13.35 131.75	MAIN BYPASS TO RT OF A-33 RIGHT OF A-33	01+051.33 01+080.00 00+860.00 00+959.41	28.67 99.41	A-32: 100mm x 3.0m @ 4.50m GAP A-33: 100mm x 3.0m @ 4.50m GAP	129+496.25 129+601.25	105.00	CENTER OF MAIN BYPASS				
-018.25	01+150.00	131.75	LEFT OF A-33	00+959.41 00+989.41	30.00	A-33: 100mm x 3.0m @ 4.50m GAP A-33: 100mm UNBROKEN LINE	129+694.41 129+732.99 130+111.17 130+148.95	38.58 37.78	CENTER OF MAIN BYPASS CENTER OF MAIN BYPASS				
018.25 1	133+116.55	13.35	LEFT OF A-33 TO MAIN BYPASS	01+022.25 01+055.25	33.00	A-33: 100mm UNBROKEN LINE	131+970.66 132+075.66	105.00	CENTER OF MAIN BYPASS	-			
	100	(FIX	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES	PR	OJECT AND LOCATI	ON:	SCALE :	SHEET CONTENTS :		SHEET N
	االل	Æ	DESIGNED	7.77	DEPART!	MENT OF PUBLIC WORKS AND HIGH	HWAYS -	THE DE	TAILED DESIGN STUDY ON	** .			-
JAPAN INT		COOPERATION	10112102	PUNE - PMO	BUE	REAU OF DESIGN OF	TICE OF THE SECRETARY	UPGRADING II	NTER-URBAN HIGHWAY SYSTEM	1			- 1
_			CHECKED In Indian /	S. OSE Submitted By:	Reviewed By:	Recommended By: Recommended By:	Approved By:		E PAN-PHILIPPINE HIGHWAY anatuan and San Jose Bypasses)	ļ	SCHEDULE OF PA	VEMENT MARKINGS	RG-0
	& ENGINEERS	VEC YACH	ITO ENGINEERING	W. KILONE DANIED C TRAIAND		(See cover shas Signature)	et for (See cover sheet for Signature/Approval)	ir idi idel, Cabi			JOILLOULE OF ITA		. 11.0-0
EI INTERNATION		CO., I	LTD. SUBMITTED , 1 1 1 1 1	TI RIVERIO DANILO C. TRAJANO	JOSEFINA M. ALAG	AR GILBERTO S. REYES MANUEL M. BO	NOAN SIMEON A DATUMANONG C		YPASS - CONTRACT PACKAGE IV	•			

SCHEDULE OF ROAD RIGHT-OF-WAY MARKERS

POINT NO.	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING	POINT	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	OFFSET FROM	NORTHING	EASTING
BYPA	SS - LEFT SIDE	1	<u>. </u>	<u> </u>	535L	123+920	-16.000	1,720,334.546	496,097.476	588L	125+780	-22.000	1,722,019.513	495,367.903	642L	128+020	-18.000	1,723,841.847	494,055.323	695L	130+340	-17.000	1,726,035.904	493,377.384
1L	155+860.000	-10.000	1,744,783.741	496,159.295	536L	123+940	-17.000	1,720,353.900	496,092.336	589L	125+800	-23.000	1,722,035.180	495,355.431	643L	128+040	-18.000	1,723,858.097	494,053.664	697L	130+360	-18.000	1,726,055.904	
2L	155+880.000	-12.000	1,744,803.126	496,163.847	537L	123+960	-18.000	1,720,373.254	496,087.196	590L	125+860	-23.000	1,722,083.930	495,320.454	644L	128+060	-17.000	1,723,874.930	494,042.818	698L	130+420	-18.000		493,369.605 493,347.858
484L	121+620	-17.000	1,718,201.636	496,915.077	538L	124+060	-18.000	1,720,471.065	496,066.385	591L	125+904	-22.000	1,722,120.263	495,295.616	645L	128+080	-17.000	1,723,891.180	494,031.158	6991	130+480	-18.000	1,726,109.418	493,324.281
485L	121+640	-16.000	1,718,218.405	496,904.059	539L	124+160	-18.000	1,720,568.280	496,044.715	592L	125+960	-22.000	1,722,165.763	495,262.970	646L	128+100	-18.000	1,723,906.993	494,018.665	700L	130+500	-17.000	1,726,182.352	493,316.926
486L	121+720	-15.000	1,718,283.805	496,857.434	540L	124+260	-18.000	1,720,664.875	496,020.652	593L	125+980	-21.000	1,722,182.596	495,252.124	647L	128+120	-18.000	1,723,923.492	494,007.108	701L	130+520	-17.000	1,726,182.332	493,308.460
487L	121+780	-16.000	1,718,333.460	496,823.329	5411	124+360	-18.000	1,720,760.839	495,994.181	594L	126+000	-20.000	1,722,199.429	495,241.277	648L	128+140	-19.000	1,723,939.519	493,994.857	702L	130+540	-15.000	1,726,218.521	493,300.693
488L	121+800	-17.000	1,718,349.569	496,811,296	542L	124+460	-18.000	1,720,856.111	495,965.320	595L	126+020	-19,000	1,722,216.262	495,230.430	649L	128+200	-19.000	1,723,989.853	493,961.371	703L	130+640	-16.000	1,726,306.147	
489L	121+820	-18.000	1,718,365.742	496,799.340	543L	124+480	-19.000	1,720,874.770	495,958.310	596L	126+040	-19.000	1,722,232,512	495,218.771	650L	128+220	-20.000	1,724,006.270	493,949.635	<u> </u>	130+740	-16.000		493,254.409
490L	121+840	-18,000	1,718,382.527	496,788.299	514L	124+500	-20.000	1,720,893.389	495,951.209	597L	126+060	~18.000	1,722,249,345	495,207.924	651L	128+240	-20.000	1,724,003.270	493,938.874	704L 705L	130+800	-16.000	1,726,391.067	493,203.330 493,170.446
491L	121+860	-19,000	1,718,398.823	496,776.503	545L	124+520	-21.000	1,720,911.968	495,944.017	598L	126+220	-18.000	1,722,379.345	495,114.651	652L	128+260	-21.000	1,724,039.928	493,927.398	706L	130+820	-15.000	1,726,457.455	493,159.938
492L	121+880	-20,000	1,718,415.182	496,764.786	546L	124+560	-21.000	1,720,949.654	495,931.249	599L	126+240	-17.000	1,722,396.178	495,103.B04	653L	128+280	-22.000	1,724,056.636	493,916.052	707L	130+880	-15.000	1,726,505.516	493,124.866
493L	121+980	-20.000	1,718,500.497	496,711,672	547L	124+580	-20.000	1,720,968.779	495,925.668	600L	126+420	-17.000	1,722,542.428	494,998.871	654L	128+300	-20.000	1,724,074,970	493,907.415	708L	130+900	-15.000	1,726,520.662	493,112.030
494L	122+050	-20.000	1,718,569,688	496,670,728	548L	124+600	~20.000	1,720,987.546	495,919.048	601L	126+440	-18.000	1,722,558.095	494,985.400	655L	128+320	-18.000	1,724,093.360	493,898.934	709L	130+920	-16.000	1,726,536.275	493,099.819
495L	122+160	-20.000	1,718,657.307	496,621.506	549L	124+620	-19.000	1,721,006.619	495,913.274	6021	126+460	-19.000	1,722,573.763	494,973.928	656L	128+340	-16.000	1,724,111.803	493,890.609	710L	130+940	-17.000	1,726,551.123	493,086.657
496L	122+180	-21.000	1,718,674,502	496,611.045	550L	124+640	-19.000	1,721,025.322	495,906.465	603L	126+520	-19.000	1,722,622.513	494,938.950	657L	128+360	-16.000	1,724,129.319	493,880.694	711L	131+000			
497L	122+200	-21.000	1,718,692.224	496,601.550	551L	124+660	-18.000	1,721,044.341	495,900.499	604L	126+540	-20.000	1,722,638.180	494,926.479	658L	128+380	-17.000	1,724,146.433	493,870.044	7112L	131+020	-17.000 18.000	1,726,596.690	493,048.504 493,034.703
498L	122+220	-22.000	1,718,709.527	496,591.260	552L	124+580	-17.000	1,721,063.335	495,894.436	605L	126+560	-20.000	1,722,654.430	494,914.820	6591	128+400	-18.000	1,724,163.638	493,859.527	713L	131+060	-18.000	1,726,640.281	493,034.703
499L	122+240	-22.000	1,718,727.348	496,581.941	553L	124+760	-17.000	1,721,137.555	495,865.508	606L	126+580	-21.000	1,722,670.097	494,902.348	660L	128+500	-18.000	1,724,253.199	493,813.463	714L	131+080	-19.000	1,726,654.045	492,993.B59
500L	122+260	-23.000	1,718,744.757	495,571.B21	554L	124+820	-17.000	1,721,192.833	495,842.841	607L	126+620	-21.000	1,722,702.597	494,879.029	661L	128+600	-18.000	1,724,344.531	493,771,017	715L	131+100	-20.000	1,726,667.642	492,979.454
501L	122+300	-23.000	1,718,780.637	496,553.625	555L	124+840	-18.000	1,721,210.791	495,834.181	508L	126+640	-20.000	1,722,719.430	494,868.183	662L	128+700	-18.000	1,724,437,487	493,732.257	716L	131+120	-20.000	1,726,681.774	492,965.618
502L	122+363.995	-26.055	1,718,837.089	496,522.510	556L	124+860	-19.000	1,721,228.702	495,825.433	609L	126+660	-19.000	1,722,736.263	494,857.336	663L	128+740	-16.678	1,724,475,556	493,719.037	717L	131+140	-19.000	1,726,696.462	492,952.328
503L	122+389.942	-17.607	1,718,864.273	496,518.902	557L	124+900	-19.000	1,721,265.186	495,809.504	610L	126+720	-19.000	1,722,785.013	494,822.359	664L	128+760.977	-18.891	1,724,494.597	493,709.621	718L	131+160	-19.000	1,726,710.291	492,938.173
504L	122+398.014	~21.114	1,718,870.112	496,512,270	558L	124+920	-20.000	1,721,282,959	495,800.491	611L	125+740	-18.000	1,722,801.846	494,811,512	665L	128+920	-17.000	1,724,647.255	493,661.217	719L	131+180	-18.000	1,726,724.688	492,924.551
505L	122+420.995	-20.884	1,718,891,140	496,502,702	559L	124+940	-20.000	1,721,301.095	495,792.301	612L	126+760	-17,000	1,722,818.679	494,800.665	666L	129+020	-17.000	1,724,744.360	493,634.651	720L	131+260	-18.000	1,726,777.784	492,865.795
506L	122+480	-20.000	1,718,945,495	496,478.961	560L	124+960	-21.000	1,721,318.772	495,783.113	613L	126+780	-17.000	1,722,834.929	494,789.006	667L	129+040	-18.000	1,724,763.668	493,628.834	721L	131+340	-18.000	1,726,828.218	492,804.737
507L	122+540	-20.000	1,719,000.752	496,454.B23	561L	125+020	-21.000	1,721,372,793	495,757.737	614L	126+800	-16.000	1,722,851.762	494,778.159	668L	129+060	-19.000	1,724,783.029	493,623.169	722L	131+360	-17.000	1,726,841.190	492,789.737
50BL	122+560	-21.000	1,719,018.862	496,446.041	562L	125+080	-21.000	1,721,426.428	495,731.553	615L	126+980	-16.000	1,722,998.012	494,673.227	669L	129+080	-19.000	1,724,802.663	493,618,633	723L	131+380	-16.000	1,726,854.002	492,774.585
5091.	122+578.896	-21.975	1,719,036.005	496,437.796	563L	125+100	-20.000	1,721,444.668	495,723.540	616L	127+000	-17.000	1,723,013.679	494,660.755	670L	129+100	-20.000	1,724,822.120	493,613.277	724L	131+460	-16.000	1,726,900.308	492,710.232
510L	122+670.230	-22.045	1,719,121.153	496,403.396	564L	125+120	-20.000	1,721,462.418	495,714.543	617L	127+020	-18.000	1,723,029.346	494,648.283	671L	129+120	-21,000	1,724,841.627	493,608.075	725L	131+540	-16.000	1,726,943.708	492,643.884
511L	122+720	-22.000	1,719,167.906	496,385.548	565L	125+140	-19.000	1,721,480,581	495,706.345	618L	127+040	-19.000	1,723,045.013	494,635.B11	672L	129+160	-21,000	1,724,881.167	493,600.099	726L	131+560	-17.000	1,726,953.240	492,626.481
512L	122+740	-21.000	1,719,187.097	496,379.462	566L	125+160	-19.000	1,721,498.245	495,697.169	619L	127+260	-19.000	1,723,223.763	494,507.560	673L	129+180	-20.000	1,724,901,165	493,597.332	727L	131+640	-16.000	1,726,993.744	492,558.345
513L	122+780	-21.000	1,719,224.878	496,365.699	567L	125+180	-18.000	1,721,516.330	495,688.788	620L	127+280	-18.000	1,723,240.596	494,496.714	674L	129+260	-20.000	1,724,980.273	493,583.605	728L	131+664.037	-16.635	1,727,004,497	492,537.081
5144.	122+800	-20.000	1,719,244,152	496,359.902	568L	125+200	-18.000	1,721,533.905	495,679.432	621L	127+300	-18.000	1,723,256.846	494,485.054	675L	129+360	-20.000	1,725,078.857	493,566.836	729L	131+760	-16.000	1,727,047.403	492,452.229
515L	122+820	-18.000	1,719,263.779	496,355.148	569L	125+220	~17.000	1,721,551.910	495,670.869	622L	127+320	-17.000	1,723,273.679	494,474.208	676L	129+436	~17.000	1,725,154.284	493,557.049	730L	131+780	-17.000	1,727,054.742	492,433.794
516L	122+840	-17.000	1,719,283.095	496,349.550	570L	125+300	-17.000	1,721,621.561	495,632.214	623L	127+340	-16.000	1,723,290.512	494,463.361	677L	129+462	-17.000	1,725,179.916	493,552.689	731L	131+880	-17.000	1,727,092.941	492,342.414
517L	122+920	-17.000	1,719,359.373	496,324.328	571L	125+320	-18.000	1,721,638.354	495,621.467	624L	127+360	-15.000	1,723,307.345	494,452.514	678L	129+580	-17.000	1,725,296.245	493,532.902	732L	131+900	-18.000	1,727,099.032	492,323.542
518L	122+940	~19.000	1,719,377.921	496,316.353	572L	125+400	-18.000	1,721,707.000	495,581.093	625L	127+420	-15.000	1,723,356.095	494,417.537	679L	129+600	-16.000	1,725,316.129	493,530.534	733L	131+920	-19.000	1,727,104.908	492,304.614
519L	123+020	-19.000	1,719,454.843	496,293.035	573L	125+420	-19.000	1,721,723.515	495,569.932	626L	127+440	-16.000	1,723,371.762	494,405.065	680L	129+660	-16.000	1,725,375.280	493,520.473	734L	132+000	-19.000	1,727,130.113	492,229.551
520L	123+040	-18.000	1,719,474,421	496,288.407	574L	125+440	-19.000	1,721,740.493	495,559.542	627L	127+460	~17.000	1,723,387.430	494,392.593	681L	129+680	-17. Q0 0	1,725,394.829	493,516.133	735L	132+080	-19.000	1,727,152.665	492,153.351
521L	123+060	-18.000	1,719,493.746	496.282.917	575L	125+460	-20.000	1,721,756.891	495,548.219	628L	127+480	-18.000	1,723,403.097	494,380.122	682L	129+700	-17.000	1,725,414.546	493,512.779	736L	132+100	-20.000	1,727,157.075	492,133.901
522L	123+080	-17.000	1,719,513.364	496,278.486	576L	125+480	-20.000	1,721,773.760	495,537.663	629L	127+660	-18.000	1,723,549.347	494,275.189	68JL	129+720	-18.000	1,725,434.095	493,508.440	737L	132+120	~20.000	1,727,162.383	492,114.682
523L	123+180	-17.000	1,719,610.492	496,252.977	577L	125+500	-21.000	1,721,790,040	495,526.178	630L	127+680	19.000	1,723,565.014	494,262.717	684L	129+740	-18.000	1,725,453.812	493,505,086	738L	132+144.005	-18.801	1,727,169.857	492,091.884
524L	123+200	-18.000	1,719,629.756	496,247.195	578L	125+520	-21.00D	1,721.806.799	495,515.457	631L	127+700	-18.000	1,723,581.847	494,251.871	685L	129+760	-19.000	1,725,473.361	493,500.746	739L	132+160	-18.000	1,727,174.823	492,076.670
525L	123+260	-18.000	1,719,688.413	496,233.347	579L	125+540	-22.000	1,721,822.958	495,503.813	632L	127+720	-17.000	1,723,598.680	494,241.024	686L	129+780	-20.000	1,725,492.910	493,496.406	74QL	132+180	~17.000	1,727,181.030	492,057.632
525L	123+280	-17.000	1,719,708.228	496,229.903	580L	125+560	-23.000	1,721,839.055	495,492.091	63.3L	127+740	-16.000	1,723,615.513	494,230,177	687L	129+883	-20.055	1,725,594.442	493,479.081	741L	132+220	-17.000	1,727,191.513	492,019.030
527L	123+320	-17.000	1,719,747.474	496,221.359	581L	125+624.183	-22.972	1,721,892.108	495,456.629	634L	127+760	-16.000	1,723,631.763	494,218.518	688L	129+945.413	-21.339	1,725,655.733	493,467.343	742L	132+240	-16.000	1,727,197.720	491,999.991
528L	123+340	-19.000	1,719,766.620	496,215.241	581L-A	125+633.965	-23.018	1,721,900.115	495,451.108	635L	127+780	-15.000	1,723,648.596	494,207.671	689L	130+020	-18.000	1,725,729.510	493,457.701	743L	132+360	-16.000	1,727,229.169	491,884.185
529L	123+440	-19.000	1,719,864.430	496,194.431	5821.	125+639.756	-23.000	1,721,904.874	495,447.868	636L	127+800	-15.000	1,723,564.846	494,196.012	690L	130+040	-17.000	1,725,749.244	493,455.010	744L	132+380	-17.000	1,727,233.446	491,864.623
530L	123+465	-17.750	1,719,889.143	496,190.451	583L	125+660	23.000	1,721,921.439	495,436,434	637L	127+810.934	16.093	1,723,573.092	494,188.750	691L	130+060	-17.000	1,725,768,753	493,451.207	745L	132+400	-18.000	1,727,237.723	491,845.060
531L	123+495	-17.000	1,719,918.642	496, 184.941	584L	125+680	-22.000	1,721,938.322	495,425.876	538L	127+834.418	-18.000	1,723,691.061	494,173.511	692L	130+080	-16.000	1,725,788.416	493,448.233	746L	132+420	-19.000	1,727,241.999	491,825.497
532L	123+600	-17.000	1,720,021.344	495,163.091	585L	125+700	-22.000	1,721,954.577	495,414.414	639L	127+940	-18.000	1,723,776.847	494,111.960	693L	130+100	-16,000	1,725,807.830	493,444.108	747L	132+440	-20.000	1,727,246.276	491,805.934
533L	123+620	-16.000	1,720,041.114	496,159,907	586L	125+720	-21.000	1,721,971.357	495,403.684	640L	127+960	-17.000	1,723,793.680	494,101.114	694L	130+200	-16.000	1,725,904.059	493,420.402	748L	132+500	-20.000	1,727,262.000	491,748.031
534L	123+800	-16.000	1,720,217.173	496,122.448	587L	125+760	-21.000	1,722,003.846	495,380.375	641L	128+000	-17.000	1,723,826.180	494,077.795	695L	130+220	-17.000	1,725,922.860	493,414.061	749L	132+520	-21.000	1,727,266.277	491,728.468
			\		D	ATE SIGNATUR	GE TOTAL	乔		REPUBLIC	OF THE PHILIPP	PINES		PROJE	CT AND LO	CATION :		1	SCALE :	SHEET CO	INTENTS :			SHEET NO. :
i I		HIRCH!	=_\			7/1	77	- T-1-	DEDADTAGENT	F AC 0116	ILIC MADEC	AND HIGHW	IAVE			DETAIL OD DE	01044 0T: 101/ 0							

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.

NED	1	DAT	,		NATURE	4	DEPARTMEN	REPUBLIC OF THE PHIL T OF PUBLIC WOR	LIPPINES KS AND HIGHWAYS	5				
	1177		<u> 02</u>	- 2	LÚNA	PJHL - PMO	BUREAU (OF DESIGN	OFFICE OF THE SECRETARY					
KED	10	//9	102	8 s.	COSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for	Approved By: (See cover sheet for				
ITTED		7	1	ż	Keneh	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	_GILBERTO S. REYES	Signature) MANUEL M. BONGAN	Signature/Approval) SIMEON A. DATUMANONG				
	110	(4)	2	TEAL	LEADER	Project Director	Chief, Highways Division	GIC, Director IV	Undersecretary	Secretary				

ROJECT AND EDGATION :	SUALE :	SHEET CONTENTS :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	SCHEDULE OF ROAD RIGHT-OF-WAY MARKERS
CABANATUAN BYPASS - CONTRACT PACKAGE IV	_	(1 OF 3)
	FULL SIZE A1	

RG-06

SCHEDULE OF ROAD RIGHT-OF-WAY MARKERS

POINT	STITION	OFFSET			POINT		OFFSET			POINT		OFFSET	1		POINT	}	OFFSET	Į.	1	BOINT	J	OFFSET		1
NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	FROM CENTERLINE	NORTHING	EASTING
750L	132+620	-22.000	1,727,291.520	491,631,701	++	SS - RIGHT SID			1	505R	123+640	16.000	1,720,057.335	496,187.044	558R-A	125+627.068	20.983	1,721,919.240	495,491.331	613R	128+280	18.000	1,724,077.306	493,950.297
751L	132+634.444	-27.000	1,727,290.480	491,616,452	452R	121+620	16.000	1,718,221.125	496,941.707	506R	123+740	16.000	1,720,165.146	496,166.234	559R	125+637.016	20.990	1,721,927.499	495,485.693	614R	128+300	19.000	1,724,094.856	493,940.965
54R	158+000.000	20.000	1,746,903.476	496.195.439	453R	121+700	16.000	1,718,285.813	496,895.117	507R	123+760	15.000	1,720,184,500	495,161.094	560R	125+660	21.000	1,721,946.524	495,472.583	615R	128+320	17.000	1,724,110.964	493,929.185
55R	158+100.000	20.000	1,746,995.776	496,228,253	454R	121+780	16.000	1,718,351.379	496,849.842	508R	123+860	15.000	1,720,282.311	495,140,283	561R	125+680	20.000	1,721,962.439	495,460.261	616R	128+340	15.000	1,724,127.180	493,917.526
56R	158+120.000	21.000	1,747,013.416	496,236.831	455R	121+800	17.000	1,718,368.467	496,839.560	509R	123+880	16.000	1,720,302.081	496,137.099	562R	125+700	20.000	1,721,978.866	495,448.678	617R	128+420	15.000	1,724,196.846	493,879.191
57R 58R	158+200.000	21.000	1,747,083.866	495,271,000	456R	121+820	17.000	1,718,385.050	496,828.532	510R	123+920	16.000	1,720,341.205	496,128,775	563R	125+720	19.000	1,721,994.653	495,436.200	618R	128+440	16.000	1,724,214.912	493,870.844
59R	158+400.000	21.000	1,747,183.863	496,332.527	457R	121+840	18.000	1,718,402.236	496,818.425	511R	123+940	17.000	1,720,360.976	495,125.591	564R	125+760	19.000	1,722,027.164	495,412.875	519R	128+540	16.000	1,724,303.980	493,826.822
60R	158+460.000	24.000	1,747,259.117	496,421.000	458R 459R	121+860	19.000	1,718,419,467	496,808.406	512R	123+960	17.000	1,720,380.538	496,121.429	565R	125+780	20.000	1,722,043.997	495,402.028	620R	128+640	16.000	1,724,394.737	493,786.396
61R	158+480.000	23.000	1,747,302.990	496,433,753	460R	121+880	19.000	1,718,436.205	496,797.634	513R	123+980	18.000	1,720,400.308	496,118.245	566R	125+800	21.000	1,722,060.830	495,391.181	621R	128+769.262	15.248	1,724,514.062	493,738.868
62R	158+500.000	22.000	1,747,317.570	496,446.814	461R	121+980	20.000	1,718,521.211	496,787.790 496,745.891	514R 515R	124+000	18.000	1,720,419.870	496,114,083	567R	125+860	21.000	1,722,109.580	495,356.204	522R	128+797.667	15.546	1,724,540.760	493,729.690
63R	158+580.000	22.000	1,747,370.267	496,504.618	462R	122+000	19.000	1,718,537.747	496,734.770	516R	124+050	19.000	1,720,439.640	496,110.899	568R	125+911	20.000	1,722,150.435	495,325,660	623R	128+900	16.000	1,724,637.562	493,698,569
752L	132+645.444	-20.000	1,727,300.119	491,607.671	463R	122+040	19.000	1,718,572.007	496,714.496	517R	124+080	18.000	1,720,478.765	496,102.575 496,097.420	569R	125+960	20.000	1,722,190.247	495,297.095	524R	128+920	17.000	1,724,656.882	493,693.826
753L	132+989.244	-19.000	1,727,391.187	491,276,150	464R	122+060	18.000	1,718,588.713	496,703.622	518R	124+120	18.000	1,720,537.393	496,088.783	570R 571R	125+980 126+000	19.000	1,722,205.914	495,284,624	525R	129+020	17.000	1,724,752.675	493,667.619
754L	133+088	-19.000	1,727,417.069	491,180.846	465R	122+140	18.000	1,718,658.048	496,564.444	519R	124+140	17.000	1,720,556.756	496,083.343				1,722,221.582	495,272,152	626R	129+100	17.000	1,724,830.016	493,649.424
755L	133+120	-19.000	1,727.425.455	491,149,965	466R	122+200	18.000	1,718,710.555	496,635.974	520R	124+160	17.000	1,720,576.316	496,078.780	572R 573R	125+020 126+040	17.000	1,722,237.249	495,259.680 495,247.209	627R 628R	129+160 129+180	17.000	1,724,888.382	493,637.408 493,632.731
756L	133+200	-19.000	1,727,446.422	491,072.761	467R	122+220	19.000	1,718,728.618	496,627.544	521R	124+180	16.000	1,720,595.618	496,073.148	574R	126+260	16.000	1,722,431.666	495,118.958	629R	129+300	16.000	1,725,025.743	493,632.731
757L	133+260	-17.000	1,727,464.077	491,015.382	468R	122+240	20.000	1,716,746,718	496,619.207	522R	124+280	16.000	1,720,692,915	496,048.392	575R	126+460	16,000	1,722,594.166	495,002.366	630R	129+320	17.000	1,725,045.628	493,610.020
75BL	133+280	-17,000	1,727,469.318	490,996.081	469R	122+260	21.000	1,718,764.854	496,610.963	523R	124÷400	16.000	1,720,808.810	496,015,486	576R	126+480	17.000	1,722,610.999	494,991,519	631R	129+340	18.000	1,725,065.512	493,607.652
7591.	133+300	-16.000	1,727,475.525	490,977.042	470R	122+280	21.000	1,718,782.576	496,601.920	524R	124+420	17.000	1,720,828.320	496,010.621	577R	126+520	17.000	1,722,643,499	494,968.201	632R	129+426	19.000	1,725,150,462	493,594.216
760L	133+400	-16.000	1,727,501.733	490,880.538	471R	122+300	22.000	1,718,800.790	496,593.860	525R	124+440	18.000	1,720,847.810	496,005.657	578R	126+540	18.000	1,722,660.332	494,957.354	633R	129+449	19.000	1,725,173.137	493,590.359
761L	133+420	-17.000	1,727,506.010	490,860.975	472R	122+320	23.000	1,718,819.039	496,585.894	526R	124+460	18.000	1,720,886.115	495,993.528	579R	126+580	18.000	1,722,692.832	494,934.035	634R	129+500	18.000	1,725,223.247	493,580.821
762L	133+480	-17.000	1,727,521.734	490,803.072	473R	122+364.118	22.945	1,718,858.439	496,566.614	527R	124+500	19.000	1,720,905.533	495,988.270	580R	125+600	19.000	1,722,709.665	494,923.189	635R	129+520	17.000	1,725,242,796	493,576.482
763L	133+500	-16.000	1,727,527.941	490,784.033	474R	122+389.942	18.987	1,718,879.922	496,551.982	528R	124+560	19.000	1,720,962.678	495,969.069	581R	126+620	20.000	1,722,726.498	494,912.342	636R	129+580	17.000	1,725,301,946	493,566.420
764L	133+680	-16.000	1,727,575.116	490,610.325	475R	122+400	23.000	1,718,890.682	496,551.345	529R	124+620	19.000	1,721,019.529	495,949.014	582R	126+640	18.000	1,722,741.582	494,899.058	637R	129+600	16.000	1,725,321.495	493,562.081
765L	133+700	-17.000	1,727,579.392	490,590.762	476R	122+426.032	21.025	1,718,913.314	496,538.620	530R	124+640	17.000	1,721,037.723	495,940.262	583R	126+660	18.000	1,722,757.832	494,887.399	638R	129+700	16.000	1,725,420.079	493,545.312
766L	133+780	-17.000	1,727,600.359	490,513.558	477R	122+460	21.000	1,718,944.037	496,524.554	531R	124+680	17.000	1,721,075.365	495,926.237	584R	126+680	19.000	1,722,774.665	494,876.552	639R	129+720	17.000	1,725,439.964	493,542.944
767L	133+800	-18.000	1,727,604.635	490,493.995	478R	122+480	20,000	1,718,961.781	496,515.495	532R	124+700	16.000	1,721,093.774	495,918.150	585R	126+700	20.00D	1,722,791.498	494,865.705	640R	129+800	17.000	1,725,518.831	493,529.529
768L	133+835	~18.000	1,727,613.808	490,460.219	479R	122+500	19.000	1,718,979.574	496,506.523	533R	124+720	15.000	1,721,112.138	495,909.973	586R	126+720	18.000	1,722,806.582	494,852.421	641R	129+840	20.000	1,725,558.768	493,525.779
769L	133+880	-17.000	1,727,626.567	490,417.054	480R	122+520	19.000	1,718,997.815	496,498.555	534R	12 4+ 780	15.000	1,721,168.085	495,887.682	587R	126+740	18.000	1,722.822.832	494,840.762	642R	129+896	19.665	1,725,613.919	493,516.058
770L	133+900	-17.000	1,727,631.808	490,397.753	481R	122+540	18.000	1,719,015,702	496,489.759	535R	124+800	16.000	1,721,187.041	495,880.990	588R	126+760	17.000	1,722,838.499	494,828.290	643R	129+958.004	19.323	1,725,675.024	493,505.288
771L	133+920	~18.000	1,727,636.085	490,378.190	482R	122+589.011	17.925	1,719,060,645	496,470.770	536R	124+860	16.000	1,721,242.545	495,857.579	589R	126+780	16.000	1,722,854.166	494,815.818	644R	130+060	20.000	1,725,775.969	493,487.496
772L	134+040	-18.000	1,727,667.534	490,262.384	483R	122+682.089	20.994	1,719,147.785	496,439.225	537R	124+880	17.000	1,721,261.368	495,850.507	590R	127+000	16,000	1,723.032.917	494,687.567	645R	130+100	18.000	1,725,815.058	493,477.331
773L	134+060	-19.000	1,727,671.811	490,242.821	484R	122+740	21.000	1,719,201.669	496,418.852	538R	124+900	17.000	1,721,279.755	495,842.424	591R	127+018	16.000	1,723.047.542	494,677.074	646R	130+120	17.000	1,725,834.542	493,471.961
774L 775L	134+080	~20.000	1,727,676.158	490,223,116	485R	122+760	20.000	1,719,220,003	496,411.057	539R	124+920	18.000	1,721,298.511	495,835.163	592R	127+280	16.000	1,723,260.417	494,524.339	647R	130+200	17.000	1,725,912.839	493,452.213
776L	134+100 134+160	-21.000 -21.000	1,727,680.897	490,203,239	486R	122+780	19.000	1,719,238.381	496,403,351	540R	124+960	18.000	1,721,335.089	495,818.535	593R	127+300	15.000	1,723,275.084	494,511.867	648R	130+220	18.000	1,725,932.546	493,447.694
777L	134+204	-21.000	1,727,716.790	490,145.155 490,103.356	487R 488R	122+800	18.000	1,719,256,801	496,395.735	541R	124+980	19.000	1,721,353.738	495,810.991	594R	127+440	15.000	1,723,389.834	494,430.253	649R	130+320	18.000	1,726,028.776	493,417.062
77BL	134+248	~19.000	1,727,736.874	490,063.175	489R	122+820 122+900	17.000	1,719,275.264	496,388.210 496,362.824	542R 543R	125+080 125+100	19.000	1,721,444.245	495,767.366 495,757.477	595R	127+460	16.000	1,723.406.667	494,419.406	650R	130+420	18.000	1,726,123.155	493,381.134
779L	134+260	-18.000	1,727,743.058	490,052.586	490R	122+920	18.000	1,719,370.028	496,357.667	544R	125+140	18.000	1,721,461.764	495,739.221	596R	127+480	16.000	1,723,422.917	494,407.747	651R	130+500	18.000	1,726,197.132	493,348.652
780L	134+340	-18.000	1,727,781.590	489,980.862	491R	123+020	18.000	1,719,465.222	496,328.549	545R	125+160	17.000	1,721,497.557	495,739.221	597R 598₽	127+500	17.000	1,723,439.750	494,396.900	652R	130+520	17.000	1,726,214.962	493,339.119
781L	134+407.421	-18.255	1.727,818.219	489,922.824	492R	123+040	17.000	1,719,484.071	496,322.051	546R	125+180	16.000	1,721,532.230	495,718.840	598R 599R	127+600	18.000	1,723,521.000	494,338.604	653R	130+540	17.000	1,726,233.118	493,330.290 493,320.367
782L	134+382.519	-24.709	1,727,798.741	489,940.409	493R	123+060	16.000	1,719,502.957	496,315,645	547R	125+280	16.000	1,721,620.378	495,670.782	600R	127+540	18.000	1,723,554.083	494,316.098	654R 655R	130+560	16.000	1,726,250.722	493,320.367
783L	134+387.461	-44.044	1,727,785.338	489,925.564	494R	123+100	16.000	1,719.541.360	496,305,044	548R	125+360	16.000	1,721,690.015	495,630.759	600R	127+640	17.000	1,723,554.063	494,303.626	656R	130+660	16.000	1,726,425.251	493,272.264
784L	134+538.782	-15.582	1.727,902.799	489,819.517	495R	123+120	15.000	1,719,560.345	496,298,921	549R	125+420	16.000	1,721,741.709	495,599.831	602R	127+700	17.000	1,723,602.250	494,280.308	657R	130+860	16.000	1,726,508.038	493,219.312
785L	134+560	-16.000	1,727,917.062	489,803,353	496R	123+220	15.000	1,719,656.948	496,274,579	550R	125+440	17.000	1,721,759.360	495,590.202	603R	127+700	16.000	1,723,617.917	494,267.836	658R	130+920	16.000	1,726,556.129	493,124.915
786L	134+580	-17.000	1,727,930.388	489,787.968	497R	123+240	16.000	1,719,676.567	496,270.975	551R	125+460	17.000	1,721,776.440	495,579.633	604R	127+760	16.000	1,723,650.418	494,244.518	659R	130+940	17.000	1,726,572.513	493,113.086
787L	134+620	-17.000	1,727,959.369	489,759.424	498R	123+280	16.000	1,719,715.408	496,262,112	552R	125+480	18.000	1,721,793.998	495,569.825	605R	127+837.800	15.000	1,723,713.047	494,198.351	660R	130+960	17.000	1,726,588.135	493,100.298
788L	134+640	-16.000	1,727,974.954	489,746.332	499R	123+300	17.000	1,719,735.075	496,258.804	553R	125+500	18.000	1,721,810.975	495,559.083	606R	127+852.739	15,000	1,723,725.185	494,189.642	661R	130+980	18.000	1,726,604.261	493,088.100
789L	134+660	-13.000	1,727,991.819	489,735,110	500R	123+340	17.000	1,719,774.111	496,250.453	554R	125+520	19.000	1,721,828.439	495,549.097	607R	127+980	16.000	1,723,829.168	494,116.267	662R	131+060	18.000	1,726,664.743	493,034.532
790L	134+680	-13.000	1,728,006.647	489,721.689	501R	123+360	18.000	1,719,793.882	496,247,269	555R	125+540	20.000	1,721,845.857	495,539.021	608R	128+060	16.000	1,723,894.168	494,069.630	563R	131+080	19.000	1,726,680.174	493,021.451
791L	134+700	-12.000	1,728,022.145	489,709.009	502R	123+477	17.000	1,719,908.112	496,221,943	556R	125+560	20.000	1,721,862.680	495,528.020	609R	128+120	16.000	1,723,942.887	494,035.033	554R	131+120	19.000	1,726,709.213	492,993.332
792L	134+720	-11.000	1.728,037.644	489,696.328	503R	123+512	17.000	1,719,942.346	496,214.659	557R	125+580	21.000	1,721,880.000	495,517.768	611R	128+160	17.000	1,723,976.268	494,013.454	665R	131+140	18.000	1,726,722.785	492,978.330
793L	134+731.828	~11.000	1,728,046.413	489,688.391	504R	123+620	17,000	1,720,047,981	496,192,184	558R	125+617.054	20.977	1,721,910.912	495,496.986	612R	128+180	18.000	1,723,993.357	494,003.286	556R	131+160	18.000	1,726,736.901	492,963.881
					0/	TE SIGNATURE					OF THE PHILIPPI			PROJEC	T AND LO	CATION:		······································	CALE :	SHEET CO	ntents :		· 1	SHEET NO. :
18		בווער ביי	-1			177	7		DEPARTMENT	OF PUR	RIIC WORKS	AND HIGHW	/AYS		TUE	DETAIL ED DES	ICH STUDY OF							

JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS

KATAHIRA & ENGINEERING
CO., LTD.

DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES										
0/12/02	M	1	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS									
11-7	7/ 00	PJHL — PMO	BUREAU (JF DESIGN	OFFICE OF THE SECRETARY							
احرا مرامر	4.900	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:						
17/17/2	TS GUSE ((See cover sheet for	(See cover sheet for						
1 1	MALE SIVE	*	IOCCONIA NA ALIANIA		, ,	Signature/Approval)						
la/+ 1 la 1.						SIMEON A. DATUMANONG						
	TEAM LEADER	Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary						
	OATE 912/02 1919/02 10/21/02	912/02 At	9/12/02 SUNX PUHL - PMO Submitted By: 10/19/07 15/06/07 DANICO C. TRAJANO	DEPARTMEN O 12 02 SUDMITTED PIMO BUREAU (O 19 02 Submitted By: Reviewed By:	DEPARTMENT OF PUBLIC WOR PUHL - PMO BUREAU OF DESIGN Submitted By: Reviewed By: Recommended By: DANIC C. TRAJANO JOSEFINA M. ALAGAR GILBERTO S. REYES	DEPARTMENT OF PUBLIC OF THE PHILIPPINS 12/02 SURVEY DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 16/19 17 Submitted By: Recommended By: Recommended By: Submitted By: Submitt						

THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	R
ABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1	

SCHEDULE OF
ROAD RIGHT-OF-WAY MARKERS
(2 OF 3)

RG-07

SCHEDULE OF ROAD RIGHT-OF-WAY MARKERS

POINT	STATION	OFFSET		5.07000	POINT	T	OFFSET	T		POINT		OFFSET FROM	!	1	POINT		OFFSET FROM	T	1	POINT		OFFSET	T		l pour	1	OFFSET	1	
NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	NO.	STATION	FROM CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING
567R 568R	131+180	17.000	1,726,750.128	492,948.589	719R-E	+	34.048	1,727,867.532	489,916.009	A23-3L	1+029.403	-7.500	1,719,939.225	495,219.056	A28-7L	1+110	-4.000	1,724,597.145	493,787.721	A31-4R	1+050	7.500	1,727,017.496	492,630.687	A34-11R	1+059.680	6.500	1,727,653.510	490,539.523
669R	131+220	15.000	1,725,763,177	492,933.159 492,917.593	719R-0	134+477.535	23.870	1,727,893.590	489,891.553	A23~4L	1+060	-7.500	1,719,952.151	496,237.905	A28-1R	0+890	5.000	1,724,406.753	493,681.794	A31-5R	1+100	5.000	1.727,034.583	492,566.999	A34-12R	1+090	6.SOD	1,727,561.598	490,568.744
670R	131+260	15.000	1,726,802,754	492,887.370	720R	134+467.309	41.532 15.283	1,727,901.378	489,910.239 489,878,807	A23-5L	1+080	7.500	1,719,978.455	496,248.996	A28-2R	0+920	5.000	1,724,434.102	493,693,228	A31-6R	1+120	5.000	1,727,041.951	492,685.568		ERSECTION A-S			
671R	131+280	16.000	1,726,816.618	492,872.684	721R	134+560	16.000	1,727,894.086	489,825.236	A23-1R A23-2R	0+900 0+973	7.500	1,719,847.791	496,127.820	A28-3R	0+967	7.000	1.724.474.956	493,716.217	∥ 	RSECTION A-				A35-11	0+032	-17.000	1,727,711.829	490,089.712
672R	131+380	16.000	1,726,879.555	492,793.849	722R	134+640	16.000	1,727,996.479	489,770.011	A23-3R	1+020	7.500 8.500	1,719,891.258	495,185.468	A28-4R	1+020	7.000	1,724,522.137	493,740.362	A32-1L	D+910	-7.500	1,727,107.240	492,064.363	A35-20	0+060	-16.000	1,727,689.253	490,083.852
673R	131+460	16.000	1,726,926.691	492,728.340	723R	134+660	14.000	1,728,009.938	489,755.128	A23-4R	1+050	7.500	1,719,953.361	496,224.060 496,250.059	A28-5R A28-6R	1+060	5.000	1,724,556.926	493,757.852 493,770.316	A32-2L	0+976	-7.500	1,727,165.885	492,094.541	A35-31	0+080	-16.000	1,727,672.487	490,084.330
674R	131+480	17.000	1,725,938.847	492,712.197	724R	134+680	14.000	1,728,024,766	489,741.706	A23-5R	1+050	7.500	1,719,970.125	496,261,470	A28-7R	1+110	5.000	1,724,590.356	493,793.629	A32-4L	1+022	-7.500 -7.500	1,727,20\$.724	492,115.969 492,143.080	A35-40	0+100	-15.000 -16.000	1,727,656,151	490,088.129
675R	131+604.610	17.860	1,727,005.946	492,605.792	725R	134+700	13.000	1,728,038.922	489,727.543	-	RSECTION A-		1 10 10 10 10 10 10 10 10 10 10 10 10 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		RSECTION A		1,124,080,000	430,188,028	A32-1R	0+910	7.500	1,727,100.359	492,077.691	A35-60	0+120		1,727,640.896	490,095.098
676R	131+636.037	16.623	1,727,020.424	492,577.534	726R	134+720	12.000	1,728,053,079	489,713.380	A241L	0+890	-5.000	1,721,871.454	495,366.697	A29-1L	0+890	-7.500	1,725,197.075	493,458.097	A32-2R	0+976	7,500	1,727,159.004	492,107.969	A35-7U	0+140	-14.500 -7.500	1,727,626.181	490,103.959 490,150.938
677R	131+680	16.000	1,727,040.810	492,538.130	727R	134+731.828	11.000	1,728,061.177	489,704.701	A24-2L	0+920	~4.879	1.721.884.223	495.393.594	A29-2L	0+920	-7.500	1,725,189.085	493,497.502	A32-3R	1+022	7.500	1.727.199.712	492,129,229	A35-16	0+025	10.000	1,727,727.250	490,066.820
578R	131+740	16.000	1,727,067.824	482,483.962	INTER	RSECTION A-22	:			A24-3L	0+973	-9.593	1,721,917,236	495,434.496	A29-3L	0+940	-7.500	1,725,181.829	493,516.259	A32-4R	1+080	7.500	1,727,250.986	492,155.341	A35-2F	0+040	10.000	1,727,712.751	490,061.666
678R	131+760	17.000	1,727,077.332	482,465.131	A22-1L	0+870	-5.000	1,718,845.417	496,406.115	A24-4L	1+060	~7.000	1,721,945,489	495,516.731	A29-4L	0+960	-7.500	1,725,177.146	493,534.392	INTE	RSECTION A-	3			A35-3R	0+060	10.000	1,727,691.110	490,057.918
680R	131+860	17.000	1,727,117.292	492,373.446	A22-2L	0+921.783	∽5.00 0	1,718,858.634	496,456.183	A24-5L	1+080	~5.000	1,721,952.085	495,533.726	A29-5L	0+976	-7.500	1,725,174.819	493,550.042	A33-1L	0+860	-7.500	1,727.309,918	491,131.515	A3S-4R	0+070	10.000	1,727,680.117	490,057.682
681R	131+960	17.000	1,727,152.044	492,278.686	A22-3L	0+977	-10.000	1,718,885.523	496,501.602	A24-6L	1+115	~5.000	1,721,971.152	495,563.076	A29-6L	1+024	-7.500	1,725,167.854	493,597.534	A33-2L	0+880	-7.500	1,727,325,989	491,141.211	A35-5R	0+073.943	19.295	1,727,675.155	490,048.617
682R	32+114.558	17.336	1,727,196.940	492,129.830	A22-4L	1+025.773	-10.000	1,718,912.117	496,545.204	A24-1R	0+890	4.000	1,721,863.324	495,370.557	A29-7L	1+110	-7.500	1,725,155.375	493,682.623	A33-JL	0+900	-7.500	1,727,342.893	491,145.626					
683R	32+141.998	15.957	1,727,202.876	492,102.956	A22-5L	1+040	~10.000	1,718,915.841	486,561.340	A24-2R	0+920	4.131	1,721,876.270	495,397.827	A29-1R	0+690	7.500	1,725,182,568	493.464.285	A33-4L	0+940	-9.000	1,727,384.192	491,144.983					
584R	132+360	16.000	1,727,260.051	491,892.572	A22-6L	1+085.134	-7.500	1,718,909.314	496,607.519	A24-3R	1+054.050	6.549	1,721,930.964	495,514.082	A29-2R	0+920	7.500	1,725,174,848	493,492.778	A33-5L	0+974	-9.500	1,727,417.259	491,153.438	<u> </u>				
685R	132+380	17.000	1,727,266.258	491,873.533	A22-7L	1+104.804	-5.000	1,718,907.347	496,626.418	A24-4R	1+070.515	6.000	1,721,937.636	495,531.410	A29-3R	0+940	7.500	1,725,167.668	493,511.313	A33-6L	1+024	-9.500	1,727,465,511	491,166.542					
686R	132+400	18.000	1,727,272,464	491,854,495	A22-8L	1+120	~5.000	1,718,909.456	496,640.949	A24-5R	1+080	4.000	1,721,944.537	495,538.629	A29~4R	0+960	7.500	1,725,162.361	493,531.864	A33-7L	1+080	-7.500	1.727.519.029	491,183.148					
687R	132+420	19.000	1,727,278,671	491,835.456	A22-9L	. 1+140	-5.00 0	1,718,914.214	496,660.035	A24-6R	1+115	4.000	1,721,963.605	495,567.979	A29-5R	0+976	7.500	1,725,159.978	493,547.865	A33-8L	1+100	-7.500	1,727,536.791	491,186.214					
688R	132+440	20.000	1,727,284.877	491,816.417	A22-1R		4,000	1,718,836.715	496,408.412	INTE	RSECTION A-2	5			A29-6R	1+024	7.500	1.725,153.013	493,595.357	A33-9L	1+120	-7.500	1,727,553.997	491,183.502				i	
689R	132+540	20.000	1,727,311.086	491,719.912	A22-2R		6.000	1,718,853.933	496,476.970	A25-1L	0+900	~10.000	1,722,054.193	495,246,447	A29-7R	1+110	7.500	1,725,140.534	493,680.447	433~10L	1+150	-7.500	1,727,578.900	491,170.023					
690R	132+560	21.000	1,727,317,292	491,700.874	A22-3R	0+960	7.500	1,718,861.596	496,496.456	A25-ZL	0+957	-10.000	1,722,092.954	495,288.239	INTE	RSECTION A-	30			A33-1R	0+860	7.500	1,727,301.701	491,144.065					
591K	132+580	22.000	1.727.323.499	491,681.835	A22-4R		9.000	1,718,896.952	496,563.392	A25-3L	1+040	-11.000	1,722,150.129	495,348.414	A30-1L	0+840	-7.500	1,725,508.806	493,421.276	A33-2R	0+880	7.500	1,727,319.888	491,154.914					
692R 693R	132+620	23.000	1,727,334,947	491,643.495	A22-5R	 	4,500	1,718,897.505	496,622.372	A25-4L	1+090	-10.000	1,722,183.397	495,385.754	A30-2L	0+860	-7.500	1,725,521.404	493,433.039	A333R	0+900	6.500	1,727,341.605	491,159.567					
694R	32+634.444	27.000	1,727,342.593	491,630.604	A22-6R	1	5.000	1,718,904.550	496,662.605	A25-1R	0+900	10.000	1,722,039.529	495,260.048	A30-3L	0+880	-7.500	1,725,537.545	493,439.588	A33-4R	0+920	7.500	1.727.362.736	491,159.498					
695R	32+989.244	19.000	1,727,338.720	491,618.154	A220-1L	0+011.087		4.740.040.007		A25-2R	0+956	10.000	1,722,077.511	495,301.107	A30-4L	0+900	-7.500	1,725,554.941	493,440.495	A33-5R	0+940	9.000	1.727.379.720	491,162.419					
696R	133+088	19.000	1,727,453,741	491,190.805	A220-10	0+020	-5.000	1,718,912.887	496,612.650	A25-3R	1+038	13.000	1,722,131.173	495,363.268	A30-5L	0+920	-7.500	1,725,575,675	493,437.751	A33-6R	0+974	9.500	1,727,412.279	491,171.774	 				
597R	133+120	19.000	1,727,462.127	491,159.924	A220-3L	0+040	-5.000 -5.000	1,718,920.872 1,718,937,542	496,612,003 496,605.537	A25-4R	1+060	10.000	1,722,148.333	495,377.358	A30-6L	0+940	-12.000	1,725,599.811	493,438.492	A337R	1+024	9.500	1,727,460.532	491,184,878	\Vdash				
698R	133+220	18.000	1,727,487.370	491,063.157	A220-4L	0+060	-5.000	1,718,950.378	496,593.090	A25-5R	1+090 RSECTION A-2	10,000	1,722,168.733	495,399.354	A30-7L	0+980	-22,000	1,725,641.033	493,463.073	A33-8R	1+100	7.500	1,727,536,636	491,201.214	-				,I
599R	133+240	17.000	1,727,491.647	491,043.594	A220-5L	0+114	-5.005	1,718,978.548	496,547.314	A26-1L	0+940	-3.500	1,722.971.814	494,645.021	A30-8L A30-9L	1+040	~12.500 ~9.000	1,725,670,353	493,516.277	A33-9R	1+120	7.500	1,727,558,759	491,197.726	$\Vdash \rightarrow$	-			
700R	133+260	17.000	1,727,502.130	491,004.992	A220-6L	0+117.639	-7.929	1,718,977.962	496,542.683	A26-2L	0+980	-4,000	1,723,007.770	494,662.096	N30-10L	1+080	-7.500	1,725,679.703	493,531.139 493,540,411	╟──┴	F+150 ECTION A-34	7.500	1.727.586.603	491,182.894	$\parallel - \downarrow$		1		
701R	133+300	16.000	1,727,506.406	480,985.429	A220-1R	0+010.114	5.000	1,718,911.734	496,622.631	A26~3L	14023	-4.000	1,723,046.852	494,580.030	A30-11L	1+100	-7.500	1,725,713.288	493,546.808	A34-1L	0+770	-6.500	1,727,593,127	490,272.603					
702R	133+400	16.000	1,727,532.615	490.888.924	A220-2R	0+025.521	5.000	1,718,928.480	496,620.503	A26-4L	1+050	-3.500	1,723,080.143	494,596,392	A30-1R	0+840	7.500	1,725,496,964	493,432,596	A34-2L	0+792	-6.500	1,727,598.995	490,293.805	 -				
703R	133+420	17.000	1,727,538.621	490,869.886	A22a-JR	0+040	5.000	1,718,942.938	496,613.956	A26-1R	0+940	5.000	1,722,967.888	494,652,560	A30-2R	0+850	7.500	1,725,513,537	493,445,611	A34-3L	0+820	~6.500	1,727,603.061	490,323.198	╟─┼			 +	
704R	133+450	17.000	1,727,554.546	490,811.983	A22a-4R	0+050	5.000	1,718,958.627	496,598.743	A26-2R	0+975	6.000	1,722,999.055	494,559.099	A30-3R	0+880	7.500	1,725,534.290	493,454.231	A34-4L	0+900	-6.500	1,727,597,354	490,403.459	 	·			
705R	133+500	15.000	1,727,558.823	490,792.420	A22a-5R	D+114	4.993	1,718,987.069	496,552.547	A26-3R	1+018	6.000	1,723,038.137	494,687.033	A30-4R	0+900	7.500	1,725,556.656	493,455.397	A34-5L	0+940	-7.500	1,727,597.519	490,441.328	1				——— <u>[</u> [
706R	133+680	15.000	1,727,605.997	490,618.712	A22a-6R	0+117.571	7.806	1,718,991.334	495,550.976	A26~4R	1+040	5.000	1,723,058.494	494,695.293	A30-5R	0+920.133	7.586	1,725,575.571	493,452.837	A34-6L	04967.937	-8.000	1,727,608.096	490,462.999		f			——— <u> </u>
707R	133+783	17.000	1,727,633.956	490,519.574	INT	ERSECTION A-2	23			A26-5R	1+060	5.000	1,723,076.406	494,704.026	A30-6R	0+940	10.000	1,725,590.953	493,458.630	A34-7L	1+020	-8.000	1,727,643.881	490,499.516					
708R	133+814	17.000	1,727,642.081	490,489.657	A231L	0+900	-7.500	1,719,859.842	496,118.888	INTE	RSECTION A-2				A30-7R	0+948.607	11.669	1,725,596.063	493,463,320	A34-8L	1+040	-6.500	1,727,656.908	490,516.354					
709R	133+880	18.000	1,727,660.343	490,426.227	A23-2L	0+973	-7.500	1,719,903.309	495,177.537	A27-1L	0+940	-5.000	1,723,644.854	494,186.053	A30-8R	1+034	14.000	1,725,645.748	493,527.802	A34-9L	1+050	-6.500	1,727,666.125	490,536.363					
710R	134+020	18.000	1,727,697.034	490,291,120	423-3L	1+029.403	-7.500	1,719,939.225	496,219.086	A27-2L	1+060	-5.000	1,723,757.785	494,213.483	A30-9R	1+060	11.000	1,725,667.655	493,547.103	A34-10L	1+090	6.500	1,727,874,127	490,565.277				1	
711R	134+040	17.000	1,727,701.311	490,271.557	A23-4L	1+060	-7.500	1,719,962.151	496,237.905	A27-1R	0+940	5.000	1.723.647.474	494,195.704	A30-10R	1+100	7.500	1,725,70B.490	493,561.020	A34-1R	0+770	6.500	1,727,580,598	490.276.070					
712R	134+120	17.000	1,727,723.144	490,195.449	A23-5L	1+080	-7.500	1,719,978.455	496,248.996	A27-2R	1+020	4.000	1,723,719.980	494,198.700	INTE	RSECTION A-	11			A34-ZR	0+792	5.500	1,727,586.466	490,297.273					
713R	134+200	17.000	1,727,750.322	490,121,677	A23-1R	0+900	7.500	1,719,847.791	496,127.820	A27-3R	1+060		1,723,751.882	494,221.555	A31-1L	0+900	5.000	1,727,008.340	492,473.673	A34-3R	0+820	6.500	1,727,590.061	490,323.170					
714R	134+280	17.000	1,727,783.309	490.050.313	A23-2R		7.500	1,719,891.258	496,186.468	····	RSECTION A-2					0+957.389	-5.000	1,727,001,225	492,530.618	A34~4R	0+860	6.500	1,727.585.878	490,382.548					
715R 716R	134+360	17.000	1,727,821.893	489,981.814	A23-3R	 	8.500	1,719,921.338	496,224.060	A28-1L	0+890	-3.500	1,724,409.841	493,673.875	A31-3L	1+022	-6.500	1,727,018.049	492,590.061	A34~5R	0+920	7.500	1.727.581.906	490.422.363					
716R	134+380	18,000	1.727.833.225	489,965.730	A23-4R	-	7.500	1,719,953.361	496,250.059	A28-2L	0+920	-5.000	1,724,438.376	493,684.187	A31-4L	1+060	-4.987	1,727,029.136	492,626.164	A34-6R	0+940	7.500	1,727,582.821	490,444.323					
718R	134+400	18,000	1,727,844.038	489,949.335	A23~5R		7.500	1,719,970.125	496,261.470	A28-3L	D+977	6.500	1,724,490.008	493,708.755	A31-5L	1+120	-5.000	1,727,051.255	492,681.899	A34-7R	0+960	7,500	1,727,590,872	490,465.222					
719R	134+420 134+460	17.000 17.000	1,727,854.358	489,932.583 489,900.883		ERSECTION A-2	· · · · · · · · · · · · · · · · · · ·	·		A28-4L	1+032	-5.000	1,724,538.286	493,735.146	A31~1R	0+900	5.000	1,726,998.417	492,472,433	A34-8R	0+980	9.750	1,727,603.099	490,483.645					
├	34+462.350	19.677	1,727,881.144	489,900.681	A23-1L A23-2L		-7.500	1,719,859,842	496,118.889	A28~5L	1+060	-4.500	1,724,552,776	493,750.368	A31-2R	0+960	5.075	1,726,990.945	492,532.232	A34-9R	1+028	8.745	1,727.637.638	490,516.993					
<u></u> -	O T I TVENUV	13.017	1,141,001,177	702,800.001	743-20	V+8/3	-7.500	1,719,903.309	496,177.537	A28-6L	1+080	-4.000	1.724.577.449	493,765.092	A31-3R	1+034	7.500	1,727,008.587	492,605.887	A34-10R	1+040	7.500	1,727.545.338	490.524.235					
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ADILL	DATE SIGNATURE				REPUBLIC OF THE PH			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
JAPAN INTERNATIONAL COOPERATION AGENCY	DESIGNED 16/12	los siuna	PUHL - PMO		NT OF PUBLIC WORKS AND HIGHWAYS U OF DESIGN OFFICE OF THE SECRETARY			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM		SCHEDULE OF	
1.0	CHECKED 10/10	1/02 9. GOSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for	Approved By: (See gover sheet for	ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	ROAD RIGHT-OF-WAY MARKERS	RG-08
	SUBMITTED 10/2	TEAM LEADER	Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES DIC, Director IV	Signature) MANUEL M. BONOAN Undersecretary	Signature/Approval) SIMEON A. DATUMANONG Secretary	CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1	(3 OF 3)	