

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

**SAN JOSE BYPASS
(INITIAL STAGE)**



December 2002

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

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02-158

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GENERAL

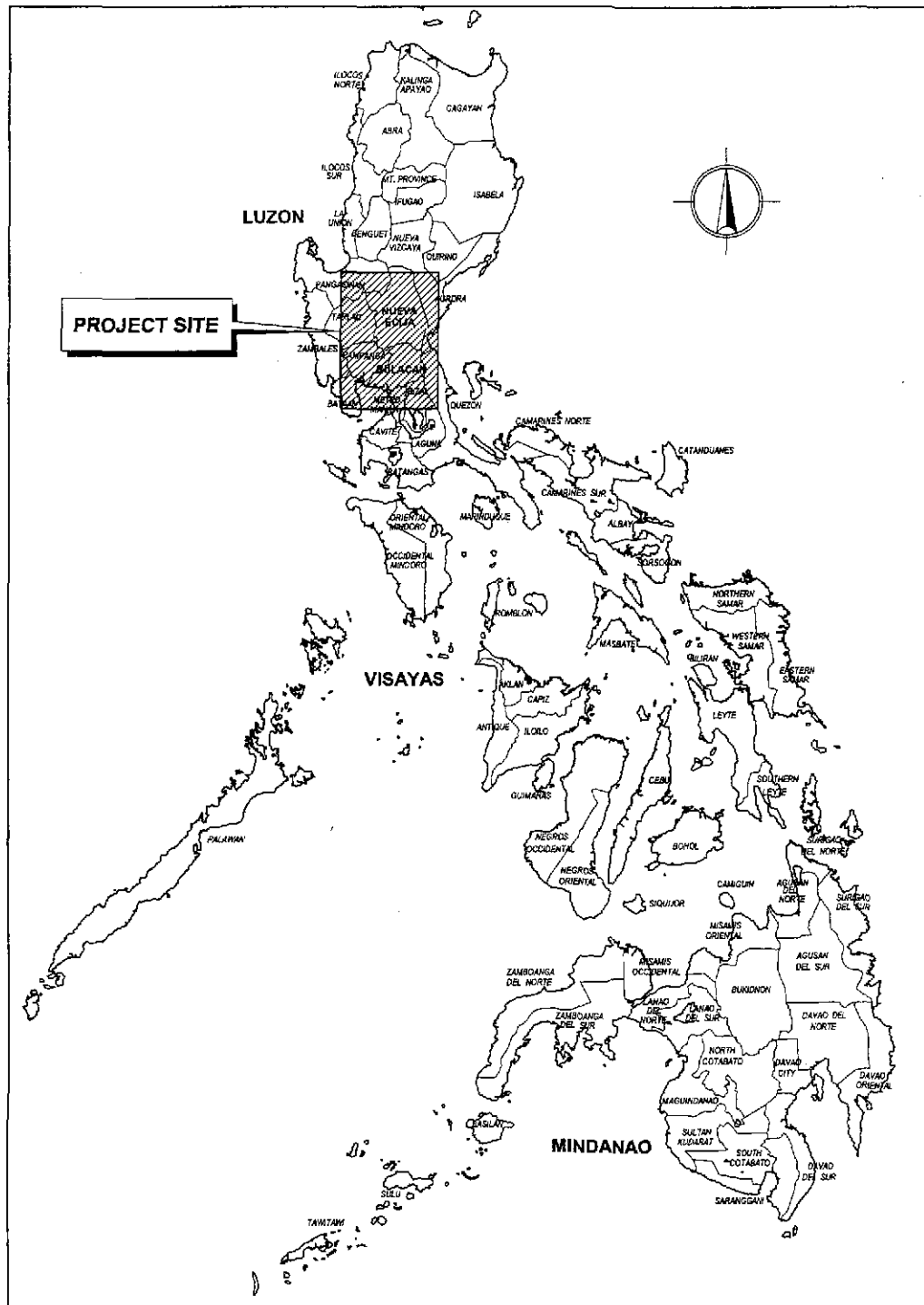
INDEX OF DRAWINGS

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

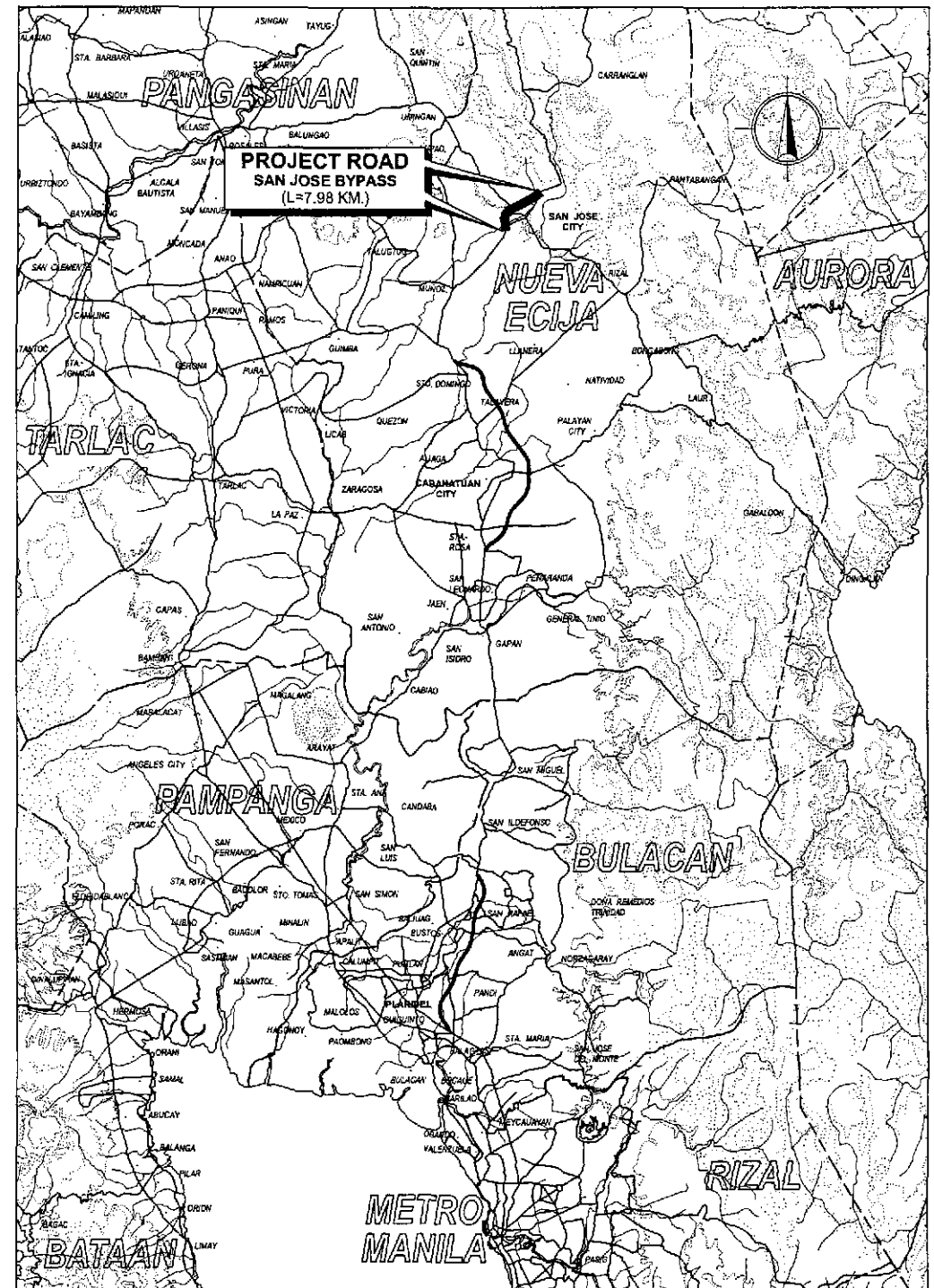
SAN JOSE BYPASS (INITIAL STAGE)

SHEET NO.	TITLE OF DRAWING	SHEET NO.	TITLE OF DRAWING	SHEET NO.	TITLE OF DRAWING
	GENERAL				
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RG-02	ALIGNMENT TECHNICAL DESCRIPTION	RI-16	GEOMETRIC DESIGN LAYOUT	RM-04	LAYOUT PLAN, STA. 159 + 900.000 TO STA. 161 + 300.000
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RG-10	SCHEDULE OF RIGHT-OF-WAY MARKERS - 2 of 2	RI-23	TRAFFIC SIGNAL LIGHT LAYOUT	RM-11	LAYOUT PLAN, STA. 161 + 300.000 TO STA. 162 + 700.000
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RP-02	PLAN AND PROFILE, STA. 156 + 400.000 TO STA. 157 + 100.000	RI-26	PAVING PLAN	RS-02	GEOMETRIC DESIGN STANDARD-2 (HORIZONTAL AND VERTICAL CURVES)
RP-03	PLAN AND PROFILE, STA. 157 + 100.000 TO STA. 157 + 800.000	RI-27	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT	RS-03	GEOMETRIC DESIGN STANDARD-3 (SUPERELEVATION ATTAINMENT)
RP-04	PLAN AND PROFILE, STA. 157 + 800.000 TO STA. 158 + 500.000		INTERSECTION A-6 (STA 161+769.385)	RS-04	STANDARD PORTLAND CEMENT CONCRETE PAVEMENT DETAILS
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RI-04	GEOMETRIC DESIGN LAYOUT - 1 of 2	RI-40	PLAN AND PROFILE	RS-20	TRAFFIC SIGNAL POST TYPE B, C & D
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				RS-24	TYPICAL FENCING DETAILS

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL yeo YACHIYO ENGINEERING CO., LTD.	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE :	SHEET CONTENTS :	SHEET NO. :				
	DESIGNED	9/2/02				PJHL - PMO	BUREAU OF DESIGN	OFFICE OF THE SECRETARY	NOT TO SCALE	INDEX OF DRAWINGS (INITIAL STAGE) Sheet 1 of 2	GS-01
	CHECKED	9/4/02				Submitted By:	Reviewed By:	Recommended By:	Approved By:	FULL SIZE A1	
SUBMITTED	7/6/02		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary				



1 KEY MAP
GS-03 NOT TO SCALE



2 VICINITY MAP
GS-03 NOT TO SCALE

	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/2/02	<i>[Signature]</i>		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses)		NOT TO SCALE	KEY AND VICINITY MAP	GS-03
	SUBMITTED	9/4/02	<i>[Signature]</i>		SAN JOSE BYPASS		FULL SIZE A1		
				Submitted By: DANILO C. TRAJANO (Project Director) Reviewed By: JOSEFINA M. ALAGAR (Chief, Highways Division) Recommended By: GILBERTO S. REYES (OIC, Director IV) Recommended By: MANUEL M. BONDAN (Undersecretary) Approved By: SIMEON A. DATUMANONG (Secretary)					



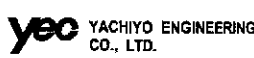
LEGEND AND SYMBOLS

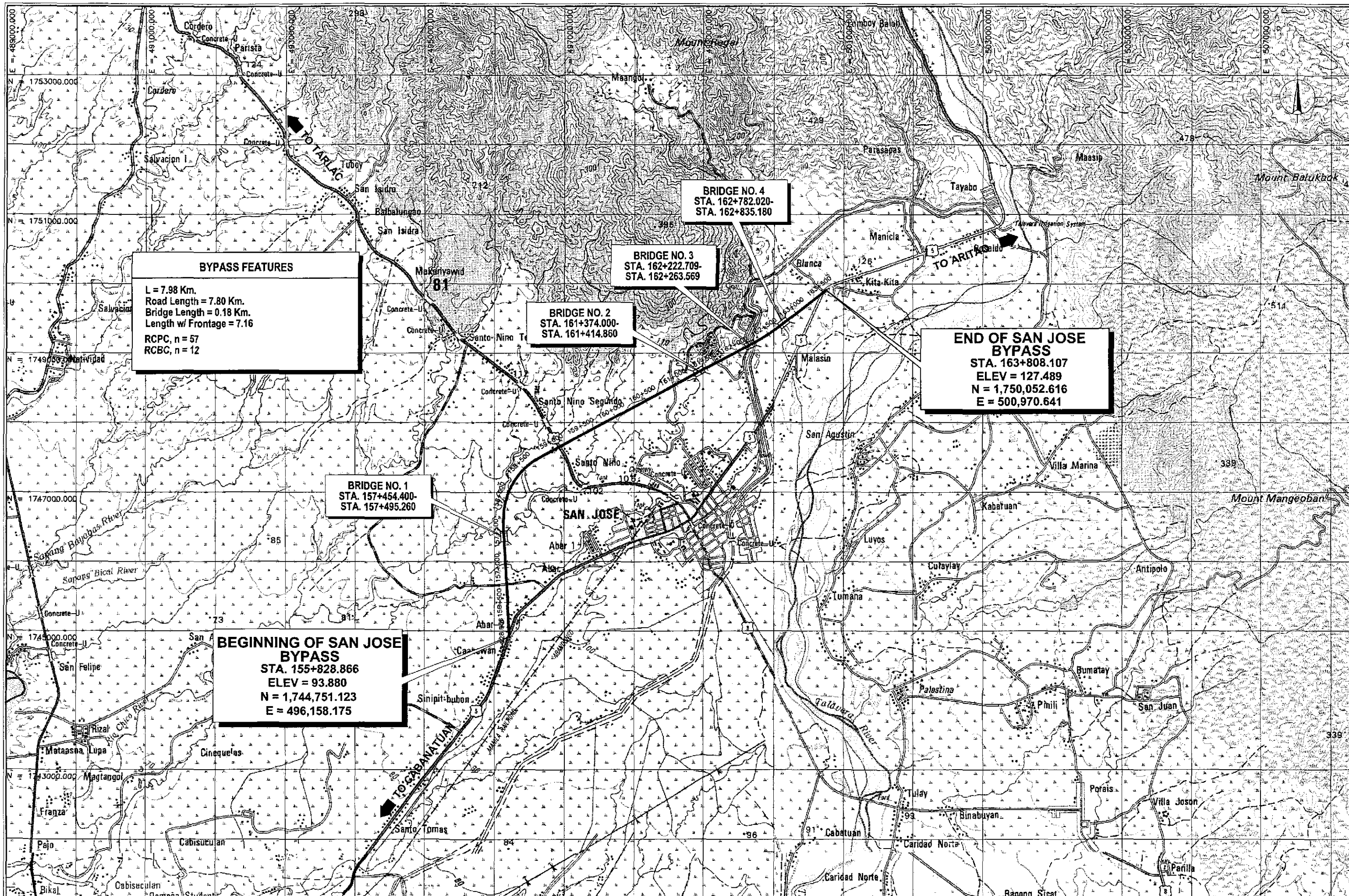
EXISTING FEATURES	
ROAD	
CONTOUR	
ORIGINAL GROUND	
CONCRETE FENCE	
BARBED WIRE FENCE	
HOUSE	
TREES	
BRIDGE	
SINGLE PIPE CULVERT	
DOUBLE PIPE CULVERT	
BOX CULVERT	
DITCH LINE/ IRRIGATION LINE	
IRRIGATION LINE	
RIVER/CREEK	
ELECTRIC POST	
KILOMETER POST	
TRAVERSE STATION POINT	
BENCHMARK	
FISH POND	
NATIONAL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

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

ABBREVIATIONS

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

 JICA JAPAN INTERNATIONAL COOPERATION AGENCY	DATE: 9/2/02 SIGNATURE: <i>[Signature]</i> ACACIO	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : NOT TO SCALE	SHEET CONTENTS : ABBREVIATIONS	SHEET NO. : GS-05
	CHECKED: 9/4/02 SIGNATURE: <i>[Signature]</i> COSE	SUBMITTED: 9/6/02 SIGNATURE: <i>[Signature]</i> TEAM LEADER	SUBMITTED BY: DANILO C. TRAJANO Project Director	REVIEWED BY: JOSEFINA M. ALAGAR Chief, Highway Division	RECOMMENDED BY: GILBERTO S. REYES D.C. Director IV	RECOMMENDED BY: (See cover sheet for Signature/Approval) MANUEL M. BONDAN Undersecretary	APPROVED BY: (See cover sheet for Signature/Approval) SIMEON A. DATUMANDING Secretary	FULL SIZE A1	
	 KATAHIRA & ENGINEERS INTERNATIONAL		 YACHIYO ENGINEERING CO., LTD.		SAN JOSE BYPASS				



BYPASS FEATURES

L = 7.98 Km.
 Road Length = 7.80 Km.
 Bridge Length = 0.18 Km.
 Length w/ Frontage = 7.16

RCPC, n = 57
 RCBC, n = 12

BRIDGE NO. 1
 STA. 157+454.400-
 STA. 157+495.260

BRIDGE NO. 2
 STA. 161+374.000-
 STA. 161+414.860

BRIDGE NO. 3
 STA. 162+222.709-
 STA. 162+263.569

BRIDGE NO. 4
 STA. 162+782.020-
 STA. 162+835.180

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

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

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>		PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)		SCALE : 1:25,000	SHEET CONTENTS : PROJECT ROAD GENERAL ALIGNMENT/ FEATURES	SHEET NO. : GS-06
DESIGNED: 9/2/02 CHECKED: 9/4/02 SUBMITTED: 9/6/02	DATE: 9/2/02 SIGNATURE: [Signature] ACACIO	PJHL - PMO Submitted By: DANILLO C. TRAJANO Project Director	BUREAU OF DESIGN Reviewed By: JOSEFINA M. ALAGAR Chief, Highway Division	OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONDAN Undersecretary	FULL SIZE A1		

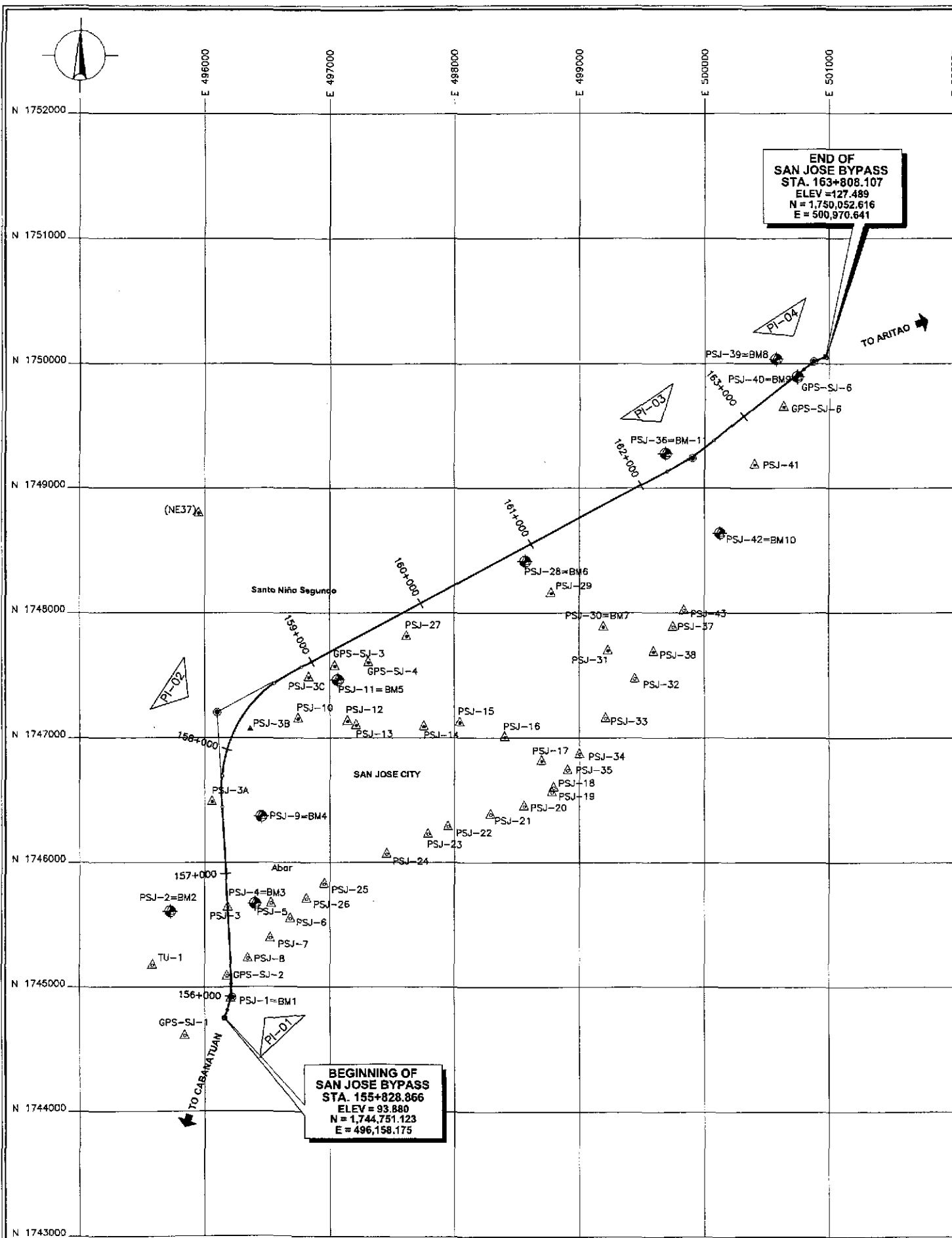


TABLE OF HORIZONTAL AND VERTICAL CONTROL

POLYGON POINT	COORDINATES		ELEV.	REMARKS
	NORTHING	EASTING		
PSJ-1(BM# 1)	1,744,906.325	496,208.059	94.949	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-2(BM# 2)	1,745,608.972	495,721.435	93.396	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-3	1,745,638.052	496,194.450	95.033	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-3A	1,745,487.258	496,080.394	94.954	Mark is a 8mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-3B	1,747,071.011	496,361.786	98.893	Mark is a 8mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-3C	1,747,484.598	496,831.975	102.785	Mark is a 8mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-4(BM# 3)	1,745,869.911	496,400.934	95.772	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-5	1,745,868.883	496,530.301	96.250	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-6	1,745,545.955	496,682.338	96.192	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-6	1,745,545.962	496,682.337	96.192	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-7	1,745,389.379	496,521.091	95.644	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-8	1,745,228.044	496,339.813	94.817	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.
PSJ-9(BM# 4)	1,746,371.027	49,545.400	96.739	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-10	1,747,148.012	496,744.976	99.932	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-11(BM# 5)	1,747,465.278	497,084.856	103.326	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-12	1,747,133.042	497,141.329	101.584	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-13	1,747,099.879	497,208.490	101.790	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-14	1,747,090.173	497,748.505	104.579	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-15	1,747,124.421	498,045.057	107.077	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-16	1,747,005.744	498,405.287	106.279	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-17	1,746,814.358	498,695.323	106.425	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-18	1,746,800.983	498,798.095	105.843	White "X" mark on the road at Maharlika Highway corner A. Bonifacio Street with a nailed bottle crown at the center.
PSJ-19	1,746,562.332	498,781.530	106.716	White "X" mark at the northwest corner of Maharlika Highway and A. Bonifacio Street with a nailed bottle crown at the center.
PSJ-20	1,746,448.970	498,559.717	105.193	White "X" mark at the southeast corner of Maharlika Highway and A. Bonifacio Street with a nailed bottle crown at the center.
PSJ-21	1,746,384.170	498,293.944	104.164	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.
PSJ-22	1,746,288.268	497,948.544	102.854	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.
PSJ-23	1,745,227.689	497,782.587	102.254	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.
PSJ-24	1,746,066.304	497,448.819	101.019	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.
PSJ-25	1,745,825.562	496,965.537	98.700	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.

TABLE OF HORIZONTAL AND VERTICAL CONTROL

POLYGON POINT	COORDINATES		ELEV.	REMARKS
	NORTHING	EASTING		
PSJ-26	1,745,704.868	498,813.299	97.618	White "X" mark at edge of Maharlika Highway with a nailed bottle crown at the center.
PSJ-27	1,747,810.894	497,609.704	106.480	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-28(BM# 6)	1,748,413.129	498,566.434	113.320	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-29	1,748,155.024	498,772.777	112.215	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-30(BM# 7)	1,747,873.324	499,208.984	109.561	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-31	1,747,695.786	499,230.878	108.039	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-32	1,747,470.534	499,442.879	109.238	White "X" mark on the pavement of Maharlika Highway with a nailed bottle crown at the center.
PSJ-33	1,747,154.549	499,210.017	106.618	White "X" mark on the pavement of Maharlika Highway with a nailed bottle crown at the center.
PSJ-34	1,746,869.849	499,001.100	105.712	White "X" mark on the pavement of Maharlika Highway with a nailed bottle crown at the center.
PSJ-35	1,746,738.455	498,905.225	106.249	White "X" mark on the pavement of Maharlika Highway with a nailed bottle crown at the center.
PSJ-36(BM# 11)	1,749,278.714	499,682.109	157.873	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-37	1,747,886.172	499,748.098	112.347	White "X" mark on the pavement of Maharlika Highway with a nailed bottle crown at the center.
PSJ-38	1,747,596.102	499,592.108	110.591	White "X" mark beside Maharlika Highway with a nailed bottle crown at the center.
PSJ-39(BM# 8)	1,750,026.594	500,545.032	130.659	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-40(BM# 9)	1,749,894.067	500,741.504	128.209	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-41	1,749,187.254	500,405.422	123.111	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-42(BM# 10)	1,748,637.001	500,125.994	119.240	Mark is a 12mm dia. steel bar embedded at the center of a 15cm x 15cm x 1m concrete monument.
PSJ-43	1,748,017.556	499,835.397	114.190	White "X" mark on the pavement of Maharlika Highway with a nailed bottle crown at the center.
PSJ-3A	1,745,518.594	496,288.749	95.170	Mark is a 8mm dia. steel bar embedded at the center of a 20cm x 20cm x 1m concrete monument.
PSJ-3B	1,745,834.627	496,361.324	96.670	Mark is a 8mm dia. steel bar embedded at the center of a 20cm x 20cm x 1m concrete monument.

TABLE OF GPS STATION

POLYGON POINT	COORDINATES		ELEV.	REMARKS
	NORTHING	EASTING		
SJ-1	1,744,609.148	495,838.819	87.410	Located in Brgy. Tanawan. It is embedded beside an irrigation pump about 200m from the highway and about 80M from the foot of a transmission tower.
SJ-2	1,745,086.656	496,178.856	99.115	Located in Brgy. Abar. From Cabanatuan to San Jose take a left turn to a concrete road. It is 97m from the highway and 5m on the left from the road.
SJ-3	1,747,572.469	497,041.304	110.268	Located in Brgy. Sto. Nino. It is embedded on the ground in the middle of the rice field near a water pump.
SJ-4	1,747,803.872	497,305.904	110.649	Located in Brgy. Sto. Nino. It is embedded on the middle of the field near a small creek.
SJ-5	1,749,648.825	500,632.894	133.228	Located in Brgy. Kita-Kita. It is embedded in front of Oblate Apostles of the Two Hearts of Jesus and Mary Church beside the highway.
SJ-6	1,750,035.598	500,574.858	137.354	Located in Brgy. Kita-Kita. From the church take a left turn on a concrete road before the brgy. hall, 57m from the centerline. It is embedded in front of Venturina's residence 22m from the road centerline.

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS
INTERNATIONAL

YEC YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/2/02
CHECKED: 9/14/02
SUBMITTED: 9/16/02

DATE: 9/2/02

SIGNATURE: S. GOSE

PROJECT DIRECTOR: DANILO C. TRAJANO

CHIEF, HIGHWAYS DIVISION: JOSEFINA M. ALAGAR

DIC, DIRECTOR IV: GILBERTO S. REYES

UNDERSECRETARY: MANUEL M. BONDAN

SECRETARY: SIMEON A. DATUMANONG

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

SAN JOSE BYPASS

SCALE : 1:20,000
FULL SIZE A1

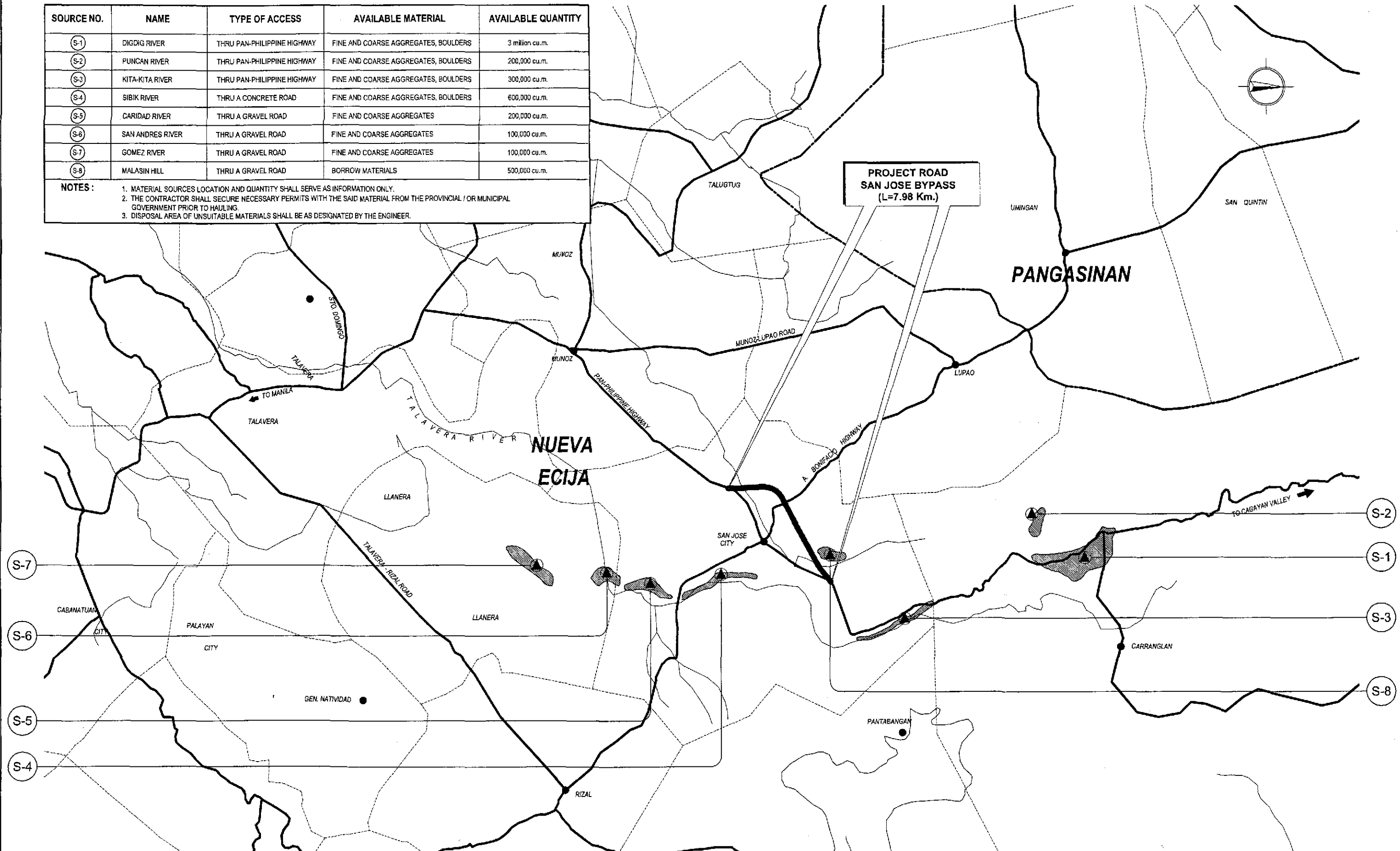
SHEET CONTENTS :
HORIZONTAL AND VERTICAL CONTROL MONUMENT

SHEET NO. : GS-07

SOURCE NO.	NAME	TYPE OF ACCESS	AVAILABLE MATERIAL	AVAILABLE QUANTITY
(S-1)	DIGDIG RIVER	THRU PAN-PHILIPPINE HIGHWAY	FINE AND COARSE AGGREGATES, BOULDERS	3 million cu.m.
(S-2)	PUNCAN RIVER	THRU PAN-PHILIPPINE HIGHWAY	FINE AND COARSE AGGREGATES, BOULDERS	200,000 cu.m.
(S-3)	KITA-KITA RIVER	THRU PAN-PHILIPPINE HIGHWAY	FINE AND COARSE AGGREGATES, BOULDERS	300,000 cu.m.
(S-4)	SIBIK RIVER	THRU A CONCRETE ROAD	FINE AND COARSE AGGREGATES, BOULDERS	600,000 cu.m.
(S-5)	CARIDAD RIVER	THRU A GRAVEL ROAD	FINE AND COARSE AGGREGATES	200,000 cu.m.
(S-6)	SAN ANDRES RIVER	THRU A GRAVEL ROAD	FINE AND COARSE AGGREGATES	100,000 cu.m.
(S-7)	GOMEZ RIVER	THRU A GRAVEL ROAD	FINE AND COARSE AGGREGATES	100,000 cu.m.
(S-8)	MALASIN HILL	THRU A GRAVEL ROAD	BORROW MATERIALS	500,000 cu.m.

NOTES:

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



A
 GS-08 SCALE AS SHOWN
LOCATION OF MATERIAL SOURCES

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : 1:80,000 FULL SIZE A1	SHEET CONTENTS : LOCATION OF MATERIAL SOURCES	SHEET NO. : GS-08
	CHECKED	DATE	SIGNATURE								
	SUBMITTED	DATE	SIGNATURE	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary				

R O A D W A Y

GENERAL NOTES

HIGHWAY / CIVIL AND DRAINAGE NOTES

1.0 DESIGN STANDARDS / SPECIFICATIONS

- 1.1 ALL GEOMETRIC DESIGN STANDARDS SHALL COMPLY WITH THE VALUES PRESCRIBED IN " A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS ", 1994 EDITION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAYS AND TRANSPORTATION OFFICIALS (AASHTO), AND " DESIGN GUIDELINES CRITERIA AND STANDARDS " ISSUED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
- 1.2 ALL WORKS SHALL COMPLY WITH THE DPWH STANDARD SPECIFICATIONS, 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 GEODESY SERVICES, INC. CORRESPONDING GPS STATIONS ARE AS FOLLOWS:

GPS STA.	NORTHING	EASTING	ELEVATIONS	DESCRIPTION
SJ-1	1744609.148	495838.819	97.410	LOCATED IN BGY. TANAWAN. IT IS EMBEDDED BESIDE AN IRRIGATION PUMP ABOUT 200m. FROM THE HIGHWAY AND ABOUT 80m. FROM THE FOOT OF A TRANSMISSION TOWER.
SJ-2	1745086.656	496178.856	99.115	LOCATED IN BGY. ABAR. FROM CABANATUAN TO SAN JOSE TAKE A LEFT TURN TO A CONCRETE ROAD. IT IS 97m. FROM THE HIGHWAY AND 5m. ON THE LEFT FROM THE ROAD.
SJ-3	1747572.469	497041.304	110.268	LOCATED IN BGY. STO. NIÑO. IT IS EMBEDDED ON THE GROUND IN THE MIDDLE OF THE RICEFIELD NEAR A WATER PUMP.
SJ-4	1747603.872	497305.904	110.649	LOCATED IN BGY. STO. NIÑO. IT IS EMBEDDED ON THE MIDDLE OF THE FIELD NEAR A SMALL CREEK.
SJ-5	1749648.826	500632.894	133.226	LOCATED IN BGY. KITA-KITA. IT IS EMBEDDED IN FRONT OF OBLATE APOSTLES OF THE TWO HEARTS OF JESUS AND MARY CHURCH BESIDE THE HIGHWAY.
SJ-6	1750035.698	500574.838	137.364	LOCATED IN BGY. KITA-KITA. FROM THE CHURCH TAKE A LEFT TURN ON A CONCRETE ROAD BEFORE THE BARANGAY HALL, 57m. FROM THE CENTERLINE. IT IS EMBEDDED IN FRONT OF VENTURINA'S RESIDENCE 22m. FROM THE ROAD CENTERLINE.

- 2.2 VERTICAL CONTROL IS REFERRED TO BM NJ-92 ESTABLISHED BY THE SJ'S WITH ELEVATION 105.688m. ABOVE MEAN SEA LEVEL. LOCATED IN THE PROVINCE OF NUEVA ECJA, TOWN OF SAN JOSE, ALONG THE NATIONAL HIGHWAY NO. 5, AND AT THE TOWN PLAZA. IT IS EMBEDDED IN A HOLE DRILLED ON TOP OF THE BASE OF RIZAL MONUMENT, ABOUT 45m. N OF CENTERLINE OF THE HIGHWAY, ABOUT 45m. W OF THE CATHOLIC CHURCH, ABOUT 50m. S OF THE ST. JOSEPH'S COLLEGE, 0.1m S OF THE N EDGE OF THE CONCRETE BASE, AND 0.72m. ABOVE THE GROUND. MARK IS PC ; GS NJ 92 1952

3.0 ALIGNMENT CONTROLS AND REFERENCES

- 3.1 PROJECT IMPLEMENTATION OF ALL BYPASSES SHALL BE DONE IN STAGE CONSTRUCTION. INITIAL STAGE CONSISTS OF CONSTRUCTING TWO LANE-TWO WAY HIGHWAY AS SHOWN IN THE TYPICAL SECTIONS, SERVICE FRONTAGE ROADS PROVIDED AT EACH SIDE OF THE HIGHWAY SHALL BE CONSTRUCTED WITH GRAVEL SURFACE ONLY. ULTIMATE STAGE SHALL BE THE CONCRETING OF TRICYCLE/BIKE FRONTAGE ROADS WITH OTHER ROADSIDE FACILITIES NOT YET INCLUDED DURING THE INITIAL STAGE.
- 3.2 THE FOLLOWING MAJOR POINTS CONTROLLED THE DESIGN OF HORIZONTAL AND VERTICAL ALIGNMENT:
- 3.2.1 ALONG SAN JOSE BYPASS
- SWAMPY AREA/IRRIGATION RESERVOIR (LEFT SIDE OF STA. 157+000.00 CENTERLINE)
 - PANLASIAN CREEK (LEFT SIDE OF STA. 157+900.00 CENTERLINE)
 - NATIONAL POWER CORPORATION TRANSMISSION TOWER (LEFT SIDE OF STA. 161+040.00)
 - SWAMPY AREA (RIGHT SIDE OF STA. 161+700.00 CENTERLINE)
 - IRRIGATION SLUICE GATE (LEFT SIDE OF STA. 162+250.00 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 STATION ALONG THE PAN-PHILIPPINE HIGHWAY WHICH IS KM.156 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 ELEVATIONS AND GRADES

- 6.1 ELEVATIONS AND GRADES AS DESCRIBED IN THE ROAD PROFILES ARE TOP OF FINISHED PAVEMENT ALONG THE CENTERLINE AND/OR REFERENCE LINE INDICATED IN THE TYPICAL ROADWAY SECTIONS.

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 ALONG TRICYCLE AND GRAVEL CROSS ROADS

- 8.1 GRAVEL MATERIALS ALONG THE TRICYCLE AND 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, UNBLOCKING AND / 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.

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	9/2/02	<i>[Signature]</i>	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		
	CHECKED	7/4/02	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	NOT TO SCALE	GENERAL NOTES HIGHWAY/ CIVIL AND DRAINAGE
SUBMITTED	7/6/02	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary	FULL SIZE A1	RG-01	

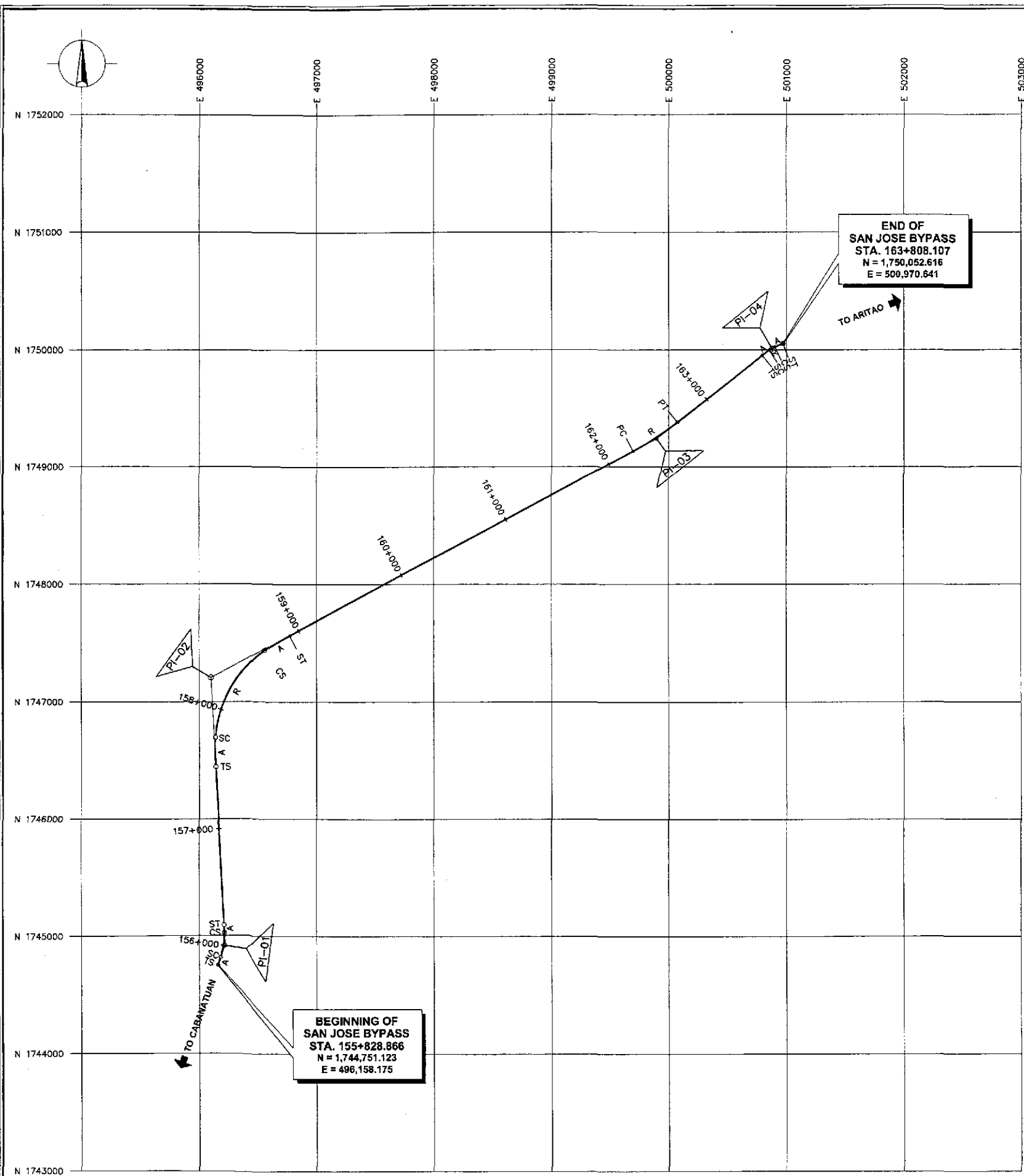


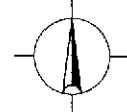
TABLE OF COORDINATES

P.I. No.	NORTHING	EASTING		NORTHING	EASTING
01	1,744,917.334	496,218.670	TS	1,744,751.123	496,158.175
			SC	1,744,816.470	496,180.748
			CS	1,745,024.881	496,211.943
			ST	1,745,093.972	496,209.493
02	1,747,204.691	496,099.830	TS	1,746,444.966	496,139.302
			SC	1,746,694.780	496,136.742
			ST	1,747,437.151	496,555.170
03	1,749,242.645	499,898.792	PC	1,749,136.385	499,700.712
			PT	1,749,382.535	500,074.739
04	1,750,017.577	500,873.471	TS	1,749,953.293	500,792.617
			SC	1,749,998.094	500,852.729
			CS	1,750,024.994	500,900.944
			ST	1,750,052.616	500,970.641

ELEMENTS OF CURVES

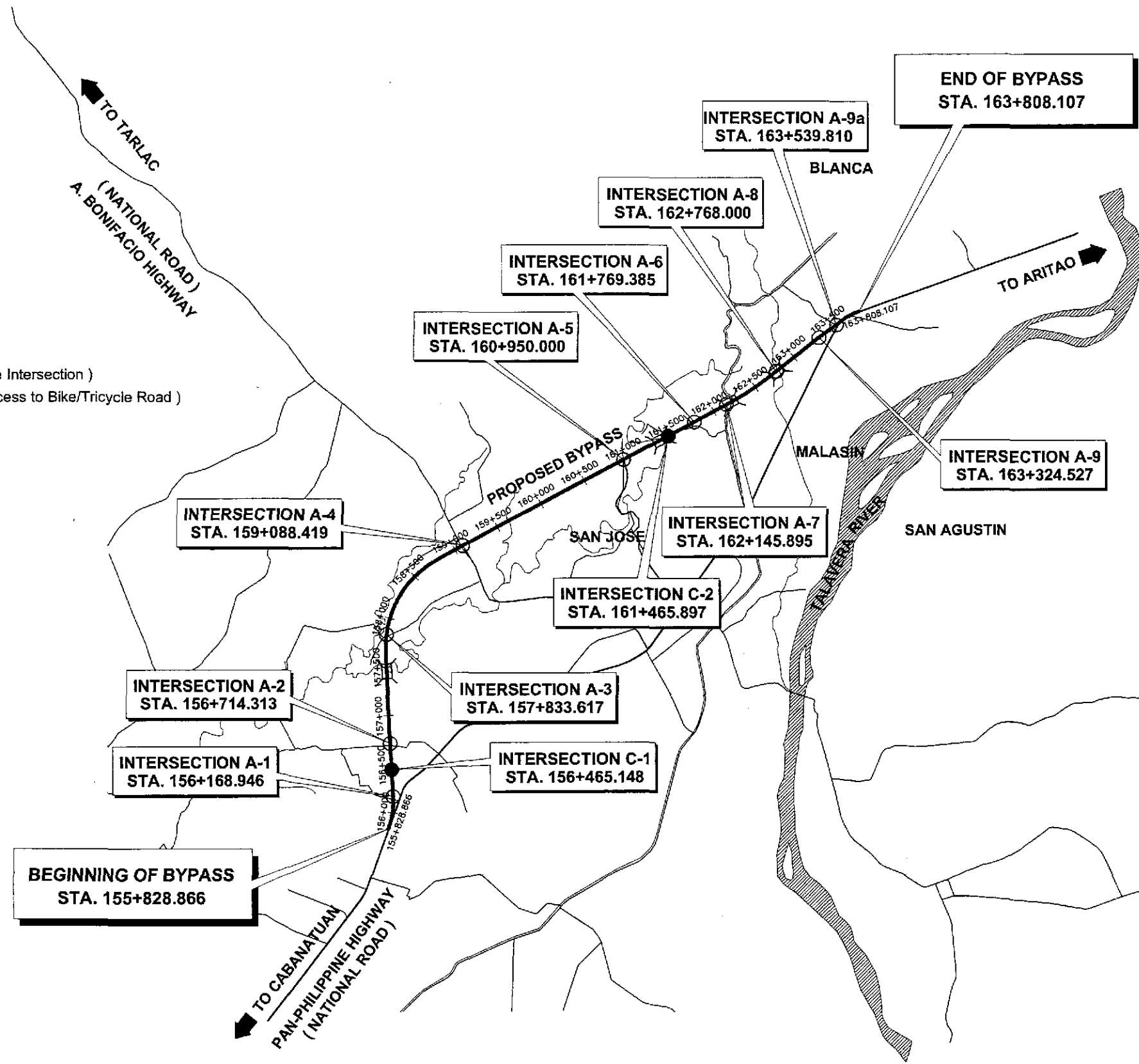
P.I. No.	STATION	DISTANCE	AZIMUTH	TANGENT	DEFLECTION	A	Ls	STATION
				Θ_s	ANGLE			
01	156+005.743	176.877	199°59'59"	176.877	22°58'26"	220.000	69.143	TS=155+828.866 SC=155+898.009
		2,290.443	177°01'33"	02°49'47"		700.000	211.537	CS=156+109.545 ST=156+178.688
		760.749	177°01'33"	02°49'47"		500.000	250.000	TS=157+531.504 SC=157+781.504
02	158+292.254	4,311.075	241°47'19"	07°09'43"	64°45'46"	1,000.000	880.324	CS=158+661.828 ST=158+911.828
		224.781	241°47'19"	07°09'43"		-	-	-
03	162+462.154	1,245.198	231°30'47"	-	10°16'32"	2,500.000	448.357	PC=162+237.372 PT=162+685.729
		103.295	231°30'47"	-		-	-	-
04	163+706.146	103.295	250°10'15"	05°22'17"	18°39'28"	173.205	75.000	TS=163+602.852 SC=163+677.852
		103.295	250°10'15"	05°22'17"		400.000	55.255	CS=163+733.107 ST=163+808.107

	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
		9/2/02	<i>[Signature]</i>	BUREAU OF DESIGN Submitted By: DANILLO C. TRAJANO Reviewed By: JOSEFINA M. ALACAR Recommended By: GILBERTO S. REYES Recommended By: MANUEL M. BONDAN Approved By: SIMEON A. DATUMANONG				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:20,000	ALIGNMENT TECHNICAL DESCRIPTION	RG-02
	CHECKED	9/4/02	<i>[Signature]</i>	OFFICE OF THE SECRETARY (See cover sheet for Signature/Approval)				SAN JOSE BYPASS	FULL SIZE A1		
	SUBMITTED	9/6/02	<i>[Signature]</i>	(See cover sheet for Signature/Approval)							



LEGEND:

- Intersection Type A (At Grade Intersection)
- Intersection Type C (Only Access to Bike/Tricycle Road)
- ⌘ Bridge



A LOCATION OF PROPOSED INTERSECTIONS ALONG BYPASS
 RG-03 SCALE 1:25,000

JICA
 JAPAN INTERNATIONAL COOPERATION AGENCY

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

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

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

SCALE :
 1:25,000
 FULL SIZE A1

SHEET CONTENTS :
 LOCATION OF INTERSECTIONS
 ALONG BYPASS

SHEET NO. :
RG-03

SCHEDULE OF TRAFFIC SIGNS (INITIAL STAGE)

STATION	REFERENCE NO.	REMARKS
ITEM 605 (1) WARNING SIGNS (TRIANGULAR 900mm)		
1.0) 156 + 058.000	W3-1	RIGHT SIDE OF MAIN BYPASS
2.0) 156 + 066.000	W8-3A	RIGHT SIDE OF PAN-PHIL HIGHWAY
3.0) 156 + 063.000	W4-2(R)	LEFT SIDE OF MAIN BYPASS
4.0) 156 + 290.000	W3-1	LEFT SIDE OF MAIN BYPASS
5.0) 156 + 596.000	W2-8	RIGHT SIDE OF MAIN BYPASS
6.0) 156 + 820.000	W2-8	LEFT SIDE OF MAIN BYPASS
7.0) 157 + 710.000	W2-8	RIGHT SIDE OF MAIN BYPASS
8.0) 157 + 965.000	W2-8	LEFT SIDE OF MAIN BYPASS
9.0) 158 + 970.000	W3-1	RIGHT SIDE OF MAIN BYPASS
10.0) 159 + 210.000	W3-1	LEFT SIDE OF MAIN BYPASS
11.0) 160 + 825.000	W2-8	RIGHT SIDE OF MAIN BYPASS
12.0) 161 + 075.000	W2-8	LEFT SIDE OF MAIN BYPASS
13.0) 161 + 645.000	W2-8	RIGHT SIDE OF MAIN BYPASS
14.0) 161 + 892.000	W3-1	LEFT SIDE OF MAIN BYPASS
15.0) 162 + 010.000	W3-1	RIGHT SIDE OF MAIN BYPASS
16.0) 162 + 265.000	W2-8	LEFT SIDE OF MAIN BYPASS
17.0) 162 + 556.000	W3-1	RIGHT SIDE OF MAIN BYPASS
18.0) 162 + 880.000	W3-1	LEFT SIDE OF MAIN BYPASS
19.0) 163 + 205.000	W3-1	RIGHT SIDE OF MAIN BYPASS
20.0) 163 + 550.000	W4-2	RIGHT SIDE OF MAIN BYPASS
21.0) 163 + 650.000	W2-8	LEFT SIDE OF MAIN BYPASS
22.0) 0 + 085.000	W2-10(L)	CENTER ISLAND OF A-9 ROAD CROSSING
23.0) 0 + 119.617	W8-3B	CROSS ROAD AT INTERSECTION A-9
TOTAL NO. OF WARNING SIGNS		23.00 pcs
ITEM 605 (2)a REGULATORY SIGNS (TRIANGULAR 1039mm)		
1.0) 0 + 983.00	R1-2	RIGHT SIDE INTERSECTION OF A-1
2.0) 156 + 710.00	R1-2	RIGHT SIDE MAIN BYPASS
3.0) 156 + 723.00	R1-2	LEFT SIDE MAIN BYPASS
4.0) 157 + 837.00	R1-2	RIGHT SIDE MAIN BYPASS
5.0) 157 + 837.00	R1-2	LEFT SIDE MAIN BYPASS
6.0) 159 + 072.00	R1-2	RIGHT SIDE MAIN BYPASS
7.0) 159 + 097.00	R1-2	LEFT SIDE MAIN BYPASS
8.0) 180 + 930.00	R1-2	RIGHT SIDE MAIN BYPASS
9.0) 180 + 970.00	R1-2	LEFT SIDE MAIN BYPASS
10.0) 161 + 755.00	R1-2	RIGHT SIDE MAIN BYPASS
11.0) 161 + 755.00	R1-2	LEFT SIDE MAIN BYPASS
12.0) 162 + 123.00	R1-2	RIGHT SIDE MAIN BYPASS
13.0) 162 + 166.00	R1-2	LEFT SIDE MAIN BYPASS
14.0) 162 + 750.00	R1-2	RIGHT SIDE MAIN BYPASS
15.0) 163 + 307.00	R1-2	RIGHT SIDE MAIN BYPASS
16.0) 163 + 720.00	R1-2	RIGHT SIDE MAIN BYPASS
TOTAL NO. OF REGULATORY SIGNS		16.00 pcs
ITEM 605 (2)b REGULATORY SIGNS (OCTAGONAL 600mm)		
1.0) 0 + 970.00	R1-1A	LEFT SIDE INTERSECTION A-2
2.0) 1 + 032.00	R1-1A	RIGHT SIDE INTERSECTION A-2
3.0) 0 + 975.00	R1-1A	LEFT SIDE INTERSECTION A-3
4.0) 1 + 035.00	R1-1A	RIGHT SIDE INTERSECTION A-3
5.0) 0 + 066.00	R1-1A	LEFT SIDE INTERSECTION A-5
6.0) 0 + 132.00	R1-1A	RIGHT SIDE INTERSECTION A-5
7.0) 0 + 965.00	R1-1A	LEFT SIDE INTERSECTION A-6
8.0) 1 + 030.00	R1-1A	RIGHT SIDE INTERSECTION A-6
9.0) 0 + 188.00	R1-1A	LEFT SIDE INTERSECTION A-7
10.0) 0 + 255.00	R1-1A	RIGHT SIDE INTERSECTION A-7
11.0) 0 + 974.00	R1-1A	LEFT SIDE INTERSECTION A-8
12.0) 1 + 025.00	R1-1A	RIGHT SIDE INTERSECTION A-8
13.0) 0 + 980.00	R1-1A	RIGHT SIDE INTERSECTION A-9a
TOTAL NO. OF REGULATORY SIGNS (Octagonal)		13.00 pcs
ITEM 605 (2)c REGULATORY SIGNS (RECTANGULAR 450x750mm)		
1.0) 156 + 043.00	R3-1PA	LEFT SIDE PAN-PHIL HIGHWAY
2.0) 156 + 066.00	R2-6A	LEFT SIDE PAN-PHIL HIGHWAY
3.0) 156 + 155.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
4.0) 1 + 000.00	R3-1PA	RIGHT SIDE INTERSECTION A-1
5.0) 0 + 030.00	R3-6P	RIGHT SIDE INTERSECTION A-1-2
6.0) 0 + 970.00	R3-6P	LEFT SIDE INTERSECTION A-2
7.0) 1 + 032.00	R3-6P	RIGHT SIDE INTERSECTION A-2

STATION	REFERENCE NO.	REMARKS
8.0) 0 + 975.00	R3-6P	LEFT SIDE INTERSECTION A-3
9.0) 1 + 035.00	R3-6P	RIGHT SIDE INTERSECTION A-3
10.0) 0 + 060.00	R3-6P	LEFT SIDE INTERSECTION A-4
11.0) 0 + 140.00	R3-6P	RIGHT SIDE INTERSECTION A-4
12.0) 0 + 066.00	R3-6P	LEFT SIDE INTERSECTION A-5
13.0) 0 + 132.00	R3-6P	RIGHT SIDE INTERSECTION A-5
14.0) 0 + 955.00	R3-6P	LEFT SIDE INTERSECTION A-6
15.0) 1 + 030.00	R3-6P	RIGHT SIDE INTERSECTION A-6
16.0) 0 + 188.00	R3-6P	LEFT SIDE INTERSECTION A-7
17.0) 0 + 255.00	R3-6P	RIGHT SIDE INTERSECTION A-7
18.0) 0 + 974.00	R3-6P	LEFT SIDE INTERSECTION A-8
19.0) 1 + 025.00	R3-6P	RIGHT SIDE INTERSECTION A-8
20.0) 163 + 675.00	R3-6P	LEFT SIDE MAIN BYPASS
21.0) 156 + 182.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
22.0) 156 + 696.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
23.0) 156 + 735.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
24.0) 157 + 811.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
25.0) 157 + 856.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
26.0) 159 + 072.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
27.0) 159 + 103.00	R2-7(L)	LEFT SIDE MAIN BYPASS
28.0) 159 + 103.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
29.0) 160 + 930.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
30.0) 160 + 970.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
31.0) 161 + 747.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
32.0) 161 + 792.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
33.0) 162 + 123.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
34.0) 163 + 520.00	R2-7(L)	CENTER ISLAND MAIN BYPASS
TOTAL NO. OF WARNING SIGNS		34.00 pcs
ITEM 605 (2)d REGULATORY SIGNS (CIRCULAR 600mm DIA.)		
1.0) 155 + 900.00	R2-3	CENTER ISLAND MAIN BYPASS
2.0) 156 + 170.00	R3-14A	RIGHT SIDE MAIN BYPASS
3.0) 156 + 153.00	R3-13	RIGHT SIDE PAN-PHIL HIGHWAY
4.0) 156 + 155.00	R3-15	CENTER ISLAND MAIN BYPASS
5.0) 0 + 983.00	R3-13A	LEFT SIDE INTERSECTION A-1
6.0) 156 + 182.00	R3-15	CENTER ISLAND MAIN BYPASS
7.0) 156 + 280.00	R2-3	CENTER ISLAND PAN-PHIL HIGHWAY
8.0) 156 + 292.00	R2-3	CENTER ISLAND MAIN BYPASS
9.0) 156 + 583.00	R2-3	CENTER ISLAND MAIN BYPASS
10.0) 156 + 696.00	R3-15	CENTER ISLAND MAIN BYPASS
11.0) 156 + 735.00	R3-15	CENTER ISLAND MAIN BYPASS
12.0) 156 + 846.00	R2-3	CENTER ISLAND MAIN BYPASS
13.0) 157 + 700.00	R2-3	CENTER ISLAND MAIN BYPASS
14.0) 157 + 811.00	R3-15	CENTER ISLAND MAIN BYPASS
15.0) 157 + 856.00	R3-15	CENTER ISLAND MAIN BYPASS
16.0) 157 + 967.00	R2-3	CENTER ISLAND MAIN BYPASS
17.0) 158 + 943.00	R2-3	CENTER ISLAND MAIN BYPASS
18.0) 159 + 072.00	R3-15	CENTER ISLAND MAIN BYPASS
19.0) 0 + 080.00	R3-15	CENTER ISLAND INTERSECTION A-4
20.0) 0 + 120.00	R3-15	CENTER ISLAND INTERSECTION A-4
21.0) 159 + 103.00	R3-15	CENTER ISLAND MAIN BYPASS
22.0) 159 + 233.00	R2-3	CENTER ISLAND MAIN BYPASS
23.0) 160 + 819.00	R2-3	CENTER ISLAND MAIN BYPASS
24.0) 160 + 930.00	R3-15	CENTER ISLAND MAIN BYPASS
25.0) 160 + 970.00	R3-15	CENTER ISLAND MAIN BYPASS
26.0) 161 + 081.00	R2-3	CENTER ISLAND MAIN BYPASS
27.0) 161 + 370.00	R6-4	RIGHT SIDE MAIN BYPASS
28.0) 161 + 440.00	R6-4	LEFT SIDE MAIN BYPASS
29.0) 161 + 635.00	R2-3	CENTER ISLAND MAIN BYPASS
30.0) 161 + 747.00	R3-15	CENTER ISLAND MAIN BYPASS
31.0) 161 + 792.00	R3-15	CENTER ISLAND MAIN BYPASS
32.0) 162 + 123.00	R3-15	CENTER ISLAND MAIN BYPASS
33.0) 162 + 166.00	R3-15	CENTER ISLAND MAIN BYPASS
34.0) 162 + 166.00	R3-13A	CENTER ISLAND MAIN BYPASS
35.0) 162 + 215.00	R6-4	RIGHT SIDE MAIN BYPASS
36.0) 162 + 255.00	R6-4	LEFT SIDE MAIN BYPASS
37.0) 162 + 757.00	R3-13A	RIGHT SIDE MAIN BYPASS
38.0) 162 + 757.00	R3-14A	RIGHT SIDE MAIN BYPASS
39.0) 0 + 993.00	R3-13A	LEFT SIDE INTERSECTION A-8

STATION	REFERENCE NO.	REMARKS
40.0) 0 + 993.00	R3-14A	LEFT SIDE INTERSECTION A-8
41.0) 1 + 010.00	R3-13A	RIGHT SIDE INTERSECTION A-8
42.0) 1 + 010.00	R3-14A	RIGHT SIDE INTERSECTION A-8
43.0) 162 + 763.00	R3-13A	LEFT SIDE MAIN BYPASS
44.0) 162 + 763.00	R3-14A	LEFT SIDE MAIN BYPASS
45.0) 162 + 845.00	R6-4	LEFT SIDE MAIN BYPASS
46.0) 163 + 311.00	R3-15	CENTER ISLAND MAIN BYPASS
47.0) 163 + 520.00	R3-15	CENTER ISLAND MAIN BYPASS
48.0) 163 + 546.00	R2-3	CENTER ISLAND MAIN BYPASS
49.0) 163 + 590.00	R2-3	CENTER ISLAND MAIN BYPASS
50.0) 0 + 027.00	R3-15	CENTER ISLAND INTERSECTION A-9
51.0) 0 + 185.00	R2-3	CENTER ISLAND INTERSECTION A-9
TOTAL NO. OF WARNING SIGNS		51.00 pcs
ITEM 605 (3) INFORMATORY SIGNS		
a. 2180 x 1380mm		
1.0) 155 + 840.00	GS-1	RIGHT SIDE OF PAN-PHIL HIGHWAY
2.0) 155 + 985.00	GS-2	RIGHT SIDE OF MAIN BYPASS
TOTAL INFORMATORY SIGNS (2180x1380)		2.00 pcs.
b. 2345 x 590mm		
1.0) 1 + 053.00	GS-3	LEFT SIDE OF A-1 ROAD CROSSING
TOTAL INFORMATORY SIGNS (2345x590mm)		1.00 pc.
c. 22472 x 1110mm		
1.0) 0 + 065.00	GS-4	RIGHT SIDE OF A-1 PAN-PHIL HIGHWAY
2.0) 0 + 050.00	GS-5	LEFT TURNING ISLAND A-4 RD. CROSSING
3.0) 0 + 150.00	GS-4	RIGHT TURNING ISLAND A-4 RD. CROSSING
4.0) 0 + 055.00	GS-4	RIGHT SIDE INTERSECTION A-9
5.0) 0 + 105.00	GS-4	RIGHT SIDE OF A-9 ROAD CROSSING
TOTAL INFORMATORY SIGNS (22472x1110)		5.00 pcs.
d. 2442 x 1345mm		
1.0) 163 + 515.00	GS-7	LEFT SIDE OF MAIN BYPASS
TOTAL INFORMATORY SIGNS (2442x1345)		1.00 pc.
e. 2190 x 1380mm		
1.0) 163 + 140.00	GS-6	RIGHT SIDE OF MAIN BYPASS
2.0) 163 + 196.00	GS-6	CENTER ISLAND OF MAIN BYPASS
TOTAL INFORMATORY SIGNS (2190x1380)		2.00 pcs.
ITEM 605 (4) SPECIAL INSTRUCTION SIGNS		
1.0) 0 + 030.00	S2-3	RIGHT SIDE INTERSECTION A-1-2
2.0) 0 + 060.00	S2-3	LEFT SIDE INTERSECTION A-4
3.0) 0 + 140.00	S2-3	RIGHT SIDE INTERSECTION A-4
4.0) 163 + 305.00	S2-6	RIGHT SIDE MAIN BYPASS
5.0) 0 + 119.62	S2-9	CROSS ROAD @ INTERSECTION A-9
TOTAL NO. OF SPECIAL SIGNS		5.00 pcs.

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : NOT TO SCALE FULL SIZE A1	SHEET CONTENTS : SCHEDULE OF TRAFFIC SIGNS (INITIAL STAGE)	SHEET NO. : RG-04
	CHECKED	9/2/02	<i>[Signature]</i>		Submitted By: PJHL - PMO	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary				
	SUBMITTED	9/4/02	<i>[Signature]</i> TEAM LEADER									

SCHEDULE OF PAVEMENT MARKINGS (INITIAL STAGE)

ITEM 612(1) - REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS

STATION		LENGTH (m)	REMARKS
FROM	TO		
1.0 CENTERLINE			
155+828.87	155+860.26	31.59	Centerline: 150mm X 3.0m @ 9m gap
156+334.09	156+541.35	207.26	Centerline: 150mm X 3.0m @ 4.5m gap
156+887.37	157+097.37	210.00	Centerline: 150mm X 3.0m @ 4.5m gap
157+097.37	157+448.92	351.55	Centerline: 150mm X 3.0m @ 9.0m gap
157+448.92	157+658.92	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
158+008.51	158+218.51	210.00	Centerline: 150mm X 3.0m @ 4.5m gap
158+218.00	158+690.59	472.59	Centerline: 150mm X 3.0m @ 9.0m gap
158+690.59	158+900.59	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
159+274.66	159+484.66	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
159+484.66	160+567.08	1,082.42	Centerline: 150mm X 3.0m @ 9.0m gap
160+567.08	160+787.08	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
161+122.92	161+332.92	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
161+332.92	161+595.40	262.48	Centerline: 150mm X 3.0m @ 9.0m gap
162+233.41	162+443.41	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
162+443.41	162+550.00	106.59	Centerline: 150mm X 3.0m @ 9.0m gap
162+550.00	162+756.00	206.00	Centerline: 150mm X 3.0m @ 9.0m gap
162+756.00	162+935.43	179.43	Centerline: 150mm X 3.0m @ 9.0m gap
162+935.43	163+145.43	210.00	Centerline: 150mm X 3.0m @ 9.0m gap
162+659.50	163+868.11	1,208.61	Centerline: 150mm X 3.0m @ 9.0m gap
156+046.00	156+160.00	114.00	A-1a : 150mm X 3.0m @ 4.50m gap
0+925.00	0+964.00	39.00	A-1 : 150mm X 3.0m @ 4.50m gap
0+964.00	0+984.00	20.00	A-1 : 150mm unbroken line
0+984.00	0+956.00	51.00	A-2 : 105mm X 3.0m @ 4.50m gap
0+956.00	0+976.00	20.00	A-2 : 150mm unbroken line
1+021.00	1+060.00	39.00	A-2 : 150mm X 3.0m @ 4.50m gap
1+060.00	1+080.00	20.00	A-2 : 150mm unbroken line
1+028.00	1+060.00	32.00	A-3 : 150mm X 3.0m @ 4.50m gap
1+060.00	1+080.00	20.00	A-3 : 150mm unbroken line
0+000.00	0+020.00	20.00	A-4 : 150mm X 3.0m @ 4.50m gap
1+180.00	0+200.00	20.00	A-4 : 150mm X 3.0m @ 4.50m gap
0+900.00	0+955.00	55.00	A-6 : 150mm X 3.0m @ 4.50m gap
0+955.00	0+975.00	20.00	A-6 : 150mm unbroken line
1+025.00	1+080.00	55.00	A-6 : 150mm X 3.0m @ 4.50m gap
1+080.00	1+100.00	20.00	A-6 : 150mm unbroken line
0+940.00	0+960.00	20.00	A-9a : 150mm X 3.0m @ 4.50m gap
0+960.00	0+980.00	20.00	A-9a : 150mm unbroken line
2.0 EDGE LINES			
2.1 LEFT SIDE, OUTER EDGE			
155+828.87	156+157.01	328.34	Main Bypass
156+157.01	0+974.27	19.40	Main Bypass to RT of A-1
0+925.00	0+974.27	49.27	Right of A-1
0+925.00	0+992.50	67.50	Left of A-1
156+174.23	156+698.06	523.83	Main Bypass
156+698.06	0+960.52	22.23	Main Bypass to RT of A-2
0+905.00	0+980.52	75.52	Right of A-2
0+905.00	0+977.31	72.31	Left of A-2
0+977.31	156+734.30	24.89	Left of A-2 to Main Bypass
156+734.30	157+814.94	1080.64	Main Bypass
157+814.94	0+981.62	16.58	Main Bypass to RT of A-3
0+973.52	0+981.62	8.10	RT of A-3
0+973.52	0+992.17	6.92	RT of A-3, RT of A-3a
0+925.00	0+992.17	67.17	RT of A-3a
0+925.00	0+993.54	68.54	LT of A-3a
0+993.54	0+962.78	5.98	LT of A-3a to RT of A-3
0+925.00	0+962.78	37.78	RT of A-3
0+925.00	0+985.56	60.56	LT of A-3
0+985.56	157+840.91	13.59	LT of A-3 to Main Bypass
157+840.91	159+046.96	1206.05	Main Bypass
159+046.96	0+064.83	45.74	Main Bypass to RT of A-4
0+000.00	0+064.83	64.83	RT of A-4
0+000.00	0+077.71	77.71	LT of A-4
0+077.71	159+107.89	22.30	LT of A-4 to Main Bypass
159+107.89	160+936.75	1828.86	Main Bypass
160+936.75	0+082.11	22.63	Main Bypass to RT of A-5
0+082.11	0+082.10	15.35	RT of A-5
0+082.10	0+076.19	7.74	LT of A-5
0+076.19	160+971.94	20.10	LT of A-5 to Main Bypass
160+971.94	161+747.98	778.04	Main Bypass
161+747.98	0+976.87	17.71	Main Bypass to RT of A-6
0+900.00	0+976.87	76.87	RT of A-6
0+900.00	0+983.13	83.13	LT of A-6
0+983.13	161+781.21	21.17	LT of A-6 to Main Bypass
161+781.21	162+128.05	346.84	Main Bypass
162+128.05	0+199.55	27.52	Main Bypass to RT of A-7
0+188.23	0+199.55	11.62	RT of A-7
0+188.23	0+195.74	7.51	LT of A-7

STATION		LENGTH (m)	REMARKS
FROM	TO		
0+195.74	162+168.40	26.42	LT of A-7 to Main Bypass
162+168.40	162+766.15	597.75	Main Bypass
0+973.65	0+997.24	23.59	RT of A-8
0+973.65	0+994.96	21.31	LT of A-8
162+772.51	163+518.28	745.77	Main Bypass
163+518.28	0+974.05	19.40	Main Bypass to RT of A-9a
0+870.00	0+974.05	104.05	RT of A-9a
0+870.00	0+977.28	107.28	LT of A-9a
0+977.28	163+553.12	24.04	LT of A-9a to Main Bypass
163+553.12	163+808.11	254.99	Main Bypass
2.2 LEFT SIDE, INNER EDGE			
155+890.00	156+154.00	264.00	Approach to A-1
156+174.00	156+292.00	118.00	Approach to A-1
156+583.00	156+699.00	116.00	Approach to A-2
156+729.00	156+846.00	117.00	Approach to A-2
157+701.00	157+817.00	116.00	Approach to A-3
157+841.00	157+967.00	126.00	Approach to A-3
158+943.00	159+078.00	135.00	Approach to A-4
159+097.00	159+233.00	136.00	Approach to A-4
160+819.00	160+936.00	117.00	Approach to A-5
160+964.00	161+081.00	117.00	Approach to A-5
161+635.00	161+753.00	118.00	Approach to A-6
161+786.00	162+129.00	343.00	Between A-6 to A-7
162+160.00	162+224.00	64.00	Approach to A-7
163+196.00	163+313.00	117.00	Approach to A-9
163+342.00	163+526.00	184.00	Between A-9 to C-2
163+545.00	163+577.00	32.00	Approach to C-2
2.3 RIGHT SIDE, OUTER EDGE			
155+988.54	156+155.65	187.11	Main Bypass
156+155.65	1+015.97	11.09	Main Bypass to RT of A-1
1+015.97	1+050.76	34.79	RT of A-1
1+050.76	156+152.07	16.97	RT of A-1 to LT of A-1a
156+175.94	1+053.43	14.61	LT of A-1a to LT of A-1
1+011.02	1+053.43	42.41	LT of A-1
1+011.02	0+009.82	6.88	LT of A-1 to RT of A-1-2
0+009.82	0+144.46	134.64	RT of A-1-2
0+030.36	0+144.46	114.10	LT of A-1-2
0+030.36	156+200.00	28.80	LT of A-1-2 to Main Bypass
156+200.00	156+694.32	494.32	Main Bypass
156+694.32	1+022.69	24.89	Main Bypass to RT of A-2
1+022.69	1+080.00	57.31	RT of A-2
1+019.48	1+080.00	60.52	LT of A-2
1+080.00	156+730.57	22.23	LT of A-2 to Main Bypass
156+730.57	157+822.04	1091.47	Main Bypass
157+822.04	1+016.59	20.87	Main Bypass to RT of A-3
1+016.59	1+080.00	63.41	RT of A-3
1+026.82	1+080.00	53.18	LT of A-3
1+026.82	157+858.99	21.25	LT of A-3 to Main Bypass
157+858.99	159+068.81	1209.82	Main Bypass
159+068.81	0+119.14	21.74	Main Bypass to RT of A-4
0+119.14	0+200.00	80.86	RT of A-4
0+138.85	0+200.00	61.15	LT of A-4
0+138.85	159+130.73	48.76	LT of A-4 to Main Bypass
159+130.73	160+924.14	1793.41	Main Bypass
160+924.14	0+125.48	20.10	Main Bypass to RT of A-5
0+125.48	0+133.22	7.74	RT of A-5
0+116.04	0+133.22	17.18	LT of A-5
0+116.04	0+160.97	22.63	LT of A-5 to Main Bypass
160+967.61	161+757.56	789.95	Main Bypass
161+757.56	1+016.87	21.17	Main Bypass to RT of A-6
1+016.87	1+100.00	83.13	RT of A-6
1+023.13	1+100.00	76.87	LT of A-6
1+023.13	161+790.79	17.71	LT of A-6 to Main Bypass
161+790.79	162+122.00	331.21	Main Bypass
162+122.78	0+247.06	26.82	Main Bypass to RT of A-7
0+247.06	0+254.23	7.17	RT of A-7
0+243.42	0+254.23	10.81	LT of A-7
0+243.43	162+162.86	26.23	LT of A-7 to Main Bypass
162+162.86	162+763.50	600.64	Main Bypass
1+005.04	1+024.59	19.55	RT of A-8
1+002.76	1+024.59	21.83	LT of A-8
161+769.85	163+304.26	534.41	Main Bypass
163+304.26	0+025.52	24.32	Main Bypass to RT of A-9
0+025.52	0+247.30	221.78	RT of A-9
0+054.24	0+247.30	193.05	LT of A-9
0+054.24	163+383.35	79.71	LT of A-9 to Main Bypass
155+890.00	156+154.00	264.00	Approach to A-1

STATION		LENGTH (m)	REMARKS
FROM	TO		
156+174.00	156+292.00	118.00	Approach to A-1
156+583.00	156+699.00	116.00	Approach to A-2
156+729.00	156+846.00	117.00	Approach to A-2
157+701.00	157+817.00	116.00	Approach to A-3
157+841.00	157+967.00	126.00	Approach to A-3
158+943.00	159+078.00	135.00	Approach to A-4
159+097.00	159+233.00	136.00	Approach to A-4
160+819.00	160+936.00	117.00	Approach to A-5
160+964.00	161+081.00	117.00	Approach to A-5
161+635.00	161+753.00	118.00	Approach to A-6
161+786.00	162+129.00	343.00	Between A-6 to A-7
162+160.00	162+224.00	64.00	Approach to A-7
163+196.00	163+313.00	117.00	Approach to A-9
163+342.00	163+526.00	184.00	Between A-9 to C-2
163+545.00	163+577.00	32.00	Approach to C-2
3.0 LANE LINES			
155+890.00	156+151.00	261.00	(LS) Lane Line: 150mm X 3.0m @ 4.5m gap
156+121.00	156+151.00	30.00	(RS) Lane Line 150mm Unbroken
156+182.00	156+222.00	40.00	(LS) Lane Line 150mm Unbroken
156+736.00	156+776.00	40.00	(LS) Lane Line 150mm Unbroken
157+770.00	157+810.00	40.00	(RS) Lane Line 150mm Unbroken
157+860.00	157+900.00	40.00	(LS) Lane Line 150mm Unbroken
159+042.00	159+078.00	36.00	(RS) Lane Line 150mm Unbroken
159+012.00	159+042.00	30.00	(RS) Lane Line: 150mm X 3.0m @ 4.5m gap
159+102.00	159+134.00	32.00	(LS) Lane Line 150mm Unbroken
159+134.00	159+164.00	30.00	(LS) Lane Line: 150mm X 3.0m @ 4.5m gap
160+882.00	160+922.00	40.00	(RS) Lane Line 150mm Unbroken
160+973.00	161+013.00	40.00	(LS) Lane Line 150mm Unbroken
161+707.00	161+747.00	40.00	(RS) Lane Line 150mm Unbroken
161+792.00	161+832.00	40.00	(LS) Lane Line 150mm Unbroken
162+082.00	162+122.00	40.00	(RS) Lane Line 150mm Unbroken
163+205.00	163+245.00	40.00	(RS) Lane Line 150mm X 3.0m @ 4.5m gap
163+245.00	163+275.00	30.00	(RS) Lane Line 150mm Unbroken
163+349.00	163+379.00	30.00	(LS) Lane Line 150mm Unbroken
163+372.00	163+522.00	150.00	(LS) Lane Line 150mm X 3.0m @ 4.5m gap</

SCHEDULE OF PLANTINGS

A. ROADSIDE PLANTING (HIGH TREE) LOCATION 3-B

STATION		LENGTH (m)	
FROM	TO	LEFT	RIGHT
155+828.00	156+400.00	520.00	300.00
156+400.00	157+100.00	650.00	625.00
157+100.00	157+800.00	640.00	640.00
157+800.00	158+500.00	640.00	640.00
158+500.00	159+200.00	640.00	640.00
159+200.00	159+900.00	700.00	700.00
159+900.00	160+600.00	700.00	700.00
160+600.00	161+300.00	640.00	640.00
161+300.00	162+000.00	580.00	570.00
162+000.00	162+700.00	580.00	600.00
162+700.00	163+400.00	610.00	525.00
163+400.00	163+808.11	150.00	180.00
TOTAL		7,030.00	6,760.00

B. OUTER SEPARATION PLANTING (LOW TREE) LOCATION 1-B

STATION		LENGTH (m)	
FROM	TO	LEFT	RIGHT
155+828.00	156+400.00	90.00	90.00
156+400.00	157+100.00	407.00	407.00
157+100.00	157+800.00	539.00	539.00
157+800.00	158+500.00	517.00	524.00
158+500.00	159+200.00	426.00	425.00
159+200.00	159+900.00	652.00	652.00
159+900.00	160+600.00	700.00	700.00
160+600.00	161+300.00	402.00	402.00
161+300.00	162+000.00	272.00	272.00
162+000.00	162+700.00	488.00	498.00
162+700.00	163+400.00	372.00	377.00
163+400.00	163+808.11	0.00	0.00
TOTAL		4,865.00	4,887.00



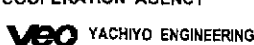
C. OUTER SEPARATION PLANTING (2-A) (LOCATION 1-B)

STATION		LENGTH (m)	LOCATION
FROM	TO		
156+190.75	156+229.25	38.50	LEFT SIDE
156+192.00	156+229.25	37.25	RIGHT SIDE
156+230.75	156+269.25	77.00	BOTH SIDES
156+270.75	156+309.25	77.00	BOTH SIDES
156+570.75	156+609.25	77.00	BOTH SIDES
156+610.75	156+649.25	77.00	BOTH SIDES
156+650.75	156+689.25	77.00	BOTH SIDES
156+690.75	156+693.00	4.50	BOTH SIDES
156+699.00	156+705.00	6.00	RIGHT SIDE
156+699.00	156+708.00	9.00	LEFT SIDE
156+720.00	156+729.25	9.25	RIGHT SIDE
156+724.00	156+729.25	5.25	LEFT SIDE
156+730.75	156+769.25	77.00	BOTH SIDES
156+770.75	156+809.25	77.00	BOTH SIDES
156+810.75	156+849.25	77.00	BOTH SIDES
156+850.75	156+861.00	20.50	BOTH SIDES
157+685.00	157+689.25	8.50	BOTH SIDES
157+690.75	157+729.25	77.00	BOTH SIDES
157+730.75	157+759.25	28.50	RIGHT SIDE
157+730.75	157+769.25	38.50	LEFT SIDE
157+760.75	157+789.25	28.50	RIGHT SIDE
157+770.75	157+809.25	38.50	LEFT SIDE
157+790.75	157+810.00	19.25	RIGHT SIDE
157+816.00	157+823.00	7.00	LEFT SIDE
157+816.00	157+834.00	18.00	RIGHT SIDE
157+832.00	157+849.25	17.25	LEFT SIDE
157+850.75	157+888.25	37.50	LEFT SIDE
157+852.00	157+859.25	7.25	RIGHT SIDE
157+860.75	157+889.25	28.50	RIGHT SIDE
157+889.75	157+929.25	39.50	LEFT SIDE
157+890.75	157+919.25	28.50	RIGHT SIDE
157+920.75	157+949.25	28.50	RIGHT SIDE
157+930.75	157+969.25	38.50	LEFT SIDE
157+950.75	157+976.00	19.25	RIGHT SIDE
157+970.75	157+983.00	12.25	LEFT SIDE

STATION		LENGTH (m)	LOCATION
FROM	TO		
158+926.00	158+929.25	6.50	BOTH SIDES
158+930.75	158+969.25	77.00	BOTH SIDES
158+970.75	159+009.25	77.00	BOTH SIDES
159+010.75	159+039.25	57.00	BOTH SIDES
159+040.75	159+056.00	15.25	LEFT SIDE
159+040.75	159+070.00	29.25	RIGHT SIDE
159+076.00	159+082.00	6.00	RIGHT SIDE
159+110.75	159+139.25	28.50	LEFT SIDE
159+121.00	159+139.25	18.25	RIGHT SIDE
159+140.75	159+169.25	57.00	BOTH SIDES
159+170.75	159+209.25	77.00	BOTH SIDES
159+210.75	159+229.25	37.00	BOTH SIDES
159+230.75	159+248.00	34.50	BOTH SIDES
160+798.00	160+829.25	62.50	BOTH SIDES
160+830.75	160+869.25	77.00	BOTH SIDES
160+870.75	160+899.25	57.00	BOTH SIDES
160+900.75	160+929.25	28.50	LEFT SIDE
160+900.75	160+933.00	32.25	RIGHT SIDE
160+930.75	160+949.00	18.25	LEFT SIDE
160+955.00	160+967.00	12.00	RIGHT SIDE
160+963.00	160+967.00	4.00	LEFT SIDE
160+973.00	160+999.25	52.50	BOTH SIDES
161+000.75	161+029.25	57.00	BOTH SIDES
161+030.75	161+059.25	57.00	BOTH SIDES
161+060.75	161+096.00	70.50	BOTH SIDES
161+621.00	161+629.25	16.50	BOTH SIDES
161+630.75	161+669.25	77.00	BOTH SIDES
161+670.75	161+709.25	77.00	BOTH SIDES
161+710.75	161+749.25	77.00	BOTH SIDES
161+750.75	161+756.00	5.25	LEFT SIDE
161+750.75	161+770.00	19.25	RIGHT SIDE
161+769.00	161+786.00	17.00	LEFT SIDE
161+782.00	161+786.00	4.00	RIGHT SIDE
161+792.00	161+829.25	74.50	BOTH SIDES
161+830.75	161+869.25	77.00	BOTH SIDES
161+870.75	161+909.25	77.00	BOTH SIDES
161+910.75	162+029.25	237.00	BOTH SIDES
162+030.75	162+059.25	57.00	BOTH SIDES
162+060.75	162+089.25	57.00	BOTH SIDES
162+090.75	162+119.25	28.50	LEFT SIDE
162+090.75	162+120.00	29.25	RIGHT SIDE
162+120.75	162+122.00	1.25	LEFT SIDE
162+128.00	162+132.00	4.00	RIGHT SIDE
162+128.00	162+139.00	11.00	LEFT SIDE
163+185.00	163+189.25	24.25	LEFT SIDE
163+186.00	163+189.25	23.25	RIGHT SIDE
163+190.75	163+219.25	57.00	BOTH SIDES
163+220.75	163+249.25	57.00	BOTH SIDES
163+250.75	163+289.25	77.00	BOTH SIDES
163+290.75	163+304.00	13.25	LEFT SIDE
163+290.75	163+320.00	29.25	RIGHT SIDE

D. CENTER MEDIAN PLANTINGS (LOCATION 1-A)

STATION		LENGTH (m.)					
FROM	TO	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
155+828.00	156+400.00	5	208	0	9	0	142
156+400.00	157+100.00	5	95	0	16	0	114
157+100.00	157+800.00	0	38	0	7	0	58
157+800.00	158+500.00	5	59	0	6	0	57
158+500.00	159+200.00	5	136	0	16	0	77
159+200.00	159+900.00	0	0	0	0	0	37
159+900.00	160+600.00	0	0	0	0	0	0
160+600.00	161+300.00	7	95	0	16	0	116
161+300.00	162+000.00	5	96	0	16	0	210
162+000.00	162+700.00	5	62	0	8	42	65
162+700.00	163+400.00	5	52	0	0	44	70
163+400.00	163+808.11	0	45	30	45	35	17
TOTAL		42	856	30	141	121	963

 JAPAN INTERNATIONAL COOPERATION AGENCY  KATAHIRA & ENGINEERS INTERNATIONAL  YEO YACHIYO ENGINEERING CO., LTD.	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/2/02	S. LUNA	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)		NOT TO SCALE	SCHEDULE OF PLANTINGS (INITIAL STAGE)	RG-06
	SUBMITTED	9/6/02	Mr. Rando	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	FULL SIZE A1			

SCHEDULE OF PAVEMENT SURFACE AND UNSUITABLE EXCAVATION (INITIAL STAGE)

SCHEDULE OF PAVEMENT SURFACE					
STATION LIMIT		PCCP 250mm THK	PCCP 180mm THK	GRAVEL SURFACE	REMARKS
FROM	TO				
155+828.87	156+327.96	5,378.00	1,003.84	106.54	A-1 Intersection
156+327.96	156+547.49	1,846.55	878.12	163.09	Typical
156+547.49	156+881.23	3,543.86	1,282.48	331.80	A-2 Intersection
156+881.23	157+449.53	4,262.25	2,273.00	727.70	Typical
157+449.53	157+500.13	0.00	0.00	0.00	Bridge
157+500.13	157+665.05	1,236.90	659.68	199.99	Typical
157+665.05	158+002.39	3,509.50	1,305.50	419.20	A-3 Intersection
158+002.39	158+906.73	6,782.55	3,617.36	1,168.41	Typical
158+906.73	159+268.52	4,933.18	1,075.14	441.46	A-4 Intersection
159+268.52	160+783.22	11,360.25	6,058.80	1,956.99	Typical
160+783.22	161+116.78	3,629.69	1,263.94	421.76	A-5 Intersection
161+116.78	161+369.13	1,892.63	1,009.40	319.49	Typical
161+369.13	161+419.73	0.00	727.24	0.00	Bridge
161+419.73	161+601.54	1,363.57	1,051.00	221.81	Typical
161+601.54	162+218.73	6,329.74	1,292.18	784.03	A-7 & A-8 Intersection
162+218.73	162+269.37	195.04	0.00	0.00	Bridge
162+269.37	162+781.23	4,108.36	2,022.24	627.09	Typical
162+781.23	162+844.55	0.00	0.00	0.00	Bridge
162+844.55	163+145.13	2,254.35	1,202.32	375.03	Typical
163+145.13	163+808.11	8,935.54	425.04	212.15	A-9 Intersection
TOTAL		71,361.96	27,147.28	8,456.54	

SCHEDULE OF UNSUITABLE EXCAVATION					
STATION		THICKNESS (m)	STATION		THICKNESS (m)
FROM	TO		FROM	TO	
156+000.00	156+200.00	0.20	159+700.00	159+900.00	0.50
156+200.00	156+400.00	0.35	159+900.00	160+100.00	0.50
156+400.00	156+600.00	0.35	160+100.00	160+300.00	0.30
156+600.00	156+800.00	0.25	160+300.00	160+500.00	0.30
156+800.00	157+000.00	0.30	160+500.00	160+700.00	0.35
157+000.00	157+200.00	0.30	160+700.00	160+900.00	0.30
157+200.00	157+400.00	0.30	160+900.00	161+100.00	0.45
157+400.00	157+500.00	0.25	161+100.00	161+300.00	0.35
157+500.00	157+700.00	0.60	161+300.00	161+500.00	0.20
157+700.00	157+900.00	0.55	161+500.00	161+700.00	0.25
157+900.00	158+100.00	0.40	161+700.00	161+900.00	0.25
158+100.00	158+300.00	0.30	161+900.00	162+100.00	0.20
158+300.00	158+400.00	0.40	162+100.00	162+300.00	0.20
158+400.00	158+500.00	0.40	162+300.00	162+500.00	0.30
158+500.00	158+700.00	0.70	162+500.00	162+700.00	0.30
158+700.00	158+900.00	0.40	162+700.00	162+900.00	0.30
158+900.00	159+100.00	0.40	162+900.00	163+100.00	0.30
159+100.00	159+300.00	0.30	163+100.00	163+300.00	0.30
159+300.00	159+500.00	0.45	163+300.00	163+500.00	0.80
159+500.00	159+700.00	0.60	163+500.00	163+750.00	0.80

JICA JAPAN INTERNATIONAL COOPERATION AGENCY	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	7/2/02		<i>[Signature]</i>	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 PAVEMENT SURFACE AND UNSUITABLE EXCAVATION (INITIAL STAGE)	RG-07
	CHECKED	7/4/02		<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	Approved By:	FULL SIZE A1
SUBMITTED	7/6/02	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary		

SCHEDULE OF ROAD RIGHT-OF-WAY MARKERS

POINT NO.	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 CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING
BYPASS - LEFT SIDE															BYPASS - RIGHT SIDE									
1L	155+860.000	-10.000	1,744,783.741	496,159.295	54L	157+660.000	-21.000	1,746,572.952	496,113.051	108L	159+880.000	-21.000	1,748,040.501	497,613.445	162L	162+144.307	-35.269	1,749,123.470	499,602.029	1R	156+058.960	17.500	1,744,973.115	496,227.701
2L	155+880.000	-12.000	1,744,803.126	496,163.847	55L	157+740.000	-21.000	1,746,654.073	496,113.536	109L	160+040.000	-21.000	1,748,116.137	497,754.439	163L	162+162.872	-28.618	1,749,126.386	499,621.533	2R	156+154.577	17.500	1,745,070.694	496,228.177
3L	155+900.000	-13.000	1,744,822.175	496,168.901	56L	157+760.000	-22.000	1,746,674.473	496,113.426	110L	160+060.000	-20.000	1,748,124.710	497,772.536	164L	162+180.000	-22.000	1,749,128.651	499,639.755	3R	156+169.406	20.005	1,745,085.723	496,229.951
4L	155+920.000	-13.000	1,744,841.025	496,174.374	57L	157+780.002	-22.000	1,746,694.855	496,114.689	111L	160+290.000	-20.000	1,748,233.437	497,975.214	165L	162+200.000	-21.000	1,749,137.224	499,657.852	4R	156+171.101	20.502	1,745,087.447	496,230.360
5L	155+940.000	-20.000	1,744,861.685	496,172.505	58L	157+808.115	-24.004	1,746,723.680	496,115.153	112L	160+520.000	-20.000	1,748,342.164	498,177.892	166L	162+223.570	-21.000	1,749,148.366	499,678.622	5R	156+182.815	49.005	1,745,100.636	496,258.218
6L	155+960.000	-20.000	1,744,880.621	496,176.847	59L	157+808.347	-28.735	1,746,724.388	496,110.469	113L	160+540.000	-19.000	1,748,350.737	498,195.989	167L	162+280.000	-26.000	1,749,179.554	499,725.423	6R	156+198.951	72.321	1,745,117.960	496,280.665
7L	155+980.000	-15.000	1,744,898.767	496,185.564	60L	157+841.091	-29.610	1,746,757.960	496,113.511	114L	160+660.000	-19.000	1,748,407.464	498,301.734	168L	162+300.000	-25.000	1,749,188.406	499,743.157	7R	156+200.000	20.000	1,745,116.293	496,228.360
8L	156+070.000	-15.000	1,744,986.163	496,195.947	61L	157+843.001	-25.000	1,746,759.290	496,118.341	115L	160+680.000	-20.000	1,748,417.800	498,318.886	169L	162+320.000	-24.000	1,749,197.404	499,760.828	8R	156+202.314	48.632	1,745,120.090	496,256.833
9L	156+155.000	-15.000	1,745,069.622	496,195.692	62L	157+860.000	-22.000	1,746,776.083	496,123.791	116L	160+820.000	-20.000	1,748,483.982	498,442.255	170L	162+340.000	-23.000	1,749,206.547	499,778.432	9R	156+211.812	64.202	1,745,130.383	496,271.890
10L	156+168.893	-26.827	1,745,082.825	496,183.205	63L	157+880.000	-24.000	1,746,796.598	496,125.109	117L	160+840.000	-21.000	1,748,494.317	498,459.406	171L	162+360.000	-22.000	1,749,215.834	499,795.970	10R	156+240.612	86.712	1,745,160.312	496,292.875
11L	156+188.759	-21.508	1,745,102.914	496,187.491	64L	157+900.000	-26.000	1,746,817.121	496,126.844	118L	160+860.000	-20.000	1,748,502.891	498,477.503	172L	162+400.000	-22.000	1,749,236.538	499,829.782	11R	156+258.680	99.185	1,745,179.002	496,304.374
12L	156+200.000	-20.000	1,745,114.218	496,188.414	65L	157+920.000	-24.000	1,746,836.805	496,132.908	119L	160+900.000	-20.000	1,748,521.800	498,512.752	173L	162+440.000	-20.000	1,749,256.101	499,864.344	12R	156+463.924	20.000	1,745,379.862	496,214.666
13L	156+220.000	-21.000	1,745,134.139	496,186.377	66L	157+960.000	-24.000	1,746,876.659	496,142.309	120L	160+920.000	-21.000	1,748,532.135	498,529.903	174L	162+580.000	-20.000	1,749,334.672	499,978.839	13R	156+484.844	20.000	1,745,400.753	496,213.581
14L	156+240.000	-22.000	1,745,154.060	496,184.341	67L	157+980.000	-25.000	1,746,896.720	496,146.642	121L	160+940.000	-19.000	1,748,539.828	498,548.473	175L	162+600.000	-19.000	1,749,345.612	499,995.425	14R	156+620.000	20.000	1,745,535.727	496,206.568
15L	156+300.000	-22.000	1,745,213.979	496,181.228	68L	158+000.000	-22.000	1,746,915.550	496,155.211	122L	160+958.101	-34.866	1,748,562.366	498,556.923	176L	162+620.000	-19.000	1,749,357.488	500,011.328	15R	156+640.000	21.000	1,745,555.752	496,206.529
16L	156+320.000	-21.000	1,745,234.004	496,181.189	69L	158+020.000	-22.000	1,746,935.067	496,161.283	123L	160+971.676	-28.485	1,748,563.160	498,571.902	177L	162+640.000	-20.000	1,749,370.285	500,026.528	16R	156+680.000	21.000	1,745,595.698	496,204.454
17L	156+340.000	-20.000	1,745,254.029	496,181.150	70L	158+040.000	-21.000	1,746,954.134	496,168.689	124L	160+980.000	-20.000	1,748,569.618	498,583.249	178L	162+660.000	-19.000	1,749,381.619	500,042.847	17R	156+691.817	22.182	1,745,607.561	496,205.021
18L	156+400.000	-20.000	1,745,313.948	496,178.037	71L	158+140.000	-21.000	1,747,048.851	496,206.694	125L	161+100.000	-20.000	1,748,616.345	498,688.994	179L	162+680.000	-20.000	1,749,394.658	500,057.840	18R	156+700.017	30.345	1,745,616.173	496,212.748
19L	156+420.000	-21.000	1,745,333.870	496,176.000	72L	158+160.000	-20.000	1,747,066.875	496,216.321	126L	161+120.000	-19.000	1,748,624.918	498,707.091	180L	162+700.000	-19.000	1,749,406.288	500,074.085	19R	156+721.425	31.677	1,745,637.622	496,212.967
20L	156+560.000	-21.000	1,745,473.681	496,168.737	73L	158+220.000	-20.000	1,747,121.106	496,244.664	127L	161+180.000	-19.000	1,748,653.282	498,759.963	181L	162+740.000	-19.000	1,749,431.181	500,105.395	20R	156+725.000	25.000	1,745,640.845	496,206.114
21L	156+580.000	-22.000	1,745,493.602	496,166.700	74L	158+240.000	-21.000	1,747,139.300	496,253.966	128L	161+200.000	-20.000	1,748,663.617	498,777.115	182L	162+760.000	-20.000	1,749,444.411	500,120.428	21R	156+740.000	20.000	1,745,655.566	496,200.342
22L	156+680.000	-22.000	1,745,593.467	496,161.512	75L	158+280.000	-21.000	1,747,174.081	496,275.368	129L	161+220.000	-21.000	1,748,673.953	498,794.286	183L	162+787.765	-28.021	1,749,455.522	500,121.514	22R	156+960.000	21.000	1,745,875.321	496,189.926
23L	156+700.000	-23.000	1,745,613.389	496,159.475	76L	158+300.000	-22.000	1,747,191.701	496,285.754	130L	161+300.000	-21.000	1,748,711.771	498,864.763	184L	162+783.663	-28.454	1,749,465.755	500,133.689	23R	156+980.000	22.000	1,745,895.346	496,189.887
24L	156+707.162	-31.852	1,745,620.082	496,150.264	77L	158+450.000	-22.000	1,747,312.072	496,380.451	131L	161+320.000	-24.000	1,748,723.869	498,880.969	185L	162+792.959	-21.564	1,749,466.147	500,145.253	24R	157+040.000	22.000	1,745,955.265	496,186.774
25L	156+726.954	-30.599	1,745,639.912	496,150.488	78L	158+600.000	-22.000	1,747,416.940	496,492.074	132L	161+340.000	-26.000	1,748,735.086	498,897.648	186L	162+840.000	-21.000	1,749,494.981	500,182.425	25R	157+060.000	21.000	1,745,975.187	496,184.737
26L	156+730.000	-25.000	1,745,643.244	496,155.921	79L	158+660.000	-21.000	1,747,453.192	496,541.492	133L	161+360.000	-28.000	1,748,746.303	498,914.327	187L	162+860.000	-22.000	1,749,508.210	500,197.458	26R	157+180.000	21.000	1,746,095.025	496,178.511
27L	156+740.000	-21.000	1,745,653.438	496,159.397	80L	158+680.000	-20.000	1,747,464.047	496,558.789	134L	161+374.000	-27.000	1,748,752.040	498,927.136	188L	162+880.000	-22.000	1,749,520.657	500,213.113	27R	157+200.000	20.000	1,746,114.946	496,176.475
28L	156+980.000	-21.000	1,745,873.142	496,147.982	81L	158+780.000	-20.000	1,747,517.945	496,644.716	135L	161+420.000	-25.000	1,748,772.023	498,968.617	189L	162+900.000	-21.000	1,749,532.321	500,229.390	28R	157+260.000	20.000	1,746,174.855	496,173.362
29L	156+980.000	-22.000	1,745,893.063	496,145.946	82L	158+880.000	-20.000	1,747,566.856	496,732.682	136L	161+440.000	-25.000	1,748,781.477	498,986.242	190L	162+920.000	-20.000	1,749,543.985	500,245.668	29R	157+280.000	21.000	1,746,194.890	496,173.323
30L	157+020.000	-22.000	1,745,933.009	496,143.871	83L	158+900.000	-21.000	1,747,577.227	496,749.855	137L	161+455.371	-23.000	1,748,786.981	499,000.732	191L	163+140.000	-20.000	1,749,680.899	500,417.873	30R	157+300.000	22.000	1,746,214.915	496,173.284
31L	157+060.000	-23.000	1,745,972.904	496,140.797	84L	158+940.000	-21.000	1,747,596.139	496,785.108	138L	161+474.359	-23.099	1,748,796.045	499,017.418	192L	163+160.000	-21.000	1,749,694.128	500,432.905	31R	157+340.000	22.000	1,746,254.861	496,171.208
32L	157+080.000	-22.000	1,745,992.929	496,140.758	85L	158+960.000	-22.000	1,747,606.475	496,802.259	139L	161+500.000	-23.000	1,748,808.079	499,040.060	193L	163+280.000	-21.000	1,749,768.808	500,526.835	32R	157+360.000	23.000	1,746,274.886	496,171.169
33L	157+100.000	-21.000	1,746,012.954	496,140.719	86L	158+980.000	-21.000	1,747,615.048	496,820.356	140L	161+520.000	-22.000	1,748,816.852	499,058.156	194L	163+300.000	-20.000	1,749,780.472	500,543.113	33R	157+380.000	24.000	1,746,294.911	496,171.130
34L	157+180.000	-21.000	1,746,092.846	496,136.568	87L	159+020.000	-21.000	1,747,633.957	496,855.605	141L	161+540.000	-21.000	1,748,825.225	499,076.253	195L	163+320.000	-20.000	1,749,792.919	500,558.768	34R	157+400.000	25.000	1,746,314.936	496,171.091
35L	157+200.000	-20.000	1,74																					

SCHEDULE OF ROAD RIGHT-OF-WAY MARKERS

POINT NO.	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 CENTERLINE	NORTHING	EASTING	POINT NO.	STATION	OFFSET FROM CENTERLINE	NORTHING	EASTING
54R	158+000.000	20.000	1,746,903.476	496,195.439	108R	160+947.919	33.814	1,748,497.031	498,580.418	162R	162+880.000	23.000	1,749,485.433	500,241.118	INTERSECTION A-2					C2-1R	0+940.000	5.000	1,748,821.126	498,970.228
55R	158+100.000	20.000	1,746,995.776	496,228.253	109R	160+960.000	22.000	1,748,513.152	498,585.479	163R	162+900.000	22.000	1,749,498.662	500,256.151	A2-1L	0+905.000	-5.000	1,745,634.276	496,086.455	C2-2R	0+960.000	10.000	1,748,804.265	498,982.111
56R	158+120.000	21.000	1,747,013.416	496,236.831	110R	161+060.000	22.000	1,748,560.425	498,573.600	164R	162+920.000	22.000	1,749,511.109	500,271.806	A2-2L	0+930.000	-7.500	1,745,638.460	496,111.429	INTERSECTION A-6				
57R	158+200.000	21.000	1,747,083.866	496,271.000	111R	161+080.000	21.000	1,748,570.761	498,590.751	165R	162+940.000	21.000	1,749,524.339	500,286.839	A2-3L	1+080.000	-7.000	1,745,632.997	496,242.421	A6-1L	0+900.000	-5.000	1,748,977.452	499,210.448
58R	158+400.000	21.000	1,747,183.863	496,332.527	112R	161+100.000	21.000	1,748,580.215	498,708.376	166R	163+140.000	21.000	1,749,648.806	500,443.389	A2-4L	1+080.000	-5.000	1,745,628.719	496,262.061	A6-2L	0+920.000	-7.500	1,748,966.830	499,227.577
59R	158+420.000	24.000	1,747,259.117	496,394.921	113R	161+200.000	21.000	1,748,627.488	498,796.498	167R	163+160.000	22.000	1,749,660.470	500,459.666	A2-1R	0+905.000	5.000	1,745,624.300	496,087.147	A6-3L	1+080.000	-7.500	1,748,880.557	499,360.277
60R	158+460.000	24.000	1,747,288.165	496,421.000	114R	161+280.000	21.000	1,748,665.306	498,886.993	168R	163+180.000	23.000	1,749,672.134	500,475.943	A2-2R	0+930.000	7.500	1,745,623.473	496,112.060	A6-4L	1+100.000	-5.000	1,748,869.093	499,376.853
61R	158+480.000	23.000	1,747,302.990	496,433.753	115R	161+300.000	23.000	1,748,672.998	498,885.563	169R	163+200.000	25.000	1,749,683.015	500,492.843	A2-3R	1+080.000	5.000	1,745,618.785	496,260.915	A6-5L	1+100.000	-5.000	1,748,869.093	499,376.853
62R	158+500.000	22.000	1,747,317.570	496,446.814	116R	161+320.000	25.000	1,748,680.690	498,904.133	170R	163+241.839	139.519	1,749,619.413	500,596.862	INTERSECTION A-3									
63R	158+580.000	22.000	1,747,370.267	496,504.618	117R	161+340.000	26.000	1,748,689.263	498,922.230	171R	163+260.000	25.000	1,749,720.355	500,539.808	A3-1L	0+940.117	-5.000	1,746,765.902	496,092.961	A6-1R	0+900.000	5.000	1,748,969.672	499,204.164
64R	158+660.000	22.000	1,747,418.175	496,566.449	118R	161+360.000	27.000	1,748,697.836	498,940.326	172R	163+261.813	126.082	1,749,642.362	500,604.134	A3-2L	0+960.000	-9.000	1,746,756.548	496,108.383	A6-2R	0+920.000	7.500	1,748,955.161	499,218.152
65R	158+760.000	22.000	1,747,471.616	496,648.831	119R	161+374.000	25.000	1,748,706.217	498,951.718	173R	163+280.000	24.000	1,749,733.585	500,554.841	A3-3L	1+080.000	-8.000	1,746,778.079	496,193.620	A6-3R	1+080.000	7.500	1,748,867.257	499,353.341
66R	158+780.000	21.000	1,747,482.510	496,665.342	120R	161+420.000	25.000	1,748,727.962	498,992.254	174R	163+288.927	96.861	1,749,682.108	500,607.172	A3-4L	1+080.000	-5.000	1,746,783.374	496,213.138	A6-4R	1+100.000	5.000	1,748,860.226	499,372.229
67R	158+911.828	21.000	1,747,545.811	496,780.137	121R	161+440.000	24.000	1,748,738.298	499,009.405	175R	163+300.000	23.000	1,749,746.814	500,569.873	A3-1R	0+940.117	5.000	1,746,759.203	496,085.536	INTERSECTION A-7				
68R	158+960.000	21.000	1,747,568.583	496,822.586	122R	161+460.000	24.000	1,748,747.753	499,027.029	176R	163+306.632	61.146	1,749,721.083	500,598.804	A3-2R	0+949.954	7.050	1,746,750.400	496,090.739	A7-1L	0+116.988	-11.597	1,749,200.096	499,615.234
69R	158+980.000	22.000	1,747,577.156	496,840.683	123R	161+480.000	22.000	1,748,758.970	499,043.708	177R	163+311.144	107.730	1,749,687.427	500,631.327	A3-3R	0+960.184	5.769	1,746,743.918	496,100.725	A7-2L	0+140.029	-9.931	1,749,174.484	499,620.269
70R	159+000.000	22.000	1,747,586.611	496,858.308	124R	161+580.000	22.000	1,748,806.242	499,131.829	178R	163+312.024	38.302	1,749,742.320	500,588.808	A3-4R	0+964.341	9.054	1,746,738.671	496,103.459	A7-3L	0+160.000	-10.000	1,749,152.465	499,620.158
71R	159+020.000	21.000	1,747,596.947	496,875.459	125R	161+620.000	22.000	1,748,825.151	499,167.077	179R	163+343.725	34.420	1,749,765.087	500,611.206	A3-5R	1+080.000	8.000	1,746,763.430	496,200.053	A7-4L	0+276.838	-7.500	1,749,040.841	499,641.990
72R	159+063.853	21.000	1,747,617.677	496,914.103	126R	161+640.000	23.000	1,748,833.724	499,185.174	180R	163+360.000	22.000	1,749,784.937	500,616.216	A3-6R	1+080.000	5.000	1,746,774.218	496,217.159	A7-1R	0+000.000	5.000	1,749,304.873	499,574.374
73R	159+079.206	38.708	1,747,809.330	496,936.003	127R	161+660.000	23.000	1,748,843.179	499,202.798	181R	163+380.000	17.000	1,749,801.298	500,628.759	A3-1L	0+925.000	-5.000	1,746,685.074	496,070.120	A7-2R	0+011.466	10.000	1,749,295.309	499,566.311
74R	159+106.654	38.075	1,747,822.863	496,959.891	128R	161+680.000	22.000	1,748,853.515	499,219.950	182R	163+400.000	17.000	1,749,813.744	500,644.414	A3a-2L	0+949.483	-4.989	1,746,703.652	496,086.066	A7-3R	0+040.000	10.000	1,749,283.688	499,562.649
75R	159+117.553	21.000	1,747,843.062	496,961.424	129R	161+700.000	21.000	1,748,863.850	499,237.107	183R	163+420.000	19.000	1,749,824.626	500,661.314	A3a-3L	0+972.781	-5.338	1,746,721.274	496,098.375	A7-4R	0+060.000	10.000	1,749,241.649	499,566.671
76R	159+140.000	21.000	1,747,853.674	496,981.204	130R	161+720.000	20.000	1,748,874.186	499,254.253	184R	163+440.000	18.000	1,749,837.855	500,676.347	A3a-1R	0+925.000	5.000	1,746,678.565	496,077.711	A7-5R	0+080.000	10.000	1,749,221.253	499,575.892
77R	159+160.000	22.000	1,747,862.247	496,999.301	131R	161+760.000	20.000	1,748,893.095	499,289.501	185R	163+460.000	17.000	1,749,851.084	500,691.379	A3a-2R	0+950.000	5.000	1,746,697.534	496,093.978	A7-6R	0+120.000	10.000	1,749,189.215	499,596.337
78R	159+420.000	22.000	1,747,785.155	497,228.416	132R	161+775.496	33.313	1,748,888.689	499,309.450	186R	163+480.000	16.000	1,749,864.314	500,706.412	A3a-3R	0+972.781	-5.338	1,746,721.274	496,098.375	A7-7R	0+140.000	10.000	1,749,172.255	499,600.463
79R	159+440.000	21.000	1,747,795.491	497,245.567	133R	161+793.566	27.704	1,748,902.174	499,322.722	187R	163+500.000	16.000	1,749,876.761	500,722.067	A3a-1R	0+925.000	5.000	1,746,678.565	496,077.711	A7-8R	0+160.000	10.000	1,749,154.413	499,600.253
80R	159+580.000	21.000	1,747,861.673	497,368.937	134R	161+800.000	21.000	1,748,911.123	499,325.222	188R	163+540.000	16.000	1,749,901.654	500,753.377	A3a-2R	0+950.000	5.000	1,746,697.534	496,093.978	A7-9R	0+280.000	8.000	1,749,036.024	499,626.931
81R	159+600.000	23.000	1,747,869.365	497,387.506	135R	161+860.000	22.000	1,748,938.605	499,378.568	189R	163+580.000	14.000	1,749,915.666	500,767.787	A3a-3R	0+967.012	4.496	1,746,711.814	496,104.638	A7-10R	0+300.000	8.000	1,749,018.832	499,625.484
82R	159+640.000	23.000	1,747,888.274	497,422.755	136R	161+880.000	23.000	1,748,947.178	499,396.665	190R	163+580.000	15.000	1,749,927.330	500,784.065	INTERSECTION A-4									
83R	159+660.000	22.000	1,747,898.610	497,439.906	137R	161+900.000	24.000	1,748,955.752	499,414.762	191R	163+600.000	14.000	1,749,995.908	500,868.947	A4-1L	0+000.000	-5.000	1,747,736.113	496,879.146	A7-11R	0+354.167	8.000	1,748,969.062	499,606.657
84R	159+680.000	21.000	1,747,908.945	497,457.058	138R	161+940.000	23.000	1,748,975.542	499,449.537	192R	163+620.000	12.000	1,749,954.514	500,813.479	A4-2L	0+020.000	-10.000	1,747,721.042	496,893.213	INTERSECTION A-8				
85R	159+700.000	20.000	1,747,919.281	497,474.209	139R	161+980.000	23.000	1,748,994.451	499,484.786	193R	163+640.000	11.000	1,749,967.422	500,828.516	A4-3L	0+190.000	-7.500	1,747,578.528	496,983.773	A8-1L	0+895.000	-5.000	1,749,528.114	500,092.713
86R	159+840.000	20.000	1,747,985.463	497,597.578	140R	162+000.000	22.000	1,749,004.787	499,501.937	194R	163+660.000	9.000	1,749,980.697	500,843.191	A4-4R	0+200.000	-7.500	1,747,570.352	496,989.531	A8-2L	0+930.000	-9.000	1,749,501.022	500,115.230
87R	159+880.000	21.000	1,747,994.036	497,615.675	141R	162+060.000	22.000	1,749,033.150	499,554.810	195R	163+675.499	8.850	1,749,989.418	500,855.840	A4-1R	0+000.000	5.000	1,747,731.266	496,870.399	A8-3L	1+057.735	-7.500	1,749,383.748	500,168.987
88R	159+880.000	23.000	1,748,001.728	497,634.245	142R	162+080.000	21.000	1,749,043.486	499,571.961	196R	163+690.577	10.494	1,749,995.908	500,868.947	A4-2R	0+020.000	10.000	1,747,711.349	496,875.719	A8-4L	1+090.000	-7.500	1,749,347.427	500,172.139