

APPENDIX D
FLOOD LEVEL COMPUTATION

WATER SURFACE PROFILE / BACKWATER ANALYSIS

PROJECT FLARIDEL - BALIUG BYPASS ROAD SECTION
 LOCATION BULACAN
 BRIDGE NAME ANGAT RIVER
 COMPUTED BY rda
 DATE Jul-99

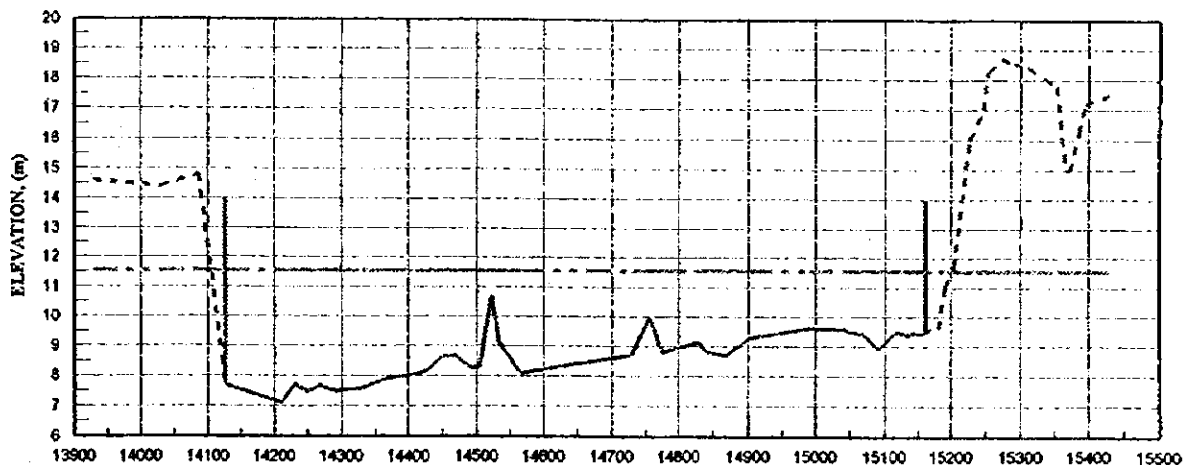
DESIGN DISCHARGE 3,274.33 cms.
 RETURN PERIOD 50 Yrs.

INITIAL VALUES

STATIONING 100,000 m. (Downstream)
 WATER SURFACE ELEVATION 11,230 m.
 FLOW AREA 2330.569 sq. m.
 CONVEYANCE (Kd) 103552.570
 DOWNSTREAM BED ELEVATION 7.800 m.
 UPSTREAM BED ELEVATION 8.000 m.
 LENGTH OF REACH 200,000 m.

STATION	TRIAL	FLOW	CONVEYANCE	MEAN	VELOCITY	TOTAL	FRICTION	AVERAGE	LENGTH	FRICTION	EDDY	TOTAL	COMPUTED
(m)	ELEV.	AREA	FACTOR	VELOCITY	HEAD	HEAD	SLOPE	FRICTION	BETWEEN	LOSS	LOSS	HEAD	WATER
(m)	Z	A	Kd	V	$\frac{V^2}{2g}$	H1	Sf	Sf	Dn	N	he	H2	SURFACE
(m)	(m)	(Sq. m)	---	(mps)	(m)	(m)		H	(m)			(m)	(m)
100	D-S	11 230	2330 569	103552 570	1 405	0 1007	11 331	0 001000	0 001	---	---	---	11 230
50	D-S	11 386	2408 299	109175 150	1 350	0 0943	11 480	0 000899	0 000950	50 00	0 048	0 000010	11 386
0	BR	11 550	3061 350	157259 120	1 070	0 0584	11 608	0 000434	0 000667	50 00	0 033	0 000429	11 550
50	U-S	11 619	2661 522	121401 100	1 230	0 0771	11 696	0 000727	0 000581	50 00	0 029	0 000131	11 619
100	U-S	11 722	2415 668	104711 380	1 355	0 0936	11 816	0 000978	0 000853	50 00	0 043	0 000080	11 722

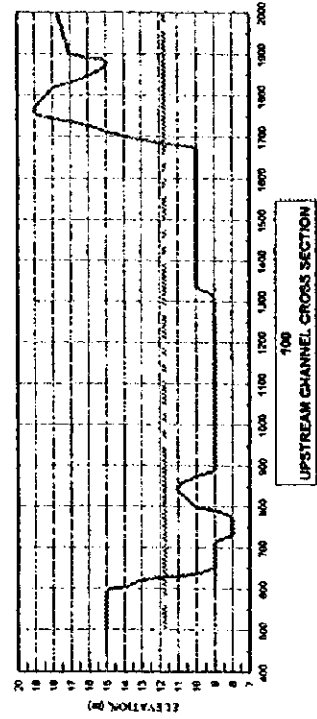
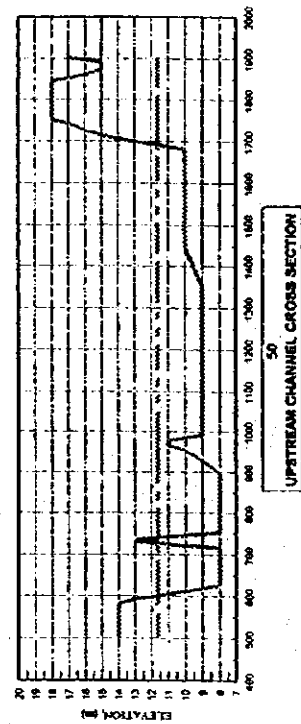
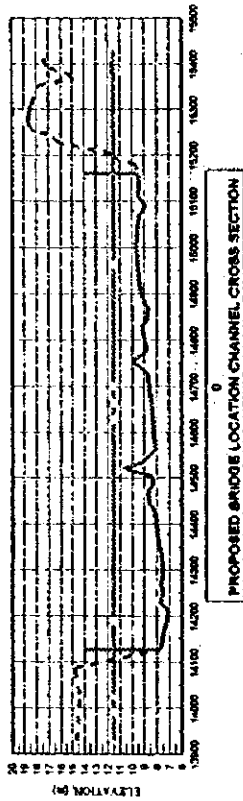
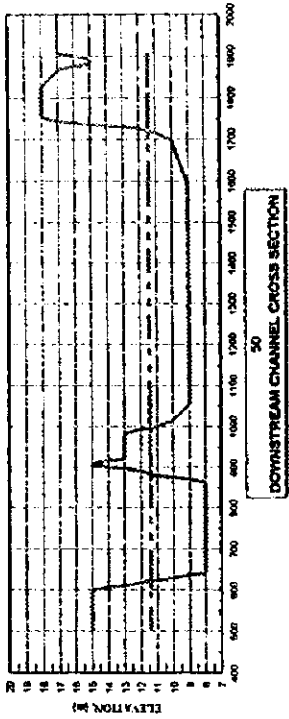
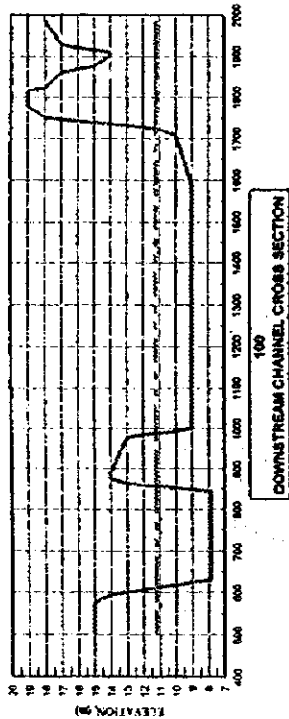
LEGEND: D-S = Downstream, U-S = Upstream, BR = Proposed Bridge Location
 50 D-S means 50m downstream of the proposed bridge location



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PROPOSED BRIDGE LOCATION CHANNEL CROSS SECTION

MAXIMUM FLOOD ELEVATION 11 550 m.
 FLOW AREA 3061.35 Sq. m.
 VELOCITY 1.07 mps
 Waterway width at high flood. (under the bridge) 1033.00 m.
 Proposed bridge Length 1035.00 m.

' PLARIDEL - BALIUG BYPASS ROAD SECTION
 ANGAT RIVER
 CHANNEL CROSS SECTIONS



PLARIDEL - BALIUAG BYPASS ROAD SECTION
ANGAT RIVER

100 m DOWNSTREAM			50 m DOWNSTREAM			0 m BRIDGE SITE			50 m UPSTREAM			100 m UPSTREAM		
N o.	COORDINATES		N o.	COORDINATES		N o.	COORDINATES		N o.	COORDINATES		N o.	COORDINATES	
	X	Y		X	Y		X	Y		X	Y		X	Y
1	500	15	1	500	15	1	14127	14	1	500	14	1	500	15
2	578	15	2	600	15	2	14127	7.7	2	582	14	2	598	15
3	592	14	3	606	14	3	14210	7.1	3	592	13	3	602	14
4	600	13	4	612	13	4	14230	7.7	4	598	12	4	620	13
5	606	12	5	618	12	5	14250	7.47	5	605	11	5	626	12
6	612	11	6	624	11	6	14268	7.65	6	611	10	6	630	11
7	618	10	7	630	10	7	14290	7.48	7	619	9	7	636	10
8	625	9	8	635	9	8	14330	7.58	8	627	8	8	650	9
9	631	7.8	9	640	8	9	14350	7.77	9	715	8	9	714	9
10	644	7.8	10	665	8	10	14370	7.92	10	718	9	10	730	8
11	648	9	11	670	9	11	14410	8.05	11	721	10	11	776	8
12	652	10	12	675	10	12	14430	8.2	12	724	11	12	790	9
13	656	11	13	679	11	13	14450	8.65	13	728	12	13	798	10
14	660	12	14	690	12	14	14470	8.66	14	731	13	14	838	11
15	664	13	15	696	13	15	14490	8.29	15	735	13	15	854	11
16	674	14	16	900	14	16	14504	8.29	16	738	12	16	874	10
17	688	14	17	903	15	17	14522	10.7	17	742	11	17	887	9
18	678	13	18	908	15	18	14533	9.15	18	745	10	18	1315	9
19	984	12	19	916	14	19	14565	8.1	19	748	9	19	1335	10
20	989	11	20	921	13	20	14728	8.7	20	752	8	20	1673	10
21	993	10	21	983	13	21	14755	9.98	21	895	8	21	1681	11
22	1000	9	22	992	12	22	14774	8.8	22	929	9	22	1686	12
23	1588	9	23	1000	11	23	14830	9.15	23	955	10	23	1694	13
24	1708	10	24	1015	10	24	14840	8.81	24	965	11	24	1701	14
25	1723	11	25	1053	9	25	14870	8.7	25	979	11	25	1713	15
26	1728	12	26	1589	9	26	14900	9.28	26	985	10	26	1727	16
27	1731	13	27	1699	10	27	14990	9.61	27	991	9	27	1736	17
28	1736	14	28	1717	11	28	15040	9.58	28	1351	9	28	1744	18
29	1739	15	29	1727	12	29	15050	9.49	29	1445	10	29	1754	19
30	1743	16	30	1730	13	30	15070	9.4	30	1681	10	30	1768	19
31	1747	17	31	1733	14	31	15090	8.9	31	1687	11	31	1820	18
32	1751	18	32	1737	15	32	15114	9.5	32	1695	12	32	1830	17
33	1779	19	33	1740	16	33	15133	9.41	33	1700	13	33	1846	16
34	1817	19	34	1744	17	34	15160	9.45	34	1707	14	34	1868	15
35	1823	18	35	1754	18	35	15160	14	35	1715	15	35	1885	15
36	1861	17	36	1828	18				36	1727	16	36	1891	16
37	1868	16	37	1868	17				37	1744	17	37	1897	17
38	1876	15	38	1875	16				38	1752	18	38	2035	18
39	1902	14	39	1881	15				39	1844	18			
40	1910	14	40	1895	15				40	1853	17			
41	1916	15	41	1901	16				41	1861	16			
42	1921	16	42	1907	17				42	1873	15			
43	1929	17							43	1890	15			
44	1987	18							44	1896	16			
									45	1902	17			

WATER SURFACE PROFILE / BACKWATER ANALYSIS

PROJECT CABANATUAN BYPASS ROAD SECTION
 LOCATION NUEVA ECIJA
 BRIDGE NAME PAMPANGA RIVER
 COMPUTED BY rda
 DATE Jul-99

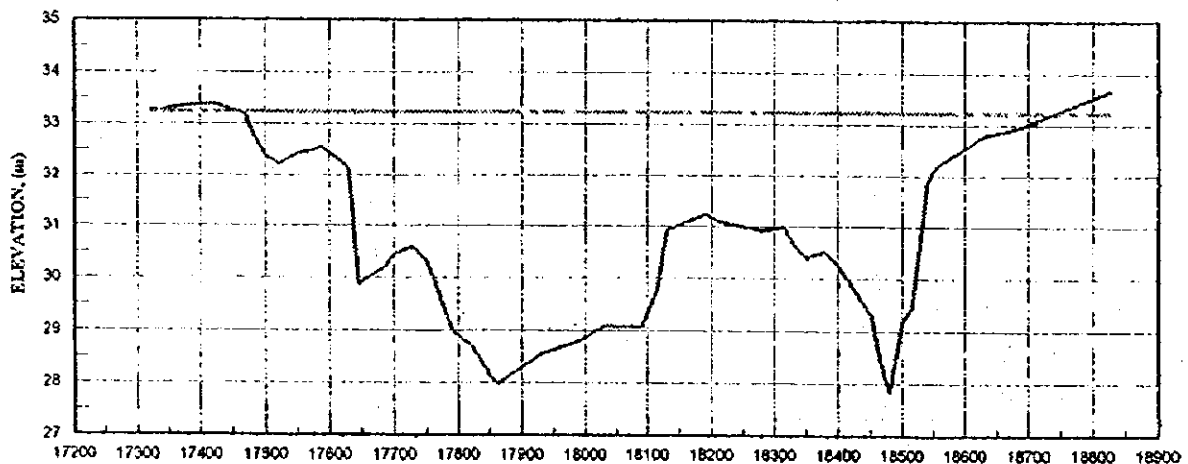
DESIGN DISCHARGE 7,294.12 cms.
 RETURN PERIOD 50.000 Yrs.

INITIAL VALUES

STATIONING 100.000 m. (Downstream)
 WATER SURFACE ELEVATION 32.675 m.
 FLOW AREA 3564.538 sq. m.
 CONVEYANCE (Kd) 182440.730
 DOWNSTREAM BED ELEVATION 27.680 m.
 UPSTREAM BED ELEVATION 28.000 m.
 LENGTH OF REACH 200.000 m.

STATION	TOTAL ELEV. Z	FLOW AREA A	CONVEYANCE FACTOR Kd	MEAN VELOCITY V	VELOCITY HEAD $\frac{V^2}{2g}$	TOTAL HEAD ELEV. H1	FRICTION SLOPE Sf	AVERAGE FRICTION SLOPE Sf	LENGTH BETWEEN SECTIONS Dx	FRICTION LOSS M	EDDY LOSS h_e	TOTAL HEAD ELEV. H2	COMPUTED WATER SURFACE ELEV.
(m)	(m)	(Sq. m)	(mps)	(m)	(m)			(m)			(m)	(m)
100 DS	32.675	3564.538	182440.730	2.045	0.2134	32.888	0.001598	0.001598	---	---	---	32.888	32.675
50 DS	32.975	3617.740	179784.760	2.016	0.2072	33.182	0.001646	0.001622	50.00	0.081	0.000065	33.182	32.975
0 BR	33.230	3385.036	190283.740	2.155	0.2368	33.467	0.001469	0.001558	50.00	0.078	0.000099	33.467	33.230
50 US	33.697	4107.769	224228.520	1.775	0.1608	33.768	0.001058	0.001264	50.00	0.063	0.000732	33.768	33.607
100 US	33.818	4094.184	231756.650	1.782	0.1619	33.980	0.000990	0.001024	50.00	0.051	0.000000	33.980	33.818

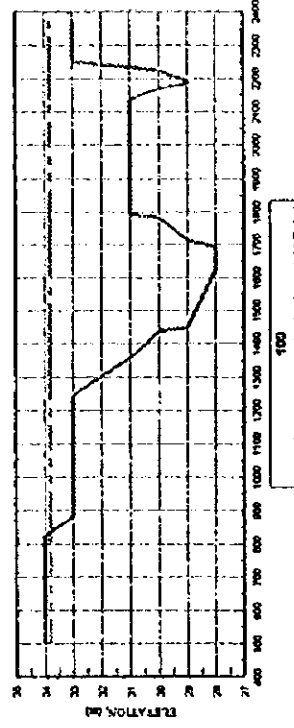
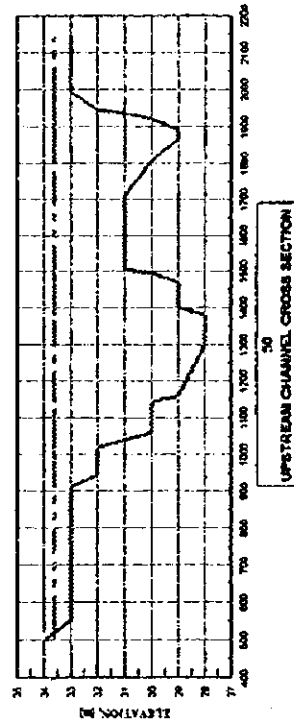
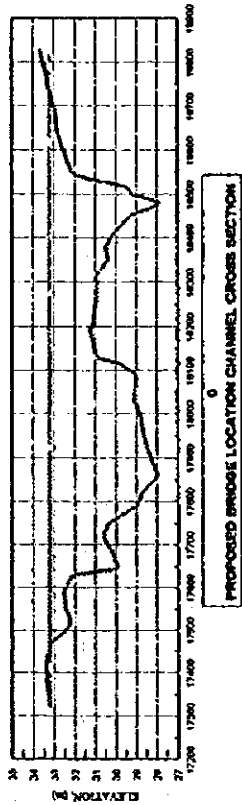
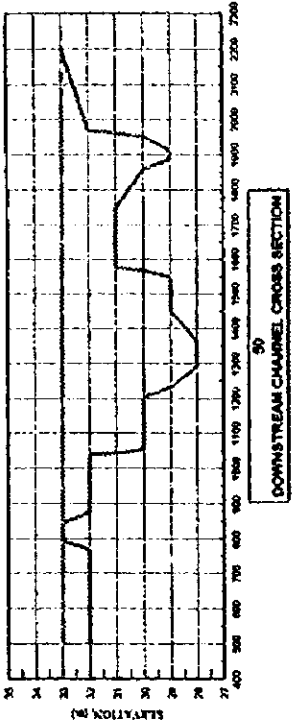
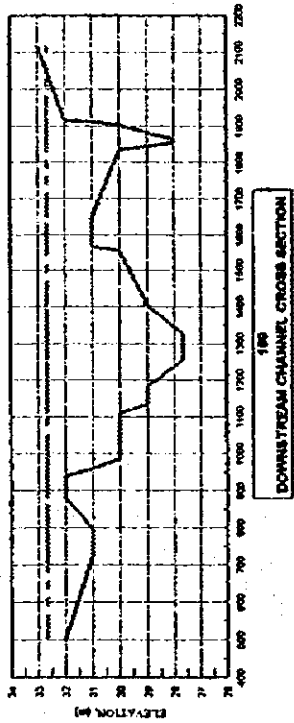
LEGEND: DS = Downstream, US = Upstream, BR = Proposed Bridge Location 50 DS means 50m downstream of the proposed bridge location



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PROPOSED BRIDGE LOCATION CHANNEL CROSS SECTION

MAXIMUM FLOOD ELEVATION 33.230 m.
 FLOW AREA 3385.04 Sq. m.
 VELOCITY 2.16 mps
 Waterway width at high flood. (under the bridge) 1280.62 m.
 Proposed bridge Length 1283.00 m.

CABANATUAN BYPASS ROAD SECTION
 PAMPANGA RIVER
 CHANNEL CROSS SECTIONS



**CABANATUAN BYPASS ROAD SECTION
PAMPANGA RIVER**

100 m DOWNSTREAM			50 m DOWNSTREAM			0 m BRIDGE SITE			50 m UPSTREAM			100 m UPSTREAM		
N	COORDINATES		N	COORDINATES		N	COORDINATES		N	COORDINATES		N	COORDINATES	
	o	X		Y	o		X	Y		o	X		Y	o
1	500	32	1	500	32	1	17320	33.26	1	500	34	1	500	34
2	728	31	2	770	32	2	17340	33.24	2	550	33	2	830	34
3	798	31	3	794	33	3	17350	33.3	3	910	33	3	880	33
4	880	32	4	844	33	4	17420	33.39	4	944	32	4	1246	33
5	940	32	5	874	32	5	17470	33.19	5	1018	32	5	1302	32
6	980	31	6	1038	32	6	17480	32.85	6	1040	31	6	1358	31
7	988	30	7	1044	31	7	17500	32.39	7	1060	30	7	1438	30
8	1110	30	8	1054	30	8	17520	32.21	8	1144	30	8	1448	29
9	1138	29	9	1204	30	9	17550	32.43	9	1180	29	9	1624	28
10	1182	29	10	1232	29	10	17570	32.48	10	1300	28	10	1694	28
11	1258	27.68	11	1292	28	11	17590	32.55	11	1380	28	11	1714	29
12	1326	27.68	12	1366	28	12	17630	32.14	12	1400	29	12	1784	30
13	1404	29	13	1450	29	13	17645	29.89	13	1470	29	13	1794	31
14	1554	30	14	1550	29	14	17685	30.2	14	1494	30	14	2134	31
15	1566	31	15	1588	30	15	17700	30.46	15	1504	31	15	2170	30
16	1650	31	16	1578	31	16	17730	30.59	16	1710	31	16	2186	29
17	1834	30	17	1748	31	17	17750	30.33	17	1806	30	17	2196	29
18	1844	29	18	1858	30	18	17770	29.66	18	1866	29	18	2226	30
19	1854	28	19	1888	29	19	17790	28.99	19	1890	29	19	2234	31
20	1864	28	20	1912	29	20	17820	28.72	20	1920	30	20	2242	32
21	1880	29	21	1952	30	21	17860	27.96	21	1936	31	21	2252	33
22	1902	30	22	1962	31	22	17930	28.55	22	1944	32	22	2372	33
23	1910	31	23	1970	32	23	17990	28.79	23	1994	33			
24	1918	32	24	2204	33	24	18030	29.09	24	2144	33			
25	2118	33				25	18090	29.06						
						26	18115	29.78						
						27	18130	30.92						
						28	18190	31.23						
						29	18210	31.09						
						30	18280	30.92						
						31	18315	30.99						
						32	18330	30.68						
						33	18350	30.4						
						34	18380	30.52						
						35	18400	30.26						
						36	18415	29.98						
						37	18450	29.31						
						38	18485	28.43						
						39	18480	27.82						
						40	18500	29.2						
						41	18515	29.43						
						42	18540	31.85						
						43	18550	32.18						
						44	18630	32.79						
						45	18685	32.95						
						46	18830	33.68						

WATER SURFACE PROFILE / BACKWATER ANALYSIS

PROJECT CABANATUAN BYPASS ROAD SECTION
 LOCATION NUEVA ECILJA
 BRIDGE NAME TALAVERA RIVER
 COMPUTED BY rda
 DATE Jul-99

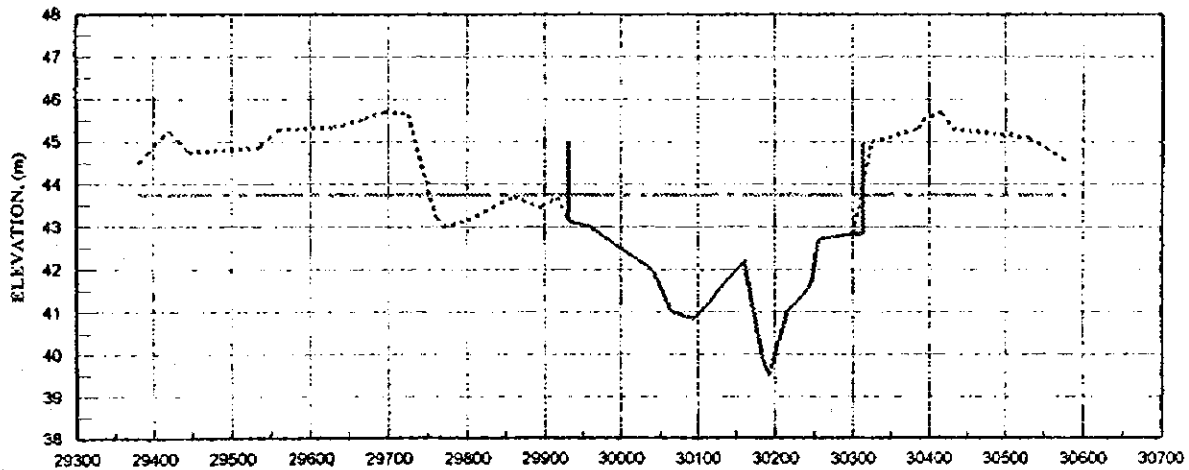
DESIGN DISCHARGE 1,456.91 cms.
 RETURN PERIOD 50.000 Yrs.

INITIAL VALUES

STATIONING 100.000 m. (Downstream)
 WATER SURFACE ELEVATION 43.330 m.
 FLOW AREA 900.672 sq. m.
 CONVEYANCE (Kd) 37639.630
 DOWNSTREAM BED ELEVATION 38.700 m.
 UPSTREAM BED ELEVATION 39.000 m.
 LENGTH OF REACH 200.000 m.

STATION (m)	TOTAL ELEV. Z (m)	FLOW AREA A (Sq. m)	CONVEYANCE FACTOR Kd	MEAN VELOCITY V (mps)	VELOCITY HEAD $\frac{V^2}{2g}$ (m)	TOTAL HEAD ELEV. H1 (m)	FRICTION SLOPE Sf	AVERAGE FRICTION SLOPE Sf f1	LENGTH BETWEEN SECTIONS Lx (m)	FRICTION LOSS hf	EDDY LOSS he	TOTAL HEAD ELEV. H2 (m)	COMPUTED WATER SURFACE ELEV. (m)
100 D-S	43.330	900.672	37639.630	1.611	0.1335	43.464	0.001498	0.001498	---	---	---	43.464	43.330
50 D-S	43.512	795.571	33499.060	1.831	0.1759	43.683	0.001893	0.001696	50.00	0.085	0.000231	43.683	43.512
0 BR	43.745	723.825	32446.560	2.013	0.2066	43.952	0.002016	0.001955	50.00	0.098	0.000169	43.952	43.745
50 U/S	44.147	1019.265	36133.810	1.429	0.1041	44.251	0.001626	0.001821	50.00	0.091	0.001739	44.251	44.147
100 U/S	44.349	1174.461	41215.050	1.240	0.0784	44.427	0.001250	0.001439	50.00	0.072	0.000182	44.427	44.349

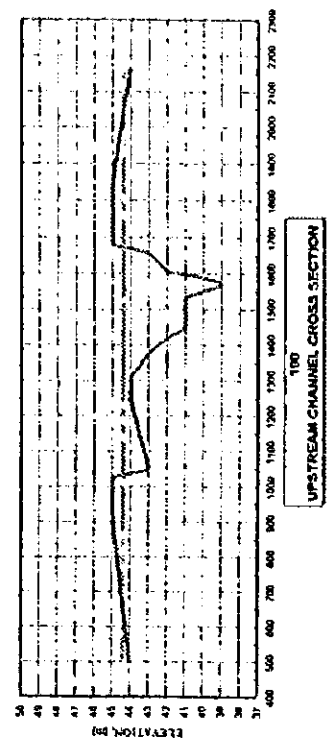
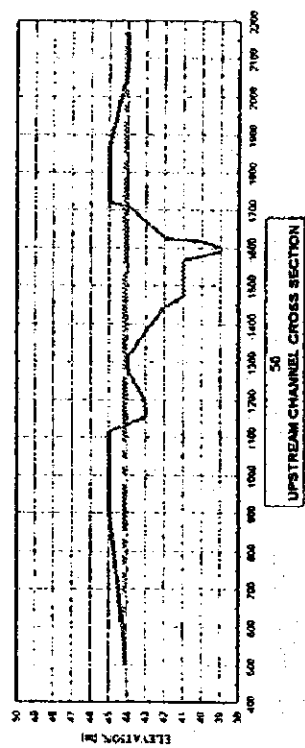
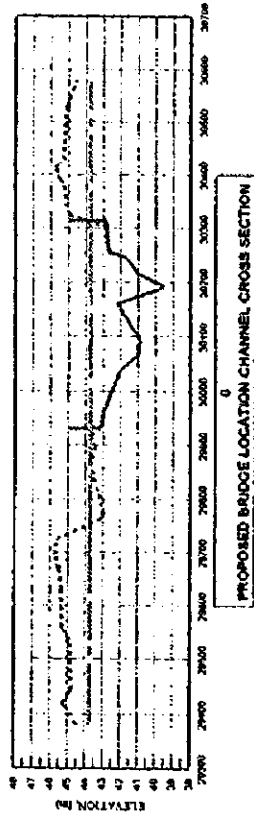
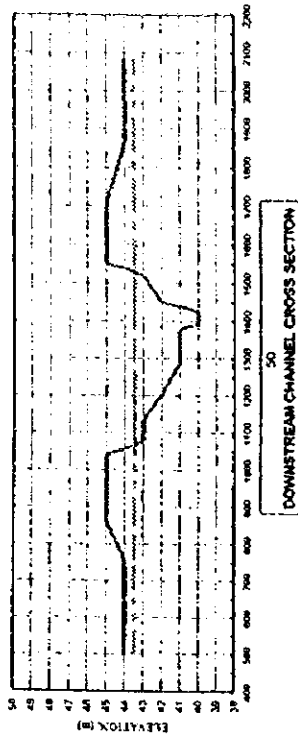
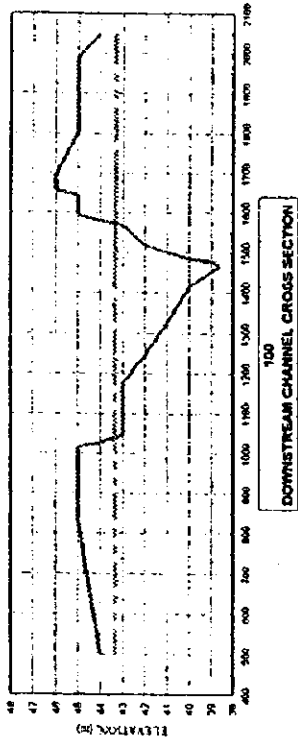
LEGEND: D/S = Downstream, U/S = Upstream, BR = Proposed Bridge Location 50 D/S means 50m downstream of the proposed bridge location



PROPOSED BRIDGE LOCATION CHANNEL CROSS SECTION

MAXIMUM FLOOD ELEVATION 43.745 m.
 FLOW AREA 723.90 Sq. m.
 VELOCITY 2.01 mps
 Waterway width at high flood (under the bridge) 383.00 m.
 Proposed bridge Length 385.00 m.

TALAVERA RIVER
CHANNEL CROSS SECTIONS



**CABANATUAN BYPASS ROAD SECTION
TALAVERA RIVER**

100 m
DOWNSTREAM

50 m
DOWNSTREAM

0 m
BRIDGE SITE

50 m
UPSTREAM

100 m
UPSTREAM

100 m DOWNSTREAM			50 m DOWNSTREAM			0 m BRIDGE SITE			50 m UPSTREAM			100 m UPSTREAM		
N	COORDINATES		N	COORDINATES		N	COORDINATES		N	COORDINATES		N	COORDINATES	
o.	X	Y	o.	X	Y	o.	X	Y	o.	X	Y	o.	X	Y
1	500	44	1	500	44	1	29930	45	1	500	44	1	500	44
2	836	45	2	760	44	2	29930	43.15	2	910	45	2	930	45
3	1015	45	3	860	45	3	29960	43	3	1116	45	3	1026	45
4	1027	44	4	1040	45	4	30040	42.01	4	1134	44	4	1036	44
5	1047	43	5	1056	44	5	30065	41	5	1154	43	5	1048	43
6	1177	43	6	1076	43	6	30095	40.86	6	1194	43	6	1058	43
7	1247	42	7	1132	43	7	30160	42.21	7	1280	44	7	1242	44
8	1327	41	8	1204	42	8	30185	39.85	8	1310	44	8	1308	44
9	1417	40	9	1289	41	9	30192	39.5	9	1380	43	9	1376	43
10	1481	38.7	10	1378	41	10	30215	41	10	1444	42	10	1420	42
11	1474	38.7	11	1392	40	11	30245	41.65	11	1470	41	11	1448	41
12	1484	40	12	1426	40	12	30255	42.72	12	1566	41	12	1534	41
13	1500	41	13	1438	41	13	30300	42.83	13	1578	40	13	1550	40
14	1520	42	14	1450	42	14	30313	42.83	14	1592	39	14	1565	39
15	1568	43	15	1520	43	15	30313	45	15	1602	39	15	1575	39
16	1580	44	16	1540	44				16	1618	40	16	1590	40
17	1593	45	17	1550	45				17	1621	41	17	1598	41
18	1643	45	18	1706	45				18	1626	42	18	1606	42
19	1655	46	19	1864	44				19	1670	43	19	1656	43
20	1695	46	20	2084	44				20	1710	44	20	1668	44
21	1803	45							21	1720	45	21	1678	45
22	1987	45							22	1870	45	22	1848	45
23	2051	44							23	2070	44	23	2168	44
									24	2170	44			

APPENDIX 13

- **13.1-1 Construction Cost Estimate**
- **13.2-1 Road ROW Acquisition and Compensation Cost Estimate**
- **13.4-1 Annual Maintenance Cost Estimate**
- **13.4-2 Maintenance Budget by EMK System**

APPENDIX 13.1-1 CONSTRUCTION COST ESTIMATE

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

PLARIDEL-BALIUAG BYPASS

Item No.	Description	Unit	Unit Cost (PP)					Quantity	Amount (Thousand PP)			Total (x10 ³ PP)	Remarks
			Components (%)		Tax	Local ?	Foreign ?		Components (x10 ³ PP)		Tax		
			Foreign	Local					Local	Foreign			
1-01	Excavation and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	1,861	677	203	529	3,270	
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	60	22	2	16	100	
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	20,915	7,702	2,263	5,620	26,500	
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0	0	0	0	0	
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	477	174	50	129	820	
1-06	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0	0	0	0	0	
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	260.00	97,563	47,911	3,484	25,262	174,220	
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	27	42	13	17	100	
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	1,998	731	191	.560	3,480	
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	0	0	0	0	0	
	Subtotal							122,301	57,260	6,206	32,133	218,500	
2-01	Subbase and Base Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	15,780	8,652	675	4,222	29,330	
2-02	Aggregate Subbase Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0	0	0	0	0	
2-03	Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0	0	0	0	0	
2-04	Crushed Aggregate Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0	0	0	0	0	
2-05	Bituminous Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0	0	0	0	0	
	Subtotal							15,780	8,652	675	4,222	29,330	
3-01	Pavement Surface Course	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0	0	0	0	0	
3-02	Bituminous Prime Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	0	0	0	0	0	
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0	0	0	0	0	
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0	0	0	0	0	
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	5,878	2,063	56	1,413	9,420	
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	68,328	23,981	767	16,424	109,500	
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	1,760	618	20	422	2,820	
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	125	44	1	30	2,200	
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0	0	0	0	0	
	Subtotal							76,091	26,706	854	18,289	121,940	
4-01	Bridge Structure	m ³	52.8%	19.2%	12.2%	15.8%	255.00	523	190	121	156	990	
4-02	Bridge Excavation (A.O.W.L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	7,074	3,662	999	2,135	13,870	
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	185	133	135	87	540	
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	12,789	13,521	733	4,848	31,890	

PLARIDEL-BALUANG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (Pp)				Total (Pp)	Quantity				Components (x10 ³ Pp)				Total (x10 ³ Pp)	Remarks	
			Components (%)		Tax	Local 2		Local 1	Foreign	Local 2	Local 1	Foreign	Local 2	Local 1	Foreign			Tax
			Foreign	Local 1														
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	15.1%	1,700.00	3,743.4	7,968	369	6,596	3,699	2,857	12,522	17,590			
4-06	Structural Concrete for RC Thin Members	m ³	43.5%	39.0%	2.2%	15.3%	4,510.00	18,027.9	35,605	1,801	31,922	1,801	12,522	81,950				
4-07	Structural Concrete for RC Thin Members	m ³	41.2%	41.2%	2.4%	15.2%	5,190.00	743.6	0	0	0	0	0	0	0			
4-08	Concrete for Sidewalk	m ³	46.6%	36.1%	2.1%	15.2%	3,890.00	1,347	1,347	61	1,043	439	2,890	2,890				
4-09	Lean Concrete	m ³	48.6%	34.1%	2.1%	15.2%	3,050.00	629.9	933	40	655	292	1,920	1,920				
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.9%	15.2%	34,301	4,107,535.4	80,730	0	36,068	2,677	21,415	140,890				
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	15.3%	37,000	0	0	0	0	0	0	0				
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	457,000	226,525.0	59,835	2,174	24,845	2,174	16,666	103,520				
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	63,300	0	0	0	0	0	0	0				
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	5,410.00	3,634.4	9,751	668	6,173	3,068	3,068	19,660				
4-15	Cast-in-place Concrete Bored Pile (1.2m Dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	3,876.6	54,407	474	12,336	474	11,863	79,080				
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	11.0	2,051	60	1,050	60	589	3,750				
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	5.0	1,012	28	518	28	292	1,850				
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	0.0	0	0	0	0	0	0				
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	13.0	4,064	102	1,996	102	1,148	7,310				
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	15.7%	603,000.00	0.0	0	0	0	0	0	0				
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	15.8%	834,000.00	10.0	4,687	108	2,227	108	1,318	8,340				
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.6%	1.3%	15.8%	986,000.00	122.0	67,844	1,964	31,877	1,964	19,005	120,290				
4-23	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.6%	1.3%	15.7%	1,210,000.00	0.0	0	0	0	0	0	0				
4-24	Reinforced Concrete Railing	m	45.8%	36.6%	2.2%	15.3%	1,240.00	3,166.0	1,804	86	1,438	86	602	3,930				
4-25	Median Barrier	m	48.8%	33.9%	2.1%	15.2%	2,620.00	0.0	0	0	0	0	0	0				
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	18.0%	427,000.00	19.0	6,488	16	146	16	1,460	8,110				
4-27	Rubber Bearing Shoe (R=100t)	each	77.0%	5.2%	0.2%	17.1%	56,200.00	244.0	10,825	27	713	27	2,345	12,710				
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	15.1%	31,100.00	46.0	848	6	360	6	216	1,430				
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	99.0	1,230	14	696	14	340	2,270				
4-30	Expansion Joint (τ=300mm)	m	79.9%	2.0%	0.0%	18.1%	184,000.00	147.5	21,685	0	543	0	4,912	27,140				
4-31	Expansion Joint (τ=200mm)	m	77.8%	5.1%	0.1%	17.0%	57,700.00	18.0	809	1	53	1	177	1,040				
4-32	Expansion Joint (τ=100mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	268.4	3,995	7	1,677	7	1,001	5,680				
4-33	Expansion Joint (τ=50mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	50.8	269	1	189	1	81	540				
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	78,000,000.00	0.0	0	0	0	0	0	0				
4-35	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.6%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0	0	0				
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0	0	0				
4-37	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0	0	0				
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	1.0	39,780	293	9,594	293	8,833	58,500				
4-39	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	15.0%	42,150,000.00	0.0	0	0	0	0	0	0				
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	1.0	7,997	47	5,284	47	2,352	15,680				
4-41	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	0.0	0	0	0	0	0	0				

Cost Estimation

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ESTIMATED CONSTRUCTION COST

UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY

(Sta. Rita, Plaridel - San Jose Section)

PLARIDEL-BALIUAG BYPASS

Item No.	Description	Unit	Unit Cost (PP)				Quantity	Amount (Thousand PP)			Remarks	
			Components (%)		Total (PP)	Components (x10 ³ PP)						
			Foreign	Local-1		Local-2		Local-1	Local-2	Tax		Total (x10 ³ PP)
Subtotal												
5.	Slope Protection						446,334	195,495	12,612	120,814	775,260	
5-01	Stone Pitching	m ³	52.8%	22.0%	10.1%	15.1%	0	0	0	0	0	0
5-02	Gabion	m ²	51.1%	27.0%	6.6%	15.3%	0	0	0	0	0	0
5-03	Seeding	m ³	15.2%	43.8%	26.1%	14.9%	40	114	64	38	260	
5-04	Grouted Riprap	m ³	48.3%	22.4%	13.9%	15.4%	691	320	199	220	1,430	
5-05	Stone Masonry	m ³	55.1%	21.6%	8.1%	15.2%	220	86	32	62	400	
Subtotal												
6.	Drainage Structure						951	520	299	320	2,094	
6-01	RCBC, 1-2.5mx3.0m	■	42.1%	40.2%	2.4%	15.3%	0	0	0	0	0	0
6-02	RCBC, 1-3.0mx2.0m	■	44.0%	38.4%	2.4%	15.2%	933	814	51	322	2,120	
6-03	RCBC, 1-3.0mx2.5m	■	43.5%	38.8%	2.4%	15.3%	218	194	12	76	500	
6-04	RCBC, 1-2.0mx2.0m	■	43.1%	39.2%	2.4%	15.3%	0	0	0	0	0	0
6-05	RCBC, 2-2.5mx2.0m	■	44.5%	37.9%	2.3%	15.3%	0	0	0	0	0	0
6-06	RCBC, 2-3.0mx1.5m	■	46.0%	36.4%	2.3%	15.3%	304	240	15	101	660	
6-07	RCBC, 2-3.0mx2.0m	■	45.4%	37.0%	2.3%	15.3%	0	0	0	0	0	0
6-08	RCBC, 2-3.0mx2.5m	■	44.7%	37.7%	2.3%	15.3%	1,748	1,474	90	598	3,910	
6-09	RCBC, 2-3.0mx3.0m	■	44.2%	38.2%	2.4%	15.2%	0	0	0	0	0	0
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.3%	15.3%	0	0	0	0	0	0
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	15.3%	81	67	4	28	180	
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	15.2%	117	98	6	39	260	
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	2.0%	16.0%	0	0	0	0	0	0
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	15.2%	0	0	0	0	0	0
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	15.2%	72	52	3	23	150	
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	15.2%	0	0	0	0	0	0
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	15.2%	428	324	20	138	910	
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	15.2%	0	0	0	0	0	0
6-19	RCPC, 0.41m dia.	■	55.9%	22.8%	5.9%	15.4%	2,415	985	255	665	4,320	
6-20	RCPC, 0.61m dia.	■	56.3%	23.1%	5.2%	15.4%	0	0	0	0	0	0
6-21	RCPC, 0.91m dia.	■	56.6%	23.1%	4.8%	15.5%	0	0	0	0	0	0
6-22	RCPC, 1.07m dia.	■	57.0%	23.2%	4.4%	15.4%	0	0	0	0	0	0
6-23	RCPC, 1.22m dia.	■	57.1%	23.3%	4.2%	15.4%	0	0	0	0	0	0
6-24	RCPC, 1.52m dia.	■	57.3%	23.3%	4.0%	15.4%	0	0	0	0	0	0
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	6.2%	15.5%	1,090	1,126	175	439	2,830	
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	15.5%	0	0	0	0	0	0
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.0%	6.1%	15.5%	0	0	0	0	0	0
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	6.1%	15.4%	0	0	0	0	0	0
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	15.4%	0	0	0	0	0	0
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	15.4%	0	0	0	0	0	0
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	■	38.4%	43.3%	2.9%	15.4%	595	671	45	239	1,550	
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	■	42.3%	39.6%	2.8%	15.3%	0	0	0	0	0	0
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	■	35.6%	46.1%	3.0%	15.3%	0	0	0	0	0	0

Cost Estimation

PLARIDEL-BALIUNG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)						Quantity	Amount (Thousand PP)				Remarks
			Components (%)			Total (PP)	Components (x10 ³ PP)			Tax	Total (x10 ³ PP)			
			Foreign	Local-1	Local-2		Foreign	Local-1				Local-2		
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.6%	43.2%	2.9%	15.3%	7,820.00	0.0	0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	51.50	40,423.1	19	1,639	372	2,080		
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0.0	0	0	0	0		
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	10,600.00	0.0	0	0	0	0		
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0.0	0	0	0	0		
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0.0	0	0	0	0		
Subtotal								8,051	5,064	2,315	3,040	19,479		
7. Miscellaneous Facilities														
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	7,718.9	1,818	162	744	4,900		
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	2,734.0	969	59	385	2,550		
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	712.0	534	46	235	1,530		
7-04	Planting, Big Tree	km	16.1%	70.7%	1.3%	11.9%	80,200.00	0.5	6	1	5	40		
7-05	Planting, Small Tree	km	7.8%	80.4%	0.6%	11.2%	41,000.00	1.0	32	0	5	40		
7-06	Traffic Signal light, 3 leg	each	55.0%	29.8%	1.1%	15.1%	19,800.00	0.0	0	0	0	0		
7-07	Traffic Signal light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	27,800.00	8.0	124	2	33	220		
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	0.0	0	0	0	0		
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	240,000.00	20.6	2,870	124	721	4,940		
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	96,100.00	0.0	0	0	0	0		
Subtotal								6,324	5,374	394	2,128	14,220		
9. Engineer's Facility, Other General Requirement and Mobilization/Demobilization														
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot						1.0	33,822	15,004	1,168	9,046	59,040.5%	
Subtotal									33,822	15,004	1,168	9,046	59,040.5%	
Total Contingencies									710,254	315,075	24,523	189,998	1,239,850	
Total Construction Cost									35,513	15,754	1,226	9,497	61,990.5%	
Detailed Engineering Construction Supervision Land Acquisition									745,767	330,829	25,749	199,495	1,301,840	
Subtotal									49,208	21,829	1,699	13,162	85,900 Phase 1&2	
Total Cost									59,661	26,466	2,060	15,963	104,150.8%	
Subtotal									0	0	0	0	0	
Total Cost									854,636	379,124	29,508	228,621	1,491,890	

PLARIDEL-BALUAG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)					Quantity	Amount (Thousand PP)				Total (x10 ³ PP)	Remarks
			Components (%)						Components (x10 ³ PP)					
			Foreign	Local-1	Local-2	Tax	Total (PP)		Foreign	Local-1	Local-2	Tax		
1. Earthwork														
1-01	Clearing and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	125	46	14	35	220		
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	0	0	0	0	0		
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	0	0	0	0	0		
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0	0	0	0	0		
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	0	0	0	0	0		
1-06	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0	0	0	0	0		
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	23,808.00	3,466	1,702	124	898	6,190		
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	0	0	0	0	0		
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	172	63	17	48	300		
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	0	0	0	0	0		
Subtotal								3,763	1,811	155	981	6,710		
2. Subbase and Base Course														
2-01	Aggregate Subbase Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	1,211	664	52	323	2,250		
2-02	Aggregate Base Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0	0	0	0	0		
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0	0	0	0	0		
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0	0	0	0	0		
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0	0	0	0	0		
Subtotal								1,211	664	52	323	2,250		
3. Pavement Surface Course														
3-01	Bituminous Prime Coat	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0	0	0	0	0		
3-02	Bituminous Tack Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	711	189	3	197	1,100		
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	12,256	3,463	77	3,444	19,240		
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0	0	0	0	0		
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	6,939	2,435	78	1,668	11,120		
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	0	0	0	0	0		
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	0	0	0	0	0		
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	2,427	852	27	584	3,890		
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0	0	0	0	0		
Subtotal								22,333	6,939	183	5,893	35,350		
4. Bridge Structure														
4-01	Bridge Excavation (A.O.W.L.)	m ³	52.8%	19.2%	12.2%	15.8%	255.00	42	15	10	13	80		
4-02	Bridge Excavation (B.O.W.L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	0	0	0	0	0		
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	3	2	3	2	10		
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	0	0	0	0	0		

PLARIDEL-BALIUAG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rica, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)			Total (PP)	Quantity	Plaridel-Baliuag Bypass (access road)			Total (x10 ³ PP)	Remarks
			Components (%)					Amount (Thousand PP)				
			Foreign	Local-1	Local-2			Foreign	Local-1	Local-2		
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	4,700.00	54.4	118	5	39	260	
4-06	Structural Concrete for	m ³	43.5%	39.0%	2.2%	4,540.00	328.0	648	33	228	1,490	
4-07	Structural Concrete for RC Thin Members	m ³	41.2%	41.2%	2.4%	5,190.00	0.0	0	0	0	0	
4-08	Concrete for Sidewalk	m ³	46.6%	36.1%	2.1%	3,890.00	6.0	9	0	4	20	
4-09	Lean Concrete	m ³	48.6%	34.1%	2.1%	3,050.00	10.0	15	1	4	30	
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.9%	34.30	51,485.0	1,014	34	269	1,770	
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	37.00	0.0	0	0	0	0	
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	457.00	0.0	0	0	0	0	
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	63.30	0.0	0	0	0	0	
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	5,410.00	528.0	1,419	97	446	2,860	
4-15	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	20,400.00	0.0	0	0	0	0	
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	341,000.00	5.0	985	27	269	1,710	
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	370,000.00	0.0	0	0	0	0	
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	542,000.00	0.0	0	0	0	0	
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	562,000.00	0.0	0	0	0	0	
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	603,000.00	0.0	0	0	0	0	
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	834,000.00	0.0	0	0	0	0	
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.5%	1.3%	986,000.00	0.0	0	0	0	0	
4-23	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.5%	1.3%	1,240.00	80.0	46	2	15	100	
4-24	Reinforced Concrete Railing	m	45.9%	36.6%	2.2%	2,620.00	0.0	0	0	0	0	
4-25	Median Barrier	m	48.8%	33.9%	2.1%	427,000.00	0.0	0	0	0	0	
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	56,200.00	0.0	0	0	0	0	
4-27	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	31,100.00	0.0	0	0	0	0	
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	22,900.00	10.0	125	1	35	220	
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	184,000.00	0.0	0	0	0	0	
4-30	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	57,700.00	0.0	0	0	0	0	
4-31	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	24,900.00	21.8	323	1	80	540	
4-32	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	10,700.00	0.0	0	0	0	0	
4-33	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	78,000,000.00	0.0	0	0	0	0	
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	56,200,000.00	0.0	0	0	0	0	
4-35	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.6%	16.0%	0.4%	20,900,000.00	0.0	0	0	0	0	
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	1,330,000.00	0.0	0	0	0	0	
4-37	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	64.6%	29.2%	1.1%	53,500,000.00	0.0	0	0	0	0	
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	42,150,000.00	0.0	0	0	0	0	
4-39	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.0%	16.0%	0.4%	15,675,000.00	0.0	0	0	0	0	
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	864,500.00	0.0	0	0	0	0	
4-41	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%		0.0	0	0	0	0	

Cost Estimation

- 6/36 -

1999/8/7

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

PLARIDEL-BALIUAG BYPASS

Item No.	Description	Unit	Unit Cost (PP)			Quantity	Amount (Thousand PP)			Total (x10 ³ PP)	Remarks
			Components (%)				Components (x10 ³ PP)				
			Foreign	Local 1	Local 2		Foreign	Local 1	Local 2		
5. Stone Protection											
5-01	Stone Pitching	m ³	52.8%	22.0%	10.1%	0.0	0	0	0	0	0
5-02	Gabion	m ³	51.1%	27.0%	15.2%	0	0	0	0	0	0
5-03	Seeding	m ²	15.2%	43.8%	26.1%	6,706.4	175	104	60	400	
5-04	Grouted Riprap	m ³	48.3%	22.4%	13.9%	52.0	34	70	10	70	
5-05	Stone Masonry	m ³	55.1%	21.6%	8.1%	0.0	0	0	0	0	
Subtotal							4,697	2,785	214	1,404	9,100
6. Drainage Structure											
6-01	RCBC, 1-2.5mx3.0m	m	42.1%	40.2%	2.4%	0	0	0	0	0	
6-02	RCBC, 1-3.0mx2.0m	m	44.0%	38.4%	2.4%	0	0	0	0	0	
6-03	RCBC, 1-3.0mx2.5m	m	43.5%	38.8%	2.4%	0	0	0	0	0	
6-04	RCBC, 1-2.0mx2.0m	m	43.1%	39.2%	2.4%	0	0	0	0	0	
6-05	RCBC, 2-2.5mx2.0m	m	44.5%	37.3%	2.3%	0	0	0	0	0	
6-06	RCBC, 2-3.0mx1.5m	m	46.0%	36.4%	2.3%	0	0	0	0	0	
6-07	RCBC, 2-3.0mx2.0m	m	45.4%	37.0%	2.3%	0	0	0	0	0	
6-08	RCBC, 2-3.0mx2.5m	m	44.7%	37.7%	2.3%	0	0	0	0	0	
6-09	RCBC, 2-3.0mx3.0m	m	44.2%	38.2%	2.4%	0	0	0	0	0	
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.3%	0	0	0	0	0	
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	0	0	0	0	0	
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	0	0	0	0	0	
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	2.0%	0	0	0	0	0	
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	0	0	0	0	0	
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	0	0	0	0	0	
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	0	0	0	0	0	
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	0	0	0	0	0	
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	0	0	0	0	0	
6-19	RCPC, 0.41m dia.	m	55.9%	22.8%	5.9%	0	0	0	0	0	
6-20	RCPC, 0.61m dia.	m	56.3%	23.1%	5.2%	0	0	0	0	0	
6-21	RCPC, 0.91m dia.	m	56.6%	23.1%	4.8%	0	0	0	0	0	
6-22	RCPC, 1.07m dia.	m	57.0%	23.2%	4.4%	0	0	0	0	0	
6-23	RCPC, 1.22m dia.	m	57.1%	23.3%	4.2%	0	0	0	0	0	
6-24	RCPC, 1.52m dia.	m	57.3%	23.3%	4.0%	0	0	0	0	0	
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.6%	6.2%	0	0	0	0	0	
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	0	0	0	0	0	
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.0%	6.1%	0	0	0	0	0	
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	6.1%	0	0	0	0	0	
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	0	0	0	0	0	
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	0	0	0	0	0	
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	2.9%	0	0	0	0	0	
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	2.6%	0	0	0	0	0	
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	0	0	0	0	0	
Subtotal						95	191	114	70	470	

PLARIDEL-BALIUAG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Quantity	Amount (Thousand PP)				Remarks
			Components (%)		Total (PP)	Components (x10 ³ PP)		Total (x10 ³ PP)				
			Foreign	Local-1		Local-2			Tax			
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.6%	43.2%	2.9%	15.3%	0.0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	0.0	0	0	0	0	
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	0	0	0	0	0	
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	0	0	0	0	0	
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	0	0	0	0	0	
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	0.0	0	0	0	0	
	Subtotal						0	0	0	0	0	
Z.	Miscellaneous Facilities											
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	0.0	0	0	0	0	
7-02	Curbstone Type B (U-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	0.0	0	0	0	0	
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	0.0	0	0	0	0	
7-04	Planting, Big Tree	km	16.1%	70.7%	1.3%	11.9%	0.0	0	0	0	0	
7-05	Planting, Small Tree	km	7.8%	80.4%	0.6%	11.2%	0.0	0	0	0	0	
7-06	Traffic Signal Light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	0.0	0	0	0	0	
7-07	Traffic Signal Light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	0.0	0	0	0	0	
7-08	Toll Gate Facilities	lot	56.0%	27.6%	1.2%	15.0%	0.0	0	0	0	0	
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	0.0	0	0	0	0	
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	0.0	0	0	0	0	
	Subtotal						0	0	0	0	0	
9.	Engineer's Facility, Other General Requirement and Mobilization/Demobilization											
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot					1,605	620	36	429	2,690	5%
	Subtotal						1,605	620	36	429	2,690	
Total							33,704	13,010	756	9,100	56,570	
Contingencies							1,685	651	38	455	2,830	5%
Total Construction Cost							35,389	13,661	794	9,555	59,400	
Detailed Engineering Construction Supervision		Lot					1,416	546	32	386	2,380	4%
Land Acquisition		Lot					2,831	1,093	64	762	4,750	8%
		m ²					0	0	0	0	0	
Total Cost							39,636	15,300	890	10,704	66,520	

PLARIDEL-BALIUAG BYPASS

ESTIMATED CONSTRUCTION COST
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(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)					Total (PP)	Quantity	Amount (Thousand PP)				Remarks
			Components (%)		Tax		Components (x10 ³ PP)			Total (x10 ³ PP)				
			Foreign	Local	Local 1	Local 2	Foreign				Local 1	Local 2	Tax	
1-01	Earthwork	m ²	56.9%	20.7%	6.2%	16.2%	5.97	49,633.5	171	62	19	48	300	
1-02	Clearing and Grubbing	m ³	60.3%	22.1%	2.3%	15.3%	147.00	0.0	0	0	0	0	0	
1-03	Surplus Common Excavation (Roadway and Shoulder)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	0.0	0	0	0	0	0	
1-04	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	59.2%	21.5%	0.4%	15.9%	467.00	0.0	0	0	0	0	0	
1-05	Surplus Rock Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	0.0	0	0	0	0	0	
1-06	Structure Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0.0	0	0	0	0	0	
1-07	Embankment from Roadway/Drainage Excavation	m ³	56.0%	27.5%	2.0%	14.5%	260.00	14,857	7,296	531	2,846	26,530		
1-08	Embankment from Borrow	m ³	27.1%	43.0%	12.9%	17.0%	170.00	0.0	0	0	0	0	0	
1-09	Removal of Existing PCC Pavement	m ²	57.4%	21.0%	5.5%	16.1%	12.00	121	44	12	33	210		
1-10	Subgrade Preparation	each	50.0%	28.8%	5.1%	16.1%	21,900.00	0.0	0	0	0	0	0	
	Demolition of Wing Wall													
	Subtotal							15,149	7,402	562	3,977	27,040		
2-01	Subbase and Base Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	5,206.2	422	233	206	1,430		
2-02	Aggregate Subbase Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0.0	0	0	0	0		
2-03	Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0.0	0	0	0	0		
2-04	Crushed Aggregate Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,500.00	0.0	0	0	0	0		
2-05	Bituminous Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0.0	0	0	0	0		
	Subtotal							7,69	422	33	206	1,430		
3-01	Pavement Surface Course	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0.0	0	0	0	0		
3-02	Bituminous Prime Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	0.0	0	0	0	0		
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0		
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0		
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	0.0	0	0	0	0		
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	7,875	2,764	88	1,893	12,620		
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	0.0	0	0	0	0		
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	0.0	0	0	0	0		
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0.0	0	0	0	0		
	Subtotal							7,875	2,764	88	1,893	12,620		
4-01	Bridge Structure	m ³	52.8%	19.2%	12.2%	15.8%	255.00	3,733.7	182	116	150	950		
4-02	Bridge Excavation (A.O.W.L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	0.0	0	0	0	0		
4-03	Bridge Excavation (B.O.W.L.)	m ³	34.2%	24.7%	25.0%	16.1%	483.00	44	32	33	21	130		
4-04	Foundation Fill	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	0.0	0	0	0	0		
	Structural Concrete for PC Superstructure	m ³												

ESTIMATED CONSTRUCTION COST

UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY

(Sta. Rita, Plaridel - San Jose Section)

PLARIDEL-BALIUAG BYPASS

Item No.	Description	Unit	Unit Cost (PP)					Total (PP)	Quantity	Amount (Thousand PP)				Remarks
			Components (%)							Components (x10 ³ PP)				
			Foreign	Local 1	Local 2	Tax	Total			Foreign	Local 1	Local 2	Tax	
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	15.1%	4,700.00	794.7	1,694	79	564	3,740		
4-06	Structural Concrete for	m ³	43.5%	39.0%	2.2%	15.3%	4,540.00	4,610.7	9,105	460	3,202	20,930		
4-07	Structural Concrete for RC Thin Members	m ³	41.2%	41.2%	2.4%	15.2%	5,190.00	0.0	0.0	0	0	0		
4-08	Concrete for Sidewalk	m ³	46.6%	36.1%	2.1%	15.2%	3,890.00	0.0	0	0	0	0		
4-09	Lean Concrete	m ³	48.6%	34.1%	2.1%	15.2%	3,050.00	139.0	204	9	64	420		
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.5%	15.2%	34.30	709,884.0	13,953	463	3,700	24,350		
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	15.3%	37.00	0.0	0	0	0	0		
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	457.00	0.0	0	0	0	0		
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	63.30	0.0	0	0	0	0		
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	5,410.00	4,560.0	12,236	839	3,849	24,670		
4-15	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	0.0	0	0	0	0		
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	24.0	4,474	131	1,285	8,180		
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	0.0	0	0	0	0		
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	0.0	0	0	0	0		
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	32.0	9,997	252	2,822	17,980		
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	15.7%	603,000.00	0.0	0	0	0	0		
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	15.8%	804,000.00	4.0	1,877	43	528	3,340		
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.5%	1.3%	15.8%	986,000.00	4.0	2,222	51	623	3,940		
4-23	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.6%	1.3%	15.7%	1,240,000.00	0.0	0	0	0	0		
4-24	Reinforced Concrete Railing	m	45.9%	36.6%	2.2%	15.3%	1,240.00	730.0	418	20	139	910		
4-25	Median Barrier	m	48.8%	33.9%	2.1%	15.2%	2,620.00	0.0	0	0	0	0		
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	18.0%	427,000.00	0.0	0	0	0	0		
4-27	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	17.1%	56,200.00	16.0	698	2	153	900		
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	15.0%	31,100.00	64.0	1,180	8	301	1,990		
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	48.0	596	7	165	1,100		
4-30	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	18.1%	184,000.00	0.0	0	0	0	0		
4-31	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	17.0%	57,700.00	0.0	0	0	0	0		
4-32	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	170.5	2,542	4	627	4,250		
4-33	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	0.0	0	0	0	0		
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	79,000,000.00	0.0	0	0	0	0		
4-35	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.0%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0		
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0		
4-37	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0		
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	0.0	0	0	0	0		
4-39	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.0%	16.0%	0.4%	15.0%	42,150,000.00	0.0	0	0	0	0		
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	0.0	0	0	0	0		
4-41	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	0.0	0	0	0	0		

Cost Estimation

- 10/36 -

1999/8/7

PLARIDEL-BALIUNG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)			Quantity	Amount (Thousand PP)			Total (x10 ³ PP)	Remarks	
			Components (%)				Components (x10 ³ PP)					
			Foreign	Local-1	Local-2		Foreign	Local-1	Local-2			Tax
Subtotal												
5-01	Slope Protection	m ³										
5-02	Stone Pitching	m ³	52.8%	22.0%	10.1%	1,410.00	0.0	0	0	0	0	0
5-03	Gabion	m ³	51.1%	27.0%	6.6%	2,220.00	0	0	0	0	0	0
5-04	Grouted Riprap	m ³	15.2%	43.8%	26.1%	59.50	116	198	113	760		
5-05	Stone Masonry	m ³	48.3%	22.4%	13.9%	1,420.00	526	152	168	1,090		
			55.1%	21.6%	8.1%	2,290.00	0	0	0	0	0	0
Subtotal							61,742	35,318	2,517	18,203	117,780	
Subtotal							642	577	350	281	1,850	
6-01	Drainage Structure	m	42.1%	40.2%	2.4%	33,900.00	0	0	0	0	0	0
6-02	RCBC, 1-2.5x3.0m	m	44.0%	38.4%	2.4%	29,800.00	0	0	0	0	0	0
6-03	RCBC, 1-3.0x2.5m	m	43.5%	38.8%	2.4%	33,600.00	0	0	0	0	0	0
6-04	RCBC, 1-2.0x2.0m	m	43.1%	39.2%	2.4%	25,700.00	776	706	43	275	1,800	
6-05	RCBC, 2-2.5x2.0m	m	44.5%	37.9%	2.3%	45,800.00	0	0	0	0	0	0
6-06	RCBC, 2-3.0x1.5m	m	46.0%	36.4%	2.3%	45,500.00	0	0	0	0	0	0
6-07	RCBC, 2-3.0x2.0m	m	45.4%	37.0%	2.3%	51,800.00	0	0	0	0	0	0
6-08	RCBC, 2-3.0x2.5m	m	44.7%	37.7%	2.3%	57,200.00	0	0	0	0	0	0
6-09	RCBC, 2-3.0x3.0m	m	44.2%	38.2%	2.4%	62,700.00	0	0	0	0	0	0
6-10	Wing Wall for RCBC, 1-2.5x3.0m	Each	44.2%	38.2%	2.3%	83,000.00	0	0	0	0	0	0
6-11	Wing Wall for RCBC, 1-3.0x2.0m	Each	45.2%	37.2%	2.3%	45,500.00	0	0	0	0	0	0
6-12	Wing Wall for RCBC, 1-3.0x2.5m	Each	44.9%	37.6%	2.3%	63,900.00	0	0	0	0	0	0
6-13	Wing Wall for RCBC, 1-2.0x2.0m	Each	46.0%	36.0%	2.0%	48,900.00	0	0	0	0	0	0
6-14	Wing Wall for RCBC, 2-2.5x2.0m	Each	46.8%	35.8%	2.2%	52,200.00	0	0	0	0	0	0
6-15	Wing Wall for RCBC, 2-3.0x1.5m	Each	47.9%	34.7%	2.2%	38,200.00	0	0	0	0	0	0
6-16	Wing Wall for RCBC, 2-3.0x2.0m	Each	47.5%	35.1%	2.2%	55,800.00	0	0	0	0	0	0
6-17	Wing Wall for RCBC, 2-3.0x2.5m	Each	47.0%	35.6%	2.2%	76,200.00	0	0	0	0	0	0
6-18	Wing Wall for RCBC, 2-3.0x3.0m	Each	46.6%	36.0%	2.2%	100,000.00	0	0	0	0	0	0
6-19	RCPC, 0.41m dia.	m	55.9%	22.8%	5.9%	2,170.00	0	0	0	0	0	0
6-20	RCPC, 0.61m dia.	m	56.3%	23.1%	5.2%	3,300.00	0	0	0	0	0	0
6-21	RCPC, 0.91m dia.	m	56.6%	23.1%	4.8%	5,030.00	0	0	0	0	0	0
6-22	RCPC, 1.07m dia.	m	57.0%	23.2%	4.4%	6,790.00	0	0	0	0	0	0
6-23	RCPC, 1.22m dia.	m	57.1%	23.3%	4.2%	8,340.00	0	0	0	0	0	0
6-24	RCPC, 1.52m dia.	m	57.3%	23.3%	4.0%	11,600.00	0	0	0	0	0	0
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	6.2%	28,900.00	0	0	0	0	0	0
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	38,500.00	0	0	0	0	0	0
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.0%	6.1%	51,800.00	0	0	0	0	0	0
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	6.1%	60,000.00	0	0	0	0	0	0
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	68,500.00	0	0	0	0	0	0
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	82,800.00	0	0	0	0	0	0
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	2.9%	4,140.00	2,519	2,840	190	1,011	6,560	
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	2.8%	5,070.00	0	0	0	0	0	0
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	6,820.00	0	0	0	0	0	0

PLARIDEL-BALIUNG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - Sun Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Quantity	Amount (Thousand PP)				Remarks	
			Components (%)		Total (PP)	Components (x10 ³ PP)		Total (x10 ³ PP)					
			Foreign	Local-1		Local-2			Tax	Foreign	Local-1		Local-2
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.6%	43.2%	2.9%	15.3%	7,820.00	0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	51.50	0	0	0	0	0	
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0	0	0	0	0	
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	10,600.00	0	0	0	0	0	
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0	0	0	0	0	
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0	0	0	0	0	
	Subtotal							3,387	3,618	237	1,318	8,560	
7.	Miscellaneous Facilities												
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	0	0	0	0	0	
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	0	0	0	0	0	
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	0	0	0	0	0	
7-04	Planting, Big Tree	km	16.1%	70.7%	1.3%	11.9%	80,200.00	0	0	0	0	0	
7-05	Planting, Small Tree	km	7.8%	80.4%	0.6%	11.2%	41,000.00	0	0	0	0	0	
7-06	Traffic Signal light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	19,800.00	0	0	0	0	0	
7-07	Traffic Signal light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	27,800.00	0	0	0	0	0	
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	67,200	33,360	1,440	18,000	120,000	
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	240,000.00	0	0	0	0	0	
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	96,100.00	0	0	0	0	0	
	Subtotal							67,200	33,360	1,440	18,000	120,000	
9.	Engineer's Facility, Other General Requirement and Mobilization/Demobilization												
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot						7,898	4,173	261	2,188	14,460.8%	
	Subtotal							7,898	4,173	261	2,188	14,460	
	Total Contingencies							164,602	87,634	5,488	46,016	303,740	
	Total Construction Cost							8,730	4,382	274	2,304	15,190.5%	
								172,832	92,016	5,162	48,320	318,930	
	Detailed Engineering	Lot						6,913	3,681	230	1,936	12,760.4%	
	Construction Supervision	Lot						13,827	7,361	461	3,861	25,510.8%	
	Land Acquisition	m ²						0	0	0	0	0	
	Total Cost							193,572	103,058	6,453	54,117	357,200	

PLARIDEL-BALIUAG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)						Quantity	Components (x10 ³ PP)				Total (x10 ³ PP)	Remarks
			Components (%)			Tax				Foreign	Local-1	Local-2	Tax		
			Foreign	Local-1	Local-2	Foreign	Local-1	Local-2							
1	Earthwork														
1-01	Clearing and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	206,418.7	700	255	76	199	1,230		
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	25,267.9	2,237	820	85	568	3,710		
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	160,432.3	16,732	6,161	1,810	4,497	29,200		
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0	0	0	0	0	0		
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	782.8	98	36	10	26	170		
1-06	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0	0	0	0	0	0		
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	260.00	536,076.0	78,053	33,330	2,788	20,209	139,380		
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	6,170.5	285	452	135	178	1,050		
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	312,674.1	2,153	788	206	603	3,750		
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	12.0	130	75	13	42	260		
	Subtotal							100,388	46,917	5,123	26,322	178,750			
2	Subbase and Base Course														
2-01	Aggregate Subbase Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	59,411.9	8,791	4,820	376	2,353	16,340		
2-02	Aggregate Base Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0	0	0	0	0	0		
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0	0	0	0	0	0		
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0	0	0	0	0	0		
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0	0	0	0	0	0		
	Subtotal							8,791	4,820	376	2,353	16,340			
3	Pavement Surface Course														
3-01	Bituminous Prime Coat	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0	0	0	0	0	0		
3-02	Bituminous Tack Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	0	0	0	0	0	0		
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0	0	0	0	0	0		
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0	0	0	0	0	0		
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	81,922.8	34,201	12,002	384	8,222	54,810		
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	171,369.9	77,744	27,285	872	18,689	124,590		
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	49,019.8	8,898	3,123	100	2,139	14,260		
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	184,636.0	60,253	21,147	676	14,484	96,560		
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0	0	0	0	0	0		
	Subtotal							181,096	63,558	2,032	43,534	290,270			
4	Bridge Structure														
4-01	Bridge Excavation (A. O. W. L.)	m ³	52.8%	19.2%	12.2%	15.8%	255.00	3,900.3	523	190	121	156	990		
4-02	Bridge Excavation (B. O. W. L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	10,198.6	7,074	3,662	999	2,135	12,870		
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	1,121.3	185	133	135	87	540		
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	4,530.5	12,788	13,521	733	4,848	31,890		

ESTIMATED CONSTRUCTION COST

UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY

(Sta. Rita, Plaridel - San Jose Section)

PLARIDEL-BALIUAG BYPASS

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	Components (x10 ³ PP)			Tax	Total (x10 ³ PP)	Remarks
			Components (%)						Local 1	Local 2	Foreign			
			Foreign	Local 1	Local 2	Tax								
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	15.1%	4,700.00	3,743.4	7,983	369	2,657	17,590		
4-06	Structural Concrete for RC Thin Members	m ³	43.5%	39.0%	2.2%	15.3%	4,540.00	18,027.9	35,605	1,801	12,522	81,850		
4-07	Concrete for Sidewalk	m ³	41.2%	36.1%	2.1%	15.2%	3,890.00	0.0	0	0	0	0		
4-08	Lean Concrete	m ³	46.6%	34.1%	2.1%	15.2%	3,050.00	743.6	1,347	61	439	2,890		
4-09	Reinforcing Steel Bar (Grade 40)	kg	48.6%	25.6%	1.9%	15.2%	3,430.00	629.9	933	40	292	1,920		
4-10	Reinforcing Steel Bar (Grade 60)	kg	57.3%	25.3%	1.7%	15.3%	37.00	0.0	0	0	21,415	140,890		
4-11	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	457.00	226,525.0	24,845	2,174	16,666	103,520		
4-12	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	63.30	0.0	0	0	0	0		
4-13	Pre-cast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	5,410.00	3,634.4	9,751	668	3,068	19,660		
4-14	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	3,876.6	54,407	474	11,863	79,080		
4-15	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	11.0	2,051	60	589	3,750		
4-16	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	5.0	1,012	28	292	1,850		
4-17	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	0.0	0	0	0	0		
4-18	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	13.0	4,064	102	1,148	7,310		
4-19	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	15.7%	602,000.00	0.0	0	0	0	0		
4-20	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	15.8%	834,000.00	10.0	4,587	108	1,318	8,340		
4-21	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.5%	1.3%	15.8%	986,000.00	122.0	67,844	1,564	19,005	120,290		
4-22	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.6%	1.3%	15.7%	1,210,000.00	0.0	0	0	0	0		
4-23	Reinforced Concrete Railing	m	45.9%	36.6%	2.2%	15.3%	1,240.00	3,166.0	1,804	86	602	3,930		
4-24	Median Barrier	m	48.8%	33.9%	2.1%	15.2%	2,620.00	1,497.0	1,913	82	596	3,920		
4-25	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	18.0%	427,000.00	19.0	6,488	16	1,460	8,110		
4-26	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	17.1%	56,200.00	244.0	10,625	27	2,345	13,710		
4-27	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	15.1%	31,100.00	46.0	848	6	216	1,430		
4-28	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	99.0	1,230	14	340	2,270		
4-29	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	18.1%	184,000.00	147.5	21,685	0	4,912	27,140		
4-30	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	17.0%	57,700.00	18.0	809	1	177	1,040		
4-31	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	268.4	3,995	7	1,001	6,680		
4-32	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	50.8	269	1	81	540		
4-33	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	78,000,000.00	0.0	0	0	0	0		
4-34	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.6%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0		
4-35	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0		
4-36	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0		
4-37	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	1.0	39,780	293	8,833	58,500		
4-38	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	15.0%	42,150,000.00	0.0	0	0	0	0		
4-39	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	1.0	7,997	47	2,352	15,680		
4-40	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	0.0	0	0	0	0		

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

PLARIDEL-BALIUAG BYPASS

Item No.	Description	Unit	Unit Cost (PP)			Quantity	Total (PP)	Amount (Thousand PP)			Tax	Total (x10 ³ PP)	Remarks
			Components (%)					Components (x10 ³ PP)					
			Foreign	Local	Tax			Foreign	Local	Tax			
Subtotal													
5-01	Slope Protection	m ³	52.8%	22.0%	10.1%	1,410.00	0.0	0	0	0	0	0	
5-02	Stone Pitching	m ³	51.1%	27.0%	6.6%	2,220.00	0.0	0	0	0	0	0	
5-03	Gabion	m ²	15.2%	43.8%	26.1%	59.50	6,596.6	171	102	58	390	390	
5-04	Seeding	m ³	48.3%	27.4%	13.9%	1,420.00	0.0	0	0	0	0	0	
5-05	Grouted Riprap	m ³	55.1%	21.6%	8.1%	2,290.00	1,800.6	890	334	626	4,120	4,120	
Subtotal													
			448,247	196,924	12,694	121,415	779,180						
Subtotal			2,329	1,061	436	684	4,510						
6-01	Drainage Structure	m	42.1%	40.2%	2.4%	33,900.00	0.0	0	0	0	0	0	
6-02	RCBC, 1-2.5mx3.0m	m	44.0%	38.4%	2.4%	29,500.00	48.0	625	34	216	1,420	0	
6-03	RCBC, 1-3.0mx2.0m	m	43.5%	38.8%	2.4%	33,600.00	10.0	148	8	52	340	0	
6-04	RCBC, 1-3.0mx2.5m	m	43.1%	39.2%	2.4%	25,700.00	0.0	0	0	0	0	0	
6-05	RCBC, 1-2.0mx2.0m	m	44.5%	37.9%	2.3%	45,800.00	0.0	0	0	0	0	0	
6-06	RCBC, 2-2.5mx2.0m	m	46.0%	36.4%	2.3%	45,500.00	9.6	202	10	68	440	0	
6-07	RCBC, 2-3.0mx1.5m	m	45.4%	37.0%	2.3%	51,800.00	0.0	0	0	0	0	0	
6-08	RCBC, 2-3.0mx2.5m	m	44.7%	37.7%	2.3%	57,200.00	45.6	1,167	60	399	2,610	0	
6-09	RCBC, 2-3.0mx3.0m	m	44.2%	38.2%	2.4%	62,700.00	0.0	0	0	0	0	0	
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.3%	83,000.00	0.0	0	0	0	0	0	
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	45,500.00	2.0	41	33	14	90	0	
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	63,900.00	2.0	58	3	20	130	0	
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	2.0%	48,900.00	12.0	271	12	95	590	0	
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	52,200.00	0.0	0	0	0	0	0	
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	38,200.00	2.0	38	2	12	80	0	
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	55,800.00	0.0	0	0	0	0	0	
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	76,200.00	6.0	216	10	70	460	0	
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	100,000.00	0.0	0	0	0	0	0	
6-19	RCPC, 0.41m dia.	m	55.9%	22.8%	5.9%	2,170.00	17,474.9	21,197	8,646	5,840	37,920	0	
6-20	RCPC, 0.61m dia.	m	56.3%	23.1%	5.2%	3,300.00	0.0	0	0	0	0	0	
6-21	RCPC, 0.91m dia.	m	56.6%	23.1%	4.8%	5,030.00	0.0	0	0	0	0	0	
6-22	RCPC, 1.07m dia.	m	57.0%	23.2%	4.4%	6,790.00	0.0	0	0	0	0	0	
6-23	RCPC, 1.22m dia.	m	57.1%	23.3%	4.2%	8,340.00	0.0	0	0	0	0	0	
6-24	RCPC, 1.52m dia.	m	57.3%	23.3%	4.0%	11,600.00	0.0	0	0	0	0	0	
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	6.2%	28,900.00	642.0	7,142	7,383	2,375	18,550	0	
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	38,500.00	0.0	0	0	0	0	0	
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.1%	6.1%	51,800.00	0.0	0	0	0	0	0	
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	6.1%	60,000.00	0.0	0	0	0	0	0	
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	68,500.00	0.0	0	0	0	0	0	
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	82,800.00	0.0	0	0	0	0	0	
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	2.9%	4,140.00	23,389.8	37,183	41,927	14,912	96,830	0	
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	2.8%	5,070.00	0.0	0	0	0	0	0	
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	6,870.00	0.0	0	0	0	0	0	

PLARIDEL-BALIANG BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (pp)					Total (pp)	Quantity	Amount (Thousand pp)				Remarks
			Components (%)			Components (x10 ³ pp)				Tax	Total (x10 ³ pp)	Components (x10 ³ pp)		
			Foreign	Local-1	Local-2	Local-1	Local-2					Foreign	Tax	
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.6%	43.2%	2.9%	15.3%	7,820.00	0.0	0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	51.50	0.0	0	0	0	0	0	
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0.0	0	0	0	0	0	
6-37	Water Channel (W=1.5m)	m	36.8%	44.5%	3.0%	15.3%	10,800.00	0.0	0	0	0	0	0	
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0.0	0	0	0	0	0	
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0.0	0	0	0	0	0	
	Subtotal							68,288	50,263	6,336	24,373	159,450		
7.	Miscellaneous Facilities													
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	12,288	14,705	1,093	5,034	33,120		
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	5,936	6,967	359	2,358	15,620		
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	11,698	15,654	1,006	5,162	33,520		
7-04	Planting, Big Tree	km	16.1%	70.7%	1.3%	11.9%	80,200.00	3.0	170	3	28	240		
7-05	Planting, Small Tree	km	7.8%	80.4%	0.6%	11.2%	41,000.00	108	1,118	8	156	1,390		
7-06	Traffic Signal light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	19,800.00	0	0	0	0	0		
7-07	Traffic Signal light, 4 leg	each	66.5%	27.7%	0.8%	15.0%	27,800.00	0	0	0	0	0		
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	0.0	0	0	0	0		
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	240,000.00	0	0	0	0	0		
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	96,100.00	1,150	491	50	289	1,980		
	Subtotal							31,219	39,105	2,519	13,027	85,870		
9.	Engineer's Facility, Other General Requirement and Mobilization/Demobilization													
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot						42,018	20,627	1,476	11,599	75,720.5%		
	Subtotal							42,018	20,627	1,476	11,599	75,720.5%		
	Total Contingencies							882,376	433,175	30,992	243,507	1,590,050		
	Total Construction Cost							44,119	21,659	1,550	12,172	79,500.5%		
								926,495	454,834	32,542	255,679	1,669,550		
	Detailed Engineering Construction Supervision Land Acquisition	Lot						13,618	6,685	478	3,758	24,540	Review	
		Lot						74,120	36,387	2,603	20,450	133,560.8%		
		m ²						0	0	0	0	0		
	Total Cost							1,014,233	497,906	35,623	279,887	1,827,650		

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)						Quantity	Amount (Thousand PP)				Remarks	
			Components (%)							Total (x10 ³ PP)	Components (x10 ³ PP)				
			Foreign		Local-1		Local-2				Foreign	Local-1	Local-2		Tax
			Foreign	Local-1	Local-2	Tax									
1. Earthwork															
1-01	Clearing and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	631,099.4	2,145	780	234	611	3,770		
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	2,845.2	253	93	10	64	420		
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	292,803.6	30,535	11,244	3,304	8,207	53,290		
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0.0	0	0	0	0	0		
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	950.0	115	42	12	31	200		
1-06	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0.0	0	0	0	0	0		
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	260.00	794,734.2	115,713	56,823	4,133	29,961	206,630		
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	2,312.7	106	168	50	66	390		
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	397,114.3	2,738	1,002	262	768	4,770		
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	0.0	0	0	0	0	0		
Subtotal													289,470		
2. Subbase and Base Course															
2-01	Aggregate Subbase Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	145,993.1	21,601	11,844	923	5,782	40,150		
2-02	Aggregate Base Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0.0	0	0	0	0	0		
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0.0	0	0	0	0	0		
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0.0	0	0	0	0	0		
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0.0	0	0	0	0	0		
Subtotal													40,150		
3. Pavement Surface Course															
3-01	Bituminous Prime Coat	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0.0	0	0	0	0	0		
3-02	Bituminous Tack Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	0.0	0	0	0	0	0		
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0	0		
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0	0		
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	18,798.1	7,850	2,755	88	1,887	12,580		
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	207,516.6	94,137	33,038	1,056	22,829	150,860		
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	11,258.3	2,047	718	23	492	2,280		
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	3,556.8	1,161	407	13	279	1,860		
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0.0	0	0	0	0	0		
Subtotal													168,580		
4. Bridge Structure															
4-01	Bridge Excavation (A. O. W. L.)	m ³	52.8%	19.2%	12.2%	15.8%	255.00	6,075.4	818	298	189	245	1,550		
4-02	Bridge Excavation (B. O. W. L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	11,931.2	8,277	4,285	1,169	2,499	16,230		
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	1,342.6	222	161	163	104	650		
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	2,980.7	8,413	8,896	483	3,188	20,980		

Cost Estimation

CABANATUAN BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)			Total (PP)	Quantity	Cabanatuan Bypass Stage Construction Phase I (2-Lane Bypass Only)				Remarks
			Components (%)					Amount (Thousand PP)				
			Foreign	Local 1	Local 2			Foreign	Local 1	Local 2	Tax	
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	4,700.00	7,231.0	12,746	714	5,133	33,990	
4-06	Structural Concrete for	m ³	43.5%	39.0%	2.2%	4,540.00	19,041.5	33,716	1,902	13,276	86,450	
4-07	Structural Concrete for RC Thin Members	m ³	41.2%	41.2%	2.4%	5,190.00	0.0	0	0	0	0	
4-08	Concrete for Sidewalk	m ³	46.6%	36.1%	2.1%	3,890.00	1,134.3	2,055	93	670	4,410	
4-09	Lean Concrete	m ³	48.6%	34.1%	2.1%	3,050.00	696.1	723	45	322	2,120	
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.9%	34.30	4,826,735.9	42,383	3,146	25,165	165,560	
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	37.00	0.0	0	0	0	0	
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	457.00	149,036.9	39,368	1,430	10,966	68,110	
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	63.30	0.0	0	0	0	0	
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	5,410.00	7,040.6	11,960	1,295	5,942	38,090	
4-15	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	20,400.00	3,945.5	12,556	483	12,074	80,490	
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	341,000.00	21.0	2,005	115	1,123	7,160	
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	370,000.00	8.0	829	44	468	2,960	
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	542,000.00	31.0	9,341	235	2,638	16,800	
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	562,000.00	8.0	2,502	63	706	4,500	
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	603,000.00	0.0	0	0	0	0	
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	834,000.00	19.0	4,232	206	2,504	15,850	
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.5%	1.3%	986,000.00	203.0	53,042	2,602	31,626	200,160	
4-23	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.6%	1.3%	1,210,000.00	11.0	3,940	173	2,090	13,310	
4-24	Reinforced Concrete Railing	m	45.9%	36.6%	2.2%	1,240.00	5,330.0	2,419	145	1,012	6,610	
4-25	Median Barrier	m	49.8%	33.9%	2.1%	2,620.00	0.0	0	0	0	0	
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	427,000.00	13.0	100	11	999	5,550	
4-27	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	56,200.00	428.0	1,251	48	4,112	24,050	
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	31,100.00	129.0	1,011	16	605	4,010	
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	22,900.00	183.0	2,271	25	629	4,190	
4-30	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	184,000.00	121.4	447	0	4,043	22,340	
4-31	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	57,700.00	34.2	1,533	2	335	1,970	
4-32	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	24,900.00	350.1	2,189	9	1,307	8,720	
4-33	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	10,700.00	218.7	819	5	351	2,340	
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	78,000,000.00	0.0	0	0	0	0	
4-35	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.6%	16.0%	0.4%	56,200,000.00	0.0	0	0	0	0	
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	20,900,000.00	0.0	0	0	0	0	
4-37	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	54.6%	29.2%	1.1%	1,330,000.00	0.0	0	0	0	0	
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	58,500,000.00	0.0	0	0	0	0	
4-39	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	42,150,000.00	1.0	6,744	169	6,322	42,150	
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15,675,000.00	0.0	0	0	0	0	
4-41	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	864,500.00	1.0	251	9	130	860	

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)				Quantity	Amount (Thousand PP)				Remarks
			Components (%)		Total (PP)	Components (x10 ³ PP)		Total (x10 ³ PP)				
			Foreign	Local		Local-1			Local-2	Local-1	Local-2	
5. Slope Protection												
5-01	Stone Pitching	m ³	52.8%	22.0%	1,410.00	0	0	0	0	0	0	0
5-02	Gabion	m ³	51.1%	27.0%	2,220.00	0	0	0	0	0	0	0
5-03	Seeding	m ²	15.2%	43.8%	59.50	13,658.1	123	355	211	121	810	810
5-04	Grouted Riprap	m ³	48.3%	22.4%	1,420.00	770.9	526	244	152	168	1,090	1,090
5-05	Stone Masonry	m ³	55.1%	21.6%	2,290.00	52.2	66	26	10	18	120	120
Subtotal							514,916	231,721	14,989	140,534	902,160	
6. Drainage Structure												
6-01	RCBC, 1-2.5mx3.0m	Each	42.1%	40.2%	33,900.00	0.0	0	0	0	0	0	0
6-02	RCBC, 1-3.0mx2.0m	Each	44.0%	38.4%	29,500.00	26.0	339	296	18	117	770	770
6-03	RCBC, 1-3.0mx2.5m	Each	43.5%	38.8%	33,600.00	0.0	0	0	0	0	0	0
6-04	RCBC, 1-2.0mx2.0m	Each	43.1%	39.2%	25,700.00	0.0	0	0	0	0	0	0
6-05	RCBC, 2-2.5mx2.0m	Each	44.5%	37.9%	45,800.00	0.0	0	0	0	0	0	0
6-06	RCBC, 2-3.0mx1.5m	Each	45.0%	36.4%	45,500.00	0.0	0	0	0	0	0	0
6-07	RCBC, 2-3.0mx2.0m	Each	45.4%	37.0%	51,800.00	50.0	1,176	958	60	396	2,590	2,590
6-08	RCBC, 2-3.0mx2.5m	Each	44.7%	37.7%	57,200.00	26.0	666	562	34	228	1,490	1,490
6-09	RCBC, 2-3.0mx3.0m	Each	44.2%	38.2%	62,700.00	73.0	2,024	1,750	110	696	4,580	4,580
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	83,000.00	0.0	0	0	0	0	0	0
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	45,500.00	4.0	81	67	4	28	180	180
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	63,900.00	0.0	0	0	0	0	0	0
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	48,900.00	0.0	0	0	0	0	0	0
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	52,200.00	0.0	0	0	0	0	0	0
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	38,200.00	0.0	0	0	0	0	0	0
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	55,800.00	8.0	214	158	10	68	450	450
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	76,200.00	4.0	141	107	7	45	300	300
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	100,000.00	8.0	373	288	18	121	800	800
6-19	RCPC, 0.41m dia.	Each	55.9%	22.8%	2,170.00	2,204.2	2,672	1,090	282	736	4,780	4,780
6-20	RCPC, 0.61m dia.	Each	56.3%	23.1%	3,300.00	0.0	0	0	0	0	0	0
6-21	RCPC, 0.91m dia.	Each	56.6%	23.1%	5,030.00	0.0	0	0	0	0	0	0
6-22	RCPC, 1.07m dia.	Each	57.0%	23.2%	6,790.00	0.0	0	0	0	0	0	0
6-23	RCPC, 1.22m dia.	Each	57.1%	23.3%	8,340.00	1,919.0	9,136	3,728	672	2,464	16,000	16,000
6-24	RCPC, 1.52m dia.	Each	57.3%	23.3%	11,600.00	132.0	877	356	61	236	1,530	1,530
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	28,900.00	123.0	1,367	1,413	220	550	3,550	3,550
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	38,500.00	0.0	0	0	0	0	0	0
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.0%	51,800.00	0.0	0	0	0	0	0	0
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	60,000.00	0.0	0	0	0	0	0	0
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	68,500.00	0.0	0	0	0	0	0	0
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	82,800.00	8.0	251	267	40	102	660	660
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	4,140.00	0.0	0	0	0	0	0	0
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	5,070.00	0.0	0	0	0	0	0	0
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	6,820.00	0.0	0	0	0	0	0	0

Cost Estimation

- 19/36 -

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CABANATUAN BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. 8+10, Floridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	Components (x10 ³ PP)				Total (x10 ³ PP)	Remarks
			Foreign		Local				Local-1	Local-2	Tax	Total		
			%	Amount	%	Amount								
6-34	Side Ditch Type D (#=1.0m, H=1.0m)	m	38.6%	2.9%	15.3%	7,870.00	0.0	0	0	0	0	0		
6-35	Side Ditch Type E (#=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	17.9%	51.50	55,240.2	68	2,238	508	2,840	0		
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	16.5%	2,100.00	0.0	0	0	0	0	0		
6-37	Water Channel (#=1.5m)	m	36.8%	44.9%	3.0%	10,500.00	0.0	0	0	0	0	0		
6-38	Water Channel (#=2.0m)	m	37.2%	44.4%	15.4%	14,200.00	138.0	729	870	59	302	1,960		
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	15.3%	6,400.00	0.0	0	0	0	0	0		
	Subtotal						20,114	11,936	3,833	6,597	42,480			
7-	Miscellaneous Facilities													
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	635.00	11,587.0	2,731	3,268	243	1,118	7,360		
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	931.00	4,818.0	1,706	2,003	103	678	4,490		
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	2,150.00	0.0	0	0	0	0	0		
7-04	Planting, Big Tree	ea	16.1%	70.7%	11.9%	80,200.00	6.1	79	346	6	59	490		
7-05	Planting, Small Tree	ea	7.8%	80.4%	0.6%	41,000.00	0.0	0	0	0	0	0		
7-06	Traffic Signal light, 3 leg	each	55.0%	23.8%	1.1%	19,800.00	2.0	22	12	0	6	0		
7-07	Traffic Signal light, 4 leg	each	56.5%	27.7%	0.8%	27,800.00	11.0	175	86	2	47	310		
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	120,000,000.00	0.0	0	0	0	0	0		
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	240,000.00	28.2	3,933	1,679	169	989	6,770		
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	96,100.00	0.0	0	0	0	0	0		
	Subtotal						8,646	7,394	523	2,897	19,450			
9-	Engineer's Facility, Other General Requirement and Mobilization/Demobilization													
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot					41,140	18,530	1,491	11,059	72,220	5%		
	Subtotal						41,140	18,530	1,491	11,059	72,220			
	Total Contingencies						863,932	389,120	31,317	232,171	1,516,540			
	Total Construction Cost						43,197	19,456	1,566	11,611	75,830	5%		
							907,129	408,576	32,883	243,782	1,592,370			
	Detailed Engineering Construction Supervision Land acquisition	Lot					66,367	29,892	2,406	17,835	116,500	Phase 1&2		
		Lot					72,570	32,686	2,631	19,503	127,390	8%		
		m ²					0	0	0	0	0	0		
	Total Cost						1,046,066	471,154	37,920	281,120	1,836,260			

ESTIMATED CONSTRUCTION COST

UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY

(Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)						Cabanatuan Bypass (access road)						Remarks	
			Components (%)			Total (PP)			Amount (Thousand PP)			Total (x10 ³ PP)				
			Foreign	Local-1	Local-2	Tax	Foreign	Local-1	Local-2	Tax	Foreign	Local-1	Local-2	Tax		Total
1. Earthwork																
1-01	Clearing and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	76,186.0	256	93	28	72	450			
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	0.0	0	0	0	0	0			
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	0.0	0	0	0	0	0			
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0.0	0	0	0	0	0			
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	0.0	0	0	0	0	0			
1-06	Embankment from Roadway/Drainage	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0.0	0	0	0	0	0			
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	260.00	7,734	3,798	276	2,002	12,810				
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	0.0	0	0	0	0	0			
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	62,822.5	158	41	120	750				
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	0.0	0	0	0	0	0			
Subtotal								8,421	4,049	345	2,195	15,010				
2. Subbase and Base Course																
2-01	Aggregate Subbase Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	18,542.1	1,505	117	734	5,100				
2-02	Aggregate Base Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0.0	0	0	0	0	0			
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0.0	0	0	0	0	0			
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0.0	0	0	0	0	0			
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0.0	0	0	0	0	0			
Subtotal								2,744	1,505	117	734	5,100				
3. Pavement Surface Course																
3-01	Bituminous Prime Coat	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0.0	0	0	0	0	0			
3-02	Bituminous Tack Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	37.8	175	3	183	1,020				
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	12,369.3	5,677	126	5,646	21,540				
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0	0			
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	43,441.0	6,364	203	4,360	29,060				
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	0.0	0	0	0	0	0			
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	10,752.8	685	22	470	3,130				
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	5,900.0	677	22	463	3,090				
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0.0	0	0	0	0	0			
Subtotal								42,764	13,578	376	11,122	67,490				
4. Bridge Structure																
4-01	Bridge Excavation (A.O.W.L.)	m ³	52.8%	19.2%	12.2%	15.8%	255.00	515.0	25	16	20	130				
4-02	Bridge Excavation (B.O.W.L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	0.0	0	0	0	0	0			
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	46.0	5	5	3	20				
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	0.0	0	0	0	0	0			

Cost Estimation

CABANATUAN BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	Amount (Thousand PP)				Total (x10 ³ PP)	Remarks
			Components (%)		Tax				Components (x10 ³ PP)		Tax			
			Foreign	Local	Local	Local			Local	Local	Local	Local		
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	15.1%	4,700.00	156.9	331	15	110	730		
4-06	Structural Concrete for	m ³	43.5%	39.0%	2.2%	15.3%	4,540.00	489.0	966	49	339	2,220		
4-07	Structural Concrete for RC Thin Members	m ³	41.2%	41.2%	2.4%	15.2%	5,190.00	0.0	0	0	0	0		
4-08	Concrete for Sidewalk	m ³	46.6%	36.1%	2.1%	15.2%	3,890.00	20.3	37	2	12	80		
4-09	Lean Concrete	m ³	48.6%	34.1%	2.1%	15.2%	3,050.00	23.0	34	1	11	70		
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.9%	15.2%	34.30	93,564.0	1,839	61	488	2,210		
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	15.3%	37.00	0.0	0	0	0	0		
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	457.00	0.0	0	0	0	0		
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	63.30	0.0	0	0	0	0		
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	5,410.00	528.0	1,419	97	446	2,860		
4-15	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	0.0	0	0	0	0		
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	0.0	0	0	0	0		
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	0.0	0	0	0	0		
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	0.0	0	0	0	0		
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	0.0	0	0	0	0		
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	15.7%	603,000.00	0.0	0	0	0	0		
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	15.8%	894,000.00	10.0	4,687	108	1,318	8,340		
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.5%	1.3%	15.8%	986,000.00	0.0	0	0	0	0		
4-23	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.6%	1.3%	15.7%	1,210,000.00	0.0	0	0	0	0		
4-24	PC Girder (AASHTO Type VI, L=40m)	each	45.9%	36.6%	2.2%	15.3%	1,240.00	30.0	32	2	10	70		
4-25	Reinforced Concrete Railing	m	48.8%	33.9%	2.1%	15.2%	2,620.00	0.0	0	0	0	0		
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	18.0%	427,000.00	0.0	0	0	0	0		
4-27	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	17.1%	56,200.00	0.0	0	0	0	0		
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	15.1%	31,100.00	20.0	368	2	94	620		
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	0.0	0	0	0	0		
4-30	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	18.1%	184,000.00	0.0	0	0	0	0		
4-31	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	17.0%	57,700.00	0.0	0	0	0	0		
4-32	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	41.4	616	1	154	1,030		
4-33	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	0.0	0	0	0	0		
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	78,000,000.00	0.0	0	0	0	0		
4-35	PC Box Girder Temporary Works (Paopanga Bridge)	Lot	68.6%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0		
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0		
4-37	Temporary Works for Substructure in River (Paopanga Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0		
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	0.0	0	0	0	0		
4-39	PC Box Girder Temporary Works (Paopanga Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	15.0%	42,150,000.00	0.0	0	0	0	0		
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	0.0	0	0	0	0		
4-41	Temporary Works for Substructure in River (Paopanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	0.0	0	0	0	0		

ESTIMATED CONSTRUCTION COST

UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)				Quantity	Cabanatuan Bypass (access road)			Total (x10 ³ PP)	Remarks
			Components (%)		Total (PP)	Amount (Thousand PP)		Tax				
			Foreign	Local		Local 1			Local 2			
5. Slope Protection												
5-01	Stone Pitching	m ³	52.8%	22.0%	10.1%	15.1%	0	0	0	0	0	0
5-02	Gabion	m ³	51.1%	27.0%	6.6%	15.3%	0	0	0	0	0	0
5-03	Seeding	m ²	15.2%	43.8%	26.1%	14.9%	0	0	0	0	0	0
5-04	Grouted Riprap	m ³	48.3%	22.4%	13.9%	15.4%	48	22	14	16	100	0
5-05	Stone Masonry	m ³	55.1%	21.6%	8.1%	15.2%	0	0	0	0	0	0
Subtotal							10,444	5,638	361	3,017	19,460	
6. Drainage Structures												
6-01	RCBC, 1-2.5mx3.0m	Each	42.1%	40.2%	2.4%	15.3%	0	0	0	0	0	0
6-02	RCBC, 1-3.0mx2.0m	Each	44.0%	38.4%	2.4%	15.2%	0	0	0	0	0	0
6-03	RCBC, 1-3.0mx2.5m	Each	43.5%	38.8%	2.4%	15.3%	0	0	0	0	0	0
6-04	RCBC, 1-2.0mx2.0m	Each	43.1%	39.2%	2.4%	15.3%	0	0	0	0	0	0
6-05	RCBC, 2-2.5mx2.0m	Each	44.5%	37.9%	2.3%	15.3%	0	0	0	0	0	0
6-06	RCBC, 2-3.0mx1.5m	Each	46.0%	36.4%	2.3%	15.3%	0	0	0	0	0	0
6-07	RCBC, 2-3.0mx2.0m	Each	45.4%	37.0%	2.3%	15.3%	0	0	0	0	0	0
6-08	RCBC, 2-3.0mx2.5m	Each	44.7%	37.7%	2.3%	15.3%	0	0	0	0	0	0
6-09	RCBC, 2-3.0mx3.0m	Each	44.2%	38.2%	2.4%	15.2%	0	0	0	0	0	0
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.3%	15.3%	0	0	0	0	0	0
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	15.3%	0	0	0	0	0	0
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	15.2%	0	0	0	0	0	0
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	2.0%	16.0%	0	0	0	0	0	0
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	15.2%	0	0	0	0	0	0
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	15.2%	0	0	0	0	0	0
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	15.2%	0	0	0	0	0	0
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	15.2%	0	0	0	0	0	0
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	15.2%	0	0	0	0	0	0
6-19	RCPC, 0.41m dia.	Each	55.9%	22.8%	5.9%	15.4%	5,740.7	2,861	735	1,919	12,460	0
6-20	RCPC, 0.61m dia.	Each	56.3%	23.1%	5.2%	15.4%	0	0	0	0	0	0
6-21	RCPC, 0.91m dia.	Each	56.6%	23.1%	4.6%	15.5%	0	0	0	0	0	0
6-22	RCPC, 1.07m dia.	Each	57.0%	23.2%	4.4%	15.4%	0	0	0	0	0	0
6-23	RCPC, 1.22m dia.	Each	57.1%	23.3%	4.2%	15.4%	0	0	0	0	0	0
6-24	RCPC, 1.52m dia.	Each	57.3%	23.3%	4.0%	15.4%	0	0	0	0	0	0
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	6.2%	15.5%	198.0	2,277	355	886	5,720	0
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	15.5%	0	0	0	0	0	0
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.0%	6.1%	15.5%	0	0	0	0	0	0
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	6.1%	15.4%	0	0	0	0	0	0
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	15.4%	0	0	0	0	0	0
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	15.4%	0	0	0	0	0	0
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	2.9%	15.4%	348.0	624	42	221	1,440	0
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	2.8%	15.3%	0	0	0	0	0	0
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	15.3%	0	0	0	0	0	0
Subtotal							6,965	2,861	735	1,919	12,460	

CABANATUAN BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)					Quantity	Cabanatuan Bypass (access road)					Remarks
			Components (%)		Total (PP)	Components (x10 ³ PP)			Components (x10 ³ PP)		Total (x10 ³ PP)			
			Foreign	Local		Local 1	Local 2		Foreign	Tax				
			Local 2	Tax		Local 1	Local 2		Local 1	Tax				
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.6%	43.2%	2.9%	15.3%	7,820.00	0	0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	51.50	0	0	0	0	0	0	
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0	0	0	0	0	0	
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	10,600.00	0	0	0	0	0	0	
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0	0	0	0	0	0	
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0	0	0	0	0	0	
Subtotal							3,720	3,742	1,132	3,026		19,620		
7.	Miscellaneous Facilities													
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	1,391	1,665	124	570	3,750		
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	2,086	2,449	126	829	5,490		
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	0	0	0	0	0		
7-04	Planting, Big Tree	ka	16.1%	70.7%	1.3%	11.9%	80,200.00	39	170	3	28	240		
7-05	Planting, Small Tree	ka	7.8%	80.4%	0.6%	11.2%	41,000.00	0	0	0	0	0		
7-06	Traffic Signal light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	19,800.00	0	0	0	0	0		
7-07	Traffic Signal light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	27,800.00	0	0	0	0	0		
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	0	0	0	0	0		
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	ka	58.1%	24.8%	2.5%	14.6%	240,000.00	0	0	0	0	0		
7-10	Miscellaneous Facilities (Phase 2 construction)	ka	58.1%	24.8%	2.5%	14.6%	96,100.00	0	0	0	0	0		
Subtotal							3,516	4,284	253	1,427		9,480		
9.	Engineer's Facility, Other General Requirement and Mobilization/Demobilization													
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot					3,893	1,741	130	1,076		6,830.5%		
Subtotal							3,893	1,741	130	1,076		6,830		
Total Contingencies							81,540	35,559	2,728	22,613		143,440		
Total Construction Cost							4,077	1,828	136	1,129		7,170.5%		
Detailed Engineering Construction Supervision Land Acquisition							85,617	38,387	2,864	23,742		150,610		
Subtotal							3,425	1,535	115	945		6,020.4%		
Total Cost							6,849	3,071	229	1,901		12,050.3%		
Subtotal							95,891	42,993	3,208	26,588		168,680		

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)						Cabanatuan Bypass Stage Construction Phase 2 (2-lane bypass & frontage road)				Remarks	
			Components (%)			Total (PP)			Quantity		Amount (Thousand PP)			Total (x10 ³ PP)
			Foreign	Local 1	Local 2	Local 1	Local 2	Tax	Foreign	Local 1	Local 2	Tax		
			Local 1	Local 2	Tax	Local 1	Local 2	Tax	Local 1	Local 2	Tax	Local 2		Tax
1. Earthwork														
1-01	Clearing and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	721,589.3	892	267	699	4,310		
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	0.0	0	0	0	0		
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	441,623.3	16,960	4,984	12,378	80,380		
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0.0	0	0	0	0		
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	190.0	8	2	7	40		
1-06	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0.0	0	0	0	0		
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	260.00	1,055,554.6	75,471	5,489	39,794	274,440		
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	17,752.5	1,299	390	513	3,020		
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	518,314.9	1,306	342	1,002	6,220		
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	12.0	75	42	260			
Subtotal								206,737	96,011	11,487	54,435	368,670		
2. Subbase and Base Course														
2-01	Aggregate Subbase Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	114,618.5	9,298	725	4,539	31,520		
2-02	Aggregate Base Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0.0	0	0	0	0		
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0.0	0	0	0	0		
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0.0	0	0	0	0		
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0.0	0	0	0	0		
Subtotal								16,958	9,298	725	4,539	31,520		
3. Pavement Surface Course														
3-01	Bituminous Prime Coat	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0.0	0	0	0	0		
3-02	Bituminous Tack Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	0.0	0	0	0	0		
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0		
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0		
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	183,975.8	26,955	862	18,461	123,080		
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	274,137.5	43,647	1,395	29,895	199,300		
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	205,966.2	13,127	420	8,990	59,940		
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	126,543.5	14,493	463	9,928	66,180		
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0.0	0	0	0	0		
Subtotal								279,864	98,222	3,140	67,274	448,500		
4. Bridge Structure														
4-01	Bridge Excavation (A.O.W.L.)	m ³	52.8%	19.2%	12.2%	15.8%	255.00	6,075.4	298	189	245	1,550		
4-02	Bridge Excavation (B.O.W.L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	11,931.2	4,285	1,169	2,499	16,250		
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	1,342.6	161	153	104	650		
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	2,980.7	8,896	483	3,188	20,980		

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
 (Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity			Amount (Thousand PP)			Remarks
			Components (%)		Tax	Foreign		Local-1	Local-2	Tax	Total			
			Foreign	Local-1								Local-2		
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	15.1%	4,700.00	7,231.0	12,746	714	5,133	33,990		
4-06	Structural Concrete for	m ³	43.5%	39.0%	2.2%	15.3%	4,540.00	19,041.5	33,716	1,902	13,226	86,450		
4-07	Structural Concrete for RC Thin Members	m ³	41.2%	41.2%	2.4%	15.2%	5,190.00	0.0	0	0	0	0		
4-08	Concrete for Sidewalk	m ³	46.6%	36.1%	2.1%	15.2%	3,890.00	1,134.3	1,592	93	670	4,410		
4-09	Lean Concrete	m ³	48.6%	34.1%	2.1%	15.2%	3,050.00	696.1	723	45	322	2,120		
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.9%	15.2%	34.30	4,826,735.9	0	3,146	25,165	155,560		
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	15.3%	37.00	0.0	0	0	0	0		
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	457.00	149,036.9	39,368	1,430	10,966	68,110		
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	63.30	0.0	0	0	0	0		
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	5,410.00	7,040.6	11,960	1,285	5,942	38,090		
4-15	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	3,945.5	12,556	483	12,074	80,490		
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	21.0	2,005	115	1,123	7,160		
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	8.0	829	44	468	2,960		
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	31.0	9,341	235	2,638	16,800		
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	8.0	1,229	63	706	4,500		
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	15.7%	603,000.00	0.0	0	0	0	0		
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	15.8%	834,000.00	19.0	4,232	206	2,504	15,850		
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.6%	1.3%	15.8%	986,000.00	203.0	53,042	2,602	31,626	200,160		
4-23	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.6%	1.3%	15.7%	1,210,000.00	11.0	3,540	173	2,090	13,310		
4-24	Reinforced Concrete Railing	m	45.9%	36.6%	2.2%	15.3%	1,240.00	5,330.0	3,034	145	1,012	6,610		
4-25	Median Barrier	m	48.9%	33.9%	2.1%	15.2%	2,620.00	2,135.0	1,895	117	850	5,590		
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	18.0%	427,000.00	13.0	4,440	11	999	5,550		
4-27	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	17.1%	56,200.00	428.0	18,639	1,251	4,112	24,050		
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	15.1%	31,100.00	129.0	2,378	1,011	605	4,010		
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	183.0	2,271	25	629	4,190		
4-30	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	18.1%	184,000.00	121.4	17,850	447	4,043	22,340		
4-31	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	17.0%	57,700.00	34.2	1,533	2	335	1,970		
4-32	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	350.1	5,215	9	1,307	8,720		
4-33	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	218.7	1,165	5	351	2,340		
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	78,000,000.00	0.0	0	0	0	0		
4-35	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.6%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0		
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0		
4-37	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0		
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	0.0	0	0	0	0		
4-39	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	15.0%	42,150,000.00	1.0	6,744	169	6,322	42,150		
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	0.0	0	0	0	0		
4-41	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	1.0	251	9	130	860		

Cost Estimation

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
 (Sta. Rita, Plaridel - San Jose Section)

CABANATUAN BYPASS

Item No.	Description	Unit	Unit Cost (PP)			Quantity	Amount (Thousand PP)			Total (x10 ³ PP)	Remarks	
			Components (%)				Components (x10 ³ PP)					
			Foreign	Local-1	Local-2		Foreign	Local-1	Local-2			Tax
5. Stone Protection												
5-01	Stone Pitching	m ³	52.8%	22.0%	10.1%	0.0	0	0	0	0	0	0
5-02	Cabion	m ³	51.1%	27.0%	6.6%	0.0	0	0	0	0	0	0
5-03	Seeding	m ²	15.2%	42.8%	26.1%	16,389.7	429	286	145	980		
5-04	Grouted Riprap	m ³	48.3%	22.4%	13.9%	782.9	536	154	171	1,110		
5-05	Stone Masonry	m ³	55.1%	21.6%	8.1%	10.4	4	2	3	20		
Subtotal							517,644	233,616	15,106	141,384	907,750	
6. Drainage Structures												
6-01	RCBC, 1-2.5mx3.0m	m	42.1%	40.2%	2.4%	0.0	0	0	0	0	0	0
6-02	RCBC, 1-3.0mx2.0m	m	44.0%	38.4%	2.4%	26.0	296	18	0	117	770	
6-03	RCBC, 1-3.0mx2.5m	m	43.5%	38.8%	2.4%	0.0	0	0	0	0	0	0
6-04	RCBC, 1-2.0mx2.0m	m	43.1%	39.2%	2.4%	0.0	0	0	0	0	0	0
6-05	RCBC, 2-2.5mx2.0m	m	44.5%	37.9%	2.3%	0.0	0	0	0	0	0	0
6-06	RCBC, 2-3.0mx1.5m	m	46.0%	36.4%	2.3%	0.0	0	0	0	0	0	0
6-07	RCBC, 2-3.0mx2.0m	m	45.4%	37.0%	2.3%	24.0	459	29	0	189	1,240	
6-08	RCBC, 2-3.0mx2.5m	m	44.7%	37.7%	2.3%	24.0	516	32	0	210	1,370	
6-09	RCBC, 2-3.0mx3.0m	m	44.2%	38.2%	2.4%	0.0	0	0	0	0	0	0
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.3%	0.0	0	0	0	0	0	0
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	2.0	33	2	0	14	90	
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	0.0	0	0	0	0	0	0
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.8%	36.8%	2.0%	0.0	0	0	0	0	0	0
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	0.0	0	0	0	0	0	0
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	0.0	0	0	0	0	0	0
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	2.0	77	5	0	33	220	
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	4.0	71	3	0	23	150	
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	4.0	186	9	0	61	400	
6-19	RCPC, 0.41m dia.	m	55.9%	22.8%	5.9%	41,811.7	50,718	5,353	13,973	90,730		
6-20	RCPC, 0.61m dia.	m	56.3%	23.1%	5.2%	0.0	0	0	0	0	0	0
6-21	RCPC, 0.91m dia.	m	56.6%	23.1%	4.8%	0.0	0	0	0	0	0	0
6-22	RCPC, 1.07m dia.	m	57.0%	23.2%	4.4%	0.0	0	0	0	0	0	0
6-23	RCPC, 1.22m dia.	m	57.1%	23.3%	4.2%	1,275.0	6,070	446	1,637	10,630		
6-24	RCPC, 1.52m dia.	m	57.3%	23.3%	4.0%	56.0	372	26	101	650		
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.3%	39.8%	6.2%	1,171.0	13,028	2,098	5,246	33,840		
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	50.0	741	118	299	1,930		
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.1%	6.1%	10.0	200	32	80	520		
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.2%	40.3%	6.1%	0.0	0	0	0	0	0	0
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	0.0	0	0	0	0	0	0
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	8.0	251	40	102	660		
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	2.9%	24,249.9	38,550	43,469	15,460	100,390		
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	2.8%	0.0	0	0	0	0	0	0
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	0.0	0	0	0	0	0	0
Subtotal							696	412	320	2,110		

CABANATUAN BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)										Quantity	Amount (Thousand PP)				Remarks
			Components (%)			Total (PP)			Components (x10 ³ PP)					Total (x10 ³ PP)				
			Foreign	Local-1	Local-2	Tax	Foreign	Local-1	Local-2	Tax								
			38.6%	43.2%	2.9%	15.3%	0.0	0	0	0								
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	2.4%	0.9%	78.8%	17.9%	7,820.00	0	0	0	0	0	0	0	0			
6-35	Side Ditch Type E (W=0.3m, H=0.3m, 1:1)	m					51.50	0	0	0	0	0	0	0	0			
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0	0	0	0	0	0	0	0			
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	10,600.00	0	0	0	0	0	0	0	0			
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0	0	0	0	0	0	0	0			
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0	0	0	0	0	0	0	0			
	Subtotal							111,847	83,076	11,172	37,545	243,590						
7-	Miscellaneous Facilities																	
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	24,605	29,446	2,189	10,080	66,320						
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	13,422	15,753	812	5,333	35,320						
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	18,986	25,405	1,632	8,377	54,400						
7-04	Planting, Big Tree	km	16.1%	70.7%	1.3%	11.9%	80,200.00	636	2,793	51	470	3,950						
7-05	Planting, Small Tree	km	7.8%	80.4%	0.6%	11.2%	41,000.00	96	989	7	138	1,250						
7-06	Traffic Signal light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	19,800.00	22	12	0	6	40						
7-07	Traffic Signal light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	27,800.00	175	85	2	47	310						
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	0	0	0	0	0						
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	240,000.00	0	0	0	0	0						
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	96,100.00	1,575	672	68	395	2,710						
	Subtotal							59,517	75,156	4,761	24,846	164,280						
9-	Engineer's Facility, Other General Requirement and Mobilization/Demobilization																	
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot						59,663	29,803	2,338	16,516	108,320						
	Subtotal							59,663	29,803	2,338	16,516	108,320						
Total Contingencies								1,252,926	625,864	49,091	346,859	2,274,740						
Total Construction Cost								62,646	31,293	2,455	17,346	113,740	5%					
								1,315,572	657,157	51,546	364,205	2,388,480						
Detailed Engineering Construction Supervision Land Acquisition								18,336	9,159	718	5,076	33,290	Review					
								105,246	52,573	4,124	29,137	191,080	18%					
								0	0	0	0	0						
								1,486,071.2	0	0	0	0						
Total Cost								1,439,154	718,889	56,388	398,418	2,612,850						

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)					Total (PP)	Quantity	Amount (Thousands PP)					Total (x10 ³ PP)	Remarks
			Components (%)							Components (x10 ³ PP)						
			Foreign	Local-1	Local-2	Inx	Total			Foreign	Local-1	Local-2	Inx	Total		
1. Earthwork																
1-01	Clearing and Grubbing	m ²	56.9%	20.7%	6.2%	16.2%	5.97	253,971.9	865	315	94	246	1,520			
1-02	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	90,100.0	7,984	2,926	305	2,025	13,240			
1-03	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	0.0	0	0	0	0	0			
1-04	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0.0	0	0	0	0	0			
1-05	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	0.0	0	0	0	0	0			
1-06	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0.0	0	0	0	0	0			
1-07	Embankment from Borrow	m ³	56.0%	27.5%	2.0%	14.5%	260.00	263,092.0	38,304	18,810	1,368	9,918	68,400			
1-08	Removal of Existing PCC Pavement	m ²	27.1%	43.0%	12.9%	17.0%	170.00	0.0	0	0	0	0	0			
1-09	Subgrade Preparation	m ²	57.4%	21.0%	5.5%	16.1%	12.00	198,906.3	1,372	502	131	385	2,390			
1-10	Demolition of Wing Wall	each	50.0%	28.8%	5.1%	16.1%	21,900.00	0.0	0	0	0	0	0			
	Subtotal							48,525	22,553	1,898	12,374		85,550			
2. Subbase and Base Course																
2-01	Aggregate Subbase Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	50,268.7	7,435	4,077	318	1,990	13,820			
2-02	Aggregate Base Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0.0	0	0	0	0	0			
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0.0	0	0	0	0	0			
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0.0	0	0	0	0	0			
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0.0	0	0	0	0	0			
	Subtotal							7,435	4,077	318	1,990		13,820			
3. Pavement Surface Course																
3-01	Bituminous Prime Coat	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0.0	0	0	0	0	0			
3-02	Bituminous Tack Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	0.0	0	0	0	0	0			
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0	0			
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0.0	0	0	0	0	0			
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	6,408.8	2,677	940	30	643	4,290			
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	64,171.7	29,110	10,216	327	6,997	46,650			
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	44,470.2	8,075	2,834	91	1,940	12,940			
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	67,789.5	22,121	7,764	248	5,317	35,450			
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0.0	0	0	0	0	0			
	Subtotal							61,983	21,751	696	14,857		99,330			
4. Bridge Structure																
4-01	Bridge Excavation (A. O. F. L.)	m ³	52.8%	19.2%	12.2%	15.8%	255.00	1,104.6	148	54	34	44	280			
4-02	Bridge Excavation (B. O. F. L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	2,185.6	1,515	784	214	457	2,970			
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	185.7	31	22	23	14	90			
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	0.0	0	0	0	0	0			

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	San Jose Bypass (excluding access road)				Total (x10³ PP)	Remarks
			Components (%)		Tax				Amount (Thousand PP)		Local Z	Tax		
			Foreign	Local-1	Local-2	Tax			Local-1	Local-2				
4-05	Structural Concrete for RC Superstructure	m³	45.3%	37.5%	2.1%	15.1%	4,700.00	698.9	1,240	69	495	3,280		
4-06	Structural Concrete for RC Thin Members	m³	43.5%	39.0%	2.2%	15.3%	4,540.00	1,939.2	3,432	194	1,346	8,800		
4-07	Structural Concrete for RC Thin Members	m³	41.2%	36.1%	2.1%	15.2%	5,190.00	0.0	0	0	0	0		
4-08	Concrete for Sidewalk	m³	46.6%	34.1%	2.1%	15.2%	3,890.00	94.4	134	8	56	370		
4-09	Lean Concrete	m³	48.6%	34.1%	2.1%	15.2%	3,050.00	92.8	136	6	43	280		
4-10	Reinforcing Steel Bar (Grade 40)	kg	57.3%	25.6%	1.9%	15.2%	34.30	390,442.4	3,428	254	2,036	15,390		
4-11	Reinforcing Steel Bar (Grade 60)	kg	57.7%	25.3%	1.7%	15.3%	37.00	0.0	0	0	0	0		
4-12	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	457.00	0.0	0	0	0	0		
4-13	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	63.30	0.0	0	0	0	0		
4-14	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	5,410.00	1,904.0	3,234	350	1,607	10,300		
4-15	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	0.0	0	0	0	0		
4-16	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	0.0	0	0	0	0		
4-17	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	0.0	0	0	0	0		
4-18	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	10.0	1,480	76	850	5,420		
4-19	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	0.0	0	0	0	0		
4-20	PC Girder (AASHTO Type IV, L=27m)	each	55.6%	27.3%	1.4%	15.7%	603,000.00	20.0	3,292	169	1,894	12,050		
4-21	PC Girder (AASHTO Type V, L=30m)	each	56.2%	26.7%	1.3%	15.8%	834,000.00	0.0	0	0	0	0		
4-22	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.5%	1.3%	15.8%	986,000.00	0.0	0	0	0	0		
4-23	PC Girder (AASHTO Type VI, L=40m)	each	56.4%	26.6%	1.3%	15.7%	1,210,000.00	0.0	0	0	0	0		
4-24	Reinforced Concrete Railing	m	45.9%	36.6%	2.2%	15.3%	1,240.00	204.0	92	6	37	250		
4-25	Median Barrier	m	48.8%	33.9%	2.1%	15.2%	2,620.00	204.0	180	11	80	530		
4-26	Rubber Bearing Shoe (R=850t)	each	80.0%	1.8%	0.2%	18.0%	427,000.00	0.0	0	0	0	0		
4-27	Rubber Bearing Shoe (R=100t)	each	77.5%	5.2%	0.2%	17.1%	56,200.00	0.0	0	0	0	0		
4-28	Rubber Bearing Shoe (R=65t)	each	59.3%	25.2%	0.4%	15.1%	31,100.00	40.0	312	5	188	1,240		
4-29	Rubber Bearing Shoe (R=50t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	60.0	414	8	205	1,370		
4-30	Expansion Joint (t=300mm)	m	79.9%	2.0%	0.0%	18.1%	184,000.00	0.0	0	0	0	0		
4-31	Expansion Joint (t=200mm)	m	77.8%	5.1%	0.1%	17.0%	57,700.00	0.0	0	0	0	0		
4-32	Expansion Joint (t=100mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	0.0	0	0	0	0		
4-33	Expansion Joint (t=50mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	151.2	567	3	243	1,620		
4-34	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	78,000,000.00	0.0	0	0	0	0		
4-35	PC Box Girder Temporary Works (Pampanga Bridge)	Lot	68.6%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0		
4-36	Temporary Works for Substructure in River (Angat Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0		
4-37	Temporary Works for Substructure in River (Pampanga Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0		
4-38	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	0.0	0	0	0	0		
4-39	PC Box Girder Temporary Works (Pampanga Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	15.0%	42,150,000.00	0.0	0	0	0	0		
4-40	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	0.0	0	0	0	0		
4-41	Temporary Works for Substructure in River (Pampanga Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	0.0	0	0	0	0		

Cost Estimation

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	San Jose Bypass (excluding access road)				Remarks
			Components (%)		Amount (Thousand PP)				Components (x10 ³ PP)		Total (x10 ³ PP)		
			Foreign	Local	Local 1	Local 2			Local 1	Local 2		Tax	
Subtotal													
5.	Slope Protection												
5-01	Stone Pitching	m ³	52.8%	22.0%	10.1%	1,410.00	0.0	0	0	0	0	0	0
5-02	Gablon	m ³	51.1%	27.0%	6.6%	2,220.00	0.0	0	0	0	0	0	0
5-03	Seeding	m ²	15.2%	43.8%	26.1%	59.50	3,289.7	30	88	52	30	30	200
5-04	Grouted Riprap	m ³	48.3%	22.4%	13.9%	1,420.00	181.5	126	58	36	40	40	260
5-05	Stone Masonry	m ³	55.1%	21.6%	8.1%	2,290.00	0.0	0	0	0	0	0	0
Subtotal								32,475	18,750	1,430	9,995	67,250	
Subtotal								156	146	88	70	460	
6.	Drainage Structure												
6-01	RCBC, 1-2.5mx3.0m	m	42.1%	40.2%	2.4%	33,900.00	34.0	484	462	28	176	1,150	
6-02	RCBC, 1-3.0mx2.0m	m	44.0%	38.4%	2.4%	29,500.00	0.0	0	0	0	0	0	
6-03	RCBC, 1-3.0mx2.5m	m	43.5%	38.8%	2.4%	33,600.00	96.0	1,405	1,253	78	494	3,230	
6-04	RCBC, 1-2.0mx2.0m	m	43.1%	39.2%	2.4%	25,700.00	0.0	0	0	0	0	0	
6-05	RCBC, 2-2.5mx2.0m	m	44.5%	37.9%	2.3%	45,800.00	42.0	854	728	44	294	1,920	
6-06	RCBC, 2-3.0mx1.5m	m	46.0%	36.4%	2.3%	45,500.00	0.0	0	0	0	0	0	
6-07	RCBC, 2-3.0mx2.0m	m	45.4%	37.0%	2.3%	51,800.00	0.0	0	0	0	0	0	
6-08	RCBC, 2-3.0mx2.5m	m	44.7%	37.7%	2.3%	57,200.00	35.0	894	754	46	306	2,000	
6-09	RCBC, 2-3.0mx3.0m	m	44.2%	38.2%	2.4%	62,700.00	0.0	0	0	0	0	0	
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.3%	83,000.00	4.0	146	126	9	50	330	
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	45,500.00	0.0	0	0	0	0	0	
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	63,900.00	12.0	346	290	18	116	770	
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	2.0%	48,900.00	0.0	0	0	0	0	0	
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	52,200.00	4.0	98	75	5	32	210	
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	38,200.00	0.0	0	0	0	0	0	
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	56,800.00	0.0	0	0	0	0	0	
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	76,200.00	4.0	141	107	7	45	300	
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	100,000.00	0.0	0	0	0	0	0	
6-19	RCPC, 0.41m dia.	m	55.9%	22.8%	5.9%	2,170.00	14,575.7	17,681	7,212	1,866	4,871	31,630	
6-20	RCPC, 0.61m dia.	m	56.3%	23.1%	5.2%	3,300.00	0.0	0	0	0	0	0	
6-21	RCPC, 0.91m dia.	m	56.6%	23.1%	4.8%	5,030.00	80.0	226	92	19	63	400	
6-22	RCPC, 1.07m dia.	m	57.0%	23.2%	4.4%	6,790.00	0.0	0	0	0	0	0	
6-23	RCPC, 1.22m dia.	m	57.1%	23.3%	4.2%	8,340.00	545.0	2,598	1,060	191	701	4,550	
6-24	RCPC, 1.52m dia.	m	57.3%	23.3%	4.0%	11,600.00	0.0	0	0	0	0	0	
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	6.2%	28,900.00	486.0	5,409	5,592	871	2,178	14,050	
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	38,500.00	0.0	0	0	0	0	0	
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.1%	6.1%	51,800.00	4.0	81	84	13	32	210	
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.4%	40.1%	6.1%	60,000.00	0.0	0	0	0	0	0	
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	68,500.00	0.0	0	0	0	0	0	
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	82,800.00	0.0	0	0	0	0	0	
6-31	Side Ditch Type A (H=0.5m, H=1.0m)	m	38.4%	43.3%	2.9%	4,140.00	214.0	342	385	26	137	890	
6-32	Side Ditch Type B (H=0.5m, H=1.0m)	m	42.3%	39.6%	2.8%	5,070.00	0.0	0	0	0	0	0	
6-33	Side Ditch Type C (H=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	6,820.00	0.0	0	0	0	0	0	

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	San Jose Bypass (excluding access road) Amount (Thousand PP)				Total (x10 ³ PP)	Remarks
			Components (%)		Components (x10 ³ PP)				Foreign	Local-1	Local-2	Tax		
			Foreign	Local-1	Local-2	Tax								
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.0%	43.2%	2.9%	15.3%	7,870.00	0.0	0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	51.50	0.0	0	0	0	0	0	
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0.0	0	0	0	0	0	
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	10,600.00	0.0	0	0	0	0	0	
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0.0	0	0	0	0	0	
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0.0	0	0	0	0	0	
	Subtotal							30,705	18,220	3,220	9,495	61,640		
7-	Miscellaneous Facilities													
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	6,841	8,187	609	2,803	18,440		
7-02	Curbstone Type B (U-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	5,138	6,030	311	2,041	13,520		
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	0	0	0	0	0		
7-04	Planting, Big Tree	ea	16.1%	70.7%	1.3%	11.9%	80,200.00	29	127	2	22	180		
7-05	Planting, Small Tree	ea	7.8%	80.4%	0.6%	11.2%	41,000.00	41	418	3	58	520		
7-06	Traffic Signal Light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	19,800.00	11	6	0	3	20		
7-07	Traffic Signal Light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	27,800.00	45	22	1	12	80		
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	0	0	0	0	0		
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	240,000.00	1,005	429	43	253	1,730		
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	96,100.00	0	0	0	0	0		
	Subtotal							13,110	15,219	969	5,192	34,490		
9-	Engineer's Facility, Other General Requirement and Mobilization/Demobilization													
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot						9,719	5,036	431	2,694	17,880		
	Subtotal							9,719	5,036	431	2,694	17,880		
Total														
Contingencies								204,108	105,755	9,050	56,507	375,420		
Total Construction Cost								10,205	5,288	453	2,874	18,770.5		
								214,313	111,043	9,503	59,381	394,190		
Detailed Engineering Construction Supervision Land Acquisition		Lot Lot m ²						8,573 17,145 0	4,442 8,883 0	380 760 0	2,375 4,752 0	15,770.4 31,540.8 0		
Total Cost								240,031	124,368	10,643	66,458	441,500		

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)					Quantity	San Jose Bypass (access road)					Remarks
			Components (%)		Total (PP)	Amount (Thousand PP)			Components (x10 ³ PP)		Tax	Total (x10 ³ PP)		
			Foreign	Local-1		Local-2	Tax		Local-1	Local-2				
1-01	Excavation	m ²	56.9%	20.7%	6.2%	16.2%	5.97	63	23	7	17	110		
1-02	Clearing and Grubbing													
1-03	Surplus Common Excavation (Roadway and Shoulder)	m ³	60.3%	22.1%	2.3%	15.3%	147.00	0	0	0	0	0		
1-04	Surplus Common Excavation (Drainage and Side Ditch Structure)	m ³	57.3%	21.1%	6.2%	15.4%	182.00	0	0	0	0	0		
1-05	Surplus Rock Excavation	m ³	59.2%	24.5%	0.4%	15.9%	467.00	0	0	0	0	0		
1-06	Structure Excavation	m ³	57.5%	21.0%	6.0%	15.5%	211.00	0	0	0	0	0		
1-07	Embankment from Roadway/Drainage Excavation	m ³	58.0%	22.4%	3.9%	15.7%	129.00	0	0	0	0	0		
1-08	Removal of Existing PCC Pavement	m ²	56.0%	27.5%	2.0%	14.5%	260.00	1,742	855	62	451	3,110		
1-09	Subgrade Preparation	m ²	27.1%	43.0%	12.9%	17.0%	170.00	0	0	0	0	0		
1-10	Demolition of Wing Wall	each	57.4%	21.0%	5.5%	16.1%	12.00	63	23	6	18	110		
	Subtotal		50.0%	28.8%	5.1%	16.1%	21,900.00	0	0	0	0	0		
								1,868	901	75	486	3,330		
2-01	Subbase and Base Course	m ³	53.8%	29.5%	2.3%	14.4%	275.00	398	218	17	107	740		
2-02	Aggregate Subbase Course	m ³	52.8%	30.8%	2.4%	14.0%	325.00	0	0	0	0	0		
2-03	Crushed Aggregate Base Course	m ³	54.1%	29.0%	2.5%	14.4%	360.00	0	0	0	0	0		
2-04	Bituminous Treated Base Course	m ³	63.7%	18.4%	0.4%	17.5%	2,250.00	0	0	0	0	0		
2-05	Cement Treated Base Course	m ³	61.5%	22.6%	1.0%	14.9%	992.00	0	0	0	0	0		
	Subtotal							398	218	17	107	740		
3-01	Pavement Surface Course	t	64.7%	17.1%	0.3%	17.9%	26,000.00	0	0	0	0	0		
3-02	Bituminous Prime Coat	t	64.6%	17.2%	0.3%	17.9%	26,900.00	129	34	1	36	200		
3-03	Bituminous Concrete Surface Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	2,249	635	14	632	3,530		
3-04	Bituminous Concrete Binder Course (Hot Laid)	t	63.7%	18.0%	0.4%	17.9%	2,550.00	0	0	0	0	0		
3-05	PCC Pavement (t=23cm)	m ²	62.4%	21.9%	0.7%	15.0%	669.00	3,492	1,272	39	837	5,580		
3-06	PCC Pavement (t=25cm)	m ²	62.4%	21.9%	0.7%	15.0%	727.00	0	0	0	0	0		
3-07	PCC Pavement for Sidewalk (t=10cm)	m ²	62.4%	21.9%	0.7%	15.0%	291.00	0	0	0	0	0		
3-08	PCC Pavement for Shoulder (t=18cm)	m ²	62.4%	21.9%	0.7%	15.0%	523.00	0	0	0	0	0		
3-09	Aggregate Surface Course for Shoulder	m ³	54.1%	29.1%	2.5%	14.3%	383.00	0	0	0	0	0		
	Subtotal							5,850	1,891	54	1,505	9,310		
4-01	Bridge Structure	m ³	52.8%	19.2%	12.2%	15.8%	255.00	37	13	9	11	70		
4-02	Bridge Excavation (A.O.W.L.)	m ³	51.0%	26.4%	7.2%	15.4%	1,360.00	0	0	0	0	0		
4-03	Foundation Fill	m ³	34.2%	24.7%	25.0%	16.1%	483.00	3	2	3	2	10		
4-04	Structural Concrete for PC Superstructure	m ³	40.1%	42.4%	2.3%	15.2%	7,040.00	0	0	0	0	0		

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)					Total (PP)	Quantity	San Jose Bypass (access road)				Remarks
			Components (%)		Tax		Amount (Thousand PP)			Components (x10 ³ PP)		Total (x10 ³ PP)		
			Foreign	Local-1	Local-2	Tax	Foreign			Local-1	Local-2		Tax	
4-05	Structural Concrete for RC Superstructure	m ³	45.3%	37.5%	2.1%	15.1%	4,700.00	66.3	140	118	7	47	310	
4-06	Structural Concrete for RC Thin Members	m ³	43.5%	39.0%	2.2%	15.3%	4,540.00	370.7	731	655	37	257	1,680	
4-07	Structural Concrete for Sidewalk	m ³	41.2%	41.2%	2.4%	15.2%	5,190.00	0.0	0	0	0	0	0	
4-08	Lean Concrete	m ³	46.6%	36.1%	2.1%	15.2%	3,890.00	23.1	42	32	2	14	90	
4-09	Reinforcing Steel Bar (Grade 40)	kg	48.6%	34.1%	1.9%	15.2%	3,050.00	10.5	15	10	1	4	30	
4-10	Reinforcing Steel Bar (Grade 60)	kg	57.3%	25.6%	1.7%	15.3%	34.30	59,274.2	1,163	520	39	308	2,030	
4-11	PC Tendons	kg	57.8%	24.0%	2.1%	16.1%	37.00	0.0	0	0	0	0	0	
4-12	Structural Steel	kg	61.5%	22.7%	0.8%	15.0%	457.00	0.0	0	0	0	0	0	
4-13	Precast RC Concrete Pile (0.4m x 0.4m)	m	49.6%	31.4%	3.4%	15.6%	53.30	528.0	1,419	898	97	446	2,860	
4-14	Cast-in-place Concrete Bored Pile (1.2m dia.)	m	68.8%	15.6%	0.6%	15.0%	20,400.00	0.0	0	0	0	0	0	
4-15	PC Girder (AASHTO Type III, L=20m)	each	54.7%	28.0%	1.6%	15.7%	341,000.00	0.0	0	0	0	0	0	
4-16	PC Girder (AASHTO Type III, L=22m)	each	54.7%	28.0%	1.5%	15.8%	370,000.00	0.0	0	0	0	0	0	
4-17	PC Girder (AASHTO Type IV, L=24m)	each	55.6%	27.3%	1.4%	15.7%	542,000.00	0.0	0	0	0	0	0	
4-18	PC Girder (AASHTO Type IV, L=25m)	each	55.6%	27.3%	1.4%	15.7%	562,000.00	5.0	1,562	767	39	442	2,810	
4-19	PC Girder (AASHTO Type V, L=27m)	each	56.2%	26.7%	1.3%	15.8%	834,000.00	0.0	0	0	0	0	0	
4-20	PC Girder (AASHTO Type V, L=30m)	each	56.4%	26.5%	1.3%	15.8%	986,000.00	0.0	0	0	0	0	0	
4-21	PC Girder (AASHTO Type V, L=35m)	each	56.4%	26.6%	1.3%	15.7%	1,210,000.00	0.0	0	0	0	0	0	
4-22	PC Girder (AASHTO Type VI, L=40m)	each	48.3%	36.6%	2.2%	15.3%	1,240.00	50.0	28	22	1	9	60	
4-23	Reinforced Concrete Railing	m	45.8%	33.9%	2.1%	15.2%	2,620.00	50.0	63	44	3	20	130	
4-24	Median Barrier	each	80.0%	1.8%	0.2%	18.0%	427,000.00	0.0	0	0	0	0	0	
4-25	Rubber Bearing Shoe (R=850t)	each	77.5%	5.2%	0.2%	17.1%	56,200.00	0.0	0	0	0	0	0	
4-26	Rubber Bearing Shoe (R=100t)	each	59.3%	25.2%	0.4%	15.1%	31,100.00	0.0	0	0	0	0	0	
4-27	Rubber Bearing Shoe (R=65t)	each	54.2%	30.2%	0.6%	15.0%	22,900.00	0.0	0	0	0	0	0	
4-28	Rubber Bearing Shoe (R=50t)	each	79.9%	2.0%	0.0%	18.1%	184,000.00	0.0	0	0	0	0	0	
4-29	Expansion Joint (t=300mm)	m	77.0%	5.1%	0.1%	17.0%	57,700.00	0.0	0	0	0	0	0	
4-30	Expansion Joint (t=200mm)	m	59.8%	25.1%	0.1%	15.0%	24,900.00	0.0	0	0	0	0	0	
4-31	Expansion Joint (t=100mm)	m	49.8%	35.0%	0.2%	15.0%	10,700.00	21.8	115	81	0	34	230	
4-32	Expansion Joint (t=50mm)	m	68.0%	16.4%	0.5%	15.1%	78,000,000.00	0.0	0	0	0	0	0	
4-33	PC Box Girder Temporary Works (Angat Bridge)	Lot	68.6%	16.0%	0.4%	15.0%	56,200,000.00	0.0	0	0	0	0	0	
4-34	PC Box Girder Temporary Works (Paopanga Bridge)	Lot	51.0%	33.7%	0.3%	15.0%	20,900,000.00	0.0	0	0	0	0	0	
4-35	Temporary Works for Substructure in River (Angat Bridge)	Lot	54.6%	29.2%	1.1%	15.1%	1,330,000.00	0.0	0	0	0	0	0	
4-36	Temporary Works for Substructure in River (Paopanga Bridge)	Lot	68.0%	16.4%	0.5%	15.1%	58,500,000.00	0.0	0	0	0	0	0	
4-37	PC Box Girder Temporary Works (Angat Bridge) Stage Construction	Lot	68.6%	16.0%	0.4%	15.0%	42,150,000.00	0.0	0	0	0	0	0	
4-38	PC Box Girder Temporary Works (Paopanga Bridge) Stage Construction	Lot	51.0%	33.7%	0.3%	15.0%	15,675,000.00	0.0	0	0	0	0	0	
4-39	Temporary Works for Substructure in River (Angat Bridge) Stage Construction	Lot	54.6%	29.2%	1.1%	15.1%	864,500.00	0.0	0	0	0	0	0	
4-40	Temporary Works for Substructure in River (Paopanga Bridge) Stage Construction	Lot	68.0%	16.4%	0.5%	15.1%								

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rtn, Plaridel - San Jose Section)

SAN JOSE BYPASS

Item No.	Description	Unit	Unit Cost (PP)			Quantity	San Jose Bypass (access road)			Total (x10 ³ PP)	Remarks
			Components (%)				Amount (Thousand PP)				
			Foreign	Local 1	Local 2		Local 1	Local 2	Tax		
Subtotal											
5.	Slope Protection										
5-01	Stone Pitching	m ³	52.8%	22.0%	10.1%	0.0	0	0	0	0	0
5-02	Gabion	m ³	51.1%	27.0%	6.6%	0.0	0	0	0	0	0
5-03	Seeding	m ³	15.2%	43.8%	26.1%	3,366.7	38	52	30	200	
5-04	Grouted Riprap	m ³	48.3%	22.4%	13.9%	52.0	16	10	10	70	
5-05	Stone Masonry	m ³	55.1%	21.6%	8.1%	0.0	0	0	0	0	0
Subtotal											
6.	Drainage Structure										
6-01	RCBC, 1-2.5mx3.0m	Each	42.1%	40.2%	2.4%	0.0	0	0	0	0	0
6-02	RCBC, 1-3.0mx2.0m	Each	44.0%	38.4%	2.4%	0.0	0	0	0	0	0
6-03	RCBC, 1-3.0mx2.5m	Each	43.5%	38.8%	2.4%	0.0	0	0	0	0	0
6-04	RCBC, 1-2.0mx2.0m	Each	43.1%	39.2%	2.4%	0.0	0	0	0	0	0
6-05	RCBC, 2-2.5mx2.0m	Each	44.5%	37.9%	2.3%	0.0	0	0	0	0	0
6-06	RCBC, 2-3.0mx1.5m	Each	46.0%	36.4%	2.3%	0.0	0	0	0	0	0
6-07	RCBC, 2-3.0mx2.0m	Each	45.4%	37.0%	2.3%	0.0	0	0	0	0	0
6-08	RCBC, 2-3.0mx2.5m	Each	44.7%	37.7%	2.3%	0.0	0	0	0	0	0
6-09	RCBC, 2-3.0mx3.0m	Each	44.2%	38.2%	2.4%	0.0	0	0	0	0	0
6-10	Wing Wall for RCBC, 1-2.5mx3.0m	Each	44.2%	38.2%	2.4%	0.0	0	0	0	0	0
6-11	Wing Wall for RCBC, 1-3.0mx2.0m	Each	45.2%	37.2%	2.3%	0.0	0	0	0	0	0
6-12	Wing Wall for RCBC, 1-3.0mx2.5m	Each	44.9%	37.6%	2.3%	0.0	0	0	0	0	0
6-13	Wing Wall for RCBC, 1-2.0mx2.0m	Each	46.0%	36.0%	2.0%	0.0	0	0	0	0	0
6-14	Wing Wall for RCBC, 2-2.5mx2.0m	Each	46.8%	35.8%	2.2%	0.0	0	0	0	0	0
6-15	Wing Wall for RCBC, 2-3.0mx1.5m	Each	47.9%	34.7%	2.2%	0.0	0	0	0	0	0
6-16	Wing Wall for RCBC, 2-3.0mx2.0m	Each	47.5%	35.1%	2.2%	0.0	0	0	0	0	0
6-17	Wing Wall for RCBC, 2-3.0mx2.5m	Each	47.0%	35.6%	2.2%	0.0	0	0	0	0	0
6-18	Wing Wall for RCBC, 2-3.0mx3.0m	Each	46.6%	36.0%	2.2%	0.0	0	0	0	0	0
6-19	RCPC, 0.41m dia.	Each	55.9%	22.8%	5.9%	0.0	0	0	0	0	0
6-20	RCPC, 0.61m dia.	Each	56.3%	23.1%	5.2%	0.0	0	0	0	0	0
6-21	RCPC, 0.91m dia.	Each	56.6%	23.1%	4.8%	0.0	0	0	0	0	0
6-22	RCPC, 1.07m dia.	Each	57.0%	23.2%	4.4%	0.0	0	0	0	0	0
6-23	RCPC, 1.22m dia.	Each	57.1%	23.3%	4.2%	0.0	0	0	0	0	0
6-24	RCPC, 1.52m dia.	Each	57.3%	23.3%	4.0%	0.0	0	0	0	0	0
6-25	Catch Basin for 0.41m dia. RCPC	Each	38.5%	39.8%	6.2%	0.0	0	0	0	0	0
6-26	Catch Basin for 0.61m dia. RCPC	Each	38.4%	40.0%	6.1%	0.0	0	0	0	0	0
6-27	Catch Basin for 0.91m dia. RCPC	Each	38.4%	40.0%	6.1%	0.0	0	0	0	0	0
6-28	Catch Basin for 1.07m dia. RCPC	Each	38.2%	40.3%	6.1%	0.0	0	0	0	0	0
6-29	Catch Basin for 1.22m dia. RCPC	Each	38.2%	40.3%	6.1%	0.0	0	0	0	0	0
6-30	Catch Basin for 1.52m dia. RCPC	Each	38.1%	40.4%	6.1%	0.0	0	0	0	0	0
6-31	Side Ditch Type A (W=0.5m, H=0.5m)	m	38.4%	43.3%	2.9%	0.0	0	0	0	0	0
6-32	Side Ditch Type B (W=0.5m, H=1.0m)	m	42.3%	39.6%	2.8%	0.0	0	0	0	0	0
6-33	Side Ditch Type C (W=1.0m, H=0.5m)	m	35.6%	46.1%	3.0%	0.0	0	0	0	0	0
Subtotal											
Subtotal											

SAN JOSE BYPASS

ESTIMATED CONSTRUCTION COST
UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY
(Sta. Rita, Plaridel - San Jose Section)

Item No.	Description	Unit	Unit Cost (PP)				Total (PP)	Quantity	San Jose Bypass (access road)				Remarks
			Components (%)			Tax			Amount (Thousand PP)			Total (x10 ³ PP)	
			Foreign	Local-1	Local-2				Foreign	Local-1	Local-2		
6-34	Side Ditch Type D (W=1.0m, H=1.0m)	m	38.6%	43.2%	2.9%	15.3%	7,820.00	0.0	0	0	0	0	
6-35	Side Ditch Type E (W=0.3m, H=0.5m, 1:1)	m	2.4%	0.9%	78.8%	17.9%	51.50	0.0	0	0	0	0	
6-36	Underdrain (Granular Material, 15cm slotted PVC pipe, Filter Cloth)	m	44.7%	37.1%	1.7%	16.5%	2,100.00	0.0	0	0	0	0	
6-37	Water Channel (W=1.5m)	m	36.8%	44.9%	3.0%	15.3%	10,600.00	0.0	0	0	0	0	
6-38	Water Channel (W=2.0m)	m	37.2%	44.4%	3.0%	15.4%	14,200.00	0.0	0	0	0	0	
6-39	Concrete Sheet Pile	m ²	51.9%	29.5%	3.3%	15.3%	6,400.00	0.0	0	0	0	0	
	Subtotal							0	0	0	0	0	
7.	Miscellaneous Facilities												
7-01	Curbstone Type A	m	37.1%	44.4%	3.3%	15.2%	635.00	0.0	0	0	0	0	
7-02	Curbstone Type B (L-Shaped Gutter)	m	38.0%	44.6%	2.3%	15.1%	931.00	0.0	0	0	0	0	
7-03	Curbstone Type C (U-Shaped Gutter)	m	34.9%	46.7%	3.0%	15.4%	2,150.00	0.0	0	0	0	0	
7-04	Planting, Big Tree	km	16.1%	70.7%	1.3%	11.9%	80,200.00	0.0	0	0	0	0	
7-05	Planting, Small Tree	km	7.8%	80.4%	0.6%	11.2%	41,000.00	0.0	0	0	0	0	
7-06	Traffic Signal light, 3 leg	each	55.0%	28.8%	1.1%	15.1%	19,800.00	0.0	0	0	0	0	
7-07	Traffic Signal light, 4 leg	each	56.5%	27.7%	0.8%	15.0%	27,800.00	0.0	0	0	0	0	
7-08	Toll Gate Facilities	lot	56.0%	27.8%	1.2%	15.0%	120,000.00	0.0	0	0	0	0	
7-09	Miscellaneous Facilities such as road markings, signs, guardrails, etc.	km	58.1%	24.8%	2.5%	14.6%	240,000.00	0.0	0	0	0	0	
7-10	Miscellaneous Facilities (Phase 2 construction)	km	58.1%	24.8%	2.5%	14.6%	96,100.00	0.0	0	0	0	0	
	Subtotal							0	0	0	0	0	
9.	Engineer's Facility, Other General Requirement and Mobilization/Demobilization												
9-01	Engineer's Facility, Other General Requirement and Mobilization/Demobilization	Lot						682	317	22	189	1,210.5%	
	Subtotal							682	317	22	189	1,210.5%	
	Total							14,315	6,660	469	3,956	25,400	
	Contingencies							716	333	23	198	1,270.5%	
	Total Construction Cost							15,031	6,993	492	4,154	26,670	
	Detailed Engineering Construction Supervision Land Acquisition	Lot						601	280	20	169	1,070.4%	
		Lot						1,202	559	39	330	2,130.8%	
		m ²						0	0	0	0	0	
	Total Cost							16,834	7,832	551	4,653	29,870	

APPENDIX 13.2-1 PLARIDEL-BALIJAG BYPASS: ROAD ROW ACQUISITION AND COMPENSATION COST (1/3)

MUNICIPALITY/CITY	STATION NOS.		LAND ACQUISITION COST				DAMAGE COMPENSATION COST				TOTAL COST (in P)	
	FROM	TO	TYPE OF LAND	AREA (m ²)	UNIT COST (in P/m ²)	COST (in P)	TYPE OF IMPROVEMENT	AREA	UNIT COST (in P)	COST (in P)		
BALAGTAS	0+000	1+200	AGRIC	54,000	300.00	16,200,000.00	RICE PRODUCE PIGGERY	5.40 Ha 350.00 m ²	15,000.00 /Ha 1,910.00 /m ²	81,000.00 668,500.00	16,281,000.00 668,500.00	
	Sub-Total 1					16,200,000.00				749,500.00	16,949,500.00	
GUGUJUNTO	1+200	1+700	RES**	22,500	750.00	16,875,000.00	CONC HSE (8)	200.00 m ²	5,400.00 /m ²	8,640,000.00	25,515,000.00	
	1+700	5+860	AGRIC**	187,200	300.00	56,160,000.00	RICE PRODUCE PIGGERY (2) POULTRY (2) CONC HSE (3)	18.72 m ² 500.00 m ² 500.00 m ² 200.00 m ²	15,000.00 /m ² 1,910.00 /m ² 1,910.00 /m ² 5,400.00 /m ²	280,800.00 1,910,000.00 1,910,000.00 3,240,000.00	56,440,800.00 1,910,000.00 1,910,000.00 3,240,000.00	
Sub-Total 2						73,035,000.00				15,980,800.00	89,015,800.00	
PLARIDEL	5+860	6+100	RES***	10,800	540.00	5,832,000.00	CONC HSE (2)	200.00 m ²	5,400.00 /m ²	2,160,000.00	7,992,000.00	
	Sub-Total 3					5,832,000.00				2,160,000.00	7,992,000.00	
BUSTOS	6+100	7+280	AGRIC	53,100	150.00	7,965,000.00	RICE PRODUCE	5.31 Ha	15,000.00 /Ha	79,650.00	8,044,650.00	
	7+300	9+900	AGRIC	117,000	150.00	17,550,000.00	RICE PRODUCE LIGHT MAT HSE (1)	11.70 Ha 50.00 m ²	15,000.00 /Ha 2,300.00 /m ²	175,500.00 115,000.00	17,725,500.00 115,000.00	
	9+300	11+300	AGRIC	63,000	150.00	9,450,000.00	RICE PRODUCE LIGHT MAT HSE (1)	6.30 Ha 50.00 m ²	15,000.00 /Ha 2,300.00 /m ²	94,500.00 115,000.00	9,544,500.00 115,000.00	
	11+300	13+600	AGRIC	117,000	150.00	17,550,000.00	RICE PRODUCE SEMI CONC HSE (4)	11.70 Ha 50.00 m ²	15,000.00 /Ha 4,760.00 /m ²	175,500.00 952,000.00	17,725,500.00 952,000.00	
	13+600	13+880	AGRIC	12,600	150.00	1,890,000.00	RICE PRODUCE LIGHT MAT HSE (1)	1.26 Ha 50.00 m ²	15,000.00 /Ha 2,300.00 /m ²	18,900.00 115,000.00	1,908,900.00 115,000.00	
	13+880	14+300	RES	18,900	2,000.00	37,800,000.00	CONC HSE (28)	50.00 m ²	5,400.00 /m ²	30,240,000.00	68,040,000.00	
	14+300	15+200	AGRIC	40,500	250.00	10,125,000.00	RICE PRODUCE LIGHT MAT HSE (1)	200.00 m ² 4.05 Ha 50.00 m ²	15,000.00 /Ha 2,300.00 /Ha	60,750.00 115,000.00	10,785,750.00 115,000.00	
	15+200	15+700	ANGAT RIVER									
	Sub-Total 4					94,365,000.00				32,177,150.00	126,542,150.00	
	SAN RAFAEL	15+700	16+000	AGRIC	13,500	250.00	3,375,000.00	RICE PRODUCE SEMI CONC HSE (4)	1.35 Ha 50.00 m ²	15,000.00 /Ha 4,760.00 /m ²	20,250.00 952,000.00	3,395,250.00 952,000.00
16+000		16+200	RES	9,000	2,000.00	18,000,000.00	CONC HSE (12)	200.00 m ²	5,400.00 /m ²	12,960,000.00	30,960,000.00	
16+200		17+200	AGRIC	45,000	250.00	11,250,000.00	RICE PRODUCE SEMI CONC HSE (3)	4.50 Ha 50.00 m ²	15,000.00 /Ha 4,760.00 /m ²	67,500.00 714,000.00	11,317,500.00 714,000.00	
17+200		19+400	AGRIC	99,000	250.00	24,750,000.00	RICE PRODUCE POULTRY (1)	9.90 Ha 500.00 m ²	15,000.00 /Ha 1,910.00 /m ²	148,500.00 955,000.00	24,898,500.00 955,000.00	
19+400		20+400	AGRIC	45,000	250.00	11,250,000.00	SEMI CONC HSE (4)	50.00 m ²	4,760.00 /m ²	952,000.00	952,000.00	
20+400		20+600	RES	9,000	1,000.00	9,000,000.00	RICE PRODUCE CONC HSE (2)	4.50 Ha 200.00 m ²	15,000.00 /Ha 5,400.00 /m ²	67,500.00 2,160,000.00	11,317,500.00 2,160,000.00	
20+600		21+988.84	AGRIC (OPEN)	62,498	350.00	21,874,230.00	RICE PRODUCE	6.25 Ha	15,000.00 /Ha	93,746.70	21,967,976.70	
Sub-Total 5					98,499,230.00				19,090,496.70	118,589,726.70		
TOTAL				979,597.80		288,931,230.00			70,157,946.70	359,089,176.70		

* Based on records of the Municipal Assessor's Office
 ** Assume that land values are the same as Balagtas
 *** NO actual values available from Plaridel Mun. Assessor's Office

APPENDIX 13.2-1 CABANATUAN BYPASS: ROAD ROW ACQUISITION AND COMPENSATION COST (2/3)

MUNICIPALITY/CITY	STATION NOS. FROM TO	LAND ACQUISITION COST				DAMAGE COMPENSATION COST				TOTAL COST (in P)
		TYPE OF LAND	AREA (m ²)	UNIT COST (in P/m ²)	COST (in P)	TYPE OF IMPROVEMENT	AREA	UNIT COST (in P)	COST (in P)	
SAN LEONARDO	0+000	AGRIC	36,400	45.00	1,638,000.00	RICE PRODUCE	3.64 Ha	15,000.00 /Ha	54,600.00	1,692,600.00
	0+700	Sub-Total 1			1,638,000.00				54,600.00	1,692,600.00
	2+100	AGRIC	72,800	45.00	3,276,000.00	RICE PRODUCE	7.28 Ha	15,000.00 /Ha	109,200.00	3,385,200.00
	4+600	AGRIC	130,000	45.00	5,850,000.00	RICE PRODUCE	13.00 Ha	15,000.00 /Ha	195,000.00	6,045,000.00
	5+900	AGRO-IND	67,600	45.00	3,042,000.00	RICE PRODUCE	6.76 Ha	15,000.00 /Ha	101,400.00	3,143,400.00
	5+900	AGRIC	36,400	45.00	1,638,000.00	RICE PRODUCE	3.64 Ha	15,000.00 /Ha	54,600.00	1,692,600.00
	6+600	AGRIC	72,800	45.00	3,276,000.00	RICE PRODUCE	7.28 Ha	15,000.00 /Ha	109,200.00	3,385,200.00
	8+000	Sub-Total 2			17,082,000.00				568,400.00	17,650,400.00
	9+000	AGRIC	52,000	45.00	2,340,000.00	RICE PRODUCE	5.20 Ha	15,000.00 /Ha	78,000.00	2,418,000.00
	9+200	RES	10,400	400.00	4,160,000.00	CONC HSES (2)	150.00 m ²	4,535.00 /m ²	1,360,500.00	5,520,500.00
9+400	AGRIC	10,400	45.00	468,000.00	RICE PRODUCE	1.04 Ha	15,000.00 /Ha	15,600.00	483,600.00	
9+500	RES	5,200	400.00	2,080,000.00	NONE				2,080,000.00	
9+500	AGRIC	52,000	45.00	2,340,000.00	RICE PRODUCE	5.20 Ha	15,000.00 /Ha	78,000.00	2,418,000.00	
10+500	AGRIC	62,400	45.00	2,808,000.00	RICE PRODUCE	6.24 Ha	15,000.00 /Ha	93,600.00	2,901,600.00	
11+700	RES	10,400	400.00	4,160,000.00	CONC HSES (6)	150.00 m ²	4,535.00 /m ²	4,081,500.00	8,241,500.00	
11+900	AGRIC	36,400	45.00	1,638,000.00	RICE PRODUCE	3.64 Ha	15,000.00 /Ha	54,600.00	1,692,600.00	
12+600	AGRIC	20,800	45.00	936,000.00	RICE PRODUCE	2.08 Ha	15,000.00 /Ha	31,200.00	967,200.00	
13+000	RES	15,600	800.00	12,480,000.00	CONC HSES (9)	150.00 m ²	4,535.00 /m ²	6,122,250.00	18,602,250.00	
13+300	AGRIC	104,000	45.00	4,680,000.00	RICE PRODUCE	10.40 Ha	15,000.00 /Ha	1,404,000.00	6,084,000.00	
15+300	RES	5,200	800.00	4,160,000.00	CONC HSES (15)	150.00 m ²	4,535.00 /m ²	10,203,750.00	11,841,750.00	
16+400	AGRIC	36,400	45.00	1,638,000.00	RICE PRODUCE	3.64 Ha	15,000.00 /Ha	54,600.00	1,692,600.00	
16+100	RES	5,200	800.00	4,160,000.00	NONE				4,160,000.00	
16+200	AGRIC	46,800	45.00	2,106,000.00	RICE PRODUCE	4.68 Ha	15,000.00 /Ha	70,200.00	2,176,200.00	
17+100	PAMPANGA RIVER									
17+600	AGRIC	52,000	40.00	2,080,000.00	CONC HSES (5)	150.00 m ²	4,535.00 /m ²	3,401,250.00	5,481,250.00	
18+600	RES	5,200	300.00	1,560,000.00	CONC HSES (3)	150.00 m ²	4,535.00 /m ²	2,046,750.00	3,606,750.00	
18+700	AGRIC	46,800	40.00	1,872,000.00	RICE PRODUCE	4.68 Ha	15,000.00 /Ha	70,200.00	1,942,200.00	
19+600	AGRIC	62,400	40.00	2,496,000.00	CONC HSES (3)	150.00 m ²	4,535.00 /m ²	2,040,750.00	4,536,750.00	
20+800	AGRIC	10,400	40.00	416,000.00	RICE PRODUCE	1.04 Ha	15,000.00 /Ha	15,600.00	431,600.00	
21+000	Sub-Total 3			81,282,000.00				31,263,150.00	92,545,150.00	
22+300	AGRIC	31,200	45.00	1,404,000.00	RICE PRODUCE	3.12 Ha	15,000.00 /Ha	46,800.00	1,450,800.00	
22+900	RES	5,200	300.00	1,560,000.00	NONE				1,560,000.00	
23+000	AGRIC	10,400	45.00	468,000.00	RICE PRODUCE	1.04 Ha	15,000.00 /Ha	15,600.00	483,600.00	
23+200	RES	5,200	300.00	1,560,000.00	NONE				1,560,000.00	
23+300	AGRIC	15,600	45.00	702,000.00	RICE PRODUCE	1.56 Ha	15,000.00 /Ha	23,400.00	725,400.00	
23+600	AGRIC	20,800	45.00	936,000.00	RICE PRODUCE	2.08 Ha	15,000.00 /Ha	31,200.00	967,200.00	
23+600	RES	5,200	300.00	1,560,000.00	NONE				1,560,000.00	
24+100	AGRIC	78,000	45.00	3,510,000.00	RICE PRODUCE	7.80 Ha	15,000.00 /Ha	117,000.00	3,627,000.00	
25+600	AGRIC	15,600	45.00	702,000.00	RICE PRODUCE	1.56 Ha	15,000.00 /Ha	23,400.00	725,400.00	
26+900	RES	5,200	400.00	2,080,000.00	NONE				2,080,000.00	
27+000	AGRIC	72,800	45.00	3,276,000.00	RICE PRODUCE	7.28 Ha	15,000.00 /Ha	109,200.00	3,385,200.00	
28+400	AGRIC	31,200	550.00	1,716,000.00	RICE PRODUCE	3.12 Ha	15,000.00 /Ha	46,800.00	1,762,800.00	
29+300	RES	7,800	45.00	351,000.00	NONE				351,000.00	
29+450	AGRIC	7,800	45.00	351,000.00	RICE PRODUCE	0.78 Ha	15,000.00 /Ha	11,700.00	362,700.00	
29+900	TALAVERA RIVER									
30+300	AGRIC	20,800	45.00	936,000.00	RICE PRODUCE	2.08 Ha	15,000.00 /Ha	31,200.00	967,200.00	
Sub-Total 4				23,309,000.00				456,300.00	23,765,300.00	
TOTAL			1,463,800.00		103,311,000.00				32,343,450.00	135,654,450.00

* Based on records of the Municipal Assessor's Office

APPENDIX 13.2-1 SAN JOSE BYPASS: ROAD ROW ACQUISITION AND COMPENSATION COST (3/3)

STATION NOS. FROM TO	LAND ACQUISITION COSTS				DAMAGE COMPENSATION COSTS				TOTAL COST (in P)
	TYPE OF LAND	AREA (m ²)	UNIT COST (in P/m ²)	COST (in P)	TYPE OF IMPROVEMENT	AREA	UNIT COST (in P)	COST (in P)	
0+000	RES	3,200	800.00	2,560,000.00	NONE	-	-	-	2,560,000.00
0+100	AGRIC	43,520	40.00	1,740,800.00	RICE PRODUCE	4.35 Ha	15,000.00 /Ha	65,280.00	1,806,080.00
1+460	AGRIC	23,680	40.00	947,200.00	RICE PRODUCE	2.37 Ha	15,000.00 /Ha	35,520.00	982,720.00
2+200	CREEK								
2+250	RES	4,800	550.00	2,640,000.00	SEMI CONC HSE (2)	100 m ²	3,485.00 m ²	697,000.00	3,337,000.00
2+400	AGRIC	14,080	40.00	563,200.00	RICE PRODUCE	1.41 Ha	15,000.00 /Ha	21,120.00	584,320.00
2+840	RES	1,920	550.00	1,056,000.00	NONE	-	-	-	1,056,000.00
2+900	AGRIC	9,600	40.00	384,000.00	RICE PRODUCE	0.96 Ha	15,000.00 /Ha	14,400.00	398,400.00
3+200	CREEK								
3+440	AGRIC	49,920	40.00	1,996,800.00	RICE PRODUCE	4.99 Ha	15,000.00 /Ha	74,880.00	2,071,680.00
5+000	AGRIC	29,440	40.00	1,177,600.00	RICE PRODUCE	2.94 Ha	15,000.00 /Ha	44,160.00	1,221,760.00
5+920	AGRIC	1,920	550.00	1,056,000.00	LIGHT MAT HSE (1)	50.00 m ²	2,375.00 m ²	118,750.00	118,750.00
5+980	RES	1,920	550.00	1,056,000.00	CONCRETE HSE (4)	100 m ²	4,535.00 m ²	1,814,000.00	2,870,000.00
6+040	IRRIG CANAL								
6+540	AGRIC	16,000	40.00	640,000.00	RICE PRODUCE	1.60 Ha	15,000.00 /Ha	144,000.00	784,000.00
6+620	CREEK								
6+620	AGRIC	21,760	40.00	870,400.00	RICE PRODUCE	2.18 Ha	15,000.00 /Ha	195,840.00	1,066,240.00
TOTAL		219,840.00		15,632,000.00				3,224,950.00	18,856,950.00

* Based on records of the Municipal Assessor's Office (For Taxation purposes)