

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 0 + 000 To 0 + 100

L = 0.10 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	400	110.00	44.00	57	25	18	25.08	11.00	7.92
2) Removal of Sidewalk	sq. m.	650	105.00	68.25	57	25	18	38.90	17.06	12.29
3) Removal of Curb/Gutter	L. M.	300	163.00	48.90	55	28	17	26.90	13.69	8.31
4) Removal of RC Pile	L. M.	100	950.00	95.00	60	25	15	57.00	23.75	14.25
5) Pavement Subbase	cu. m.	120	430.00	51.60	55	27	18	28.38	13.93	9.29
6) Pavement PCC (23 cm)	sq. m.	600	690.00	414.00	53	29	18	219.42	120.06	74.52
7) Sidewalk (t = 10 cm)	sq. m.	450	342.00	153.90	50	32	18	76.95	49.25	27.70
8) Curb/Gutter	L. M.	300	452.70	135.81	52	30	18	70.62	40.74	24.45
9) RC Pipe (Ø 760)	L. M.	100	1,210.00	121.00	51	34	15	61.71	41.14	18.15
10) Manhole Inlet/(40 m)	each	2	14,500.00	29.00	53	34	13	15.37	9.86	3.77
11) Sub-total				1,161.46				620.33	340.49	200.64
12) Miscellaneous (15% of Sub-total)	L. S.			174.22				93.05	51.07	30.10
TOTAL				1,335.68				713.38	391.56	230.74

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 0 + 100 To 1 + 000

L = 0.90 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	11,250	110.00	1,237.50	57	25	18	705.38	309.38	222.75
2) Removal of Sidewalk	sq. m.	6,840	105.00	718.20	57	25	18	409.37	179.55	129.28
3) Removal of Curb/Gutter	L. M.	3,600	163.00	586.80	55	28	17	322.74	164.30	99.76
4) Removal of RC Pile	L. M.	1,800	950.00	1,710.00	60	25	15	1,026.00	427.50	256.50
5) Pavement Subbase	cu. m.	612	430.00	263.16	55	27	18	144.74	71.05	47.37
6) Pavement PCC (23 cm)	sq. m.	3,060	690.00	2,111.40	53	29	18	1,119.04	612.31	380.05
7) Sidewalk (t = 10 cm)	sq. m.	6,030	342.00	2,062.26	50	32	18	1,031.13	659.92	371.21
8) Curb/Gutter	L. M.	3,600	452.70	1,629.72	52	30	18	847.45	488.92	293.35
9) RC Pipe (Ø 760)	L. M.	1,800	1,210.00	2,178.00	51	34	15	1,110.78	740.52	326.70
10) Manhole Inlet/(40 m)	each	45	14,500.00	652.50	53	34	13	345.83	221.85	84.83
11) Sub-total				13,149.54				7,062.46	3,875.30	2,211.78
12) Miscellaneous (15% of Sub-total)	L. S.			1,972.43				1,059.37	581.29	331.77
TOTAL				15,121.97				8,121.83	4,456.59	2,543.55

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C-3

SECTION : From 3 + 050 To 3 + 500

L = 0.45 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	1,215	430.00	522.45	55	27	18	287.35	141.06	94.04
6) Pavement PCC (23 cm)	sq. m.	6,075	690.00	4,191.75	53	29	18	2,221.63	1,215.61	754.52
7) Sidewalk (t = 10 cm)	sq. m.	3,150	342.00	1,077.30	50	32	18	538.65	344.74	193.91
8) Curb/Gutter	L. M.	1,800	452.70	814.86	52	30	18	423.73	244.46	146.67
9) RC Pipe (Ø 760)	L. M.	900	1,210.00	1,089.00	51	34	15	555.39	370.26	163.35
10) Manhole Inlet/(40 m)	each	23	14,500.00	333.50	53	34	13	176.76	113.39	43.36
11) Sub-total				8,028.86				4,203.50	2,429.51	1,395.85
12) Miscellaneous (15% of Sub-total)	L. S.			1,204.33				630.52	364.43	209.38
TOTAL				9,233.19				4,834.02	2,793.94	1,605.23

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 3 + 500 To 4 + 100

L = 0.60 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	5,820	110.00	640.20	57	25	18	364.91	160.05	115.24
2) Removal of Sidewalk	sq. m.	4,080	105.00	428.40	57	25	18	244.19	107.10	77.11
3) Removal of Curb/Gutter	L. M.	2,400	163.00	391.20	55	28	17	215.16	109.54	66.50
4) Removal of RC Pile	L. M.	1,200	950.00	1,140.00	60	25	15	684.00	285.00	171.00
5) Pavement Subbase	cu. m.	780	430.00	335.40	55	27	18	184.47	90.56	60.37
6) Pavement PCC (23 cm)	sq. m.	3,900	690.00	2,691.00	53	29	18	1,426.23	780.39	484.38
7) Sidewalk (t = 10 cm)	sq. m.	5,700	342.00	1,949.40	50	32	18	974.70	623.81	350.89
8) Curb/Gutter	L. M.	2,400	452.70	1,086.48	52	30	18	564.97	325.94	195.57
9) RC Pipe (Ø 760)	L. M.	1,200	1,210.00	1,452.00	51	34	15	740.52	493.68	217.80
10) Manhole Inlet/(40 m)	each	30	14,500.00	435.00	53	34	13	230.55	147.90	56.55
11) Sub-total				10,549.08				5,629.70	3,123.97	1,795.41
12) Miscellaneous (15% of Sub-total)	L. S.			1,582.36				844.46	468.59	269.31
TOTAL				12,131.44				6,474.16	3,592.56	2,064.72

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3
SECTION : From 4 + 250

To 6 + 840

L = 2.59 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	36,519	110.00	4,017.09	57	25	18	2,289.74	1,004.27	723.08
2) Removal of Sidewalk	sq. m.	41,440	105.00	4,351.20	57	25	18	2,480.18	1,087.80	783.22
3) Removal of Curb/Gutter	L. M.	10,360	163.00	1,688.68	55	28	17	928.77	472.83	287.08
4) Removal of RC Pile	L. M.	5,180	950.00	4,921.00	60	25	15	2,952.60	1,230.25	738.15
5) Pavement Subbase	cu. m.	6,734	430.00	2,895.62	55	27	18	1,592.59	781.82	521.21
6) Pavement PCC (23 cm)	sq. m.	33,670	690.00	23,232.30	53	29	18	12,313.12	6,737.37	4,181.81
7) Sidewalk (t = 10 cm)	sq. m.	14,245	342.00	4,871.79	50	32	18	2,435.90	1,558.97	876.92
8) Curb/Gutter	L. M.	10,360	452.70	4,689.97	52	30	18	2,438.79	1,406.99	844.19
9) RC Pipe (Ø 760)	L. M.	5,180	1,210.00	6,267.80	51	34	15	3,196.58	2,131.05	940.17
10) Manhole Inlet/(40 m)	each	128	14,500.00	1,856.00	53	34	13	983.68	631.04	241.28
11) Sub-total				58,791.45				31,611.95	17,042.39	10,137.11
12) Miscellaneous (15% of Sub-total)	L. S.			8,818.72				4,741.79	2,556.36	1,520.57
TOTAL				67,610.17				36,353.74	19,598.75	11,657.68

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3
SECTION : From 6 + 840 To 7 + 400

L = 0.56 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	1,400	110.00	154.00	57	25	18	87.78	38.50	27.72
2) Removal of Sidewalk	sq. m.	3,360	105.00	352.80	57	25	18	201.10	88.20	63.50
3) Removal of Curb/Gutter	L. M.	2,240	163.00	365.12	55	28	17	200.82	102.23	62.07
4) Removal of RC Pile	L. M.	1,120	950.00	1,064.00	60	25	15	638.40	266.00	159.60
5) Pavement Subbase	cu. m.	168	430.00	72.24	55	27	18	39.73	19.50	13.00
6) Pavement PCC (23 cm)	sq. m.	840	690.00	579.60	53	29	18	307.19	168.08	104.33
7) Sidewalk (t = 10 cm)	sq. m.	3,360	342.00	1,149.12	50	32	18	574.56	367.72	206.84
8) Curb/Gutter	L. M.	2,240	452.70	1,014.05	52	30	18	527.30	304.21	182.53
9) RC Pipe (Ø 760)	L. M.	1,120	1,210.00	1,355.20	51	34	15	691.15	460.77	203.28
10) Manhole Inlet/(40 m)	each	28	14,500.00	406.00	53	34	13	215.18	138.04	52.78
11) Sub-total				6,512.13				3,483.21	1,953.26	1,075.66
12) Miscellaneous (15% of Sub-total)	L. S.			976.82				522.48	292.99	161.35
TOTAL				7,488.95				4,005.69	2,246.25	1,237.00

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 7 + 400 To 8 + 400

L = 1.0 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,000	110.00	330.00	57	25	18	188.10	82.50	59.40
2) Removal of Sidewalk	sq. m.	3,500	105.00	367.50	57	25	18	209.48	91.88	66.15
3) Removal of Curb/Gutter	L. M.	3,000	163.00	489.00	55	28	17	268.95	136.92	83.13
4) Removal of RC Pile	L. M.	1,000	950.00	950.00	60	25	15	570.00	237.50	142.50
5) Pavement Subbase	cu. m.	400	430.00	172.00	55	27	18	94.60	46.44	30.96
6) Pavement PCC (23 cm)	sq. m.	2,000	690.00	1,380.00	53	29	18	731.40	400.20	248.40
7) Sidewalk (t = 10 cm)	sq. m.	2,500	342.00	855.00	50	32	18	427.50	273.60	153.90
8) Curb/Gutter	L. M.	3,000	452.70	1,358.10	52	30	18	706.21	407.43	244.46
9) RC Pipe (Ø 760)	L. M.	1,000	1,210.00	1,210.00	51	34	15	617.10	411.40	181.50
10) Manhole Inlet/(40 m)	each	25	14,500.00	362.50	53	34	13	192.13	123.25	47.13
11) Sub-total				7,474.10				4,005.46	2,211.12	1,257.52
12) Miscellaneous (15% of Sub-total)	L. S.			1,121.12				600.82	331.67	188.63
TOTAL				8,595.22				4,606.28	2,542.78	1,446.15

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C-3

SECTION : From 8 + 400 To 8 + 900

L = 0.5 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	1,500	110.00	165.00	57	25	18	94.05	41.25	29.70
2) Removal of Sidewalk	sq. m.	3,000	105.00	315.00	57	25	18	179.55	78.75	56.70
3) Removal of Curb/Gutter	L. M.	1,500	163.00	244.50	55	28	17	134.48	68.46	41.57
4) Removal of RC Pile	L. M.	500	950.00	475.00	60	25	15	285.00	118.75	71.25
5) Pavement Subbase	cu. m.	200	430.00	86.00	55	27	18	47.30	23.22	15.48
6) Pavement PCC (23 cm)	sq. m.	1,000	690.00	690.00	53	29	18	365.70	200.10	124.20
7) Sidewalk (t = 10 cm)	sq. m.	3,000	342.00	1,026.00	50	32	18	513.00	328.32	184.68
8) Curb/Gutter	L. M.	1,500	452.70	679.05	52	30	18	353.11	203.72	122.23
9) RC Pipe (Ø 760)	L. M.	500	1,210.00	605.00	51	34	15	308.55	205.70	90.75
10) Manhole Inlet/(40 m)	each	13	14,500.00	188.50	53	34	13	99.91	64.09	24.51
11) Sub-total				4,474.05				2,380.64	1,332.36	761.06
12) Miscellaneous (15% of Sub-total)	L. S.			671.11				357.10	199.85	114.16
TOTAL				5,145.16				2,737.73	1,532.21	875.22

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 8 + 900 To 10 + 200

L = 1.40 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	15,540	110.00	1,709.40	57	25	18	974.36	427.35	307.69
2) Removal of Sidewalk	sq. m.	11,200	105.00	1,176.00	57	25	18	670.32	294.00	211.68
3) Removal of Curb/Gutter	L. M.	5,600	163.00	912.80	55	28	17	502.04	255.58	155.18
4) Removal of RC Pile	L. M.	2,800	950.00	2,660.00	60	25	15	1,596.00	665.00	399.00
5) Pavement Subbase	cu. m.	2,800	430.00	1,204.00	55	27	18	662.20	325.08	216.72
6) Pavement PCC (23 cm)	sq. m.	14,000	690.00	9,660.00	53	29	18	5,119.80	2,801.40	1,738.80
7) Sidewalk (t = 10 cm)	sq. m.	7,000	342.00	2,394.00	50	32	18	1,197.00	766.08	430.92
8) Curb/Gutter	L. M.	5,600	452.70	2,535.12	52	30	18	1,318.26	760.54	456.32
9) RC Pipe (Ø 760)	L. M.	2,800	1,210.00	3,388.00	51	34	15	1,727.88	1,151.92	508.20
10) Manhole Inlet/(40 m)	each	70	14,500.00	1,015.00	53	34	13	537.95	345.10	131.95
11) Sub-total				26,654.32				14,305.81	7,792.05	4,556.46
12) Miscellaneous (15% of Sub-total)	L. S.			3,998.15				2,145.87	1,168.81	683.47
TOTAL				30,652.47				16,451.68	8,960.86	5,239.93

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C-3

SECTION : From 10 + 200 To 10 + 300

L = 0.10 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	1,410	110.00	155.10	57	25	18	88.41	38.78	27.92
2) Removal of Sidewalk	sq. m.	800	105.00	84.00	57	25	18	47.88	21.00	15.12
3) Removal of Curb/Gutter	L. M.	400	163.00	65.20	55	28	17	35.86	18.26	11.08
4) Removal of RC Pile	L. M.	200	950.00	190.00	60	25	15	114.00	47.50	28.50
5) Pavement Subbase	cu. m.	130	430.00	55.90	55	27	18	30.75	15.09	10.06
6) Pavement PCC (23 cm)	sq. m.	650	690.00	448.50	53	29	18	237.71	130.07	80.73
7) Sidewalk (t = 10 cm)	sq. m.	400	342.00	136.80	50	32	18	68.40	43.78	24.62
8) Curb/Gutter	L. M.	400	452.70	181.08	52	30	18	94.16	54.32	32.59
9) RC Pipe (Ø 760)	L. M.	200	1,210.00	242.00	51	34	15	123.42	82.28	36.30
10) Manhole Inlet/(40 m)	each	4	14,500.00	58.00	53	34	13	30.74	19.72	7.54
11) Sub-total				1,616.58				871.32	470.79	274.47
12) Miscellaneous (15% of Sub-total)	L. S.			242.49				130.70	70.62	41.17
TOTAL				1,859.07				1,002.02	541.41	315.64

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C-3

SECTION : From 10 + 300 To 11 + 000

L = 0.60 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	8,460	110.00	930.60	57	25	18	530.44	232.65	167.51
2) Removal of Sidewalk	sq. m.	4,800	105.00	504.00	57	25	18	287.28	126.00	90.72
3) Removal of Curb/Gutter	L. M.	2,400	163.00	391.20	55	28	17	215.16	109.54	66.50
4) Removal of RC Pile	L. M.	1,200	950.00	1,140.00	60	25	15	684.00	285.00	171.00
5) Pavement Subbase	cu. m.	780	430.00	335.40	55	27	18	184.47	90.56	60.37
6) Pavement PCC (23 cm)	sq. m.	3,900	690.00	2,691.00	53	29	18	1,426.23	780.39	484.38
7) Sidewalk (t = 10 cm)	sq. m.	2,400	342.00	820.80	50	32	18	410.40	262.66	147.74
8) Curb/Gutter	L. M.	2,400	452.70	1,086.48	52	30	18	564.97	325.94	195.57
9) RC Pipe (Ø 760)	L. M.	1,200	1,210.00	1,452.00	51	34	15	740.52	493.68	217.80
10) Manhole Inlet/(40 m)	each	30	14,500.00	435.00	53	34	13	230.55	147.90	56.55
11) Sub-total				9,786.48				5,274.02	2,854.31	1,658.14
12) Miscellaneous (15% of Sub-total)	L. S.			1,467.97				791.10	428.15	248.72
TOTAL				11,254.45				6,065.12	3,282.46	1,906.87

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 11 + 000 To 12 + 060

L = 1.06 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	11,766	110.00	1,294.26	57	25	18	737.73	323.57	232.97
2) Removal of Sidewalk	sq. m.	8,480	105.00	890.40	57	25	18	507.53	222.60	160.27
3) Removal of Curb/Gutter	L. M.	4,240	163.00	691.12	55	28	17	380.12	193.51	117.49
4) Removal of RC Pile	L. M.	2,120	950.00	2,014.00	60	25	15	1,208.40	503.50	302.10
5) Pavement Subbase	cu. m.	2,120	430.00	911.60	55	27	18	501.38	246.13	164.09
6) Pavement PCC (23 cm)	sq. m.	10,600	690.00	7,314.00	53	29	18	3,876.42	2,121.06	1,316.52
7) Sidewalk (t = 10 cm)	sq. m.	5,300	342.00	1,812.60	50	32	18	906.30	580.03	326.27
8) Curb/Gutter	L. M.	4,240	452.70	1,919.45	52	30	18	998.11	575.83	345.50
9) RC Pipe (Ø 760)	L. M.	2,120	1,210.00	2,565.20	51	34	15	1,308.25	872.17	384.78
10) Manhole Inlet/(40 m)	each	52	14,500.00	754.00	53	34	13	399.62	256.36	98.02
11) Sub-total				20,166.63				10,823.86	5,894.77	3,448.01
12) Miscellaneous (15% of Sub-total)	L. S.			3,024.99				1,623.58	884.21	517.20
TOTAL				23,191.62				12,447.44	6,778.98	3,965.21

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 12 + 060 To 12 + 250

L = 0.19 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	2,109	110.00	231.99	57	25	18	132.23	58.00	41.76
2) Removal of Sidewalk	sq. m.	1,520	105.00	159.60	57	25	18	90.97	39.90	28.73
3) Removal of Curb/Gutter	L. M.	760	163.00	123.88	55	28	17	68.13	34.69	21.06
4) Removal of RC Pile	L. M.	380	950.00	361.00	60	25	15	216.60	90.25	54.15
5) Pavement Subbase	cu. m.	380	430.00	163.40	55	27	18	89.87	44.12	29.41
6) Pavement PCC (23 cm)	sq. m.	1,900	690.00	1,311.00	53	29	18	694.83	380.19	235.98
7) Sidewalk (t = 10 cm)	sq. m.	950	342.00	324.90	50	32	18	162.45	103.97	58.48
8) Curb/Gutter	L. M.	760	452.70	344.05	52	30	18	178.91	103.22	61.93
9) RC Pipe (Ø 760)	L. M.	380	1,210.00	459.80	51	34	15	234.50	156.33	68.97
10) Manhole Inlet/(40 m)	each	8	14,500.00	116.00	53	34	13	61.48	39.44	15.08
11) Sub-total				3,595.62				1,929.98	1,050.10	615.55
12) Miscellaneous (15% of Sub-total)	L. S.			539.34				289.50	157.51	92.33
TOTAL				4,134.97				2,219.47	1,207.61	707.88

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C - 3

SECTION : From 12 + 250 To 13 + 400

L = 1.15 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	16,215	110.00	1,783.65	57	25	18	1,016.68	445.91	321.06
2) Removal of Sidewalk	sq. m.	18,400	105.00	1,932.00	57	25	18	1,101.24	483.00	347.76
3) Removal of Curb/Gutter	L. M.	4,600	163.00	749.80	55	28	17	412.39	209.94	127.47
4) Removal of RC Pile	L. M.	2,300	950.00	2,185.00	60	25	15	1,311.00	546.25	327.75
5) Pavement Subbase	cu. m.	2,990	430.00	1,285.70	55	27	18	707.14	347.14	231.43
6) Pavement PCC (23 cm)	sq. m.	14,950	690.00	10,315.50	53	29	18	5,467.22	2,991.50	1,856.79
7) Sidewalk (t = 10 cm)	sq. m.	6,325	342.00	2,163.15	50	32	18	1,081.58	692.21	389.37
8) Curb/Gutter	L. M.	4,600	452.70	2,082.42	52	30	18	1,082.86	624.73	374.84
9) RC Pipe (Ø 760)	L. M.	2,300	1,210.00	2,783.00	51	34	15	1,419.33	946.22	417.45
10) Manhole Inlet/(40 m)	each	56	14,500.00	812.00	53	34	13	430.36	276.08	105.56
11) Sub-total				26,092.22				14,029.78	7,562.97	4,499.46
12) Miscellaneous (15% of Sub-total)	L. S.			3,913.83				2,104.47	1,134.45	674.92
TOTAL				30,006.05				16,134.25	8,697.42	5,174.38

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : C-3

SECTION : From 13 + 400 To 14 + 480

L = 1.08 km.

ITEM	UNIT	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
				F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	110.00	831.60	57	25	18	474.01	207.90	149.69
2) Removal of Sidewalk	sq. m.	105.00	1,814.40	57	25	18	1,034.21	453.60	326.59
3) Removal of Curb/Gutter	L. M.	163.00	704.16	55	28	17	387.29	197.16	119.71
4) Removal of RC Pile	L. M.	950.00	2,052.00	60	25	15	1,231.20	513.00	307.80
5) Pavement Subbase	cu. m.	430.00	743.04	55	27	18	408.67	200.62	133.75
6) Pavement PCC (23 cm)	sq. m.	690.00	2,235.60	53	29	18	1,184.87	648.32	402.41
7) Sidewalk (t = 10 cm)	sq. m.	342.00	4,801.68	50	32	18	2,400.84	1,536.54	864.30
8) Curb/Gutter	L. M.	452.70	1,955.66	52	30	18	1,016.95	586.70	352.02
9) RC Pipe (Ø 760)	L. M.	1,210.00	2,613.60	51	34	15	1,332.94	888.62	392.04
10) Manhole Inlet/(40 m)	each	14,500.00	783.00	53	34	13	414.99	266.22	101.79
11) Sub-total			18,534.74				9,885.96	5,498.69	3,150.09
12) Miscellaneous (15% of Sub-total)	L. S.		2,780.21				1,482.89	824.80	472.51
TOTAL			21,314.96				11,368.85	6,323.49	3,622.61

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 3
SECTION : From 0 + 000 To 2 + 000

L = 2.00 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	24,000	110.00	2,640.00	57	25	18	1,504.80	660.00	475.20
2) Removal of Sidewalk	sq. m.	10,000	105.00	1,050.00	57	25	18	598.50	262.50	189.00
3) Removal of Curb/Gutter	L. M.	8,000	163.00	1,304.00	55	28	17	717.20	365.12	221.68
4) Removal of RC Pile	L. M.	4,000	950.00	3,800.00	60	25	15	2,280.00	950.00	570.00
5) Pavement Subbase	cu. m.	3,300	430.00	1,419.00	55	27	18	780.45	383.13	255.42
6) Pavement PCC (23 cm)	sq. m.	16,500	690.00	11,385.00	53	29	18	6,034.05	3,301.65	2,049.30
7) Sidewalk (t = 10 cm)	sq. m.	12,000	342.00	4,104.00	50	32	18	2,052.00	1,313.28	738.72
8) Curb/Gutter	L. M.	8,000	452.70	3,621.60	52	30	18	1,883.23	1,086.48	651.89
9) RC Pipe (Ø 760)	L. M.	4,000	1,210.00	4,840.00	51	34	15	2,468.40	1,645.60	726.00
10) Manhole Inlet/(40 m)	each	100	14,500.00	1,450.00	53	34	13	768.50	493.00	188.50
11) Sub-total				35,613.60				19,087.13	10,460.76	6,065.71
12) Miscellaneous (15% of Sub-total)	L. S.			5,342.04				2,863.07	1,569.11	909.86
TOTAL				40,955.64				21,950.20	12,029.87	6,975.56

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 3
SECTION : From 2 + 900 To 4 + 300

L = 1.40 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	16,800	110.00	1,848.00	57	25	18	1,053.36	462.00	332.64
2) Removal of Sidewalk	sq. m.	7,000	105.00	735.00	57	25	18	418.95	183.75	132.30
3) Removal of Curb/Gutter	L. M.	5,600	163.00	912.80	55	28	17	502.04	255.58	155.18
4) Removal of RC Pile	L. M.	2,800	950.00	2,660.00	60	25	15	1,596.00	665.00	399.00
5) Pavement Subbase	cu. m.	2,310	430.00	993.30	55	27	18	546.32	268.19	178.79
6) Pavement PCC (23 cm)	sq. m.	11,500	690.00	7,935.00	53	29	18	4,205.55	2,301.15	1,428.30
7) Sidewalk (t = 10 cm)	sq. m.	8,400	342.00	2,872.80	50	32	18	1,436.40	919.30	517.10
8) Curb/Gutter	L. M.	5,600	452.70	2,535.12	52	30	18	1,318.26	760.54	456.32
9) RC Pipe (Ø 760)	L. M.	2,800	1,210.00	3,388.00	51	34	15	1,727.88	1,151.92	508.20
10) Manhole Inlet/(40 m)	each	70	14,500.00	1,015.00	53	34	13	537.95	345.10	131.95
11) Sub-total				24,895.02				13,342.71	7,312.53	4,239.79
12) Miscellaneous (15% of Sub-total)	L. S.			3,734.25				2,001.41	1,096.88	635.97
TOTAL				28,629.27				15,344.11	8,409.41	4,875.75

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 3
SECTION : From 11 + 310 To 15 + 000

L = 3.69 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	29,889	110.00	3,287.79	57	25	18	1,874.04	821.95	591.80
2) Removal of Sidewalk	sq. m.	19,188	105.00	2,014.74	57	25	18	1,148.40	503.69	362.65
3) Removal of Curb/Gutter	L. M.	25,830	163.00	4,210.29	55	28	17	2,315.66	1,178.88	715.75
4) Removal of RC Pile	L. M.	11,070	950.00	10,516.50	60	25	15	6,309.90	2,629.13	1,577.48
5) Pavement Subbase	cu. m.	5,314	430.00	2,285.02	55	27	18	1,256.76	616.96	411.30
6) Pavement PCC (23 cm)	sq. m.	26,568	690.00	18,331.92	53	29	18	9,715.92	5,316.26	3,299.75
7) Sidewalk (t = 10 cm)	sq. m.	18,819	342.00	6,436.10	50	32	18	3,218.05	2,059.55	1,158.50
8) Curb/Gutter	L. M.	25,830	452.70	11,693.24	52	30	18	6,080.49	3,507.97	2,104.78
9) RC Pipe (Ø 760)	L. M.	11,070	1,210.00	13,394.70	51	34	15	6,831.30	4,554.20	2,009.21
10) Manhole Inlet/(40 m)	each	276	14,500.00	4,002.00	53	34	13	2,121.06	1,360.68	520.26
11) Sub-total				76,172.30				40,871.57	22,549.25	12,751.47
12) Miscellaneous (15% of Sub-total)	L. S.			11,425.84				6,130.74	3,382.39	1,912.72
TOTAL				87,598.14				47,002.31	25,931.64	14,664.20

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 3

SECTION : From 15 + 000 To 18 + 300

L = 3.30 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	24,420	110.00	2,686.20	57	25	18	1,531.13	671.55	483.52
2) Removal of Sidewalk	sq. m.	28,050	105.00	2,945.25	57	25	18	1,678.79	736.31	530.15
3) Removal of Curb/Gutter	L. M.	23,100	163.00	3,765.30	55	28	17	2,070.92	1,054.28	640.10
4) Removal of RC Pile	L. M.	9,900	950.00	9,405.00	60	25	15	5,643.00	2,351.25	1,410.75
5) Pavement Subbase	cu. m.	6,864	430.00	2,951.52	55	27	18	1,623.34	796.91	531.27
6) Pavement PCC (23 cm)	sq. m.	34,320	690.00	23,680.80	53	29	18	12,550.82	6,867.43	4,262.54
7) Sidewalk (t = 10 cm)	sq. m.	16,830	342.00	5,755.86	50	32	18	2,877.93	1,841.88	1,036.05
8) Curb/Gutter	L. M.	23,100	452.70	10,457.37	52	30	18	5,437.83	3,137.21	1,882.33
9) RC Pipe (Ø 760)	L. M.	9,900	1,210.00	11,979.00	51	34	15	6,109.29	4,072.86	1,796.85
10) Manhole Inlet/(40 m)	each	246	14,500.00	3,567.00	53	34	13	1,890.51	1,212.78	463.71
11) Sub-total				77,193.30				41,413.56	22,742.47	13,037.27
12) Miscellaneous (15% of Sub-total)	L. S.			11,579.00				6,212.03	3,411.37	1,955.59
TOTAL				88,772.30				47,625.60	26,153.83	14,992.86

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 3
SECTION : From 18 + 460 To 18 + 860

L = 0.4 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	1,000	430.00	430.00	55	27	18	236.50	116.10	77.40
6) Pavement PCC (23 cm)	sq. m.	5,000	690.00	3,450.00	53	29	18	1,828.50	1,000.50	621.00
7) Sidewalk (t = 10 cm)	sq. m.	3,400	342.00	1,162.80	50	32	18	581.40	372.10	209.30
8) Curb/Gutter	L. M.	1,600	452.70	724.32	52	30	18	376.65	217.30	130.38
9) RC Pipe (Ø 760)	L. M.	800	1,210.00	968.00	51	34	15	493.68	329.12	145.20
10) Manhole Inlet/(40 m)	each	20	14,500.00	290.00	53	34	13	153.70	98.60	37.70
11) Sub-total				7,025.12				3,670.43	2,133.71	1,220.98
12) Miscellaneous (15% of Sub-total)	L. S.			1,053.77				550.56	320.06	183.15
TOTAL				8,078.89				4,220.99	2,453.77	1,404.13

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 3

SECTION : From 19 + 750 To 20 + 200

L = 0.45 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	7,942.5	110.00	873.68	57	25	18	497.99	218.42	157.26
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	1,318.5	430.00	566.96	55	27	18	311.83	153.08	102.05
6) Pavement PCC (23 cm)	sq. m.	6,592.5	690.00	4,548.83	53	29	18	2,410.88	1,319.16	818.79
7) Sidewalk (t = 10 cm)	sq. m.	-	342.00	0.00	50	32	18	0.00	0.00	0.00
8) Curb/Gutter	L. M.	900	452.70	407.43	52	30	18	211.86	122.23	73.34
9) RC Pipe (Ø 760)	L. M.	-	1,210.00	0.00	51	34	15	0.00	0.00	0.00
10) Manhole Inlet/(40 m)	each	-	14,500.00	0.00	53	34	13	0.00	0.00	0.00
11) Sub-total				6,396.89				3,432.56	1,812.88	1,151.44
12) Miscellaneous (15% of Sub-total)	L. S.			959.53				514.88	271.93	172.72
TOTAL				7,356.42				3,947.44	2,084.82	1,324.16

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 4

SECTION : From Sta. 1 +040 To Sta. 1 + 400

L = 0.36 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	168	430.00	72.24	55	27	18	39.73	19.50	13.00
6) Pavement PCC (23 cm)	sq. m.	5,040	690.00	3,477.60	53	29	18	1,843.13	1,008.50	625.97
7) Sidewalk (t = 10 cm)	sq. m.	3,960	342.00	1,354.32	50	32	18	677.16	433.38	243.78
8) Curb/Gutter	L. M.	1,440	452.70	651.89	52	30	18	338.98	195.57	117.34
9) RC Pipe (Ø 760)	L. M.	720	1,210.00	871.20	51	34	15	444.31	296.21	130.68
10) Manhole Inlet/(40 m)	each	18	14,500.00	261.00	53	34	13	138.33	88.74	33.93
11) Sub-total				6,688.25				3,481.64	2,041.91	1,164.70
12) Miscellaneous (15% of Sub-total)	L. S.			1,003.24				522.25	306.29	174.70
TOTAL				7,691.49				4,003.89	2,348.19	1,339.40

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 4

SECTION : From Sta. 1+700 To Sta. 2 + 700

L = 1.0 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	1,500	430.00	645.00	55	27	18	354.75	174.15	116.10
6) Pavement PCC (23 cm)	sq. m.	7,500	690.00	5,175.00	53	29	18	2,742.75	1,500.75	931.50
7) Sidewalk (t = 10 cm)	sq. m.	6,000	342.00	2,052.00	50	32	18	1,026.00	656.64	369.36
8) Curb/Gutter	L. M.	2,000	452.70	905.40	52	30	18	470.81	271.62	162.97
9) RC Pipe (Ø 760)	L. M.	1,000	1,210.00	1,210.00	51	34	15	617.10	411.40	181.50
10) Manhole Inlet/(40 m)	each	25	14,500.00	362.50	53	34	13	192.13	123.25	47.13
11) Sub-total				10,349.90				5,403.53	3,137.81	1,808.56
12) Miscellaneous (15% of Sub-total)	L. S.			1,552.49				810.53	470.67	271.28
TOTAL				11,902.39				6,214.06	3,608.48	2,079.84

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 4
 SECTION : From 0 + 910 To 1 + 030 L = 0.12 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000P)	COMPONENT (%)			COMPONENT COST (x1000P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	336	430.00	144.48	55	27	18	79.46	39.01	26.01
6) Pavement PCC (23 cm)	sq. m.	1,680	690.00	1,159.20	53	29	18	614.38	336.17	208.66
7) Sidewalk (t = 10 cm)	sq. m.	1,320	342.00	451.44	50	32	18	225.72	144.46	81.26
8) Curb/Gutter	L. M.	480	452.70	217.30	52	30	18	112.99	65.19	39.11
9) RC Pipe (Ø 760)	L. M.	240	1,210.00	290.40	51	34	15	148.10	98.74	43.56
10) Manhole Inlet/(40 m)	each	6	14,500.00	87.00	53	34	13	46.11	29.58	11.31
11) Sub-total				2,349.82				1,226.77	713.14	409.90
12) Miscellaneous (15% of Sub-total)	L. S.			352.47				184.02	106.97	61.49
TOTAL				2,702.29				1,410.78	820.11	471.39

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 4

SECTION : From 0 + 720 To 0 + 790

L = 0.07 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	196	430.00	84.28	55	27	18	46.35	22.76	15.17
6) Pavement PCC (23 cm)	sq. m.	980	690.00	676.20	53	29	18	358.39	196.10	121.72
7) Sidewalk (t = 10 cm)	sq. m.	770	342.00	263.34	50	32	18	131.67	84.27	47.40
8) Curb/Gutter	L. M.	280	452.70	126.76	52	30	18	65.91	38.03	22.82
9) RC Pipe (Ø 760)	L. M.	140	1,210.00	169.40	51	34	15	86.39	57.60	25.41
10) Manhole Inlet/(40 m)	each	2	14,500.00	29.00	53	34	13	15.37	9.86	3.77
11) Sub-total				1,348.98				704.09	408.61	236.28
12) Miscellaneous (15% of Sub-total)	L. S.			202.35				105.61	61.29	35.44
TOTAL				1,551.32				809.70	469.90	271.73

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R-4

SECTION : From 0 + 150 To 0 + 320

L = 0.17 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	153	430.00	65.79	55	27	18	36.18	17.76	11.84
6) Pavement PCC (23 cm)	sq. m.	765	690.00	527.85	53	29	18	279.76	153.08	95.01
7) Sidewalk (t = 10 cm)	sq. m.	255	342.00	87.21	50	32	18	43.61	27.91	15.70
8) Curb/Gutter	L. M.	340	452.70	153.92	52	30	18	80.04	46.18	27.71
9) RC Pipe (Ø 760)	L. M.	170	1,210.00	205.70	51	34	15	104.91	69.94	30.86
10) Manhole Inlet/(40 m)	each	4	14,500.00	58.00	53	34	13	30.74	19.72	7.54
11) Sub-total				1,098.47				575.23	334.58	188.65
12) Miscellaneous (15% of Sub-total)	L. S.			164.77				86.29	50.19	28.30
TOTAL				1,263.24				661.52	384.77	216.95

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 7

SECTION : From - 1 - 120 To - 0 - 850

L = 0.27 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	2,349	110.00	258.39	57	25	18	147.28	64.60	46.51
2) Removal of Sidewalk	sq. m.	1,998	105.00	209.79	57	25	18	119.58	52.45	37.76
3) Removal of Curb/Gutter	L. M.	1,080	163.00	176.04	55	28	17	96.82	49.29	29.93
4) Removal of RC Pile	L. M.	540	950.00	513.00	60	25	15	307.80	128.25	76.95
5) Pavement Subbase	cu. m.	145.8	430.00	62.69	55	27	18	34.48	16.93	11.28
6) Pavement PCC (23 cm)	sq. m.	729	690.00	503.01	53	29	18	266.60	145.87	90.54
7) Sidewalk (t = 10 cm)	sq. m.	1,539	342.00	526.34	50	32	18	263.17	168.43	94.74
8) Curb/Gutter	L. M.	1,080	452.70	488.92	52	30	18	254.24	146.67	88.00
9) RC Pipe (Ø 760)	L. M.	540	1,210.00	653.40	51	34	15	333.23	222.16	98.01
10) Manhole Inlet/(40 m)	each	12	14,500.00	174.00	53	34	13	92.22	59.16	22.62
11) Sub-total				3,565.58				1,915.42	1,053.81	596.35
12) Miscellaneous (15% of Sub-total)	L. S.			534.84				287.31	158.07	89.45
TOTAL				4,100.41				2,202.73	1,211.88	685.80

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 7

SECTION : From - 0 - 850 To 0 + 000

L = 0.85 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	2,550	110.00	280.50	57	25	18	159.89	70.13	50.49
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	1,700	163.00	277.10	55	28	17	152.41	77.59	47.11
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	510	430.00	219.30	55	27	18	120.62	59.21	39.47
6) Pavement PCC (23 cm)	sq. m.	2,550	690.00	1,759.50	53	29	18	932.54	510.26	316.71
7) Sidewalk (t = 10 cm)	sq. m.	-	342.00	0.00	50	32	18	0.00	0.00	0.00
8) Curb/Gutter	L. M.	1,700	452.70	769.59	52	30	18	400.19	230.88	138.53
9) RC Pipe (Ø 760)	L. M.	-	1,210.00	0.00	51	34	15	0.00	0.00	0.00
10) Manhole Inlet/(40 m)	each	-	14,500.00	0.00	53	34	13	0.00	0.00	0.00
11) Sub-total				3,305.99				1,765.63	948.06	592.31
12) Miscellaneous (15% of Sub-total)	L. S.			495.90				264.84	142.21	88.85
TOTAL				3,801.89				2,030.47	1,090.26	681.15

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 7

SECTION : From 0 + 000 To 0 + 800

L = 0.8 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	5,200	110.00	572.00	57	25	18	326.04	143.00	102.96
2) Removal of Sidewalk	sq. m.	2,000	105.00	210.00	57	25	18	119.70	52.50	37.80
3) Removal of Curb/Gutter	L. M.	2,400	163.00	391.20	55	28	17	215.16	109.54	66.50
4) Removal of RC Pile	L. M.	800	950.00	760.00	60	25	15	456.00	190.00	114.00
5) Pavement Subbase	cu. m.	80	430.00	34.40	55	27	18	18.92	9.29	6.19
6) Pavement PCC (23 cm)	sq. m.	400	690.00	276.00	53	29	18	146.28	80.04	49.68
7) Sidewalk (t = 10 cm)	sq. m.	3,200	342.00	1,094.40	50	32	18	547.20	350.21	196.99
8) Curb/Gutter	L. M.	2,400	452.70	1,086.48	52	30	18	564.97	325.94	195.57
9) RC Pipe (Ø 760)	L. M.	800	1,210.00	968.00	51	34	15	493.68	329.12	145.20
10) Manhole Inlet/(40 m)	each	20	14,500.00	290.00	53	34	13	153.70	98.60	37.70
11) Sub-total				5,682.48				3,041.65	1,688.24	952.59
12) Miscellaneous (15% of Sub-total)	L. S.			852.37				456.25	253.24	142.89
TOTAL				6,534.85				3,497.90	1,941.47	1,095.48

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 7
SECTION : From 0 + 800

To 1 + 600

L = 0.80 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000P)	COMPONENT (%)			COMPONENT COST (x1000P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	8,000	110.00	880.00	57	25	18	501.60	220.00	158.40
2) Removal of Sidewalk	sq. m.	3,200	105.00	336.00	57	25	18	191.52	84.00	60.48
3) Removal of Curb/Gutter	L. M.	2,400	163.00	391.20	55	28	17	215.16	109.54	66.50
4) Removal of RC Pile	L. M.	800	950.00	760.00	60	25	15	456.00	190.00	114.00
5) Pavement Subbase	cu. m.	640	430.00	275.20	55	27	18	151.36	74.30	49.54
6) Pavement PCC (23 cm)	sq. m.	3,200	690.00	2,208.00	53	29	18	1,170.24	640.32	397.44
7) Sidewalk (t = 10 cm)	sq. m.	2,000	342.00	684.00	50	32	18	342.00	218.88	123.12
8) Curb/Gutter	L. M.	2,400	452.70	1,086.48	52	30	18	564.97	325.94	195.57
9) RC Pipe (Ø 760)	L. M.	800	1,210.00	968.00	51	34	15	493.68	329.12	145.20
10) Manhole Inlet/(40 m)	each	20	14,500.00	290.00	53	34	13	153.70	98.60	37.70
11) Sub-total				7,878.88				4,240.23	2,290.70	1,347.95
12) Miscellaneous (15% of Sub-total)	L. S.			1,181.83				636.03	343.61	202.19
TOTAL				9,060.71				4,876.26	2,634.31	1,550.14

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 7

SECTION : From 1 + 600 To 2 + 000

L = 0.40 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	2,600	110.00	286.00	57	25	18	163.02	71.50	51.48
2) Removal of Sidewalk	sq. m.	1,000	105.00	105.00	57	25	18	59.85	26.25	18.90
3) Removal of Curb/Gutter	L. M.	1,200	163.00	195.60	55	28	17	107.58	54.77	33.25
4) Removal of RC Pile	L. M.	400	950.00	380.00	60	25	15	228.00	95.00	57.00
5) Pavement Subbase	cu. m.	40	430.00	17.20	55	27	18	9.46	4.64	3.10
6) Pavement PCC (23 cm)	sq. m.	200	690.00	138.00	53	29	18	73.14	40.02	24.84
7) Sidewalk (t = 10 cm)	sq. m.	1,600	342.00	547.20	50	32	18	273.60	175.10	98.50
8) Curb/Gutter	L. M.	1,200	452.70	543.24	52	30	18	282.48	162.97	97.78
9) RC Pipe (Ø 760)	L. M.	400	1,210.00	484.00	51	34	15	246.84	164.56	72.60
10) Manhole Inlet/(40 m)	each	10	14,500.00	145.00	53	34	13	76.85	49.30	18.85
11) Sub-total				2,841.24				1,520.82	844.12	476.30
12) Miscellaneous (15% of Sub-total)	L. S.			426.19				228.12	126.62	71.44
TOTAL				3,267.43				1,748.95	970.74	547.74

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R-7

SECTION : From 2 + 000 To 3 + 150

L = 1.15 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	11,500	110.00	1,265.00	57	25	18	721.05	316.25	227.70
2) Removal of Sidewalk	sq. m.	4,600	105.00	483.00	57	25	18	275.31	120.75	86.94
3) Removal of Curb/Gutter	L. M.	3,450	163.00	562.35	55	28	17	309.29	157.46	95.60
4) Removal of RC Pile	L. M.	1,150	950.00	1,092.50	60	25	15	655.50	273.13	163.88
5) Pavement Subbase	cu. m.	920	430.00	395.60	55	27	18	217.58	106.81	71.21
6) Pavement PCC (23 cm)	sq. m.	4,600	690.00	3,174.00	53	29	18	1,682.22	920.46	571.32
7) Sidewalk (t = 10 cm)	sq. m.	2,875	342.00	983.25	50	32	18	491.63	314.64	176.99
8) Curb/Gutter	L. M.	3,450	452.70	1,561.82	52	30	18	812.14	468.54	281.13
9) RC Pipe (Ø 760)	L. M.	1,150	1,210.00	1,391.50	51	34	15	709.67	473.11	208.73
10) Manhole Inlet/(40 m)	each	28	14,500.00	406.00	53	34	13	215.18	138.04	52.78
11) Sub-total				11,315.02				6,089.57	3,289.19	1,936.26
12) Miscellaneous (15% of Sub-total)	L. S.			1,697.25				913.43	493.38	290.44
TOTAL				13,012.27				7,003.00	3,782.57	2,226.70

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 7

SECTION : From 3 + 150 To 3 + 860

L = 0.71 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	6,390	110.00	702.90	57	25	18	400.65	175.73	126.52
2) Removal of Sidewalk	sq. m.	5,396	105.00	566.58	57	25	18	322.95	141.65	101.98
3) Removal of Curb/Gutter	L. M.	2,840	163.00	462.92	55	28	17	254.61	129.62	78.70
4) Removal of RC Pile	L. M.	1,420	950.00	1,349.00	60	25	15	809.40	337.25	202.35
5) Pavement Subbase	cu. m.	426	430.00	183.18	55	27	18	100.75	49.46	32.97
6) Pavement PCC (23 cm)	sq. m.	2,130	690.00	1,469.70	53	29	18	778.94	426.21	264.55
7) Sidewalk (t = 10 cm)	sq. m.	4,331	342.00	1,481.20	50	32	18	740.60	473.98	266.62
8) Curb/Gutter	L. M.	2,840	452.70	1,285.67	52	30	18	668.55	385.70	231.42
9) RC Pipe (Ø 760)	L. M.	1,420	1,210.00	1,718.20	51	34	15	876.28	584.19	257.73
10) Manhole Inlet/(40 m)	each	34	14,500.00	493.00	53	34	13	261.29	167.62	64.09
11) Sub-total				9,712.35				5,214.02	2,871.40	1,626.93
12) Miscellaneous (15% of Sub-total)	L. S.			1,456.85				782.10	430.71	244.04
TOTAL				11,169.20				5,996.12	3,302.11	1,870.97

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R-7
 SECTION : From University Avenue To C-5 I/C L = 2.40 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	9,360	430.00	4,024.80	55	27	18	2,213.64	1,086.70	724.46
6) Pavement PCC (23 cm)	sq. m.	46,800	690.00	32,292.00	53	29	18	17,114.76	9,364.68	5,812.56
7) Sidewalk (t = 10 cm)	sq. m.	24,000	342.00	8,208.00	50	32	18	4,104.00	2,626.56	1,477.44
8) Curb/Gutter	L. M.	9,600	452.70	4,345.92	52	30	18	2,259.88	1,303.78	782.27
9) RC Pipe (Ø 760)	L. M.	4,800	1,210.00	5,808.00	51	34	15	2,962.08	1,974.72	871.20
10) Manhole Inlet/(40 m)	each	120	14,500.00	1,740.00	53	34	13	922.20	591.60	226.20
11) Sub-total				56,418.72				29,576.56	16,948.03	9,894.13
12) Miscellaneous (15% of Sub-total)	L. S.			8,462.81				4,436.48	2,542.20	1,484.12
TOTAL				64,881.53				34,013.04	19,490.24	11,378.25

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R-7
SECTION : From C-5

To END

L = 3.45 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	-	110.00	0.00	57	25	18	0.00	0.00	0.00
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	13,455	430.00	5,785.65	55	27	18	3,182.11	1,562.13	1,041.42
6) Pavement PCC (23 cm)	sq. m.	67,275	690.00	46,419.75	53	29	18	24,602.47	13,461.73	8,355.56
7) Sidewalk (t = 10 cm)	sq. m.	34,500	342.00	11,799.00	50	32	18	5,899.50	3,775.68	2,123.82
8) Curb/Gutter	L. M.	13,800	452.70	6,247.26	52	30	18	3,248.58	1,874.18	1,124.51
9) RC Pipe (Ø 760)	L. M.	6,900	1,210.00	8,349.00	51	34	15	4,257.99	2,838.66	1,252.35
10) Manhole Inlet/(40 m)	each	172	14,500.00	2,494.00	53	34	13	1,321.82	847.96	324.22
11) Sub-total				81,094.66				42,512.46	24,360.33	14,221.87
12) Miscellaneous (15% of Sub-total)	L. S.			12,164.20				6,376.87	3,654.05	2,133.28
TOTAL				93,258.86				48,889.33	28,014.38	16,355.15

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 9

SECTION : From 0 + 000 To 1 + 100

L = 1.10 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	12,210	110.00	1,343.10	57	25	18	765.57	335.78	241.76
2) Removal of Sidewalk	sq. m.	4,290	105.00	450.45	57	25	18	256.76	112.61	81.08
3) Removal of Curb/Gutter	L. M.	4,400	163.00	717.20	55	28	17	394.46	200.82	121.92
4) Removal of RC Pile	L. M.	2,200	950.00	2,090.00	60	25	15	1,254.00	522.50	313.50
5) Pavement Subbase	cu. m.	1,430	430.00	614.90	55	27	18	338.20	166.02	110.68
6) Pavement PCC (23 cm)	sq. m.	7,150	690.00	4,933.50	53	29	18	2,614.76	1,430.72	888.03
7) Sidewalk (t = 10 cm)	sq. m.	6,050	342.00	2,069.10	50	32	18	1,034.55	662.11	372.44
8) Curb/Gutter	L. M.	4,400	452.70	1,991.88	52	30	18	1,035.78	597.56	358.54
9) RC Pipe (Ø 760)	L. M.	2,200	1,210.00	2,662.00	51	34	15	1,357.62	905.08	399.30
10) Manhole Inlet/(40 m)	each	54	14,500.00	783.00	53	34	13	414.99	266.22	101.79
11) Sub-total				17,655.13				9,466.67	5,199.42	2,989.04
12) Miscellaneous (15% of Sub-total)	L. S.			2,648.27				1,420.00	779.91	448.36
TOTAL				20,303.40				10,886.67	5,979.33	3,437.40

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 9
SECTION : From 1 + 100 To 1 + 680

L = 0.58 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	7,308	110.00	803.88	57	25	18	458.21	200.97	144.70
2) Removal of Sidewalk	sq. m.	2,262	105.00	237.51	57	25	18	135.38	59.38	42.75
3) Removal of Curb/Gutter	L. M.	2,320	163.00	378.16	55	28	17	207.99	105.88	64.29
4) Removal of RC Pile	L. M.	1,160	950.00	1,102.00	60	25	15	661.20	275.50	165.30
5) Pavement Subbase	cu. m.	928	430.00	399.04	55	27	18	219.47	107.74	71.83
6) Pavement PCC (23 cm)	sq. m.	4,640	690.00	3,201.60	53	29	18	1,696.85	928.46	576.29
7) Sidewalk (t = 10 cm)	sq. m.	2,900	342.00	991.80	50	32	18	495.90	317.38	178.52
8) Curb/Gutter	L. M.	2,320	452.70	1,050.26	52	30	18	546.14	315.08	189.05
9) RC Pipe (Ø 760)	L. M.	1,160	1,210.00	1,403.60	51	34	15	715.84	477.22	210.54
10) Manhole Inlet/(40 m)	each	28	14,500.00	406.00	53	34	13	215.18	138.04	52.78
11) Sub-total				9,973.85				5,352.15	2,925.66	1,696.04
12) Miscellaneous (15% of Sub-total)	L. S.			1,496.08				802.82	438.85	254.41
TOTAL				11,469.93				6,154.98	3,364.50	1,950.45

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 9

SECTION : From 1 + 680 To 3 + 100

L = 1.42 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	9,940	110.00	1,093.40	57	25	18	623.24	273.35	196.81
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	2,840	163.00	462.92	55	28	17	254.61	129.62	78.70
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	1,988	430.00	854.84	55	27	18	470.16	230.81	153.87
6) Pavement PCC (23 cm)	sq. m.	9,940	690.00	6,858.60	53	29	18	3,635.06	1,988.99	1,234.55
7) Sidewalk (t = 10 cm)	sq. m.	-	342.00	0.00	50	32	18	0.00	0.00	0.00
8) Curb/Gutter	L. M.	2,840	452.70	1,285.67	52	30	18	668.55	385.70	231.42
9) RC Pipe (Ø 760)	L. M.	-	1,210.00	0.00	51	34	15	0.00	0.00	0.00
10) Manhole Inlet/(40 m)	each	-	14,500.00	0.00	53	34	13	0.00	0.00	0.00
11) Sub-total				10,555.43				5,651.61	3,008.47	1,895.35
12) Miscellaneous (15% of Sub-total)	L. S.			1,583.31				847.74	451.27	284.30
TOTAL				12,138.74				6,499.35	3,459.74	2,179.65

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 9
SECTION : From 3 + 100 To 3 + 300

L = 0.20 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,000	110.00	330.00	57	25	18	188.10	82.50	59.40
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	600	430.00	258.00	55	27	18	141.90	69.66	46.44
6) Pavement PCC (23 cm)	sq. m.	3,000	690.00	2,070.00	53	29	18	1,097.10	600.30	372.60
7) Sidewalk (t = 10 cm)	sq. m.	-	342.00	0.00	50	32	18	0.00	0.00	0.00
8) Curb/Gutter	L. M.	1,200	452.70	543.24	52	30	18	282.48	162.97	97.78
9) RC Pipe (Ø 760)	L. M.	-	1,210.00	0.00	51	34	15	0.00	0.00	0.00
10) Manhole Inlet/(40 m)	each	-	14,500.00	0.00	53	34	13	0.00	0.00	0.00
11) Sub-total				3,201.24				1,709.58	915.43	576.22
12) Miscellaneous (15% of Sub-total)	L. S.			480.19				256.44	137.31	86.43
TOTAL				3,681.43				1,966.02	1,052.75	662.66

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 9
SECTION : From 3 + 300 To 4 + 320

L = 1.02 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,060	110.00	336.60	57	25	18	191.86	84.15	60.59
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	1,020	163.00	166.26	55	28	17	91.44	46.55	28.26
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	612	430.00	263.16	55	27	18	144.74	71.05	47.37
6) Pavement PCC (23 cm)	sq. m.	3,060	690.00	2,111.40	53	29	18	1,119.04	612.31	380.05
7) Sidewalk (t = 10 cm)	sq. m.	-	342.00	0.00	50	32	18	0.00	0.00	0.00
8) Curb/Gutter	L. M.	1,020	452.70	461.75	52	30	18	240.11	138.53	83.12
9) RC Pipe (Ø 760)	L. M.	-	1,210.00	0.00	51	34	15	0.00	0.00	0.00
10) Manhole Inlet/(40 m)	each	-	14,500.00	0.00	53	34	13	0.00	0.00	0.00
11) Sub-total				3,339.17				1,787.20	952.59	599.39
12) Miscellaneous (15% of Sub-total)	L. S.			500.88				268.08	142.89	89.91
TOTAL				3,840.05				2,055.28	1,095.48	689.30

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 9
SECTION : From 4 + 320

To 4 + 510

L = 0.19 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000 ₱)	COMPONENT (%)			COMPONENT COST (x1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,629	110.00	399.19	57	25	18	227.54	99.80	71.85
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	190	163.00	30.97	55	28	17	17.03	8.67	5.26
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	851.2	430.00	366.02	55	27	18	201.31	98.82	65.88
6) Pavement PCC (23 cm)	sq. m.	4,256	690.00	2,936.64	53	29	18	1,556.42	851.63	528.60
7) Sidewalk (t = 10 cm)	sq. m.	-	342.00	0.00	50	32	18	0.00	0.00	0.00
8) Curb/Gutter	L. M.	380	452.70	172.03	52	30	18	89.45	51.61	30.96
9) RC Pipe (Ø 760)	L. M.	-	1,210.00	0.00	51	34	15	0.00	0.00	0.00
10) Manhole Inlet/(40 m)	each	-	14,500.00	0.00	53	34	13	0.00	0.00	0.00
11) Sub-total				3,904.84				2,091.75	1,110.53	702.56
12) Miscellaneous (15% of Sub-total)	L. S.			585.73				313.76	166.58	105.38
TOTAL				4,490.57				2,405.52	1,277.11	807.95

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 10
SECTION : From 0 + 000

To 2 + 180

L = 2.07 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	31,050	110.00	3,415.50	57	25	18	1,946.84	853.88	614.79
2) Removal of Sidewalk	sq. m.	18,009	105.00	1,890.95	57	25	18	1,077.84	472.74	340.37
3) Removal of Curb/Gutter	L. M.	16,560	163.00	2,699.28	55	28	17	1,484.60	755.80	458.88
4) Removal of RC Pile	L. M.	8,280	950.00	7,866.00	60	25	15	4,719.60	1,966.50	1,179.90
5) Pavement Subbase	cu. m.	2,152.8	430.00	925.70	55	27	18	509.14	249.94	166.63
6) Pavement PCC (23 cm)	sq. m.	10,764	690.00	7,427.16	53	29	18	3,936.39	2,153.88	1,336.89
7) Sidewalk (t = 10 cm)	sq. m.	16,560	342.00	5,663.52	50	32	18	2,831.76	1,812.33	1,019.43
8) Curb/Gutter	L. M.	8,280	452.70	3,748.36	52	30	18	1,949.15	1,124.51	674.70
9) RC Pipe (Ø 760)	L. M.	4,140	1,210.00	5,009.40	51	34	15	2,554.79	1,703.20	751.41
10) Manhole Inlet/(40 m)	each	102	14,500.00	1,479.00	53	34	13	783.87	502.86	192.27
11) Sub-total				40,124.87				21,793.98	11,595.62	6,735.27
12) Miscellaneous (15% of Sub-total)	L. S.			6,018.73				3,269.10	1,739.34	1,010.29
TOTAL				46,143.59				25,063.08	13,334.96	7,745.56

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 10
SECTION : From 2 + 180 To 2 + 930

L = 0.75 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	11,250	110.00	1,237.50	57	25	18	705.38	309.38	222.75
2) Removal of Sidewalk	sq. m.	6,525	105.00	685.13	57	25	18	390.52	171.28	123.32
3) Removal of Curb/Gutter	L. M.	6,000	163.00	978.00	55	28	17	537.90	273.84	166.26
4) Removal of RC Pile	L. M.	3,000	950.00	2,850.00	60	25	15	1,710.00	712.50	427.50
5) Pavement Subbase	cu. m.	780	430.00	335.40	55	27	18	184.47	90.56	60.37
6) Pavement PCC (23 cm)	sq. m.	3,900	690.00	2,691.00	53	29	18	1,426.23	780.39	484.38
7) Sidewalk (t = 10 cm)	sq. m.	6,000	342.00	2,052.00	50	32	18	1,026.00	656.64	369.36
8) Curb/Gutter	L. M.	3,000	452.70	1,358.10	52	30	18	706.21	407.43	244.46
9) RC Pipe (Ø 760)	L. M.	1,500	1,210.00	1,815.00	51	34	15	925.65	617.10	272.25
10) Manhole Inlet/(40 m)	each	36	14,500.00	522.00	53	34	13	276.66	177.48	67.86
11) Sub-total				14,524.13				7,889.02	4,196.59	2,438.51
12) Miscellaneous (15% of Sub-total)	L. S.			2,178.62				1,183.35	629.49	365.78
TOTAL				16,702.74				9,072.37	4,826.08	2,804.29

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : R - 10
SECTION : From 2 + 930

To 3 + 300

L = 0.37 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	6,197.5	110.00	681.73	57	25	18	388.58	170.43	122.71
2) Removal of Sidewalk	sq. m.	2,331	105.00	244.76	57	25	18	139.51	61.19	44.06
3) Removal of Curb/Gutter	L. M.	2,960	163.00	482.48	55	28	17	265.36	135.09	82.02
4) Removal of RC Pile	L. M.	1,480	950.00	1,406.00	60	25	15	843.60	351.50	210.90
5) Pavement Subbase	cu. m.	273.8	430.00	117.73	55	27	18	64.75	31.79	21.19
6) Pavement PCC (23 cm)	sq. m.	1,369	690.00	944.61	53	29	18	500.64	273.94	170.03
7) Sidewalk (t = 10 cm)	sq. m.	2,793.5	342.00	955.38	50	32	18	477.69	305.72	171.97
8) Curb/Gutter	L. M.	1,480	452.70	670.00	52	30	18	348.40	201.00	120.60
9) RC Pipe (Ø 760)	L. M.	740	1,210.00	895.40	51	34	15	456.65	304.44	134.31
10) Manhole Inlet/(40 m)	each	18	14,500.00	261.00	53	34	13	138.33	88.74	33.93
11) Sub-total				6,659.08				3,623.53	1,923.83	1,111.72
12) Miscellaneous (15% of Sub-total)	L. S.			998.86				543.53	288.58	166.76
TOTAL				7,657.94				4,167.05	2,212.41	1,278.47

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : Makati Access Ramp
SECTION : From 0 + 100 To 0 + 460

L = 0.36 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (₱)	COST (x1000₱)	COMPONENT (%)			COMPONENT COST (x1000₱)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,276	110.00	360.36	57	25	18	205.41	90.09	64.86
2) Removal of Sidewalk	sq. m.	2,880	105.00	302.40	57	25	18	172.37	75.60	54.43
3) Removal of Curb/Gutter	L. M.	1,440	163.00	234.72	55	28	17	129.10	65.72	39.90
4) Removal of RC Pile	L. M.	720	950.00	684.00	60	25	15	410.40	171.00	102.60
5) Pavement Subbase	cu. m.	576	430.00	247.68	55	27	18	136.22	66.87	44.58
6) Pavement PCC (23 cm)	sq. m.	2,880	690.00	1,987.20	53	29	18	1,053.22	576.29	357.70
7) Sidewalk (t = 10 cm)	sq. m.	2,340	342.00	800.28	50	32	18	400.14	256.09	144.05
8) Curb/Gutter	L. M.	1,440	452.70	651.89	52	30	18	338.98	195.57	117.34
9) RC Pipe (Ø 760)	L. M.	720	1,210.00	871.20	51	34	15	444.31	296.21	130.68
10) Manhole Inlet/(40 m)	each	18	14,500.00	261.00	53	34	13	138.33	88.74	33.93
11) Sub-total				6,400.73				3,428.47	1,882.18	1,090.08
12) Miscellaneous (15% of Sub-total)	L. S.			960.11				514.27	282.33	163.51
TOTAL				7,360.84				3,942.74	2,164.50	1,253.59

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : Makati Access Ramp
SECTION : From 0 + 460 To 0 + 900

L = 0.44 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	6,402	110.00	704.22	57	25	18	401.41	176.06	126.76
2) Removal of Sidewalk	sq. m.	3,520	105.00	369.60	57	25	18	210.67	92.40	66.53
3) Removal of Curb/Gutter	L. M.	1,760	163.00	286.88	55	28	17	157.78	80.33	48.77
4) Removal of RC Pile	L. M.	880	950.00	836.00	60	25	15	501.60	209.00	125.40
5) Pavement Subbase	cu. m.	479.6	430.00	206.23	55	27	18	113.43	55.68	37.12
6) Pavement PCC (23 cm)	sq. m.	2,398	690.00	1,654.62	53	29	18	876.95	479.84	297.83
7) Sidewalk (t = 10 cm)	sq. m.	2,200	342.00	752.40	50	32	18	376.20	240.77	135.43
8) Curb/Gutter	L. M.	1,760	452.70	796.75	52	30	18	414.31	239.03	143.42
9) RC Pipe (Ø 760)	L. M.	880	1,210.00	1,064.80	51	34	15	543.05	362.03	159.72
10) Manhole Inlet/(40 m)	each	22	14,500.00	319.00	53	34	13	169.07	108.46	41.47
11) Sub-total				6,990.50				3,764.46	2,043.59	1,182.45
12) Miscellaneous (15% of Sub-total)	L. S.			1,048.58				564.67	306.54	177.37
TOTAL				8,039.08				4,329.13	2,350.13	1,359.81

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : Alabang Ramp

SECTION : From (A) 0 + 000 To (A) 0 + 650

L = 0.65 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000 P)	COMPONENT (%)			COMPONENT COST (x1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,607.5	110.00	396.83	57	25	18	226.19	99.21	71.43
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	1,189.5	430.00	511.49	55	27	18	281.32	138.10	92.07
6) Pavement PCC (23 cm)	sq. m.	5,947.5	690.00	4,103.78	53	29	18	2,175.00	1,190.09	738.68
7) Sidewalk (t = 10 cm)	sq. m.	2,600	342.00	889.20	50	32	18	444.60	284.54	160.06
8) Curb/Gutter	L. M.	2,600	452.70	1,177.02	52	30	18	612.05	353.11	211.86
9) RC Pipe (Ø 760)	L. M.	1,300	1,210.00	1,573.00	51	34	15	802.23	534.82	235.95
10) Manhole Inlet/(40 m)	each	32	14,500.00	464.00	53	34	13	245.92	157.76	60.32
11) Sub-total				9,115.31				4,787.31	2,757.63	1,570.36
12) Miscellaneous (15% of Sub-total)	L. S.			1,367.30				718.10	413.64	235.55
TOTAL				10,482.60				5,505.40	3,171.28	1,805.92

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : Alabang Ramp
SECTION : From (A) 0 + 650 To (A) 0 + 950

L = 0.30 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x1000P)	COMPONENT (%)			COMPONENT COST (x1000P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	3,210	110.00	353.10	57	25	18	201.27	88.28	63.56
2) Removal of Sidewalk	sq. m.	-	105.00	0.00	57	25	18	0.00	0.00	0.00
3) Removal of Curb/Gutter	L. M.	-	163.00	0.00	55	28	17	0.00	0.00	0.00
4) Removal of RC Pile	L. M.	-	950.00	0.00	60	25	15	0.00	0.00	0.00
5) Pavement Subbase	cu. m.	582	430.00	250.26	55	27	18	137.64	67.57	45.05
6) Pavement PCC (23 cm)	sq. m.	2,910	690.00	2,007.90	53	29	18	1,064.19	582.29	361.42
7) Sidewalk (t = 10 cm)	sq. m.	1,200	342.00	410.40	50	32	18	205.20	131.33	73.87
8) Curb/Gutter	L. M.	1,200	452.70	543.24	52	30	18	282.48	162.97	97.78
9) RC Pipe (Ø 760)	L. M.	600	1,210.00	726.00	51	34	15	370.26	246.84	108.90
10) Manhole Inlet/(40 m)	each	14	14,500.00	203.00	53	34	13	107.59	69.02	26.39
11) Sub-total				4,493.90				2,368.63	1,348.30	776.97
12) Miscellaneous (15% of Sub-total)	L. S.			674.09				355.29	202.24	116.55
TOTAL				5,167.99				2,723.93	1,550.54	893.52

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : Buendia Ramp

SECTION : From (A) 0 + 000 To (A) 0 + 430

L = 0.43 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	1,935	110.00	212.85	57	25	18	121.32	53.21	38.31
2) Removal of Sidewalk	sq. m.	2,924	105.00	307.02	57	25	18	175.00	76.76	55.26
3) Removal of Curb/Gutter	L. M.	1,720	163.00	280.36	55	28	17	154.20	78.50	47.66
4) Removal of RC Pile	L. M.	860	950.00	817.00	60	25	15	490.20	204.25	122.55
5) Pavement Subbase	cu. m.	111.8	430.00	48.07	55	27	18	26.44	12.98	8.65
6) Pavement PCC (23 cm)	sq. m.	559	690.00	385.71	53	29	18	204.43	111.86	69.43
7) Sidewalk (t = 10 cm)	sq. m.	2,580	342.00	882.36	50	32	18	441.18	282.36	158.82
8) Curb/Gutter	L. M.	1,720	452.70	778.64	52	30	18	404.89	233.59	140.16
9) RC Pipe (Ø 760)	L. M.	860	1,210.00	1,040.60	51	34	15	530.71	353.80	156.09
10) Manhole Inlet/(40 m)	each	20	14,500.00	290.00	53	34	13	153.70	98.60	37.70
11) Sub-total				5,042.62				2,702.07	1,505.91	834.64
12) Miscellaneous (15% of Sub-total)	L. S.			756.39				405.31	225.89	125.20
TOTAL				5,799.01				3,107.38	1,731.79	959.84

RECONSTRUCTION OF AT-GRADE ROAD

EXPRESSWAY : Buendia Ramp

SECTION : From (A) 0 + 430 To (A) 1 + 100

L = 0.67 km.

ITEM	UNIT	QUANTITY	UNIT PRICE (P)	COST (x 1000 P)	COMPONENT (%)			COMPONENT COST (x 1000 P)		
					F	L	T	F	L	T
1) Removal of Existing PCC Pavement	sq. m.	5,862.5	110.00	644.88	57	25	18	367.58	161.22	116.08
2) Removal of Sidewalk	sq. m.	4,556	105.00	478.38	57	25	18	272.68	119.60	86.11
3) Removal of Curb/Gutter	L. M.	2,680	163.00	436.84	55	28	17	240.26	122.32	74.26
4) Removal of RC Pile	L. M.	1,340	950.00	1,273.00	60	25	15	763.80	318.25	190.95
5) Pavement Subbase	cu. m.	341.7	430.00	146.93	55	27	18	80.81	39.67	26.45
6) Pavement PCC (23 cm)	sq. m.	1,708.5	690.00	1,178.87	53	29	18	624.80	341.87	212.20
7) Sidewalk (t = 10 cm)	sq. m.	4,020	342.00	1,374.84	50	32	18	687.42	439.95	247.47
8) Curb/Gutter	L. M.	2,680	452.70	1,213.24	52	30	18	630.88	363.97	218.38
9) RC Pipe (Ø 760)	L. M.	1,340	1,210.00	1,621.40	51	34	15	826.91	551.28	243.21
10) Manhole Inlet/(40 m)	each	32	14,500.00	464.00	53	34	13	245.92	157.76	60.32
11) Sub-total				8,832.37				4,741.06	2,615.88	1,475.43
12) Miscellaneous (15% of Sub-total)	L. S.			1,324.86				711.16	392.38	221.31
TOTAL				10,157.22				5,452.22	3,008.26	1,696.74

E. COST ESTIMATE OF SPECIAL SECTIONS

TABLE COST ESTIMATE OF PASIG RIVER BRIDGE
Expressway C-3

Length = 146 m

TYPE	ITEM	UNIT PRICE	QUANTITY	COST (x P 1000)	COMPONENT (%)			COMPONENT COST			
					F	L	T	F	L	T	
PC BOX GIRDER	• CONCRETE (Class P)	P 6,000 / m ³	2,456	14,736	55	27	18	8,105	3,979	2,652	
	• RE-BAR (Grade 40)	P 28.8 / kg	171,920	4,951	48	40	12	2,377	1,981	594	
	• PRESTRESSING STEEL	P 175 / kg	122,800	21,490	65	17	18	13,969	3,653	3,868	
	• TIMBERING	P 24 / kg	450,000	10,800	20	65	15	2,160	7,020	1,620	
	• EXPANSION JOINT	P 6,500 / LM	39.4	256	65	17	18	166	44	46	
	• NEOPRENE PAD	P 5,000 / set	8	40	65	17	18	26	7	7	
	• METAL RAILING	P 2,050 / LM	292	599	62	20	18	371	120	108	
	• DRAINS	P 1,118 / LM	20	22	60	22	18	13	5	4	
	• SUB-TOTAL				52,894				27,187	16,808	8,900
	• OTHERS				2,645	54	30	16	1,428	793	423
	TOTAL			55,539				28,615	17,601	9,323	
PIER	• CONCRETE (Class A)	P 4,135 / m ³	351.2	1,452	51	31	18	741	450	261	
	• RE-BAR (Grade 40)	P 28.8 / kg	87,800	2,529	48	40	12	1,214	1,011	303	
	• STAGING	P 10,000 / m ²	700	7,000	40	45	15	2,800	3,150	1,050	
	• BORED PILE	P 145,000 / LM	100	14,500	60	22	18	8,700	3,190	2,610	
	• SHIP DEFENDER	P 1.0 M/set	2	2,000	60	22	18	1,200	440	360	
	• SUB-TOTAL				27,481				14,654	8,242	4,585
	• OTHERS				1,374	54	30	16	742	412	220
		TOTAL			28,855				15,396	8,654	4,805
	ABUT	• CONCRETE (Class A)	P 4,135 / m ³	312	1,290	51	31	18	658	400	232
		• RE-BAR (Grade 40)	P 28.8 / m ³	78,000	2,246	48	40	12	1,078	899	270
• STAGING		P 10,000 / kg	280	2,800	40	45	15	1,120	1,260	420	
• BORED PILE		P 145,000 / LM	80	11,600	60	22	18	6,960	2,552	2,088	
• SUB-TOTAL					17,937				9,816	5,110	3,010
• OTHERS					897	54	30	16	484	269	143
		TOTAL			18,833				10,301	5,380	3,153
		GRAND TOTAL			103,227				54,312	31,634	17,281

EXPRESSWAY R - 3

STA. 7 + 310 ↔ STA. 7 + 600 (290 m)

ITEM	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
				F	L	T	F	L	T
PCC Pavement	5,365.0	690.0	3,702	53.0	29.0	18.0	1,962	1,074	666
Sub-base	1,342.0	430.0	577	53.0	29.0	18.0	306	167	104
Roadway Excavation	12,400.0	278.0	3,447	54.0	30.0	16.0	1,861	1,034	552
Embankment	2,340.0	200.0	468	58.0	24.0	18.0	271	112	84
Structural Excavation	6,500.0	305.0	1,983	60.0	25.0	15.0	1,190	496	297
Concrete	4,187.0	4,135.0	17,313	51.0	31.0	18.0	8,830	5,367	3,116
Re-bar	397,000.0	28.8	11,434	48.0	40.0	12.0	5,488	4,573	1,372
R.C. Pipe	580.0	1,580.0	916	51.0	34.0	15.0	467	312	137
TOTAL			39,840				20,375	13,135	6,329

EXPRESSWAY R - 3

STA. 7 + 600 ↔ STA. 8 + 420 (C-5 I/C) - 820 m

ITEM	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
				F	L	T	F	L	T
PCC Pavement	16,132.0	690.0	11,131	53.0	29.0	18.0	5,899	3,228	2,004
Sub-base	4,033.0	430.0	1,734	53.0	29.0	18.0	919	503	312
Roadway Excavation	47,900.0	278.0	13,316	54.0	30.0	16.0	7,191	3,995	2,131
Embankment	9,050.0	200.0	1,810	58.0	24.0	18.0	1,050	434	326
Structural Excavation	36,030.0	305.0	10,989	60.0	25.0	15.0	6,593	2,747	1,648
Concrete	20,051.0	4,135.0	82,911	51.0	31.0	18.0	42,285	25,702	14,924
Re-bar	2,082,200.0	28.8	59,967	48.0	40.0	12.0	28,784	23,987	7,196
R.C. Pipe	2,490.0	1,580.0	3,934	51.0	34.0	15.0	2,006	1,338	590
TOTAL			185,793				94,728	61,934	29,131

TABLE COST ESTIMATE OF EDSA ACCESS RAMP (SUMMARY)

Length = 146 m

RAMP	ITEM	UNIT PRICE	QUANTITY	COST (x P 1000)	COMPONENT (%)			COMPONENT COST							
					F	L	T	F	L	T					
Cubao To Alabang	1. Widening														
	• Demolition of Existing Structure	L.S.	-	2,000	58	24	18	1,160	480	360					
	• Widening of Approach	L.S.	-	4,645	55	28	17	2,555	1,301	790					
	• Widening of Steel Girder	P 40,000 / m ²	334	13,360	60	22	18	8,016	2,939	2,405					
	• Strengthening Pier	L.S.	-	20,000	58	24	18	11,600	4,800	3,600					
	2. Ramp Viaduct														
	• Standard Section	P 20,000 / m ²	1,709	34,180	55	27	18	18,799	9,229	6,152					
	• Curved Section	P 22,000 / m ²	838	18,436	60	22	18	11,062	4,056	3,318					
	• Toll Plaza	P 27,000 / m ²	1,636	44,172	60	22	18	26,503	9,718	7,951					
	• Taper Section	P 21,000 / m ²	1,072	22,512	55	27	18	12,382	6,078	4,052					
	SUB-TOTAL	P		159,305				92,076	38,600	28,628					
Alabang To Cubao	1. Ramp Viaduct														
	• Standard Section	P 20,000 / m ²	3,216	64,320	55	27	18	35,376	17,366	11,578					
	• Curved Section	P 22,000 / m ²	1,005	22,110	60	22	18	13,266	4,864	3,980					
	• Taper Section	P 21,000 / m ²	905	19,005	55	27	18	10,453	5,131	3,421					
	2. Approach Road	L.S.	9,290	9,290	55	28	17	5,110	2,601	1,579					
		SUB-TOTAL			114,725				64,204	29,963	20,558				
	GRAND TOTAL			274,030				156,280	68,564	49,186					

TABLE COST ESTIMATE OF PASIG RIVER BRIDGE 1
Expressway R-4

Length = 160 m

TYPE	ITEM	UNIT PRICE	QUANTITY	COST (x P 1000)	COMPONENT (%)			COMPONENT COST			
					F	L	T	F	L	T	
PC BOX GIRDER	• CONCRETE (Class P)	P 6,000 / m ³	2,588	15,528	55	27	18	8,540	4,193	2,795	
	• RE-BAR (Grade 40)	P 28.8 / kg	181,160	5,217	48	40	12	2,504	2,087	626	
	• PRESTRESSING STEEL	P 175 / kg	129,400	22,645	65	17	18	14,719	3,850	4,076	
	• TIMBERING	P 24 / kg	450,000	10,800	20	65	15	2,160	7,020	1,620	
	• EXPANSION JOINT	P 6,500 / LM	39.4	256	65	17	18	166	44	46	
	• NEOPRENE PAD	P 5,000 / set	4	20	65	17	18	13	3	4	
	• METAL RAILING	P 2,050 / LM	240	492	62	20	18	305	98	89	
	• DRAINS	P 1,118 / LM	20	22	60	22	18	13	5	4	
	• SUB-TOTAL				54,981				28,422	17,299	9,260
	• OTHERS				2,749	54	30	16	1,484	825	440
	TOTAL			57,730				29,906	18,124	9,699	
PIER	• CONCRETE (Class A)	P 4,135 / m ³	629.4	2,603	51	31	18	1,327	807	468	
	• RE-BAR (Grade 40)	P 28.8 / kg	157,350	4,532	48	40	12	2,175	1,813	544	
	• STAGING	P 10,000 / m ²	1,050	10,500	40	45	15	4,200	4,725	1,575	
	• BORED PILE (Ø 2.5 m)	P 100,500 / LM	240	24,120	60	22	18	14,472	5,306	4,342	
	• SHIP DEFENDER	P 1.0 M/set	3	3,000	60	22	18	1,800	660	540	
	• SUB-TOTAL				44,754				23,975	13,311	7,469
	• OTHERS				2,238	54	30	16	1,208	671	358
		TOTAL			46,992				25,183	13,982	7,827
	ABUT	• CONCRETE (Class A)	P 4,135 / m ³	488.2	2,019	51	31	18	1,030	626	363
		• LEAN CONCRETE	P 2,710 / m ³	8.4	23	50	33	17	11	8	4
• RE-BAR (Grade 40)		P 28.8 / m ³	97,640	2,812	48	40	12	1,350	1,125	337	
• EXCAVATION		P 305 / m ³	291.2	89	60	25	15	53	22	13	
• BORED PILE (Ø 2.5 m)		P 100,500 / LM	120	12,060	60	22	18	7,236	2,653	2,171	
• SUB-TOTAL					17,002				9,680	4,434	2,889
• OTHERS					850	54	30	16	459	255	136
		TOTAL			17,852				10,139	4,689	3,025
		GRAND TOTAL			122,574				65,228	36,795	20,551

TABLE COST ESTIMATE OF PASIG RIVER BRIDGE 2
Expressway R-4

Length = 135 m

TYPE	ITEM	UNIT PRICE	QUANTITY	COST (x P 1000)	COMPONENT (%)			COMPONENT COST			
					F	L	T	F	L	T	
PC BOX GIRDER	● CONCRETE (Class P)	P 6,000 / m ³	2,183.6	13,102	55	27	18	7,206	3,537	2,358	
	● RE-BAR (Grade 40)	P 28.8 / kg	152,852	4,402	48	40	12	2,113	1,761	528	
	● PRESTRESSING STEEL	P 175 / kg	109,180	19,107	65	17	18	12,419	3,248	3,439	
	● TIMBERING	P 24 / kg	380,000	9,120	20	65	15	1,824	5,928	1,368	
	● EXPANSION JOINT	P 6,500 / LM	39.4	256	65	17	18	166	44	46	
	● NEOPRENE PAD	P 5,000 / set	4	20	65	17	18	13	3	4	
	● METAL RAILING	P 2,050 / LM	270	554	62	20	18	343	111	100	
	● DRAINS	P 1,118 / LM	17	19	60	22	18	11	4	3	
	● SUB-TOTAL				46,579				24,096	14,636	7,846
	● OTHERS				2,329	54	30	16	1,258	699	373
	TOTAL			48,908				25,354	15,335	8,219	
PIER	● CONCRETE (Class A)	P 4,135 / m ³	419.6	1,735	51	31	18	885	538	312	
	● RE-BAR (Grade 40)	P 28.8 / kg	125,880	3,625	48	40	12	1,740	1,450	435	
	● STAGING	P 10,000 / m ²	700	7,000	40	45	15	2,800	3,150	1,050	
	● BORED PILE (Ø 2.5 m)	P 100,500 / LM	160	16,080	60	22	18	9,648	3,538	2,894	
	● SHIP DEFENDER	P 1.0 M/set	2	2,000	60	22	18	1,200	440	360	
	● SUB-TOTAL				30,440				16,273	9,116	5,052
	● OTHERS				1,522	54	30	16	822	457	244
		TOTAL			31,962				17,095	9,572	5,295
	ABUT	● CONCRETE (Class A)	P 4,135 / m ³	488.2	2,019	51	31	18	1,030	626	363
		● LEAN CONCRETE	P 2,710 / m ³	8.4	23	50	33	17	11	8	4
● RE-BAR (Grade 40)		P 28.8 / m ³	97,640	2,812	48	40	12	1,350	1,125	337	
● EXCAVATION		P 305 / m ³	291.2	89	60	25	15	53	22	13	
● BORED PILE (Ø 2.5 m)		P 100,500 / LM	120	12,060	60	22	18	7,236	2,653	2,171	
● SUB-TOTAL					17,002				9,680	4,434	2,889
● OTHERS					850	54	30	16	459	255	136
		TOTAL			17,852				10,139	4,689	3,025
		GRAND TOTAL			98,723				52,588	29,596	16,539

QUEZON MEMORIAL CIRCLE UNDERPASS

Length = 146 m

SECTION	ITEM	UNIT PRICE	QUANTITY	COST (x ₱ 1000)	COMPONENT (%)			COMPONENT COST		
					F	L	T	F	L	T
STA. 3 + 750 ↔ 3 + 930	● Approach Road	₱ -	L = 180 M (Height = 4 M)	₱ 12,472	55	27	18	6,860	3,367	2,245
		TOTAL		12,472				6,860	3,367	2,245
STA. 3 + 930 ↔ 4 + 140 (At-Grade)	● Pavement ● Drainage & Fence	₱ 1,175 / m ²	3,570	₱ 4,195	53	29	18	2,223	1,216	755
		₱ 3,260 / LM	420	₱ 1,369	51	34	15	698	466	205
		TOTAL		5,564				2,922	1,682	960
STA. 4 + 140 ↔ 4 + 350 &	● Concrete ● Re-Bar ● Excavation	₱ 4,135 / m ³	2,613	₱ 10,805	51	31	18	5,510	3,349	1,945
		₱ 28.8 / kg	313,560	₱ 9,031	48	40	12	4,335	3,612	1,084
STA. 4 + 990 ↔ 5 + 115 (Retaining Wall)	● Pavement ● Drainage ● Curb & Gutter ● Removal of Existing Pave	₱ 305 / m ³	34,170	₱ 10,422	60	25	15	6,253	2,605	1,563
		₱ 1,175 / m ²	6,030	₱ 7,085	53	29	18	3,755	2,055	1,275
		₱ 2,120 / LM	670	₱ 1,420	52	33	15	739	469	213
		₱ 453 / LM	670	₱ 304	52	30	18	158	91	55
		₱ 950 / LM	6,949	₱ 6,602	57	25	18	3,763	1,650	1,188
		TOTAL		45,668				24,513	13,832	7,323
STA. 4 + 350 ↔ 4 + 400 &	● Concrete ● Re-Bar ● Excavation	₱ 4,135 / m ³	6,580	₱ 27,208	51	31	18	13,876	8,435	4,897
		₱ 28.8 / kg	1,645,000	₱ 47,376	48	40	12	22,740	18,950	5,685
STA. 4 + 940 ↔ 4 + 990 (Tunnel)	● Excavation ● Railing ● Pavement ● Drainage	₱ 305 / m ³	21,200	₱ 6,466	60	25	15	3,880	1,617	970
		₱ 2,050 / LM	200	₱ 410	62	20	18	254	82	74
		₱ 990 / m ²	1,800	₱ 1,782	53	29	18	944	517	321
		₱ 2120 / LM	200	₱ 424	52	33	15	220	140	64
		TOTAL		83,666				41,915	29,740	12,011
STA. 4 + 400 ↔ 4 + 940	● Concrete ● Re-Bar ● Excavation	₱ 4,135 / m ³	34,128	₱ 141,119	51	31	18	71,971	43,747	25,401
		₱ 28.8 / kg	8,032,000	₱ 231,322	48	40	12	111,034	92,529	27,759
STA. 5 + 115 ↔ 5 + 290 (Semi-Tunnel)	● Excavation ● Railing ● Pavement ● Drainage	₱ 305 / m ³	128,790	₱ 39,281	60	25	15	23,569	9,820	5,892
		₱ 2,050 / LM	1,080	₱ 2,214	62	20	18	1,373	443	399
		₱ 990 / m ²	9,720	₱ 9,623	53	29	18	5,100	2,791	1,732
		₱ 2120 / LM	1,080	₱ 2,290	52	33	15	1,191	756	343
		TOTAL		425,848				214,237	150,085	61,526
STA. 5 + 115 ↔ 5 + 290	● Approach Road	₱ -	L = 175 M (Height = 4 M)	₱ 12,472	55	27	18	6,860	3,367	2,245
		TOTAL		12,472				6,860	3,367	2,245
TOTAL COST				₱ 585,690				297,306	202,074	86,310

AT-GRADE EXPRESSWAY

Expressway R-7 : From Quezon Memorial Circle to C-5

Item	Unit	Unit Price	Quantity	Cost (1,000 ₱)	Component (%)			Cost Component (1,000 ₱)		
					F	L	T	F	L	T
1. PCC Pavement	sq. m.	690.0	21,804.0	15,044.8	53	29	18	7,973.7	4,363.0	2,708.1
2. Sub-base	cu. m.	430.0	6,813.3	2,929.7	55	27	18	1,611.3	791.0	527.3
3. Curb	L.M.	452.7	2,066.0	935.3	52	30	18	486.3	280.6	168.4
4. Center Median	cu. m.	100.0	4,524.7	452.5	58	24	18	262.4	108.6	81.4
5. Side Ditch	L.M.	480.0	2,066.0	991.7	52	30	18	515.7	297.5	178.5
6. Embankment	cu. m.	200.0	49,179.0	9,835.8	58	24	18	5,704.8	2,360.6	1,770.4
7. Roadway Excavation	cu. m.	278.0	11,160.0	3,102.5	54	30	16	1,675.3	930.7	496.4
8. Removal of Existing Pave.	sq. m.	110.0	10,340.0	1,137.4	57	25	18	648.3	284.4	204.7
Total				34,429.6				18,877.9	9,416.4	6,135.3

AT-GRADE EXPRESSWAY

Expressway R-7 : From C-5 to END

Item	Unit	Unit Price	Quantity	Cost (1,000 ₱)	Component (%)			Cost Component (1,000 ₱)		
					F	L	T	F	L	T
1. PCC Pavement	sq. m.	690.0	50,100.0	34,569.0	53	29	18	18,321.6	10,025.0	6,222.4
2. Sub-base	cu. m.	430.0	15,096.0	6,491.3	55	27	18	3,570.2	1,752.6	1,168.4
3. Curb	L.M.	452.7	5,290.0	2,394.8	52	30	18	1,245.3	718.4	431.1
4. Center Median	cu. m.	100.0	8,299.0	829.9	58	24	18	481.3	199.2	149.4
5. Side Ditch	L.M.	480.0	4,540.0	2,179.2	52	30	18	1,133.2	653.8	392.3
6. Embankment	cu. m.	200.0	97,825.0	19,565.0	58	24	18	11,347.7	4,695.6	3,521.7
7. Roadway Excavation	cu. m.	278.0	2,560.0	711.7	54	30	16	384.3	213.5	113.9
8. Removal of Existing Pave.	sq. m.	110.0	11,660.0	1,282.6	57	25	18	731.1	320.7	230.9
Total				68,023.4				37,214.7	18,578.8	12,230.0

RECONSTRUCTION OF EAST SERVICE ROAD

ITEM	QUANTITY	UNIT PRICE (₱)	COST (x 1000 ₱)	COMPONENT (%)			COMPONENT COST (x 1000 ₱)		
				F	L	T	F	L	T
Removal									
Existing PCC Pavement	28,000	110	3,080.0	57	25	18	1,755.6	770.0	554.4
Existing Sidewalk	8,000	105.0	840.0	57	25	18	478.8	210.0	151.2
Existing Curb/Gutter	8,000	163.0	1,304.0	55	28	17	717.2	365.1	221.7
Existing R.C. Pipe	4,000	950.0	3,800.0	60	25	15	2,280.0	950.0	570.0
Construction									
PCC Pavement	28,000	690.0	19,320.0	53	29	18	10,239.6	5,602.8	3,477.6
Sub-base	7,000	430.0	3,010.0	55	27	18	1,655.5	812.7	541.8
Sidewalk	8,000	342.0	2,736.0	50	32	18	1,368.0	875.5	492.5
Curb/Gutter	8,000	452.7	3,621.6	52	30	18	1,883.2	1,086.5	651.9
R.C. Pipe	5,000	1,580.0	7,900.0	51	34	15	4,029.0	2,686.0	1,185.0
Roadway Excavation	57,000	278.0	15,846.0	54	30	16	8,556.8	4,753.8	2,535.4
Structural Excavation	21,000	305.0	6,405.0	60	25	15	3,843.0	1,601.3	960.8
Concrete	9,900	4,135.0	40,936.5	51	31	18	20,877.6	12,690.3	7,368.6
Rebar	1,188,000	28.8	34,214.4	48	40	12	16,422.9	13,685.8	4,105.7
TOTAL			143,013.5				74,107.3	46,089.7	22,816.5

APPENDIX 9.3.1 QUANTITIES AND ROW/COMPENSATION COST ESTIMATE

- A. QUANTITIES
- B. ROW/COMPENSATION COST ESTIMATE

A. QUANTITIES

EXPRESSWAY ROUTE : C-3

LAND ACQUISITION AREA AND NO. OF HOUSES/BUILDING AFFECTED

SECTION	Length (km.)	Land Area To Be Acquired (sq. m.)	No. of Houses/Buildings Affected														
			Residential House	Squatter Shanty	Commercial Building	Factory	Warehouse	Permanent Building	School Building	Hospital/Health Center	Gasoline Station						
1) Adriatico Ave. to South Super Highway (STA. 1-450 to STA. 0+000)	1.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) South Super Highway to Pasig River (STA. 0+000 to STA. 2+500)	2.50	5,800	38	1,200	5	-	-	-	-	-	-	-	-	-	-	-	-
3) Pasig River to Araneta Avenue (STA. 2+250 to STA. 4+150)	1.65	8,300	65	900	3	-	-	-	-	-	-	-	-	-	-	-	-
4) Aurora Blvd. to Quezon Avenue (STA. 4+150 to STA. 6+840)	2.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) Quezon Avenue to A. Bonifacio Avenue (STA. 6+840 to STA. 10+180)	3.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) A. Bonifacio Avenue to R-10 (STA. 10+180 to STA. 14+480)	4.30	1,200	-	-	5	1	-	-	-	-	-	-	-	-	-	-	-
7) Expressways C-3 / R-3 Interchange	-	4,700	8	25	3	-	-	-	-	-	-	-	-	-	-	-	-
8) Expressways C-3 / R-4 Interchange	-	12,000	40	20	5	1	-	-	-	-	-	-	-	-	-	-	-
9) Expressways C-3 / R-6 Interchange	-	5,400	-	-	10	-	-	-	-	1	-	-	-	-	-	-	-
10) Expressways C-3 / R-7 Interchange	-	10,100	25	40	10	-	-	0	-	-	-	-	-	-	-	-	-
11) Expressways C-3 / R-9 Interchange	-	5,800	-	-	6	0	1	-	-	-	-	-	-	-	-	-	-
12) Expressways C-3 / R-10 Interchange	-	1,800	-	-	1	1	0	-	-	-	-	-	-	-	-	-	-

EXPRESSWAY ROUTE : R-3 (Manila South Tollway) LAND ACQUISITION AREA AND NO. OF HOUSES/BUILDING AFFECTED

SECTION	Length (km.)	Land Area To Be Acquired (sq. m.)	No. of Houses/Buildings Affected														
			Residential House	Squatter Shanty	Commercial Building	Factory	Warehouse	Permanent Building	School Building	Hospital/Health Center	Gasoline Station						
1) Quirino Avenue to Buendia Avenue (STA. 0+000 to STA. 2+420)	2.42	-	-	860	-	-	-	-	-	-	-	-	-	-	-	-	-
2) Buendia Avenue to EDSA (STA. 2+420 to STA. 4+600)	2.18	-	-	270	-	-	-	-	-	-	-	-	-	-	-	-	-
3) EDSA to C-5 I/C (STA. 4+600 to STA. 8+000)	3.40	1,300	35	292	12	-	-	-	-	-	-	-	-	-	-	-	-
4) C-5 I/C to Bicutan I/C (STA. 8+000 to STA. 11+300)	3.30	-	-	170	-	-	-	-	-	-	-	-	-	-	-	-	-
5) Bicutan I/C to Sucat I/C (STA. 11+300 to STA. 15+000)	3.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) Sucat I/C to Alabang I/C (STA. 15+000 to STA. 18+200)	3.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7) Alabang I/C to SLE (STA. 18+200 to STA. 20+200)	2.00	6,600	-	30	12	-	-	-	-	-	-	-	-	-	-	-	-
8) Buendia Access Ramp	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9) Expressways R-3/C-5 Interchange	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10) Bicutan Access Ramp	-	8,400	10	20	-	-	-	-	-	-	-	-	-	-	-	-	-
11) Sucat Access Ramp	-	11,000	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-
12) Alabang Access Ramp	-	17,400	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

EXPRESSWAY ROUTE : R-4

LAND ACQUISITION AREA AND NO. OF HOUSES/BUILDING AFFECTED

SECTION	Length (km.)	Land Area To Be Acquired (sq. m.)	No. of Houses/Buildings Affected														
			Residential House	Squatter Shanty	Commercial Building	Factory	Warehouse	Permanent Building	School Building	Hospital/ Health Center	Gasoline Station						
1) Expressway C-3 to Pasig River (STA. 0+000 to STA. 0+340)	0.34	900	-	30	1	-	-	-	-	-	-	-	-	-	-	-	-
2) Pasig River to Pasig River (STA. 0+340 to STA. 0+900)	0.56	7,200	-	10	-	1	-	-	-	-	-	-	-	-	-	-	-
3) Pasig River to Makati Access Ramp (STA. 0+900 to STA. 2+430)	1.53	27,000	30	150	7	1	1	1	-	-	-	-	-	-	-	-	-
4) Expressway R-4 / Makati Access I/C	-	12,000	-	30	-	4	3	-	-	-	-	-	-	-	-	-	-
5) Makati Access Ramp	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SECTION	Length (km.)	Land Area To Be Acquired (sq. m.)	No. of Houses/Buildings Affected														
			Residential House	Squatter Shanty	Commercial Building	Factory	Warehouse	Permanent Building	School Building	Hospital/ Health Center	Gasoline Station						
1) Welcome Rotonda to Araneta Avenue (STA. -1-200 to STA. 0+000)	1.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) Araneta Avenue to EDSA (STA. 0+000 to STA. 3+150)	3.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) EDSA to Quezon Memorial Circle (STA. 3+150 to STA. 4+000)	0.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) Quezon Memorial Circle to University Avenue (STA. 4+000 to STA. 5+100)	1.10	2,400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5) University Avenue to C-5 (STA. 5+100 to STA. 7+600)	2.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6) C-5 to END (STA. 7+600 to STA. 11+050)	3.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

LAND ACQUISITION AREA AND NO. OF HOUSES/BUILDING AFFECTED

SECTION	Length (km.)	Land Area To Be Acquired (sq. m.)	No. of Houses/Buildings Affected															
			Residential House	Squatter Shanty	Commercial Building	Factory	Warehouse	Permanent Building	School Building	Hospital/ Health Center	Gasoline Station							
			1) C-3 to EDSA (STA. 0+000 to STA. 1+680)	1.68	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2) EDSA to Toll Plaza of NLE (STA. 1+680 to STA. 3+200)	1.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3) Toll Plaza of NLE to END (STA. 3+200 to STA. 4+510)	1.31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4) EDSA Access Ramp	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

EXPRESSWAY ROUTE : R-10

LAND ACQUISITION AREA AND NO. OF HOUSES/BUILDING AFFECTED

SECTION	Length (km.)	Land Area To Be Acquired (sq.m.)	No. of Houses/Buildings Affected																				
			Residential House	Squatter Shanty	Commercial Building	Factory	Warehouse	Permanent Building	School Building	Hospital/ Health Center	Gasoline Station												
1) C-3 to Moriones Avenue (STA. 0+000 to STA. 3+300)																							

B. ROW/COMPENSATION COST ESTIMATE

ROW ACQUISITION / COMPENSATION COST

	Adriatico - R-3 I/C			R-3 I/C			R-3 I/C to R-4 I/C		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	0	0	0	4,700	15,000	70,500	5,800	8,000	46,400
b. Residential House	0	0	0	8	300,000	2,400	38	300,000	11,400
c. Squatter Shanty	0	0	0	25	10,000	250	1,200	10,000	12,000
d. Commercial Bldg.	0	0	0	3	1,000,000	3,000	5	500,000	2,500
e. Factory	0	0	0	0	-	0	-	-	0
f. Warehouse	0	0	0	0	-	0	-	-	0
g. Permanent Bldg.	0	0	0	0	-	0	-	-	0
h. Hospital	0	0	0	0	-	0	-	-	0
i. Gas Station	0	0	0	0	-	0	-	-	0
TOTAL			0			76,150			72,300

	R-4 I/C			R-4 I/C - R-6 I/C			R-6 I/C		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	12,000	8,000	96,000	8,300	12,000	99,600	5,400	20,000	108,000
b. Residential House	40	300,000	12,000	65	400,000	26,000	-	-	0
c. Squatter Shanty	20	10,000	200	900	10,000	9,000	-	-	0
d. Commercial Bldg.	5	500,000	2,500	3	1,000,000	3,000	10	2,000,000	20,000
e. Factory	1	1,000,000	1,000	-	-	0	-	-	0
f. Warehouse	-	-	0	-	-	0	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	1	10,000,000	10,000
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			111,700			137,600			138,000

EXPRESSWAY C - 3

ROW ACQUISITION / COMPENSATION COST

	R-6 I/C - R-7 I/C			R-7 I/C			R-7 I/C - R-9 I/C		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	-	-	0	10,100	20,000	202,000	-	-	0
b. Residential House	-	-	0	25	500,000	12,500	-	-	0
c. Squatter Shanty	-	-	0	40	10,000	400	-	-	0
d. Commercial Bldg.	-	-	0	10	2,000,000	20,000	-	-	0
e. Factory	-	-	0	-	-	0	-	-	0
f. Warehouse	-	-	0	-	-	0	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	-	-	0
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			0			234,900			0

	R-9 I/C			R-9 I/C - R-10 I/C			R-10 I/C		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	5,800	15,000	87,000	1,200	15,000	18,000	1,800	15,000	27,000
b. Residential House	-	-	0	-	-	0	-	-	0
c. Squatter Shanty	-	-	0	-	-	0	-	-	0
d. Commercial Bldg.	6	1,000,000	6,000	5	1,000,000	5,000	1	1,000,000	1,000
e. Factory	-	-	0	1	5,000,000	5,000	1	5,000,000	5,000
f. Warehouse	1	1,000,000	1,000	-	-	0	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	-	-	0
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			94,000			28,000			33,000

EXPRESSWAY R - 3

ROW ACQUISITION / COMPENSATION COST

	C-3 I/C - Buendia			Buendia Access Ramp			Buendia - EDSA		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	-	-	0	-	-	0	-	-	0
b. Residential House	-	-	0	-	-	0	-	-	0
c. Squatter Shanty	860	10,000	8,600	-	-	0	270	10,000	2,700
d. Commercial Bldg.	-	-	0	-	-	0	-	-	0
e. Factory	-	-	0	-	-	0	-	-	0
f. Warehouse	-	-	0	-	-	0	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	-	-	0
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			8,600			0			2,700

	EDSA Access Ramp			EDSA - C-5			C-5 I/C		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area			0	1,300	8,000	10,400			0
b. Residential House			0	35	300,000	10,500			0
c. Squatter Shanty			0	295	10,000	2,950			0
d. Commercial Bldg.			0	12	500,000	6,000			0
e. Factory			0	-	-	0			0
f. Warehouse			0	-	-	0			0
g. Permanent Bldg.			0	-	-	0			0
h. Hospital			0	-	-	0			0
i. Gas Station			0	-	-	0			0
TOTAL			0			29,850			0

EXPRESSWAY R - 3

ROW ACQUISITION / COMPENSATION COST

	C-5 - Bicutan			Bicutan Access Ramp			Bicutan - Sucat		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	-	-	0	8,400	15,000	126,000	-	-	0
b. Residential House	-	-	0	10	500,000	5,000	-	-	0
c. Squatter Shanty	170	10,000	1,700	20	10,000	200	-	-	0
d. Commercial Bldg.	-	-	0	-	-	0	-	-	0
e. Factory	-	-	0	-	-	0	-	-	0
f. Warehouse	-	-	0	-	-	0	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	-	-	0
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			1,700			131,200			0

	Sucat Access Ramp			Sucat - Alabang			Alabang Access Ramp		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	11,000	15,000	165,000	-	-	0	17,400	18,000	313,200
b. Residential House	-	-	0	-	-	0	11	500,000	5,500
c. Squatter Shanty	-	-	0	-	-	0	-	-	0
d. Commercial Bldg.	1	500,000	500	-	-	0	-	-	0
e. Factory	2	5,000,000	10,000	-	-	0	-	-	0
f. Warehouse	-	-	0	-	-	0	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	-	-	0
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			175,500			0			318,700

EXPRESSWAY R - 3

ROW ACQUISITION / COMPENSATION COST

	Alabang I/C - SLE					
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	6,600	20,000	132,000			0
b. Residential House	--	--	0			0
c. Squatter Shanty	30	10,000	300			0
d. Commercial Bldg.	12	2,000,000	24,000			0
e. Factory	--	--	0			0
f. Warehouse	--	--	0			0
g. Permanent Bldg.	--	--	0			0
h. Hospital	--	--	0			0
i. Gas Station	--	--	0			0
TOTAL			156,300			0

	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area			0			0
b. Residential House			0			0
c. Squatter Shanty			0			0
d. Commercial Bldg.			0			0
e. Factory			0			0
f. Warehouse			0			0
g. Permanent Bldg.			0			0
h. Hospital			0			0
i. Gas Station			0			0
TOTAL			0			0

EXPRESSWAY R - 4

ROW ACQUISITION / COMPENSATION COST

EXPRESSWAY R - 4

	C-3 I/C - Pasig River			Pasig River - Pasig River			Quantity	Unit Price	Cost (x 1000)
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)			
a. Land Area	900	8,000	7,200	7,200	8,000	57,600			0
b. Residential House	-	-	0	-	-	0			0
c. Squatter Shanty	30	10,000	300	10	10,000	100			0
d. Commercial Bldg.	1	500,000	500	-	-	0			0
e. Factory	-	-	0	1	10,000,000	10,000			0
f. Warehouse	-	-	0	-	-	0			0
g. Permanent Bldg.	-	-	0	-	-	0			0
h. Hospital	-	-	0	-	-	0			0
i. Gas Station	-	-	0	-	-	0			0
TOTAL			8,000			67,700			0

	Pasig River - Makati Access Ramp			R-4 / Makati Access I/C			Makati Access Ramp		
	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	27,000	8,000	216,000	12,000	8,000	96,000	-	-	0
b. Residential House	30	400,000	12,000	-	-	0	-	-	0
c. Squatter Shanty	150	10,000	1,500	30	10,000	300	-	-	0
d. Commercial Bldg.	7	1,000,000	7,000	-	-	0	-	-	0
e. Factory	1	5,000,000	5,000	4	5,000,000	20,000	-	-	0
f. Warehouse	1	2,000,000	2,000	3	2,000,000	6,000	-	-	0
g. Permanent Bldg.	-	-	0	-	-	0	-	-	0
h. Hospital	-	-	0	-	-	0	-	-	0
i. Gas Station	-	-	0	-	-	0	-	-	0
TOTAL			243,500			122,300			0

EXPRESSWAY R - 7

ROW ACQUISITION / COMPENSATION COST

	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area	2,400	8,000	19,200			0			0
b. Residential House	-	-	0			0			0
c. Squatter Shanty	-	-	0			0			0
d. Commercial Bldg.	-	-	0			0			0
e. Factory	-	-	0			0			0
f. Warehouse	-	-	0			0			0
g. Permanent Bldg.	-	-	0			0			0
h. Hospital	-	-	0			0			0
i. Gas Station	-	-	0			0			0
TOTAL			19,200			0			0

	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)	Quantity	Unit Price	Cost (x 1000)
a. Land Area			0			0			0
b. Residential House			0			0			0
c. Squatter Shanty			0			0			0
d. Commercial Bldg.			0			0			0
e. Factory			0			0			0
f. Warehouse			0			0			0
g. Permanent Bldg.			0			0			0
h. Hospital			0			0			0
i. Gas Station			0			0			0
TOTAL			0			0			0

APPENDIX 9.5.1 OPERATING COST ESTIMATE

1) Central Toll Management Office (per 60 kms. of expressways)

General Manager	P 30,000 x 12	=	360,000
Deputy Manager	P 25,000 x 12	=	300,000
Auditor	P 20,000 x 12	=	240,000
Comptroller	P 15,000 x 12	=	180,000
Financial Analyst	P 15,000 x 12	=	180,000
Secretary	P 8,000 x 12	=	96,000
Auditing Clerk	P 6,000 x 2 x 12	=	144,000
Clerk/Typist	P 6,000 x 3 x 12	=	216,000
Driver	P 4,000 x 3 x 12	=	144,000
Janitor	P 4,000 x 12	=	48,000
Office Supply, etc.	P 30,000 x 12	=	360,000
Electricity/Gas/Telephone	P 25,000 x 12	=	300,000
Vehicle Maintenance	P 8,000 x 3 x 12	=	288,000
			<hr/>
	TOTAL	=	2,856,000

$\text{P}2,856,000/60 \text{ km} = 47,600 \text{ P / km / Year}$

2) Field Toll Operation Office (per 25 kms.)

Office Manager	P 25,000 x 12	=	300,000
Deputy Office Manager	P 20,000 x 12	=	240,000
Accountant	P 15,000 x 3 x 12	=	540,000
Cashier	P 12,000 x 3 x 12	=	432,000
Bookkeeper	P 12,000 x 3 x 12	=	432,000
Supply Officer	P 8,000 x 3 x 12	=	288,000
Dispatcher	P 8,000 x 3 x 12	=	288,000
Electrician	P 8,000 x 3 x 12	=	288,000
Accounting Clerk	P 6,000 x 6 x 12	=	432,000
Clerk/Typist	P 6,000 x 3 x 12	=	216,000
Driver	P 4,000 x 12 x 12	=	576,000
Security Guard	P 4,000 x 6 x 12	=	288,000
Janitor	P 4,000 x 3 x 12	=	144,000
Toll Receipts, Office Supply	P100,000 x 12	=	1,200,000
Office Equipment Maintenance	P 20,000 x 12	=	240,000
Electricity/Water/Telephone	P 30,000 x 12	=	360,000
Vehicle Maintenance	P 8,000 x 4 x 12	=	384,000
			<hr/>
	TOTAL		6,648,000

$\text{P}6,648,000/25 \text{ km} = 265,920 \text{ P / km / Year}$

3) Toll Plaza

2-booth Toll Plaza

Chief Supervisor	₱ 15,000 x 12	=	180,000
Assistant Supervisor	₱ 12,000 x 3 x 12	=	432,000
Teller	₱ 5,000 x 12 x 12	=	720,000
Security Guard	₱ 4,000 x 3 x 12	=	144,000
Electricity	₱ 4,000 x 12	=	48,000
Maintenance of Equipment	₱ 3,000 x 12	=	36,000

TOTAL = 1,560,000

4-booth Toll Plaza

Chief Supervisor	₱ 15,000 x 12	=	180,000
Assistant Supervisor	₱ 12,000 x 3 x 12	=	432,000
Teller	₱ 5,000 x 21 x 12	=	1,260,000
Security Guard	₱ 4,000 x 3 x 12	=	144,000
Electricity	₱ 8,000 x 12	=	96,000
Maintenance of Equipment	₱ 6,000 x 12	=	72,000

TOTAL = 2,184,000

6-booth Toll Plaza

Chief Supervisor	₱ 15,000 x 12	=	180,000
Assistant Supervisor	₱ 12,000 x 5 x 12	=	720,000
Teller	₱ 5,000 x 30 x 12	=	1,800,000
Security Guard	₱ 4,000 x 3 x 12	=	144,000
Electricity	₱ 12,000 x 12	=	144,000
Maintenance of Equipment	₱ 9,000 x 12	=	108,000

TOTAL = 3,096,000

8-booth Toll Plaza

Chief Supervisor	₱ 15,000 x 12	=	180,000
Assistant Supervisor	₱ 12,000 x 6 x 12	=	864,000
Teller	₱ 5,000 x 42 x 12	=	2,520,000
Security Guard	₱ 4,000 x 6 x 12	=	288,000
Electricity	₱ 16,000 x 12	=	192,000
Maintenance of Equipment	₱ 12,000 x 12	=	144,000

TOTAL = 4,188,000

For 30 km

2-booth Toll Plaza (8)	1,560,000 x 8	=	12,480,000
4-booth Toll Plaza (1)	2,184,000 x 1	=	2,184,000
6-booth Toll Plaza (1)	3,096,000 x 1	=	3,096,000
8-booth Toll Plaza (1)	4,188,000 x 1	=	4,188,000

TOTAL = 21,948,000

₱21,948,000/30 km = 731,600 ₱ / km / Year

4) Traffic Control and Management

Traffic Control Division (for 60 km)

Head of Division	P30,000 x 12	=	360,000
Assistant Head	P25,000 x 12	=	300,000
Traffic Management Specialist	P20,000 x 9 x 12	=	2,160,000
Radio Operator	P 8,000 x 6 x 12	=	576,000
Telephone Board Operator	P 6,000 x 3 x 12	=	216,000
Secretary	P 8,000 x 12	=	96,000
Clerk/Typist	P 6,000 x 6 x 12	=	432,000
Driver	P 4,000 x 4 x 12	=	192,000
Janitor	P 4,000 x 3 x 12	=	144,000
Office Supply	P15,000 x 12	=	180,000
Equipment Maintenance	P10,000 x 12	=	120,000
Vehicle Maintenance	P 6,000 x 4 x 12	=	288,000
Electricity/Water	P 5,000 x 12	=	60,000
TOTAL			5,124,000

P5,124,000/60 km = 85,400 P / km / Year

Research and Systems Development Division (for 60 km)

Head of Division	P30,000 x 12	=	360,000
Assistant Head	P25,000 x 12	=	300,000
Chief Traffic Engineer	P18,000 x 12	=	216,000
Traffic Engineer	P10,000 x 5 x 12	=	600,000
Systems Analyst	P10,000 x 4 x 12	=	480,000
Computer Operator	P 8,000 x 4 x 12	=	384,000
Secretary	P 8,000 x 12	=	96,000
Clerk/Typist	P 6,000 x 2 x 12	=	144,000
Driver	P 4,000 x 2 x 12	=	96,000
Janitor	P 4,000 x 12	=	48,000
Office Supply	P10,000 x 12	=	120,000
Equipment Maintenance	P10,000 x 12	=	120,000
Vehicle Maintenance	P 6,000 x 2 x 12	=	144,000
Electricity/Water	P 5,000 x 12	=	60,000
TOTAL			3,168,000

P3,168,000/60 km = 52,800 P / km / Year

Expressway Patrol Group (for 25 km)

Chief Patrol Officer	₱20,000 x 12	=	240,000
Assistant Patrol Officer	₱15,000 x 12	=	180,000
Patrolman	₱ 9,000 x 24 x 12	=	2,592,000
Driver	₱ 4,000 x 12 x 12	=	576,000
Supply	₱10,000 x 12	=	120,000
Vehicle Maintenance	₱15,000 x 4 x 12	=	720,000
	<hr/>		
	TOTAL	=	4,428,000

₱4,428,000/25 km = 177,120 ₱ / km / Year

5) Annual Operating Cost Per Km

Central Toll Management Office	₱ 47,600
Field Toll Operating Office	₱ 265,920
Toll Plaza	₱ 731,600
Traffic Control Division	₱ 85,400
Research/Systems Development Division	₱ 52,800
Expressway Patrol Group	₱ 177,120

₱1,360,440

Say ₱1,360,000/km/Year

APPENDIX 9.5.2 COST ESTIMATE OF EXPRESSWAY MAINTENANCE

1) Maintenance Division

Division Chief	P30,000 x 12	=	360,000
Assistant Division Chief	P25,000 x 12	=	300,000
Inspection Chief	P20,000 x 12	=	240,000
Inspectors	P10,000 x 6 x 12	=	720,000
Driver	P 4,000 x 2 x 12	=	96,000
Planning Chief	P20,000 x 1 x 12	=	240,000
Planning Engineer	P10,000 x 4 x 12	=	480,000
Material Section Chief	P20,000 x 1 x 12	=	240,000
Supply Officer	P 8,000 x 3 x 12	=	288,000
Maintenance Chief	P20,000 x 1 x 12	=	240,000
Foreman	P10,000 x 4 x 12	=	480,000
Laborer	P 4,000 x 20 x 12	=	960,000
Driver	P 4,000 x 4 x 12	=	192,000
Bidding Section Chief	P20,000 x 12	=	240,000
Cost Estimator	P10,000 x 12	=	120,000
Document Specialist	P10,000 x 2 x 12	=	240,000
Assistant Engineer	P 8,000 x 2 x 12	=	192,000
Legal Section Chief	P20,000 x 12	=	240,000
Support Officer	P 8,000 x 4 x 12	=	384,000
Administrative Section Chief	P15,000 x 12	=	180,000
Secretary	P 8,000 x 12	=	96,000
Accountant	P10,000 x 12	=	120,000
Cashier	P10,000 x 12	=	120,000
Clerk/Typist	P 6,000 x 2 x 12	=	144,000
Driver	P 4,000 x 3 x 12	=	144,000
Janitor	P 4,000 x 12	=	48,000
	Sub-Total	=	7,104,000
Vehicle Maintenance	P10,000 x 9 x 12	=	1,080,000
Office Supply	P20,000 x 12	=	240,000
Office Equipment Maintenance	P20,000 x 12	=	240,000
Electricity/Water/Telephone	P20,000 x 12	=	240,000
Miscellaneous		=	100,000
			1,900,000
	TOTAL		9,004,000

$\text{P}9,004,000/60 \text{ km} = \text{P}150,000 / \text{km} / \text{Year}$

2) Expressway Cleaning

Equipment Rental

For Surface Cleaning (Power Broom)	P50,000 x 12	=	600,000
For Lighting Pole, Overhead Sign, etc. Cleaning (Vehicle with broom)	P45,000 x 2 x 12	=	1,080,000
For other facilities cleaning (Vehicles for laborers)	P28,000 x 4 x 12	=	1,344,000
<u>Additional Laborers</u>	P 4,000 x 20 x 12	=	960,000
	TOTAL		P3,984,000

$\text{P}3,984,000/60 \text{ km} = \text{P}66,000 / \text{km} / \text{Year}$

3) Routing Maintenance

2.5% of Construction Cost of Expressway Miscellaneous

$$P12,300,000 \times 0.025 = P307,000 / km / Year$$

4) Electricity

South Luzon Expressway P15,000 - per km (1990)

$$P15,000 \times (1 + 0.07)^9 \times 2 = P37,000$$

5) Expressway Structure Maintenance/Repair

Bangkok Expressway: First Stage, 27.1 km

Year	Current Price	1993 Price 1/	Cost per km.
1989	13,876,000 Baht	16,900,000 Baht	624,000 Baht
1990	6,827,000 Baht	7,900,000 Baht	292,000 Baht
Average			458,000 Baht

1/ Escalation was assumed 5% p.a.
1 Baht = 1 Peso

Estimated cost for expressway structure maintenance and repair 460,000 Pesos/km/year

6) Total

Maintenance Division	P 150,000
Expressway Cleaning	66,000
Routing Maintenance	307,000
Electricity	37,000
Expressway Structure Maintenance/Repair	460,000
TOTAL	ø1,020,000

First 10 years : 1,020,000 P / km/ Year
Second 10 years : 2,040,000 P / km / Year

**APPENDICES
TO
CHAPTER 11**

APPENDICES TO CHAPTER 11

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**Appendix 11.2.1 IMPLEMENTATION METHODS OF EXPRESSWAY IN OTHER COUNTRIES
(JAPAN, INDONESIA AND THAILAND)**

THE SECOND STAGE EXPRESSWAY SYSTEM (SES) PROJECT, THAILAND

1) PROJECT DESCRIPTION

Bangkok Metropolitan Administration currently has a population of 6.5 million. To cope with the urban transportation problems, the Government of Kingdom of Thailand constructed the First Stage Expressway (FES) which is being operated by the Expressway and Rapid Transit Authority (ETA).

The Second Stage Expressway (SES) approximately 32 km. in length, is planned to be implemented by the private sector finance. The ETA, through consultancy engineers, prepared a set of detailed design specification, tender documents to form the basis for investment proposal.

2) CONCESSION AGREEMENT

The Bangkok Expressway Consortium, formed by Kumagai Gumi Company Limited and the Bangkok Expressway Company Limited (BECL) submitted the winning proposal in 1987. The first phase should be completed in 1993, while its second phase in 1995.

BECL is responsible for alternative detailed design, construction, operation and maintenance during the concession period, and shall turn over it in good state of repair under the following conditions.

- Concession Period : 30 years
- Project Cost : Approximately US\$ 1 Billion
- Financing : Equity 20%
Credit 80%
- Toll : The toll can be revised in accordance with the Consumer Price Index for the Bangkok Metropolis
- Franchise : BECL may install, develop, construct or sub-let any ancillary facilities such as shops, premises, buildings, car parks, gasoline stations, advertising display, etc.

3) DESIGN AND CONSTRUCTION

The ETA appointed an Independent Design Checker (IDC), an Independent Certification Engineer (ICE) and professional Consultants as the ETA's Engineer.

The Independent Design Checker (IDC) is responsible for confirmation of detailed design prepared by BECL.

The Independent Certificate Engineer (ICE) is responsible for monitoring its progress of construction.

ETA's Engineer is responsible for;

- liaison with BECL, ICE and IPC on behalf of ETA,
- approving the detailed design,
- advising ETA on implications of variations,
- receiving and reviewing reports, design, documentation, etc. in connection with the works and explaining and discussing with ETA,
- observing lists of materials, equipment and plant, and
- reviewing safety considerations

INDONESIA HIGHWAY CORPORATION, INDONESIA

1) POLICY ON TOLL ROADS

An even distribution of development with all its benefits is one of its major goals of the Government of Indonesia. In line with this policy, the Government funds have been set to finance road development in less developed areas, while construction of high standard and high capacity highway such as toll roads is proposed to be financed from non-government budget such as issuing bonds and from other foreign and domestic private sector.

The Government has therefore decided that these high standard roads will be financed through toll, so that the users will repay for the investment.

The construction of toll roads is subject to the following criteria:

- The toll road must be a public road
- It must be integrated in the road network
- It must be an alternative to the existing road
- The toll road shall be of higher specification than the existing public highway
- The toll road must offer a higher reliability to the users than the existing public highway
- The toll must not exceed the savings on vehicle operating cost to the toll road users compared to the alternative highway user.

2) FINANCING

The Government has created in 1978 the Indonesia Highway Corporation (P.T. Jasa Marga), a state-owned company in charge of financing, constructing, operating and monitoring toll roads throughout Indonesia. Through ownership and management of toll roads rest with the government, the government can delegate its responsibility to toll road corporations through P.T. Jasa Marga.

In financing the project, the Government is responsible for land acquisition and Jasa Marga seeks the fund from;

a) Toll Revenues

Toll revenues from the existing toll roads increased every year and reached to US\$ 121.6 million in 1991.

b) Government Equity

The Government has converted into equity in Jasa Marga the soft loans from multilateral or bilateral sources contracted for toll roads design, supervision and construction.

c) Bonds

Jasa Marga has been placing since 1983 bonds on the domestic financial market.

d) Joint-Operation with Private

An example is the construction of an additional interchange.

e) Joint-Venture with Private Investors

The investment in toll road should be in cooperation with P.T. Jasa Marga in the form of Joint Venture or Joint Operation. The Joint Venture Agreement is based on a "Built, Operation, Transfer" scheme.

Two projects are presently under construction by a joint-venture between P.T. Jasa Marga and a group of domestic and foreign investors.

3) TOLL RATE

Toll rates are decided based on the following factors:

a) Benefits to the toll road users

Toll rates should provide road users with sufficient savings on vehicle operating cost (saving on fuel, vehicle spare parts, time and other benefits) in comparison with the use of a non-toll road alternative.

b) Benefit to the Company

Toll rates are decided by considering the scope of the investment for constructing and operating the toll road system being self financing over the payback period and should not exceed 70% of the saving on vehicle operating cost so that the road user still could enjoy 30% saving by using toll roads.

METROPOLITAN EXPRESSWAY PUBLIC CORPORATION, TOKYO, JAPAN

1) SCOPE OF ACTIVITIES

The Metropolitan Expressway Public Corporation (MEPC) was established in 1959, with the objective of promoting construction of motorways (Metropolitan Expressways) in Central Tokyo and the vicinity. At present, the Metropolitan Expressway network consists of 25 routes with a total length of over 217.4 kilometers. The number of vehicles using them daily has increased to an average of 1.05 million as of fiscal year 1989.

The main activities of MEPC includes the following:

a) Construction and Management of Expressways

The main objective is to construct, maintain, repair and manage the toll roads as determined by city planning schemes.

b) Urban Redevelopment

Where construction of expressways needs urban redevelopment, MEPC participates in redevelopment works upon request of the local governments.

c) Improvement of Streets along Expressways

MEPC construct streets and roads related to expressway under the trust of the national or local government.

d) Construction and Management of Parking Lots

e) Construction and Management of Facilities below Elevated Expressways.

MEPC constructs and manages facilities located under elevated expressways such as office buildings.

2) FINANCE

MEPC receives investments from the national government and local governments which comprise the capital of the corporation.

Annual revenues consists of the following:

a) Infrastructure Improvement Program Revenues (6.1% of total revenue)

Interest-free loans from the national and local public bodies for improving the expressways.

b) Metropolitan Expressway Bonds (46.2%)

A large portion of construction funds is raised by the issuance of Metropolitan Expressway Bonds by MEPC. (Government underwritten bonds and privately offered bonds).

- c) Private Sector Loans (4.0 %)
Loans from institutions in the private sector, such as banks.
- d) Expressway Toll Receipts (29.3%)
Toll receipt, parking lots and miscellaneous incomes.
- e) Income from Consigned Business (12.5 %)
Funds from the national and local governments for the construction of related streets and facilities.
- f) Others (1.9%)
Grants from the national and local government, income from other sources, etc.

3) TOLLS

- Principle
In principle, the construction of roads must fundamentally be the responsibility of the national government or local governments, making use of the revenues from sources such as free tax and people are entitled to use road free of charge. However, because of the fact that limited fiscal resources can not cope with the rapid expansion of traffic, the Law on special measures for Road Improvement was enacted establishing the system of toll roads. Under this Law, highway construction, maintenance and management are funded with loans and the repayment of these loans is accomplished by using the toll revenues collected from toll road users.
- Toll Rates
Toll rates are fixed so as to cover the total expenditures increased in construction, maintenance management and fundings by appropriating the total revenue receivable during a fixed period.
- Period of Toll Collection
The period of toll collection is fixed at thirty years from the commencement of service date of the expressway network, known as "The Nominal Commencement Date". This is calculated by taking into consideration the construction costs of the respective routes and their commencement of service date.
- Pooling System
A so-called "pooling system" has been adopted for the accounting of Metropolitan Expressway tolls. This system pools all toll revenues for repayment of all expenditures as opposed to an accounting system based on the repayment of those for individual routes.

Appendix 11.5.1

**OBSERVATION ON THE BOT LAW
AND IMPLEMENTING RULES AND REGULATIONS**

OBSERVATION ON THE BOT LAW AND IMPLEMENTING RULES AND REGULATIONS

1. LEGISLATION

1.1 BOT Law

Republic Act No. 6957, known as the BOT Law, is entitled "An Act Authorizing the Financing, Construction, and Maintenance of Infrastructure Projects by the Private Sector and for other purposes". This Act was approved by the President on July 9, 1990.

Policy

The Act states that "it is the declared policy of the State to recognize the indispensable role of the private sector as the main engine for national growth and development and provide the most appropriate favorable incentives to mobilize private sources for the purposes".

Definition of BOT and BT

The Act specifies the Terms of BOT and BT schemes as follows:

- Build Operate and Transfer Scheme (BOT Scheme)

A contractual arrangement whereby the contractor undertakes the construction, including financing, of a given infrastructure facility, and the operation and maintenance thereof. The contractor operates the facility, over a fixed term during which it is allowed to charge facility users appropriate tolls, fees, rentals, and charge sufficient to enable the contractor to recover its operating and maintenance expenses and its investment in the project plus a reasonable rate of return thereon.

- Build-and-Transfer Scheme (BT Scheme)

A contractual agreement whereby the contractor undertakes the construction, including financing, of a given infrastructure facility, and its turnover after completion to the government agency or local government unit concerned which shall pay the contractor its total investment expended on the project, plus a reasonable rate of return thereon.

1.2 Implementing Rules and Regulations (IRR)

Pursuant to the BOT Law, the Implementing Rules and Regulations (IRR) was formulated to carry out the provision of the said Act, by DPWH, DOF, DILG, NEDA, and duly accredited organizations representing the private Philippine construction industry, on April 3, 1991.

IRR comprise the following contents:

- (1) Definition of BOT and BT Schemes
- (2) Authorized Contracting Government Agencies/Units
- (3) Eligible Infrastructure Projects

- (4) Inclusion of Proposed BOT and BT projects in agency/LGU Infrastructure Programs
- (5) Approval of Proposed BOT and BT Projects
- (6) Minimum Standards and Basic Parameters
- (7) Prequalification, Bids, and Award Committee
- (8) Advertisement
- (9) Bidding Document
- (10) Prequalification of Contractors
- (11) Contents of BID
- (12) Bidding Procedure
- (13) Bid Evaluation Criteria
- (14) Negotiated Contract
- (15) Performance Bonds and Contract Approval
- (16) Repayment Scheme
- (17) Contract Terms and Conditions
- (18) Contract Termination
- (19) Assurance of Compliance by Contractor
- (20) Adjustment of Tolls/Fees/Rentals/Charges
- (21) Agency/LGU Implementing Guidelines
- (22) Effectivity

2. MAJOR REQUIREMENTS AND OBSERVATIONS

Reviewed and observed hereafter are the major legislative requirements prescribed by the BOT Law and Implementation Rules and Regulations (IRR) and their observations.

(1) Ownership Structure of the Contractor for BOT Scheme

Requirements

IRR Section 1.1 specifies;

The ownership structure of the contractor of an infrastructure facility whose operation requires a public utility franchise must be in accordance with the Constitution.

IRR Section 10.1 a.i. specifies;

Thus, at least 60% of the capital of the contractor/applicant must be of Filipino citizens.

Observation

In order to comply with this requirement, the maximum allowable foreign ownership of the contractor is 40%. This restriction on foreign ownership may severely limit available financing from possible foreign investors.

(2) Financing from the Philippine Government Institutions for BOT Scheme

Requirements

IRR Section 1.1 specifies;

The financing of a foreign or foreign-controlled contractor from the Philippine Government financing institutions shall not exceed 20% of the total cost of the infrastructure or facility.

Observation

Whenever possible, the Government should be willing to participate in BOT projects, this is recommended to subsidize a major portion of the project costs, so that the project may become financially viable.

(3) Facilities to be provided by the Government

Requirements

IRR Section 6.3 specifies;

- The Agency/LGU shall indicate the facilities associated with subject project which are to be provided by the government. These facilities may include, but not be limited to Right-of-Way. The cost of the same may be partly or wholly be financed and/or shouldered by the Contractor as part of its bid and cost recovery scheme.

Observations

- The responsibility and cost of relocation of households and right-of-way acquisition affected by the project is recommended to be that of the Government of the Philippines.
- From the perspective of BOT scheme, the government shall acquire the land and make sure it is available prior to commencement of the project, otherwise the government shall shoulder the costs caused due to the delay in the acquisition of the land.

(4) Minimum Standards and Basic Parameters

Requirements

IRR Section 6.1, 6.2 and 6.3 specify;

- Minimum Output Standards and Specifications

The contractor shall build and operate the subject infrastructure facility which shall comply with the minimum design and performance standard and specifications prescribed by the Agency/LGU.

- Economic Parameters

To provide a uniform basis for the preparation by the contractors of their bids and the comparison by the tendering Agency/LGU of the bids on a "present value" basis, the Agency/LGU shall prescribe the following economic parameters:

- a. Inflation and discounting rates
- b. Foreign exchange rates
- c. Maximum period of project construction
- d. Fixed term for project operation and collection of tolls/fees/rentals/charges, in the case of BOT projects
- e. Formula and price indices to be used in adjustment of tolls/fees/rentals/charges, in the case of BOT projects
- f. Minimum period of repayment, in the case of BT projects

- Facilities to be provided by the Government

The Agency/LGU shall indicate the facilities associated with the subject project which are to be provided by the Government. The cost of the same may be partly or wholly be financed and/or shouldered by the contractor as part of its bid and cost-recovery scheme. These facilities may include, but not be limited to the following:

- a. Right-of-way
- b. Part of structure, e.g., carriageway and stations for a rail transit project

Observation

- The Agency/LGU shall lay down the minimum design and performance and specifications, as well as economic parameters. These shall be the basis on which the bidder/contractor shall observe in preparing its bid, and also used by Agency/LGU in evaluating bids and in supervising and monitoring the project construction and operation.
- The right-of-way shall be provided by the Philippine Government. The responsibility and cost of relocation of householdS affected by the project shall be that of the Philippine Government.

(5) Prequalification of Contractors

The criteria for prequalification include legal requirement, experience of track record, capability, and period of preparation of prequalification documents. Among these, the major legal requirements are as follows:

Requirements

IRR Section 10 specifies;

- For BOT Projects where operation requires a public utility franchise.

Thus, at least 60% of the capital of the contractor must be owned by Filipino citizen.

- For BOT Projects other than above and BT Projects

If foreign-owned, the contractor must be duly accredited by its government to undertake component activities of BOT projects and certified as such by its embassy in the Philippines, or by the Philippine Consular Office located in the contractor's domicile/head office location.

Observation

- Refer to (1) on ownership structure
- According to IRR Section 3, highways and expressways project are included as eligible infrastructure projects for BOT/BT Schemes, but it is not clear that these projects may fall under this category of projects where operation require a public utility franchise.

(6) Contents of the Bid

IRR Section 11 specifies;

Requirements

- The bid of each prequalified contractor for a BOT project shall usually include (a) the feasibility study, including preliminary engineering design, of the project, (b) the proposed schedule of tolls, fees, rentals, and other charges to be imposed, (c) the bid bond, and (d) other supporting documents.

For a BT project, the bid shall usually include (a) the feasibility study, including preliminary engineering design, (b) the proposed schedule of payments and attendant terms and conditions (c) the bid bond, and (d) other supporting documents.

As an alternative the Agency/LGU may conduct the feasibility study and, in some cases, even the detailed engineering design, and call for proposals based on such feasibility study/detailed engineering design. In this case, the bid of each prequalified contractor shall cover only items (b), (c) and (d) above.

- Feasibility Study, including Preliminary Engineering Design shall cover the following:
 - Marketability
 - Technical Soundness
 - Economic Feasibility
 - Financial Viability
 - Operational Feasibility
 - Environmental Standards

- For BOT Project - Proposed Toll/Fees/Rentals/Charges:

The bid shall indicate the amounts in present values, schedules, and fixed terms of the tolls/fees/rentals/charges to be imposed on the users of the facility over the specified fixed term for project operation.

- For BT Project - Proposed Payments:

The bid shall indicate the amounts in present values, schedules and attendant terms and conditions of the payments to be made by the Agency/LGU to the contractor.

Observations

- One of the main responsibility of the Agency/LGU is to prescribe the minimum design and performance standards and specifications as well as economic parameters. These shall also be used by the Agency/LGU in comparatively evaluating the bids.

Taking into consideration the magnitude of BOT Projects, required technical soundness of the facility, and the uniform basis and fairness in evaluation of bids, it is recommended that the Agency/LGU shall conduct the detailed feasibility study and call for tender proposals based on such study, as mentioned as an alternative method in IRR Section 10.

- However, the bidder shall be solely responsible for the validity and soundness, including the assumptions, projections, analysis and outputs, as well as the input data used.
- For this purpose, the bidder shall be allowed the alternative tenders aside from the concepts set forth in the detailed feasibility study.

(7) Contract Terms and Conditions

IRR Section 17 specifies the obligations and authority of BOT Contractor and the Agency/LGU, particularly the regulation on the right-of-way acquisition as follows:

Requirements

Section 17.2.d Provision of Right-of-Way and Other Facilities

The Agency/LGU shall acquire and provide to the contractor the required right-of-way and other associated facilities for the project (per Section 6.3 of these IRR), free of any third party rights which will prevent or hamper the implementation and operation of the project. These right-of-way and associated facilities shall be provided according to the timetables and specifications stated in the Instructions to Bidders and in the contract.

The Agency/LGU may require, in the said Instruction to Bidders and in the contract, that the cost of the right-of-way or associated facilities be part of the bid, i.e., of the project cost to be financed and recovered by the contractor.

Observations

- Refer to "Facilities to be provided by the Government"

(8) Contract Termination

Requirements

IRR Section 18 specifies the contract termination, particularly on the case of the right-of-way acquisition, as follows:

The Agency/LGU, through to fault of the contractor and by mutual agreement with the contractor, may also revoke, cancel, or terminate the contract in case of failure of the Agency/LGU to provide the required right-of-way and other facilities which the government is obliged to provide under the contract or in any of the stated cases under the two preceding paragraph, the Agency/LGU "shall compensate the said contractor for its actual expense in the project plus a reasonable rate of return therein not exceeding that stated in the bidding documents and in the contract as of the date of such revocation, cancellation or termination".

Observations

- Refer to "Facilities to be provided by the Government".

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