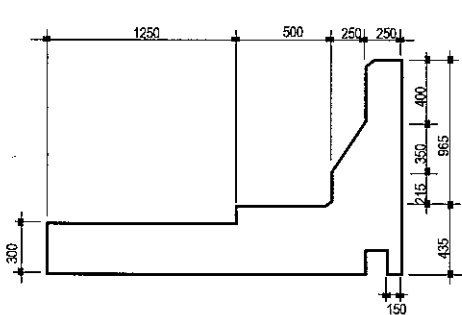
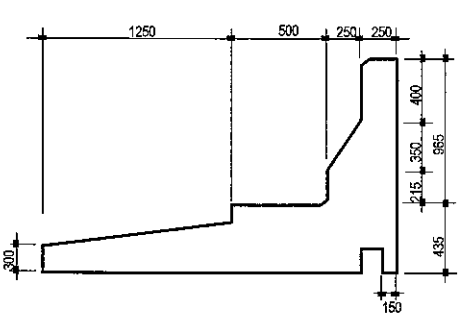
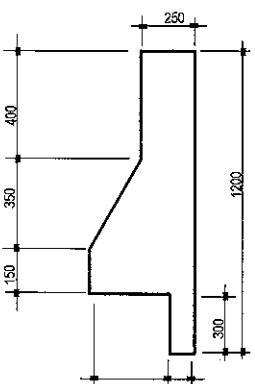


DIVISION 7.
Structures

NO. PAY ITEM	DESCRIPTION	UNIT	ESTIMATE QUANTITY	REMARKS
DIVISION 7 STRUCTURES				
7.1.2(1)	Structure Concrete , Class A (35 Mpa) (for Post Tension Double Girder)	Cu M	929.75	
7.1.2(2)	Structure Concrete , Class A (35 Mpa) for Steel Girder	Cu M	365.97	
7.1.3(1)	Structure Concrete , Class B (30 Mpa) for Pier Head	Cu M	98.02	
7.1.3(2)	Structure Concrete , Class B (30 Mpa) for Column	Cu M	93.22	
7.1.3(3)	Structure Concrete , Class B (30 Mpa) for Composite Column	Cu M	32.84	
7.1.3(4)	Structure Concrete , Class B (30 Mpa) for Abutment	Cu M	185.06	
7.1.4(1)	Structure Concrete , Class B-1 (28 Mpa) for Barrier , Median	Cu M	-	in Div 8
7.1.4(2)	Structure Concrete , Class B-1 (28 Mpa) for Parapet Wall	Cu M	646.00	
7.1.5	Structure Concrete , Class C (24 Mpa) for Footing, Approach Slab and Retaining Wall	Cu M	250.25	
7.1.(6)	Structure Concrete, Class D (Fc' = 20 Mpa)	Cu M	-	
7.1.(8)	Structure Concrete, Class E (Fc' = 17 Mpa)	Cu M	21.63	
SS.7.1.(9)	Waterproofing on Deck	Sq M	2,541.50	
7.1(9)	Structure Column Casing (Ribbed Inner Surface t = 20 mm)	Kg	-	
SS7.1(10)	Structure Casing for Bored Pile (Inner Ribbed Surface t = 13 mm)	Kg	9,608.40	
SS7.1(10)a	Structure Column Casing (Erected)	Kg	-	
SS7.1(11)	Structure Casing for Bored Pile (Erected)	Kg	9,608.40	
7.2.1	PC Strand Size 12.7 mm and Accessories	Kg	20,819.98	
7.2.2	PC Strand Size 21.8 mm and Accessories	Kg	11,137.15	
7.2.3	PC Bar and Accessories	Kg	1,326.61	
7.3.(4)	Reinforcing Steel Bars Deform	Kg	397,081.81	
7.3.(6)	Reinforcing Steel Bars D 51	Kg	-	
7.5.(1)	Furnish and Delivery of Steel Girder	Ton	190.26	
7.5.(1)a	Furnish and Delivery of Steel Coping and Portal	Ton	54.92	
7.5.(3)	Erection of Steel Girder	Ton	190.26	
7.5.(4)	Erection of Steel Coping and Portal	Ton	54.92	
7.6.(22)	Cast in Place Concrete Bored Pile Dia 1500 mm	Ln M	242.00	
7.6.(23)	Cast in Place Concrete Bored Pile Dia 1800 mm	Ln M	120.00	
7.6.(26)	Cast in Place Concrete Bored Pile Dia 2500 mm	Ln M	79.00	
7.6.(27)	Pile Integrity Test	Each	21.00	
SS7.6.(28)	Pile Dynamic Analysis (PDA) 2500 mm	Each	1.00	
SS7.6.(29)a	Pile Dynamic Analysis (PDA) 1800 mm	Each	1.00	
SS7.6.(29)b	Pile Dynamic Analysis (PDA) 1500 mm	Each	1.00	
7.9.(1)	Stone Masonry	Cu M	113.110	from highway
7.9.(2)	Blinding Stone	Cu M	-	
7.11.(2)	Expantion Joint (Type A)	Ln M	46.00	
7.11.(2)	Expantion Joint (Type B)	Ln M	-	
SS7.11.(4)	Restrainer Type - A	Set	4.00	
SS7.11.(5)	Restrainer Type - B	Set	-	
SS7.11.(6)	Stopper for Steel Girder	Set	4.00	
7.11.(6)	Fixed Anchor	Set	-	including in girder
7.11.(7)	Moved Anchor	Set	-	
7.12.(2)	Elastomeric Bearing Pad Type - A1	Set	-	
7.12.(2)a	Elastomeric Bearing Pad Type - A2	Set	-	
7.12.(2)b	Elastomeric Bearing Pad Type - A3	Set	4.00	
7.12.(2)c	Elastomeric Bearing Pad Type - A4	Set	-	
7.12.(7)a	Bridge Bearing for Steel Girder Type - B1	Set	4.00	
7.12.(7)b	Bridge Bearing for Steel Girder Type - B2	Set	-	
7.12.(7)c	Bridge Bearing for Steel Girder Type - C1	Set	-	
7.12.(7)d	Bridge Bearing for Steel Girder Type - C2	Set	-	
7.12.(7)e	Bridge Bearing for Steel Girder Type - C3	Set	-	
7.12.(7)f	Bridge Bearing for Steel Girder Type - C4	Set	-	
7.13	Steel Bridge Reilings	Ln.M	1,040.80	
7.14	Bridge Name Plate	Each	2.00	
7.15.(1)	Demolition of Existing Structure Masonry	Cu M	187.83	
7.15.(2)	Demolition of Existing Structure Concrete	Cu M	387.52	
7.15.(10)	Demolition of Existing Rigid Pavement	Ln M	-	
7.15.(11)	Demolition of Existing Hedge or Fence	Ln M	259.59	from highway
7.15.(12)	Demolition of Existing Concrete Side Walk	Sq M	-	
7.15.(13)	Demolition of Existing Concrete Curb	Ln M	-	
7.16.(1)	Concrete Pavement (t = 27 cm)	Sq M	-	
7.16.(2)	Lean Concrete (t = 10 cm)	Sq M	-	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006		Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT					
KATAHIRA AND ENGINEERS INTERNATIONAL					
DRAWING NO : BSB - 01 and 08		QUANTITY : Ahda		CHECKED BY :	
NO	DESCRIPTION	A1/A2	CALCULATION	QTY (Cu M)	REMARKS
7.1.3(4)	Structure Concrete, Class B (30 Mpa) for Abutment				
		A1	2.20 x 13 x 2.40	68.64	Footing
			Area 1.624 Sq M Height 5.229 Ln M		Column
			1.624 x 5.229 x 2	16.98	
			4.20 x 5.229 x 0.4	8.78	Wall
			Sub Total	94.41	
		A2	2.20 x 13 x 2.40	68.64	Footing
			Area 1.624 Sq M Height 4.467 Ln M		Column
			1.624 x 4.467 x 2	14.51	
			4.20 x 4.467 x 0.4	7.50	Wall
			Sub Total	90.65	
			SUMMARY	185.06	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared 10/12/2006 10:40	Sheet: of
PROJECT : BALARAJA. FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	
SKETCH DRAWING		CALCULATION	
		Balaraja Flyover - Contract Package 1	
 <p>Section of Parapet at Approach</p>  <p>Section of Parapet at M.S.E Wall</p>  <p>Section of Parapet at Viaduct</p>		<p>Structure Concrete</p> <p>A. At Approach Slab</p> <p>Data:</p> <p>1.19 sqm. = Area of Parapet from AutoCad Drawing</p> <p>10.00 m = Length of Parapet at Approach Slab (2 side)</p> <p>A.1. Volume of Concrete Parapet at Approach A</p> <p>Volume = 1.19 x 10.00 = 11.90 cum.</p> <p>A.2. Volume of Concrete Parapet at Approach B</p> <p>Volume = 1.19 x 10.00 = 11.90 cum.</p> <p>B. At MSE Wall</p> <p>Data:</p> <p>1.06 sqm. = Area of Parapet from AutoCad Drawing</p> <p>182.00 m = Length of Parapet at MSE Wall Approach A (2 side)</p> <p>137.00 m = Length of Parapet at MSE Wall Approach B (2 side)</p> <p>B.1. Volume of Concrete Parapet at MSE Wall (Approach A)</p> <p>Volume = 1.06 x 182.00 = 192.92 cum.</p> <p>B.2. Volume of Concrete Parapet at MSE Wall (Approach B)</p> <p>Volume = 1.06 x 137.00 = 145.22 cum.</p> <p>C. At Viaduct</p> <p>Data:</p> <p>0.37 sqm. = Area of Parapet from AutoCad Drawing</p> <p>442.00 m = Length of Parapet at Viaduct (2 side)</p> <p>C.1. Volume of Concrete Parapet at Viaduct</p> <p>Volume = 0.37 x 442.00 = 163.54 cum.</p> <p>Total Concrete Volume of Parapet at Merak 1 = 525.48 cum.</p>	
		REMARKS	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 09 - 2006	Sheet : 1 of 2	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : BSB - 44		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
7.1.(5)	Structure Concrete, Class C (24 Mpa) for Footing, Approach Slab and Retaining Wall			
		Quantity		A1 & A2 Approach Slab
		$= 0.25 \times 8.50 \times 5$	10.63	
		$= 0.15 \times 8.50 \times 2 \times (0.25 + 0.4) / 2$	0.83	
			11.45	
		Note , for two Approach Slab		
		$= 11.454 \times 2$	22.91	
SUMMARY			22.91	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 09 - 2006	Sheet : 2 of 2	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : BMS - 011 , 012		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
7.1.(5)	Structure Concrete, Class C (24 Mpa) for Footing, Approach Slab and Retaining Wall	Sta 0 + 301.750 - 0 + 240.000		Stubwall A1 - End of Ramp sta 0 + 301.75 - 0 + 240.00
		L1 = 31.750 Ln M		
		L2 = 30.000 Ln M		
		h1 = 1.386 M'		
		h2 = 0.500 M'		
		t = 0.400 M'		
		w1 = 1.300 M'		
		w2 = 0.800 M'		
		Quantity :		
		$= (1.386+0.50) /2 \times 61.750 \times 0.40 \times 2$	46.58	
		$= 0.4 \times 1.30 \times 31.75 \times 2$	33.02	
		$= 0.4 \times 0.80 \times 30.00 \times 2$	19.20	
		Sub Total	98.80	
		Sta 0 + 694.750 - 0 + 760.000		Stubwall A2 - End of Ramp sta 0 + 694.75 - 0 + 760.00
		L1 = 40.000 Ln M		
		L2 = 25.250 Ln M		
		h1 = 2.212 M'		
		h2 = 0.500 M'		
		t = 0.400 M'		
		w1 = 1.300 M'		
		w2 = 0.800 M'		
		Quantity :		
		$= (2.212+0.50) /2 \times 65.250 \times 0.40 \times 2$	70.78	
		$= 0.4 \times 1.30 \times 40.00 \times 2$	41.60	
		$= 0.4 \times 0.80 \times 25.25 \times 2$	16.16	
		Sub Total	128.54	
		Total Stubwall	227.35	
		SUMMARY	250.25	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 22 - 09 - 2006	Sheet : 2 of 2
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : BMS - 011 , 012		QUANTITY :	CHECKED BY :
NO	DESCRIPTION	CALCULATION	QTY (Cu M)
			REMARKS
7.1(8)	Lean Concrete, Class E (fc' = 17 Mpa)	Sta 0 + 301.750 - 0 + 240.000	
			Stubwall A1 - End of Ramp sta 0 + 301.75 - 0 + 240.00
		L1 = 31.750 Ln M	
		L2 = 30.000 Ln M	
		w1 = 1.500 M'	
		w2 = 1.000 M'	
		t = 0.100 M'	
		Quantity :	
		= ((31.75 x 1.50)+(30.00 x 1.00))x 0.1	
		= 7.76 Cu M	
		Sub Total	7.76
		Sta 0 + 694.750 - 0 + 760.000	
			Stubwall A2 - End of Ramp sta 0 + 694.75 - 0 + 760.00
		L1 = 40.000 Ln M	
		L2 = 25.250 Ln M	
		w1 = 1.500 M'	
		w2 = 1.000 M'	
		t = 0.100 M'	
		Quantity :	
		= ((40 x 1.50) + (25.25 x 1.00)) x 0.10	
		= 8.53 Cu M	
		Sub Total	8.53
		Total Stubwall	16.29
		SUMMARY	21.63

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Sq M)	REMARKS
SS7.1.(9)	Water Proofing on Deck	A1 - A2 = 221 Ln M		
		Width = 5.75 M		
		Quantity = 221 x 5.75 x 2	2,541.50	
		SUMMARY	2,541.50	

CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared : 21 - 08 - 2006			Sheet : 1 of 1			
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT									
KATAHIRA AND ENGINEERS INTERNATIONAL									
DRAWING NO : BCL - 005 to BCL 007 BST - 027			QUANTITY : Anda						
CHECKED BY :									
NO	DESCRIPTION	LOCATION	Length (M)	No. Req'd	Nos	Weight / 1 nos (Kg / M)	Weight (Kg)	Total Weighth (Kg)	Remarks
7.2.2	PC Strand Size 21.8 mm and Accessories	A1 to P3	12.71	1	96	31.55	3,028.80		A1 - P1 - P2 - P3
		P6 to A2	12.71	1	128	31.55	4,038.40		P6 - P7 - P8 - P9 - A2
		P3 to P6	12.71	1	129	31.55	4,069.95		P3 - P4 - P5 - P6 Deck Slab
								11,137.15	
SUMMARY								11,137.15	

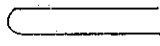


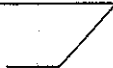




CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 18 - 09 - 2006	Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		10/17/2006 10:27		
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		Quantity :	CHECKED BY :	
NO	SKETCH DRAWING	DESCRIPTION	SUMMARY (Kg)	REMARKS
7.3.(4)	REINFORCING STEEL BARS DEFORM			
		SUB STRUCTURE		
		Bored pile	-	116,694.00
		Abutment	44,090.00	
		Pier Column	33,830.00	
		Pier Head	23,567.00	
		Approach Slab	4,096.00	
		Stubwall	15,470.00	
		SUPER STRUCTURE		
		DECK SLAB / STEEL GIRDER	51,905.03	
		PC Girder	119,075.00	
		Parapet Wall	47,848.52	
		OTHER	-	
		TOTAL	339,881.55	
	REINFORCING STEEL BARS D 51	Bored pile	-	147,576.00

LENGTH OF PARAPET EACH FLYOVER

No.	Fly Over	A1 (meter)	A2 (meter)	AB1 (meter)	Bridge (meter)	Total (meter)	Remarks
1	Merak	92.95	122.95	115.00	920.00	1,581.80	
2	Balaraja	96.00	73.50	-	221.00	781.00	
3	Nagrek	270.00	80.00	-	224.00	1,148.00	
4	Gebang	104.66	144.65	-	385.00	1,268.62	
5	Peterongan	120.00	120.00	-	262.00	1,004.00	
6	Tanggulangin	110.66	110.66	-	200.00	842.63	





BAR BENDING SCHEDULE
PARAPET

PARAPET APPROACH

Rebar Name	Dia (mm)	Length (mm)	NOS	Unit Weight (kg/m')	Weight (kg)	Diagram	Remarks
a	16.00	300.00	5.00	1.58	23.70		
b	12.00	120.00	5.00	0.88	5.26		
c	14.00	135.00	5.00	0.88	5.92		
d	20.00	125.00	6.60	2.47	20.34		
e	12.00	254.00	5.00	0.88	11.14		
f	12.00	135.00	5.00	0.88	5.92		
g	12.00	100.00	14.00	1.21	16.93		
h	14.00	100.00	12.00	1.58	18.96		

108.162

PARAPET BRIDGE

Rebar Name	Dia (mm)	Length (mm)	NOS	Unit Weight (kg/m')	Weight (kg)	Diagram	Remarks
a	10	228	5	0.62	7.07		
b	16	115	5	1.58	9.09		
c	10	55	5	0.62	1.71		
d	10	100	12	0.62	7.44		

25.298

**QUANTITY CALCULATION REINFORCING BAR AT BALARAJA FLY OVER
(PARAPET)**

status 10/9/2006 11:47
 LENGTH LENGTH
 FLY OVER 221.00 2 442.00
 442.00 Meter

RE-BAR AT BRIDGE BALARAJA FLYOVER PER LN.M

1	a	2.28	5	0.62	7.068
2	b	1.15	5	1.58	9.085
3	c	0.55	5	0.62	1.705
4	d	1	12	0.62	7.44
					25.298

TOTAL WEIGHT
(KG)

442.00 11,181.72

LENGTH LENGTH
 ABUTMENT A1 96.00 2 192.00
 ABUTMENT A2 73.50 2 147.00
 ABUTMENT AB1 0.00 2 0.00
 339.00 Meter

RE-BAR PARAPET AT APPROACH BALARAJA FLYOVER PER LN.M

1	a	3.00	5.00	1.58	23.70
2	b	1.20	5.00	0.88	5.26
3	c	1.35	5.00	0.88	5.92
4	d	1.25	6.60	2.47	20.34
5	e	2.54	5.00	0.88	11.14
6	f	1.35	5.00	0.88	5.92
7	g	1.00	14.00	1.21	16.93
8	h	1.00	12.00	1.58	18.96
					108.16165

339.00 36,666.80

TOTAL WEIGHT of REINFORCING STEEL PARAPET MERAK FO (kg)

47,848.52

BALARAJA FLYOVER
 QUANTITY OF ABUTMENT AND PIER COLUMN REINFORCEMENT

7.3.(4) REINFORCING STEEL BARS GRADE 40

LOCATION		TYPE	WEIGHT (Kg)	TOTAL WEIGHT (Kg)	REMARKS / DRAWING NO
A1		FOOTING	11,123.00		BSB - 14
		RC COLUMN	7,625.00	22,439.00	BSB - 10
		WALL	3,691.00		BSB - 10
P1	P1 - L	RC COLUMN	2,329.00	4,658.00	BSB - 17
	P1 - R	RC COLUMN	2,329.00		BSB - 17
P2	P2 - L	RC COLUMN	2,284.00	4,568.00	BSB - 18
	P2 - R	RC COLUMN	2,284.00		BSB - 18
P3	P3	RC COLUMN	5,829.00	5,829.00	BSB - 19
P4	P4	COMPOSITE COLUMN	256.00	256.00	BSB - 35
P5	P5	COMPOSITE COLUMN	256.00	256.00	BSB - 35
P6	P6 - L	RC COLUMN	1,976.00	3,952.00	BSB - 20
	P6 - R	RC COLUMN	1,976.00		BSB - 20
P7	P7 - L	RC COLUMN	3,010.00	6,009.00	BSB - 21
	P7 - R	RC COLUMN	2,999.00		BSB - 21
P8	P8 - L	RC COLUMN	1,887.00	3,742.00	BSB - 22
	P8 - R	RC COLUMN	1,855.00		BSB - 22
P9	P9 - L	RC COLUMN	2,311.00	4,560.00	BSB - 18
	P9 - R	RC COLUMN	2,249.00		BSB - 18
A2		FOOTING	11,277.00	21,651.00	BSB - 16
		RC COLUMN	7,207.00		BSB - 12
		WALL	3,167.00		BSB - 12
		TOTAL ABUTMENT A1 DAN A2		44,090.00	
		TOTAL PIER P1 s/d P9		33,830.00	

BALARAJA FLYOVER
 QUANTITY OF APPROACH SLAB REINFORCEMENT

7.3.(4) REINFORCING STEEL BARS GRADE 40

LOCATION		TYPE	WEIGHT (Kg)	TOTAL WEIGHT (Kg)	REMARKS / DRAWING NO
A1		APROACH SLAB	2,048.00		BSB - 44
A2		APROACH SLAB	2,048.00		BSB - 44
				4,096.00	
		TOTAL APROACH SLAB A1 & A2		4,096.00	

BALARAJA FLYOVER
 QUANTITY OF PIER HEAD REINFORCEMENT

LOCATION		TYPE	WEIGHT (Kg)	TOTAL WEIGHT (Kg)	REMARKS / DRAWING NO
P3		PIER HEAD	12,657.00		BSB - 27
P6		PIER HEAD	10,910.00		BSB - 31
		TOTAL PIER HEAD P3 & P6		23,567.00	

BALARAJA FLYOVER
 QUANTITY OF BORED PILE REINFORCEMENT

LOCATION	WEIGHT PER 1 PC (Kg)		NO. REQ'D (PCS)	TOTAL WEIGHT (Kg)	
	Reinforcing Steel Bars Grede 40	Reinforcing Steel Bars D 51		Reinforcing Steel Bars Grede 40	Reinforcing Steel Bars D 51
A1	10,510.00	-	3.00	31,530.00	-
P1	1,452.00	6,573.00	2.00	2,904.00	13,146.00
P2	1,441.00	7,078.00	2.00	2,882.00	14,156.00
P3	7,767.00	12,784.00	1.00	7,767.00	12,784.00
P4	9,297.00	26,778.00	1.00	9,297.00	26,778.00
P5	9,297.00	26,778.00	1.00	9,297.00	26,778.00
P6	1,365.00	6,628.00	2.00	2,730.00	13,256.00
P7	1,634.00	7,193.00	2.00	3,268.00	14,386.00
P8	1,452.00	6,573.00	2.00	2,904.00	13,146.00
P9	1,452.00	6,573.00	2.00	2,904.00	13,146.00
A2	13,737.00	-	3.00	41,211.00	-
			SUB TOTAL	116,694.00	147,576.00
			TOTAL	264,270.00	

BREAK DOWN REINFORCING STEEL

BALARAJA

	quantity	unit	weight (Kg)	total weight (Kg)	
GIRDER	164.946	Cum	101.00	45,025.80	
APPROACH SLAB	11.610	Cum	138.00	1,602.18	
	11.610	Cum	138.00	1,602.18	
MS WALL	192.370	Cum	109.00	20,968.33	
STUBWALL	144.810	Cum	109.00	15,784.29	
	A1		6,754.00	6,754.00	15,470.00 Stubwall
	A2		8,716.00	8,716.00	105,048.78 Parapet
PARAPET (stubwall)	58.663	Cum	79.00	9,756.50	120,518.78
	61.988	Cum	79.00	10,309.50	
					120,518.78

BALARAJA

A1 - A2 = 221 + (2 x 0.95) = 222.90

Ramp - A1 - MS Wall = 96.000

Ms Wall - end of Ramp = 61.750

Ramp - A2 = 73.500

Ms Wall - end of Ramp = 65.250

Area 1 = 0.370 Sq M

Area 2 = 1.161 Sq M

Area 3 = 1.057 Sq M

Area 4 = 0.475 Sq M

Quantity

= 222.90 x 0.370 x 2

= 5.00 x 1.161 x 2

= 91.00 x 1.057 x 2

= 61.75 x 0.475 x 2

= 5.00 x 1.161 x 2

= 68.50 x 1.057 x 2

= 65.25 x 0.475 x 2

164.95

11.61

192.37

58.66

11.61

144.81

61.99

646.00

		Date Prepared : 10 - 09 - 2006	Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ton)	REMARKS
7.5.(1)a	Furnish and Delivery of Steel Coping and Portal		54.92	
		SUMMARY	54.92	

PROJECT : BALARAJA FLYOVER
NORTH JAVA CORRIDOR FLYOVER PROJECT
KATAHIRA AND ENGINEERS INTERNATIONAL

DRAWING NO : ESTIMATOR : CHECKED BY :

SKETCH DRAWING	CALCULATION						REMARKS		
	PROJECT : BALARAJA FLYOVER								
	STA	AREA	AV. AREA	DISTANCE		L (M)	VOL (Cu.M)		
				START	END				
<p style="text-align: center;">Sta 0+280 - 0+300</p>	0 + 660.00	0.79	0.40	0 + 659.27	0 + 660.00	0.73	0.29	LEFT SIDE	
	0 + 680.00	1.77	1.28	0 + 660.00	0 + 680.00	20.00	25.61	TANGERANG BOUND	
	0 + 700.00	1.73	1.75	0 + 680.00	0 + 700.00	20.00	34.93		
	0 + 720.00	1.00	1.36	0 + 700.00	0 + 720.00	20.00	27.25		
	0 + 738.95	1.64	1.32	0 + 720.00	0 + 738.95	18.95	25.03		
	TOTAL						79.68	113.11	
<p style="text-align: center;">Sta 0+820 - 0+880</p>									

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 19 - 08 - 2006	Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : BSM - 02, 03		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
7.11.(2)	Expansion Joint (Type A)	P3 = 5.75 x 2 x 2 Each = 23.00 Ln M	23.00	
		P6 = 5.75 x 2 x 2 Each = 23.00 Ln M	23.00	
SUMMARY			46.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 21 - 08 - 2006		Sheet : 1 of 1	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT					
KATAHIRA AND ENGINEERS INTERNATIONAL					
DRAWING NO : BSM - 05		QUANTITY :		CHECKED BY :	
NO	DESCRIPTION	CALCULATION		QTY (Each)	REMARKS
SS7.11.(4)	Restrainner Type - A	P3	= 1.00 x 2 Each = 2.00 Each	2.00	
		P6	= 1.00 x 2 Each = 2.00 Each	2.00	
		SUMMARY		4.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 15 - 09 - 2006	Sheet : 1 of 1	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : BSM - 04 , 07		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Set)	REMARKS
7.12.(7)a	Bridge Bearing for Steel Girder, Type - B1	P3 = 1.00 x 2 = 2.00 Set	2.00	
		P6 = 1.00 x 2 = 2.00 Set	2.00	
SUMMARY			4.00	

CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared :			Sheet: 1 of 1						
PROJECT : BALARAJA FLYOVER			BACK UP QUANTITY DEMOLITION OF MASONRY									
NORTH JAVA CORRIDOR FLYOVER PROJECT												
KATAHIRA AND ENGINEERS INTERNATIONAL												
DRAWING NO :			ESTIMATOR :			CHECKED BY :						
SKETCH DRAWING			QUANTITY CALCULATION					REMARKS				
			PROJECT : BALARAJA FLYOVER									
			STA	L/R	Average	Length	Volume					
			Start	End	Area	(Cu.M)						
SERVICE ROAD			00 + 263.11	00 + 274.94	L	0.360	11.836	4.261				
			00 + 275.72	00 + 279.91	L	0.360	4.184	1.506				
			00 + 283.45	00 + 294.27	L	0.360	10.819	3.895				
			00 + 296.78	00 + 307.05	L	0.360	10.273	3.698				
			00 + 310.03	00 + 315.41	L	0.360	5.375	1.935				
			00 + 327.66	00 + 340.30	L	0.360	12.635	4.549				
			00 + 360.82	00 + 370.00	L	0.360	9.183	3.306				
			00 + 383.45	00 + 386.23	L	0.360	2.774	0.999				
			00 + 448.51	00 + 451.20	L	0.360	2.691	0.969				
			00 + 620.68	00 + 675.30	L	0.360	54.624	19.665				
			00 + 637.68	00 + 655.45	L	0.360	17.765	6.395				
			00 + 761.05	00 + 770.50	L	0.360	9.458	3.405				
			00 + 784.34	00 + 786.88	L	0.360	2.534	0.912				
						55.494						
			00 + 133.47	00 + 137.07	R	0.360	3.604	1.297				
			00 + 138.83	00 + 169.95	R	0.360	31.118	11.202				
			00 + 179.86	00 + 188.06	R	0.360	8.200	2.952				
			00 + 190.73	00 + 208.28	R	0.360	17.554	6.319				
			00 + 246.03	00 + 257.16	R	0.360	11.126	4.005				
			00 + 262.27	00 + 268.68	R	0.360	6.410	2.308				
			00 + 271.66	00 + 286.78	R	0.360	15.122	5.444				
			00 + 360.58	00 + 365.94	R	0.360	5.369	1.933				
			00 + 435.59	00 + 445.82	R	0.360	10.223	3.680				
			00 + 448.95	00 + 456.44	R	0.360	7.492	2.697				
			00 + 479.07	00 + 491.41	R	0.360	12.332	4.440				
			00 + 517.44	00 + 537.55	R	0.360	20.105	7.238				
			00 + 541.85	00 + 546.78	R	0.360	24.405	8.786				
			00 + 547.80	00 + 563.37	R	0.360	5.954	2.143				
			00 + 572.72	00 + 598.26	R	0.360	24.922	8.972				
			00 + 603.14	00 + 618.94	R	0.360	30.417	10.950				
			00 + 619.19	00 + 640.52	R	0.360	16.056	5.780				
			00 + 736.37	00 + 730.17	R	0.360	117.178	42.184				
						132.331						
			QUANTITY OF DEMOLITION MASONRY =					187.826	Cu.M			

CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared : 10/3/2006 19:21			Sheet : 1 of 1			
PROJECT : BALARAJA FLYOVER			BACK UP QUANTITY OF DEMOLITION CONCRETE						
NORTH JAVA CORRIDOR FLYOVER PROJECT									
KATAHIRA AND ENGINEERS INTERNATIONAL									
DRAWING NO : BRD 019 - BRD 024			ESTIMATOR :			CHECKED BY :			
SKETCH DRAWING			QUANTITY CALCULATION PROJECT : BALARAJA FLYOVER				REMARKS		
			STA	Length	Concrete	Volume	L/R		
			Start	End	Thickness	(Cu.M)			
MAIN ROAD			00 + 000.00	00 + 000.00	0.000	0.100	0.000	L	
			00 + 000.00	00 + 000.00	0.000	0.100	0.000	L	
							0.000		
MAIN ROAD			00 + 000.00	00 + 000.00	0.000	0.100	0.000	R	
			00 + 000.00	00 + 000.00	0.000	0.100	0.000	R	
							0.000		
SERVICE ROAD			00 + 523.91	00 + 548.43	24.513	0.100	2.451	L	
			00 + 549.23	00 + 555.18	5.951	0.100	0.595	L	
			00 + 556.69	00 + 563.90	7.204	0.100	0.720	L	
			00 + 564.19	00 + 569.41	5.212	0.100	0.521	L	
			00 + 570.04	00 + 591.07	21.032	0.100	2.103	L	
			00 + 591.83	00 + 600.76	8.934	0.100	0.893	L	
			00 + 601.58	00 + 608.61	7.030	0.100	0.703	L	
			00 + 609.90	00 + 618.97	9.066	0.100	0.907	L	
			00 + 619.76	00 + 638.93	19.172	0.100	1.917	L	
			00 + 640.69	00 + 647.01	6.320	0.100	0.632	L	
			00 + 652.40	00 + 658.32	5.921	0.100	0.592	L	
			00 + 659.74	00 + 682.09	22.355	0.100	2.235	L	
			00 + 683.02	00 + 690.91	7.888	0.100	0.789	L	
			00 + 690.09	00 + 710.87	20.781	0.100	2.078	L	
			00 + 711.46	00 + 749.24	37.785	0.100	3.779	L	
			00 + 852.42	00 + 876.64	24.216	0.100	2.422	L	
			00 + 930.97	00 + 943.88	12.907	0.100	1.291	L	
			00 + 945.25	00 + 966.54	21.287	0.100	2.129	L	
			00 + 981.72	00 + 992.84	11.127	0.100	1.113	L	
			01 + 007.58	01 + 014.87	7.290	0.100	0.729	L	
			01 + 017.76	01 + 019.73	1.964	0.100	0.196	L	
			01 + 020.18	01 + 021.84	1.666	0.100	0.167	L	
		01 + 182.04	01 + 187.87	5.824	0.100	0.582	L		
						29.545			
SERVICE ROAD			01 + 078.03	01 + 079.18	1.146	0.100	0.115	R	
			01 + 104.08	01 + 105.80	1.719	0.100	0.172	R	
			01 + 106.80	01 + 108.49	1.697	0.100	0.170	R	
			01 + 217.28	01 + 221.25	3.971	0.100	0.397	R	
			01 + 242.30	01 + 244.11	1.804	0.100	0.180	R	
			01 + 485.93	01 + 490.81	4.887	0.100	0.489	R	
							1.522		
QUANTITY OF DEMOLITION OF EXISTING CONCRE						31.067		Cu.M	

CONSTRUCTION COST ESTIMATE WORKSHEET

Date Prepared :

Sheet : 1 of 1

PROJECT : BALARAJA FLYOVER

BACK UP QUANTITY DEMOLITION OF HEDGE OR FENCE

NORTH JAVA CORRIDOR FLYOVER PROJECT

7.15 (11)

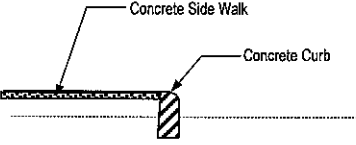
KATAHIRA AND ENGINEERS INTERNATIONAL

DRAWING NO :

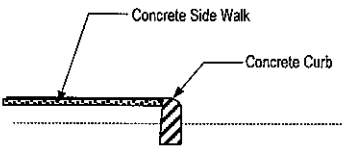
ESTIMATOR :

CHECKED BY :

SKETCH DRAWING	QUANTITY CALCULATION				REMARKS	
	PROJECT : BALARAJA FLYOVER	STATION	Length	L/R		
SERVICE ROAD	Start	End				
	00 + 439.22	00 + 445.86	6.640	L		
	00 + 447.53	00 + 461.40	13.871	L		
	00 + 637.06	00 + 658.32	21.262	L		
	00 + 761.06	00 + 784.46	23.403	L		
			65.176			
	00 + 221.28	00 + 260.77	39.488	L		
	00 + 286.53	00 + 359.80	73.273	L		
	00 + 369.57	00 + 397.45	27.883	L		
	00 + 399.78	00 + 439.75	39.969	L		
	00 + 736.36	00 + 750.15	13.798	L		
			194.411			
			QUANTITY DEMOLITION OF HEDGE OF FENCE = 259.587 M			

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared 9/20/2006 14:21	Sheet : of		
PROJECT : BALARAJA PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT					
KATAHIRA AND ENGINEERS INTERNATIONAL					
DRAWING NO : BRS-019, BRD-020, BRD-021, BRD-022, BRD-023, BRD024		ESTIMATOR :	CHECKED BY :		
SKETCH DRAWING		CALCULATION			
		7.15(12) Balaraja Fly Over - Contract Package 1			
		Item No. 7.15(4) - Demolition of Concrete Side Walk			
		MAIN ROAD / FLYOVER			
		STATION		WIDTH	AREA
		START	END		
		0+000.000	0+000.000	0.000	0.000
		0+000.000	0+000.000	0.000	0.000
		SUB TOTAL LENGTH			0.000
		STATION		WIDTH	AREA
		START	END		
		0+000.000	0+000.000	0.000	0.000
		0+000.000	0+000.000	0.000	0.000
		SUB TOTAL LENGTH			0.000
SERVICE ROAD					
STATION		LEFT SIDE WIDTH	AREA		
START	END				
0+000.000	0+000.000	0.000	0.000		
0+000.000	0+000.000	0.000	0.000		
SUB TOTAL LENGTH			0.000		
STATION		RIGHT SIDE WIDTH	AREA		
START	END				
0+000.000	0+000.000	0.000	0.000		
0+000.000	0+000.000	0.000	0.000		
SUB TOTAL LENGTH			0.000		
TOTAL	= 0.000 cum.				
REMARKS					

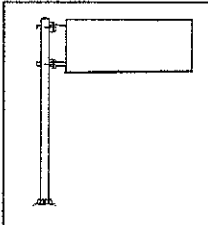
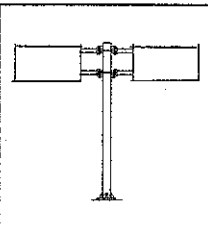
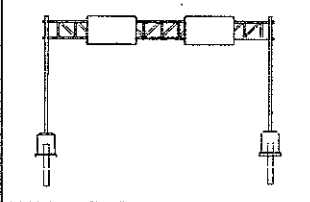
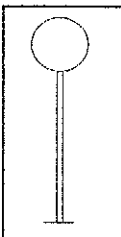
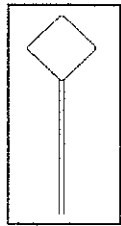
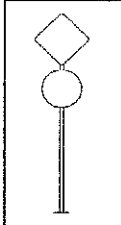

7.15 (13)

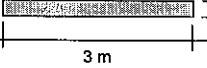
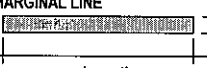
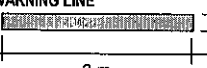
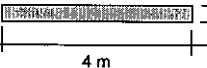



CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared 9/20/2006 11:07	Sheet : of
PROJECT : BALARAJA PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : BRS-019, BRD-020, BRD-021, BRD-022, BRD-023, BRD024	ESTIMATOR :	CHECKED BY :	
SKETCH DRAWING	CALCULATION		REMARKS
 <p>Concrete Side Walk</p> <p>Concrete Curb</p>	Balaraja Fly Over - Contract Package 1		
	Item No. 7.15 (5) - Demolition of Concrete Curb		
	MAIN ROAD / FLYOVER		
	STATION		LENGTH
	START	END	
	0+000.000	0+000.000	0.000
	0+000.000	0+000.000	0.000
	SUB TOTAL LENGTH		0.000
	STATION		LENGTH
	START	END	
	0+000.000	0+000.000	0.000
	0+000.000	0+000.000	0.000
	SUB TOTAL LENGTH		0.000
	SERVICE ROAD		
	STATION		LEFT SIDE LENGTH
	START	END	
	0+000.000	0+000.000	0.000
	0+000.000	0+000.000	0.000
	SUB TOTAL LENGTH		0.000
	STATION		RIGHT SIDE LENGTH
START	END		
0+000.000	0+000.000	0.000	
0+000.000	0+000.000	0.000	
SUB TOTAL LENGTH		0.000	
TOTAL	0.000 m.	✓	

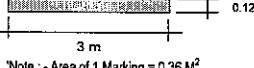
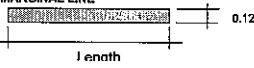
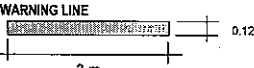
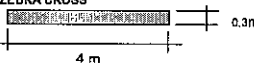


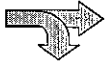
DIVISION 8.
Miscellaneous

CONSTRUCTION COST ESTIMATE WORKSHEET				Date Prepared :		Sheet : 1 of 1		
PROJECT : BALARAJA FLYOVER				BACK UP QUANTITY SOLID SODING				
NORTH JAVA CORRIDOR FLYOVER PROJECT				8.1.17				
KATAHIRA AND ENGINEERS INTERNATIONAL								
DRAWING NO :			ESTIMATOR :			CHECKED BY :		
SKETCH DRAWING			QUANTITY CALCULATION				REMARKS	
			PROJECT : BALARAJA FLYOVER					
			STA	Width	Average	Length	Area	
							(Sq.M)	
			00 + 398.00	12.264	6.132	0.000	0.000	
			00 + 424.43	12.264	12.264	26.431	324.150	
			00 + 439.20	0.000	6.132	0.000	0.000	
			00 + 434.94	5.932	2.966	0.000	0.000	
			00 + 438.31	11.739	8.836	3.369	29.767	
			00 + 441.06	12.141	11.940	2.751	32.847	
			00 + 443.42	11.939	12.040	2.357	28.378	
			00 + 474.37	5.330	8.635	30.952	267.255	
			00 + 499.12	3.600	4.465	24.755	110.531	
			00 + 518.79	6.189	4.895	19.665	96.250	
			00 + 531.89	9.642	7.916	13.105	103.733	
			00 + 541.33	10.710	10.176	9.433	95.990	
			00 + 543.74	10.552	10.631	2.416	25.684	
			00 + 546.13	9.315	9.934	2.384	23.681	
			00 + 548.26	0.000	4.658	2.130	9.920	
			00 + 558.26	11.467	5.734	0.000	0.000	
			00 + 567.70	11.570	11.519	9.448	108.827	
			00 + 580.33	11.396	11.483	12.624	144.961	
			00 + 589.70	6.800	9.098	9.376	85.303	
			00 + 591.29	5.233	6.017	1.588	9.554	
			00 + 593.20	0.000	2.617	1.908	4.992	
			00 + 593.08	0.000	0.000	0.000	0.000	
			00 + 597.26	4.601	2.301	4.180	9.616	
			00 + 600.00	11.569	8.085	2.740	22.163	
			00 + 616.54	13.800	12.685	16.536	209.751	
			00 + 617.60	14.000	13.900	1.065	14.804	
			00 + 620.75	14.000	14.000	3.149	44.086	
			TOTAL				1802.234 ✓	Sq.M

CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared :		Sheet : 1 of 1			
PROJECT : BALARAJA FLYOVER			BACK UP QUANTITY BRC FENCE					
NORTH JAVA CORRIDOR FLYOVER PROJECT								
KATAHIRA AND ENGINEERS INTERNATIONAL			<i>8-3(13)</i>					
DRAWING NO :		ESTIMATOR :		CHECKED BY :				
	SKETCH DRAWING	QUANTITY CALCULATION PROJECT : BALARAJA FLYOVER			REMARKS			
	SERVICE ROAD	STA		Length				
		Start	End	L/R				
		00 + 659.27	00 + 738.95	L	79.680	M		
			TOTAL		79.680	M		
			QUANTITY OF BRC FENCE =			79.680	M	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet : of
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		BACK UP QUAMTITY ROAD SIGN	
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :		ESTIMATOR :	CHECKED BY :
SKETCH DRAWING	CALCULATION		REMARKS Drawing No.
	0		
Overhead Sign Type A			
	- Overhead Sign Type B = 1 Each		BTR - 001
Overhead Sign Type B	- Overhead Sign Type B = 1 Each		BTR - 001
	5-1-14 2 ✓		
Overhead Sign Type C			
	- Reg & Warning Sign Type A = 3 Each		GTR - 001
Regulatory and Warning Sign Type A	- Reg & Warning Sign Type A = 3 Each		GTR - 002
	- Reg & Warning Sign Type A = 16 Each		GTR - 003
Regulatory and Warning Sign Type A	- Reg & Warning Sign Type A = 6 Each		GTR - 004
	28		
Regulatory and Warning Sign Type A	- Reg & Warning Sign Type A = 5 Each		GTR - 001
	- Reg & Warning Sign Type A = 1 Each		GTR - 002
Regulatory and Warning Sign Type A	- Reg & Warning Sign Type A = 12 Each		GTR - 003
	- Reg & Warning Sign Type A = 1 Each		GTR - 004
	19		
	- Reg & Warning Sign Type B = 0 Each		
SUMMARY QUANTITY ROAD SIGN			
	- Overhead Sign Type A 0 Each ✓		
	- Overhead Sign Type B 2 Each ✓		
	- Overhead Sign Type C 0 Each ✓		
	- Regulatory & Warning Sign Type A 47 Each ✓		
	- Regulatory & Warning Sign Type B 0 Each ✓		

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet: of				
PROJECT : BALARAJA FLY OVER NORTH JAVA CORRIDOR FLYOVER PROJECT							
KATAHIRA AND ENGINEERS INTERNATIONAL							
DRAWING NO :		ESTIMATOR :	CHECKED BY :				
SKETCH DRAWING		CALCULATION Balaraja Flyover - Contract Package 1			REMARKS		
1	SEPARATOR LINE  0.12 3 m 'Note : - Area of 1 Marking = 0.36 M ²	Item No. : - Road Marking			ROAD MARKING		
		Note: See Detailed Construction Layout Plan Dwg. # MTR-003 - MTR-008 for reference.			FLYOVER		
2	MARGINAL LINE  0.12 Length 'Note : - Area of Marking = Length x 0.12 m	Station	Marginal Strip Length	Separator Line Sum of Marks	Warning Line Sum of Marks	Zebra Cross Sum of Marks	Area (m ²)
		00 + 000.00	1416.0	0	0	0	169.920
3	WARNING LINE  0.12 3 m 'Note : - Area of 1 Marking = 0.36 M ²	00 + 000.00	796.0	0	0	0	95.520
		00 + 500.00					
		SUM				265.44	
4	ZEBRA CROSS  0.3m 4 m 'Note : - Area of 1 Marking = 1.2 M ²	CHEVRON AND STOP LINE					
		Station	CHEVRON Length	STOP LINE Length	AREA (m ²)		
		00 + 000.00	125.5	0	37.65		
		00 + 500.00					
		SUM			37.65		
5	ARROW a. TYPE 1 (DIRECT)  'Note : - Area of 1 Arrow = 1.1M ² b. TYPE 2 (TURN LEFT/RIGHT)  'Note : - Area of 1 Marking = 1.18 M ² c. TYPE 3 (DIRECT AND TURN LEFT/RIGHT)  'Note : - Area of 1 Marking = 1.48 M ²	TOTAL AREA ROAD MARKING FLYOVER =			303.09 (m²)		
		TOTAL AREA			916.20 (m²)		

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet : of																																																	
PROJECT : BALARAJA FLY OVER NORTH JAVA CORRIDOR FLYOVER PROJECT KATAHIRA AND ENGINEERS INTERNATIONAL																																																				
DRAWING NO :		ESTIMATOR :	CHECKED BY :																																																	
SKETCH DRAWING		CALCULATION																																																		
		Balaraja Flyover - Contract Package 1																																																		
1 SEPARATOR LINE  3 m *Note :- Area of 1 Marking = 0.36 M ²		Item No. : Road Marking : ROAD MARKING AT GRADE *Note: See Detailed Construction Layout Plan Dwg. # MTR-003 - MTR-008 for reference.																																																		
2 MARGINAL LINE  1 m *Note :- Area of Marking = Length x 0.12 m		<table border="1"> <thead> <tr> <th>Station</th> <th>Marginal Strip Length</th> <th>Separator Line Sum of Marks</th> <th>Warning Line Sum of Marks</th> <th>Zebra Cross Sum of Marks</th> <th>Area (m²)</th> </tr> </thead> <tbody> <tr> <td>00 + 500.00</td> <td>396.2</td> <td>25</td> <td>0</td> <td>0</td> <td>56.539</td> </tr> <tr> <td>00 + 702.00</td> <td>852.3</td> <td>32</td> <td>11</td> <td>68</td> <td>199.357</td> </tr> <tr> <td>01 + 187.29</td> <td>509.3</td> <td>56</td> <td>0</td> <td>0</td> <td>81.278</td> </tr> <tr> <td>01 + 410.00</td> <td>314.03</td> <td>42</td> <td>17</td> <td>0</td> <td>58.923</td> </tr> <tr> <td>00 + 000.00</td> <td>396.8</td> <td>10</td> <td>10</td> <td>0</td> <td>54.821</td> </tr> <tr> <td>00 + 500.00</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="5" style="text-align: right;">SUM</td> <td>450.92</td> </tr> </tbody> </table>			Station	Marginal Strip Length	Separator Line Sum of Marks	Warning Line Sum of Marks	Zebra Cross Sum of Marks	Area (m ²)	00 + 500.00	396.2	25	0	0	56.539	00 + 702.00	852.3	32	11	68	199.357	01 + 187.29	509.3	56	0	0	81.278	01 + 410.00	314.03	42	17	0	58.923	00 + 000.00	396.8	10	10	0	54.821	00 + 500.00						SUM					450.92
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		TOTAL AREA ROAD MARKING AT GRADE = 613.11 (m²)																																																		

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		BACK UP QUANTITY CON. CURB TYPE A 8.8 (1)		
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		ESTIMATOR :	CHECKED BY :	
SKETCH DRAWING		CALCULATION		
		REMARKS Drawing No.		
		Concrete Curb Type A Left and Right side		
		L = 357.322	M median before app	BRD-020
		L = 386.695	M biside app A1	BRD-020,21
		L = 333.120	M biside app A2	BRD-022,23
		L = 243.184	M med under bridge	BRD-021,22
		L = 91.931	M med under bridge	BRD-022
		L = 22.574	M med under bridge	BRD-022
		L = 250.785	M median before app	BRD-023
		1685.611		
Quantity Concrete Curb Type A = 1685.611 M ✓				

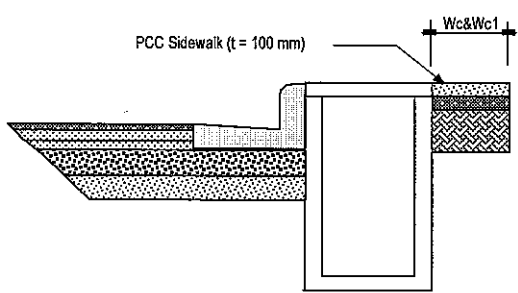
CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet : of	
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		BACK UP QUANTITY CON. CURB TYPE B		
KATAHIRA AND ENGINEERS INTERNATIONAL		88 (2)		
DRAWING NO :		ESTIMATOR :	CHECKED BY :	
SKETCH DRAWING	CALCULATION		REMARKS Drawing No.	
<p>Combination of Concrete Curb Gutter</p>	Concrete Curb and Gutter Left Side			
	L = 53.898	M	BRD-019	
	L = 519.927	M	BRD-019,20,21	
	L = 50.043	M	BRD-022	
	L = 108.520	M	BRD-022	
	L = 144.189	M	BRD-023	
	876.577		M	
	Concrete Curb and Gutter Right Side			
	R = 181.561	M	BRD-019	
	R = 176.831	M	BRD-020	
	R = 138.180	M	BRD-020	
	R = 386.519	M	BRD-021,22,23	
	R = 92.657	M	BRD-023	
	975.748		M	
	Quantity Concrete Curb & Gutter =		1852.33 Ln.M	✓

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet : of									
PROJECT : BALARAJA FLYOVER												
NORTH JAVA CORRIDOR FLYOVER PROJECT												
KATAHIRA AND ENGINEERS INTERNATIONAL												
DRAWING NO :	ESTIMATOR :	CHECKED BY :										
SKETCH DRAWING		CALCULATION	REMARKS									
<p>New Jersey Concrete Barrier</p> <p>Section of Concrete Median Type B</p>		Balaraja Flyover - Contract Package 1										
		R.S. 4										
		Item No: 3.4(2) - Concrete Median Type B (New Jersey Barrier)										
		Note: See Detailed Construction Layout Plan										
		Dwg. # BRD-019 - BRD-023 for reference.										
		<table border="1"><thead><tr><th colspan="2">Station</th><th>Length</th></tr><tr><th>From</th><th>To</th><th>(m)</th></tr></thead><tbody><tr><td>0 + 240.00</td><td>0 + 760.00</td><td>520.00 ✓</td></tr></tbody></table>	Station		Length	From	To	(m)	0 + 240.00	0 + 760.00	520.00 ✓	
		Station		Length								
		From	To	(m)								
		0 + 240.00	0 + 760.00	520.00 ✓								

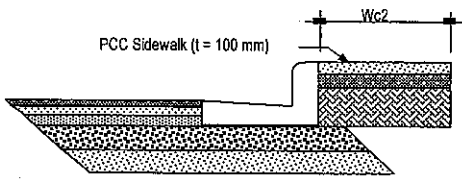
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT KATAHIRA AND ENGINEERS INTERNATIONAL	
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DRAWING NO :	ESTIMATOR :	CHECKED BY :
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SKETCH DRAWING



Section of PCC Sidewalk



Section of PCC Sidewalk

CALCULATION

Balaraja Flyover - Contract Package 1

Item No. 8.4.13 - Concrete Sidewalk

Note: See Detailed Construction Layout Plan

Dwg. # BRD-019 - BRD-023 for reference.

Input Data :

Wc= 0.451

Area= (Difference in Station) x Wc

At Right Service Road

Station		Area
From	To	(m ²)
00 + 081.00	00 + 257.97	79.81
00 + 265.00	00 + 395.00	58.63
00 + 402.00	00 + 788.00	174.09
00 + 795.41	00 + 882.00	39.05
Sub-Total =		351.58 sqm.

Input Data :

Wc1= 0.500 ave.

Area= (Difference in Station) x Wc1

At Left Service Road

Station		Area
From	To	(m ²)
00 + 078.00	00 + 128.93	25.47
00 + 136.00	00 + 460.00	162.00
00 + 710.00	00 + 741.90	15.95
00 + 744.20	00 + 882.00	68.90
Sub-Total =		272.32 sqm.

Input Data :

Wc2= 1.350 ave.

Area= (Difference in Station) x Wc2

00 + 460.00	00 + 594.00	180.90	
00 + 600.00	00 + 635.00	61.06	Stationing is reference only
00 + 640.00	00 + 710.00	94.50	
Sub-Total =		336.46 sqm.	

Total Area of Concrete Sidewalk :

At= 960.36 sqm.

DIVISION 9.

Facilities

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared	Sheet : of
PROJECT : BALARAJA FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		BACK UP ELECTRICAL	
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :		ESTIMATOR :	CHECKED BY :
SKETCH DRAWING	CALCULATION		REMARKS
ELECTRICAL UNDER VIADUCT	1. Panel LP-PJU FO = 0 Each		
	2. Cealling sont 150 watt = 20 Each		
	3. Cable NYY 2 x 2.5 mm ² = 205+5x9 = 250 m		
FLY OVER	1. Panel LP-PJU.FO = 1 Each		
	2. Ligthing Pole (sont 250 watt) = 18 Each		
	3. Cable NYY 2x2.5mm ² = 18x11.5 = 207 m		
	4. Cable NYFGBY 4 x 10mm ² = (755-245)+2x18= 546 m		
SERVICE ROAD	1. Panel LP-PJU.1 = 1 Each		
	2. Panel LP-PJU.2 = 1 Each		
	3. Panel LP-PJU.3 = 1 Each		
	4. Panel LP-PJU.4 = 1 Each		
	5. Panel LP-PJU.5 = 1 Each		
	6. Lighting Pole (sont 250 watt) = 54 Each		
	7. Cable NYY 2x2.5 mm ² = 54 x 11.5 = 621 m		
	8. Cable NYFGBY 4 x 10 mm ² = 950x2+54x2 = 2008 m		
	9. Cable NYFGBY 4 x 25 mm ² :		
	PLN to LP-PJU.1 = 60 m		
	LP-PJU.5 to LP-PJU.2 = 50 m		
	PLN to LP-PJU.3 = 120 m		
	PLN to LP-PJU.4 = 60 m		
	LP-PJU.3 to LP-PJU.5 = 270 m		
	560 M		
	Cable NYFGBY 4 x 50 mm ² = 200 M		
	SUMMARY QUANTITY BALARAJA FO		
1. Panel LP-PJU.FO = 1 Each ✓			
Panel LP-PJU.1 = 1 Each ✓			
Panel LP-PJU.2 = 1 Each ✓			
Panel LP-PJU.3 = 1 Each ✓			
Panel LP-PJU.4 = 1 Each ✓			
Panel LP-PJU.5 = 1 Each ✓			
2. Ligthing Pole (sont 250 watt) = 72 Each ✓			
3. Ceilling Sont 150 watt = 20 Each ✓			
4. Cable NYY 2 x 2.5 mm ² = 1078 M			
Cable NYFGBY 4 x 10 mm ² = 2554 M ✓			
Cable NYFGBY 4 x 25 mm ² = 560 M ✓			
Cable NYFGBY 4 x 50 mm ² = 200 M ✓			

**Relocation & Protection
of Existing Utilities**

COST ESTIMATE FOR UTILITY PROTECTION AND RELOCATION

BALARAJA FLYOVER

No.	Description	Unit	Estimate Quantity	Unit Price (Rp.)	Amount (Rp.)	Remarks
	ABOVE GROUND					
1	Relocation of Existing Electricity (PLN), Pole medium Voltage	Each	15.00			
2	Relocation of Existing Electricity (PLN), Pole Low Voltage	Each	30.00			
2	Electric Cable Above Ground	Ln.M	3780.00			
4	Relocation of Existing Telephone Utility pole	Each	40.00			
5	Telephone Cable Above Ground	Ln.M	2200.00			
	UNDER GROUND					
6	Protection of Existing Gas Pipe Type A	Ln.M	415.00			
7	Protection of Existing Gas Pipe Type D	Ln.M	120.00			
8	Relocation Water Pipe	Ls	1.00			
9	Relocation Optic Cable	Ln.M	660.00			
			TOTAL COST		0.00	