NO.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

DETAILED DESIGN STUDY
OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
IN THE REPUBLIC OF INDONESIA

FINAL REPORT
QUANTITY CALCULATION

PACKAGE III
(PETERONGAN - TANGGULANGIN)

DECEMBER 2006

KATAHIRA & ENGINEERS INTERNATIONAL

SD
CR(5)
06-090

JAPAN INTERNATIONAL
COOPERATION AGENCY

DIRECTORATE GENERAL OF HIGHWAY
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

DETAILED DESIGN STUDY
OF
NORTH JAVA CORRIDOR FLYOVER PROJECT
IN THE REPUBLIC OF INDONESIA

QUANTITY CALCULATION
PETERONGAN FLYOVER

CONTRACT PACKAGE 3
(PETERONGAN - TANGGULANGIN)

KATAHIRA & ENGINEERS INTERNATIONAL

THE NORTH JAVA CORRIDOR FLYOVER PROJECT
QUANTITY CALCULATION
PETERONGAN FLYOVER

TABLE OF CONTENTS

DIVISION 1.
General

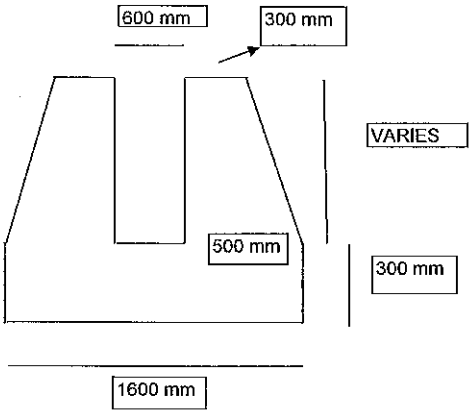
CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared :		Sheet : of
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT KATAHIRA AND ENGINEERS INTERNATIONAL	BACK QUANTITY GENERAL		
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

	SKETCH DRAWING	QUANTITY CALCULATION PROJECT : PETERONGAN FLYOVER	REMARKS

Pay Item		Unit	Quantity
1.2	Mobilization and Demobilization	Ls	1
1.2 (1)b.	Engineer facilities	Ls	1
1.8	Maintenance and Protection of traffic	Ls	1

DIVISION 2.
Drainage

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	BACK UP QUANTITY OF MORTARED STONE WORK	Sheet : of
PROJECT : PETERONGAN FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :		CHECKED BY :

SKETCH DRAWING	CALCULATION	REMARKS
	PROJECT : PETERONGAN FLYOVER	
	Drawing PDG - 001 (Drainage Schedule at grade)	

DMH to DMH		Heigh	Length	Area	Quantity	
		M	M	Sq.M	Cu. M	
DMH-77	DMH-77A	1.429	13.000	1.623	**21.102**	Type II
			TOTAL		**21.102**	

QUANTITY OF MORTARED STONEWORK = **21.102** Cu. M

MONTARED STONE WORK TYPE II

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT	BACK UP DRAINAGE		
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING			CALCULATION				REMARKS
Drainage Schedule at Flyover			**Drawing No. PDV 001:**				
			Drainage Schedule				
			- Deck drain Type II (L) =	5	Each		
			- Deck drain Type II (R) =	13	Each		
			- PVC dia 200 mm =	158.8	M		
			Approach 1				
			- Deck drain Type II (L) =	6	Each		
			- Deck drain Type II (R) =	6	Each		
			- PVC dia 200 mm =	32.54	M		
			Approach 2				
			- Deck drain Type II (L) =	0	Each		
			- Deck drain Type II (R) =	9	Each		
			- PVC dia 200 mm =	21.35	M		
Drainage Schedule Under Flyover			**Drawing No. PDV 002 :**				
			- Uditch DS 1 =	133.6	M		
			- Uditch DS 5 =	300	M		
SUMMARY QUANTITY OF DRAINAGE			- PVC dia 250 mm =	191.6	M		
- PVC Drain Pipe dia 150 mm	**0.00**	M	- RCP dia 600 mm =	68.3	M	(Type B)	
- PVC Drain Pipe dia 200 mm	**212.69**	M	- Manhole Type VII =	18	Each		
- PVC Drain Pipe dia 250 mm	**191.60**	M	- Catch Basin Type I =	14	Each		
- RCP dia 600 mm (Type A)	**10.00**	M	**Drawing No. PDG 001 :**				
- RCP dia 600 mm (Type B)	**68.30**	M	Drainage Slope Right				
- RCP dia 800 mm (Type A)	**456.70**	M	- Uditch DS 4 =	583.67	M		
- Manhole Type I	**53.00**	Each	- RCP dia 600 mm =	10	M	(Type A)	
- Manhole Type II	**0.00**	Each	- RCP dia 800 mm =	243.5	M	(Type A)	
- Manhole Type III	**17.00**	Each	- Manhole Type I =	26	Each		
- Manhole Type IV	**1.00**	Each	- Manhole Type II =	0	Each		
- Manhole Type V	**6.00**	Each	- Manhole Type III =	9	Each		
- Manhole Type VI	**8.00**	Each	- Manhole Type IV =	1	Each		
- Manhole Type VII	**18.00**	Each	- Manhole Type V =	4	Each		
- Catch Basin Type I	**14.00**	Each	- Manhole Type VI =	3	Each		
- Uditch DS 1	**133.60**	M	Drainage Slope Left				
- Uditch DS 4	**1161.17**	M	- Uditch DS 4 =	577.5	M		
- Uditch DS 5	**300.00**	M	- RCP dia 800 mm =	213.2	M	(Type A)	
-Deck Drain Type I	**0.00**	Each	- Manhole Type I =	27	Each		
-Deck Drain Type II	**39.00**	Each	- Manhole Type II =	0	Each		
- Steel Gutter	**0.00**	M	- Manhole Type III =	8	Each		
- Outer Gutter	**0.00**	M	- Manhole Type IV =	0	Each		
			- Manhole Type V =	2	Each		
			- Manhole Type VI =	5	Each		

DIVISION 3.
Earthworks

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/16/2006 17:05	Sheet : 1 of 3	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING

CALCULATION

Peterongan Fly Over - Contract Package 3

REMARKS

Item No. 3.1(1) - Clearing and Grubbing

MAIN ROAD BEFORE FLYOVER

STA	LEFT SIDE WIDTH	AVE. LEFT WIDTH	LENGTH	AREA
0+089.882	0.000	0.000	0.000	0.000
0+090.757	2.521	1.261	0.875	1.103
0+091.840	2.725	2.623	1.083	2.841
0+113.596	3.993	3.359	21.756	73.078
0+129.721	4.934	4.464	16.125	71.974
0+143.178	5.710	5.322	13.457	71.618
0+158.518	6.506	6.108	15.340	93.697
0+159.610	5.530	2.765	1.092	3.019
0+160.619	0.000	2.765	1.009	2.790
0+163.329	4.793	4.793	2.710	12.989
0+165.009	6.985	5.889	1.680	9.894
0+167.497	6.643	6.814	2.488	16.953
0+185.000	6.563	6.603	17.503	115.572
SUB TOTAL LEFT AREA				475.528

STA	RIGHT SIDE WIDTH	AVE. RIGHT WIDTH	LENGTH	AREA
0+016.251	0.000	0.000	0.000	0.000
0+018.716	2.000	1.000	2.465	2.465
0+066.817	2.421	2.211	48.101	106.327
0+104.483	4.359	0.000	0.000	0.000
0+125.185	5.721	0.000	20.702	0.000
0+128.061	2.734	4.228	2.876	12.158
0+128.900	0.000	1.367	0.839	1.147
0+134.091	0.000	0.000	5.191	0.000
0+135.258	2.612	1.306	1.167	1.524
0+138.988	6.295	4.454	3.730	16.612
0+144.216	6.457	6.376	5.228	33.334
0+185.000	7.142	6.800	40.784	277.311
0+000.000	0.000	0.000	0.000	0.000
SUB TOTAL RIGHT AREA				450.878

MAIN ROAD AFTER FLYOVER

STA	LEFT SIDE WIDTH	AVE. LEFT WIDTH	LENGTH	AREA
0+800.000	5.617	5.617	0.000	0.000
0+819.536	5.401	5.509	19.536	107.624
0+839.549	4.705	5.053	20.013	101.126
0+858.542	3.805	4.255	18.993	80.815
0+890.280	2.431	3.118	31.738	98.959
0+926.582	2.054	2.243	36.302	81.407
0+929.445	8.292	5.173	2.863	14.810
0+930.194	7.977	8.135	0.749	6.093
0+931.594	0.000	3.989	1.400	5.584
SUB TOTAL LEFT AREA				496.418

STA	RIGHT SIDE WIDTH	AVE. RIGHT WIDTH	LENGTH	AREA
0+800.000	5.323	5.323	0.000	0.000
0+819.538	5.230	5.277	19.538	103.092
0+839.555	4.675	4.353	20.017	99.134

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/16/2006 17:05	Sheet : 2 of 3	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING

CALCULATION

Peterongan Fly Over - Contract Package 3

REMARKS

Item No. 3.1(1) - Clearing and Grubbing

0+887.746	2.520	3.598	48.191	173.367
0+908.781	2.000	2.260	21.035	47.539
0+941.973	2.000	2.000	33.192	66.384
0+944.776	0.000	1.000	2.803	2.803
SUB TOTAL RIGHT AREA				492.320

SERVICE ROAD

STA	LEFT SIDE WIDTH	AVE. LEFT WIDTH	LENGTH	AREA
0+185.000	6.563	6.563	0.000	0.000
0+263.935	7.000	6.782	78.935	535.298
0+341.486	7.000	7.000	77.551	542.857
0+381.497	7.300	7.150	40.011	286.079
0+393.070	6.905	7.103	11.573	82.197
0+401.690	5.989	6.447	8.620	55.573
0+411.610	4.867	5.428	9.920	53.846
0+439.939	3.241	4.054	28.329	114.846
0+439.939	3.011	3.126	0.000	0.000
0+445.508	3.069	3.040	5.569	16.930
0+451.061	2.173	2.621	5.553	14.554
0+456.927	1.521	1.847	5.866	10.835
0+466.663	1.697	1.609	9.736	15.665
0+473.935	0.000	0.849	7.272	6.170
0+459.469	0.000	0.000	0.000	0.000
0+460.742	5.719	2.860	1.273	3.640
0+461.928	3.437	4.578	1.186	5.430
0+464.516	2.291	2.864	2.588	7.412
0+467.369	2.187	2.239	2.853	6.388
0+469.260	0.000	1.094	1.891	2.068
0+469.200	0.000	0.000	0.000	0.000
0+471.045	2.115	1.058	1.845	1.951
0+481.978	1.712	1.914	10.933	20.920
0+484.236	0.000	0.856	2.258	1.933
0+485.580	0.000	0.000	0.000	0.000
0+487.530	2.003	1.002	1.950	1.953
0+511.989	2.016	2.010	24.459	49.150
0+524.613	3.766	2.891	12.624	36.496
0+531.282	4.249	4.008	6.669	26.726
0+539.617	4.392	4.321	8.335	36.011
0+546.515	4.300	4.346	6.898	29.979
0+581.061	3.644	3.972	34.546	137.217
0+602.247	5.227	4.436	21.186	93.971
0+634.964	5.345	5.286	32.717	172.942
0+711.494	5.626	5.486	76.530	419.805
0+777.945	5.591	5.609	66.451	372.690
0+800.000	5.617	5.604	22.055	123.596
SUB TOTAL LEFT AREA				3,285.128

STA	RIGHT SIDE WIDTH	AVE. RIGHT WIDTH	LENGTH	AREA
0+185.000	7.142	7.142	0.000	0.000
0+290.058	6.738	6.940	105.058	729.103
0+381.497	6.972	6.855	91.439	626.814
0+387.330	6.981	6.977	5.833	40.694
0+402.525	6.337	6.659	15.195	101.184

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/16/2006 17:05	Sheet : 3 of 3	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS

Peterongan Fly Over - Contract Package 3

Item No. 3.1(1) - Clearing and Grubbing

0+417.598	4.451	5.394	15.073	81.304	
0+429.486	2.895	3.673	11.888	43.665	
0+436.480	2.420	2.658	6.994	18.587	
0+441.468	2.897	2.659	4.988	13.261	
0+441.468	0.897	1.897	0.000	0.000	
0+447.373	1.666	1.282	5.905	7.567	
0+456.927	1.569	1.618	9.554	15.454	
0+458.316	0.000	0.785	1.389	1.090	
0+458.755	0.000	0.000	0.000	0.000	
0+460.000	1.537	0.769	1.245	0.957	
0+467.789	1.417	1.477	7.789	11.504	
0+471.566	3.304	2.361	3.777	8.916	
0+472.499	5.974	4.639	0.933	4.328	
0+474.484	0.000	2.987	1.985	5.929	
0+472.514	0.000	0.000	0.000	0.000	
0+473.059	2.728	1.364	0.545	0.743	
0+487.934	2.082	2.405	14.875	35.774	
0+497.921	2.000	2.041	9.987	20.383	
0+516.047	2.010	2.005	18.126	36.343	
0+540.778	4.041	3.026	24.731	74.824	
0+542.989	6.993	5.517	2.211	12.198	
0+543.861	10.364	8.679	0.872	7.568	
0+546.930	9.284	9.824	3.069	30.150	
0+548.567	5.600	7.442	1.637	12.183	
0+580.408	5.688	5.644	31.841	179.711	
0+634.515	5.593	5.641	54.107	305.191	
0+678.097	5.319	5.456	43.582	237.783	
0+711.681	5.651	5.485	33.584	184.208	
0+800.000	5.323	5.487	88.319	484.606	
SUB TOTAL RIGHT AREA				3,332.019	
Total Area		= 8,532.29 sqm.			

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared :		Sheet : 1 of 2
PROJECT : PETERONGAN **FLYOVER** NORTH JAVA CORRIDOR FLYOVER PROJECT **KATAHIRA AND ENGINEERS INTERNATIONAL**	BACK QUANTITY SELECTED TREE REMOVAL		
DRAWING NO :	ESTIMATOR :	CHECKED BY	

	SKETCH DRAWING	QUANTITY CALCULATION PROJECT : PETERONGAN FLYOVER	REMARKS

Selected Tree Removal Dia ≤ 300 mm

Main Road

Sta	L/R	Quantity	Unit
0 + 136	R	1.00	Each
0+ 805	R	1.00	Each
0+ 813	R	1.00	Each
0+ 845	R	1.00	Each
TOTAL		**4.00**	Each

Service Road

Sta	L/R	Quantity	Unit
0 + 206	L	1.00	Each
0 + 238	R	1.00	Each
0 + 243	L	1.00	Each
0 + 247	R	1.00	Each
0 + 249	L	1.00	Each
0 + 259	L	1.00	Each
0 + 278	R	1.00	Each
0 + 316	L	1.00	Each
0 + 346	L	1.00	Each
0 + 353	L	1.00	Each
0 + 358	L	1.00	Each
0 + 367	L	1.00	Each
0 + 373	R	1.00	Each
0 + 386	R	1.00	Each
0 + 390	L	1.00	Each
0 + 394	L	1.00	Each
0 + 397	L	1.00	Each
0 + 404	L	1.00	Each
0 + 518	R	1.00	Each
0 + 570	L	1.00	Each
0 + 632	L	1.00	Each
0 + 746	L	1.00	Each
TOTAL		**22.00**	Each

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared :		Sheet : 2 of 2
PROJECT : PETERONGAN **FLYOVER** NORTH JAVA CORRIDOR FLYOVER PROJECT **KATAHIRA AND ENGINEERS INTERNATIONAL**	BACK QUANTITY SELECTED TREE REMOVAL		
DRAWING NO :	ESTIMATOR :	CHECKED BY	

	SKETCH DRAWING	QUANTITY CALCULATION PROJECT : PETERONGAN FLYOVER	REMARKS

Selected Tree Removal Dia ≥ 300 mm

Main Road

Sta	L/R		Quantity	Unit
0 + 161	L	R	1.00	Each
0+ 822		R	1.00	Each
0+ 838		R	1.00	Each
TOTAL			**3.00**	Each

Servive Road

Sta	L/R		Quantity	Unit
0 + 226	L	R	1.00	Each
0+ 268	L	R	1.00	Each
0+ 293	L	R	1.00	Each
TOTAL			**3.00**	Each

SUMMARY QUANTITY SELECTED TREE REMOVAL

Selected Tree Removal Dia ≤ 300 mm	=	**26.00**	Each
Selected Tree Removal Dia ≥ 300 mm	=	**6.00**	Each

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/22/2006 11:41	Sheet : of	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING

CALCULATION

Peterongan Fly Over - Contract Package 3

REMARKS

Item No. 3.2 (1) - Common Excavation

MAIN ROAD BEFORE FLYOVER

STA	LEFT SIDE AREA	AVE. LEFT AREA	LENGTH	VOLUME
0+089.739	0.000	0.000	0.000	0.000
0+090.758	2.222	1.111	1.019	1.132
0+093.398	0.867	1.545	2.640	4.077
0+125.189	2.684	1.776	31.791	56.445
0+156.620	4.471	3.578	31.431	112.444
0+158.519	4.978	4.725	1.899	8.972
0+160.722	0.000	2.489	2.203	5.483
0+163.213	7.874	7.874	0.000	0.000
0+165.021	5.903	6.889	1.808	12.454
0+167.498	4.656	5.280	2.477	13.077
0+185.000	4.561	4.609	17.502	80.658
SUB TOTAL LEFT VOLUME				294.744

STA	RIGHT SIDE AREA	AVE. RIGHT AREA	LENGTH	VOLUME
0+055.704	0.000	0.000	0.000	0.000
0+080.161	0.956	0.478	24.457	11.690
0+123.631	3.597	2.277	43.470	98.959
0+125.186	3.902	3.750	1.555	5.830
0+127.603	3.434	3.668	2.417	8.866
0+129.041	0.000	1.717	1.438	2.469
0+133.720	0.000	0.000	0.000	0.000
0+136.579	3.354	1.677	2.859	4.795
0+140.000	4.418	3.886	3.421	13.294
0+144.224	4.442	4.430	4.224	18.712
0+185.000	5.127	4.785	40.776	195.093
SUB TOTAL RIGHT VOLUME				359.709

MAIN ROAD AFTER FLYOVER

STA	LEFT SIDE AREA	AVE. LEFT AREA	LENGTH	VOLUME
0+800.000	3.617	3.617	0.000	0.000
0+814.037	3.504	3.561	14.037	49.979
0+839.459	2.704	3.104	25.422	78.910
0+911.140	0.000	1.352	71.681	96.913
0+926.266	0.000	0.000	0.000	0.000
0+930.190	1.889	0.945	3.924	3.706
0+931.359	0.000	0.945	1.169	1.104
SUB TOTAL LEFT VOLUME				230.612

STA	RIGHT SIDE AREA	AVE. RIGHT AREA	LENGTH	VOLUME
0+800.000	3.304	3.304	0.000	0.000
0+819.508	3.431	3.368	19.508	65.693
0+902.298	0.000	1.716	82.790	142.026
SUB TOTAL RIGHT VOLUME				207.719

SERVICE ROAD

STA	LEFT SIDE AREA	AVE. LEFT AREA	LENGTH	VOLUME
0+185.000	4.561	4.561	0.000	0.000

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/22/2006 11:41	Sheet : of	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING

CALCULATION

Peterongan Fly Over - Contract Package 3

REMARKS

Item No. 3.2 (1) - Common Excavation

0+212.767	4.559	4.560	27.767	126.618
0+242.236	4.794	4.677	29.469	137.812
0+270.973	5.000	4.897	28.737	140.725
0+326.233	5.000	5.000	55.260	276.300
0+381.502	5.300	5.150	55.269	284.635
0+391.488	5.014	5.157	9.986	51.498
0+411.436	2.875	3.945	19.948	78.685
0+431.481	1.662	2.269	20.045	45.472
0+441.487	1.160	1.411	10.006	14.118
0+448.552	1.903	1.532	7.065	10.820
0+450.918	2.181	2.042	2.366	4.831
0+452.928	2.180	2.181	2.010	4.383
0+456.785	1.537	1.859	3.857	7.168
0+466.664	1.697	1.617	9.879	15.974
0+473.936	0.000	0.849	7.272	6.170
0+459.466	0.000	0.000	0.000	0.000
0+460.743	5.719	2.860	1.277	3.652
0+461.928	3.437	4.578	1.185	5.425
0+464.517	2.287	2.862	2.589	7.410
0+467.370	2.213	2.250	2.853	6.419
0+469.261	0.000	1.107	1.891	2.092
0+469.201	0.000	0.000	0.000	0.000
0+471.045	2.116	1.058	1.844	1.951
0+482.078	1.692	1.904	11.033	21.007
0+484.248	0.000	0.846	2.170	1.836
0+511.990	0.000	0.000	0.000	0.000
0+525.761	1.867	0.934	13.771	12.855
0+531.364	2.251	2.059	5.603	11.537
0+539.601	2.392	2.322	8.237	19.122
0+546.492	2.301	2.347	6.891	16.170
0+581.061	1.643	1.972	34.569	68.170
0+621.010	3.215	2.429	39.949	97.036
0+648.919	3.215	3.215	27.909	89.727
0+699.011	3.512	3.364	50.092	168.484
0+749.496	3.563	3.538	50.485	178.591
0+800.000	3.617	3.590	50.504	181.309
SUB TOTAL LEFT VOLUME				2,098.003

STA	RIGHT SIDE AREA	AVE. RIGHT AREA	LENGTH	VOLUME
0+185.000	5.127	5.127	0.000	0.000
0+186.376	5.127	5.127	1.376	7.055
0+263.961	4.829	4.978	77.585	386.218
0+387.345	4.981	4.905	123.384	605.199
0+402.361	4.329	4.655	15.016	69.899
0+417.256	2.479	3.404	14.895	50.703
0+428.323	0.996	1.738	11.067	19.229
0+436.481	0.401	0.699	8.158	5.698
0+447.373	1.666	1.034	10.892	11.257
0+456.901	1.569	1.618	9.528	15.412
0+458.317	0.000	0.785	1.416	1.111
0+458.756	0.000	0.000	0.000	0.000
0+460.174	1.579	0.790	1.418	1.120
0+467.790	1.417	1.498	7.616	11.409
0+470.849	2.503	1.960	3.059	5.996

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/22/2006 11:41	Sheet : of	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS

Peterongan Fly Over - Contract Package 3

Item No. 3.2 (1) - Common Excavation

0+472.499	5.974	4.239	1.650	6.994	
0+474.486	0.000	2.987	1.987	5.935	
0+516.122	0.000	0.000	0.000	0.000	
0+535.133	1.628	0.814	19.011	15.475	
0+541.215	4.428	3.028	6.082	18.416	
0+543.875	10.347	7.388	2.660	19.651	
0+546.931	9.284	9.816	3.056	29.996	
0+548.878	5.306	7.295	1.947	14.203	
0+553.113	3.818	4.562	4.235	19.320	
0+586.999	3.603	3.711	33.886	125.734	
0+666.618	3.361	3.482	79.619	277.233	
0+711.505	3.625	3.493	44.887	156.790	
0+800.000	3.304	3.465	88.495	306.591	
0+000.000	0.000	0.000	0.000	0.000	
SUB TOTAL RIGHT VOLUME				2,186.643	
TOTAL	**= 5,377.430 cum.**				

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/20/2006 8:55	Sheet : \ of \	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING

CALCULATION

Peterongan Fly Over - Contract Package 3

REMARKS

Item No. 3.1(3) - Excavation of Existing Pavement

EXCAVATION OF EXISTING PAVEMENT

MAIN ROAD BEFORE FLYOVER

LEFT SIDE AREA	AVE. LEFT AREA	DISTANCE			VOL
		START	END	LENGTH	
0.170	0.170	0+090.742	0+159.761	69.019	11.733
0.170	0.170	0+163.064	0+185.000	21.936	3.729
SUB TOTAL LEFT VOLUME					15.462

RIGHT SIDE AREA	AVE. RIGHT AREA	DISTANCE			VOL
		START	END	LENGTH	
0.170	0.170	0+055.703	0+127.751	72.048	12.248
0.170	0.170	0+134.689	0+185.000	50.311	8.553
SUB TOTAL RIGHT VOLUME					20.801

MAIN ROAD AFTER FLYOVER

LEFT SIDE AREA	AVE. LEFT AREA	DISTANCE			VOLUME
		START	END	LENGTH	
0.170	0.170	0+800.000	0+911.140	111.140	18.894
0.170	0.170	0+926.266	0+930.949	4.683	0.796
SUB TOTAL LEFT VOLUME					19.690

RIGHT SIDE AREA	AVE. RIGHT AREA	DISTANCE			VOLUME
		START	END	LENGTH	
0.170	0.170	0+800.000	0+900.834	100.834	17.142
0.180	0.350	0+000.000	0+000.000	0.000	0.000
SUB TOTAL RIGHT VOLUME					17.142

SERVICE ROAD

LEFT SIDE AREA	AVE. LEFT AREA	DISTANCE			VOLUME
		START	END	LENGTH	
0.170	0.170	0+185.000	0+343.750	158.750	26.988
0.593	0.593	0+383.096	0+385.444	2.348	1.393
0.170	0.170	0+385.444	0+453.229	67.785	11.523
0.170	0.170	0+459.274	0+800.000	340.726	57.923
0.000	0.000	0+000.000	0+000.000	0.000	0.000
SUB TOTAL LEFT VOLUME					97.827

RIGHT SIDE AREA	AVE. RIGHT AREA	DISTANCE			VOLUME
		START	END	LENGTH	
0.170	0.170	0+185.000	0+343.750	158.750	26.988
0.265	0.265	0+343.750	0+381.500	37.750	10.011
0.643	0.643	0+381.500	0+384.921	3.421	2.200
0.170	0.170	0+384.921	0+397.427	12.506	2.126
0.487	0.487	0+397.427	0+397.953	0.526	0.256
0.653	0.653	0+397.953	0+401.638	3.685	2.406
0.170	0.170	0+401.638	0+454.408	52.770	8.971
0.170	0.170	0+459.276	0+484.365	25.089	4.265
0.170	0.170	0+516.107	0+800.000	283.893	48.262
SUB TOTAL RIGHT VOLUME					105.484

TOTAL	= 276.407 cum.

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 21 - 09 - 2006	Sheet : 1 of 2	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
3.2 (3)	Structure Excavation to a depth			
	not exceeding 2 m	A1 = 13.20 x 2.60 x 2.00	68.64	Abutment
		A2 = 13.20 x 2.60 x 2.00	68.64	
		TOTAL	137.28	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 21 - 09 - 2006	Sheet : 2 of 2	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
3.2 (3)	Structure Excavation to a depth not exceeding 2 m	A1		Stub Wall
		W = 1.50 m		
		L = 18.00 m		
		H = 1.756 m		
		W = 1.00 m		
		L = 18.75 m		
		H = 1.00 m		
		Quantity		
		= 1.50 x 1.756 x 18.00 x 2	94.82	
		= 1.00 x 1.00 x 18.75 x 2	37.50	
		sub total	132.32	
		A2		Stub Wall
		W = 1.50 m		
		L = 37.00 m		
		H = 1.779 m		
		W = 1.00 m		
		L = 36.75 m		
		H = 0.80 m		
		Quantity		
		= 1.50 x 1.779 x 37.00 x 2	197.47	
		= 1.00 x 0.80 x 36.75 x 2	58.80	
		sub total	256.27	
		SUMMARY	525.87	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 21 - 09 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
3.2 (4)	Structure Excavation to a depth			
	greater than 2 m but not	A1 = 13.20 x 2.60 x 1.30	44.62	Abutment
	exceeding 4 m			
		A2 = 13.20 x 2.60 x 1.30	44.62	
		SUMMARY	89.23	

CONSTRUCTION COST ESTIMATE WORKSHEET

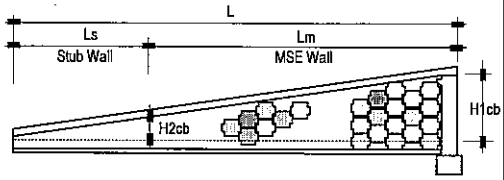
PROJECT : ..... FLYOVER
NORTH JAVA CORRIDOR FLYOVER PROJECT
KATAHIRA AND ENGINEERS INTERNATIONAL

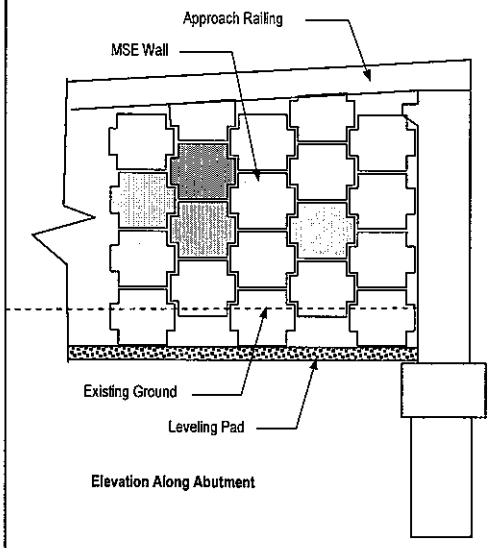
PETERONGAN FLYOVER

Item No.	Description	Unit	Main Road / Flyover	Right Service Road	Left Service Road	Total
	Division 3 - EARTHWORKS					
3.2(1)	Borrow Materials	cum.	10,225.37			10,225.37
3.1(22)	Subgrade Preparation in Earth Cut	sqm.	2,097.65	3,385.92	3,331.03	8,814.60
3.1(23)	Subgrade Preparation on Embankment	sqm.	4,279.25			4,279.25
SS 3.4(1)	Machanical Stabilized Earthwall and Accessories	sqm.	2,071.77			2,071.77
	Division 4 - PAVEMENT WIDENING AND SHOULDERS					
4.2	Aggregate SubBase Class B	cum.	119.58	36.11	29.49	185.18
	Division 5 - GRANULAR PAVEMENT					
5.1.1	Aggregate SubBase Class A	cum.	1,528.37	876.35	872.80	3,277.52
5.1.2	Aggregate SubBase Class B	cum.	2,587.59	995.31	979.70	4,562.60
	Division 6 - ASPHALT PAVEMENT					
6.1.1	Prime Coat	Lit.	5,959.21	2,492.25	2,517.30	10,968.76
6.1.2	Tact Coat	Lit.	11,511.50	3,014.48	3,041.03	17,567.01
6.3.5	Asphalt Concrete Wearing Course (AC-WC)	tonne	1,321.74	348.70	351.24	2,021.68
6.3.6	Asphalt Concrete Binder Course (AC-BC)	tonne	1,106.55	339.97	342.37	1,788.89
6.3.7	Asphalt Concrete Base (AC-Base)	tonne	1,352.23	559.18	563.18	2,474.59

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING





Elevation Along Abutment

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

3.1(13) - Embankment with Materials from Borrow Excavation

I. At Abutment A2

A. Along MSE Wall

Input Data:

H1cb =	5.362 m.	Ht. Borrow Materials at the start of MSE Wall (ave.)
H2cb =	0.872 m.	Ht. Borrow Materialsl at the end of MSE Wall
W =	12.419 m.	Width of Borrow Materials
Lm =	120.000 m.	Total length of MSE Wall

Volume(m) = (H1cb + H2cb)/2 x W x Lm = **4,645.20** cum.

B. Along Stub Wall

Input Data:

H2cb =	0.872 m.	Ht. Borrow Materials at the start of Stub Wall
H3cb =	0.000 m.	Ht. Borrow Materialsl at the end of Stub Wall
W =	12.000 m.	Width of Borrow Materials
Ls =	73.750 m.	Total length of MSE Wall

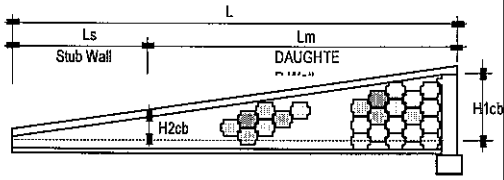
Volume(s) = (H2cb + H3cb)/2 x W x Lm = **385.86** cum.

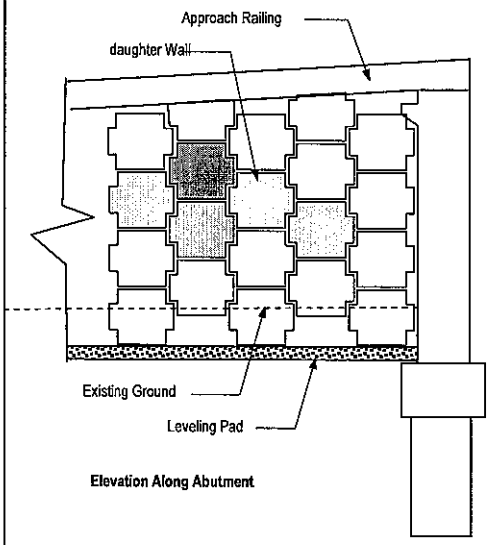
Total Volume of Borrow Materials along Approach B

Vtb = 5,031.06 cum.

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING





Elevation Along Abutment

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

3.1(13) - Embankment with Materials from Borrow Excavation

I. At Abutment A1

A. Along MSE Wall

Input Data:

H1cb =	5.802 m.	Ht. Borrow Materials at the start of MSE Wall
H2cb =	0.902 m.	Ht. Borrow Materialsl at the end of MSE Wall
W =	12.419 m.	Width of Borrow Materials
Lm =	120.000 m.	Total length of MSE Wall

Volume(m) = $(H1cb + H2cb)/2 \times W \times Lm$ = 4,995.42 cum.

B. Along Stub Wall

Input Data:

H2cb =	0.902 m.	Ht. Borrow Materials at the start of Stub Wall
H3cb =	0.000 m.	Ht. Borrow Materialsl at the end of Stub Wall
W =	12.000 m.	Width of Borrow Materials
Ls =	36.750 m.	Total length of Stub Wall

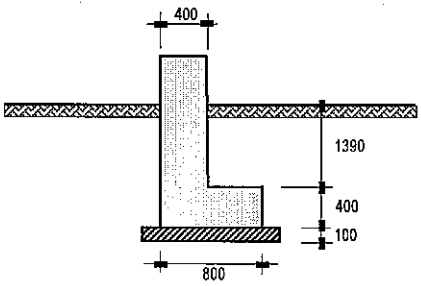
Volume(s) = $(H2cb + H3cb)/2 \times W \times Lm$ = 198.89 cum.

Total Volume of Borrow Materials along Approach A

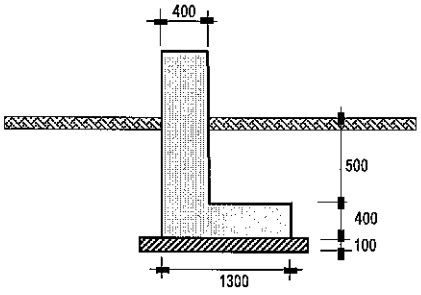
Vta = 5,194.31 cum.

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS



Section 1 at End of Stubwall



Section 2 at Beg. of Stub Wall

Item No. 3.2(2) - Structural Backfill

Input Data: At Approach A Side of Flyover

for excavation (Section 1)

Lwf1 =	8.750	m
Wwf1 =	0.800	m
twf1 =	0.400	m
Tlc1 =	0.100	m
h1 =	1.390	m

for excavation (Section 2)

Lwf2 =	8.000	m
Wwf2 =	1.300	m
twf 2=	0.400	m
Tlc2 =	0.100	m
h2 =	0.500	m

Volume of Backfill = (Volume of Excavation - Volume of Concrete & Lean Conc.)

1.0 Excavation for section 1

Vol. of Exc.= (8.750 + 0.450) x (0.100 + 0.400 + 1.390)

x (0.800 + 0.900) = 29.560 cum.

2.0 Excavation for section 2

Vol. of Exc.= (8.000 + 0.450) x (0.100 + 0.400 + 0.500)

x (1.300 + 0.900) = 18.590 cum.

3.0 Volume of Concrete for section 1

Vol of Conc.= { (0.800 x 0.400) + (0.400 x 1.390)

+ (0.100 x 1.000) } x 8.750 = 8.540 cum.

4.0 Volume of Concrete for section 2

Vol of Conc.= { (1.300 x 0.400) + (0.400 x 0.500)

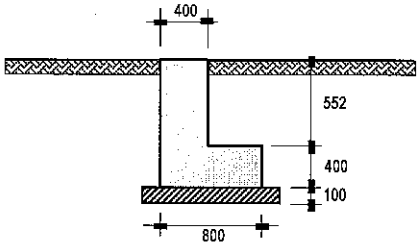
+ (0.100 x 1.500) } x 8.000 = 6.960 cum.

Volume of Backfill = 32.650 x 2 side

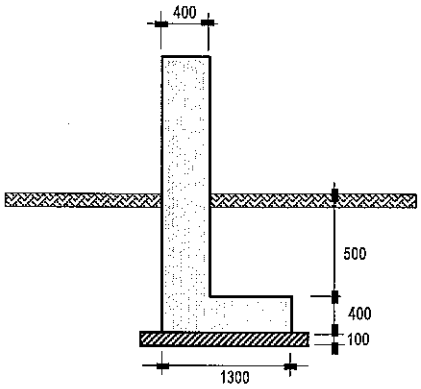
Volume of Backfill = 65.300 cum.

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS



Section 1 at End of Stubwall



Section 2 at Beg. of Stub Wall

Item No. 3.2(2) - Structural Backfill

Input Data: At Approach B Side of Flyover

for excavation (Section 1)

Lwf1 =	20.1014	m
Wwf1 =	0.800	m
twf1 =	0.400	m
Tlc1 =	0.100	m
h1 =	0.552	m

for excavation (Section 2)

Lwf2 =	20.101	m
Wwf2 =	1.300	m
twf 2=	0.400	m
Tlc2 =	0.100	m
h2 =	0.500	m

Volume of Backfill = (Volume of Excavation - Volume of Concrete & Lean Conc.)

1.0 Excavation for section 1

Vol. of Exc.= (20.101 + 0.450) x (0.100 + 0.400 + 0.552)

x (0.800 + 0.900) = 36.753 cum.

2.0 Excavation for section 2

Vol. of Exc.= (20.101 + 0.450) x (0.100 + 0.400 + 0.500)

x (1.300 + 0.450) = 35.964 cum.

3.0 Volume of Concrete for section 1

Vol of Conc.= (0.800 x 0.400) + (0.400 x 0.552)

+ (0.100 x 1.000) x 20.101 = 12.881 cum.

4.0 Volume of Concrete for section 2

Vol of Conc.= (1.300 x 0.400) + (0.400 x 0.500)

+ (0.100 x 1.500) x 20.101 = 17.488 cum.

Volume of Backfill =	**42.348**	x	**2**	**side**
Volume of Backfill =	**84.696**	**cum.**		
Total =	**150.000**	**cum.**		

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 9/23/2006 12:16	Sheet : of	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING

CALCULATION

Peterongan Fly Over - Contract Package 3

REMARKS

Item No. 3.2 (3) - Permeable backfill

MAIN ROAD

STA	LEFT SIDE AREA	AVE. LEFT AREA	DISTANCE			VOLUME
			START	END	LENGTH	
0+820.000	0.387	0.194	0+809.825	0+820.000	10.175	1.969
0+840.000	0.417	0.209	0+820.000	0+840.000	20.000	4.170
0+860.000	0.426	0.213	0+840.000	0+860.000	20.000	4.260
0+880.000	0.372	0.186	0+860.000	0+889.912	29.912	5.564
0+920.000	0.385	0.193	0+916.010	0+927.743	11.733	2.259
SUB TOTAL LEFT VOLUME						18.221

RIGHT SIDE AREA	AVE. RIGHT AREA	DISTANCE			VOLUME
		START	END	LENGTH	
0.770	0.385	0+055.703	0+127.751	72.048	27.746
1.099	0.935	0+134.689	0+185.000	50.311	47.021
SUB TOTAL RIGHT VOLUME					74.766

SERVICE ROAD

STA	LEFT SIDE AREA	AVE. LEFT AREA	DISTANCE			VOLUME
			START	END	LENGTH	
0+383.096	1.250	0.000	0+383.096	0+385.444	2.348	0.000
0+453.229	0.979	1.114	0+385.444	0+453.229	67.785	75.541
SUB TOTAL LEFT VOLUME						75.541

RIGHT SIDE AREA	AVE. RIGHT AREA	DISTANCE			VOLUME
		START	END	LENGTH	
0.985	0.493	0+381.500	0+384.921	3.421	1.685
0.580	0.783	0+384.921	0+397.427	12.506	9.786
SUB TOTAL RIGHT VOLUME					11.471

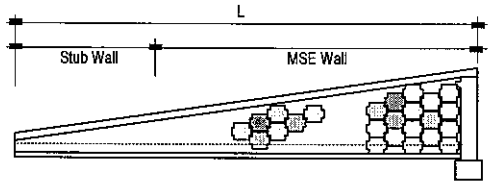
TOTAL	= 180.000 cum.	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS
	Item No. 3.1(22) - Subgrade Preparation in Earthcut	
	A. Along Approach A	
	Subgrade Preparation for Widening :	
	From AutoCad Area :	
	A. For Right Service Road	
	Area 1 = 1,196.28	
	Area 2 = 965.34	
	Area 3 = 1,224.30	Additional Area
	Sub-Total= 3,385.92 sqm.	
	B. For Left Service Road	
	Area 1 = 1249.21	
	Area 2 = 77.47	
	Area 3 = 905.44	
	Area 4 = 1098.91	Additional Area
	Sub-Total= 3,331.03 sqm.	
	C. For Main Road	
	At Approach A	
	Area 1 = 133.77	
	Area 2 = 137.51	
	Area 3 = 183.45	
	Area 4 = 108.09	
	Area 5 = 604.31	Additional Area
	Sub-Total= 1,167.13 sqm.	
	At Approach B	
	Area 1 = **205.05**	
	Area 2 = **211.70**	
	Area 3 = **513.77**	Additional Area
	Sub-Total= 930.52 sqm.	
	Total Area= 8814.600 sqm.	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS



Peterongan Flyover - Contract Package 3

Item No. 3.1(23) - Subgrade Preparation on Embankment

A. Along Approach A

Input Data:

W =	12.209 m.	Ave .Width of Borrow Materials	
Lm =	156.750 m.	Total length of Approach	
Area 1 =	12.209	x	156.750
Area 1 =	**1,913.76**	**sqm.**	

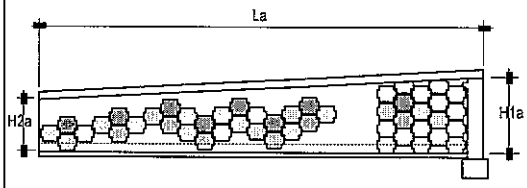
B. Along Approach B

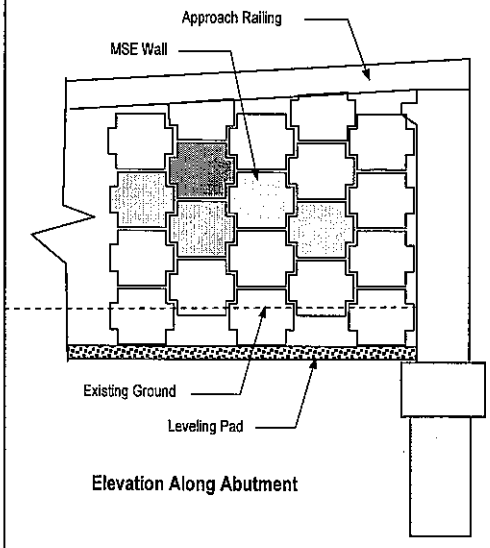
Input Data:

W =	12.209 m.	Ave .Width of Borrow Materials	
Lm =	193.750 m.	Total length of Approach	
Area 2 =	12.209	x	193.750
Area 2 =	**2,365.49**	**sqm.**	
Total Area =	**4,279.25**	**sqm.**	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING





Elevation Along Abutment

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

SS:3.4(1) : Mechanical Stabilized Earthwall and Accessories (MSE)

I. At Abutment A2

Input Data:

A. At Right Side of Abutment A2

H1ar =	6.112 m.	Ht. of MSE Wall at the start of MSE Wall
H2ar =	1.622 m.	Ht. of MSE Wall at the end of MSE Wall
Lar =	120.000 m.	Total length of MSE Wall

Area(r) = (6.112 + 1.622) / 2.00 x 120.000 = 464.04 sqm.

Input Data:

B. At Left Side of Abutment A2

H1al =	6.112 m.	Ht. of MSE Wall at the start of MSE Wall
H2al =	1.622 m.	Ht. of MSE Wall at the end of MSE Wall
Lal =	120.000 m.	Total length of MSE Wall

Area(l) = (6.112 + 1.622) / 2.00 x 120.000 = 464.04 sqm.

Input Data:

C. Along Abutment A2

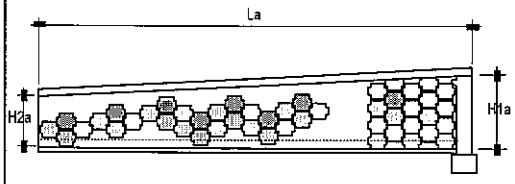
H1al =	6.112 m.	Ht. of MSE Wall at the start of MSE Wall
W1 =	12.700 m.	Width of MSE Wall at Abutment A1

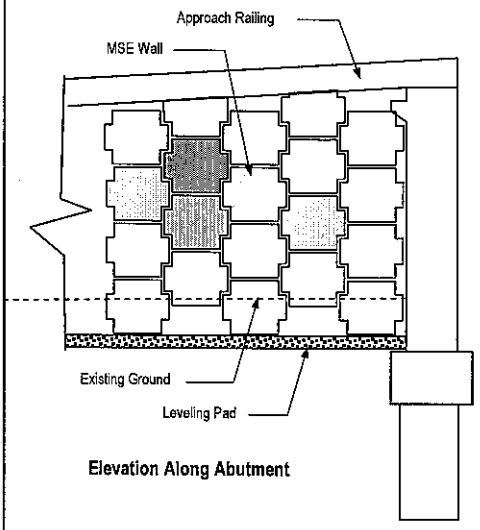
Area = (6.112 x 12.700) = 77.62 sqm.

Total Area = 1,005.700 **sqm.**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS
	Peterongan Flyover - Contract Package 3	





Elevation Along Abutment

SS.3.4(1) - Mechanical Stabilized Earthwall and Accessories (MSE)

I. At Abutment A1

Input Data:

A. At Right Side of Abutment A1

H1ar =	6.552 m.	Ht. of MSE Wall at the start of MSE Wall
H2ar =	1.652 m.	Ht. of MSE Wall at the end of MSE Wall
Lar =	120.000 m.	Total length of MSE Wall

Area(r) = (6.552 + 1.652) / 2.00 x 120.000 = **492.24 sqm.**

Input Data:

B. At Left Side of Abutment A1

H1al =	6.552 m.	Ht. of MSE Wall at the start of MSE Wall
H2al =	1.625 m.	Ht. of MSE Wall at the end of MSE Wall
Lal =	120.000 m.	Total length of MSE Wall

Area(l) = (6.552 + 1.625) / 2.00 x 120.000 = **490.62 sqm.**

Input Data:

C. Along Abutment A1

H1al =	6.552 m.	Ht. of MSE Wall at the start of MSE Wall
W1 =	12.700 m.	Width of MSE Wall at Abutment A1

Area = (6.552 x 12.700) = **83.21 sqm.**

Total Area = 1,066.070 sqm.

DIVISION 4.
Pavement Widening and Shoulders

DIVISION 5.
Granular Pavement

DIVISION 6.
Asphalt Pavement

CONSTRUCTION COST ESTIMATE WORKSHEET

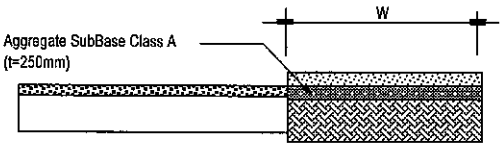
PROJECT : ..... FLYOVER
NORTH JAVA CORRIDOR FLYOVER PROJECT
KATAHIRA AND ENGINEERS INTERNATIONAL

PETERONGAN FLYOVER

Item No.	Description	Unit	Main Road / Flyover	Right Service Road	Left Service Road	Total
	Division 4 - PAVEMENT WIDENING AND SHOULDERS					
4.2.1	Aggregate SubBase Class B	cum.	119.58	36.11	29.49	185.18
	Division 5 - GRANULAR PAVEMENT					
5.1.1	Aggregate SubBase Class A	cum.	1,528.37	876.35	872.80	3,277.52
5.1.2	Aggregate SubBase Class B	cum.	2,587.59	995.31	979.70	4,562.60
	Division 6 - ASPHALT PAVEMENT					
6.1.1	Prime Coat	Lit.	5,959.21	2,492.25	2,517.30	10,968.76
6.1.2	Tact Coat	Lit.	11,511.50	3,014.48	3,041.03	17,567.01
6.3.5	Asphalt Concrete Wearing Course (AC-WC)	tonne	1,321.74	348.70	351.24	2,021.68
6.3.6	Asphalt Concrete Binder Course (AC-BC)	tonne	1,106.55	339.97	342.37	1,788.89
6.3.7	Asphalt Concrete Base (AC-Base)	tonne	1,352.23	559.18	563.18	2,474.59

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

	SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS



Section of PCC Shoulder

Item No. 4.2 - Aggregate SubBase Class A

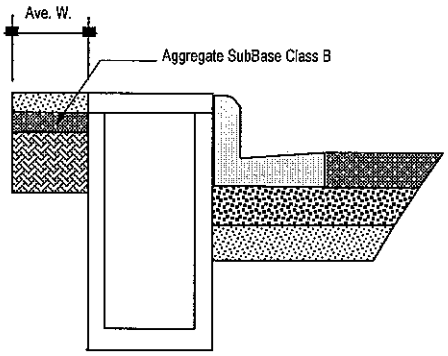
Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

Data :		
Thickness =	0.250 m	
From AutoCad Area :		
A. At Right Service Road		
Area Right =	41.22 sqm.	
Volume =	**10.31 cum**	
B. At Left Service Road		
Area Left =	31.76 sqm.	
Volume =	**7.94 cum**	
Total Volume =	**18.25 cum**	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



Section of Aggregate Subbase Class B Left

CALCULATION

Peferongan Flyover - Contract Package 3

REMARKS

Item No. 4.2.1 - Aggregate SubBase Class B — Location : At Shoulder

Note: See Detailed Construction Layout Plan

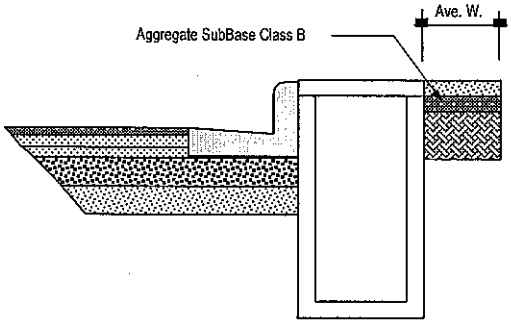
Dwg. # PRD-019 - PRD-024 for reference.

At Left Service Road

Length (m)	Ave. Width (m)	Thickness (m)	Volume (m^3)
245.147	0.627	0.100	15.371
236.000	0.404	0.100	9.534
73.000	0.628	0.100	4.584
		Total Volume =	**29.49 cum**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



Section of Aggregate Subbase Class B Right

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

Item No. 4.2.1 - Aggregate SubBase Class B

Location : At Shoulder

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

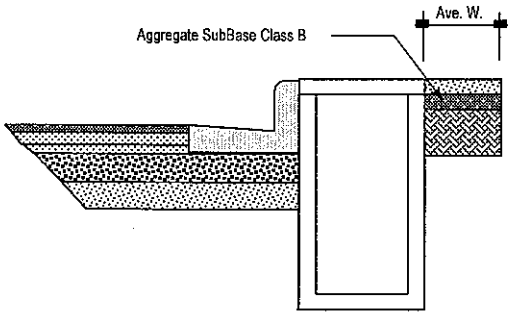
A. Approach A

At Right Side

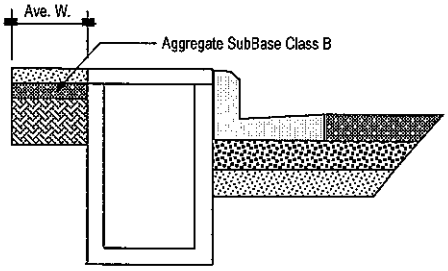
Length (m)	Ave. Width (m)	Thickness (m)	Volume (m^3)
255.881	0.531	0.100	13.587
69.122	0.823	0.100	5.689
276.000	0.610	0.100	16.836
		Total Volume =	**36.11 cum**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



Section of Aggregate Subbase Class B Right



Section of Aggregate Subbase Class B Left

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

Item No. 4.2.1 - Aggregate SubBase Class B — Location : At Shoulder

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

A. Approach A

At Right Side

Length (m)	Ave. Width (m)	Thickness (m)	Volume (m^3)
89.750	0.403	0.100	3.617
29.000	1.103	0.100	3.199
		Sub-Total =	6.82 cum

At Left Side

Length (m)	Ave. Width (m)	Thickness (m)	Volume (m^3)
69.229	1.302	0.100	9.014
20.500	1.302	0.100	2.669
		Sub-Total =	11.68 cum

A. Approach B

At Right Side

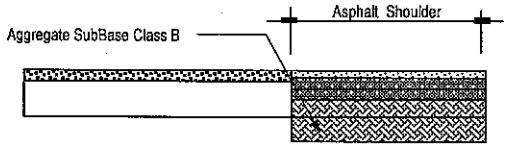
Length (m)	Ave. Width (m)	Thickness (m)	Volume (m^3)
144.000	1.253	0.100	18.043
		Sub-Total =	18.04 cum

At Left Side

Length (m)	Ave. Width (m)	Thickness (m)	Volume (m^3)
136.000	1.073	0.100	14.593
		Sub-Total =	14.593 cum

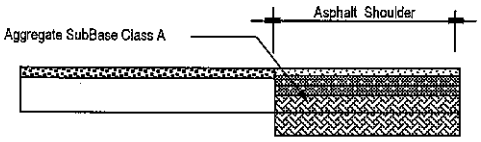
Total Volume = 51.133 cum.

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

	SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS
	 **Section of PCC Shoulder**	**Item No. 4.2.1 - Aggregate SubBase Class B**	Location: At Main Rd. Shoulder
		Note: See Detailed Construction Layout Plan Dwg. # PRD-019 - PRD-024 for reference.	
		At Left service Road	
		Data :	
		Length = 85.56	
		Width = 2.00	
		Thickness = 0.40 m	
		Total Volume = 68.45 cum	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

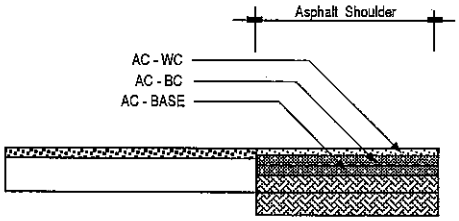
SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS
	Item No. 4.2 - Aggregate SubBase Class A	Location: At Main Rd.
		Shoulder
	Note: See Detailed Construction Layout Plan	
	Dwg. # PRD-019 - PRD-024 for reference.	
	At Left service Road	
	Data :	
	Length = 85.56	
	Width = 2.00	
	Thickness = 0.300 m	
	Total Volume = 51.34 cum	



Section of PCC Shoulder

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS
	Peterongan Flyover - Contract Package 3	



Section of Asphalt Shoulder

Location: At Main Rd. Shoulder

Note: See Detailed Construction Layout Plan
Dwg. # PRD-019 - PRD-024 for reference.

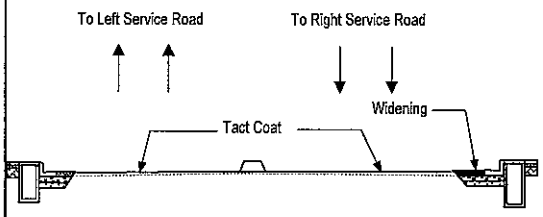
At Main Road

Data :

Length =	85.56	m					
Width =	2.00	m					
Thickness:							
AC - WC =	0.04	m					
AC - BC =	0.06	m					
AC - BASE =	0.100	m					
For AC - WC :							
Total Wt =	85.56	x 2.00	x 0.04	x 2.30	=	**15.74 Ton**	
For AC - BC :							
Total Wt =	85.56	x 2.00	x 0.06	x 2.30	=	**23.61 Ton**	
For AC - BASE :							
Total Wt =	85.56	x 2.00	x 0.100	x 2.30	=	**39.36 Ton**	
For Prime Coat :							
Total Vol. =	85.56	x 2.00	x	1.00 lit/s	=	**171.12 lit.**	
For Tact Coat :							
Total Vol. =	85.56	x 2.00	x 0.50 lit/sqm.	x 2.00	=	**171.12 lit.**	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS



Section of Road Widening

Item No. 6.1.2 - Tact Coat — Pavement Overlay

Left Service Road

Note: See Detailed Construction Layout Plan

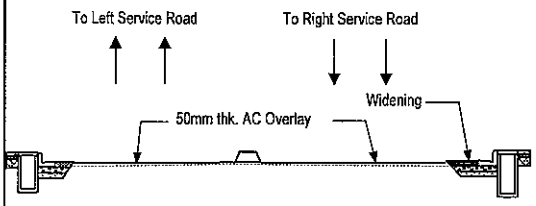
Dwg. # PRD-019 - PRD-024 for reference.

Input Data :

Area from AutoCad					
Area =	1,407.67	sqm.			
Area to be deducted from Auto Cad Area :					
Ave. Width =	0.868	m			
Total Length =	415.00	m			
Area =	360.22	sqm.			
Total Area =	**1,047.45**	**sqm.**			
Volume =	1,047.45 sqm.	x	0.5 lit/sqm.		**= 523.73 lit.**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS



Section of Road Widening

Item No. 6.3.5 - Asphalt Concrete Wearing Course (AC - WC) — Pavement Overlay

Left Service Road

Note: See Detailed Construction Layout Plan

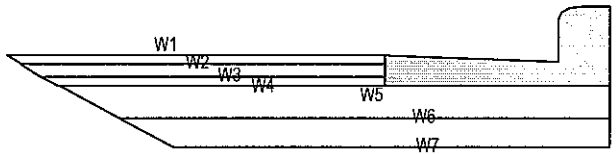
Dwg. # PRD-019 - PRD-024 for reference.

At Left Service Road

Input Data :

Area from AutoCad					
Area =	1,407.67	sqm.			
Area to be deducted from Auto Cad Area :					
Ave. Width =	0.868	m			
Total Length =	415.00	m			
Area =	360.22	sqm.			
Total Area =	**1,047.45**	**sqm.**			
thickness =	0.05 m				
Wt =	1,047.45	x 0.050	x 2.30		**= 120.46 Ton**

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



Note:

AC - WC = Asphalt Concrete Wearing Course
AC - BC = Asphalt Concrete Binder Course
AC - Base = Asphalt Concrete Base
SBC - Type A = Sub-Base Course (Agg. Class A)
SBC - Type B = Sub-Base Course (Agg. Class B)

	Thickness
AC - WC	0.040
AC - BC	0.060
AC - Base	0.100
SBC (Type -A)	0.300
SBC (Type -B)	0.350

Peterongan Flyover (At Left Service Road)

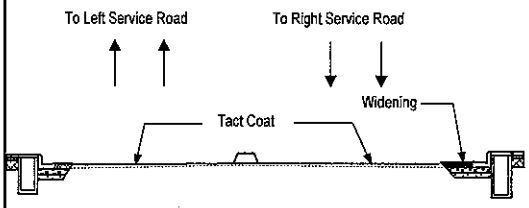
STATION	DISTANCE	AC - WC		AC - BC		AC - Base		SBC (Type A)		SBC (Type B)		Tonne	Volume		PAVEMENT			
		width		width		width		width		width		AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
		W1	W2	W2	W3	W3	w4	w5	w6	w6	w7							
00 + 185.00		5.472	5.431	5.431	5.370	5.370	5.268	6.118	6.131	6.131	6.131							
00 + 200.00	15.00	5.000	5.000	5.000	5.000	5.000	5.000	6.198	6.756	6.756	7.045	17.80	28.35	34.21	78.54	78.54	10.76	7.21
00 + 220.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.198	6.756	6.756	7.178	23.00	38.86	48.54	100.00	100.00	13.80	9.20
00 + 240.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.215	23.00	37.93	46.26	100.00	100.00	13.80	9.20
00 + 260.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.76	100.00	100.00	13.80	9.20
00 + 280.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 300.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 320.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 340.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 360.00	20.00	5.109	5.109	5.109	5.109	5.109	5.139	6.186	6.426	6.426	6.769	23.29	37.42	44.97	101.09	101.09	13.95	9.30
00 + 380.00	20.00	5.289	5.289	5.289	5.289	5.289	5.289	6.336	6.575	6.575	6.919	23.95	38.28	46.71	103.98	103.98	14.35	9.57
00 + 400.00	20.00	5.064	5.026	5.026	4.496	4.496	4.860	5.560	5.254	5.254	4.896	22.92	35.59	41.38	103.53	103.53	13.87	9.51
00 + 420.00	20.00	3.116	3.074	3.074	3.011	3.011	2.908	3.608	3.301	3.301	2.944	17.57	26.58	28.69	81.80	81.80	10.77	7.49
00 + 440.00	20.00	2.110	2.068	2.068	2.004	2.004	1.900	2.600	2.294	2.294	1.938	11.30	17.70	18.33	52.26	52.26	7.01	4.77
00 + 460.00	20.00	4.478	4.478	4.478	4.478	4.478	4.478	4.478	4.478	4.478	4.478	14.79	20.78	23.08	65.88	65.88	8.99	6.04
00 + 480.00	20.00	2.657	2.625	2.625	2.563	2.563	2.463	2.250	2.157	2.157	1.799	16.08	20.04	22.60	71.35	71.35	9.76	6.55
00 + 500.00	20.00	0.857	0.817	0.817	0.756	0.756	0.654	1.356	1.029	1.029	0.701	7.40	10.19	9.95	35.14	35.14	4.67	3.20

Peterongan Flyover (At Left Service Road)

STATION	DISTANCE	AC - WC		AC - BC		AC - Base		SBC (Type A)		SBC (Type B)		Tonne	Volume		PAVEMENT			
		width		width		width		width		width		AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
		W1	W2	W2	W3	W3	w4	w5	w6	w6	w7							
00 + 520.00	20.00	2.076	2.055	2.055	1.922	1.922	1.892	2.592	2.866	2.866	1.929	6.01	11.76	11.42	29.33	29.33	3.83	2.67
00 + 540.00	20.00	3.232	3.214	3.214	3.155	3.155	3.051	3.751	3.445	3.445	3.088	11.52	18.98	19.82	53.08	53.08	7.14	4.87
00 + 560.00	20.00	2.773	2.773	2.773	2.672	2.672	2.599	3.299	2.993	2.993	2.636	13.20	20.23	21.28	60.05	60.05	8.15	5.52
00 + 580.00	20.00	2.506	2.489	2.489	2.424	2.424	2.322	3.022	2.716	2.716	2.359	11.52	18.05	18.73	52.79	52.79	7.15	4.85
00 + 600.00	20.00	3.287	3.258	3.258	3.197	3.197	3.095	3.795	3.489	3.489	3.131	12.69	19.53	20.47	57.93	57.93	7.84	5.31
00 + 620.00	20.00	4.370	4.005	4.005	3.944	3.944	3.841	4.541	4.235	4.235	3.878	16.19	24.09	25.78	76.57	76.57	9.94	6.86
00 + 640.00	20.00	4.251	4.219	4.219	4.158	4.158	4.056	4.756	4.450	4.450	4.093	18.40	26.97	29.15	86.21	86.21	11.26	7.75
00 + 660.00	20.00	4.391	4.347	4.347	4.284	4.284	4.184	4.884	4.578	4.578	4.224	19.18	28.00	30.35	86.42	86.42	11.74	7.92
00 + 680.00	20.00	4.372	4.347	4.347	4.286	4.286	4.184	4.884	4.578	4.578	4.221	19.48	28.39	30.80	87.63	87.63	11.91	8.03
00 + 700.00	20.00	4.375	4.355	4.355	4.293	4.293	4.191	4.891	4.585	4.585	4.228	19.50	28.41	30.82	87.47	87.47	11.92	8.03
00 + 720.00	20.00	4.463	4.441	4.441	4.378	4.378	4.278	4.917	4.672	4.672	4.315	19.71	28.60	31.15	88.38	88.38	12.05	8.11
00 + 740.00	20.00	4.518	4.495	4.495	4.435	4.435	4.332	5.032	4.726	4.726	4.369	20.04	29.02	31.64	89.81	89.81	12.25	8.24
00 + 760.00	20.00	4.439	4.411	4.411	4.350	4.350	4.247	4.947	4.641	4.641	4.284	19.97	29.02	31.54	89.57	89.57	12.21	8.22
00 + 780.00	20.00	4.460	4.421	4.421	4.360	4.360	4.257	4.957	4.651	4.651	4.294	19.80	28.79	31.27	88.99	88.99	12.10	8.16
00 + 800.00	20.00	4.490	4.445	4.445	4.384	4.384	4.281	5.131	4.953	4.953	4.387	19.87	29.54	32.00	89.50	89.50	12.15	8.20
										TOTAL		563.18	866.15	979.70	2,517.30	2,517.30	342.37	230.78

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS
	Peterongan Flyover - Contract Package 3	



Section of Road Widening

Item No. 6.1.2 - Tact Coat — Pavement Overlay

Right Service Road

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

At Rigth Service Road

Input Data :

Area from AutoCad

Area =	1,392.46	sqm.

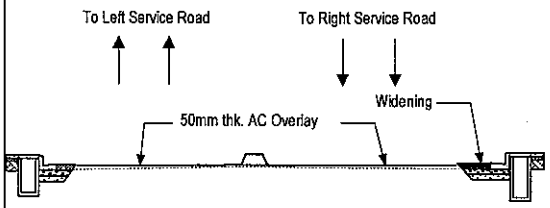
Area to be deducted from Auto Cad Area :

Ave. Width =	0.87	m
Total Length =	400.00	m
Area =	348.00	sqm.
Total Area =	**1,044.46**	**sqm.**

Volume =	1,044.46 sqm.	x	0.5 lit/sqm.	**= 522.23 lit.**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION Peterongan Flyover - Contract Package 3	REMARKS



Section of Road Widening

Item No. 6.3.5 - Asphalt Concrete Wearing Course (AC - WC) — Pavement Overlay

Right Service Road

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

At Rigth Service Road

Input Data :

Area from AutoCad

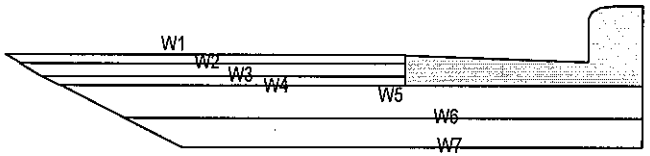
Area =	1,392.46	sqm.

Area to be deducted from Auto Cad Area :

Ave. Width =	0.87	m
Total Length =	400.00	m
Area =	348.00	sqm.
Total Area =	**1,044.46**	**sqm.**
thickness =	0.05	m

Wt = (1,044.46 x 0.050 x 2.30) = **120.11 Ton**

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



Note:

AC - WC = Asphalt Concrete Wearing Course
AC - BC = Asphalt Concrete Binder Course
AC - Base = Asphalt Concrete Base
SBC - Type A = Sub-Base Course (Agg. Class A)
SBC - Type B = Sub-Base Course (Agg. Class B)

	Thickness
AC - WC	0.040
AC - BC	0.060
AC - Base	0.100
SBC (Type -A)	0.300
SBC (Type -B)	0.350

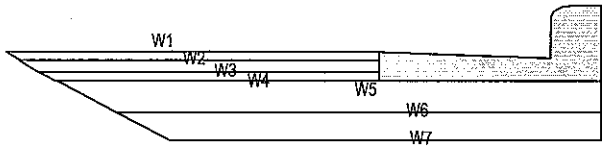
Peterongan Flyover (At Right Service Road)

STATION	DISTANCE	AC - WC		AC - BC		AC - Base		SBC (Type A)		SBC (Type B)		Tonne	Volume		PAVEMENT			
		width		width		width		width		width		AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
		W1	W2	W2	W3	W3	w4	w5	w6	w6	w7							
00 + 185.00		6.003	5.962	5.962	5.899	5.899	5.799	6.649	6.663	6.663	6.663							
00 + 200.00	15.00	5.000	5.000	5.000	5.000	5.000	5.000	6.198	6.756	6.756	7.179	18.71	29.55	35.78	82.52	82.52	11.31	7.58
00 + 220.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.213	23.00	37.93	46.26	100.00	100.00	13.80	9.20
00 + 240.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.215	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 260.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.76	100.00	100.00	13.80	9.20
00 + 280.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 300.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 320.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 340.00	20.00	5.000	5.000	5.000	5.000	5.000	5.000	6.048	6.287	6.287	6.214	23.00	37.01	43.75	100.00	100.00	13.80	9.20
00 + 360.00	20.00	5.109	5.109	5.109	5.109	5.109	5.139	6.186	6.426	6.426	6.769	23.29	37.42	44.97	101.09	101.09	13.95	9.30
00 + 380.00	20.00	5.289	5.289	5.289	5.289	5.289	5.289	6.336	6.575	6.575	6.919	23.95	38.28	46.71	103.98	103.98	14.35	9.57
00 + 400.00	20.00	5.015	5.015	5.015	5.015	5.015	5.015	6.062	6.302	6.302	6.645	23.70	37.91	46.27	103.04	103.04	14.22	9.48
00 + 420.00	20.00	2.892	2.862	2.862	2.800	2.800	2.699	3.399	3.093	3.093	2.736	17.86	28.28	32.86	79.07	79.07	10.83	7.26
00 + 440.00	20.00	1.660	1.619	1.619	1.559	1.559	1.470	2.190	1.884	1.884	1.527	9.81	15.85	16.17	45.52	45.52	6.10	4.16
00 + 460.00	20.00	2.380	2.364	2.364	2.302	2.302	2.201	2.201	1.895	1.895	1.538	8.66	12.26	11.98	40.40	40.40	5.41	3.69
00 + 480.00	20.00	0.873	0.832	0.832	0.768	0.768	0.668	1.478	1.630	1.630	1.630	6.83	10.81	11.71	32.53	32.53	4.32	2.97

Peterongan Flyover (At Right Service Road)

STATION	DISTANCE	AC - WC		AC - BC		AC - Base		SBC (Type A)		SBC (Type B)		Tonne	Volume		PAVEMENT			
		width		width		width		width		width		AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
		W1	W2	W2	W3	W3	w4	w5	w6	w6	w7							
00 + 500.00	20.00	0.871	0.829	0.829	0.769	0.769	0.666	1.366	1.059	1.059	0.700	3.30	8.30	8.78	17.44	17.44	2.21	1.57
00 + 520.00	20.00	1.443	1.401	1.401	1.337	1.337	1.231	1.931	1.625	1.625	1.278	4.60	8.97	8.16	23.14	23.14	2.99	2.09
00 + 540.00	20.00	2.882	2.842	2.842	2.768	2.768	2.667	4.262	4.262	4.262	4.262	9.20	18.12	20.00	43.25	43.25	5.76	3.94
00 + 560.00	20.00	4.633	4.618	4.618	4.556	4.556	4.457	5.155	4.849	4.849	4.492	16.62	27.79	31.26	75.15	75.15	10.20	6.89
00 + 580.00	20.00	4.558	4.512	4.512	4.449	4.449	4.345	5.045	4.739	4.739	4.382	20.48	29.68	32.31	91.91	91.91	12.51	8.43
00 + 600.00	20.00	4.619	4.573	4.573	4.511	4.511	4.409	5.109	4.803	4.803	4.446	20.37	29.54	32.15	91.77	91.77	12.45	8.40
00 + 620.00	20.00	4.474	4.428	4.428	4.264	4.264	4.265	4.965	4.659	4.659	4.301	20.07	29.30	31.87	90.93	90.93	12.27	8.32
00 + 640.00	20.00	4.441	4.394	4.394	4.332	4.332	4.230	4.930	4.624	4.624	4.267	19.65	28.77	31.24	89.15	89.15	12.02	8.16
00 + 660.00	20.00	4.304	4.261	4.261	4.201	4.201	4.099	4.799	4.492	4.492	4.135	19.39	28.27	30.66	87.45	87.45	11.86	8.00
00 + 680.00	20.00	4.157	4.117	4.117	4.056	4.056	3.954	4.654	4.348	4.348	3.990	18.76	27.44	29.69	84.61	84.61	11.48	7.75
00 + 700.00	20.00	4.258	4.216	4.216	4.155	4.155	4.053	4.752	4.446	4.446	4.089	18.65	27.30	29.53	84.15	84.15	11.42	7.70
00 + 720.00	20.00	4.337	4.299	4.299	4.238	4.238	4.136	4.836	4.530	4.530	4.172	19.07	27.85	30.16	85.95	85.95	11.67	7.87
00 + 740.00	20.00	4.241	4.201	4.201	4.140	4.140	4.038	4.738	4.432	4.432	4.075	19.03	27.80	30.12	85.78	85.78	11.65	7.86
00 + 760.00	20.00	4.224	4.185	4.185	4.124	4.124	4.022	4.872	4.885	4.885	4.159	18.77	28.39	30.71	84.65	84.65	11.49	7.75
00 + 780.00	20.00	4.238	4.200	4.200	4.137	4.137	4.037	4.887	4.900	4.900	4.196	18.77	29.32	31.75	84.62	84.62	11.49	7.75
00 + 800.00	20.00	4.177	4.131	4.131	4.070	4.070	3.968	4.818	4.832	4.832	4.188	18.64	29.16	31.70	84.15	84.15	11.41	7.70
										TOTAL		559.18	876.35	995.31	2,492.25	2,492.25	339.97	228.59

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



Note:

AC - WC = Asphalt Concrete Wearing Course
AC - BC = Asphalt Concrete Binder Course
AC - Base = Asphalt Concrete Base
SBC - Type A = Sub-Base Course (Agg. Class A)
SBC - Type B = Sub-Base Course (Agg. Class B)

	Thickness
AC - WC	0.040
AC - BC	0.060
AC - Base	0.100
SBC (Type -A)	0.300
SBC (Type -B)	0.350

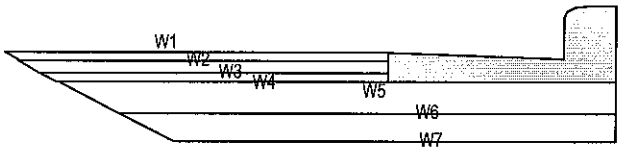
Peterongan Flyover (At Left Service Road)

STATION	DISTANCE	AC - WC		AC - BC		AC - Base		SBC (Type A)		SBC (Type B)		Tonne	Volume		PAVEMENT			
		width		width		width		width		width		AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
		W1	W2	W2	W3	W3	w4	w5	w6	w6	w7							
00 + 000.00		-	-	-	-	-	-	-	-	-	-							
00 + 020.00		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
00 + 040.00		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
00 + 060.00		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
00 + 090.00		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
00 + 100.00	10.00	2.054	2.012	2.012	1.950	1.950	1.850	2.700	2.713	2.713	2.713	2.19	4.06	4.75	10.27	10.27	1.37	0.94
00 + 120.00	20.00	3.232	3.191	3.191	3.130	3.130	3.028	3.878	3.878	3.878	3.878	11.45	19.75	23.07	52.86	52.86	7.10	4.82
00 + 140.00	20.00	4.391	4.350	4.350	4.289	4.289	4.187	5.037	5.050	5.050	5.050	16.83	26.76	31.25	76.23	76.23	10.32	6.98
00 + 160.00	20.00	4.240	4.240	4.240	4.240	4.240	4.240	4.240	4.240	4.240	4.240	19.50	27.85	32.52	86.31	86.31	11.81	7.92
00 + 180.00	20.00	5.472	5.431	5.431	5.370	5.370	5.268	6.118	6.131	6.131	6.131	21.99	31.09	36.30	97.12	97.12	13.30	8.92
00 + 185.00	5.00	5.000	5.000	5.000	5.000	5.000	5.000	6.198	6.756	6.756	7.045	5.93	9.45	11.40	26.18	26.18	3.59	2.40
00 + 800.00		4.490	4.445	4.445	4.384	4.384	4.281	5.131	4.953	4.953	4.387							
00 + 820.00	20.00	4.263	4.218	4.218	4.157	4.157	4.055	4.905	4.918	4.918	4.188	19.41	29.86	32.28	87.53	87.53	11.87	8.01
00 + 840.00	20.00	3.543	3.509	3.509	3.448	3.448	3.346	4.196	4.209	4.209	4.209	17.26	27.34	30.67	78.06	78.06	10.58	7.15
00 + 860.00	20.00	2.607	2.561	2.561	2.500	2.500	2.398	3.248	3.261	3.261	3.237	13.45	22.37	26.10	61.50	61.50	8.29	5.62
00 + 880.00	20.00	1.665	1.624	1.624	1.563	1.563	1.469	2.168	2.332	2.332	2.332	9.12	16.51	19.53	42.72	42.72	5.69	3.89
00 + 900.00	20.00	0.869	0.829	0.829	0.767	0.767	0.665	1.515	1.527	1.527	1.527	5.13	11.31	13.51	25.34	25.34	3.30	2.29
00 + 920.00	20.00	0.869	0.828	0.828	0.766	0.766	0.660	1.514	1.527	1.527	1.527	3.29	9.12	10.69	17.38	17.38	2.20	1.56
00 + 940.00	20.00	-	-	-	-	-	-	-	-	-	-	1.64	4.56	5.34	8.69	8.69	1.10	0.78
00 + 947.00	7.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
											TOTAL	147.19	240.03	277.41	670.19	670.19	90.52	61.28

PROJECT : .....FLYOVER

NORTH JAVA CORRIDOR FLYOVER PROJECT

KATAHIRA AND ENGINEERS INTERNATIONAL



Note:

AC - WC = Asphalt Concrete Wearing Course
AC - BC = Asphalt Concrete Binder Course
AC - Base = Asphalt Concrete Base
SBC - Type A = Sub-Base Course (Agg. Class A)
SBC - Type B = Sub-Base Course (Agg. Class B)

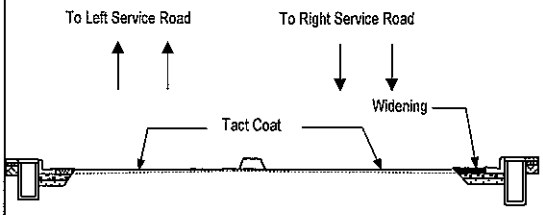
	Thickness
AC - WC	0.040
AC - BC	0.060
AC - Base	0.100
SBC (Type -A)	0.300
SBC (Type -B)	0.350

Peterongan Flyover Right Side (Main)

STATION	DISTANCE	AC - WC		AC - BC		AC - Base		SBC (Type A)		SBC (Type B)		Tonne	Volume		PAVEMENT			
		width		width		width		width		width		AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
		W1	W2	W2	W3	W3	w4	w5	w6	w6	w7							
00 + 000.00		-	-	-	-	-	-	-	-	-	-							
00 + 020.00	20.00	0.867	0.826	0.826	0.765	0.765	0.663	1.363	1.057	1.057	0.700	1.64	3.63	3.07	8.67	8.67	1.10	0.78
00 + 040.00	20.00	0.871	0.830	0.830	0.768	0.768	0.661	1.366	1.056	1.056	0.700	3.29	7.26	6.15	17.38	17.38	2.20	1.56
00 + 060.00	20.00	0.870	0.830	0.830	0.771	0.771	0.668	1.368	1.057	1.057	0.700	3.30	7.27	6.15	17.41	17.41	2.21	1.56
00 + 080.00	20.00	1.961	1.919	1.919	1.856	1.856	1.756	2.456	2.150	2.150	1.793	5.81	10.55	9.98	28.31	28.31	3.71	2.57
00 + 100.00	20.00	2.992	2.951	2.951	2.890	2.890	2.788	3.488	3.182	3.182	2.827	10.68	16.91	17.42	49.53	49.53	6.64	4.52
00 + 120.00	20.00	4.230	4.188	4.188	4.126	4.126	4.026	4.726	4.420	4.420	4.062	15.90	23.72	25.36	72.22	72.22	9.77	6.61
00 + 140.00	20.00	5.313	5.272	5.272	5.211	5.211	5.109	5.959	5.972	5.972	5.972	21.24	31.62	35.75	95.43	95.43	12.97	8.74
00 + 160.00	20.00	5.820	5.779	5.779	5.716	5.716	5.616	6.316	6.010	6.010	5.652	24.90	36.39	41.31	111.33	111.33	15.16	10.20
00 + 180.00	20.00	6.003	5.962	5.962	5.899	5.899	5.799	6.649	6.663	6.663	6.663	26.48	38.46	43.73	118.23	118.23	16.12	10.84
00 + 185.00	5.00	5.000	5.000	5.000	5.000	5.000	5.000	6.198	6.756	6.756	7.179	6.24	9.85	11.93	27.51	27.51	3.77	2.53
00 + 800.00		4.177	4.131	4.131	4.070	4.070	3.968	4.818	4.832	4.832	4.188							
00 + 820.00	20.00	4.281	4.240	4.240	4.179	4.179	4.076	4.926	4.940	4.940	4.940	18.74	29.27	33.08	84.58	84.58	11.47	7.74
00 + 840.00	20.00	3.505	3.462	3.462	3.401	3.401	3.299	4.149	4.163	4.163	4.163	17.20	27.27	31.86	77.86	77.86	10.54	7.12
00 + 860.00	20.00	2.650	2.605	2.605	2.541	2.541	2.441	3.291	3.305	3.305	3.305	13.43	22.36	26.14	61.55	61.55	8.29	5.62
00 + 880.00	20.00	1.736	1.696	1.696	1.634	1.634	1.532	2.382	2.396	2.396	2.396	9.37	17.06	19.95	43.86	43.86	5.85	4.00
00 + 900.00	20.00	0.865	0.824	0.824	0.763	0.763	0.662	1.512	1.527	1.527	1.527	5.28	11.73	13.73	26.01	26.01	3.39	2.36
00 + 920.00	20.00	0.867	0.826	0.826	0.765	0.765	0.663	1.513	1.527	1.527	1.527	3.28	9.12	10.69	17.32	17.32	2.19	1.56
00 + 940.00	20.00	0.875	0.834	0.834	0.722	0.722	0.669	1.519	1.527	1.527	1.527	3.24	9.13	10.69	17.42	17.42	2.17	1.56
00 + 947.51	7.51	0.875	0.834	0.834	0.722	0.722	0.669	1.519	1.527	1.527	1.527	1.20	3.43	4.01	6.57	6.57	0.81	0.59
											TOTAL	**191.22**	**315.03**	**351.00**	**881.19**	**881.19**	**118.36**	**80.46**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



Section of Road Widening

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

Item No. 6.1.2 - Tact Coat — Pavement Overlay

Main Road

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

At Approach A

Input Data :

Area from AutoCad

Area =	3,090.65	sqm.			
Area to be deducted from Auto Cad Area : Right Service Road					
Ave. Width =	0.870	m			
Total Length =	159.00	m			
Area =	138.33	sqm.			
Area to be deducted from Auto Cad Area : Left Service Road					
Ave. Width =	0.868	m			
Total Length =	92.00	m			
Area =	79.86	sqm.			
Total Area =	**2,872.46**	**sqm.**			
thickness =	0.05 m				
Volume =	2,872.46 sqm.	x	0.50 lit./sqm.	=	**1,436.23 lit.**

At Approach B ✓

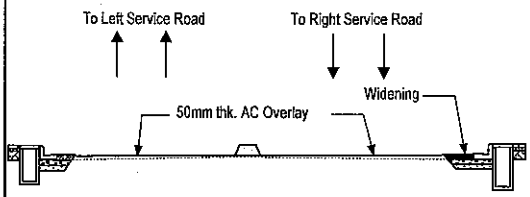
Input Data :

Area from AutoCad

Area 2 =	1,934.11	sqm.			
Area to be deducted from Auto Cad Area : Right Service Road					
Ave. Width =	0.869	m			
Total Length =	147.00	m			
Area =	127.74	sqm.			
Area to be deducted from Auto Cad Area : Left Service Road					
Ave. Width =	0.870	m			
Total Length =	120.00	m			
Area =	104.40	sqm.			
Total Area =	**1,701.97**	**sqm.**			
thickness =	0.05 m				
Wt =	1,701.97 sqm.	x	0.50 lit./sqm.	=	**850.99 lit.**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



Section of Road Widening

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

Item No. 6.3.5 - Asphalt Concrete Wearing Course (AC - WC) — Pavement Overlay

Main Raod

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

At Approach A

Input Data :

Area from AutoCad

Area =	3,090.65	sqm.

Area to be deducted from Auto Cad Area : Right Service Road

Ave. Width =	0.870	m
Total Length =	159.00	m
Area =	138.33	sqm.

Area to be deducted from Auto Cad Area : Left Service Road

Ave. Width =	0.868	m
Total Length =	92.00	m
Area =	79.86	sqm.
Total Area =	**2,872.46**	**sqm.**
thickness =	0.05 m	

Wt = 2,872.46 × 0.050 × 2.30 **= 330.33 Ton**

At Approach B

Input Data :

Area from AutoCad

Area 2 =	1,934.11	sqm.

Area to be deducted from Auto Cad Area : Right Service Road

Ave. Width =	0.869	m
Total Length =	147.00	m
Area =	127.74	sqm.

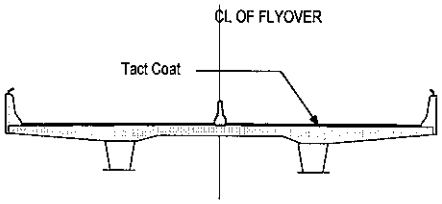
Area to be deducted from Auto Cad Area : Left Service Road

Ave. Width =	0.870	m
Total Length =	120.00	m
Area =	104.40	sqm.
Total Area =	**1,701.97**	**sqm.**
thickness =	0.05 m	

Wt = 1,701.97 × 0.050 × 2.30 **= 195.73 Ton**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



SECTION AT FLYOVER

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

Item No. 6.1.2 - Tact Coat — Location : At Viaduct

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

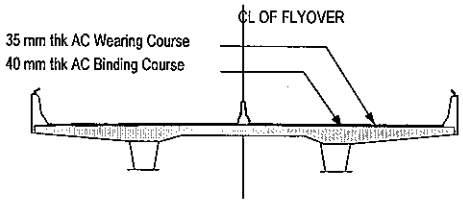
At Viaduct :

Station	Distance (m)	Width (m)	Area (m^2)	Slope is considered
00 + 343.00				
00 + 360.00	17.00	12.004	204.068	
00 + 380.00	20.00	12.004	240.08	
00 + 400.00	20.00	12.004	240.08	
00 + 420.00	20.00	12.004	240.08	
00 + 440.00	20.00	12.004	240.08	
00 + 460.00	20.00	12.004	240.08	
00 + 480.00	20.00	12.004	240.08	
00 + 500.00	20.00	12.004	240.08	
00 + 520.00	20.00	12.004	240.08	
00 + 540.00	20.00	12.004	240.08	
00 + 560.00	20.00	12.004	240.08	
00 + 580.00	20.00	12.004	240.08	
00 + 600.00	20.00	12.004	240.08	
00 + 605.00	5.00	12.004	60.02	
		Total Area =	**3,145.05 sqm.**	

Total Volume = (Total Area x 0.50 lit/sqm. x 2 face) **= 3,145.05 lit.**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS
	Peterongan Flyover - Contract Package 3	



SECTION AT FLYOVER

Item No. 6.3.6 - Asphalt Concrete Wearing Course (AC - BC) — Location : At Viaduct

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

At Viaduct :

Station	Distance	Ave. Width	Area	Slope is considered
	(m)	(m)	(m^2)	
00 + 343.00				
00 + 360.00	17.00	12.004	204.068	
00 + 380.00	20.00	12.004	240.08	
00 + 400.00	20.00	12.004	240.08	
00 + 420.00	20.00	12.004	240.08	
00 + 440.00	20.00	12.004	240.08	
00 + 460.00	20.00	12.004	240.08	
00 + 480.00	20.00	12.004	240.08	
00 + 500.00	20.00	12.004	240.08	
00 + 520.00	20.00	12.004	240.08	
00 + 540.00	20.00	12.004	240.08	
00 + 560.00	20.00	12.004	240.08	
00 + 580.00	20.00	12.004	240.08	
00 + 600.00	20.00	12.004	240.08	
00 + 605.00	5.00	12.004	60.02	
		Total Area =	**3,145.05 sqm.**	

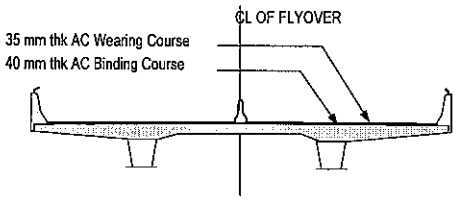
Input Data :

thickness = 0.040 m

Total Wt = (Total Area x Thickness) x 2.30 = **289.34 Ton**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : ..... FLYOVER			
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS
	Peterongan Flyover - Contract Package 3	



SECTION AT FLYOVER

Item No. 6.3.5 - Asphalt Concrete Wearing Course (AC - WC) — Location : At Viaduct

Note: See Detailed Construction Layout Plan

Dwg. # PRD-019 - PRD-024 for reference.

At Viaduct :

Station	Distance (m)	Ave. Width (m)	Area (m^2)	Slope is considered
00 + 343.00				
00 + 360.00	17.00	12.004	204.068	
00 + 380.00	20.00	12.004	240.08	
00 + 400.00	20.00	12.004	240.08	
00 + 420.00	20.00	12.004	240.08	
00 + 440.00	20.00	12.004	240.08	
00 + 460.00	20.00	12.004	240.08	
00 + 480.00	20.00	12.004	240.08	
00 + 500.00	20.00	12.004	240.08	
00 + 520.00	20.00	12.004	240.08	
00 + 540.00	20.00	12.004	240.08	
00 + 560.00	20.00	12.004	240.08	
00 + 580.00	20.00	12.004	240.08	
00 + 600.00	20.00	12.004	240.08	
00 + 605.00	5.00	12.004	60.02	
		Total Area =	**3,145.05 sqm.**	

Input Data :

thickness = 0.035 m

Total Wt = (Total Area x Thickness) x 2.30 = **253.18 Ton**

PROJECT : .....FLYOVER

NORTH JAVA CORRIDOR FLYOVER PROJECT

KATAHIRA AND ENGINEERS INTERNATIONAL

Note:

AC - WC = Asphalt Concrete Wearing Course
AC - BC = Asphalt Concrete Binder Course
AC - Base = Asphalt Concrete Base
SBC - Type A = Sub-Base Course (Agg. Class A)
SBC - Type B = Sub-Base Course (Agg. Class B)

	Thickness
AC - WC	0.040
AC - BC	0.060
AC - Base	0.100
SBC (Type -A)	0.300
SBC (Type -B)	0.450

Peterongan Flyover (At Approach)

STATION	DISTANCE	AC - WC	AC - BC	AC - Base	SBC (Type A)	SBC (Type B)	Tonne	Volume		PAVEMENT			
		width W1	width W2	width W3	width w4	width w5	AC -Base	SBC (Type A)	SBC (Type B)	Prime Coat Liters	Tack Coat Liters	AC - BC Tonne	AC - WC Tonne
00 + 185.00													
00 + 200.00	15.00	12.002	12.002	12.002	8.449	12.421	41.41	38.02	83.84	180.03	180.03	24.84	16.56
00 + 220.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 221.75	1.75	12.002	12.002	12.002	8.449	12.421	4.83	4.44	9.78	21.00	21.00	2.90	1.93
00 + 221.75													
00 + 240.00	18.25	12.002	12.002	12.002	8.449	12.421	50.38	46.26	102.01	219.04	219.04	30.23	20.15
00 + 260.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 280.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 300.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 320.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 338.00	18.00	12.002	12.002	12.002	8.449	12.421	49.69	45.62	100.61	216.04	216.04	29.81	19.88
00 + 600.00													
00 + 620.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 640.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 660.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 680.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 700.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 720.00	20.00	12.002	12.002	12.002	8.449	12.421	55.21	50.69	111.79	240.04	240.04	33.13	22.08
00 + 726.25	6.25	12.002	12.002	12.002	8.449	12.421	17.25	15.84	34.93	75.01	75.01	10.35	6.90
00 + 726.25													
00 + 740.00	13.75	12.002	12.002	12.002	12.002	12.002	37.96	49.51	74.26	165.03	165.03	22.77	15.18
00 + 760.00	20.00	12.002	12.002	12.002	12.002	12.002	55.21	72.01	108.02	240.04	240.04	33.13	22.08
00 + 780.00	20.00	12.002	12.002	12.002	12.002	12.002	55.21	72.01	108.02	240.04	240.04	33.13	22.08
00 + 800.00	20.00	12.002	12.002	12.002	12.002	12.002	55.21	72.01	108.02	240.04	240.04	33.13	22.08
00 + 338.00													
00 + 343.00	5.00	12.002									60.01		5.52
00 + 605.00													
00 + 600.00	5.00	12.002									60.01		5.52
						TOTAL	974.46	973.31	1,959.18	4,236.71	4,356.73	584.72	400.76

DIVISION 7.
Structures

PETERONGAN FLYOVER

FINAL
up to september 30' 2006

NO. PAY ITEM	DESCRIPTION	UNIT	ESTIMATE QUANTITY	REMARKS
	DIVISION 7 STRUCTURES			
7.1.2(1)	Structure Concrete , Class A (35 Mpa)	Cu M	1,183.91	
	(for Post tension Double Girder)			
7.1.2(2)	Structure Concrete , Class A (35 Mpa) for Steel Girder	Cu M	370.57	
7.1.3(1)	Structure Concrete , Class B (30 Mpa) for Pier Head	Cu M	100.41	
7.1.3(2)	Structure Concrete , Class B (30 Mpa) for Column	Cu M	101.95	
7.1.3(3)	Structure Concrete , Class B (30 Mpa) for Composite Column	Cu M	68.40	
7.1.3(4)	Structure Concrete , Class B (30 Mpa) for Abutment	Cu M	189.92	
7.1.4(1)	Structure Concrete , Class B-1 (28 Mpa) for Barrier , Median	Cu M	-	in Division 8
7.1.4(2)	Structure Concrete , Class B-1 (28 Mpa) for Parapet Wall	Cu M	809.70	
7.1.5	Structure Concrete , Class C (24 Mpa) for Footing, Approach Slab			
	and Retaining Wall	Cu M	230.06	
7.1.6	Structure Concrete, Class D	Cu M		
7.1.8	Structure Concrete , Class E	Cu M	32.94	
SS.7.1.8a	Waterproofing on Deck	Sq M	3,013.00	
7.1(9)	Structural Column Casing (Ribbed Inner Surface t = 20 mm)	Kg	-	
7.1(9)a	Steel Casing for Bored Pile t = 13 mm	Kg	19,216.80	
7.1(10)	Structural Column Casing (Erected)	Kg	-	
7.1(10)a	Steel Casing for Bored Pile (Erected)	Kg	19,216.80	
7.2.1	PC Strand Size 12.7 mm and Accessories	Kg	26,764.30	
7.2.2	PC Strand Size 21.8 mm and Accessories	Kg	13,219.45	
7.2.3	PC Bar and Accessories	Kg	1,857.26	
7.3.(4)	Reinforcing Steel Bars Deform	Kg	455,821.01	
7.3.(6)	Reinforcing Steel Bars D 51	Kg	-	
7.4.(1)	Furnish and Delivery of Steel Girder	Ton	194.23	
7.4.(2)	Furnish and Delivery of Steel Portal	Ton	56.51	
7.5.(1)	Erection of Steel Girder	Ton	194.23	
7.5.(2)	Erection of Steel Portal	Ton	56.51	
7.6.(1)	Cast in Place Concrete Pile 150 cm Diameter	Ln M	324.00	
7.6.(2)	Cast in Place Concrete Pile 180 cm Diameter	Ln M	108.00	
7.6.(3)	Cast in Place Concrete Pile 250 cm Diameter	Ln M	132.00	
7.6.(4)	Pile Integrity Test	Each	24.00	
7.6.(5)	Pile Dynamic Analysis (PDA) 2500 mm	Each	1.00	
7.6.(6)	Pile Dynamic Analysis (PDA) 1800 mm	Each	1.00	
7.6.(7)	Pile Dynamic Analysis (PDA) 1500 mm	Each	1.00	
7.9	Stone Masonry	Cu M	63.600	from highway
7.9.(1)	Blinding Stone	Cu M		
7.11.(1)	Expantion Joint (Type A)	Ln M	46.00	
7.11.(2)	Expantion Joint (Type B)	Ln M	-	
7.11.(3)	Restrainer Type - A	Set	4.00	
7.11.(4)	Restrainer Type - B	Set	-	
7.11.(5)	Stopper for Steel Girder	Set	4.00	
7.11.(6)	Fixed Anchor	Set	-	
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	1,230.80	
7.14	Bridge Name Plate	Each	2.00	
7.15.(1)	Demolition of Existing Structure Mansonry	Cu M	61.580	
7.15.(2)	Demolition of Existing Structure Concrete	Cu M	45.040	
7.15.(10)	Demolition of Existing Rigid Pavement	Ln M	-	
7.15.(11)	Demolition of Existing Hedge of Fence	Ln M	-	from Highway
7.15.(12)	Demolition of Existing Concrete Side Walk	Sq M	1,835.010	
7.15.(13)	Demolition of Existing Concrete Curb	Ln M	1,899.010	
7.16.(2)	Concrete Pavement (t = 27 cm)	Sq M		
7.17.(1)	Lean Concrete (t = 10 cm)	Sq M		
7.18.(2)	Widening of Existing Bridge	Ls	1.000	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 28 - 08 - 2006					Sheet : 1 of 3			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT										
KATAHIRA AND ENGINEERS INTERNATIONAL										
DRAWING NO : PCL - 002 - 003 PCR - 002 - 003 - 004		QUANTITY :					CHEKED BY :			
NO	DESCRIPTION	h1	h2	l	Area	Total Area (Sq M)	Ln M	QTY	TOTAL QTY (Cu M)	REMARKS
7.1.(1)a	Structure Concrete, Class A									
	(Fc' = 35 Mpa) for Post Tension									
	Double Girder	0.250	0.450	2.646	0.926					Span girder span to span
		0.450	0.450	1.062	0.478					
		(1.062 + 0.85) / 2		0.956						
		(0.739 + 0.761) / 2		0.750	0.717					
		0.450	0.300	0.600	0.225					
		0.300	0.300	4.084	1.225					
		0.300	0.450	0.600	0.225					
		(1.062 + 0.85) / 2		0.956						
		(0.739 + 0.761) / 2		0.750	0.717					
		0.450	0.450	1.062	0.478					
		0.450	0.250	2.646	0.926	5.917				
		0.250	0.450	2.646	0.926					Girder on diafragma
		(7.408 + 7.200) / 2		7.304						
		(0.739 + 0.761) / 2		0.750	5.478					
			0.450	7.408	3.334					
		0.250	0.450	2.646	0.926					
						10.664				

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 28 - 08 - 2006					Sheet : 2 of 3			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT										
KATAHIRA AND ENGINEERS INTERNATIONAL										
DRAWING NO : NCL - 004 - 003 - 004		QUANTITY :					CHEKED BY :			
NO	DESCRIPTION	h1	h2	l	Area	Total Area (Sq M)	Ln M	QTY	TOTAL QTY (Cu M)	REMARKS
7.1.(1)a	Structure Concrete, Class A	(0.4 + 0.25) / 2 x 0.25 x 2			0.1625	0.1625	8.500	1.381		Post of aproach slab at Abt
	(Fc' = 35 Mpa) for Post Tension									
	Double Girder									
		(12.7 + 7.65) / 2 x 0.70 x 1.7						12.108		Diafraghma A1
		12.7 x 0.773 x 1.7 x 0.773						12.901		Diafraghma A1
						5.917	18.250	107.985		A1 - P1
						10.664	2.000	21.328		Diafraghma P1
						5.917	18.000	106.506		P1 - P2
						10.664	2.000	21.328		Diafraghma P2
						5.917	18.000	106.506		P2 - P3
						10.664	2.000	21.328		Diafraghma P3
						5.917	17.000	100.589		P3 - P4
						10.664	1.250	13.330		Diafraghma P4
							1.700		525.29	
							80.200			
						SUB TOTAL A1 to P4			525.29	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 28 - 08 - 2006					Sheet : 3 of 3			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT										
KATAHIRA AND ENGINEERS INTERNATIONAL										
DRAWING NO : NCR - 004 - 003 - 004		QUANTITY :					CHECKED BY :			
NO	DESCRIPTION	h1	h2	l	Area	Total Area (Sq M)	Ln M	QTY	TOTAL QTY (Cu M)	REMARKS
7.1.(1)a	Structure Concrete, Class A	(0.4 + 0.25) / 2 x 0.25			0.08125	0.08125	8.500	0.691		Post of aproach slab at Abt
	(Fc' = 35 Mpa) for Post Tension									
	Double Girder									
						10.664	1.250	13.330		Diafraghma P7
						5.918	17.000	100.606		P7 - P8
						10.664	2.000	21.328		Diafraghma P8
						5.918	18.000	106.524		P8 - P9
						10.664	2.000	21.328		Diafraghma P9
						5.918	18.000	106.524		P9 - P10
						10.664	2.000	21.328		Diafraghma P10
						5.918	18.000	106.524		P10 - P11
						10.664	2.000	21.328		Diafraghma P11
						5.918	18.250	108.004		P11 - A2
		(12.7 + 7.65) / 2 x 0.70 x 1.7						12.108		Diafraghma A2
		(0.924 + 0.836) / 2 x 12.7 x 1.7						18.999		Diafraghma A2
							1.700			
							100.200		658.62	
						SUB TOTAL P7 to A2			658.62	
						SUMMARY			1,183.91	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 28 - 08 - 2006					Sheet : 1 of 1			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT										
KATAHIRA AND ENGINEERS INTERNATIONAL										
DRAWING NO : PST - 01		QUANTITY :					CHEKED BY :			
NO	DESCRIPTION	h1	h2	l	Area	Total Area (Sq M)	Ln M	QTY	TOTAL QTY (Cu M)	REMARKS
7.1.(1)b	Structure Concrete, Class A									
	(Fc' = 35 Mpa) for Steel Girder									
		0.250	0.450	2.525	0.884					
		0.450	0.450	1.501	0.675					
		0.450	0.300	0.600	0.225					
		0.300	0.300	3.450	1.035					
		0.300	0.450	0.600	0.225					
		0.450	0.450	1.501	0.675					
		0.450	0.250	2.525	0.884					
						4.603				
	P4 - P5					4.603	24.250	111.632		
	P5 - P6					4.603	32.000	147.309		
	P6 - P7					4.603	24.250	111.632		
									370.57	
							SUMMARY		370.57	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared : 28 - 08 - 2006	Sheet : 1 of 2
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		
KATAHIRA AND ENGINEERS INTERNATIONAL		
DRAWING NO :	QUANTITY :	CHECKED BY :

NO	DESCRIPTION	CALCULATION	Area	Total Area (Sq M)	Ln M	QTY	TOTAL QTY (Cu M)	REMARKS
7.1.(2)a	Structure Concrete, Class B							
	(Fc' = 340 Mpa) for Pier Head							
		1.60 X 7.75	12.400					
		3.30 x 7.91915	26.133	19.267	0.600	11.56		
		(8.08828+7.91915) /2 x 0.6	4.802	4.802	0.950	4.56		
		(8.14269+7.91915)/2x0.793	6.369	6.369	0.950	6.05		
		1.40 X 8.54723	11.966					
		1.40 X 7.91915	11.087	11.526	2.250	25.93		
							48.11	PIER HEAD P4
					TOTAL		48.11	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared : 28 - 08 - 2006	Sheet : 1 of 2
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		
KATAHIRA AND ENGINEERS INTERNATIONAL		
DRAWING NO :	QUANTITY : Ahda	CHECKED BY :

NO	DESCRIPTION	CALCULATION	Area	Total Area (Sq M)	Ln M	QTY	TOTAL QTY (Cu M)	REMARKS
7.1.(2)a	Structure Concrete, Class B							
	(Fc' = 340 Mpa) for Pier Head							
		3.14 X 0.70 X 0.70	1.539					
		3.30 X 7.75	25.575	13.557	0.300	4.067		
		1.60 X 7.75	12.400					
		3.30 x 7.91918	26.133	19.267	0.600	11.56		
		(7.91918+8.14249)/2x0.792	6.360	6.360	0.950	6.04		
		(7.91918+8.08836)/2x0.6	4.802	4.802	0.950	4.56		
		1.40 X 8.55655	11.979					
		1.40 X 7.91918	11.087	11.533	2.2605	26.07		
							52.30	PIER HEAD P7
					TOTAL		52.30	
				SUMMARY P4 AND P7			100.41	

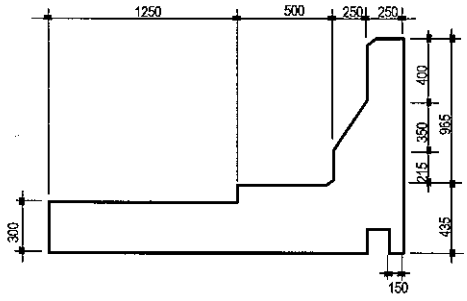
CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT					
KATAHIRA AND ENGINEERS INTERNATIONAL					
DRAWING NO : PSB - 02, 06		QUANTITY :		CHECKED BY :	
NO	DESCRIPTION	L / R	CALCULATION	QTY (Cu M)	REMARKS
7.1.(2)b	Structure Concrete, Class B (30 Mpa)				
	for Column				
		P1 - L	3.14 X 0.55² X 7.145	6.79	
		R	3.14 X 0.55² X 7.145	6.79	
		P2 - L	3.14 X 0.55² X 7.945	7.55	
		R	3.14 X 0.55² X 7.945	7.55	
		P3 - L	3.14 X 0.55² X 7.944	7.55	
		R	3.14 X 0.55² X 7.944	7.55	
		P8 - L	3.14 X 0.55² X 8.883	8.44	
		R	3.14 X 0.55² X 8.725	8.29	
		P9 - L	3.14 X 0.55² X 7.262	6.90	
		R	3.14 X 0.55² X 7.104	6.75	
		P10 - L	3.14 X 0.55² X 7.148	6.79	
		R	3.14 X 0.55² X 6.990	6.64	
		P11 - L	3.14 X 0.55² X 7.652	7.27	
		R	3.14 X 0.55² X 7.504	7.13	
			SUMMARY	101.95	

CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared : 24 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT					
KATAHIRA AND ENGINEERS INTERNATIONAL					
DRAWING NO : PSB - 03, 04, 05,		QUANTITY :		CHECKED BY :	
NO	DESCRIPTION	L / R	CALCULATION	QTY (Cu M)	REMARKS
7.1.(2)c	Structure Concrete, Class B				
	(Fc' = 30 Mpa)				
	for Composite Column	P4	3.14 X 0.680² X 11.194	16.25	
		P5	3.14 X 0.680² X 12.572	18.25	
		P6	3.14 X 0.680² X 12.582	18.27	
		P7	3.14 X 0.680² X 10.761	15.62	
			SUMMARY	68.40	

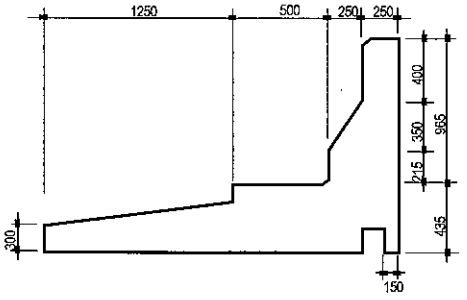
CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT					
KATAHIRA AND ENGINEERS INTERNATIONAL					
DRAWING NO :		QUANTITY :		CHECKED BY :	
NO	DESCRIPTION	A1/A2	CALCULATION	QTY (Cu M)	REMARKS
7.1.(2)d	Structure Concrete, Class B				
	(Fc' = 30 Mpa) for Abutment				
		A1	2.20 x 13 x 2.40	68.64	Footing
			Area 1.624 Sq M		Coulumn
			Height 5.451 M		
			1.624 x 5.451 x 2	17.70	
			4.20 x 5.451 x 0.4	9.16	Wall
			Total A1	95.50	
		A2	2.20 x 13 x 2.40	68.64	Footing
			Area 1.624 Sq M		Coulumn
			Height 5.230 M		
			1.624 x 5.23 x 2	16.99	
			4.20 x 5.23 x 0.4	8.79	Wall
			Total A2	94.41	
			SUMMARY	189.92	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 10/12/2006 10:40	Sheet : of	
PROJECT : PETERONGAN.... FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	ESTIMATOR :	CHECKED BY :	

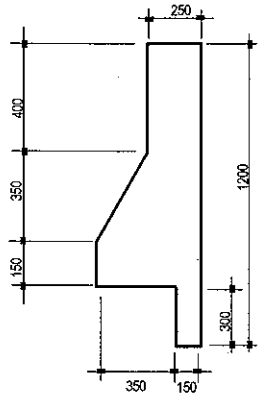
SKETCH DRAWING



Section of Parapet at Approach



Section of Parapet at M.S.E Wall



Section of Parapet at Viaduct

CALCULATION

Peterongan Flyover - Contract Package 3

REMARKS

Structure Concrete

A. At Approach Slab

Data:

1.19	sqm.	=	Area of Parapet from AutoCad Drawing
10.00	m	=	Length of Parapet at Approach Slab (2 side)

A.1. Volume of Concrete Parapet at Approach A

Volume	=	1.19	x	10.00	=	**11.90**	**cum.**

A.2. Volume of Concrete Parapet at Approach B

Volume	=	1.19	x	10.00	=	**11.90**	**cum.**

B. At MSE Wall

Data:

1.06	sqm.	=	Area of Parapet from AutoCad Drawing
230.00	m	=	Length of Parapet at MSE Wall Approach A (2 side)
230.00	m	=	Length of Parapet at MSE Wall Approach B (2 side)

B.1. Volume of Concrete Parapet at MSE Wall (Approach A)

Volume	=	1.06	x	230.00	=	**243.80**	**cum.**

B.2. Volume of Concrete Parapet at MSE Wall (Approach B)

Volume	=	1.06	x	230.00	=	**243.80**	**cum.**

C. At Viaduct

Data:

0.37	sqm.	=	Area of Parapet from AutoCad Drawing
524.00	m	=	Length of Parapet at Viaduct (2 side)

C.1. Volume of Concrete Parapet at Viaduct

Volume	=	0.37	x	524.00	=	**193.88**	**cum.**

Total Concrete Volume of Parapet at Merak 1	=	**705.28**	**cum.**

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : 1 of 2	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PSB - 46		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
7.1.(5)	Structure Concrete, Class C (Fc' = 24 Mpa) for Footing, Approach Slab, Retaining Wall			
		Quantity		A1 & A2
		= 0.25 x 8.50 x 5	10.63	
		= 0.15 x 8.50 x 2 x (0.25 + 0.4) / 2	0.83	
			11.45	
		Note , for two Approach Slab		
		= 11.454 x 2	22.91	
		SUMMARY	22.91	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 29 - 08 - 2006	Sheet : 1 of 2	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
7.1.(5)	Structure Concrete, Class C			
	(Fc' = 24 Mpa) for Footing,			
	Approach Slab, Retaining Wall	Sta 0 + 221.75 - 0 + 185.00		
		L1 = 18.000 Ln M		
		L2 = 18.750 Ln M		
		h1 = 1.756 M'		
		h2 = 1.351 M'		
		t = 0.400 M'		
		w1 = 1.300 M'		
		w2 = 0.800 M'		
		Quantity :		
		= (1.756+1.351) / 2 x 36.75 x 0.40 x 2	45.67	
		= 0.4 x 1.30 x 18.00 x 2	18.72	
		= 0.4 x 0.80 x 18.75 x 2	12.00	
		Sub Total	*76.39*	
		Sta 0 + 726.25 - 0 + 800.000		
		L1 = 37.000 Ln M		
		L2 = 36.750 Ln M		
		h1 = 1.779 M'		
		h2 = 0.552 M'		
		t = 0.400 M'		
		w1 = 1.300 M'		
		w2 = 0.800 M'		
		Quantity :		
		= (1.779+0.552) / 2 x 73.75 x 0.40 x 2	68.76	
		= 0.4 x 1.30 x 37.000 x 2	38.48	
		= 0.4 x 0.80 x 36.750 x 2	23.52	
		Sub Total	*130.76*	
		Total Stubwall	207.16	
		SUMMARY	230.06	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : 1 of 2	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PSB - 02, 07		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
7.1.8	Lean Concrete, Class E (Fc' = 17 Mpa)	A1 = A2 = (13.20 x 2.60) - (3.14 x 0.9² x 3) = 26.690 Sq M For two autment A1 and A2 = 26.69 x 0.10 x 2 = 5.338 Cu M	5.34	A1 & A2
		Sub Total	5.34	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 29 - 08 - 2006	Sheet : 2 of 2	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PMS - 011, 012, 013		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Cu M)	REMARKS
7.1.8	Lean Concrete, Class E (Fc' = 17 Mpa)	A1 Stubwall		
		= (18.000 x 1.50 x 0.10) x 2	5.40	
		= (18.750 x 1.00 x 0.10) x 2	3.75	
		Sub Total	9.15	
		A2 Stubwall		
		= (37.000 x 1.50 x 0.10) x 2	11.10	
		= (36.750 x 1.00 x 0.10) x 2	7.35	
		Sub Total	18.45	
		SUMMARY	32.94	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PSB - 01 to 07		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Sq M)	REMARKS
SS.7.1.(9)	Water Proofing on Deck			
		A1 - A2 = 262 Ln M		
		Width = 5.75 M		
		Quantity = 262 x 5.75 x 2	3,013.00	
		SUMMARY	3,013.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Kg)	REMARKS
SS7.1(10)	Structure Casing for Bored Pile	Area Ø 2500		
	(Inner Ribbed Surface t =13 mm)	= $(1.25^2 \times 3.14) - (1.237^2 \times 3.14)$		
		= 0.102 Sq M		
		P4 = 6.00 X 0.102 X 7850	4,804.20	
		P5 = 6.00 X 0.102 X 7850	4,804.20	
		P6 = 6.00 X 0.102 X 7850	4,804.20	
		P7 = 6.00 X 0.102 X 7850	4,804.20	
		SUMMARY	19,216.80	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Kg)	REMARKS
SS7.1(11)	Structure Cassing for Bored Pile			
	(Erected)	Area Ø 2500		
		= (1.250² x 3.14) - (1.237² x 3.14)		
		= 0.102 Sq M		
		P4 = 6.00 X 0.102 X 7850	4,804.20	
		P5 = 6.00 X 0.102 X 7850	4,804.20	
		P6 = 6.00 X 0.102 X 7850	4,804.20	
		P7 = 6.00 X 0.102 X 7850	4,804.20	
		SUMMARY	19,216.80	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 28 - 08 - 2006				Sheet : 1 of 1			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT									
KATAHIRA AND ENGINEERS INTERNATIONAL									
DRAWING NO : NCL 006 and NCL 007 NCR 005 and NCR 007		QUANTITY :				CHEKED BY :			
NO	DESCRIPTION	LOCATION	Length (M)	No. Req'd	Nos	Unit Weight (Kg / M)	Weight (Kg)	Total Weigth (Kg)	Remarks
7.2.(9)	PC Strand Size 12.7 mm								
		A1 - P1	20.80	12	16	0.774	3,091.05		
		P1 - P2	20.00	12	16	0.774	2,972.16		
		P2 - P3	20.00	12	16	0.774	2,972.16		
		P3 - P4	19.25	12	16	0.774	2,860.70		
		P7 - P8	19.25	12	16	0.774	2,860.70		
		P8 - P9	20.00	12	16	0.774	2,972.16		
		P9 - P10	20.00	12	16	0.774	2,972.16		
		P10 - P11	20.00	12	16	0.774	2,972.16		
		P11 - A2	20.80	12	16	0.774	3,091.05		
								26,764.30	
						SUMMARY		26,764.30	

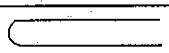
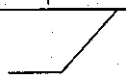
CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 28 - 08 - 2006				Sheet : 1 of 1			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT									
KATAHIRA AND ENGINEERS INTERNATIONAL									
DRAWING NO : PCL 007 and PCR 007		QUANTITY :				CHEKED BY :			
NO	DESCRIPTION	LOCATION	Length (M)	No. Req'd	Nos	Weight / 1 nos (Kg)	Weight (Kg)	Total Weigth (Kg)	Remarks
7.2.(9)a	PC Strand Size 21.8 mm								
		A1 to P4	12.71	1	128	31.55	4,038.40		A1 - P1 - P2 - P3 - P4
		P4 to P7	12.71	1	131	31.55	4,133.05		P4 - P5 - P6 - P7 Deck Slab
		P7 to A2	12.71	1	160	31.55	5,048.00		P7 - P8 - P9 - P10 - P11 - A2
								13,219.45	
						SUMMARY		13,219.45	

CONSTRUCTION COST ESTIMATE WORKSHEET			Date Prepared : 23 - 08 - 2006			Sheet : 1 of 1			
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT									
KATAHIRA AND ENGINEERS INTERNATIONAL									
DRAWING NO : NCL - 008 & NCR 006		QUANTITY :				CHEKED BY :			
NO	DESCRIPTION	LOCATION	Length (M)	No. Req'd	Nos	Unit Weight (Kg / M)	Weight (Kg)	Total Weigth (Kg)	Remarks
7.3.(3)	PC Bar	P1	7.008	1	6.00	6.31	265.32		
		P2	7.008	1	6.00	6.31	265.32		
		P3	7.008	1	6.00	6.31	265.32		
		P8	7.008	1	6.00	6.31	265.32		
		P9	7.008	1	6.00	6.31	265.32		
		P10	7.008	1	6.00	6.31	265.32		
		P11	7.008	1	6.00	6.31	265.32		
								1,857.26	
						SUMMARY		1,857.26	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared :	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		10/9/2006 13:08		
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	SKETCH DRAWING	DESCRIPTION	SUMMARY	REMARKS
7.3.(4)	REINFORCING STEEL BARS GRADE 40			
		Bored pile	-	100,779.00
		Abutment	40,540.00	
		Pier Column	36,493.00	
		Pier Head	29,657.00	
		Girder		
		Deck Slab	52,379.87	
	-	Girder	149,940.00	
		Parapet Wall	65,173.74	
		Approach Slab	4,184.00	
		Stubwall	15,658.00	
		TOTAL	394,025.61	
	REINFORCING STEEL BARS D 51	Bored Pile	-	192,439.00

BAR BENDING SCHEDULLE
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		

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	

QUANTITY CALCULATION REINFORCING BAR AT PETERONGAN FLY OVER (PARAPET)

status 10/9/2006 11:47

	LENGTH		LENGTH
FLY OVER	262.00	2	524.00
			524.00 Meter

RE-BAR AT BRIDGE PETERONGAN FLYOVER PER LN.M

						TOTAL WEIGTH (KG)	
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	**524.00**	**13,256.15**

	LENGTH		LENGTH
ABUTMENT A1	120.00	2	240.00
ABUTMENT A2	120.00	2	240.00
ABUTMENT AB1	0.00	2	0.00
			480.00 Meter

RE-BAR PARAPET AT APPROACH PETERONGAN 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	**480.00**	**51,917.59**

TOTAL WEIGTH of REINFORCING STEEL PARAPET MERAK FO (kg) **65,173.74**

PETERONGAN 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	10,524.00	20,406.00	PSB - 13
		RC COLUMN	7,523.00		PSB - 09
		WALL	2,359.00		PSB - 09
P1	P1 - L	RC COLUMN	2,408.00	4,816.00	PSB - 14
	P1 - R	RC COLUMN	2,408.00		PSB - 14
P2	P2 - L	RC COLUMN	2,094.00	4,188.00	PSB - 15
	P2 - R	RC COLUMN	2,094.00		PSB - 15
P3	P3 - L	RC COLUMN	2,922.00	5,844.00	PSB - 16
	P3 - R	RC COLUMN	2,922.00		PSB - 16
P4		COMPOSITE COLUMN	256.00	256.00	PSB - 21
					PSB - 22
P5		COMPOSITE COLUMN	256.00	256.00	PSB - 23
					PSB - 24
P6		COMPOSITE COLUMN	256.00	256.00	PSB - 25
					PSB - 26
P7		COMPOSITE COLUMN	256.00	256.00	PSB - 27
P8	P8 - L	RC COLUMN	3,656.00	7,204.00	PSB - 17
	P8 - R	RC COLUMN	3,548.00		PSB - 17
P9	P9 - L	RC COLUMN	1,959.00	3,890.00	PSB - 18
	P9 - R	RC COLUMN	1,931.00		PSB - 18
P10	P10 - L	RC COLUMN	1,937.00	3,847.00	PSB - 18
	P10 - R	RC COLUMN	1,910.00		PSB - 18
P11	P11 - L	RC COLUMN	2,857.00	5,680.00	PSB - 16
	P11 - R	RC COLUMN	2,823.00		PSB - 16
A2		FOOTING	10,524.00	20,134.00	PSB - 13
		RC COLUMN	7,323.00		PSB - 11
		WALL	2,287.00		PSB - 11
		TOTAL ABUTMENT A1 DAN A2		40,540.00	
		TOTAL PIER P1 s/d P11		36,493.00	

PETERONGAN FLYOVER
QUANTITY OF REINFORCEMENT

7.3(4) REINFORCING STEEL BARS GRADE 40

LOCATION	TYPE	WEIGHT (Kg)	TOTAL WEIGHT (Kg)	REMARKS / DRAWING NO
A1	APPROACH SLAB	2,092.00		PSB - 46
A2	APPROACH SLAB	2,092.00	4,184.00	PSB - 46
P4	PIER HEAD	12,349.00		PSB - 23
		2,171.00		PSB - 23
P7	PIER HEAD	12,966.00		PSB - 27
		2,171.00		PSB - 27
			29,657.00	
	TOTAL APPROACH SLAB A1 DAN A2		4,184.00	
	TOTAL P4 and P7		29,657.00	

PETERONGAN FLYOVER
QUANTITY OF BORED PILE REINFORCEMENT

LOCATION	WEIGHT PER 1 PC (Kg)		NO. REQ'D (PCS)	TOTAL WEIGHT (Kg)	
	GRADE SD 40	GRADE SD 51		GRADE SD 40	GRADE 51
A1	9,256.00	-	3.00	27,768.00	-
P1	1,618.00	7,858.00	2.00	3,236.00	15,716.00
P2	1,568.00	5,903.00	2.00	3,136.00	11,806.00
P3	1,593.00	7,963.00	2.00	3,186.00	15,926.00
P4	4,171.00	15,626.00	1.00	4,171.00	15,626.00
P5	7,771.00	30,111.00	1.00	7,771.00	30,111.00
P6	7,274.00	29,661.00	1.00	7,274.00	29,661.00
P7	3,163.00	12,309.00	1.00	3,163.00	12,309.00
P8	1,789.00	8,414.00	2.00	3,578.00	16,828.00
P9	1,678.00	7,394.00	2.00	3,356.00	14,788.00
P10	1,568.00	6,976.00	2.00	3,136.00	13,952.00
P11	1,618.00	7,858.00	2.00	3,236.00	15,716.00
A2	9,256.00	-	3.00	27,768.00	-
			SUB TOTAL	100,779.00	192,439.00
			TOTAL	293,218.00	

BREAK DOWN REINFORCING STEEL
PETERONGAN

GIRDER	195.286	Cum	101.00	53,307.80			
APPROACH SLAB	11.610	Cum	138.00	1,602.18			
	11.610	Cum	138.00	1,602.18			
MS WALL	243.110	Cum	109.00	26,498.99			
	243.110	Cum	109.00	26,498.99			
STUBWALL	A1		5,562.00	5,562.00		15,658.00	Stubwall
	A2		10,096.00	10,096.00		126,969.14	Parapet
PARAPET (stubwall)	34.913	Cum	79.00	5,806.50		142,627.14	
	70.063	Cum	79.00	11,652.50			
					142,627.14		

PETERONGAN
A1 - A2 = 262 + (2 x 0.95)
= 263.90 Ln M

Ms Wall - end of ramp = 36.75 Ln M
Ramp A1 Ms Wall = 120.00 Ln M

Ramp A2 - Ms Wall = 120.00 Ln M
Ms Wall - end of Ramp = 73.75 Ln M

Area 1 = 0.370 Sq M
Area 2 = 1.161 Sq M
Area 3 = 1.057 Sq M
Area = 0.475 Sq M

Quantity

= 263.90 x 0.370 x 2	195.29
= 5.00 x 1.161 x 2	11.61
= 115.00 x 1.057 x 2	243.11
= 36.75 x 0.475 x 2	34.91
= 5.00 x 1.161 x 2	11.61
= 115.00 x 1.057 x 2	243.11
= 73.75 x 0.475 x 2	70.06
	809.70

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 09 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ton)	REMARKS
7.5.(1)	Furnish and Delivery of Steel Girder		194.23	
		SUMMARY	194.23	

		Date Prepared : 10 - 09 - 2006	Sheet : of	
PROJECT : PETERONGAN 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		56.51	
		SUMMARY	56.51	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 09 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ton)	REMARKS
7.5.(3)	Erection of Steel Girder		194.23	
		SUMMARY	194.23	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 09 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ton)	REMARKS
7.5.(4)	Erection of Steel Coping and Portal			
			56.51	
		SUMMARY	56.51	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ln M)	REMARKS
7.6.(22)	Cast in Place Concrete Bored Pile	P1 2 X 22	44.00	
	Dia 1500 mm			
		P2 2 X 22	44.00	
		P3 2 X 24	48.00	
		P8 2 X 26	52.00	
		P9 2 X 24	48.00	
		P10 2 X 22	44.00	
		P11 2 X 22	44.00	
		SUMMARY	324.00	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO :	QUANTITY :	CHECKED BY :	

NO	DESCRIPTION	CALCULATION	QTY (Ln M)	REMARKS
7.6.(23)	Cast in Place Concrete Bored Pile	A1 3 X 18	54.00	
	Dia 1800 mm			
		A2 3 X 18	54.00	
		SUMMARY	108.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ln M)	REMARKS
7.6.(26)	Cast in Place Concrete Bored Pile Dia 2500 mm	P4 1 X 32	32.00	
		P5 1 X 40	40.00	
		P6 1 X 36	36.00	
		P7 1 X 24	24.00	
		SUMMARY	132.00	

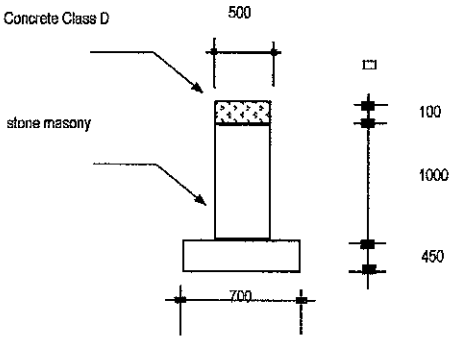
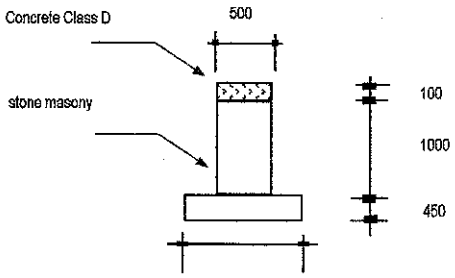
CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 24 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PSB - 01 to PSB 07		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
7.6.(27)	Pile Integrity Test	A1 3 Each		
		P1 2 Each		
		P2 2 Each		
		P3 2 Each		
		P4 1 Each		
		P5 1 Each		
		P6 1 Each		
		P7 1 Each		
		P8 2 Each		
		P9 2 Each		
		P10 2 Each		
		P11 2 Each		
		A2 3 Each		
		24 Each	24.00	
		SUMMARY	24.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
SS7.6.(28)	Pile Dynamic Analysis (PDA)		1.00	
	Dia 1500 mm			
		SUMMARY	1.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
SS7.6.(29)a	Pile Dynamic Analysis (PDA)		1.00	
	Dia 1800 mm			
		SUMMARY	1.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 24 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PSB - 03, 04, 05		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
SS7.6.(29)b	Pile Dynamic Analysis (PDA)		1.00	
	Dia 2500 mm			
		SUMMARY	1.00	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT **KATAHIRA AND ENGINEERS INTERNATIONAL**			
DRAWING NO : PRD-057, PRD-028, PRD-035	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION PROJECT : PETERONGAN FLYOVER	REMARKS
 **Sta 0+280 - 0+300**	Item No. : 7.9 Description. : Stone Masonry Data : Length = 20.00 m Concrete Class D = 0.05 sqm. Stone Masonry = 0.80 sqm. **Total** Concrete Class D = 1.00 cu.m. Stone Masonry = 15.90 cu.m.	Location: Sta 0+280
 **Sta 0+820 - 0+880**	Data : Length = 60.00 m Concrete Class D = 0.05 sqm. Stone Masonry = 0.80 sqm. **Total** Concrete Class D = 3.00 cu.m. Stone Masonry = 47.70 cu.m.	Location: Sta 0+820

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ln M)	REMARKS
7.11.(2)	Expantion Joint (Type A)			
		P4 = 5.75 x 2 x 2		
		= 23.00 Ln M		
		P8 = 5.75 x 2 x 2		
		= 23.00 Ln M		
		Total = 23.00 + 23.00		
		= 46.00 Ln M	46.00	
		SUMMARY	46.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Set)	REMARKS
SS7.11.(4)	Restrainner Type A			
		P4 = 1.00 x 2		
		= 2 Set	2.00	
		P7 = 1.00 x 2		
		= 2 Set	2.000	
		SUMMARY	4.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	

NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
SS7.11.(6)	Stopper for Steel Girder			
		P4 = 1.00 x 2 Each		Steel Girder
		= 2.00 Each		
		P7 = 1.00 x 2 Each		
		= 2.00 Each		Steel Girder
		Total = 2.00 + 2.00		
		= 4.00 Each	4.00	
		SUMMARY	4.00	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT		
KATAHIRA AND ENGINEERS INTERNATIONAL		
DRAWING NO :	QUANTITY :	CHECKED BY :

NO	DESCRIPTION	CALCULATION	QTY (Set)	REMARKS
7.12.(2)b	Elastomeric Bearing Pad			
	Type - A3	P4 = 1.00 x 2		PC Girder
		= 2.00 set		
		P7 = 1.00 x 2		PC Girder
		= 2.00 Set		
		Total = 2.00 + 2.00		
		= 4.00 Set	4.00	
		SUMMARY	4.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 25 - 08 - 2006	Sheet : 1 of 1	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Set)	REMARKS
7.12.(7)a	Bridge Bearing for Steel Girder			
	Type - B1	P4 = 1.00 x 2		
		= 2.00 Set		
		P7 = 1.00 x 2		
		= 2.00 Set		
		Total = 2.00 + 2.00		
		= 4.00 Set	4.00	
		SUMMARY	4.00	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PSB - 01 to 07 PMS - 001 to 012		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Ln M)	REMARKS
7.13	Steel Bridge Reiilings	A1 - A2 = 262 Ln M		
		Ramp A1 - End MS Wall		
		= 120.00 + 0.95		
		= 120.95 Ln M		
		Ms Wall - end of Ramp		
		= 36.75 + 0.5		
		= 37.25 Ln M		
		Ramp A2 - End MS Wall		
		= 120.00 + 0.95		
		= 120.95 Ln M		
		Ms Wall - end of Ramp		
		= 73.75 + 0.5		
		= 74.25 Ln M		
		L Total		
		= (262+120.95+37.25+120.95+74.25) x 2		
		= 1,230.80 Ln M	1,230.80	
		SUMMARY	1,230.80	

CONSTRUCTION COST ESTIMATE WORKSHEET		Date Prepared : 10 - 08 - 2006	Sheet : of	
PROJECT : PETERONGAN FLYOVER NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO :		QUANTITY :	CHECKED BY :	
NO	DESCRIPTION	CALCULATION	QTY (Each)	REMARKS
7.14	Bridge Name Plate	2 Each	2.00	
		SUMMARY	2.00	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared :		Sheet : 1 of 1
PROJECT : PETERONGAN **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 PROJECT : PETERONGAN FLYOVER						REMARKS
	STA		L/R	Average	Length	Volume	
	Start	End		Area		(Cu.M)	
MAIN ROAD	00 + 091.23	00 + 096.91	L	0.360	6.767	2.436	
	00 + 100.26	00 + 141.64	L	0.360	57.876	20.835	
	00 + 142.05	00 + 159.40	L	0.360	41.462	14.926	
	00 + 181.27	00 + 187.96	L	0.360	20.780	7.481	
	00 + 183.28	00 + 196.50	R	0.360	18.258	6.573	
	00 + 000.00	00 + 000.00	R	0.360	0.000	0.000	
						52.251	
SERVICE ROAD	00 + 835.35	00 + 844.38	L	0.360	11.023	3.968	
	00 + 845.30	00 + 848.87	L	0.360	7.056	2.540	
	00 + 849.05	00 + 853.17	L	0.360	7.824	2.817	
						9.325	
	QUANTITY OF DEMOLITION MASONRY =					**61.577** Cu.M	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared : 10/3/2006 19:21			Sheet : 1 of 1
PROJECT : PETERONGAN FLYOVER	BACK UP QUANTITY OF DEMOLITION CONCRETE			
NORTH JAVA CORRIDOR FLYOVER PROJECT				
KATAHIRA AND ENGINEERS INTERNATIONAL				
DRAWING NO : PRD 019 -PRD 024	ESTIMATOR :			CHECKED BY :

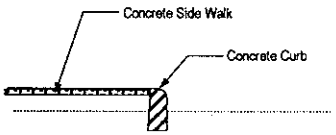
SKETCH DRAWING	QUANTITY CALCULATION PROJECT : PETERONGAN FLYOVER						REMARKS
	STA		Length	Concrete Thickness	Volume (Cu.M)	L/R	
	Start	End					
MAIN ROAD	00 + 091.23	00 + 096.91	5.681	0.100	0.568	L	
	00 + 100.26	00 + 141.64	41.378	0.100	4.138	L	
	00 + 142.05	00 + 159.40	17.355	0.100	1.736	L	
	00 + 181.27	00 + 187.96	6.690	0.100	0.669	L	
	00 + 183.28	00 + 196.50	13.219	0.100	1.322	R	
	00 + 835.35	00 + 844.38	9.031	0.100	0.903	R	
	00 + 845.30	00 + 848.87	3.570	0.100	0.357	R	
	00 + 849.05	00 + 853.17	4.121	0.100	0.412	R	
					10.105		
SERVICE ROAD	00 + 202.22	00 + 205.18	2.956	0.100	0.296	L	
	00 + 207.26	00 + 232.43	25.162	0.100	2.516	L	
	00 + 244.53	00 + 252.75	8.222	0.100	0.822	L	
	00 + 254.75	00 + 262.75	8.006	0.100	0.801	L	
	00 + 353.42	00 + 360.33	6.903	0.100	0.690	L	
	00 + 376.76	00 + 391.89	15.123	0.100	1.512	L	
	00 + 412.91	00 + 421.03	8.115	0.100	0.812	L	
	00 + 422.48	00 + 428.02	5.540	0.100	0.554	L	
	00 + 590.73	00 + 598.85	8.118	0.100	0.812	L	
	00 + 603.54	00 + 608.56	5.026	0.100	0.503	L	
	00 + 609.94	00 + 619.74	9.803	0.100	0.980	L	
	00 + 620.14	00 + 653.02	32.877	0.100	3.288	L	
	00 + 663.42	00 + 667.03	3.618	0.100	0.362	L	
	00 + 699.65	00 + 705.68	6.030	0.100	0.603	L	
	00 + 716.28	00 + 720.00	3.722	0.100	0.372	L	
	00 + 728.31	00 + 734.24	5.936	0.100	0.594	L	
	00 + 743.31	00 + 747.22	3.913	0.100	0.391	L	
	00 + 218.37	00 + 235.42	17.053	0.100	1.705	R	
	00 + 287.95	00 + 295.80	7.855	0.100	0.786	R	
	00 + 298.68	00 + 301.56	2.880	0.100	0.288	R	
	00 + 304.27	00 + 309.39	5.124	0.100	0.512	R	
	00 + 315.42	00 + 325.87	10.445	0.100	1.045	R	
	00 + 360.24	00 + 385.67	25.432	0.100	2.543	R	
	00 + 359.29	00 + 416.45	57.160	0.100	5.716	R	
	00 + 537.70	00 + 542.04	4.343	0.100	0.434	R	
	00 + 547.73	00 + 552.11	4.374	0.100	0.437	R	
	00 + 599.48	00 + 606.96	7.479	0.100	0.748	R	
	00 + 613.24	00 + 618.20	4.962	0.100	0.496	R	
	00 + 619.42	00 + 626.03	6.614	0.100	0.661	R	
	00 + 689.95	00 + 699.65	9.701	0.100	0.970	R	
	00 + 711.79	00 + 719.28	7.494	0.100	0.749	R	
	00 + 736.99	00 + 750.74	13.749	0.100	1.375	R	
	00 + 758.60	00 + 763.10	4.505	0.100	0.451	R	
	00 + 770.51	00 + 777.49	6.981	0.100	0.698	R	
	00 + 778.60	00 + 786.43	7.831	0.100	0.783	R	
	00 + 735.35	00 + 744.38	9.031	0.100	0.903	R	
					37.208		
QUANTITY OF DEMOLITION OF EXISTING CONCRE					47.313	Cu.M	

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared : 10/3/2006 16:53		Sheet : 1 of 1
PROJECT : PETERONGAN FLYOVER	BACK UP QUANTITY DEMOLITION OF HEDGE OR FENCE		
NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRD 019 - PRD 024	ESTIMATOR :		CHECKED BY :

SKETCH DRAWING	QUANTITY CALCULATION PROJECT : PETERONGAN FLYOVER				REMARKS
	STA		Length	L/R	
	Start	End			
MAIN ROAD	00 + 146.64	00 + 150.53	3.893	L	
	00 + 179.42	00 + 188.26	8.847	L	
	00 + 791.72	00 + 868.82	77.098	L	
			89.838		
MAIN ROAD	00 + 180.89	00 + 218.38	37.485	R	
	00 + 802.24	00 + 818.24	16.008	R	
	00 + 865.14	00 + 872.29	7.147	R	
	00 + 876.54	00 + 896.92	20.374	R	
	00 + 912.63	00 + 919.29	6.655	R	
			87.669		
SERVICE ROAD	00 + 264.81	00 + 297.26	32.449	L	
	00 + 301.86	00 + 317.12	15.260	L	
	00 + 319.89	00 + 335.15	15.260	L	
	00 + 335.18	00 + 342.15	6.976	L	
	00 + 346.53	00 + 353.12	6.593	L	
	00 + 140.02	00 + 412.21	272.190	L	
	00 + 562.75	00 + 569.81	7.063	L	
	00 + 581.61	00 + 584.30	2.689	L	
	00 + 587.76	00 + 590.73	2.969	L	
	00 + 598.85	00 + 598.85	0.000	L	
	00 + 613.61	00 + 620.15	6.532	L	
	00 + 668.14	00 + 668.14	0.000	L	
	00 + 747.65	00 + 775.97	28.312	L	
	00 + 779.86	00 + 789.24	9.383	L	
			396.293		
SERVICE ROAD	00 + 225.51	00 + 274.94	49.437	R	
	00 + 279.63	00 + 284.14	4.512	R	
	00 + 357.46	00 + 360.22	2.758	R	
	00 + 365.03	00 + 371.29	6.263	R	
	00 + 516.17	00 + 525.87	9.706	R	
	00 + 526.39	00 + 537.70	11.307	R	
	00 + 572.12	00 + 596.32	24.200	R	
	00 + 634.01	00 + 688.05	54.032	R	
	00 + 750.59	00 + 758.57	7.982	R	
	00 + 770.06	00 + 777.86	7.799	R	
			177.996		
	QUANTITY DEMOLITION OF HEDGE OF FENCE = **751.796** M				

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 10/4/2006 17:56	Sheet : of	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING	CALCULATION	REMARKS



Peterongan Fly Over - Contract Package 3

Item No.7.15 (4) - Demolition of Concrete Side Walk

MAIN ROAD / FLYOVER

STATION START	STATION END	LEFT SIDE WIDTH	AREA
0+097.750	0+130.513	1.698	55.632
0+000.000	0+000.000	0.000	0.000
0+000.000	0+000.000	0.000	0.000
0+000.000	0+000.000	0.000	0.000
SUB TOTAL LENGTH			55.632

STATION START	STATION END	RIGHT SIDE WIDTH	AREA
0+017.608	0+069.751	1.443	75.242
0+069.751	0+092.522	1.442	32.836
0+144.219	0+167.183	1.434	32.919
0+167.183	0+180.708	0.832	11.246
SUB TOTAL LENGTH			152.243

SERVICE ROAD

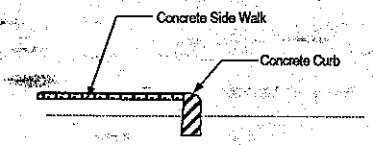
STATION START	STATION END	LEFT SIDE WIDTH	AREA
0+000.000	0+000.000	0.000	0.000
0+000.000	0+000.000	0.000	0.000
0+000.000	0+000.000	0.000	0.000
0+000.000	0+000.000	0.000	0.000
SUB TOTAL LENGTH			0.000

STATION START	STATION END	RIGHT SIDE WIDTH	AREA
0+180.708	0+259.818	1.486	117.557
0+259.818	0+320.355	1.546	93.590
0+320.355	0+436.473	1.693	196.588
0+436.473	0+447.963	1.630	18.729
SUB TOTAL LENGTH			426.464

TOTAL	**634.339 sqm.**

CONSTRUCTION COST ESTIMATE WORKSHEET	Date Prepared 10/4/2006 17:51	Sheet : of	
PROJECT : PETERONGAN PROJECT NORTH JAVA CORRIDOR FLYOVER PROJECT			
KATAHIRA AND ENGINEERS INTERNATIONAL			
DRAWING NO : PRS-019, PRD-020,PRD-021,PRD-022,PRD-023,PRD024	ESTIMATOR :	CHECKED BY :	

SKETCH DRAWING



CALCULATION — Peterongan Fly Over - Contract Package 3

REMARKS

Item No.7.15 (5) : Demolition of Concrete Curb

MAIN ROAD / FLYOVER

STATION START	STATION END	LEFT SIDE LENGTH
0+097.750	0+130.513	32.763
0+000.000	0+000.000	0.000
SUB TOTAL LENGTH		32.763

STATION START	STATION END	RIGHT SIDE LENGTH
0+017.608	0+069.751	52.143
0+069.751	0+092.522	22.771
0+144.219	0+167.183	22.964
0+167.183	0+180.708	13.525
SUB TOTAL LENGTH		111.403

SERVICE ROAD

STATION START	STATION END	LEFT SIDE LENGTH
0+000.000	0+000.000	0.000
0+000.000	0+000.000	0.000
SUB TOTAL LENGTH		0.000

STATION START	STATION END	RIGHT SIDE LENGTH
0+180.708	0+259.818	79.110
0+259.818	0+320.355	60.537
0+320.355	0+436.473	116.118
0+436.473	0+447.963	11.490
SUB TOTAL LENGTH		267.255

TOTAL	411.421 m.