

TABLES

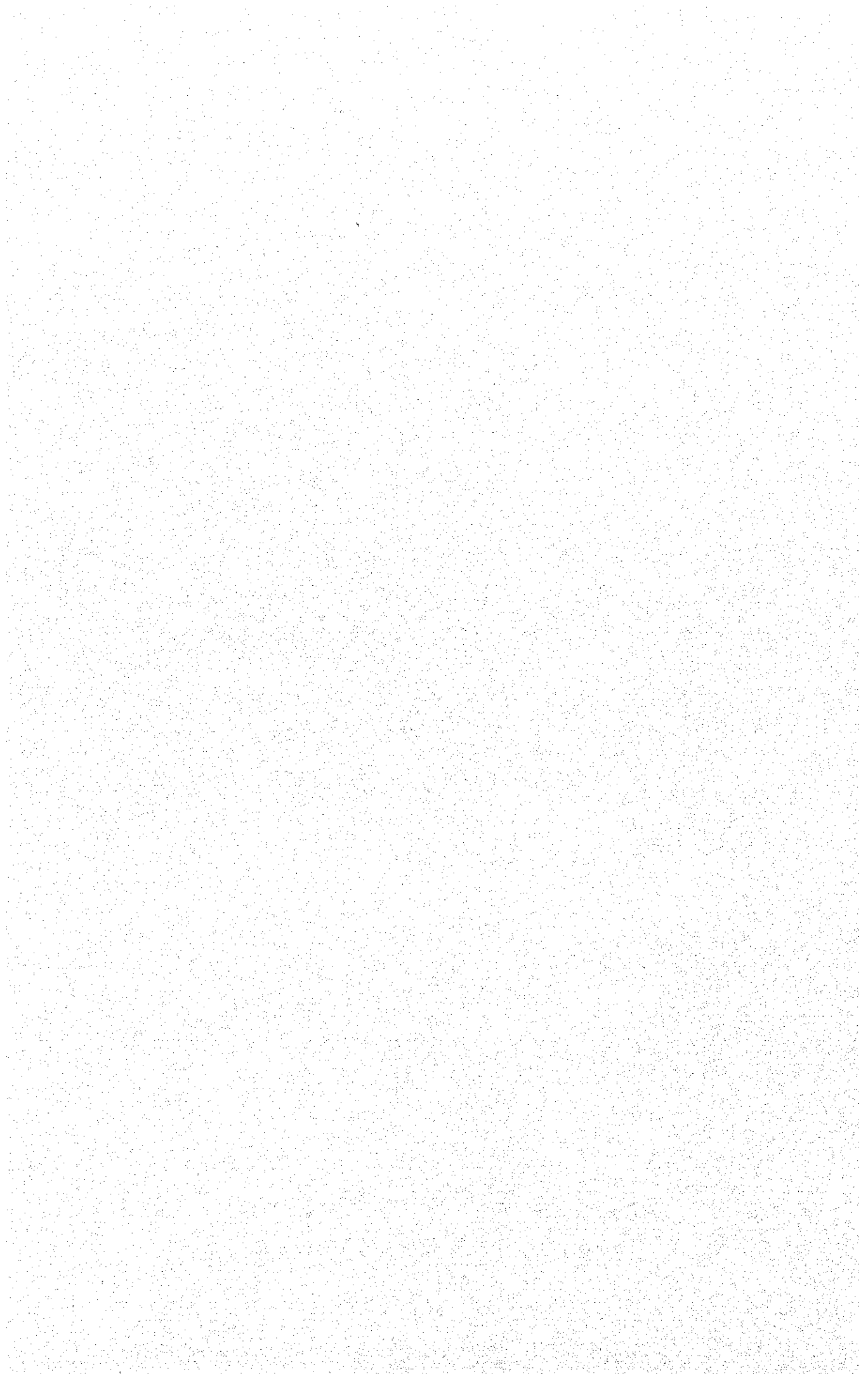


Table 2.1.1 THE RATIO OF EACH COST ITEM

Name of Cost	Detail	Rate	Original Costs for Rate	Remarks
Administration Cost		7%	Construction Base Cost Compensation Cost	*1
Physical Contingency		6%	Construction Base Cost Engineering Service Cost Compensation Cost	*1
Price Contingency	Price Escalation	3%	All costs in Foreign Currency	*2
		8%	All costs in Local Currency	*2
Value Added Tax	PPN	10%	Construction Base Cost Engineering Service Cost Contingencies	
Site Expense	consumables and etc.	15%	Direct Cost by sum of work item	
Overhead & Profit		10%	Direct Cost by sum of work item Site Expense	*2

Note *1 : Reference to similar and latest projects

*2 : Reference to similar and latest projects and Statistic Data

Table 2.1.2 PRICE ESCALATION 1990-1996

Material	Unit	Year							Percent Average (Yearly)
		1,990	1,991	1,992	1,993	1,994	1,995	1,996	
I. Brick									
-Quality I	pcs	30	33	38	50	50	50	50	
percent increment			8.9	16.3	31.6	0.0	0.0	0.0	8.9%
-Quality II	pcs	25	35	35	60	60	60	60	
percent increment			40.0	0.0	71.4	0.0	0.0	0.0	15.7%
II. Sand									
- Sand for mortar	m3	8,000	17,000	12,000	12,000	12,000	12,500	12,500	
percent increment			112.5	-29.4	0.0	0.0	4.2	0.0	7.7%
- Sand for concrete	m3	17,000	21,000	14,000	20,000	20,000	23,000	23,000	
percent increment			23.5	-33.3	42.9	0.0	15.0	0.0	5.2%
III. Lime									
- Lime for mortar	m3	23,000	40,000	30,000	35,000	40,000	40,000	40,000	
percent increment			73.9	-25.0	16.7	14.3	0.0	0.0	9.7%
- Red lime	m3	27,000	67,500	60,000	50,000	50,000	50,000	50,000	
percent increment			150.0	-11.1	-16.7	0.0	0.0	0.0	10.8%
IV. Portland cement	m3	5,200	5,600	5,600	6,300	7,500	8,500	9,750	
percent increment			7.7	0.0	12.5	19.0	13.3	14.7	11.0%
V. White cement	m3	20,000	20,000	19,000	20,000	20,000	20,000	20,000	
percent increment			0.0	-5.0	5.3	0.0	0.0	0.0	0.0%
VI. Wood									
- Teak wood									
- Plank wood	m3	1,700,000	1,500,000	1,500,000	3,000,000	3,000,000	3,000,000	3,000,000	
percent increment			-11.8	0.0	100.0	0.0	0.0	0.0	9.9%
- Beam wood	m3	1,400,000	1,800,000	1,800,000	2,250,000	2,250,000	2,250,000	2,250,000	
percent increment			28.6	0.0	25.0	0.0	0.0	0.0	8.2%
- Camphor wood									
- Plank wood	m3	450,000	400,000	400,000	700,000	1,250,000	1,250,000	1,250,000	
percent increment			-11.1	0.0	75.0	78.6	0.0	0.0	18.6%
- Beam wood	m3	425,000	550,000	650,000	550,000	1,150,000	1,150,000	1,150,000	
percent increment			29.4	18.2	-15.4	109.1	0.0	0.0	18.0%
VII. Steel									
- Reinforcing steel Dia. 19 mm, 12 m	bar	18,700	19,700	20,700	21,770	23,000	24,200	24,200	
percent increment			5.3	5.1	5.2	5.6	5.2	0.0	4.4%
- Reinforcing steel Dia. 25 mm, 12 m	bar	32,000	33,500	35,000	35,805	39,000	41,175	41,175	
percent increment			4.7	4.5	2.3	8.9	5.6	0.0	4.3%
- Steel sheet, 4x6, t = 0.8 mm	bar	29,000	30,000	30,000	35,000	35,000	35,000	35,000	
percent increment			3.4	0.0	16.7	0.0	0.0	0.0	3.2%
- Steel sheet, 4x8, t = 1.4 mm	bar	45,000	46,000	47,000	47,500	47,500	47,500	47,500	
percent increment			2.2	2.2	1.1	0.0	0.0	0.0	0.9%
- Profile steel, UNP 15 cm	bar	125,000	130,000	130,000	135,000	135,000	135,000	135,000	
percent increment			4.0	0.0	3.8	0.0	0.0	0.0	1.3%
- Profile steel, UNP 20 cm	bar	185,000	185,000	185,000	185,000	185,000	210,000	210,000	
percent increment			0.0	0.0	0.0	0.0	13.5	0.0	2.1%
VIII. Labour									
- Common worker	day	2,000	3,500	3,500	4,000	5,000	4,500	4,500	
percent increment			75.0	0.0	14.3	25.0	-10.0	0.0	14.5%
- Foreman	day	3,000	4,500	4,500	5,000	5,000	4,500	4,500	
percent increment			50.0	0.0	11.1	0.0	-10.0	0.0	7.0%
- Carpenter	day	4,500	5,500	5,500	5,500	5,500	6,500	6,500	
percent increment			22.2	0.0	0.0	0.0	18.2	0.0	6.3%
- Chief of carpenter	day	5,000	6,000	6,000	6,000	6,000	7,000	7,000	
percent increment			20.0	0.0	0.0	0.0	16.7	0.0	5.8%
- manson	day	3,000	4,500	4,500	5,500	5,500	6,000	6,000	
percent increment			50.0	0.0	22.2	0.0	9.1	0.0	12.2%
- Chief of manson	day	3,500	5,000	5,000	6,000	6,000	6,500	6,500	
percent increment			42.9	0.0	20.0	0.0	8.3	0.0	10.9%
- painter	day	3,000	4,500	4,750	5,500	5,500	5,500	5,500	
percent increment			50.0	5.6	15.8	0.0	0.0	0.0	10.6%
- Chief of painter	day	3,500	5,000	5,000	6,000	6,000	6,000	6,000	
percent increment			42.9	0.0	20.0	0.0	0.0	0.0	9.4%
- Black smith	day	3,250	4,500	4,500	5,500	5,500	5,500	5,500	
percent increment			38.5	0.0	22.2	0.0	0.0	0.0	9.2%
- Chief of Black smith	day	3,500	5,000	5,000	6,000	6,000	6,000	6,000	
percent increment			42.9	0.0	20.0	0.0	0.0	0.0	9.4%
- Earth Cutter	day	2,750	4,250	4,250	4,500	4,500	5,500	5,500	
percent increment			54.5	0.0	5.9	0.0	22.2	0.0	12.2%
Average									8.5%

**Table 2.1.3 PRICE INDEX FOR CONSUMER IN THE DEVELOPED ASIAN
AND NORTH AMERICAN COUNTRIES**

Country Name	Total Index (1990 = 100)					Escalation Ratio per year				
	1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
Asia										
Japan	107.1	107	107.2	109		0.7	-0.1	0.1	1.7	
Singapore	111.5	113.5	115	117.3		3.1	1.7	1.4	2	
North America										
United States	113.4	116.6	120	122.9		2.6	2.8	2.9	2.3	
Canada	109.4	111.8	113.5	115.4		0.2	2.2	1.6	1.6	

Table 3.1.1 RATIO OF CURRENCY PORTION FOR MAIN MATERIAL GROUPS

Material Group	Factor				Ratio (%)		
	Foreign Currency		Local Currency		Foreign Currency	Local Currency	Total
	Pure	Indirect	Currency	Currency			
Gasoline and Light Oil		Product Machine	Material	0	20	80	100
Sand and Stones		Product Machine	Material	0	5	95	100
Asphalt in General		Product Machine	Material	0	30	70	100
Cement in general		Product Machine	Material	0	20	80	100
Ready Mixed Concrete		Product Machine	Material	0	20	80	100
PC Piles	Product by Foreign Capital Firm		Transportation	95	0	5	100
RC Piles		Product Machine, Material	Material	0	25	70	95
PC Sheet Piles	Product by Foreign Capital Firm		Transportation	95	0	5	100
Woods in General			Material	0	0	100	100
Plywood		Product Machine	Material	0	10	90	100
Reinforcing Bar		Product Machine, Material	Small Tool and Material	0	30	70	100
Structural Steel SS41	Product Machine, Material		Transportation	95	0	5	100
Structural Steel SS41 (Lease)	Product Machine, Material		Small Tool, Material, Maintenance, Management	50	0	50	100
Steel Pile	Product Machine, Material		Transportation	95	0	5	100
Small steel material		Product Machine, Material	Small Tool and Material	0	30	70	100
Gates & Valves	Product Machine, Material		Transportation	95	0	5	100
PVC material		Product Machine	Material	0	30	70	100
Pumps in general	Product Machine, Material		Transportation	95	0	5	100
Plants and Grass			Tool and Material	0	0	100	100
Tile			Tool and Material	0	10	90	100
Equipment	Product Machine, Material		Tool and Material	100	0	0	100

Table 3.2.1 BASIC COSTS AND COMPUTATION OF LABORER COST

ID No.	Qualification of Working	Basic Wage *1		Additional Cost *2					Cost per Day	Rounded Cost
		(1) Daily	(2) Overtime	(3) Leave	(4) Bonus	(5) Others				
L-2-1	Foreman	25,000	10,714	1,250	2,083	9,762	48,809	48,800		
L-2-2	Operator	24,000	10,286	1,200	2,000	9,372	46,858	46,900		
L-2-3	Assistant Operator	16,000	6,857	800	1,333	6,248	31,238	31,200		
L-2-4	Electrician	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-5	Mechanic	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-6	Welder	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-7	Driver	18,000	7,714	900	1,500	7,029	35,143	35,100		
L-2-8	Assistant Driver	16,500	7,071	825	1,375	6,443	32,214	32,200		
L-2-9	Tunnel Worker	24,000	10,286	1,200	2,000	9,372	46,858	46,900		
L-2-10	Drill Worker	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-11	Mason	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-12	Carpenter	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-13	Rigger	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-14	Scaffolding Man	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-15	Plumber	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-16	Steel Worker	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-17	Concrete Worker	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-18	Form Worker	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-19	Grout Worker	24,000	10,286	1,200	2,000	9,372	46,858	46,900		
L-2-20	Painter	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-21	Plasterer	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-22	Asphalt Wolkler	18,000	7,714	900	1,500	7,029	35,143	35,100		
L-2-23	Common Labour	18,000	7,714	900	1,500	7,029	35,143	35,100		
L-2-24	Light Labour	15,000	6,429	750	1,250	5,857	29,286	29,300		
L-2-25	Watchman	15,000	6,429	750	1,250	5,857	29,286	29,300		
L-2-26	Chief of Carpenter	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-27	Chief of Mason	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-28	Chief of Concrete Worker	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-29	Chief of Steel Worker	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-30	Chief of Painter	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-31	Chief of Plasterer	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-32	Chief of Bridge	35,000	15,000	1,750	2,917	13,667	68,334	68,300		
L-2-33	Bridge Worker	30,000	12,857	1,500	2,500	11,714	58,571	58,600		
L-2-34	Cad Operator	28,000	12,000	1,400	2,333	10,933	54,666	54,700		
L-2-35	Draft Man	20,000	8,571	1,000	1,667	7,810	39,048	39,000		
L-2-36	Chief of Tunnel Worker	36,000	15,429	1,800	3,000	14,057	70,286	70,300		
L-2-37	Tunnel Specialist	31,000	13,286	1,550	2,583	12,105	60,524	60,500		

Note *1 : Source; Based on Daftar Harga Satuan Bahan Bangunan April-May 99/00 Semarang dan Sekitarnya including living and welfare facilities

*2 : (2) Overtime ; Basic wage / 7 x 1.5 x 2 hours

(3) Leave ; Basic wage / 20

(4) Bonus ; Basic wage / 12

(5) Others ; ((3)+(2)+(3)+(4)) x 25% Taxes, Food, Insurances, Transportation and other allowances

*3 : All cost belong to Local Currency Portion

giving of 1day / 1month

payment of 1month / 1year

Taxes, Food, Insurances, Transportation and other allowances

Table 3.3.1 (1/6) UNIT COSTS OF MATERIALS

ID No.	Description		Unit	Price (Rp.)			
	Major	Details		PF/C	IF/C	L/C	Total
Combustibles							
M-A-1		Gasoline	ltr	0	200	800	1,000
M-A-2		Light Oil (Diesel Oil)	ltr	0	120	480	600
M-A-3		Kerosene	ltr	0	110	440	550
M-A-4		Propane Gas	kg	0	165	660	825
M-A-5		Acetylene Gas	kg	0	1,768	7,072	8,840
M-A-6		Oxygen (big tube)	m ³	0	1,573	6,292	7,865
M-A-7		Grease	kg	0	600	2,400	3,000
M-A-8		Metanole	ltr	0	700	2,800	3,500
M-A-9		SAE 20	ltr	0	500	2,000	2,500
M-A-10		SAE 40	ltr	0	600	2,400	3,000
M-A-11		SAE 140	ltr	0	800	3,200	4,000
M-A-12		SAE 90	ltr	0	660	2,640	3,300
Sand and Stones							
M-B-1		Fine Aggregate (washed sand)	m ³	0	2,100	39,900	42,000
M-B-2		Coarse Aggregate	m ³	0	2,600	49,400	52,000
M-B-3		Sand for Mortar (Masonry)	m ³	0	2,250	42,750	45,000
M-B-4		Sand for Filling and Base Course	m ³	0	1,350	25,650	27,000
M-B-5		Cobble Stone	m ³	0	1,850	35,150	37,000
M-B-6		River Gravel (Stone)	m ³	0	2,250	42,750	45,000
M-B-7		Boulder	m ³	0	2,500	47,500	50,000
M-B-8		Sand for Dam Embankment	m ³	0	1,350	25,650	27,000
M-B-9		Soil for Backfilling	m ³	0	400	7,600	8,000
M-B-10		Crushed Stone for Riprap	m ³	0	2,350	44,650	47,000
M-B-11		Crushed Stone for Masonry	m ³	0	1,100	20,900	22,000
M-B-12		Crushed Stone for Pavement and Concrete	m ³	0	3,250	61,750	65,000
M-B-13		Solid Soil	m ³	0	600	11,400	12,000
M-B-14		Sand for Concrete	m ³	0	2,050	38,950	41,000
M-B-15		Pumicestone	kg	0	875	16,625	17,500
Concrete and Asphalt							
M-C-1		Portland Cement	kg	0	100	400	500
M-C-2		White Portland Cement	kg	0	200	800	1,000
M-C-3		Cut-back Asphalt	kg	0	195	455	650
M-C-4		Asphalt	kg	0	450	1,050	1,500
M-C-5		Asphalt Tack Coat	lit	0	6,330	14,770	21,100
M-C-6		Asphalt Prime Coat	lit	0	6,300	14,700	21,000
M-C-7		Ready Mixed Concrete; 500kg/cm ² , - mm (A1)	m ³	0	56,000	224,000	280,000
M-C-8		Ready Mixed Concrete; 400kg/cm ² , 25mm (A2)	m ³	0	49,000	196,000	245,000
M-C-9		Ready Mixed Concrete; 350kg/cm ² , 25mm (A3)	m ³	0	46,000	184,000	230,000
M-C-10		Ready Mixed Concrete; 250kg/cm ² , 25mm (B)	m ³	0	42,000	168,000	210,000
M-C-11		Ready Mixed Concrete; 225kg/cm ² , 25mm (C1&2)	m ³	0	40,000	160,000	200,000
M-C-12		Ready Mixed Concrete; 225kg/cm ² , 15mm (C3)	m ³	0	40,000	160,000	200,000
M-C-13		Ready Mixed Concrete; 175kg/cm ² , 40mm (D)	m ³	0	39,000	156,000	195,000
M-C-14		Ready Mixed Concrete; 125kg/cm ² , 25mm (E)	m ³	0	35,000	140,000	175,000
M-C-15		Prestressed Concrete Pile Dia. 300 mm A	m	95,000	0	5,000	100,000
M-C-16		Prestressed Concrete Pile Dia. 300 mm B	m	99,750	0	5,250	105,000
M-C-17		Prestressed Concrete Pile Dia. 300 mm C	m	104,500	0	5,500	110,000
M-C-18		Prestressed Concrete Pile Dia. 350 mm A	m	114,000	0	6,000	120,000
M-C-19		Prestressed Concrete Pile Dia. 350 mm B	m	121,600	0	6,400	128,000
M-C-20		Prestressed Concrete Pile Dia. 350 mm C	m	123,500	0	6,500	130,000
M-C-21		Prestressed Concrete Pile Dia. 400 mm A	m	142,500	0	7,500	150,000
M-C-22		Prestressed Concrete Pile Dia. 400 mm B	m	147,250	0	7,750	155,000
M-C-23		Prestressed Concrete Pile Dia. 400 mm C	m	152,000	0	8,000	160,000
M-C-24		Prestressed Concrete Pile Dia. 450 mm A	m	147,250	0	7,750	155,000
M-C-25		Prestressed Concrete Pile Dia. 450 mm B	m	156,750	0	8,250	165,000
M-C-26		Prestressed Concrete Pile Dia. 450 mm C	m	161,500	0	8,500	170,000
M-C-27		Prestressed Concrete Pile Dia. 500 mm A	m	171,000	0	9,000	180,000
M-C-28		Prestressed Concrete Pile Dia. 500 mm B	m	175,750	0	9,250	185,000
M-C-29		Prestressed Concrete Pile Dia. 500 mm C	m	180,500	0	9,500	190,000
M-C-30		Prestressed Concrete Pile Dia. 600 mm A	m	209,000	0	11,000	220,000
M-C-31		Prestressed Concrete Pile Dia. 600 mm B	m	213,750	0	11,250	225,000
M-C-32		Prestressed Concrete Pile Dia. 600 mm C	m	228,000	0	12,000	240,000
M-C-33		Reinforced Concrete Pipe, Dia. 200 mm	m	0	9,000	21,000	30,000
M-C-34		Reinforced Concrete Pipe, Dia. 300 mm	m	0	9,570	22,330	31,900
M-C-35		Reinforced Concrete Pipe, Dia. 400 mm	m	0	35,640	83,160	118,800
M-C-36		Reinforced Concrete Pipe, Dia. 500 mm	m	0	42,240	98,560	140,800
M-C-37		Reinforced Concrete Pipe, Dia. 600 mm	m	0	54,285	126,665	180,950
M-C-38		Reinforced Concrete Pipe, Dia. 800 mm	m	0	98,835	230,615	329,450
M-C-39		Reinforced Concrete Pipe, Dia. 1,000 mm	m	0	136,422	318,318	454,740

Table 3.3.1 (2/6) UNIT COSTS OF MATERIALS

ID No.	Description		Unit	Price (Rp.)			
	Major	Details		PF/C	IF/C	L/C	Total
M-C-40		Concrete Pile (without Re-bar) Dia.400mm	m	0	3,960	9,240	13,200
M-C-41		Concrete Pile (without Re-bar) Dia.600mm	m	0	8,580	20,020	28,600
M-C-42		Concrete Block for Pavement : 21 x 10.5 x 8cm	pcs	0	182	424	605
M-C-43		Concrete Hollow Block : 40 x 20 x 10 cm	pcs	0	270	630	900
M-C-44		Form Tie	pcs	285	0	15	300
M-C-45		Non Shrinkage Mortar	m3	0	18,260	73,040	91,300
M-C-46		Sealant	m3	0	17,600	70,400	88,000
M-C-47		Prestressed Concrete Sheet Pile (B=0.5m, t=0.32m)	m	212,800	0	11,200	224,000
M-C-48		Prestressed Concrete Sheet Pile (B=0.5m, t=0.22m)	m	190,000	0	10,000	200,000
M-C-49		Reinforced Concrete Sheet Pile	m	0	51,000	119,000	170,000
M-C-50		Precast Prestressed Concrete Main Beam	m3	0	555,720	1,296,680	1,852,400
M-C-51		Precast Prestressed Concrete Panel	m3	0	184,800	431,200	616,000
M-C-52		Precast Prestressed Concrete Concrete Diaphragm	m3	0	223,872	522,368	746,240
M-C-53		Admixture	ltr	0	1,893	4,416	6,309
M-C-54		Concrete Pavement Border	m3	0	82,500	192,500	275,000
M-C-55		U-20 Shpape Concrete Block	m	0	1,500	3,500	5,000
M-C-56		U-30 Shpape Concrete Block	m	0	2,250	5,250	7,500
M-C-57		Paving Block	piece	0	105	245	350
M-C-58		Lime	m3	0	11,500	103,500	115,000
M-C-59		Fiber Cement for Ceiling, 1200 x 1200 mm x 6 mm	m2	0	1,800	4,200	6,000
M-C-60		Prefabricated Concrete Tube	bar	0	15,000	35,000	50,000
M-C-61		Ready Mix Concrete 100 Kg/cm2	m3	0	31,000	124,000	155,000
M-C-62		Asphalt Jute Cord	kg	0	180	420	600
M-C-63		Asphalt Treated Base	ton	0	30,750	71,750	102,500
Log and Timber							
M-D-1		Log Pile, Dia. 15cm	m	0	0	10,000	10,000
M-D-2		Log Pile, Dia. 10cm	m	0	0	5,000	5,000
M-D-3		Bamboo Pile, Dia. 3cm)	m	0	0	650	650
M-D-4		Timber	m3	0	0	850,000	850,000
M-D-5		Plywood, 90x210 t=3mm	sheet	0	3,400	30,600	34,000
M-D-6		Plywood, 120 x 240 t=6mm	sheet	0	4,500	40,500	45,000
M-D-7		Plywood, 120 x 240 t=9mm	sheet	0	3,750	33,750	37,500
M-D-8		Plywood, t=12mm (water proof)	m2	0	6,000	54,000	60,000
M-D-9		Door incl. Frame Accessories, 2.1x0.9m	nos.	0	0	900,000	900,000
M-D-10		Form Timber	m3	0	0	850,000	850,000
M-D-11		Form Timber	m2	0	0	30,000	30,000
M-D-12		Coconut Pile, Dia. 25cm, 10-12 m	nos.	0	0	55,000	55,000
M-D-13		Door Frame Wood first class(Teak/Ulin)	m3	0	0	6,500,000	6,500,000
M-D-14		Plank Wood first class(Teak/Ulin)	m3	0	0	7,500,000	7,500,000
M-D-15		Door Frame Wood second class(Camphol)	m3	0	0	1,850,000	1,850,000
M-D-16		Plank Wood second class(Camphol)	m3	0	0	1,900,000	1,900,000
M-D-17		Door Frame Wood third class(Borneo)	m3	0	0	1,200,000	1,200,000
M-D-18		Plank Wood third class(Borneo)	m3	0	0	1,250,000	1,250,000
M-D-19		Wood fourth class (Sengon)	m3	0	0	850,000	850,000
M-D-20		Timbering for roof	m3	0	0	1,200,000	1,200,000
M-D-21		Plank wood (Bauwplank)	m3	0	0	850,000	850,000
M-D-22		Plank wood (Sengon)	m3	0	0	300,000	300,000
M-D-23		Dolken Wood	bar	0	0	7,500	7,500
M-D-24		Ceiling Wood	m3	0	0	750,000	750,000
M-D-25		Wood for Fire	m3	0	0	9,000	9,000
M-D-26		Wood Cornice	m	0	0	1,500	1,500
Iron							
M-E-1		Reinforcing Bar, Round U-30	kg	0	2,500	2,500	5,000
M-E-2		Reinforcing Bar, Deformed U-30	kg	0	3,000	3,000	6,000
M-E-3		Structural Steel(Lease), SS41	kg day	18	0	12	30
M-E-4		Structural Steel(Purchasing), SS41	kg	5,225	0	275	5,500
M-E-5		Structural Steel, SM41	kg	6,175	0	325	6,500
M-E-6		Structural Steel, SMA41	kg				
M-E-7		Steel Plate SS41	kg	5,225	0	275	5,500
M-E-8		H-beam (Lease), SS41	kg day	18	0	12	30
M-E-9		H-beam (Purchasing), SS41	kg	5,225	0	275	5,500
M-E-10		L-beam (Lease), SS41	kg day	15	0	15	30
M-E-11		L-beam (Purchasing), SS41	kg	5,225	0	275	5,500
M-E-12		Tierod (Lease)	kg day	60	0	40	100
M-E-13		Tierod (Purchasing)	kg	47,500	0	2,500	50,000
M-E-14		Steel Pile, Dia.38mm (1.5ch), incl. Coating & Lining	m	11,475	0	604	12,079
M-E-15		Steel Pile, Dia.100mm, incl. Coating & Lining	m	45,900	0	2,416	48,316
M-E-16		Steel Pile, Dia.125mm, incl. Coating & Lining	m	68,850	0	3,624	72,474
M-E-17		Steel Pipe, Dia.50mm, incl. Coating & Lining	m	20,540	0	1,081	21,621
M-E-18		Steel Pipe, Dia.75mm, incl. Coating & Lining	m	33,105	0	1,742	34,848

Table 3.3.1 (3/6) UNIT COSTS OF MATERIALS

ID No.	Description		Unit	Price (Rp.)			Total
	Major	Details		PF/C	IF/C	L/C	
M-E-19		Steel Pipe, Dia.100mm, incl. Coating & Lining	m	45,900	0	2,416	48,316
M-E-20		Steel Pile, Dia.350mm, incl. Coating & Lining	m	457,188	0	24,063	481,250
M-E-21		Steel Pile, Dia.400mm, incl. Coating & Lining	m	485,925	0	25,575	511,500
M-E-22		Steel Pile, Dia.600mm, incl. Coating & Lining	m	728,888	0	38,363	767,250
M-E-23		Steel Pipe for Gas	kg	5,738	0	302	6,039
M-E-24		Steel Pipe, Dia.400mm, (spiral welded)	m	248,710	0	13,090	261,800
M-E-25		Steel Pipe, Dia.600mm, (spiral welded)	m	376,200	0	19,800	396,000
M-E-26		Galvanized Steel Pipe, Dia. 150mm	m	71,250	0	3,750	75,000
M-E-27		Galvanized Steel Pipe, Dia. 50mm	m	14,250	0	750	15,000
M-E-28		Galvanized Steel Pipe, Dia. 75mm	m	19,000	0	1,000	20,000
M-E-29		Galvanized Steel Pipe, Dia. 100mm	m	23,750	0	1,250	25,000
M-E-30		Steel Sheet Pile (Lease)	kg day	16	0	11	27
M-E-31		Steel Sheet Pile (Purchasing)	ton	5,700,000	0	300,000	6,000,000
M-E-32		Expansion Joint, Steel Profile L-75x6mm	m	7,367	0	388	7,755
M-E-33		Anchor, Steel Bar (Dia.32&22) incl. PVC Pipe	nos.	0	23,100	9,900	33,000
M-E-34		Steel Door, 40mm thick, 2.10x 1.70m	pcs	2,978,250	0	156,750	3,135,000
M-E-35		Galvanized Steel Wire	kg	2,850	0	150	3,000
M-E-36		Bolt and Nut	kg	0	12,375	28,875	41,250
M-E-37		Welding Rod	kg	0	7,508	3,218	10,725
M-E-38		Galvanized Steel Fence, H=1.75m	m	0	33,957	79,233	113,190
M-E-39		Steel Fence; Chain Link Type	m	0	29,358	68,501	97,859
M-E-40		Steel Fence; Rectangular Pipe Type	m	0	46,263	107,947	154,210
M-E-41		Guardrail: H=2.1m	m	0	26,111	60,926	87,038
M-E-42		Guardrail: H=1.1m	m	0	27,332	63,774	91,105
M-E-43		Gabion Mattress; 4 mm, 1.5x3.0x0.5m	pcs	0	56,100	130,900	187,000
M-E-44		Gabion Cylinder; 4mm, Dia.=50cm	m	0	8,250	19,250	27,500
M-E-45		Zinc Roof	m2	0	2,970	6,930	9,900
M-E-46		Checkered Steel Plate, 6mm thick	kg	0	1,733	743	2,475
M-E-47		Live and Anchorage	set	0	207,900	485,100	693,000
M-E-48		Nails for Wood	kg	0	2,400	5,600	8,000
M-E-49		Nails for Iron(Steel) Sheet	kg	0	3,000	7,000	10,000
M-E-50		Stopper Nail	pcs	0	3	7	10
M-E-51		Anchor	pcs	0	2,100	4,900	7,000
M-E-52		Plug Nail	pcs	0	90	210	300
M-E-53		Screw Nail	pcs	0	150	350	500
M-E-54		Nail for Lath	kg	0	1,650	3,850	5,500
M-E-55		Steel Barring Plate	kg	0	1,780	4,152	5,932
M-E-56		Copper Plate	m2	0	323,369	754,527	1,077,896
M-E-57		Wire Mesh; Dia. 5mm x 15mm mesh	m2	0	3,000	7,000	10,000
M-E-58		Form (Metal)	m2	3,230	0	170	3,400
M-E-59		Steel Sliding Form for Arc.	LS	364,779,044	0	19,198,897	383,977,941
M-E-60		Steel Sliding Form for Side Wall	LS	364,779,044	0	19,198,897	383,977,941
M-E-61		Jumbo for Reinforcing Bar	LS	127,672,665	0	6,719,614	134,392,279
M-E-62		Prefabricated Scaffold (Lease)	m2	6,600	0	4,400	11,000
M-E-63		Tublar Scaffold (Lease)	m2	5,610	0	3,740	9,350
M-E-64		Steel Wire	kg	0	2,400	5,600	8,000
M-E-65		Steel Net	kg	0	510	1,190	1,700
M-E-66		Iron Sheet BJLS 3.0	sheet	0	20,300	8,700	29,000
M-E-67		Corrugated Iron Sheet	sheet	0	28,700	12,300	41,000
M-E-68		Gabion Mattress; 2.7mm, 3.0x1.0x0.5m, Galvanize	pcs	327,038	0	17,213	344,250
M-E-69		Gabion Mattress; 2.7mm, 3.0x1.0x0.5m, Galvanize	pcs	457,853	0	24,098	481,950
M-E-70		Gabion Mattress; 2.7mm, 2.0x1.0x0.3m, Galvanize	pcs	163,519	0	8,606	172,125
M-E-71		Gabion Mattress; 2.7mm, 2.0x1.0x0.3m, Galvanize	pcs	196,223	0	10,328	206,550
M-E-72		Gabion Cylinder; 2.7mm, Dia.=50cm, Galvanized a	m	65,408	0	3,443	68,850
M-E-73		Aluminium Sheet t=0.5mm	sheet	0	44,100	102,900	147,000
M-E-74		Steel/Reinforcing Bar Dia.12 mm	kg	0	1,050	2,450	3,500
M-E-75		Steel/Reinforcing Bar Deform Dia. 16 mm	kg	0	1,125	2,625	3,750
M-E-76		Galvanized Tube Dia. 3.81 mm	bar	0	10,800	25,200	36,000
M-E-77		C-beam (Lease), SS41	kg day	4	0	2	6
M-E-78		C-beam (Purchasing), SS41	kg	5,225	0	275	5,500
M-E-79		Supporting (Lease)	m3	5,940	0	3,960	9,900
Valves							
M-F-1		Air Valve, Dia 25mm	set	648,945	0	34,155	683,100
M-F-2		Air Valve, Dia 50mm	set	1,111,880	0	58,520	1,170,400
M-F-3		Air Valve, Dia 75mm	set	1,573,770	0	82,830	1,656,600
M-F-4		Suicide Valve for 400mm Dia. Pipe	set	9,013,125	0	474,375	9,487,500
M-F-5		Counterflow Prevention Valve for 100 mm Dia. Pip	set	47,467	0	2,498	49,965
M-F-6		Butterfly Valve for 400mm Dia. Pipe	set	7,837,500	0	412,500	8,250,000
M-F-7		Butterfly Valve for 600mm Dia. Pipe	set	11,756,250	0	618,750	12,375,000
M-F-8		Flap Gate 600 mm Dia.	set	4,898,960	0	257,840	5,156,800

Table 3.3.1 (4/6) UNIT COSTS OF MATERIALS

ID No.	Description		Unit	Price (Rp.)			
	Major	Details		PF/C	IF/C	L/C	Total
M-F-9		Flap Gate 800 mm Dia.	set	7,125,000	0	375,000	7,500,000
M-F-10		Flap Gate 1,000 mm Dia.	set	8,159,360	0	429,440	8,588,800
M-F-11		Steel Gate 1.0x1.0m (Slide Gate Type)	set	10,450,000	0	550,000	11,000,000
M-F-12		Steel Gate 1.0x1.25m (Slide Gate Type)	set	35,150,000	0	1,850,000	37,000,000
M-F-13		Steel Gate 1.5x1.5m (Slide Gate Type)	set	47,500,000	0	2,500,000	50,000,000
M-F-14		Steel Gate 2.0x1.5m (Slide Gate Type)	set	12,138,720	0	638,880	12,777,600
M-F-15		Steel Gate 2.0x2.0m (Slide Gate Type)	set	86,450,000	0	4,550,000	91,000,000
M-F-16		Steel Gate 4.00x3.46m incl. Machines	set				
M-F-17		Steel Gate 4.00x3.25m incl. Machines	set				
M-F-18		Steel Gate 5.50x4.35m incl. Machines	set				
M-F-19		Steel Gate 18.5x3.7m incl. Machines	set				
M-F-20		Expansion Joint for Pipe, Dia. 100mm	nos.	2,967,800	0	156,200	3,124,000
M-F-21		Expansion Joint for Pipe, Dia. 125mm	nos.	3,317,875	0	174,625	3,492,500
M-F-22		Expansion Joint for Pipe, Dia. 150mm	nos.	3,650,185	0	192,115	3,842,300
M-F-23		Expansion Joint for Pipe, Dia. 200mm	nos.				
M-F-24		Expansion Joint for Pipe, Dia. 300mm	nos.	3,806,935	0	200,365	4,007,300
M-F-25		Expansion Joint for Pipe, Dia. 350mm	nos.	4,507,085	0	237,215	4,744,300
M-F-26		Expansion Joint for Pipe, Dia. 400mm	nos.	7,382,925	0	388,575	7,771,500
M-F-27		Expansion Joint for Pipe, Dia. 600mm	nos.	8,145,775	0	428,725	8,574,500
M-F-28		Expansion Joint for Pipe, Dia. 800mm	nos.	18,351,245	0	965,855	19,317,100
Chemicals							
M-G-1		PVC Pipe, Dia. 250mm	m	0	58,500	136,500	195,000
M-G-2		PVC Pipe, Dia. 19.05mm(3/4")	bar	0	4,350	10,150	14,500
M-G-3		PVC Pipe, Dia. 25.4mm(1")	bar	0	6,000	14,000	20,000
M-G-4		PVC Pipe, Dia. 50mm	m	0	2,340	5,460	7,800
M-G-5		PVC Pipe, Dia. 50.8mm(2")	bar	0	14,250	33,250	47,500
M-G-6		PVC Pipe, Dia. 75mm	m	0	2,475	5,775	8,250
M-G-7		PVC Pipe, Dia. 100mm	m	0	3,465	8,085	11,550
M-G-8		PVC Pipe, Dia. 101.6mm (4")	bar	0	33,000	77,000	110,000
M-G-9		PVC Pipe, Dia. 150mm	m	0	14,108	32,918	47,025
M-G-10		PVC Pipe, Dia. 200mm	m	0	23,018	53,708	76,725
M-G-11		PVC Air Vent Pipe, Dia.75mm, 80cm Long	pcs	0	11,550	26,950	38,500
M-G-12		Elastic Joint Filler 10mm thick	m2	0	8,250	19,250	27,500
M-G-13		Geotextile	m2	7,838	0	413	8,250
M-G-14		Waterstop; B=200mm	m	47,500	0	2,500	50,000
M-G-15		Waterstop; B=300mm	m	76,000	0	4,000	80,000
M-G-16		Elastomeric Bearing, 350x280x 73mm	pcs	0	600,000	600,000	1,200,000
M-G-17		Elastomeric Bearing, 312x212x 24mm	pcs	0	150,000	150,000	300,000
M-G-18		Rubber Sheet, 400x100x 30mm	pcs	0	220,000	220,000	440,000
M-G-19		PVC Pipe, Dia. 110mm	bar	0	16,440	38,360	54,800
M-G-20		GIP Pipe 2"	m	0	6,300	2,700	9,000
Pump Equipments							
M-H-1		Screw Pump Q=3.0m3/s	nos.				
M-H-2		Screw Pump Q=2.3m3/s	nos.				
M-H-3		Submersible Pump Q=0.1m3/s, 18kw	nos.				
M-H-4		Submersible Pump Q=0.1m3/min, 1.8kw	nos.				
M-H-5		Submersible Pump Q=0.1m3/min, 2.2kw	nos.	6,139,375	0	323,125	6,462,500
M-H-6		Diesel Engine; Radiator cooled indoor, 325hp	set	4,441,250	0	233,750	4,675,000
M-H-7		Diesel Engine driven Generator Unit; 30kw	set				
M-H-8		Trash Screen; Rotary endless outdoor	set				
M-H-9		Belt Conveyor; B=0.9and18m, 2.2kw	set				
M-H-10		Electrical Panel incl. distribution, control, alarm and battery charger Panels, water level indication	set				
Plants and Grass							
M-I-1		Angsana	tree	0	0	15,000	15,000
M-I-2		Glodogan	tree	0	0	50,000	50,000
M-I-3		Flamboyant	tree	0	0	150,000	150,000
M-I-4		Cemara Kipas	tree	0	0	38,500	38,500
M-I-5		Cemara Lilin	tree	0	0	38,500	38,500
M-I-6		Palem Hijau	tree	0	0	16,500	16,500
M-I-7		Tanjung	tree	0	0	11,550	11,550
M-I-8		Cendrawasih/Taiwan Lila	tree	0	0	116	116
M-I-9		Soka	tree	0	0	275	275
M-I-10		Filling of Fertilized Soil	kg	0	0	1,320	1,320
M-I-11		Sodding Grass	m2	0	0	3,000	3,000
Building							
M-K-1		Wall Tile	m2	0	1,925	17,325	19,250
M-K-2		Mosaic Stone	m2	0	2,700	24,300	27,000
M-K-3		Roof Tile	m2	0	2,035	18,315	20,350
M-K-4		Color Floor Tile 20x20	m2	0	1,300	11,700	13,000

Table 3.3.1 (5/6) UNIT COSTS OF MATERIALS

ID No.	Description		Unit	Price (Rp.)			
	Major	Details		PF/C	IF/C	L/C	Total
M-K-5		Color Floor Tile 15x20	m2	0	1,250	11,250	12,500
M-K-6		Grey Floor Tile, 20x20	m2	0	813	7,313	8,125
M-K-7		Grey Floor Tile, 15x20	m2	0	1,083	9,750	10,833
M-K-8		Terasco Floor Tile, 30x30	m2	0	1,800	16,200	18,000
M-K-9		Terasco Floor Tile, 10x30	m2	0	5,000	45,000	50,000
M-K-10		Wafel Floor Tile, 20x20	m2	0	875	7,875	8,750
M-K-11		Window Frame (Almi) with Accessory; 0.6 x 1.2m	m2	0	4,000	36,000	40,000
M-K-12		Water Tank, 5.0m3	nos.	0	324,000	756,000	1,080,000
M-K-13		Maintenance Post Marker	nos.	0	28,600	42,900	71,500
M-K-14		Name Plate (marble)	m2	0	44,000	396,000	440,000
M-K-15		Electrical Charge	kWh	0	36	84	120
M-K-16		Marble	m2	118,750	0	6,250	125,000
M-K-17		Porcelain 11x11	m2	0	10,537	24,587	35,124
M-K-18		Porcelain 10x15	m2	0	9,000	21,000	30,000
M-K-19		Porcelain 15x15	m2	0	6,333	14,778	21,111
M-K-20		Porcelain 20x20	m2	0	3,563	8,313	11,875
M-K-21		Septic Tank 1m3	pcs	0	510,000	1,190,000	1,700,000
M-K-22		Septic Tank 2m3	pcs	0	675,000	1,575,000	2,250,000
M-K-23		Septic Tank 6m3	pcs	0	1,290,000	3,010,000	4,300,000
M-K-24		Septic Tank 10m3	pcs	0	1,590,000	3,710,000	5,300,000
M-K-25		Electrical Socket	pcs	0	4,000	36,000	40,000
M-K-26		Electrical Switch	pcs	0	900	8,100	9,000
M-K-27		Fuse for Electric Kit of 1group (Local Made)	pcs	0	15,000	135,000	150,000
M-K-28		Fuse for Electric Kit of 2group (Local Made)	pcs	0	17,500	157,500	175,000
M-K-29		Fuse for Electric Kit of 3group (Local Made)	pcs	0	22,500	202,500	225,000
M-K-30		Wall Paint	kg	0	3,750	8,750	12,500
M-K-31		Paint for Masonry Wall	kg	0	1,500	3,500	5,000
M-K-32		Putty for Masonry Wall	kg	0	2,250	5,250	7,500
M-K-33		Paint for Wood	kg	0	7,650	17,850	25,500
M-K-34		Glaziers Putty for Wood	kg	0	3,300	7,700	11,000
M-K-35		Antirust Primer paint	kg	0	3,150	7,350	10,500
M-K-36		Ridge for Roof	pieces	0	120	280	400
M-K-37		Glue for Wood	kg	0	2,250	5,250	7,500
M-K-38		Glass of 3mm thick	m2	0	8,700	20,300	29,000
M-K-39		Paint Oil	ltr	0	1,200	2,800	4,000
M-K-40		Paint for Iron	kg	0	5,700	13,300	19,000
M-K-41		Polish	kg	0	5,040	11,760	16,800
M-K-42		Sand Paper	sheet	0	750	1,750	2,500
M-K-43		Red Lead	kg	0	2,700	6,300	9,000
M-K-44		Door Hinge (125 mm)	pcs	0	1,200	2,800	4,000
M-K-45		Aluminium Door Key	pcs	0	15,000	35,000	50,000
M-K-46		Ceramic Roof Tile	m2	0	12,150	28,350	40,500
M-K-47		Ceramic Ridge Tile	pcs	0	2,846	6,640	9,485
M-K-48		Ceramic Floor Tile, 200x200 mm	m2	0	9,000	21,000	30,000
M-K-49		Ceramic Floor Tile, 200x200mm, Nonslip Texture	m2	0	9,000	21,000	30,000
M-K-50		Ceramic Floor Tile, 300x300 mm	m2	0	9,000	21,000	30,000
M-K-51		Ceramic Floor Tile, 300x300 mm, Nonslip Texture	m3	0	9,000	21,000	30,000
M-K-52		Window Hinge (75 mm)	pcs	0	1,200	2,800	4,000
M-K-53		Glass of 5 mm thick (Natural Colour)	m2	0	10,500	24,500	35,000
M-K-54		Glass of 10 mm thick (Rayband, for wall base)	m2	0	28,800	67,200	96,000
M-K-55		Espagnolette	pcs	0	10,500	24,500	35,000
M-K-56		Door Stopper	pcs	0	12,000	28,000	40,000
M-K-57		Aluminium Rolling Door	m2	0	26,775	62,475	89,250
Railway Work Material							
M-M-1		Triplex 1,220x2,440x3	sheet	0	10,500	24,500	35,000
M-M-2		Multiplex 18mm	sheet	0	30,000	70,000	100,000
M-M-3		Prall Wire	kg	0	2,250	5,250	7,500
M-M-4		Ballast 2-6 cm	m3	0	3,250	61,750	65,000
M-M-5		Wooden Sleeper 13x22x200cm	nos.	0	0	125,000	125,000
M-M-6		Wooden Sleeper for Bridge 18x22x200cm	nos.	0	0	187,500	187,500
M-M-7		Wooden Board Class II	m3	0	0	1,250,000	1,250,000
M-M-8		Wooden Board Class II	m3	0	0	900,000	900,000
M-M-9		Corrugated Zinc BJLS 30	sheet	0	24,500	35,000	59,500
M-M-10		Teak Oil	kg	0	6,000	14,000	20,000
M-M-11		Pinotex	kg	0	3,750	8,750	12,500
M-M-12		Meni for Steel	kg	0	3,750	8,750	12,500
M-M-13		Plamur	kg	0	2,400	5,600	8,000
M-M-14		Sign Lamp	nos.	0	50,000	50,000	100,000
M-M-15		Plastic Sack	nos.	0	750	1,750	2,500
M-M-16		Epoxy	sack	0	60,000	140,000	200,000

Table 3.3.1 (6/6) UNIT COSTS OF MATERIALS

ID No.	Description		Unit	Price (Rp.)			
	Major	Details		PF/C	IF/C	L/C	Total
M-M-17		Manila Rope	kg	0	750	14,250	15,000
M-M-18		Vaslin	kg	0	1,800	4,200	6,000
M-M-19		Rail R-33	ton	966,316	0	0	966,316
M-M-20		Rail R-42	ton	966,316	0	0	966,316
	Others						
M-L-1		Palm Fiber, 20mm thick	m2	0	1,100	20,900	22,000
M-L-2		Concrete Brick; 23 x 11.5 x 5.5 cm	pcs	0	150	1,350	1,500
M-L-3		Brick; 10 x 2 x 6 cm	m2	0	5	45	50
M-L-4		Staff Gauge (5.0m)	nos.	380,000	20,000	0	400,000
M-L-5		Bench (Wooden)	nos.	0	0	302,500	302,500
M-L-6		Bench (steel)	nos.	0	88,000	132,000	220,000
M-L-7		Aluminium Frame	m2	0	137,500	137,500	275,000
M-L-8		Cast-iron Cover; Dia.60cm	pcs	0	440,000	440,000	880,000
M-L-9		Handy Talky	set	0	400,000	600,000	1,000,000
M-L-10		Garbage Container	nos.	0	100,000	900,000	1,000,000
M-L-11		Truck with Crane, 2.2ton	nos.	344,250,000	0	0	344,250,000
M-L-12		Synthetic Shell (5m2 / kg)	kg	0	3,438	3,438	6,875
M-L-13		Water Proofing Coat	m2	0	13,464	8,976	22,440
M-L-14		Asbestos Cement, 6mm thick	m2	0	800	1,200	2,000
M-L-15		Drawing Paper (A1)	sheet	8,000	0	2,000	10,000
M-L-16		Blue Copy (A1)	sheet	0	2,500	2,500	5,000
M-L-17		Brick; 26 x 12.4 x 5.2 cm	pcs	0	0	200	200
M-L-18		Backhoe, 0.35m3	nos.	469,871,053	0	0	469,871,053
M-L-19		Dump Truck, 8t	nos.	422,763,158	0	0	422,763,158
M-L-20		Bulldozer, 11t	nos.	622,065,789	0	0	622,065,789
M-L-21		Patrol Car, 4WD	nos.	120,789,474	0	0	120,789,474
M-L-22		Outboard Motor Boat	nos.	90,592,105	0	0	90,592,105

Table 3.4.1 (1/4) HOURLY DRIVING EQUIPMENT COST

New ID No.	Description of Equipment	Unit	Hourly Cost			
			PF/C	IF/C	L/C	Total
A-2-1-1	Backhoe; 2 m3 Long Arm	hourly	512,435	4,440	355,749	872,624
A-2-1-2	Backhoe; 0.3 m3 with Vibrator	hourly	141,121	948	96,872	238,941
A-2-1-3	Backhoe; 0.35 m3	hourly	71,294	1,200	51,824	124,317
A-2-1-4	Backhoe; 0.35 m3 for Rock	hourly	78,423	1,200	56,526	136,149
A-2-1-5	Backhoe; 0.4 m3	hourly	80,824	1,440	59,070	141,334
A-2-1-6	Backhoe; 0.4 m3 with Joint Cutter	hourly	96,989	1,440	69,731	168,160
A-2-1-7	Backhoe; 0.6 m3	hourly	125,543	2,040	90,965	218,548
A-2-1-8	Backhoe; 0.6 m3 for Rock	hourly	138,097	2,040	99,246	239,383
A-2-1-9	Backhoe; 0.7 m3	hourly	153,950	2,160	110,182	266,292
A-2-1-10	Backhoe; 0.7 m3 for Rock	hourly	169,345	2,160	120,336	291,842
A-2-1-11	Backhoe; 0.8 m3	hourly	161,281	2,640	116,937	280,859
A-2-1-12	Backhoe; 0.8 m3 for Rock	hourly	177,410	2,640	127,575	307,625
A-2-1-13	Backhoe; 1 m3	hourly	196,104	3,360	142,785	342,249
A-2-1-14	Backhoe; 1 m3 for Rock	hourly	215,714	3,360	155,720	374,793
A-2-1-15	Backhoe; 1.2 m3	hourly	217,180	3,480	157,167	377,827
A-2-1-16	Backhoe; 1.2 m3 for Rock	hourly	238,898	3,480	171,491	413,869
A-2-1-17	Bulldozer; 11 ton	hourly	133,995	1,680	121,026	256,701
A-2-1-18	Bulldozer; 11 ton for Rock	hourly	147,395	1,680	132,457	281,532
A-2-1-19	Bulldozer; 15 ton	hourly	178,227	2,280	161,158	341,665
A-2-1-20	Bulldozer; 15 ton for Rock	hourly	196,049	2,280	176,362	374,691
A-2-1-21	Bulldozer; 15 ton with Ripper	hourly	95,983	2,280	91,000	189,263
A-2-1-22	Bulldozer; 21 ton	hourly	294,009	3,480	264,728	562,217
A-2-1-23	Bulldozer; 21 ton for Rock	hourly	323,410	3,480	289,808	616,698
A-2-1-24	Bulldozer; 21 ton with Ripper	hourly	158,277	3,720	149,900	311,897
A-2-1-25	Bulldozer; 3 ton	hourly	48,785	660	44,256	93,701
A-2-1-26	Bulldozer; 3 ton for Rock	hourly	53,663	660	48,418	102,741
A-2-1-27	Bulldozer; 32 ton	hourly	429,305	4,680	384,944	818,929
A-2-1-28	Bulldozer; 32 ton for Rock	hourly	472,235	4,680	421,566	898,481
A-2-1-29	Bulldozer; 32 ton with Ripper	hourly	237,733	5,280	223,921	466,934
A-2-1-30	Bulldozer; 44 ton for Rock	hourly	621,061	6,000	553,803	1,180,865
A-2-1-31	Truck with crane; 4 ton, Crane : 2.9 ton	hourly	48,670	780	47,768	97,217
A-2-1-32	Truck with crane; 6 ton	hourly	62,784	912	61,243	124,939
A-2-1-33	Truck with crane; 8 ton	hourly	79,818	1,320	78,502	159,640
A-2-1-34	Clamshell; 0.6 m3	hourly	145,596	1,680	99,479	246,754
A-2-1-35-1	Concrete Pump Truck; 65-85 m3/hr	Time	36,721	280	23,415	60,416
A-2-1-35-2	Concrete Pump Truck; 65-85 m3/hr	hourly	220,327	1,680	140,490	362,497
A-2-1-36-1	Concrete Pump Truck; 90-110 m3/hr	Time	45,418	340	28,935	74,694
A-2-1-36-2	Concrete Pump Truck; 90-110 m3/hr	hourly	272,510	2,040	173,613	448,163
A-2-1-37	Crawler Crane; 100 ton	hourly	850,261	2,160	760,033	1,612,454
A-2-1-38	Crawler Crane; 22.5 ton	hourly	153,115	804	138,527	292,447
A-2-1-39	Crawler Crane; 27 ton	hourly	183,054	972	165,657	349,683
A-2-1-40	Crawler Crane; 37 ton	hourly	255,763	984	229,959	486,705
A-2-1-41	Crawler Crane; 40 ton	hourly	279,714	1,080	251,509	532,302
A-2-1-42	Crawler Diesel Hammer; 2.5 ton	hourly	486,850	1,680	346,521	835,051
A-2-1-43	Crawler Diesel Hammer; 3.5 ton	hourly	584,659	1,800	415,268	1,001,727
A-2-1-44	Crawler Diesel Hammer; 4.5 ton	hourly	637,410	1,800	452,087	1,091,297
A-2-1-45	Crawler Drill; 150 kg	hourly	420,361	1,116	270,407	691,884
A-2-1-46	Crawler Drill; 180 kg	hourly	477,530	1,440	307,871	786,841
A-2-1-47	Crawler Loader; 1.2m3	hourly	101,653	1,440	81,806	184,900
A-2-1-48	Dumptruck; 10 ton	hourly	77,269	3,060	70,744	151,073
A-2-1-49	Dumptruck; 10 ton for Rock	hourly	84,996	3,210	77,195	165,400
A-2-1-50	Dumptruck; 20 ton	hourly	198,902	4,280	136,582	339,764
A-2-1-51	Dumptruck; 20 ton for Rock	hourly	218,792	4,480	149,328	372,600
A-2-1-52	Dumptruck; 32 ton	hourly	321,681	6,100	219,807	547,588
A-2-1-53	Dumptruck; 32 ton for Rock	hourly	353,849	6,350	240,348	600,547
A-2-1-54	Dumptruck; 4 ton	hourly	30,204	1,376	28,632	60,211
A-2-1-55	Dumptruck; 8 ton	hourly	58,770	2,200	53,721	114,691

Table 3.4.1 (2/4) HOURLY DRIVING EQUIPMENT COST

New ID No.	Description of Equipment	Unit	Hourly Cost			
			PF/C	IF/C	L/C	Total
A-2-1-56	Dumptruck; 8 ton for Rock	hourly	64,647	2,276	58,517	125,440
A-2-1-57	Macadam Roller; 10-12 ton	hourly	73,027	912	73,401	147,340
A-2-1-58	Mortor Sprayer; 0.8-1.2m3/h	daily	0	2,448	9,792	12,240
A-2-1-59	Motorgrader; 3.1 m	hourly	122,998	1,116	118,868	242,982
A-2-1-60	Road Roller; Tandem 8-10 ton	hourly	63,475	696	63,413	127,583
A-2-1-61	Submergible pump; D 100 mm; 3.7 kW	daily	21,522	0	10,871	32,394
A-2-1-62	Submergible pump; D 150 mm; 11 kW	daily	39,099	0	19,749	58,848
A-2-1-63	Submergible pump; D 200 mm; 15 kW	daily	65,404	0	33,036	98,440
A-2-1-64	Submergible pump; D 50 mm; 0.75 kW	daily	6,576	0	3,322	9,898
A-2-1-65	Turbine Pump Dia. 200mm 75kW	daily	177,383	0	112,624	290,007
A-2-1-66	Swamp Bulldozer; 13 ton	hourly	161,131	2,160	146,095	309,386
A-2-1-67	Swamp Bulldozer; 16 ton	hourly	180,013	2,280	162,683	344,976
A-2-1-68	Tire Roller; 8-20 ton	hourly	81,684	864	82,451	164,999
A-2-1-69	Trailer; 20 ton	hourly	119,879	2,160	102,572	224,611
A-2-1-70	Trailer; 32 ton	hourly	153,758	2,160	129,118	285,036
A-2-1-71	Truck Crane; 11(10) ton, Oil Pressure	hourly	99,322	1,020	85,929	186,271
A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	135,641	1,020	115,858	252,520
A-2-1-73	Truck Crane; 22 ton, Oil Pressure	hourly	154,913	1,032	131,788	287,732
A-2-1-74	Truck Crane; 35 ton, Oil Pressure	hourly	255,717	1,440	216,490	473,647
A-2-1-75	Truck Crane; 4.9 ton, Oil Pressure	hourly	55,146	720	48,324	104,190
A-2-1-76	Truck Crane; 60 ton, Oil Pressure	hourly	421,006	1,560	353,180	775,747
A-2-1-77	Truck Mixer; 1.6 m3	hourly	35,073	996	28,463	64,532
A-2-1-78	Truck Mixer; 3 m3	hourly	51,377	1,164	40,516	93,057
A-2-1-79	Truck Mixer; 4.5 m3	hourly	77,958	1,560	60,652	140,169
A-2-1-80	Truck; 11 ton	hourly	96,932	1,560	95,161	193,653
A-2-1-81	Truck; 3.5 ton	hourly	27,195	744	27,924	55,863
A-2-1-82	Truck; 4 ton	hourly	37,005	876	37,451	75,332
A-2-1-83	Truck; 8 ton	hourly	60,898	1,200	60,665	122,763
A-2-1-84	Tugboat; 15 ton	hourly	129,433	4,440	140,042	273,915
A-2-1-85	Vibrating Hammer; 30 kW	hourly	86,428	0	52,870	139,298
A-2-1-86	Vibrating Hammer; 40 kW	hourly	105,466	0	64,516	169,982
A-2-1-87	Vibrating Hammer; 60 kW	hourly	150,191	0	91,875	242,066
A-2-1-88	Vibrating Roller; 0.8-1.1 ton (Hand Guide)	hourly	17,057	144	14,791	31,992
A-2-1-89	Vibrating Roller; 11-12 ton	hourly	212,629	2,400	186,791	401,821
A-2-1-90	Vibrating Roller; 15-18 ton	hourly	300,975	2,640	261,373	564,988
A-2-1-91	Vibrating Roller; 3-5 ton	hourly	67,982	528	58,763	127,273
A-2-1-92	Water Jet; 45 kW	hourly	84,280	0	58,824	143,104
A-2-1-93	Water Tank; 3000 litter	daily	8,864	0	4,432	13,295
A-2-1-94	Wheel Loader; 1 m3	hourly	68,964	1,032	55,719	125,715
A-2-1-95	Wheel Loader; 1 m3 for Rock	hourly	62,694	1,032	51,029	114,756
A-2-1-96	Wheel Loader; 1.2 m3	hourly	72,404	1,116	58,629	132,149
A-2-1-97	Wheel Loader; 10 m3	hourly	1,222,719	11,040	958,866	2,192,625
A-2-1-98	Wheel Loader; 10 m3 for Rock	hourly	1,344,991	11,040	1,050,337	2,406,367
A-2-1-99	Wheel Loader; 3.1 m3	hourly	246,941	3,600	199,135	449,676
A-2-1-100	Wheel Loader; 3.1 m3 for Rock	hourly	271,635	3,600	217,608	492,844
A-2-1-101	Wheel Loader; 5.4 m3	hourly	625,744	5,760	491,154	1,122,659
A-2-1-102	Wheel Loader; 5.4 m3 for Rock	hourly	688,319	5,760	537,966	1,232,045
A-2-1-103	Concrete Pump Truck 55m3/hr	hourly	184,434	1,200	116,778	302,412
A-2-1-104	Water Tanker; 4000 litter	hourly	46,828	1,076	35,138	83,041
A-2-1-105	Tandem Roller 8/12 ton	hourly	191,666	1,200	164,522	357,388
A-2-1-108	Motorgrader; 2.8 m	hourly	104,320	0	97,032	201,352
A-2-1-109	Crawler Crane 16t	hourly	143,706	0	126,996	270,702
A-2-1-110	Crawler Crane 50t	hourly	355,844	0	314,467	670,310
A-2-1-111	Chain Saw	daily	42,825	0	17,538	60,363
A-2-1-113	Truck Crane; 80 ton, Oil Pressure	hourly	770,856	888	638,795	1,410,539
A-2-1-114	Truck Crane; 120 ton, Oil Pressure	hourly	1,082,164	888	895,335	1,978,387
A-2-1-115	Truck Crane; 160 ton, Oil Pressure	hourly	1,437,944	1,110	1,189,412	2,628,466
A-2-1-116	Truck Crane; 200 ton, Oil Pressure	hourly	1,913,305	1,154	1,581,323	3,495,783

Table 3.4.1 (3/4) HOURLY DRIVING EQUIPMENT COST

New ID No.	Description of Equipment	Unit	Hourly Cost			
			PF/C	IF/C	L/C	Total
A-2-2-1	Concrete Breaker; 600 kg	daily	232,611	0	93,259	325,870
A-2-2-2	Stabilizer	hourly	743,276	1,092	502,608	1,246,975
A-2-2-3	Truck with crane; 6 ton	hourly	62,784	0	57,595	120,379
A-2-2-4	Truck with crane; 8 ton	hourly	79,818	0	73,222	153,040
A-2-2-5	Cement Silo; 30 ton, 20t/h	daily	7,768	0	3,276	11,044
A-2-2-6	Compressor; 10.5-11 m3/min	daily	319,521	11,520	248,930	579,971
A-2-2-7	Compressor; 3.5-3.7 m3/min	daily	120,290	4,032	92,495	216,817
A-2-2-8	Compressor; 20~21 m3/min	daily	730,012	17,280	532,572	1,279,864
A-2-2-9	Compressor; 7.5 m3/min	daily	226,296	8,640	178,225	413,161
A-2-2-10	Concrete Breaker; 20 kg	daily	9,136	0	3,181	12,317
A-2-2-11	Concrete Breaker; 30 kg	daily	11,420	0	3,977	15,397
A-2-2-12	Concrete Bucket; 1 m3	daily	92,239	0	45,461	137,700
A-2-2-14	Generator; 10 kVA	daily	65,615	1,440	41,622	108,678
A-2-2-15	Generator; 100 kVA	daily	215,064	10,800	160,745	386,609
A-2-2-16	Generator; 125 kVA	daily	271,912	15,120	209,096	496,128
A-2-2-17	Generator; 15 kVA	daily	82,875	1,800	52,496	137,171
A-2-2-18	Generator; 20 kVA	daily	104,107	2,448	66,693	173,248
A-2-2-19	Generator; 200 kVA	daily	415,060	23,760	321,895	760,715
A-2-2-20	Generator; 250 kVA	daily	569,851	29,520	429,537	1,028,908
A-2-2-21	Generator; 300 kVA	daily	658,206	36,720	506,628	1,201,554
A-2-2-22	Generator; 35 kVA	daily	121,915	3,816	81,898	207,629
A-2-2-23	Generator; 75 kVA	daily	211,639	9,360	153,113	374,113
A-2-2-24	Grout Mixer; 2x200 ltr 2.3kw Yoko	daily	45,124	259	35,784	81,167
A-2-2-25	Grout Plant; 150 l/min	daily	1,114,557	12,960	522,644	1,650,162
A-2-2-26	Grout Pressure Meter; 120 l/min	daily	428,848	0	230,918	659,767
A-2-2-27	Grout Pump; 37-100 l/min 7.8kw Yoko	daily	110,621	864	88,638	200,123
A-2-2-30	Oil Pressure Jack	daily	36,093	0	17,857	53,950
A-2-2-31	Leg Hammer; 30 kg	daily	40,345	0	14,239	54,584
A-2-2-32	Leg Hammer; 40 kg	daily	45,409	0	16,027	61,435
A-2-2-33	Motor grader; 4.01 m x 0.62 m	hourly	220,940	0	205,503	426,444
A-2-2-35	Pick Hammer	daily	5,717	0	2,030	7,747
A-2-2-36	Guide Sell Feed 4m 150kg class	daily	248,497	0	85,886	334,383
A-2-2-37	Pontoon Barge; 100 ton	daily	314,821	0	237,791	552,612
A-2-2-38	Grout Center Plant Automatic 150litre/min	daily	1,114,557	0	470,804	1,585,362
A-2-2-39	Rotary Boring Machine; 11 kW	daily	241,735	1,224	191,040	433,999
A-2-2-40	Rotary Boring Machine; 5.5 kW	daily	142,653	648	112,440	255,742
A-2-2-41	Drifter Air Type : 150kg class	daily	257,007	0	88,827	345,834
A-2-2-42	Submergible pump; D 100 mm; 3.7 kW	daily	21,522	0	10,871	32,394
A-2-2-43	Submergible pump; D 150 mm; 7.5 kW	daily	28,458	0	14,374	42,831
A-2-2-44	Submergible pump; D 200 mm; 15 kW	daily	65,404	0	33,036	98,440
A-2-2-45	Submergible pump; D 50 mm; 0.75 kW	daily	6,576	0	3,322	9,898
A-2-2-46	Submergible pump; D 80 mm; 1.5 kW	daily	14,587	0	7,368	21,956
A-2-2-47	Submergible Pump; D100mm 5.5 kW	daily	26,903	0	13,589	40,492
A-2-2-48	Submergible Pump; D150mm 10.6 kW	daily	39,099	0	19,749	58,848
A-2-2-49	Submergible Pump; D200mm 22kW	daily	81,666	0	41,250	122,915
A-2-2-50	Submergible Pump; D50mm 1.5 kW	daily	11,837	0	5,979	17,816
A-2-2-51	Tamper; 60-100 kg	daily	35,109	1,080	16,859	53,047
A-2-2-52	Vibrating Roller; 1 ton	hourly	22,526	144	19,348	42,018
A-2-2-53	Vibrating Roller; 2 ton	hourly	56,452	468	48,915	105,835
A-2-2-54	Vibrating Roller; 4 ton	hourly	67,982	528	58,763	127,273
A-2-2-55	Concrete Vibrator; 60 mm Engine Type	daily	20,241	2,280	16,494	39,015
A-2-2-56	Vibro hammer; 30 kW	hourly	86,428	0	52,870	139,298
A-2-2-57	Vibro hammer; 40 kW	hourly	105,466	0	64,516	169,982
A-2-2-58	Shotcrete Machine Wet Type : 0.8~1.2	hourly	68,498	0	40,476	108,975
A-2-2-59	Concrete Vibrator; High Wave	daily	55,125	0	26,706	81,831
A-2-2-60	Portable Concrete Mixer 0.5m3	daily	236,747	360	116,739	353,846
A-2-2-61	Portable Concrete Mixer 0.2m3	daily	198,699	576	99,073	298,348
A-2-2-62	Asphalt Plant 30ton/hr, 110kw	hourly	584,193	0	399,236	983,429

Table 3.4.1 (4/4) HOURLY DRIVING EQUIPMENT COST

New ID No.	Description of Equipment	Unit	Hourly Cost			
			PF/C	IF/C	L/C	Total
A-2-2-63	Asphalt Finisher 2.4m	hourly	170,054	0	150,540	320,594
A-2-2-64	Asphalt Sprayer 30ton/hr	daily	32,295	0	11,398	43,693
A-2-2-65	Dragline 3.0m3	hourly	774,072	4,200	748,374	1,526,645
A-2-2-66	Dredger	hourly	636,080	0	464,469	1,100,550
A-2-2-67	Concrete Cutter	daily	33,629	0	13,589	47,218

Table 3.4.2 (2/3) CALCULATION SHEET FOR HOURLY DRIVING COST

A large data table with columns for ID-No., Description of Equipment, Power, Back Price, Economic Life, Driving Days, Working Days, Yearly Repair, Admin-istrations, Rest, Reverse Coefficient, Hourly or Daily for Drive, Hourly or Daily for Working, Hourly or Daily for Driving, Total Cost (Year), Daily for Working, Total Cost (Year), and Unit. Rows include various equipment types like Tractor, Wheel Loader, and Generator.

Table 3.4.2 (3/3) CALCULATION SHEET FOR HOURLY DRIVING COST

ID-No.	Description of Equipment	Power	Economic Life	Yearly Driving Days	Yearly Working Days	Maintenance %	Admin. %	Rest Price %	Revise Coefficient	Hourly or Daily for Drive		Hourly or Daily for Working		Hourly or Daily for Working		Total Cost (Year)	hourly/working	hourly/day driving	Unit		
										PPVC	L/C	PPVC	L/C	PPVC	L/C					PPVC	L/C
A-1-2-27	Gravel Pump, 37-100/min, 7.5kw, Yoko	7.5	1,300	11	99	143	75	6	9	0.001065	1538.06244	0.000035	179.648	0.000035	179.648	232.257	232.257	0.00091	232.257	0.00091	232.257
A-1-2-30	Oil Pressure Jack	0	463	5	0	138	75	6	10	0.0019432	479.965999	0.000048	390.0772	0.000048	390.0772	235.717	235.717	0.00129	235.717	0.00129	235.717
A-1-2-31	Leg Hammer, 30 kg	0	247	5	0	88	154	40	6	0.0019432	540.204543	0.000098	242.1843	0.000098	242.1843	965.7935	965.7935	0.00055	965.7935	0.00055	965.7935
A-1-2-32	Leg Hammer, 40 kg	0	278	5	0	88	154	40	6	0.0019432	540.204543	0.000098	242.1843	0.000098	242.1843	1017.227	1017.227	0.00055	1017.227	0.00055	1017.227
A-1-2-33	Motor grader, 4.01 m x 0.62 m	230	19,400	12	506	88	143	35	10	0.001318	2555.99473	0.00002	15940.36	0.00002	15940.36	3402.668	3402.668	0.00057	3402.668	0.00057	3402.668
A-1-2-35	Pick Hammer	0	34	3	0	88	154	40	6	0.0020564	69.9318182	0.000098	33.33766	0.000098	33.33766	31.6364	31.6364	0.00057	31.6364	0.00057	31.6364
A-1-2-36	Guido Self Feed 4m 150kg class	0	1,460	5	0	77	132	25	10	0.001832	2673.50649	0.00114	1670.152	0.00114	1670.152	422.078	422.078	0.00059	422.078	0.00059	422.078
A-1-2-37	Pontoon Barge, 180 ton	0	9,100	20	0	165	140	5	10	0.00044	400.8455	0.00035	400.8455	0.00035	400.8455	265.00	265.00	0.00038	265.00	0.00038	265.00
A-1-2-38	Gravel Center Plant Automatic 150litre/min	60	24,500	8	0	140	240	30	5	0.000332	1229.5455	0.00036	858.457	0.00036	858.457	1845.5	1845.5	0.00075	1845.5	0.00075	1845.5
A-1-2-39	Rotary Boring Machine; 11 kW	11.1	4,950	11	0	132	165	75	8	0.0008299	3381.03762	0.00076	2978.926	0.00076	2978.926	4002.588	4002.588	0.00099	4002.588	0.00099	4002.588
A-1-2-40	Rotary Boring Machine; 5.5 kW	5.8	2,950	11	0	132	165	75	8	0.0008299	1983.43964	0.00076	1757.924	0.00076	1757.924	1814.536	1814.536	0.00099	1814.536	0.00099	1814.536
A-1-2-41	Drifter A; Type: 150kg class	0	1,510	5	0	77	132	25	6	0.0019747	2765.06694	0.00114	1727.343	0.00114	1727.343	4255.455	4255.455	0.00097	4255.455	0.00097	4255.455
A-1-2-42	Submersible pump, D1 100 mm, 3.7 kW	5	180	9	0	110	154	150	6	0.0019747	355.443445	0.00072	179.8386	0.00072	179.8386	356.3696	356.3696	0.00198	356.3696	0.00198	356.3696
A-1-2-43	Submersible pump, D 150 mm, 5.5 kW	10.2	238	9	0	110	154	150	6	0.0019747	444.918182	0.00072	234.7511	0.00072	234.7511	442.4545	442.4545	0.00198	442.4545	0.00198	442.4545
A-1-2-44	Submersible pump, D 200 mm, 15 kW	20.4	547	9	0	110	154	150	6	0.0019747	645.342482	0.00072	334.7511	0.00072	334.7511	642.4545	642.4545	0.00198	642.4545	0.00198	642.4545
A-1-2-45	Submersible pump, D 30 mm, 0.75 kW	1.02	55	5	0	110	154	150	6	0.0019747	108.611111	0.00072	59.48413	0.00072	59.48413	108.8889	108.8889	0.00198	108.8889	0.00198	108.8889
A-1-2-46	Submersible Pump, D1 00mm 5.5 kW	7.48	225	9	0	110	154	150	6	0.0019747	195.5	0.00072	109.3211	0.00072	109.3211	195.5	195.5	0.00198	195.5	0.00198	195.5
A-1-2-47	Submersible Pump, D1 50mm 10.6 kW	14.416	327	9	0	110	154	150	6	0.0019747	344.9192	0.00072	161.526	0.00072	161.526	344.9192	344.9192	0.00198	344.9192	0.00198	344.9192
A-1-2-48	Submersible Pump, D200mm 22kW	29.92	683	9	0	110	154	150	6	0.0019747	645.342482	0.00072	334.7511	0.00072	334.7511	645.342482	645.342482	0.00198	645.342482	0.00198	645.342482
A-1-2-50	Submersible Pump, D50mm 1.5 kW	2.04	99	5	0	110	154	150	6	0.0019747	195.5	0.00072	109.3211	0.00072	109.3211	195.5	195.5	0.00198	195.5	0.00198	195.5
A-1-2-51	Tamper, 60-100 kg	4	203	5	0	88	143	50	6	0.0021705	440.602723	0.00106	214.3566	0.00106	214.3566	440.602723	440.602723	0.00238	440.602723	0.00238	440.602723
A-1-2-52	Vibrating Roller, 1 ton	8	1,720	11	506	88	132	40	8	0.0001545	267.301473	0.00092	199.5356	0.00092	199.5356	310.8157	310.8157	0.00022	310.8157	0.00022	310.8157
A-1-2-53	Vibrating Roller, 2 ton	26	3,770	11	440	88	132	40	8	0.0001777	609.876033	0.00092	3479.201	0.00092	3479.201	778.92536	778.92536	0.00021	778.92536	0.00021	778.92536
A-1-2-54	Vibrating Roller, 4 ton	28	4,540	11	440	88	132	40	8	0.0001777	609.876033	0.00092	3479.201	0.00092	3479.201	1125.62	1125.62	0.00021	1125.62	0.00021	1125.62
A-1-2-55	Concrete Vibrator 60 mm Engine Type	5	158	5	0	132	165	70	6	0.001725	276.5	0.00092	144.5929	0.00092	144.5929	335.1515	335.1515	0.00077	335.1515	0.00077	335.1515
A-1-2-56	Vibro hammer, 90 kW	0	5,720	8	682	99	132	65	6	0.0002035	1148.46774	0.00104	993.125	0.00104	993.125	1746.279	1746.279	0.00023	1746.279	0.00023	1746.279
A-1-2-57	Vibro hammer, 40 kW	0	6,980	8	682	99	132	65	6	0.0002035	1415.63469	0.00104	737.784	0.00104	737.784	1746.279	1746.279	0.00023	1746.279	0.00023	1746.279
A-1-2-58	Concrete Vibrator, High Wave	18	5,120	8	809	132	187	90	6	0.0001949	997.936544	0.00073	374.7591	0.00073	374.7591	1134.177	1134.177	0.00033	1134.177	0.00033	1134.177
A-1-2-59	Concrete Vibrator, Wet Type: 0.8-1.2	7kVA	449	8	0	99	121	100	6	0.0018371	824.867424	0.00092	433.6932	0.00092	433.6932	920.1926991	920.1926991	0.00083	920.1926991	0.00083	920.1926991
A-1-2-60	Portable Concrete Mixer 0.5m3	0	2,240	8	0	110	187	90	6	0.0015398	3449.09091	0.00063	1400	0.00063	1400	3290	3290	0.00075	3290	0.00075	3290
A-1-2-61	Portable Concrete Mixer 0.2m3	0	1,840	8	0	110	187	90	6	0.0013336	2906.77831	0.00063	1175	0.00063	1175	2470.44	2470.44	0.00075	2470.44	0.00075	2470.44
A-1-2-62	Asphalt Paver, 30m/4m, 110kw	150	56,200	9	836	209	297	55	8	0.0001336	7506.77831	0.00063	3470.94	0.00063	3470.94	9672.913	9672.913	0.00012	9672.913	0.00012	9672.913
A-1-2-63	Asphalt Finisher 2.4m	33	13,100	12	473	77	132	40	6	0.0001533	2906.77831	0.00063	1175	0.00063	1175	2470.44	2470.44	0.00012	2470.44	0.00012	2470.44
A-1-2-64	Asphalt Spreader 30m/4m	5	175	5	0	77	143	40	6	0.0022208	384.194803	0.00106	182.6783	0.00106	182.6783	384.194803	384.194803	0.00059	384.194803	0.00059	384.194803
A-1-2-65	Drumline 3.0m3	260	115,000	13	880	121	176	55	8	1.8698E-05	10002.1853	0.00063	7465.917	0.00063	7465.917	12113.2	12113.2	0.00011	12113.2	0.00011	12113.2
A-1-2-66	Drumline 3.0m3	200	100,000	15	1144	88	121	115	6	9.524E-05	9883.44988	0.00074	7843.298	0.00074	7843.298	10532.05	10532.05	7.3E-05	10532.05	7.3E-05	10532.05
A-1-2-67	Concrete Cutter	3	210	6	0	77	154	45	6	0.0019589	411.363636	0.00088	185.2273	0.00088	185.2273	556.8182	556.8182	0.00107	556.8182	0.00107	556.8182

Table 4.1.1 (1/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-1-1	Backfill (Soil) A	m3	6,076	87	5,043	11,206	Width is equal or more than 4m
CW-1-2	Backfill (Soil) B	m3	7,022	103	6,326	13,451	Width is equal or more than 0-4m
CW-1-3	Backfill (Soil) C	m3	6,392	98	6,338	12,828	Width is less than 4m
CW-1-4	Backfill (Soil) D	m3	6,038	132	7,114	13,284	Width is less than 1m
CW-1-5	Spreading A	m3	2,941	35	2,823	5,799	Bulldozer 2t
CW-1-6	Manpower Excavation	m3	0	0	15,800	15,800	Soil:Clay, Sand, Gravel
CW-1-7	Manpower Embankment/Backfill & Tamper	m3	1,760	60	9,620	11,440	Soil:Clay, Sand, Gravel
CW-1-8	Tamper Loading	m3	1,760	60	2,600	4,420	60-100kg
CW-1-9	Slope Clearing for Embankment 1	m2	2,674	35	2,902	5,611	Bulldozer 15t (S=1:2-3)
CW-1-10	Slope Clearing for Embankment 2	m2	3,265	54	2,660	5,979	Backhoe 0.6m3 by Cutting, Soil:Sand and Clay
CW-1-11	Slope Clearing for Embankment 3	m2	4,018	66	3,325	7,409	Backhoe 0.6m3 by Additional Soil (Sand)
CW-1-12	Slope Clearing of Excavation by Machine	m2	4,018	66	3,760	7,844	Backhoe 0.6m3 by Cutting (Sand)
CW-1-13	Slope Clearing of Excavation by Manpower	m2	0	0	2,202	2,202	Soil: Sand
CW-1-14	Sodding	m2	0	0	5,761	5,761	
CW-1-15	Gravel Bedding	m3	0	1,360	31,260	32,620	Under Flat and Thin Concrete Structure
CW-1-16	Backfilling Gravel A	m3	0	4,060	83,560	87,620	Behind Revetment
CW-1-17	Backfilling Gravel B	m3	0	3,980	84,740	88,720	Behind Concrete Wall
CW-1-18	Backfilling Concrete	m3	0	47,100	203,180	250,280	Behind or Between Concrete Walls
CW-1-19	Foundation River Gravel (Rubble Stone)	m3	0	2,790	62,080	64,870	Under Concrete Structure and so on
CW-1-20	Concrete Work for Reinforced Concrete C1 by Pump	m3	20,270	41,770	183,330	245,370	by Boom, Standard Concreting Volume=75m3
CW-1-21	Concrete Work for Small Structure : Type-D	m3	120	42,570	193,500	236,190	by Manpower
CW-1-22	Concrete Work for Levelling Concrete	m3	120	37,130	158,740	195,990	by Manpower
CW-1-23	Form Work A	m2	10,030	75	44,798	44,858	Reinforced Concrete less than 4m high
CW-1-24	Form Work B	m2	59	0	52,910	63,015	Reinforced Concrete more than 4m high
CW-1-25	Form Work C	m2	0	0	43,844	43,903	Plain Concrete less than 4m high
CW-1-26	Form Work D	m2	0	0	43,547	43,547	Small Concrete Structure
CW-1-27	Form Work E	m2	0	0	46,438	46,438	Small Concrete Structure II
CW-1-28	Form Work F	m2	0	0	36,510	36,510	Levelling Concrete
CW-1-29	Reinforcing Bar Setup 1	t	0	3,120,900	3,325,100	6,446,000	SD295A, Construction scale : less than 10t, less than 5m high
CW-1-30	Reinforcing Bar Setup by using Crane 1	t	137,000	3,122,000	3,442,150	6,701,150	SD295A, Construction Scale : less than 10t, more than 5m high
CW-1-31	Reinforcing Bar Setup 2	t	0	2,808,810	2,992,590	5,801,400	SD295A, Construction scale : more than 10t, less than 5m high
CW-1-32	Reinforcing Bar Setup by using Crane 2	t	123,300	2,809,800	3,097,935	6,031,035	SD295A, Construction Scale : more than 10t, more than 5m high
CW-1-33	Reinforcing Bar Setup A	t	0	3,120,900	3,342,700	6,463,600	SD295A (D10-D13), less than 5m high
CW-1-34	Reinforcing Bar Setup B	t	137,000	3,122,000	3,459,800	6,718,800	SD295A(D10-D13), higher than 5m high
CW-1-35	Reinforcing Bar Setup C	t	0	3,120,900	3,307,500	6,428,400	SD295A (D16-D25), less than 5m high

Table 4.1.1 (2/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-1-36	Reinforcing Bar Setup D	t	137,000	3,122,000	3,424,500	6,683,500	SD295A(D16-D25), higher than 5m high
CW-1-37	Prefabricated Scaffold for Re-Con I	m2	6,600	0	8,678	15,278	Less than 4m high (Lease)
CW-1-38	Prefabricated Scaffold for Re-Con II	m2	14,739	62	15,629	30,430	equal or higher than 4m high (Lease)
CW-1-39	Tublar Scaffold for Re-Con I	m2	224,200	0	26,570	250,770	Less than 4m high
CW-1-40	Tublar Scaffold for Re-Con II	m2	232,340	70	32,690	265,100	Higher than 4m high
CW-1-41	Tublar Scaffold for Re-Con III	m2	16,830	0	17,490	34,320	Less than 4m high (Scaffold : Lease)
CW-1-42	Tublar Scaffold for Re-Con IV	m2	24,970	70	23,610	48,650	Higher than 4m high (Scaffold : Lease)
CW-1-43	Pipe Support	m3	5,940	0	28,640	34,580	Height is 0-4m
CW-1-44	Frame Support	m3	11,370	50	22,310	33,730	Height is 4-10m <2t/m2
CW-1-45	Curing Work	m3	110	0	350	460	Reinforced Concrete
CW-1-46	Excavation A	m3	2,361	39	1,711	4,111	Original Soil (Condition:good)
CW-1-47	Excavation B	m3	2,951	48	2,138	5,137	Original Soil (Condition:common)
CW-1-48	Excavation C	m3	3,943	65	2,857	6,865	Original Soil (Condition:bad(less than water
CW-1-49	Excavation D	m3	2,361	39	1,711	4,111	Loosed Soil (Condition:good)
CW-1-50	Excavation E	m3	2,725	45	1,974	4,744	Loosed Soil (Condition:common)
CW-1-51	Excavation F	m3	3,541	58	2,566	6,165	Loosed Soil (Condition:bad(less than water level))
CW-1-52	Excavation G	m3	2,725	45	1,974	4,744	Loosed Soil (Condition:good, Material:Rock or Cobble)
CW-1-53	Excavation H	m3	3,541	58	2,566	6,165	Loosed Soil (Condition:common, Material:Rock or Cobble)
CW-1-54	Excavation I	m3	5,072	83	3,675	8,830	Loosed Soil (Condition:bad(less than water level), Material:Rock or Cobble)
CW-1-55	Spreading and Compaction-A	m3	1,900	23	1,939	3,862	Tire Roller 8-20t
CW-1-56	Spreading and Compaction for Gravel Pavement	m3	5,117	43	16,431	21,592	Width is less than 4m
CW-1-57	Reinforced Concrete Work Type D by Pump	m3	20,270	40,730	179,170	240,170	by Boom, Standard Concreting Volume=75m3
CW-1-58	Spreading and Compaction for Earth Filling	m3	2,834	36	2,633	5,503	Tire Roller 8-20t
CW-1-59	Spreading and Compaction-D	m3	1,509	19	1,473	3,001	Tire Roller 8-20t
CW-1-60	Concrete Work for Type-C by Shoot Hopper	m3	120	43,660	197,860	241,640	by Manpower
CW-1-61	Concrete Work for Type-C3 by Shoot Hopper	m3	120	43,660	197,860	241,640	by Manpower
CW-1-62	Reinforced Concrete Work Type B by Pump	m3	20,270	43,850	191,650	255,770	by Boom, Standard Concreting Volume=75m3
CW-1-63	Light Concrete (Concrete 1:3:5)	m3	0	26,756	408,184	434,940	
CW-1-64	Excavation by Backhoe 0.35m3	m3	2,688	45	1,954	4,687	Loosed Soil (Condition:common)
CW-1-65	Spreading by Swamp Bulldozer	m3	4,284	54	4,047	8,386	Swamp Bulldozer 16t (Loosed and Bad
CW-2-1	Temporary Fence of Corrugated Iron Sheet, 2m high	m	0	3,400	70,500	73,900	SK SNI T-01-1991-03
CW-2-2	Making of Wood Temporary Fence	m2	0	20,300	377,300	397,600	SK SNI T-01-1991
CW-2-3	Clearing Area	m2	0	0	6,900	6,900	
CW-2-4	Bowplank Installation	m	0	100	12,000	12,100	
CW-2-5	Cutting Common Earth, 1m depth	m3	0	0	16,000	16,000	
CW-2-6	Cutting Solid Earth, 1m depth	m3	0	0	25,000	25,000	
CW-2-7	Cutting Muddy Earth, 1m depth	m3	0	0	7,400	7,400	

Table 4.1.1 (3/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-2-8	Removing Earth for 150m distance	m3	0	0	4,300	4,300	
CW-2-9	Backfilling Earth	m3	0	0	7,700	7,700	
CW-2-10	Flattening and Compaction Earth	m3	0	0	20,000	20,000	
CW-2-11	Filling Solid Earth for Road Body/berm	m3	0	800	15,300	16,100	
CW-2-12	Filling Sand	m3	0	1,800	86,700	88,500	
CW-2-13	Masonry/Riprap Protection, 20cm thickness	m3	0	2,900	96,000	98,900	
CW-2-14	Masonry of Crushed Stone/Riverstone with 1cement : 2 sand	m3	0	28,800	188,500	217,300	SK SNI T-02-1991
CW-2-15	Masonry of Crushed Stone, 1cement : 3sand	m3	0	22,400	207,600	230,000	
CW-2-16	Masonry of Crushed Stone, 1cement : 5sand	m3	0	14,100	178,300	192,400	
CW-2-17	Masonry of Crushed Stone, 1cement : 3lime : 10sand	m3	0	9,800	166,600	176,400	
CW-2-18	Masonry of Brick Stone/Brickwork, 1cement : 2sand, 1Brick thickness	m2	0	8,800	152,000	160,800	SK SNI T-03-1991
CW-2-19	Masonry of Brick Stone/Brickwork, 1cement : 4sand, 1Brick thickness	m2	0	4,300	105,500	109,800	
CW-2-20	Masonry of Brick Stone/Brickwork, 1cement : 3lime : 10sand, 1Brick	m2	0	700	92,400	93,100	
CW-2-21	Masonry of Brick Stone/Brickwork, 1cement : 2sand, 1/2Brick thickness	m2	0	3,400	57,200	60,600	
CW-2-22	Masonry of Brick Stone/Brickwork, 1cement : 4sand, 1/2brick thickness	m2	0	2,200	52,600	54,800	
CW-2-23	Masonry of Brick Stone/Brickwork, 1cement : 3lime : 10sand, 1/2brick thickness	m2	0	1,300	50,700	52,000	
CW-2-24	Wall Masonry of Concrete Block, 1cement : 5sand	m2	0	5,800	39,600	45,400	
CW-2-25	Tile Floor Work of 20cm x 20cm, 1lime : 3sand	m2	0	1,400	25,900	27,300	
CW-2-26	Tile Floor Work of 20cm x 20cm, 1cement : 1/2lime : 5sand	m2	0	2,200	29,000	31,200	
CW-2-27	Plint Tile Work, 15cm x 20cm or 10cm x 20cm 1cement : 2sand	m	0	7,300	73,600	80,900	
CW-2-28	PVC pipe Installation with Dia.0.75", 1m length	piece	0	0	36,700	36,700	
CW-2-29	PVC pipe Installation with Dia.1", 1m length	piece	0	0	54,000	54,000	
CW-2-30	Cutting Earth for Installation of PVC, ACP and GIP	m2	0	0	0	0	
CW-2-31	Filling Sand for Installation of PVC, ACP and GIP	m2	0	0	0	0	
CW-2-32	Concrete Work with 1cement : 3/2sand : 5/2lime	m3	0	47,500	507,000	554,500	
CW-2-33	Concrete Work with 1cement : 2sand : 4gravel	m3	0	36,000	466,600	502,600	
CW-2-34	Concrete Work with 1cement : 2sand : 3gravel	m3	0	37,300	467,700	505,000	
CW-2-35	Concrete Work with 1cement : 3sand : 6gravel	m3	0	26,700	408,800	435,500	
CW-2-36	Reinforcing-Bar Work	kg	0	3,343	10,815	14,158	
CW-2-37	Steel-net with Dia.4-15"	m2	0	800	1,700	2,500	
CW-2-38	Form Work for 1m3 of Concrete	m3	0	9,600	821,800	831,400	
CW-2-39	Form Work for Drainage Channel	m2	0	300	143,800	144,100	
CW-2-40	Breaking-up the Concrete Form	m2	0	0	3,700	3,700	
CW-2-41	Reinforced Concrete with 1cement : 3/2sand : 5/2gravel/aggregate	m3	0	424,900	2,518,500	2,943,400	
CW-2-42	Reinforced Concrete with 1cement : 2sand : 4gravel/aggregate	m3	0	463,500	2,640,300	3,103,800	
CW-2-43	Reinforced Concrete with 1cement : 2sand : 3gravel/aggregate	m3	0	414,700	2,479,200	2,893,900	
CW-2-44	Plastering 15mm thickness with 1cement : 2sand	m2	0	1,200	10,000	11,200	SK-SNI T-03-1991-03
CW-2-45	Plastering 15mm thickness with 1cement : 3sand	m2	0	900	9,100	10,000	SK-SNI T-03-1991-03
CW-2-46	Plastering 15mm thickness with 1cement : 4sand	m2	0	800	8,600	9,400	SK-SNI T-03-1991-03

Table 4.1.1 (4/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-2-47	Plastering 15mm thickness with l cement : 6sand	m2	0	600	7,900	8,500	SK-SNI T-03-1991-03
CW-2-48	Plastering 15mm thickness with l cement : 3lime : 10sand	m2	0	400	7,200	7,600	SK-SNI T-03-1991-03
CW-2-49	Plastering 20mm thickness with l cement : 2sand	m2	0	1,900	13,900	15,800	SK-SNI T-03-1991-03
CW-2-50	Plastering 20mm thickness with l cement : 3sand	m2	0	1,500	12,300	13,800	SK-SNI T-03-1991-03
CW-2-51	Plastering 28mm thickness with l cement : 4sand per	m2	0	1,200	11,300	12,500	SK-SNI T-03-1991-03
CW-2-52	Plastering 28mm thickness with l cement : 6sand	m2	0	900	10,100	11,000	SK-SNI T-03-1991-03
CW-2-53	Seam Work at Brick Masonry with l cement : 3sand per 1m	m2	0	600	21,400	22,000	SK-SNI T-03-1991-03
CW-2-54	Roof Truss/Trestle with Max Span of 8m	m3	78,400	7,200	9,348,600	9,434,200	SK-SNI T-11-1993-03
CW-2-55	Roof Truss/Trestle with Max Span of 6m	m3	78,400	7,200	3,188,600	3,274,200	SK-SNI T-11-1993-03
CW-2-56	Roof Truss/Trestle with Max Span of 6-9m	m3	78,400	7,200	9,653,800	9,739,400	SK-SNI T-11-1993-03
CW-2-57	Roof Truss/Trestle with Max Span of 6-9m	m3	78,400	7,200	3,259,900	3,345,500	SK-SNI T-11-1993-03
CW-2-58	Teak Wood Purlin Installation	m3	0	5,300	8,666,500	8,671,800	SK-SNI T-11-1993-03
CW-2-59	Kamper Wood Purlin Installation	m3	0	5,300	2,435,400	2,440,700	SK-SNI T-11-1993-03
CW-2-60	Roof Truss for Iron Roof	m2	0	300	93,200	93,500	
CW-2-61	Roof Frame 5/7 & Roof-lath 2/8	m2	0	400	37,600	38,000	SK-SNI T-11-1993-03
CW-2-62	Roof Frame 5/7 & Roof-lath 3/4	m2	0	600	55,300	55,900	SK-SNI T-11-1993-03
CW-2-63	Roof Frame 5/7 & Roof-lath 3/4, Concrete Tile Roof	m2	0	400	41,400	41,800	SK-SNI T-11-1993-03
CW-2-64	Ridge and Hip Covering with l cement : 1sand : 5lime	m	0	2,200	37,900	40,100	
CW-2-65	Door/Window Work of Teak Wood	m3	0	124,800	10,280,800	10,405,600	SK-SNI T-11-1993-03
CW-2-66	Door/Window Work of Camphol Wood	m3	0	124,800	2,651,500	2,776,300	SK-SNI T-11-1993-03
CW-2-67	Door/Window Work (Covered by Three Plywood and Aluminium)	m2	0	300	3,237,100	3,237,400	SK-SNI T-11-1993-03
CW-2-68	Venitian Blind Door/Window Work of Teak Wood	m2	0	500	546,200	546,700	SK-SNI T-11-1993-03
CW-2-69	Venitian Blind Door/Window Work of Teak Wood	m2	0	500	253,000	253,500	SK-SNI T-11-1993-03
CW-2-70	Door/Window Work of Plywood with Teak Wood as the Frame	m2	0	4,200	444,600	448,800	SK-SNI T-11-1993-03
CW-2-71	Door/Window Work of Plywood with Camphol Wood as the Frame	m2	0	4,200	198,200	202,400	SK-SNI T-11-1993-03
CW-2-72	Glass Door/Window Work of Plywood with Teak Wood as the Frame	m2	0	6,700	2,424,200	2,430,900	SK-SNI T-11-1993-03
CW-2-73	Clamp Door/Window Work, with Camphol Wood Framework	m2	0	300	130,800	131,100	SK-SNI T-11-1993-03
CW-2-74	Panel Door/Window Work, with Teak Wood Framework	m2	0	300	455,700	456,000	
CW-2-75	Panel Door/Window Work, with Camphol Wood Framework	m2	0	300	209,200	209,500	
CW-2-76	Ceiling Frame, Grid of 50cm x 100cm, with Camphol wood	m2	0	500	80,800	81,300	
CW-2-77	Ceiling Frame, Grid of 30cm x 60cm, with Camphol wood	m2	0	600	101,500	102,100	
CW-2-78	Ceiling Frame, Grid of 30cm x 30cm, with Camphol wood per	m2	0	700	116,900	117,600	
CW-2-79	Plank Wood Work of 3cm x 20cm, with Teak wood	m	0	200	65,600	65,800	
CW-2-80	Plank Wood Work of 3cm x 30cm, with Teak wood	m	0	200	93,500	93,700	
CW-2-81	Partition Wall Work of Teak wood, with Frame of Camphol Wood	m2	0	4,400	103,300	107,700	
CW-2-82	Installation of Metal Sheet Ridge Gutter	m	0	72,100	433,500	505,600	
CW-2-83	Installation of Bag Gutter	m	0	113,200	598,000	711,200	
CW-2-84	Corrugated Iron Roof BJLS 0.30	m2	0	22,200	25,200	47,400	
CW-2-85	Eaves Gutter Installation	m2	0	61,800	365,200	427,000	
CW-2-86	Installation of Drainage Gutter	m2	0	5,150	27,590	32,740	

Table 4.1.1 (5/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-2-87	Puttying, Foundation Paint	m2	0	1,190	8,010	9,200	(1 1/2 k2 + k30 + k28/m2)
CW-2-88	Two Times Shiny Painting	m2	0	1,740	9,060	10,800	
CW-2-89	Polishing and 2times Shiny Painting	m2	0	3,800	21,600	25,400	(k28+k30/m2)
CW-2-90	Simple Polishing Work per 1m2	m2	0	200	20,800	21,000	
CW-2-91	Good Polishing Work2xk15	m2	0	400	41,600	42,000	
CW-2-92	Wall Painting Work	m2	0	1,200	18,800	20,000	
CW-2-93	Wall Painting Work per 10m2	m2	0	1,430	17,930	19,360	
CW-2-94	Wood Painting Work	m2	0	4,100	30,520	34,620	
CW-2-95	Cost of Rolling	m2	1,498	16	2,614	4,128	
CW-2-96	Road Foundation (Base Layer) 15cm thickness	m2	1,500	600	26,600	28,700	
CW-2-97	Subcoarse Layer (Support Layer) 8cm thickness	m2	2,996	506	17,044	20,546	
CW-2-98	Rolling Cost for Month	month	0	130,800	9,184,000	9,314,800	
CW-2-99	Asphalt Covering with Hot Asphalt	m2	6,000	6,900	586,900	599,800	
CW-2-100	Sand Beneath Rond Base Layer	m3	0	1,700	44,500	46,200	
CW-2-101	Crushed Stone Layer, Size of 5/7	m2	1,500	200	19,800	21,500	
CW-2-102	Foundation Layer	m2	15	102	4,161	4,278	
CW-2-103	Surface Layer with 6mm thickness	m2	1,500	2,900	20,500	24,900	
CW-2-104	Asphalt Work	m2	0	362	4,662	5,024	
CW-2-105	Reinforced Concrete with 1:2:3 Dukker Slab Type A/B (with Re-bar-110kg/m3)	m3	0	85,500	805,600	891,100	
CW-2-106	Masonry of Kanstin Casted Concrete	m3	0	31,100	450,800	481,900	
CW-2-107	Masonry of Kanstin Concrete Pavement Border with ratio of 1:2:3	m	0	0	35,900	35,900	
CW-2-108	Masonry of Kanstin Brick with ratio of 1:2	m	0	1,000	104,100	105,100	
CW-2-109	Masonry of Kanstin Brick with ratio of 1:4	m	0	500	40,500	41,000	
CW-2-110	Masonry of U-shapes Casted Concrete U-20	m	0	1,600	34,700	36,300	
CW-2-111	Masonry of U-shapes Casted Concrete U-30	m	0	2,400	36,500	38,900	
CW-2-112	Masonry of Paving Block	m2	0	5,700	44,800	50,500	
CW-3-1	Pile Work of Maintenance Bridge of Simongan Bridge-A	m	255,813	533	96,043	352,408	Length is 4m tall
CW-3-2	Pile Work of Maintenance Bridge of Simongan Bridge-B	m	246,376	488	86,168	333,032	Length is 5m tall
CW-3-3	Pile Work of Simongan Weir-A	m	254,677	257	56,438	311,372	Length is 13m tall
CW-3-4	Pile Work of Simongan Weir-B	m	186,831	225	47,461	234,516	Length is 13m tall
CW-3-5	Pile Work of RailwayBridge-A (Abut Semarang Side)	m	46,236	301	48,809	95,346	Length is 17m tall
CW-3-6	Pile Work of RailwayBridge-B (Center Pier Semarang Side)	m	34,485	228	36,082	70,795	Length is 13m tall
CW-3-7	Pile Work of RailwayBridge-C (Center Pier Cirebon Side)	m	51,877	337	54,766	106,980	Length is 14m tall
CW-3-8	Pile Work of RailwayBridge-D (Abut Cirebon Side)	m	46,114	300	48,683	95,097	Length is 17m tall
CW-3-9	Driving In of Steel Sheet Pile (Type-II)	m	9,909	76	8,579	18,564	L=10m long
CW-3-10	Pulling Out of Steel Sheet Pile (Type-II)	m	9,754	67	8,548	18,369	L=10m long
CW-3-11	Driving In of Concrete Sheet Pile (t=22)	m	15,343	136	12,963	28,442	L=10m long
CW-3-12	Driving In of Log Pile	piece	24,436	362	18,530	45,328	L=2m long
CW-3-13	Pile Work of Concrete Pile for Groyn	m	35,839	251	37,593	73,683	Length is 7m long

Table 4.1.1 (6/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-3-14	Pile Work of Simongan Weir-C	m	177,272	221	42,464	219,957	Length is 13m tall
CW-3-15	Pile Work of Simongan Weir-D	m	146,827	210	39,215	186,252	Length is 13m tall
CW-3-16	Wale Work-A	kg	30,770	1,550	27,006	59,326	Using C-Channel Steel
CW-3-17	Wale Work-B (Temporary)	ton	558,950	3,200	581,050	1,143,200	Using C-Channel Steel
CW-3-18	Installation of Tie Rod-A	kg	68,880	96	25,764	94,740	for Concrete Sheet Pile
CW-3-19	Installation of Tie Rod-B (Temporary)	kg	142,600	960	228,960	372,520	for Temporary Structure
CW-3-20	Pulling Out of Concrete Sheet Pile (t=22)	m	85,119	751	71,916	157,786	L=10m long
CW-3-21	Driving In of H-Beam	piece	59,840	834	47,754	108,427	Driving 6m long
CW-3-22	Pulling out of H-Beam	piece	51,919	723	41,432	94,074	Driving 6m long
CW-3-23	Driving In of Log Pile L=3.0m	piece	29,501	437	22,371	52,309	L=3m long
CW-3-24	Driving In of Log Pile L=4.0m	piece	33,999	504	25,782	60,285	L=4m long
CW-3-25	Driving In of Log Pile L=5.0m	piece	38,497	571	30,088	69,156	L=5m long
CW-3-26	Pile Work of Asin & Baru No.1	m	229,222	298	63,215	292,735	Length is 16m tall
CW-3-27	Pile Work of Asin & Baru No.2	m	218,427	235	51,903	270,565	Length is 26m tall
CW-4-1	Temporary Bridge	m2	917,232	19,318	861,666	1,798,215	Width is 3m. Number of Working Day is 180 days including Installation and Removal
CW-4-1-1	Temporary Bridge	ton	8,878,764	186,999	8,340,887	17,406,649	days including Installation and Removal
CW-4-2	Temporary Sign for Railway Work	unit	0	119,900	266,300	386,200	0
CW-4-3	Install and Demolish Temporary Coffter for Rail Work	m3	0	16,913	327,531	344,443	0
CW-4-4	Site Clearing for Railway Work	m2	0	0	4,935	4,935	0
CW-4-5	Removal/Demolish/Carriage of Tool	ton	97,117	1,449	249,735	348,301	10km Distance
CW-4-6	Replacing Ballast with Sleeper Mattress executed between Train Operation	m3	0	0	107,510	107,510	0
CW-4-7	Sand Bags	nos	89	759	4,200	5,047	0
CW-4-8	Temporary Steel Sheet Pile (Type-C)	nos	1,420,686	86	949,535	2,370,307	L=9.0 long and 6.0m of Driving and Pulling Out (Type-II)
CW-4-9	Installation of Tierod and Wale (Temporary)	ton	520,420	3,640	543,270	1,067,330	Excluding Material
CW-4-10	Removal of Tierod and Wale (Temporary)	ton	295,700	2,230	301,270	599,200	Excluding Material
CW-4-11	Temporary Double Steel Sheet Pile	m	11,624,101	15,806	8,175,660	19,815,566	L=9.0 and 15.0m long and 4.7 and 10.7m of Driving and Pulling Out (Type-II)
CW-4-12	Temporary Dewatering by D100mm	m	291,464	12,974	212,461	516,899	Width is 3m. Number of Working Day is 180 days including Installation and Removal
CW-4-12-1	Temporary Dewatering per 1 place (60days non-stop driving) D=100mm	place	14,573,175	648,720	10,623,031	25,196,206	
CW-4-13	Angsana Species	tree	0	150	93,560	93,710	Total height from the root is 220cm
CW-4-14	Glodogan Species	tree	0	150	128,560	128,710	Total height from the root is 170cm
CW-4-15	Flamboyant Species	tree	0	150	228,560	228,710	Total height from the root is 220cm
CW-4-16	Relocating Trees	tree	0	375	239,925	240,300	Total height from the root is 220cm
CW-4-17	Temporary Double Steel Sheet Pile for Drainage Component	m	936,106	10,719	818,076	1,764,901	L=8m long and 3.3m of Driving and Pulling Out (Type-II)

Table 4.1.1 (7/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-4-18	Temporary Steel Sheet Pile with Support for Drainage	m	913,737	7,006	855,994	1,776,737	L=7.5m long and 7.5 and 3.0m of Driving and Pulling Out (Type-II)
CW-4-19	Palm Bokol Planting	tree	0	150	328,560	328,710	Total height from the root is minimum 200cm
CW-4-20	Bougainvillea Planting	tree	0	150	103,560	103,710	Total height from the root is minimum 100cm
CW-4-21	Temporary Dewatering by D200mm	day	353,884	15,124	251,251	620,260	Assumption : Working Day is 180 days including Installation and Removal
CW-4-22	Temporary Dewatering by D180mm	day	339,696	15,124	244,084	598,904	Assumption : Working Day is 180 days including Installation and Removal
CW-4-23	Temporary Dewatering by D160mm	day	319,831	15,124	234,051	569,006	Assumption : Working Day is 180 days including Installation and Removal
CW-5-1	Loading/Unloading/Carriage of Equipment and Material	ton	0	0	70,000	70,000	
CW-5-2	Replace Ballast with Sleeper Mattress (Ballast Excavation)	m3	2,500	0	47,940	50,440	
CW-5-3	Setting/Demolish Bulkhead Behind Temporary Bridge	m3	3,543,172	14	6,925,463	10,468,649	
CW-5-4	Setting/Demolish Temporary Abutment. Window Time Work	pieces	25,000	0	820,700	845,700	
CW-5-5	Raising Track on The Bridge for 16 cm. Include 7.6 Setting Temporary Setting/Demolish Temporary Bridge. Window Time Work. Lateral Transfer	unit	0	0	125,000	125,000	
CW-5-6	Erection	ton	183,134	0	771,941	955,075	
CW-5-7	Supplies and Setting Temporary Bridge	ton	949,594	5,305	8,489,489	9,444,388	
CW-5-8	Supplies of Bridge Wooden Sleeper Size 13 x 22 x 200 cm. Setting and Demolish Sleeper Mattress as Temporary Abutment. Window Time Work	pieces	0	0	125,000	125,000	
CW-5-9	Temporary Bridge	nos	0	0	961,750	961,750	
CW-5-10	Setting and Demolish Ballast Wall	m3	2,214,583	347	4,065,625	6,280,556	
CW-5-11	Setting/Demolish Temporary Bridge. Window Time Work. Direct Crane Erection. Include Demolish Existing Bridge Demolish/Carry out Existing Bridges (32+33). Include Demolish Temporary Bridge	ton	1,193,453	4,613	1,374,440	2,572,507	
CW-5-12	Remove The Bearing Steel. Window Time Work	ton	0	0	0	0	
CW-5-13	Construct/Demolish Receiver Staging. Include Bridge Raising	Nos	897,025	6,075	817,575	1,720,675	
CW-5-14	Bridge Raising Implementation up to 44 cm Height. Window Time Work	Nos	0	0	0	0	
CW-5-15	HB-500x300x16x28, 4 bars, Include Erection	Step	956,000	0	1,836,000	2,792,000	
CW-5-16	Clearing	ton	4,398,347	4,613	3,123,373	7,526,333	
CW-5-17	Demolish/The Wing of Bridge Abutment	unit	0	0	1,404,000	1,404,000	
CW-5-18	Supplies of Bridge Wooden Sleeper Size 18x22x200	m3	1,171,050	8,100	924,350	2,103,500	
CW-5-19	Install/Removal of Cofferdam	pieces	0	0	187,500	187,500	
CW-5-20	Pumping Work in The Stage for Structure Under Water Level, 220 days x 2 nos x 2	m2	3,398,294	241,877	1,650,991	5,291,161	
CW-5-21	Temporary Road for Pile Driving Equipment (for Pier Cirebon Side)	L.S.	0	0	31,344,000	31,344,000	
CW-5-22	H40mxW6mx2	L.S.	16,056,600	224,700	15,329,300	31,610,600	
CW-5-23	Load/Demolish/Carriage of Tool (L=256 km)	ton	0	0	56,000	56,000	

Table 4.1.1 (8/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-5-24	Construct/Demolish Platform at Pier to Preparing Cross Supporter and Raising Work	Nos.	0	0	0	0	
CW-5-25	Remove The Bearing Steel and Change it with Stapling. Window Time	Nos	473,200	8,100	871,700	1,353,000	
CW-5-26	Construction/Demolish Sleeper Mattress Above Pier/Abutment of Base	m2	0	0	0	0	
CW-5-27	Cross-Support Include Setting/Demolish Cross Girder.	ton	1,019,608	3,380	5,622,910	6,645,898	
CW-5-28	Construct and Setting Cross Girder. Window Time Work	ton	546,425	2,115	723,559	1,272,099	
CW-5-29	Demolish Cross Girder	cm	4,113,007	565,947	2,573,940	7,252,893	
CW-5-29	Step by Step of Bridge Raising for 70 cm Height for 3 Span or Bridge.	cm	4,113,007	565,947	2,573,940	7,252,893	
CW-5-30	Window Time Work	m2	2,470	94	2,567	5,131	
CW-5-30	Removal of Pavement	m2	14,817	562	15,405	30,784	
CW-5-31	Removal of Concrete Slab	pieces	4,682,225	328,938	4,811,750	9,822,913	
CW-5-32	Piling/Demolish HB 400x300x12x15	ton	7,286,364	413	8,689,256	15,976,033	
CW-5-33	Setting/Demolish Steel Stiffening	ton	3,396,405	16,968	3,128,028	6,541,400	
CW-5-34	Setting/Demolish Cross Girder	ton	3,396,405	16,968	3,128,028	6,541,400	
CW-5-35	Construct/Setting/Demolish Temporary Bridge. Window Time Work.	ton	2,331,840	12,889	2,768,406	5,113,136	
CW-5-36	Direct Crane Erection	pieces	5,992,873	478,455	3,382,736	9,854,064	
CW-5-37	Setting Retaining Wall from Wooden Plate with Size of 8x12x300 cm, Incl. Material.	m3	0	0	2,084,400	2,084,400	
CW-5-38	Setting/Demolish Temporary Abutment	Nos	0	0	593,400	593,400	
CW-5-39	Fill with Gravel of Base Stapling Incl. Material.	m3	2,726	2,714	143,417	148,857	
CW-5-40	Setting/Demolish Sleeper Mattress of Rail Bundles Supporter	m	0	0	663,378	663,378	
CW-5-41	Setting/Demolish Rail Bundles	Line	1,113,425	25	1,410,600	2,524,050	
CW-5-42	Install Sleeper Saddle Rail Bundles for False Work Base	m2	0	0	159,117	159,117	
CW-5-43	Setting/Demolish Construction with Roller. Window Time Work	unit	20,350	13	9,510,013	9,530,375	
CW-5-44	Setting Horizontal of Bridge. Window Time Work	times	30,533	33	15,095,667	15,126,233	
CW-5-45	HB. In Various Size	ton	3,455,019	7,001	708,002	4,170,023	
CW-5-46	Bridge Wooden Sleeper with Size of 18x22x200 cm for Temporary Bridge	pieces	0	0	90,000	90,000	
CW-5-47	Rail Rental	ton	966,320	0	0	966,320	
CW-5-48	Raising the Bridge for 83 cm Height and Distapling	Step	1,087,200	0	2,450,000	3,537,200	
CW-5-49	Construct/Setting/Demolish Temporary Bridge. Window Time Work.	ton	2,853,443	11,734	3,418,240	6,283,417	
CW-5-50	Direct Crane Erection	ton	0	0	404,905	404,905	
CW-5-51	Setting/Demolish Temporary Cross Girder. Man Power	Line	333,650	25	459,425	793,100	
CW-5-52	Setting/Demolish Rail Bundles Include Material	m3	347	347	5,584,722	5,585,417	
CW-5-53	Setting/Demolish Bulkhead Behind The Temporary Abutment	Nos	0	0	0	0	
CW-5-54	Setting/Demolish Receiver Staging of Existing Bridge. Include Demolish the Existing Bridge	Nos	0	0	0	0	
CW-5-55	Demolish of Existing Bridge. Include Demolish Temporary Bridge	Nos	0	0	0	0	
CW-5-56	Material Supplies for Temporary Bridge	ton	1,074,558	0	544,360	1,618,918	

Table 4.1.1 (9/9) UNIT RATES OF WORKING COST

ID No.	Base Working Item	Unit	PF/C	IF/C	L/C	Total	Application
CW-5-57	Clearing of Site	unit	0	0	2,106,000	2,106,000	
CW-5-58	Coarse Sand	m ³	0	1,620	30,780	32,400	
CW-5-59	Ballast	m ³	0	3,900	74,100	78,000	
CW-5-60	Track Raising Every 5 cm until 70-100 cm for 5 km/h Speed	m	400	80	27,820	28,300	
CW-5-61	Track Tamping for 20 km/h	m	630	126	12,504	13,260	
CW-5-62	Track Tamping for > 60 km/h (By Tamping Machine). Use MTT	m	0	0	15,750	15,750	
CW-5-63	Guard of Restriction Speed (2x2x90)	MD	0	0	23,333	23,333	
CW-5-64	Demolition and Removal of Existing Substructure (Stone/Brick Masonry)	m ³	32,595	842	38,073	71,509	
CW-5-65	Demolition and Removal of Existing Substructure (Stone Masonry)	L.S.	488,918	12,634	571,090	1,072,642	
CW-5-66	Removal ballast	m ³	0	325	7,114	7,439	
CW-5-67	Dewatering for BH5	L.S.	7,170,725	197,527	7,168,487	14,536,739	
CW-5-68	Demolition & Removal of Concrete Structure	m ³	49,391	1,872	51,349	102,613	
CW-5-69	Dewatering for BH 6	L.S.	7,180,698	248,416	8,159,542	15,588,656	
CW-5-70	Removal of steel bearing	piece	0	0	81,900	81,900	
CW-5-71	Dewatering for BH.10	L.S.	24,562,294	2,220,013	53,921,127	80,703,434	
CW-5-72	Temporary Construction Road for BH10	L.S.	1,905,400	347,800	8,159,600	10,412,800	
CW-5-73	Dewatering for BH.13	L.S.	9,879,339	494,868	19,112,056	29,486,263	
CW-6-1	Furnishing of Main Beam with Reinforcing Bar	Beam	6,101,929	5,128,787	25,816,683	37,047,399	L = 21.8 m long
CW-6-2	Temporary Work for Furnishing of Main Beam with Reinforcing Bar	Beam	28,375,138	3,096	30,035,364	58,413,597	L = 21.8 m long
CW-6-3	Election of Main Beam with Anchoring Work	Beam	3,286,228	596,217	4,530,225	8,412,670	L = 21.8 m long
CW-6-4	Furnishing of Diaphragm with Reinforcing Bar	Piece	1,986,742	392,608	1,836,043	4,215,392	
CW-6-5	Depreciation of Equipment for Construction	piece	28,375,138	3,096	28,305,763	56,683,996	
CW-6-6	Setup of PC Cable	kg	6,250	65	21,799	28,114	
CW-6-7	Grout Work	m ³	0	19,173	545,192	564,365	
CW-6-8	Concrete Work for Beam	m ³	0	50,130	220,668	270,798	Utilization of Derrick Crane
CW-6-9	Hole Work for PC Cable	m	11,590	0	1,714	13,304	Cross Direction
CW-6-10	Stringing Work	cable	652,536	108,756	390,496	1,151,788	Type 195ton
CW-6-11	Temporary Placing for Beam	beam	0	0	282,500	282,500	
CW-6-12	Clean-up of Board for Furnishing Beam	beam	0	0	32,799	32,799	
CW-6-13	Furnishing, Installing and Removing Board for Furnishing Beam	m	0	0	33,161	33,161	
CW-6-14	Installing and Removing Derrick Crane	crane	0	0	443,810	443,810	Type : 3ton
CW-6-15	Installing and Removing Railing System for Derrick Crane	m	0	0	9,848	9,848	
CW-6-16	Erection of Beam	ton	0	0	12,463	12,463	
CW-6-17	Installation and Removal of Equipment for Erection	L.S.	1,534,301	8,640	6,433,439	7,976,379	
CW-6-18	Cost of Equipment and Tools	Bridge	14,870,000	2,978,000	11,892,000	29,740,000	Application : 20 ~ 30 m
CW-6-19	Anchoring for Bridge Work	place	67,545	0	447,245	514,790	
CW-6-20	Concrete Work of Beam at A2 by Crane	m ³	120	50,980	223,080	274,180	
CW-6-21	Concrete Work for Diaphragm at Type-A2 by Pump	m ³	20,270	51,140	238,540	309,950	by Boom, Standard Concreting Volume=75m ³
CW-6-22	Concrete Work of Type-B by Pump	m ³	20,270	43,850	209,410	273,530	by Boom, Standard Concreting Volume=75m ³

Table 4.1.2 (1/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-1	Backfill (Soil) A	100 m ³	Width is equal or more than 4m								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-7	Backhoe; 0.6 m ³	hourly	2.0	125,543	2,040	90,965	251,086	4,080	181,930	
	A-2-1-19	Bulldozer; 15 ton	hourly	2.0	178,226.6	2,280	161,158.4	356,453.2	4,560	322,316.7	
Others		Miscellaneous	L.S.	1				61	60	53	
								607,600	8,700	504,300	
Total for		100 m ³									
Unit Cost for		1 m ³						6,076	87	5,043	

Basis of Quantity
 Backhoe $Q = (3600 \times q \times f \times E) / C_m$ (m³/hour)
 $q = 0.59 \text{ m}^3/\text{time}$, $f = 0.9$, $E = 0.8$, $C_m = 30 \text{ second}$
 $Q = 50.976$ Hence, $100/Q = \text{approx. } 2 \text{ hour}$

Bulldozer $Q = (60 \times q \times f \times E) / C_m$ (m³/hour)
 $q = 0.59 \text{ m}^3/\text{time}$, $f = 0.9$, $E = 0.8$, $C_m = 30 \text{ second}$
 $Q = 50.976$ Hence, $100/Q = \text{approx. } 2 \text{ hour}$

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-2	Backfill (Soil) B	100 m ³	Width is equal or more than 0-4m								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-7	Backhoe; 0.6 m ³	hourly	3	125,543	2,040	90,965	376,629	6,120	272,895	
	A-2-1-19	Bulldozer; 15 ton	hourly	1.5	178,226.6	2,280	161,158.4	267,339.9	3,420	241,737.6	
	A-2-1-88	Vibrating Roller; 0.8-1.1 ton (Hand Guide)	hourly	3	170,572.3	144	147,905.6	511,716.8	432	443,716.7	
Labour	L-2-23	Common Labour	day	1.8	0	0	35,100	0	0	63,180	
Others	CW-1-8	Tamper Loading	m ³	4	1760	60	2600	7040	240	10400	60-100kg
		Miscellaneous	L.S.	1				20	88	16	
Total for		100 m ³						702,200	10,300	632,600	
Unit Cost for		1 m ³						7022	103	6,326	

* 1: All rates are quoted from Japanese Standard.

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-3	Backfill (Soil) C	100 m ³	Width is less than 4m								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-7	Backhoe; 0.6 m ³	hourly	4	125,543	2,040	90,965	502,172	8,160	363,860	
	A-2-1-88	Vibrating Roller; 0.8-1.1 ton (Hand Guide)	hourly	7	170,572.3	144	147,905.6	1,194,006	1,008	1,035,339.9	
Labour	L-2-23	Common Labour	day	4	0	0	35,100	0	0	140,400	
Others	CW-1-8	Tamper Loading	m ³	10	1760	60	2600	17,600	600	26,000	60-100kg
		Miscellaneous	L.S.	1				28	32	6	
Total for		100 m ³						639,200	9,800	633,800	
Unit Cost for		1 m ³						6,392	98	6,338	

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-4	Backfill (Soil) D	100 m ³	Width is less than 1m								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-3	Backhoe; 0.35 m ³	hourly	6	71,293.71	1,200	51,823.69	427,762	7,200	310,942	
Labour	L-2-23	Common Labour	day	4	0	0	35,100	0	0	140,400	
Others	CW-1-8	Tamper Loading	m ³	100	1760	60	2600	176,000	6,000	260,000	60-100kg
		Miscellaneous	L.S.	1				38	0	58	
Total for		100 m ³						603,800	13,200	711,400	
Unit Cost for		1 m ³						6,038	132	7,114	

Table 4.1.2 (2/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-5	Spreading A	100 m ³	Bulldozer 21t								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
Equipment	A-2-1-22	Bulldozer, 21 ton	hourly	1.0	294008.8	3480	264727.7	294,009	3,480	264,728	
Labour	L-2-23	Common Labour	day	0.5	0	0	35100	0	0	17,550	
Others		Miscellaneous	L.S.	1				91	20	22	
Total for		100 m ³						294,100	3,500	282,300	
Unit Cost for		1 m ³						2,941	35	2,823	

Working Quantity for Spreading (m³/hour) : Q2

Working Quantity for Spreading (m³/hour) : Q

Case of Bulldozer 21t

$$Q2 = 10 \times E \times (18 \times D + 13) \quad (\text{m}^3/\text{hour})$$

Where, D : Every Thickness of Compaction (m)
E : Coefficient for Working

Where, Equipment for Spreading :

D : Every Thickness of Compaction (m)
E : Coefficient for Working

0.3

0.6 common

Hence, Q2 = 110.4 (m³/hour)

$$0.91 \text{ hour}/100\text{m}^3 = \underline{\quad 1.0 \text{ hour}} \quad$$

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-6	Manpower Excavation	10 m ³	Soil:Clay, Sand, Gravel								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
Labour	L-2-23	Common Labour	day	4.5	0	0	35100	0	0	157950	
Others		Miscellaneous	L.S.	1				0	0	50	
Total for		10 m ³						0	0	158,000	
Unit Cost for		1 m ³						0	0	15800	

* 1 : Japanese Standard is referred to for labor rate.

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-7	Manpower Embankment/Backfill & Tamper	10 m ³	Soil:Clay, Sand, Gravel								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
Labour	L-2-23	Common Labour	day	2	0	0	35100	0	0	70200	
Others	CW-1-8	Tamper Loading	m ³	10	1760	60	2600	17600	600	26000	60-100kg
		Miscellaneous	L.S.	1				0	0	0	
Total for		10 m ³						17,600	600	96,200	
Unit Cost for		1 m ³						1760	60	9620	

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-8	Tamper Loading	10 m ³	60-100kg								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
Equipment	A-2-2-51	Tamper, 60-100 kg	daily	0.5	35108.56	1080	16858.77	17554.28	540	8429.385	
Labour	L-2-23	Common Labour	day	0.5	0	0	35100	0	0	17550	
Others		Miscellaneous	L.S.	1				46	60	21	
Total for		10 m ³						17,600	600	26,000	
Unit Cost for		1 m ³						1760	60	2600	

* 1 : Aforementioned rates are rates modified Japanese Standard

Table 4.1.2 (3/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-9		Slope Clearing for Embankment 1		100 m ²		Bulldozer 15t (S=1:2-3)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-19	Bulldozer, 15 ton	hourly	1.5	178226.6	2280	161158.4	267339.9	3420	241737.6	
Labour	L-2-1	Foreman	day	0.2	0	0	48800	0	0	9760	
	L-2-23	Common Labour	day	1.1	0	0	35100	0	0	38610	
Others		Miscellaneous	L.S.					60	80	92	
Total for		100 m ²						267,400	3,500	290,200	
Unit Cost for		1 m ²						2674	35	2902	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-10		Slope Clearing for Embankment 2		100 m ²		Backhoe 0.6m ³ by Cutting, Soil: Sand and Clay					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-7	Backhoe, 0.6 m ³	hourly	2.6	125542.9	2040	90965.08	326411.6	5304	236509.2	
Labour	L-2-1	Foreman	day	0.1	0	0	48800	0	0	4880	
	L-2-23	Common Labour	day	0.7	0	0	35100	0	0	24570	
Others		Miscellaneous	L.S.	1				88	96	41	
Total for		100 m ²						326,500	5,400	266,000	
Unit Cost for		1 m ²						3265	54	2660	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-11		Slope Clearing for Embankment 3		100 m ²		Backhoe 0.6m ³ by Additional Soil (Sand)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-7	Backhoe, 0.6 m ³	hourly	3.2	125542.9	2040	90965.08	401737.3	6528	291088.2	
Labour	L-2-1	Foreman	day	0.2	0	0	48800	0	0	9760	
	L-2-23	Common Labour	day	0.9	0	0	35100	0	0	31590	
Others		Miscellaneous	L.S.	1				63	72	62	
Total for		100 m ²						401,800	6,600	332,500	
Unit Cost for		1 m ²						4018	66	3325	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-12		Slope Clearing of Excavation by Machine		100 m ²		Backhoe 0.6m ³ by Cutting (Sand)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-7	Backhoe, 0.6 m ³	hourly	3.2	125542.9	2040	90965.08	401737.3	6528	291088.2	
Labour	L-2-1	Foreman	day	0.3	0	0	48800	0	0	14640	
	L-2-23	Common Labour	day	2	0	0	35100	0	0	70200	
Others		Miscellaneous	L.S.	1				63	72	72	
Total for		100 m ²						401,800	6,600	376,000	
Unit Cost for		1 m ²						4018	66	3760	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-13		Slope Clearing of Excavation by Manpower		100 m ²		Soil: Sand					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	0.7	0	0	48800	0	0	34160	
	L-2-23	Common Labour	day	5.3	0	0	35100	0	0	186030	
Others		Miscellaneous	L.S.	1				0	0	10	
Total for		100 m ²						0	0	220,200	
Unit Cost for		1 m ²						0	0	2202	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-14		Sodding		100 m ²							
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	0.6	0	0	48800	0	0	29280	
	L-2-23	Common Labour	day	6.4	0	0	35100	0	0	224640	
Material	M-1-11	Sodding Grass	m ²	100	0	0	3000	0	0	300000	
Others		Miscellaneous	L.S.	1				0	0	22,180	approx. 4% of Labour and Material
Total for		100 m ²						0	0	576,100	
Unit Cost for		1 m ²						0	0	5761	

Table 4.1.2 (4/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-15		Gravel Bedding		10 m ³		Under Flat and Thin Concrete Structure					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-23	Common Labour	day	1.5	0	0	35100	0	0	52650	
Material	M-B-11	Crushed Stone for Masonry	m ³	12	0	1100	20900	0	13200	250800	
Others		Miscellaneous	L.S.	1				0	400	9,150	Approx. 3% of mentioned above
Total for				10 m ³				0	13,600	312,600	
Unit Cost for				1 m ³				0	1360	31260	

Refer to Japanese Standard for Labor rate
Crushed Stone : 10m³ x (1+0.2) = 12 m³

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-16		Backfilling Gravel A		10 m ³		Behind Revetment					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-23	Common Labour	day	2	0	0	35100	0	0	70200	
Material	M-B-12	Crushed Stone for Pavement and Concrete	m ³	12	0	3250	61750	0	39000	741000	
Others		Miscellaneous	L.S.	1				0	1,600	24,400	Approx. 4% of mentioned above
Total for				10 m ³				0	40,600	835,600	
Unit Cost for				1 m ³				0	4060	83560	

Refer to Japanese Standard for Labor rate
Crushed Stone : 10m³ x (1+0.2) = 12 m³

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-17		Backfilling Gravel B		10 m ³		Behind Concrete Wall					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-11	Mason	day	0.5	0	0	39000	0	0	19500	
Labour	L-2-23	Common Labour	day	2	0	0	35100	0	0	70200	
Material	M-B-12	Crushed Stone for Pavement and Concrete	m ³	12	0	3250	61750	0	39000	741000	
Others		Miscellaneous	L.S.	1				0	800	16,700	Approx. 2% of mentioned above
Total for				10 m ³				0	39,800	847,400	
Unit Cost for				1 m ³				0	3980	84740	

Refer to Japanese Standard for Labor rate
Crushed Stone : 10m³ x (1+0.2) = 12 m³

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-18		Backfilling Concrete		10 m ³		Behind or Between Concrete Walls					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-17	Concrete Worker	day	1.5	0	0	39000	0	0	58500	
Labour	L-2-23	Common Labour	day	2	0	0	35100	0	0	70200	
Material	M-C-14	Ready Mixed Concrete; 125kg/cm ² , 25mm (E)	m ³	11.7	0	35000	140000	0	409500	1638000	
Others		Miscellaneous	L.S.	1				0	61,500	265,100	Approx. 15% of mentioned above
Total for				10 m ³				0	471,000	2,031,800	
Unit Cost for				1 m ³				0	47100	203180	

Refer to Japanese Standard for Labor rate
Concrete : 10 x (1+0.17) = 11.7m³

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-19		Foundation River Gravel (Rubble Stone)		10 m ³		Under Concrete Structure and so on					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-11	Mason	day	0.5	0	0	39000	0	0	19500	
Labour	L-2-23	Common Labour	day	2	0	0	35100	0	0	70200	
Material	M-B-6	River Gravel (Stone)	m ³	12	0	2250	42750	0	27000	513000	
Others		Miscellaneous	L.S.	1				0	900	18,100	Approx. 3% of mentioned above
Total for				10 m ³				0	27,900	620,800	
Unit Cost for				1 m ³				0	2790	62080	

Refer to Japanese Standard for Labor rate
Crushed Stone : 10m³ x (1+0.2) = 12 m³

Table 4.1.2 (5/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-20	Concrete Work for Reinforced Concrete C1 by Pump	10 m ³	by Boom, Standard Concreting Volume=75m ³								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-36-1	Concrete Pump Truck; 90-110 m ³ /hr	Time	0.15	45418.33	340	28935.44	6812.749	51	4340.31525	
	A-2-1-36-2	Concrete Pump Truck; 90-110 m ³ /hr	hourly	0.7	272510	2040	173612.6	190757	1428	121528.827	
Labour	L-2-1	Foreman	day	0.11	0	0	48800	0	0	5,368	
	L-2-17	Concrete Worker	day	0.36	0	0	39000	0	0	14040	
	L-2-23	Common Labour	day	0.47	0	0	35100	0	0	16497	
Material	M-C-11	Ready Mixed Concrete; 225kg/cm ² , 25mm (C1&2)	m ³	10.2	0	40000	160000	0	408000	1632000	
Others	CW-1-45	Curing Work	m ³	10	110	0	350	1100	0	3500	Reinforced Concrete
		Miscellaneous	L.S.	1				4,030	8,221	36,026	Apprx.2% of mentioned above
Total for		10 m ³						202,700	417,700	1,833,300	
Unit Cost for		1 m ³						20270	41770	183330	

Refer to Japanese Standard for All rates
Concrete : 10 x (1 + 0.02) = 10.2m³

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-21	Concrete Work for Small Structure : Type-D	10 m ³	by Manpower								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	0.8	0	0	48800	0	0	39,040	
	L-2-17	Concrete Worker	day	1.6	0	0	39000	0	0	62400	
	L-2-23	Common Labour	day	3.5	0	0	35100	0	0	122850	
Material	M-C-13	Ready Mixed Concrete; 175kg/cm ² , 40mm (D)	m ³	10.7	0	39000	156000	0	417300	1669200	
Others	CW-1-45	Curing Work	m ³	10	110	0	350	1100		3500	Reinforced Concrete
		Miscellaneous	L.S.	1				100	8,400	38,010	Apprx.2% of mentioned above
Total for		10 m ³						1,200	425,700	1,935,000	
Unit Cost for		1 m ³						120	42570	193500	

Concrete : 10 x (1 + 0.07) = 10.7m³

ID No.	Working Name	Calculation Quantity	Remarks								
CW-1-22	Concrete Work for Levelling Concrete	10 m ³	by Manpower								
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	0.2	0	0	48800	0	0	9,760	
	L-2-17	Concrete Worker	day	0.7	0	0	39000	0	0	27300	
	L-2-23	Common Labour	day	1.7	0	0	35100	0	0	59670	
Material	M-C-14	Ready Mixed Concrete; 125kg/cm ² , 25mm (E)	m ³	10.4	0	35000	140000	0	364000	1456000	
Others	CW-1-45	Curing Work	m ³	10	110	0	350	1100		3500	Reinforced Concrete
		Miscellaneous	L.S.	1				100	7,300	31,170	Apprx.2% of mentioned above
Total for		10 m ³						1,200	371,300	1,587,400	
Unit Cost for		1 m ³						120	37130	158740	

Concrete : 10 x (1 + 0.04) = 10.4m³

Table 4.1.2 (6/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-23		Form Work A		100 m ²		Reinforced Concrete less than 4m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	0	135641.1	1020	115858.5	0	0	0	
Labour	L-2-1	Foreman	day	3.2	0	0	48800	0	0	156,160	
	L-2-18	Form Worker	day	16.4	0	0	39000	0	0	639600	
	L-2-23	Common Labour	day	13.4	0	0	35100	0	0	470340	
Material	M-C-44	Form Tie	pcs	20	285	0	15	5700	0	300	
	M-D-11	Form Timber	m ²	100	0	0	30000	0	0	3000000	
Others		Miscellaneous	L.S.					300	0	213,400	Approx. 5% of mentioned above
Total for				100 m ²				6,000	0	4,479,800	
Unit Cost for				1 m ²				60	0	44798	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-24		Form Work B		100 m ²		Reinforced Concrete more than 4m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	7	135641.1	1020	115858.5	949487.62	7140	811009.391	
Labour	L-2-1	Foreman	day	3.1	0	0	48800	0	0	151,280	
	L-2-18	Form Worker	day	15.9	0	0	39000	0	0	620100	
	L-2-23	Common Labour	day	13	0	0	35100	0	0	456300	
Material	M-C-44	Form Tie	pcs	20	285	0	15	5700	0	300	
	M-D-11	Form Timber	m ²	100	0	0	30000	0	0	3000000	
Others		Miscellaneous	L.S.					47,812	360	252,011	Approx. 5% of mentioned above
Total for				100 m ²				1,003,000	7,500	5,291,000	
Unit Cost for				1 m ²				10030	75	52910	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-25		Form Work C		100 m ²		Plain Concrete less than 4m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	3.2	0	0	48800	0	0	156,160	
	L-2-18	Form Worker	day	14.8	0	0	39000	0	0	577200	
	L-2-23	Common Labour	day	14.9	0	0	35100	0	0	522990	
Material	M-C-44	Form Tie	pcs	20	285	0	15	5700	0	300	
	M-D-11	Form Timber	m ²	100	0	0	30000	0	0	3000000	
Others		Miscellaneous	L.S.					200	0	127,750	Approx. 3% of mentioned above
Total for				100 m ²				5,900	0	4,384,400	
Unit Cost for				1 m ²				59	0	43844	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-26		Form Work D		100 m ²		Small Concrete Structure					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	3.2	0	0	48800	0	0	156,160	
	L-2-18	Form Worker	day	13.6	0	0	39000	0	0	530400	
	L-2-23	Common Labour	day	16.6	0	0	35100	0	0	582660	
Material	M-D-11	Form Timber	m ²	100	0	0	30000	0	0	3000000	
Others		Miscellaneous	L.S.					0	0	85,480	Approx. 2% of mentioned above
Total for				100 m ²				0	0	4,354,700	
Unit Cost for				1 m ²				0	0	43547	

Table 4.1.2 (7/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks		Unit Cost			Cost			Remarks
CW-1-27		Form Work E		100 m ²		Small Concrete Structure II		PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Major Item	ID No.	Description	Unit	Quantity	PF/C	IF/C	L/C	PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	3	0	0	48800	0	0	0	0	0	146,400	
	L-2-18	Form Worker	day	15.9	0	0	39000	0	0	0	0	0	620100	
	L-2-23	Common Labour	day	22.4	0	0	35100	0	0	0	0	0	786240	
Material	M-D-11	Form Timber	m ²	100	0	0	30000	0	0	0	0	0	3000000	
Others		Miscellaneous	L.S.					0	0	0	0	0	91,060	Approx. 2% of mentioned above
Total for		100 m ²						0	0	0	0	0	4,643,800	
Unit Cost for		1 m ²						0	0	0	0	0	46438	

ID No.		Working Name		Calculation Quantity		Remarks		Unit Cost			Cost			Remarks
CW-1-28		Form Work F		10 m ²		Levelling Concrete		PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Major Item	ID No.	Description	Unit	Quantity	PF/C	IF/C	L/C	PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	0.1	0	0	48800	0	0	0	0	0	4,880	
	L-2-18	Form Worker	day	1	0	0	39000	0	0	0	0	0	39000	
	L-2-23	Common Labour	day	0.4	0	0	35100	0	0	0	0	0	14040	
Material	M-D-11	Form Timber	m ²	10	0	0	30000	0	0	0	0	0	300000	
Others		Miscellaneous	L.S.					0	0	0	0	0	7,180	Approx. 2% of mentioned above
Total for		10 m ²						0	0	0	0	0	365,100	
Unit Cost for		1 m ²						0	0	0	0	0	36510	

Table 4.1.2 (8/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.	Working Name	Calculation	Quantity	Remarks		
CW-1-29	Reinforcing Bar Setup 1	1 t		SD295A, Construction scale : less than 10t, less than 5m high		
Purpose	Division	Unit	Quantity	Unit Cost	Cost	Remarks
Reinforced Concrete Structure	Truck Crane is unnecessary	t	1	PF/C 0 IF/C 3120900 L/C 3325100	PF/C 0 IF/C 3120900 L/C 3325100	Average Cost of CW-1-33 and 35

ID No.	Working Name	Calculation	Quantity	Remarks		
CW-1-30	Reinforcing Bar Setup by using Crane 1	1 t		SD295A, Construction Scale : less than 10t, more than 5m high		
Purpose	Division	Unit	Quantity	Unit Cost	Cost	Remarks
Reinforced Concrete Structure	Truck Crane is unnecessary	t	1	PF/C 137000 IF/C 3122000 L/C 3442150	PF/C 137000 IF/C 3122000 L/C 3442150	Average Cost of CW-1-34 and 36

ID No.	Working Name	Calculation	Quantity	Remarks		
CW-1-31	Reinforcing Bar Setup 2	1 t		SD295A, Construction scale : more than 10t, less than 5m high		
Purpose	Division	Unit	Quantity	Unit Cost	Cost	Remarks
Reinforced Concrete Structure	Truck Crane is unnecessary	t	1	PF/C 0 IF/C 2808810 L/C 2992590	PF/C 0 IF/C 2808810 L/C 2992590	90% of average Cost of CW-1-33 and 35

ID No.	Working Name	Calculation	Quantity	Remarks		
CW-1-32	Reinforcing Bar Setup by using Crane 2	1 t		SD295A, Construction Scale : more than 10t, more than 5m high		
Purpose	Division	Unit	Quantity	Unit Cost	Cost	Remarks
Reinforced Concrete Structure	Truck Crane is unnecessary	t	1	PF/C 123300 IF/C 2809800 L/C 3097935	PF/C 123300 IF/C 2809800 L/C 3097935	90% of average Cost of CW-1-34 and 36

ID No.	Working Name	Calculation	Quantity	Remarks					
CW-1-33	Reinforcing Bar Setup A	1 t		SD295A (D10-D13), less than 5m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost	Cost	Remarks		
Equipment	A-2-1-106	Bar Cutting Machine	daily	21	0	0	0		
	A-2-1-107	Bar Bending Machine	daily	21	0	0	0		
	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	0	135641.1	1020	115858.48		
Labour	L-2-1	Foreman	day	0.6	0	0	48800		
	L-2-18	Form Worker	day	2.9	0	0	39000		
	L-2-23	Common Labour	day	2.2	0	0	35100		
Material	M-E-2	Reinforcing Bar, Deformed U-	kg	1030	0	3000	3090000		
Others		Miscellaneous	L.S.				30,900		
				Total for	1 t		0	3,120,900	3,342,700
				Unit Cost for	1 t		0	3120900	3342700

Foreman : bending 0.2 + setup 0.4 = 0.6 Form Worker : bending 1.1 + setup 1.8 = 2.9 Skilled Labour : bending 0.7 + setup 1.5 = 2.2
 Reinforcing Bar : 1 x (1 + 0.03) = 1.03 t

ID No.	Working Name	Calculation	Quantity	Remarks					
CW-1-34	Reinforcing Bar Setup B	1 t		SD295A(D10-D13), higher than 5m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost	Cost	Remarks		
Equipment	A-2-1-106	Bar Cutting Machine	daily	21	0	0	0		
	A-2-1-107	Bar Bending Machine	daily	21	0	0	0		
	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	1	135641.1	1020	115858.48		
Labour	L-2-1	Foreman	day	0.6	0	0	48800		
	L-2-18	Form Worker	day	2.9	0	0	39000		
	L-2-23	Common Labour	day	2.2	0	0	35100		
Material	M-E-2	Reinforcing Bar, Deformed U-	kg	1030	0	3000	3090000		
Others		Miscellaneous	L.S.				1,359		
				Total for	1 t		137,000	3,122,000	3,459,800
				Unit Cost for	1 t		137000	3122000	3459800

Foreman : bending 0.2 + setup 0.4 = 0.6 Form Worker : bending 1.1 + setup 1.8 = 2.9 Skilled Labour : bending 0.7 + setup 1.5 = 2.2
 Reinforcing Bar : 1 x (1 + 0.03) = 1.03 t

Table 4.1.3 (9/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.	Working Name	Calculation Quantity	Remarks	Unit Cost			Cost			Remarks			
CW-1-35		Reinforcing Bar Setup C	1 t	SD295A (D16-D25), less than 5m high			PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Major Item	ID No.	Description	Unit	Quantity	PF/C	IF/C	L/C	PF/C	IF/C	L/C			
Equipment	A-2-1-106	Bar Cutting Machine	daily	21	0	0	0	0	0	0	0		
	A-2-1-107	Bar Bending Machine	daily	21	0	0	0	0	0	0	0		
	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	0	135641.1	1020	115858.48	0	0	0	0		
Labour	L-2-1	Foreman	day	0.5	0	0	48800	0	0	0	24,400		
	L-2-18	Form Worker	day	2.4	0	0	39000	0	0	0	93600		
	L-2-23	Common Labour	day	1.9	0	0	35100	0	0	0	66690		
Material	M-E-2	Reinforcing Bar, Deformed U-3	kg	1030	0	3000	3000	0	3090000	3090000			
Others		Miscellaneous	L.S.					0	30,900	32,810		Approx. 1% of mentioned above	
Total for	1 t							0	3,120,900	3,307,500			
Unit Cost for	1 t							0	3120900	3307500			

Foreman : bending 0.2 + setup 0.3 = 0.5 Form Worker : bending 0.9 + setup 1.5 = 2.4 Skilled Labour : bending 0.6 + setup 1.3 = 1.9
 Reinforcing Bar : $1 \times (1 + 0.03) = 1.03 \text{ t}$

ID No.	Working Name	Calculation Quantity	Remarks	Unit Cost			Cost			Remarks			
CW-1-36		Reinforcing Bar Setup D	1 t	SD295A(D16-D25), higher than 5m high			PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Major Item	ID No.	Description	Unit	Quantity	PF/C	IF/C	L/C	PF/C	IF/C	L/C			
Equipment	A-2-1-106	Bar Cutting Machine	daily	21	0	0	0	0	0	0	0		
	A-2-1-107	Bar Bending Machine	daily	21	0	0	0	0	0	0	0		
	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	1	135641.1	1020	115858.48	135641.09	1020	115858.48			
Labour	L-2-1	Foreman	day	0.5	0	0	48800	0	0	0	24,400		
	L-2-18	Form Worker	day	2.4	0	0	39000	0	0	0	93600		
	L-2-23	Common Labour	day	1.9	0	0	35100	0	0	0	66690		
Material	M-E-2	Reinforcing Bar, Deformed U-3	kg	1030	0	3000	3000	0	3090000	3090000			
Others		Miscellaneous	L.S.					1,359	30,980	33,952		Approx. 1% of mentioned above	
Total for	1 t							137,000	3,122,000	3,424,500			
Unit Cost for	1 t							137000	3122000	3424500			

Foreman : bending 0.2 + setup 0.3 = 0.5 Form Worker : bending 0.9 + setup 1.5 = 2.4 Skilled Labour : bending 0.6 + setup 1.3 = 1.9
 Reinforcing Bar : $1 \times (1 + 0.03) = 1.03 \text{ t}$

Table J.1.2 (10/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-37		Prefabricated Scaffold for Re-Con I		100 m ²		Less than 4m high (Lease)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	2.1	0	0	48800	0	0	102,480	
	L-2-14	Scaffolding Man	day	3.3	0	0	39000	0	0	128700	
	L-2-23	Common Labour	day	5.6	0	0	35100	0	0	196560	
Material	M-E-62	Prefabricated Scaffold (Lease)	m ²	100	6600	0	4400	660000	0	440000	
Others		Miscellaneous	L.S.					0	0	60	
Total for				100 m ²				660,000	0	867,800	
Unit Cost for				1 m ²				6600	0	8678	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-38		Prefabricated Scaffold for Re-Con II		100 m ²		equal or higher than 4m high (Lease)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	6	135641.1	1020	115858.5	813846.531	6120	695150.907	
Labour	L-2-1	Foreman	day	2.1	0	0	48800	0	0	102,480	
	L-2-14	Scaffolding Man	day	3.3	0	0	39000	0	0	128700	
	L-2-23	Common Labour	day	5.6	0	0	35100	0	0	196560	
Material	M-E-62	Prefabricated Scaffold (Lease)	m ²	100	6600	0	4400	660000	0	440000	
Others		Miscellaneous	L.S.					53	80	9	
Total for				100 m ²				1,473,900	6,200	1,562,900	
Unit Cost for				1 m ²				14739	62	15629	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-39		Tubular Scaffold for Re-Con I		100 m ²		Less than 4m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	2.8	0	0	48800	0	0	136,640	
	L-2-14	Scaffolding Man	day	4.1	0	0	39000	0	0	159900	
	L-2-23	Common Labour	day	9.4	0	0	35100	0	0	329940	
Material	M-E-26	Galvanized Steel Pipe, Dia. 150mm	m	300	71250	0	3750	21375000	0	1125000	
	M-E-4	Structural Steel(Purchasing), SS41	kg	200	5225	0	275	1045000	0	55000	
	M-D-4	Timber	m ³	1	0	0	850000	0	0	850000	
Others		Miscellaneous	L.S.					0	0	520	
Total for				100 m ²				22,429,000	0	2,657,000	
Unit Cost for				1 m ²				224200	0	26570	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-40		Tubular Scaffold for Re-Con II		100 m ²		Higher than 4m high					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	6	135641.1	1020	115858.5	813846.531	6120	695150.907	
Labour	L-2-1	Foreman	day	2.5	0	0	48800	0	0	122,000	
	L-2-14	Scaffolding Man	day	4.6	0	0	39000	0	0	179400	
	L-2-23	Common Labour	day	6.9	0	0	35100	0	0	242190	
Material	M-E-26	Galvanized Steel Pipe, Dia. 150mm	m	300	71250	0	3750	21375000	0	1125000	
	M-E-4	Structural Steel(Purchasing), SS41	kg	200	5225	0	275	1045000	0	55000	
	M-D-4	Timber	m ³	1	0	0	850000	0	0	850000	
Others		Miscellaneous	L.S.					153	880	259	
Total for				100 m ²				23,231,000	7,000	3,269,000	
Unit Cost for				1 m ²				232340	70	32690	

Table 4.1.2 (11/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks					Remarks
CW-1-41		Tublar Scaffold for Re-Con III		100 m ²		Less than 4m high (Scaffold : Lease)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour											
	L-2-1	Foreman	day	2.8	0	0	48800	0	0	136,640	
	L-2-14	Scaffolding Man	day	4.1	0	0	39000	0	0	159900	
	L-2-23	Common Labour	day	9.4	0	0	35100	0	0	329940	
Material											
	M-E-63	Tublar Scaffold (Lease)	m ²	300	5610	0	3740	1683000	0	1122000	
Others											
		Miscellaneous	L.S.					0	0	520	
Total for		100 m ²						1,683,000	0	1,749,000	
Unit Cost for		1 m ²						16830	0	17490	

ID No.		Working Name		Calculation Quantity		Remarks					Remarks
CW-1-42		Tublar Scaffold for Re-Con IV		100 m ²		Higher than 4m high (Scaffold : Lease)					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment											
	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	6	135641.1	1020	115858.5	813846.531	6120	695150.907	
Labour											
	L-2-1	Foreman	day	2.5	0	0	48800	0	0	122,000	
	L-2-14	Scaffolding Man	day	4.6	0	0	39000	0	0	179400	
	L-2-23	Common Labour	day	6.9	0	0	35100	0	0	242190	
Material											
	M-E-63	Tublar Scaffold (Lease)	m ²	300	5610	0	3740	1683000	0	1122000	
Others											
		Miscellaneous	L.S.					153	880	259	
Total for		100 m ²						2,497,000	7,000	2,361,000	
Unit Cost for		1 m ²						24970	70	23610	

Table 4.1.2 (12/20) CALCULATION SHEET FOR COMMON WORK BY USING EQUIPMENT

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-13		Pipe Support		100 m ³		Height is 0-4m					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Labour	L-2-1	Foreman	day	3	0	0	48800	0	0	146,400	
	L-2-14	Scaffolding Man	day	6.1	0	0	39000	0	0	237900	
	L-2-18	Form Worker	day	2.9	0	0	39000	0	0	113100	
	L-2-23	Common Labour	day	7.7	0	0	35100	0	0	270270	
Material	M-E-79	Supporting (Lease)	m ³	100	5940	0	3960	594000	0	396000	
	M-D-4	Timber	m ³	2	0	0	850000	0	0	1700000	
Others		Miscellaneous	L.S.					0	0	330	
Total for		100 m ³						594,000	0	2,864,000	
Unit Cost for		1 m ³						5940	0	28640	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-44		Frame Support		100 m ³		Height is 4-10m <2/m ²					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-1-72	Truck Crane; 16 ton, Oil Pressure	hourly	4	135641.1	1020	115858.5	542564.354	4080	463433.938	
Labour	L-2-1	Foreman	day	2	0	0	48800	0	0	97,600	
	L-2-14	Scaffolding Man	day	2.7	0	0	39000	0	0	105300	
	L-2-18	Form Worker	day	4.2	0	0	39000	0	0	163800	
	L-2-23	Common Labour	day	4.4	0	0	35100	0	0	154440	
Material	M-E-79	Supporting (Lease)	m ³	100	5940	0	3960	594000	0	396000	
	M-D-4	Timber	m ³	1	0	0	850000	0	0	850000	
Others		Miscellaneous	L.S.					436	920	426	
Total for		100 m ³						1,137,000	5,000	2,231,000	
Unit Cost for		1 m ³						11370	50	22310	

ID No.		Working Name		Calculation Quantity		Remarks					
CW-1-45		Curing Work		10 m ³		Reinforced Concrete					
Major Item	ID No.	Description	Unit	Quantity	Unit Cost			Cost			Remarks
					PF/C	IF/C	L/C	PF/C	IF/C	L/C	
Equipment	A-2-2-42	Submersible pump; D 100 mm; 3.7 kW	daily	0.05	21522.49	0	10871.05	1076.1244	0	543.552632	
Labour	L-2-24	Light Labour	day	0.1	0	0	29300	0	0	2930	
Material	M-A-2	Light Oil (Diesel Oil)	ltr		0	120	480	0	0	0	
Others		Driving of Generator	day	0.05				0		0	
		Miscellaneous	L.S.					24	0	26	
Total for		10 m ³						1,100	0	3,500	
Unit Cost for		1 m ³						110	0	350	