

APPENDIX

INPUT DATA

Appendix A-1 FOR ESTIMATION OF THE PRODUCER'S SURPLUS BENEFIT

PRV. : *SULAWESI SELATAN* KAB. : *TANA TORAJA*

Code No.	KECAMATAN NAME	CULTIVATED AREA : (PA)	YIELD RATE : (Y)	FARMER'S POPULATION : (AP)	CIRCULATED COMMODITY : (PG)
01	BONGGA KARADENG	1,360	1.02	18,173	3,300
02	MENGKEDEK	2,493	3.48	31,154	420
03	SANGALLA	2,887	4.23	12,981	620
04	MAKALE	1,653	5.08	31,155	2,800
05	SALUPUTTI	3,321	5.61	38,943	1,800
06	RINDINGALLO	2,975	3.55	33,751	2,000
07	RANTEPAD	1,901	4.32	15,577	1,000
08	SANGGALANGI	5,990	8.30	41,539	720
09	SESEAN	2,750	1.46	36,347	1,200

	r ₁	r ₂	r ₃	r ₄	FARMER'S CONSUMPTION : (Cp)	NON-AGRO REQUIRMENT : (NG)
ANNUAL AVERAGE GROWTH RATE %	1.4	2.2	3.0	4.5	0.15 Ton/head/year	0.04 Ton/ton

	SEDAN	BUS	TRUCK	MOTOR CYCLE	AVERAGE FREIGHT TONAGE
RATE OF EACH VEHICLE TYPE %	32.81	3.74	16.81	46.65	0.8 Ton/Truck

Appendix A-2 Engineering Data

ROAD LINK DATA

PROVINCE : Sulawesi Selatan

KABUPATEN: Tana Toraja

LINK NO.	BEGINNING POINT (DESA NAME)	END POINT (DESA NAME)	LENGTH (KM)	THROUGH THE KEC. NAME & LENGTH		REMARKS
				KEC. NAME	LENGTH (KM)	
01	Tombangkalua'	Buntao'	3	Sanggalla	3	
02	Makale	Sapan Deata	9	Makale	9	
03	Rura	La'bo'	5	Rantepao	5	
04	Kondoran	La'bo'	8	Sanggalla	2	
				Rantepao	1	
				Sanggalangi	5	
05	Seko	Pitungpenan- nian	17	Sanggalangi	17	
06	Tombangkalua'	Bokin	16	Sanggalla	2	
				Sanggalangi	14	
07	Alang-Alang	Madandan	5	Sanggalangi	5	
08	Sp. Salu	Salu	4	Sanggalangi	4	
09	Alang-Alang	Singki'	6	Sanggalangi	3	
				Rantepao	3	
10	Alang-Alang	Ke'pe'	15	Sanggalangi	6	
				Rindingallo	9	
11	Tikala	Ke'pe'	11	Rindingallo	5	
				Rantepao	2	
				Sesean	5	
12	Rantepao	Pangli	7	Rantepao	6	
				Sesean	1	
13	Barana	Pangli	13	Rantepao	5	
				Sesean	8	
14	Sa'dan	Tandung	15	Sesean	15	
15	Pangli	Tondoklitak	16	Rindingallo	4	
				Sesean	12	
16	Kepala Pitu	Baruppu	12	Rindingallo	12	
17	Lemo	Buntang	1	Makale	1	
18	Rantepao	Buntulepong	1	Rantepao	1	
19	Tondoklitak	Sapan	14	Rindingallo	14	
20	Tondoklitak	Ke'pe'	8	Rindingallo	8	
21	Rantepao	Dalam Kota	8	Rantepao	8	Dalam Kota
22	Alang-Alang	Londa	2	Sanggalangi	2	
23	Kondoran	Makula	5	Sanggalla	5	
24	Ke'pe'	Kepala Pitu	10	Rindingallo	10	

Please note the priority No. in the Remarks of this list for each links No. according to the each Kabupaten's development plan.

ROAD LINK DATA

PROVINCE : Sulawesi Selatan

KABUPATEN: Tana Toraja

LINK NO.	BEGINNING POINT (DESA NAME)	END POINT (DESA NAME)	LENGTH (KM)	THROUGH THE KEC. NAME & LENGTH		REMARKS
				KEC. NAME	LENGTH (KM)	
25	Pangli	Sa'dan	5	Sesean	5	
26	Sa'dan	Sangkaropi'	6	Sesean	6	
27	La'bo'	Tombangkalua'	2	Sanggalangi	1.5	
				Rantapao	0.5	
28	Buntao'	Sumalu	13	Sanggalla	11	
				Sanggalangi	2	
29	Makula	Batuahi	5	Sanggalla	5	
30	Rantepao	Tikala	5	Rantepao	5	
31	Patengko	Batualu	13	Mengkendek	13	
32	Makale	Ko'kang	10	Makale	7	
				Saluputti	3	
33	Ko'kang	Ulusalu	7	Saluputti	7	
34	Ulusalu	Rembon	20	Saluputti	20	
35	Rembon	Bolokan	10	Saluputti	6	
				Rindingallo	4	
36	Passo'bo	Buakayu	42	Bonggakaradeng	28	
				Saluputti	14	
37	Mebali	Gandangbatu	15	Makale	15	
38	Tetebassi	Kondoran	8	Makale	3	
				Sanggalla	5	
39	To'buangin	Marinding	7	Mengkendek	5	
				Makale	2	
40	Sarambu	Nanggala	2	Sanggalangi	2	
41	Madandan	Rantetayo	4	Sanggalangi	4	
42	Sullukan	Tandung	5	Sanggalangi	4	
				Rantepao	1	
43	Ko'kang	Batusura'	9	Saluputti	9	
44	Bala	Minanga	10	Makale	10	
45	Ge'tengan	Tinoring	6	Mengkendek	6	
46	Marinding	Ge'tengan	6	Mengkendek	6	
47	Maliba	Uluwai	9	Mengkendek	9	
48	Salubarani	Langso	4	Makale	4	

Please note the priority No. in the Remarks of this list for each links No. according to the each Kabupaten's development plan.

ROAD LINK DATAPROVINCE : Sulawesi SelatanKABUPATEN: Tana Toraja

LINK NO.	BEGINNING POINT (DESA NAME)	END POINT (DESA NAME)	LENGTH (KM)	THROUGH THE KEC. NAME & LENGTH		REMARKS
				KEC. NAME	LENGTH (KM)	
49	Kondoran	Makale	8	Makale	5	
				Sanggalla	3	
50	Batupapan	Lamunan	4	Bonggakaradeng	4	
51	Batupapan	Lapandan	4	Bonggakaradeng	4	
52	Rantelemo	Tilangnga	3	-	3	
53	Kia'tang	To'kalim-buang	4	Makale	4	
54	Piongan	Dende'	4	Saluputti	3	
				Rindingallo	1	
55	Dende'	Ke'pe'	10	Rindingallo	10	
56	Sa'dan Malimbong	Sa'dan Ulu-salu	5	Sesean	5	
57	Leatung	Buntao'	8	Sanggalla	6	
				Sanggalangi	2	
58	Sp. Buisun	Saluallo	7	Makale	7	
59	Rantetayo	Piongan	8	Saluputti	8	
60	Rembon	Masanda	12	Saluputti	12	
61	Sumalu	Penanda	5	Sanggalla	5	

Please note the priority No. in the Remarks of this list for each links No. according to the each Kabupaten's development plan.

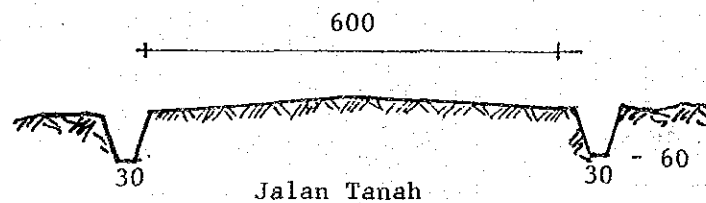
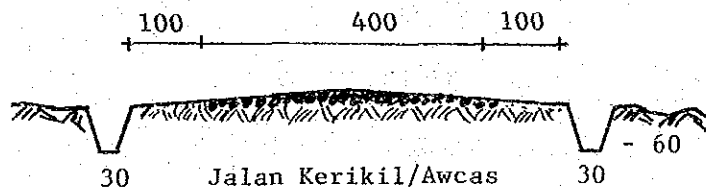
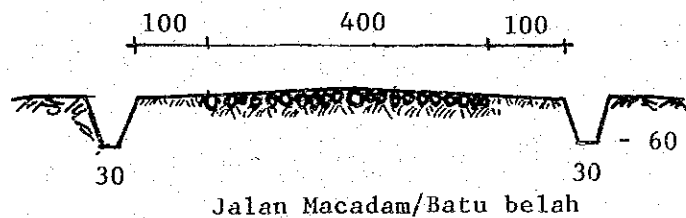
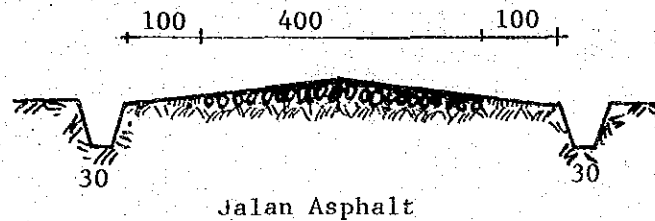
What Kind of Design Criteria has being applied for the new road construction and the improvement for the Kabupaten Road ?

Kriteria Perencanaan yang dipakai pada program penanganan jalan Kabupaten, baik untuk jalan lama maupun pembangunan baru.

Please draw the Typical Cross Section of the Kabupaten Road.

Buat gambar dan penjelasan dari: Typical cross section yang dipakai pada program penanganan jalan selama ini (baik untuk jalan lama, maupun pembangunan baru)

TYPICAL CROSS SECTION.



LINK NO. Nomor Ruas	LOCATION From - To (dari - ke)	Lebar per- kerasan(m)	Type per- kerasan	LENGTH Panjang (KM)	COSTS Harga (Rp 10 ⁶)	REMARKS Keterangan
		Lebar jembatan	Type jembatan			
02	Rante dada - Bera	4	Gravel	3	26,077	
		-	-	-		
24	Pangala' - Ke'pe'	4	Gravel	5.5	46,270	
		-	-	-		
40	Sarambu - Totumbang	4	Gravel	3.2	26,305	
		-	-	-		
25	Pangli - Batutumonga	4	Gravel	2	16,731	
		-	-	-		
34	Ulusalu - Bittuang	4	Gravel	3	24,580	
		4	Beton	16 m	18,700	
25	Pangli - Sa'dan	4	Gravel	4.5	36,497	
		-	-	-		
01	Tombangkalua' - Ledo	4	Gravel	2.6	21,574	
		-	-	-		
45	Kota Ge'tengan	4	Gravel	0.75	6,400	
		-	-	-		
57	Laatung - Buntao'	-	-	-	10,360	
		4	-	8 m		
14	Sa'dan - Tandung	4	Gravel	8.7	30,400	
		-	-	-		
	Lampio - Pintu	4	Gravel	7.17	27,500	
		-	-	-		

* PAVEMENT TYPE : Pls note the appropriate No. below.

1. : Asphalt surface / penetrasi macadam
2. : Asphalt seal / pelaburan aspal
3. : Gravel / kerikil
4. : Gravel /ANCAS / kerikil / japat

LINK NO : Nomor Ruas	L O C A T I O N From - To (dari - ke)	Lebar per- kerasan(m)	Type per- kerasan	LENGTH Panjang (KM)	COSTS Harga (Rp 10 ⁶)	REMARKS Keterangan
		Lebar Jembatan	Type Jembatan			
36	Passa'bo - Leon	6	Earth	18	68,580	
-	-	-	-	-	-	
20	Tondoklitak - To'rea	4	Gravel	2.3	19,537	
-	-	-	-	-	-	
20	Lengkong - To'rea	4	Gravel	3	23,937	
-	-	-	-	-	-	
37	Mebali - Tabang	4	Gravel	4.5	41,714	
-	-	-	-	-	-	
-	Tampo - Simbuang	4	-	16 m	20,886	
-	-	-	-	-	-	
29	Totumbang - Makula'	4	Gravel	2.5	21,385	
-	-	-	-	-	-	
34	Bittuang - Ulusalu	4	Gravel	1.5	18,050	
-	-	6	-	-	-	
02	Makale - Bera	4	Gravel	1.5	14,646	
-	-	-	-	-	-	
40	Sarambu - Nanggala	-	-	-	11,036	
-	-	6	-	4 m	-	
31	Pa'tengko - Batualu	4	Gravel	8	107,170	
-	-	-	-	-	-	

* PAVEMENT TYPE : PIs note the appropriate No. below.

1. : Asphalt surface / penetrasi macadam
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3. : Gravel / kerikil
4. : Gravel /AWCAS / kerikil / japat

KABUPATEN: Tana Toraja LOCATION AND COSTS OF THE KABUPATEN

ROADS CONSTRUCTED OR IMPROVED IN 1982/1983

Biaya konstruksi penanganan

jalan dan jembatan Kabupaten thn. 1982/1983

LINK NO : Nomor Ruas	LOCATION From - To (dari - ke)	Lebar per- kerasan(m)		Type per- kerasan	LENGTH Panjang (KM)	COSTS Harga (Rp 10 ⁶)	REMARKS Keterangan
		Lebar Jembatan	Type Jembatan	Earth			
36	Malombong - Leon	4		Earth	8.6	47,966	
		-		-	-		
29	Makula' - Batualu	4		Gravel	1.8	22,140	
21	Dalam Kota Rantepao	4		Asphalt Seal	2	24,375	
		-		-	-		
34	Ulusalu - Bittuang	4		Gravel	5	43,019	
		-		-	-		
-	Dalam Kota Makale	4		Asphalt Seal	1.9	24,994	
		-		-	-		
20	Ke'pe' - To'rea	4		Gravel	3.75	42,149	
		-		-	-		
10	Lempo - Tondok Litak	4		Gravel	5	45,269	
		-		-	-		
07	Alang-Alang-Madandan	4		Gravel	4	36,142	
		-		-	-		
37	Sillanan - Gandangbatu	4		Gravel	4	46,500	
31	Tampo - Makula'	4		Gravel	8.6	60,140	
		-		-	-		
10	Buntutabang - Ke'pe'	4		Gravel	12	82,640	
		-		-	-		
16	Pangala' - Baruppu'	4		Gravel	12	109,933	
		-		-	-		
14	Lilikira' - Tandung	4		Gravel	3	26,150	
		-		-	-		

* PAVEMENT TYPE : Plg note the appropriate No. below.

1. : Asphalt surface / penetrasi macadam
2. : Asphalt seal / pelaburan aspal
3. : Gravel / kerikil
4. : Gravel /AWCAS / kerikil / japat

KABUPATEN: Tana Toraja LOCATION AND COSTS OF THE KABUPATEN
ROADS CONSTRUCTED OR IMPROVED IN 1983/1984

Biaya konstruksi penanganan
jalan dan jembatan Kabupaten thn. 1983/1984

LINK NO Nomor Ruas	L O C A T I O N From - To (dari - ke)	Lebar per- kerasan(m)	Type per- kerasan	LENGTH Panjang	COSTS Harga (Rp 10 ⁶)	REMARKS Keterangan
		Lebar Jembatan	Type Jembatan	(KM)		
37	Gandang batu - Buntu	4	Gravel	5	78,154	
20	Tondok litak - B. Tomunga	4	Gravel	5	55,500	
38	Tetebassi - Kondoran	4	Asphalt Seal	5	68,696	
34	Ulusalu - Se'seng	4	Gravel	3.7	47,919	
12	Rantepao - Pangli	4	Asphalt Seal	3	43,430	
03	Rura - Tombangkalua'	4	Asphalt Seal	3	43,720	
24	Pangala' - Ke'pe'	4	Asphalt Seal	2.4	33,974	
30	Rantepao - Tikala	4	Asphalt Seal	0.7	14,749	
06	Tombangkalua' - Bastem	4	Gravel	9.5	158,213	
-	Makale - Burake	4	Gravel	3.5	45,150	
36	Rembon - Leon	4	Earth	10	72,000	

* PAVEMENT TYPE : Pls note the appropriate No. below.

1. : Asphalt surface / penetrasi macadam
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4. : Gravel / AWCAS / kerikil / japat

LINK NO Nomor Ruas	L O C A T I O N From - To (dari - ke)	Lebar per- kerasan(m)	Type per- kerasan	LENGTH Panjang	COSTS Harga (Rp 10 ⁶)	REMARKS Keterangan
		Lebar Jembatan	Type Jembatan	(KM)		
60	Bittuang - Pana'	6/4	Earth/Gravel	10	131,059	
23	Palawa' - Balusu	4	Gravel	3.97	38,200	
11	Tikala - Kalimbuang	3/4	Gravel	3.7	38,711	
06	Tombangkalua' - Bastem	4	Gravel	2.6	23,625	
42	Rantetayo - Madandan	4	Gravel	2.6	31,005	
21	Dalam Kota Rantepao	4	Asphalt Seal	2.75	53,604	
32	Batupapan - Maulu	4	Asphalt Seal	5	72,614	
12	Kakondongan - Pangli	4	Asphalt Seal	4	73,000	
30	Rantepao - Tikala	4	Asphalt Seal	3	43,000	
03	Ke'te' - Tombangkalua'	4	Asphalt Seal	4	67,850	
07	Langda - Madandan	4	Gravel	0.6	22,065	
	Kota Ge'tengan	4	Asphalt Seal	1.3	19,488	
		4	-	8 m	12,352	

* PAVEMENT TYPE : PIs note the appropriate No. below.

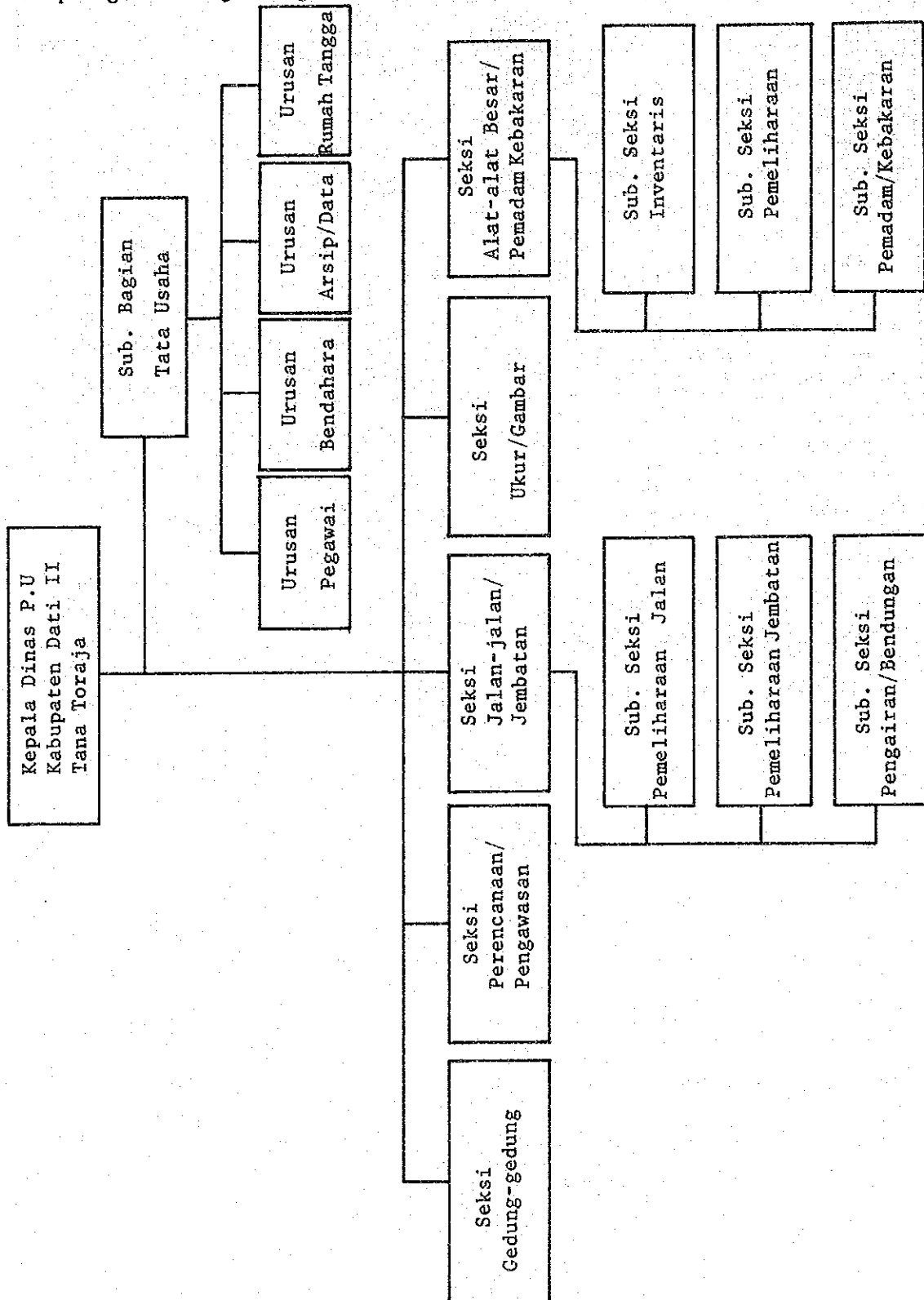
1. : Asphalt surface / penetrasi macadam
2. : Asphalt seal / pelaburan aspal
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4. : Gravel /AWCAS / kerikil / japat

EXISTING ORGANIZATION IN KABUPATEN

Struktur Organisasi yang ada dari P.U Kabupaten

Please draw the Cart of the Existing Organization in the Kabupaten.

Harap digambar bagan organisasi dari DPUK.



EXISTING STAFF RESOURCES OF BINA MARGA OF PU KABUPATENTenaga Dinas PUK yang adaPROPINSI: Sulawesi SelatanKABUPATEN: Tana Toraja

DESCRIPTION /Uraian	NUMBER / Jumlah	REMARKS Keterangan
CONTROLLING STAFF Staff teknis PUK	(19)	
DPUK ENGINEER Sarjana Teknik	-	
ASSISTANT ENGINEER Sarjana Muda Teknik	-	
TECHNICIAN STAFF Staff Teknik (STM)	19	
ADMINISTRATION Tenaga Administrasi	8	
SUPERVISOR Tenaga Pengawas	17	
WORKING FORCE Tenaga Pelaksana Lapangan	(15)	
OPERATORS Operators	3	
DRIVERS Supir	6	
MECHANICS Mechanic	-	
TRADESMAN Tukang	3	
L A B O U R Buruh / Pekerja	-	
OTHERS Lain-lain	3	
TOTAL / JUMLAH	59	

Catatan ; Untuk kolom keterangan harap diisi berapa orang yang telah mendapat Training.

LOCATION AND AREA OF DPUK WORKSHOP

E-06

Lokasi Workshop DPUK

PROPINSI : Sulawesi Selatan

KABUPATEN: Tana Toraja

LOCATION Lokasi	AREA (m2) Luas	NUMBER Jumlah	REMARKS Keterangan
Ge'tengan	10.000	1	-

PROPINSI: Sulawesi Selatan

E-07

KABUPATEN: Tana Toraja

LAND ACQUISITION COST

Daftar harga pembebasan tanah

DESCRIPTION Uraian	UNIT Satuan	RATE (RP) Harga	REMARKS Keterangan
CITY/kota	M2	-	
VILLAGE / desa	M2	-	
RICE FIELD/sawah	M2	1,125	
DRY FIELD/ladang	M2	625	
MIX CROPS/panen	M2	-	
FOREST/hutan	M2	625	
SWAMP / rawa	M2	-	
OTHERS / lain-lain	M2	625	

PROPINSI: Sulawesi Selatan

E-08

KABUPATEN: Tana Toraja

Classification of local contractors at Kabupaten level.

Klasifikasi kontraktor di Kabupaten

COMPANY NAME Nama Kontraktor	CLASS Kelas	CAPITAL Modal (Rp)	NUMBER OF EMPLOYEE Jumlah pegawai	REMARKS Keterangan
2	B2	65,261,000	9	
17	C1	59,713,000	8	
36	C2	42,293,000	7	
45	C3	31,847,000	5	

NOTE: DATI II

LIST OF EXISTING EQUIPMENT OF LOCAL CONTRACTOR

Name of contractor

NAME OF EQUIPMENT Jenis peralatan	EXISTING CONDITION/ Kondisi Peralatan					REASON OF BAD CONDI TION/Sebab Kerusakan	REQUIRE - MENT / Ke- butuhan peralatan baru
	TYPE/ Tipe	P.Y	NUMBER / Jumlah				
			GOOD Baik	BAD Rusak	TOTAL Jumlah		
Bulldozer							
Motor Grader							
Tyre Roller							
Steel Whell Roller							
Vibration Roller							
Wheel Loader							
Front End Loader and Backhoe							
Mobile Crane							
Concrete Mixer							
Stone Crusher							
Portable Compressor							
Hydraulic Excavator							
Asphalt Paving Machine							
Asphalt Sprayer							
Asphalt Mixing Machine							
Mobile Workshop							
Mechanic Rammer							
Plate Tamper							
Pile Driver							
Leg Drill							
Hand Hammer							
Farm Tractor							
Dump Truck							
Water Tank Truck							
Fuel Tank Truck							
Pick Up							
Jeep							
Motorcycle							
Generator							
Water Pump							
Others							

LIST OF EXISTING EQUIPMENT OF P.U KABUPATEN

NAME OF EQUIPMENT Jenis peralatan	EXISTING CONDITION/ Kondisi Peralatan					REASON OF BAD CONDI TION/Sebab Kerusakan	REQUIRE - MENT / Ke- butuhan peralatan baru
	TYPE/ Tipe	P.Y	NUMBER / Jumlah				
			GOOD Baik	BAD Rusak	TOTAL Jumlah		
Bulldozer							
Motor Grader							
Tyre Roller							
Steel Whell Roller							
Vibration Roller							
Wheel Loader							
Front End Loader and Backhoe							
Mobile Crane							
Concrete Mixer							
Stone Crusher							
Portable Compressor							
Hydraulic Excavator							
Asphalt Paving Machine							
Asphalt Sprayer							
Asphalt Mixing Machine							
Mobile Workshop							
Mechanic Rammer							
Plate Tamper							
Pile Driver							
Leg Drill							
Hand Hammer							
Farm Tractor							
Dump Truck							
Water Tank Truck							
Fuel Tank Truck							
Pick Up							
Jeep							
Motorcycle							
Generator							
Water Pump							
Others							

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 59 (IIIB-1) LENGTH : 8 Km

UPGRADE : 7.0m road bed, 4.0m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	20000.0	170	91	3,400,000	1,820,000	5,220,000	
Subgrade Preparation	m2	56000.0	22	11	1,232,000	616,000	1,848,000	
Normal Fill	m3	4125.0	1,740	865	7,177,500	3,569,125	10,746,625	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	3298.0	1,011	524	3,334,270	1,728,152	5,062,430	
Sub Base Course	m3	4480.0	3,272	1,351	14,658,560	6,052,480	20,711,040	
Base Course	m3	2240.0	4,500	2,303	10,080,000	5,158,720	15,238,720	
Shoulder	m2	24000.0	311	146	7,464,000	3,504,000	10,968,000	
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m2	32000.0	658	766	21,056,000	24,512,000	45,568,000	
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0	
Earth Drain	m	7100.0	925	119	6,567,500	844,900	7,412,400	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert 80cm	m	174.0	47,928	50,157	8,339,472	8,727,318	17,066,790	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	60.8	48,423	11,706	2,944,118	711,724	3,655,842	
Gabion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	86,253,428	57,243,419	143,496,847
Overhead (15%)						12,938,014	8,586,512	21,524,526
					TOTAL COST	99,191,442	65,829,931	165,021,373
Manual routine maintenance of road	Km	8.0	149,984	7,260	1,199,872	58,080	1,257,952	
Routine maintenance of asphalt road	Km	8.0	384,800	151,500	3,078,400	1,212,000	4,290,400	
			Sub Total		4,278,272	1,270,080	5,548,352	
Maintenance of Timber Bridge (New)	m2	0.0	10,146	1,121	0	0	0	
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0	
Maintenance of Timber Bridge (Exist)	m2	0.0	8,831	2,405	0	0	0	
Maintenance of Concrete Bridge (Exist)	m2	0.0	4,190	2,445	0	0	0	
					Earthwork & Pavement Unit Cost (Rp/Km)	:	20,627,672	
					Timber Bridge Unit Cost (Rp/m2)	:		
					Concrete Bridge Unit Cost (Rp/m2)	:		
					Survived Value (Rp)	:	17,545,472	
					Maintenance Rate without Bridge (%)	:	3.36	
					New Bridge Cost Rate (%)	:		

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 54 (IIIC) LENGTH : 4 Km

UPGRADE : 6.0m road bed, 4.0m road with surface Subbase Course (Rp)

I T E M	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	12000.0	170	91	2,040,000	1,092,000	3,132,000	
Subgrade Preparation	m2	24000.0	22	11	528,000	264,000	792,000	
Normal Fill	m3	1300.0	1,740	865	2,262,000	1,124,500	3,386,500	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	1590.0	1,011	524	1,607,490	833,160	2,440,650	
Sub Base Course	m3	2560.0	3,272	1,351	8,376,320	3,458,560	11,834,880	
Base Course	m3	0.0	4,500	2,303	0	0	0	
Shoulder	m2	8000.0	311	146	2,488,000	1,168,000	3,656,000	
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m2	0.0	658	766	0	0	0	
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0	
Earth Drain	m	4200.0	925	119	3,885,000	499,800	4,384,800	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert D80cm	m	102.0	47,928	50,157	4,888,656	5,116,014	10,004,670	
Masonry Culvert 180x80cm	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	35.2	48,423	11,706	1,704,489	412,051	2,116,540	
Babion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	3,890,526	388,038	4,278,564	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	31,670,481	14,356,123	46,026,604
Overhead (15%)						4,750,572	2,153,418	6,903,990
					TOTAL COST	36,421,053	16,509,541	52,930,594

Manual routine maintenance of road	Km	4.0	149,984	7,260	599,936	29,040	628,976
Routine maintenance of gravel road	Km	4.0	195,757	88,186	783,028	352,744	1,135,772
			Sub Total		1,382,964	381,784	1,764,748
Maintenance of Timber Bridge (New)	m2	16.0	10,146	1,121	162,336	17,936	180,272
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	0.0	4,190	2,445	0	0	0

Earthwork & Pavement Unit Cost (Rp/Km)	:	12,002,562
Timber Bridge Unit Cost (Rp/m2)	:	307,522
Concrete Bridge Unit Cost (Rp/m2)	:	
Survived Value (Rp)	:	4,733,952
Maintenance Rate without Bridge (Z)	:	3.68
New Bridge Cost Rate (Z)	:	9.30

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 49 (IIB-1) LENGTH : 8 Km
 UPGRADE : 6.0m road bed, 4.0m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	UNIT COST		COST		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m ²	6000.0	170	91	1,020,000	546,000	1,566,000	
Subgrade Preparation	m ²	48000.0	22	11	1,056,000	528,000	1,584,000	
Normal Fill	m ³	3150.0	1,740	865	5,481,000	2,724,750	8,205,750	
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m ³	3920.0	1,011	524	3,963,120	2,054,080	6,017,200	
Sub Base Course	m ³	4480.0	3,272	1,351	14,658,560	6,052,480	20,711,040	
Base Course	m ³	2240.0	4,500	2,303	10,080,000	5,158,720	15,238,720	
Shoulder	m ²	16000.0	311	146	4,976,000	2,336,000	7,312,000	
Asphalt Patching	m ²	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m ²	32000.0	658	766	21,056,000	24,512,000	45,568,000	
Surface Dressing (Double)	m ²	0.0	814	1,207	0	0	0	
Earth Drain	m	2900.0	925	119	2,682,500	345,100	3,027,600	
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0	
Pipe Culvert 80cm	m	0.0	47,928	50,157	0	0	0	
Masonry Culvert (80x80cm)	m	66.0	67,346	40,314	4,444,836	2,660,724	7,105,560	
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m ³	7.3	48,423	11,706	353,487	85,453	438,940	
Babion Protection	m ³	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	69,771,503	47,003,307	116,774,810
Overhead (15%)						10,465,725	7,050,496	17,516,221
					TOTAL COST	80,237,228	54,053,803	134,291,031

Manual routine maintenance of road	Km	8.0	149,984	7,260	1,199,872	58,080	1,257,952
Routine maintenance of asphalt road	Km	8.0	384,800	151,500	3,078,400	1,212,000	4,290,400
			Sub Total		4,278,272	1,270,080	5,548,352
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m ²	0.0	4,190	2,445	0	0	0

Earthwork & Pavement Unit Cost (Rp/Km)	:	16,786,379
Timber Bridge Unit Cost (Rp/m ²)	:	
Concrete Bridge Unit Cost (Rp/m ²)	:	
Survived Value (Rp)	:	17,545,472
Maintenance Rate without Bridge (%)	:	4.13
New Bridge Cost Rate (%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 42 (IIB-2) LENGTH : 4 Km

UPGRADE : 6.0m road bed, 4.0m road with surface Base Course

(Rp)

ITEM	UNIT	QUANTITY	UNIT COST		COST		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m ²	5000.0	170	91	850,000	455,000	1,305,000	
Subgrade Preparation	m ²	12000.0	22	11	264,000	132,000	396,000	
Normal Fill	m ³	1470.0	1,740	865	2,557,800	1,271,550	3,829,350	
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m ³	638.0	1,011	524	645,018	334,312	979,330	
Sub Base Course	m ³	1372.0	3,272	1,351	4,489,184	1,853,572	6,342,756	
Base Course	m ³	960.0	4,500	2,303	4,320,000	2,210,880	6,530,880	
Shoulder	m ²	8000.0	311	146	2,488,000	1,168,000	3,656,000	
Asphalt Patching	m ²	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m ²	0.0	658	766	0	0	0	
Surface Dressing (Double)	m ²	0.0	814	1,207	0	0	0	
Earth Drain	m	2500.0	925	119	2,312,500	297,500	2,610,000	
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0	
Pipe Culvert Ø80cm	m	42.0	47,928	50,157	2,012,976	2,106,594	4,119,570	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	216	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m ³	12.8	48,423	11,706	619,814	149,836	769,650	
Gabion Protection	m ³	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total			
						20,559,292	9,979,244	30,538,536
Overhead (15%)						3,083,893	1,496,886	4,580,779
					TOTAL COST	23,643,185	11,476,130	35,119,315

Manual routine maintenance of road	Km	4.0	149,984	7,260	599,936	29,040	628,976
Routine maintenance of gravel road	Km	4.0	195,757	88,186	783,028	352,744	1,135,772
			Sub Total		1,382,964	381,784	1,764,748
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m ²	16.0	4,190	2,445	67,040	39,120	106,160

Earthwork & Pavement	Unit Cost (Rp/Km)	:	8,779,829
Timber Bridge	Unit Cost (Rp/m ²)	:	
Concrete Bridge	Unit Cost (Rp/m ²)	:	
Survived Value	(Rp)	:	3,171,378
Maintenance Rate without Bridge	(%)	:	5.03
New Bridge Cost Rate	(%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 41 (IIIA) LENGTH : 5 Km

UPGRADE : 7.0m road bed, 4.0m road with surface Dressing (2)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m ²	10000.0	170	91	1,700,000	910,000	2,610,000	
Subgrade Preparation	m ²	35000.0	22	11	770,000	385,000	1,155,000	
Normal fill	m ³	500.0	1,740	865	870,000	432,500	1,302,500	
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m ³	752.0	1,011	524	760,272	394,048	1,154,320	
Sub Base Course	m ³	2800.0	3,272	1,351	9,161,600	3,782,800	12,944,400	
Base Course	m ³	1600.0	4,500	2,303	7,200,000	3,684,800	10,884,800	
Shoulder	m ²	15000.0	311	146	4,665,000	2,190,000	6,855,000	
Asphalt Patching	m ²	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m ²	0.0	658	766	0	0	0	
Surface Dressing (Double)	m ²	20000.0	814	1,207	16,280,000	24,140,000	40,420,000	
Earth Drain	m	10000.0	925	119	9,250,000	1,190,000	10,440,000	
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0	
Pipe Culvert Ø80cm	m	64.0	47,928	50,157	3,067,392	3,210,048	6,277,440	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m ³	22.4	48,423	11,706	1,084,675	262,214	1,346,889	
Babion Protection	m ³	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	54,808,939	40,581,410	95,390,349
Overhead (15%)						8,221,340	6,087,211	14,308,551
					TOTAL COST	63,030,279	46,668,621	109,698,900

Manual routine maintenance of road	Km	5.0	149,984	7,260	749,920	36,300	786,220
Routine maintenance of asphalt road	Km	5.0	384,800	151,500	1,924,000	757,500	2,681,500
			Sub Total		2,673,920	793,800	3,467,720
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m ²	0.0	4,190	2,445	0	0	0

Earthwork & Pavement Unit Cost	(Rp/Km)	:	21,939,780
Timber Bridge Unit Cost	(Rp/m ²)	:	
Concrete Bridge Unit Cost	(Rp/m ²)	:	
Survived Value	(Rp)	:	13,076,720
Maintenance Rate without Bridge	(%)	:	3.16
New Bridge Cost Rate	(%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 36 (IIIC) LENGTH : 42 Km

UPGRADE : 6.0m road bed, 4.0m road with surface Subbase Course

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	78200.0	170	91	13,294,000	7,116,200	20,410,200	
Subgrade Preparation	m2	240000.0	22	11	5,280,000	2,640,000	7,920,000	
Normal Fill	m3	459172.0	1,740	865	798,959,280	377,183,780	1,196,143,060	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	4061.0	1,011	524	4,105,671	2,127,964	6,233,635	
Sub Base Course	m3	25636.0	3,272	1,351	83,880,992	34,634,236	118,515,228	
Base Course	m3	480.0	4,500	2,303	2,160,000	1,105,440	3,265,440	
Shoulder	m2	84000.0	311	146	26,124,000	12,264,000	38,388,000	
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m2	0.0	658	766	0	0	0	
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0	
Earth Drain	m	73800.0	925	119	68,265,000	8,782,200	77,047,200	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert 800cm	m	583.0	47,928	50,157	27,942,024	29,241,531	57,183,555	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	182.4	48,423	11,706	8,832,355	2,135,174	10,967,529	
Gabion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	31,807,170	2,820,702	34,627,872	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	1,070,650,492	500,051,227	1,570,701,719
Overhead (15%)						160,597,573	75,007,604	235,605,177
					TOTAL COST	1,231,248,065	575,058,911	1,806,306,976

Manual routine maintenance of road	Km	42.0	149,984	7,260	6,299,328	304,920	6,604,248
Routine maintenance of gravel road	Km	42.0	195,757	88,186	8,221,794	3,703,812	11,925,606
			Sub Total		14,521,122	4,008,732	18,529,854
Maintenance of Timber Bridge (New)	m2	184.0	10,146	1,121	1,866,864	206,264	2,073,128
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	242.0	8,831	2,405	2,137,102	582,010	2,719,112
Maintenance of Concrete Bridge (Exist)	m2	0.0	4,190	2,445	0	0	0

Earthwork & Pavement Unit Cost	(Rp/Km)	:	42,059,165
Timber Bridge Unit Cost	(Rp/m2)	:	216,424
Concrete Bridge Unit Cost	(Rp/m2)	:	
Survived Value	(Rp)	:	47,406,091
Maintenance Rate without Bridge	(%)	:	1.05
New Bridge Cost Rate	(%)	:	2.20

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 34 (IIIA) LENGTH : 20 Km

UPGRADE : 6.0m road bed, 4.0m road with surface Dressing (2)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	19500.0	170	91	3,315,000	1,771,500	5,086,500	
Subgrade Preparation	m2	48000.0	22	11	1,056,000	528,000	1,584,000	
Normal Fill	m3	15970.0	1,740	865	27,787,800	13,814,050	41,601,850	
Fill in Swamp	m3	0.0	2,588	1,055	0	0	0	
Normal Excavation to Spoil	m3	6760.0	1,011	524	6,834,360	3,542,240	10,376,600	
Sub Base Course	m3	6268.0	3,272	1,351	20,508,896	8,468,068	28,976,964	
Base Course	m3	6400.0	4,500	2,303	28,800,000	14,739,200	43,539,200	
Shoulder	m2	40000.0	311	146	12,440,000	5,840,000	18,280,000	
Asphalt Patching	m2	0.0	3,048	1,515	0	0	0	
Surface Dressing (Single)	m2	0.0	658	766	0	0	0	
Surface Dressing (Double)	m2	89000.0	814	1,207	63,120,000	96,560,000	161,680,000	
Earth Drain	m	12600.0	925	119	11,655,000	1,499,400	13,154,400	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert 880cm	m	47.0	47,928	50,157	2,252,616	2,357,379	4,609,995	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	148.4	48,423	11,706	7,185,973	1,737,170	8,923,143	
Gabion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	186,955,645	150,860,007	337,815,652
Overhead (15%)						28,043,346	22,629,001	50,672,347
					TOTAL COST	214,998,991	173,489,008	388,487,999

Manual routine maintenance of road	Km	20.0	149,984	7,260	2,999,680	145,200	3,144,880
Routine maintenance of asphalt road	Km	20.0	384,800	151,500	7,696,000	3,030,000	10,726,000
			Sub Total		10,695,680	3,175,200	13,870,880
Maintenance of Timber Bridge (New)	m2	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	72.0	8,831	2,405	635,832	173,160	808,992
Maintenance of Concrete Bridge (Exist)	m2	636.5	4,190	2,445	2,666,935	1,556,242	4,223,177

Earthwork & Pavement	Unit Cost	(Rp/Km)	:	19,424,400
Timber Bridge	Unit Cost	(Rp/m2)	:	
Concrete Bridge	Unit Cost	(Rp/m2)	:	
Survived Value		(Rp)	:	34,066,371
Maintenance Rate without Bridge		(%)	:	3.57
New Bridge Cost Rate		(%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 33 (IIIA) LENGTH : 7 Km
 UPGRADE : 6.0m road bed, 4.0m road with surface Dressing (2)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Site Clearance in Light Bush	m ²	0.0	170	91	0	0	0
Subgrade Preparation	m ²	0.0	22	11	0	0	0
Normal Fill	m ³	490.0	1,740	865	852,600	423,850	1,276,450
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0
Normal Excavation to Spoil	m ³	41.0	1,011	524	41,451	21,484	62,935
Sub Base Course	m ³	964.0	3,272	1,351	3,154,208	1,302,364	4,456,572
Base Course	m ³	2240.0	4,500	2,303	10,080,000	5,158,720	15,238,720
Shoulder	m ²	14000.0	311	146	4,354,000	2,044,000	6,398,000
Asphalt Patching	m ²	0.0	3,848	1,515	0	0	0
Surface Dressing (Single)	m ²	0.0	658	766	0	0	0
Surface Dressing (Double)	m ²	28000.0	814	1,207	22,792,000	33,796,000	56,588,000
Earth Drain	m	1900.0	925	119	1,757,500	226,100	1,983,600
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0
Pipe Culvert D80cm	m	7.0	47,928	50,157	335,496	351,099	686,595
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	246	0	0	0
Retaining Wall and Wing Wall (Masonry)	m ³	0.0	48,423	11,706	0	0	0
Gabion Protection	m ³	0.0	13,236	121	0	0	0
New Bridge (Timber)	SET	1.0	--	--	0	0	0
New Bridge (Concrete)	SET	1.0	--	--	0	0	0
			Sub Total		43,367,255	43,323,617	86,690,872
Overhead (15%)					6,505,088	6,498,542	13,003,630
			TOTAL COST		49,872,343	49,822,159	99,694,502

Manual routine maintenance of road	Km	7.0	149,984	7,260	1,049,888	50,820	1,100,708
Routine maintenance of asphalt road	Km	7.0	384,800	151,500	2,693,600	1,060,500	3,754,100
			Sub Total		3,743,488	1,111,320	4,854,808
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m ²	160.0	4,190	2,445	670,400	391,200	1,061,600

Earthwork & Pavement Unit Cost	(Rp/Km)	:	14,242,072
Timber Bridge Unit Cost	(Rp/m ²)	:	
Concrete Bridge Unit Cost	(Rp/m ²)	:	
Survived Value	(Rp)	:	7,374,937
Maintenance Rate without Bridge	(%)	:	4.87
New Bridge Cost Rate	(%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 32 (IIIA) LENGTH : 10 Km

UPGRADE : 7.0m road bed, 4.0m road with surface Dressing (2)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	0.0	170	91	0	0	0	
Subgrade Preparation	m2	0.0	22	11	0	0	0	
Normal Fill	m3	4550.0	1,740	865	7,917,000	3,935,750	11,852,750	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	1570.0	1,011	524	1,587,270	822,680	2,409,950	
Sub Base Course	m3	168.0	3,272	1,351	549,696	226,968	776,664	
Base Course	m3	320.0	4,500	2,303	1,440,000	736,960	2,176,960	
Shoulder	m2	30000.0	311	146	9,330,000	4,380,000	13,710,000	
Asphalt Patching	m2	673.0	3,848	1,515	2,589,704	1,019,595	3,609,299	
Surface Dressing (Single)	m2	36000.0	658	766	23,688,000	27,576,000	51,264,000	
Surface Dressing (Double)	m2	4000.0	814	1,207	3,256,000	4,828,000	8,084,000	
Earth Drain	m	0.0	925	119	0	0	0	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert Ø80cm	m	0.0	47,928	50,157	0	0	0	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	0.0	48,423	11,706	0	0	0	
Gabion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					50,357,670	43,525,953	93,883,623	
Overhead (15%)					7,553,650	6,528,892	14,082,542	
					TOTAL COST	57,911,320	50,054,845	107,966,165

Manual routine maintenance of road	Km	10.0	149,984	7,260	1,499,840	72,600	1,572,440	
Routine maintenance of asphalt road	Km	10.0	384,800	151,500	3,848,000	1,515,000	5,363,000	
					Sub Total	5,347,840	1,587,600	6,935,440
Maintenance of Timber Bridge (New)	m2	0.0	10,146	1,121	0	0	0	
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0	
Maintenance of Timber Bridge (Exist)	m2	469.5	8,831	2,405	4,146,419	1,129,219	5,275,638	
Maintenance of Concrete Bridge (Exist)	m2	42.0	4,190	2,445	175,980	102,690	278,670	

Earthwork & Pavement	Unit Cost	(Rp/Km)	:	10,796,617
Timber Bridge	Unit Cost	(Rp/m2)	:	
Concrete Bridge	Unit Cost	(Rp/m2)	:	
Survived Value		(Rp)	:	1,165,571
Maintenance Rate without Bridge		(%)	:	6.42
New Bridge Cost Rate		(%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 5 (IIB-1) LENGTH : 17 Km
 UPGRADE : 6.5m road bed, 3.5m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	50250.0	170	91	8,542,500	4,572,750	13,115,250	
Subgrade Preparation	m2	110500.0	22	11	2,431,000	1,215,500	3,646,500	
Normal Fill	m3	16135.0	1,740	865	28,074,900	13,956,775	42,031,675	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	2236.0	1,011	524	2,260,596	1,171,664	3,432,260	
Sub Base Course	m3	8330.0	3,272	1,351	27,255,760	11,253,830	38,509,590	
Base Course	m3	4165.0	4,500	2,303	18,742,500	9,591,995	28,334,495	
Shoulder	m2	51000.0	311	146	15,861,000	7,446,000	23,307,000	
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m2	59500.0	658	766	39,151,000	45,577,000	84,728,000	
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0	
Earth Drain	m	23000.0	925	119	21,275,000	2,737,000	24,012,000	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert 800cm	m	332.0	47,920	50,157	15,912,096	16,652,124	32,564,220	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	115.2	48,423	11,704	5,578,329	1,348,531	6,926,860	
Gabion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	5,716,737	498,253	6,214,990	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total			
						190,801,418	116,021,422	306,822,840
Overhead (15%)						28,620,212	17,403,213	46,023,425
					TOTAL COST	219,421,630	133,424,635	352,846,265

Manual routine maintenance of road	Ka	17.0	149,984	7,260	2,549,728	123,420	2,673,148
Routine maintenance of asphalt road	Ka	17.0	384,800	151,500	6,541,600	2,575,500	9,117,100
			Sub Total		9,091,328	2,698,920	11,790,248
Maintenance of Timber Bridge (New)	m2	40.0	10,146	1,121	405,840	44,840	450,680
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	32.0	8,831	2,405	282,592	76,960	359,552
Maintenance of Concrete Bridge (Exist)	m2	0.0	4,190	2,445	0	0	0

Earthwork & Pavement	Unit Cost	(Rp/Km)	:	20,335,237
Timber Bridge	Unit Cost	(Rp/m2)	:	178,681
Concrete Bridge	Unit Cost	(Rp/m2)	:	
Survived Value		(Rp)	:	32,623,612
Maintenance Rate without Bridge		(%)	:	3.41
New Bridge Cost Rate		(%)	:	2.03

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 6 (IIIB-2) LENGTH : 16 Km
 UPGRADE : 5.5m road bed, 4.0m road with surface Base Course

(Rp)

I T E M	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	22250.0	170	91	3,782,500	2,024,750	5,807,250	
Subgrade Preparation	m2	60500.0	22	11	1,331,000	665,500	1,996,500	
Normal Fill	m3	11844.0	1,740	865	20,808,560	10,245,060	30,853,620	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	1490.0	1,011	524	1,506,390	780,760	2,287,150	
Sub Base Course	m3	7129.6	3,272	1,351	23,328,051	9,632,089	32,960,140	
Base Course	m3	3840.0	4,500	2,303	17,280,000	8,843,520	26,123,520	
Shoulder	m2	24000.0	311	146	7,464,000	3,504,000	10,968,000	
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m2	0.0	658	766	0	0	0	
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0	
Earth Drain	m	20500.0	925	119	18,962,500	2,439,500	21,402,000	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0	
Pipe Culvert 80cm	m	268.0	47,928	50,157	12,844,704	13,442,076	26,286,780	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	99.2	48,423	11,706	4,803,561	1,161,235	5,964,796	
Babion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	5,723,037	498,802	6,221,839	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total			
						117,634,303	53,237,292	170,871,595
Overhead (15%)						17,645,145	7,985,593	25,630,738
					TOTAL COST	135,279,448	61,222,885	196,502,333

Manual routine maintenance of road	Km	16.0	149,984	7,260	2,399,744	116,160	2,515,904
Routine maintenance of gravel road	Km	16.0	195,757	88,186	3,132,112	1,410,976	4,543,088
			Sub Total		5,531,856	1,527,136	7,058,992
Maintenance of Timber Bridge (New)	m2	40.0	10,146	1,121	405,840	44,840	450,680
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	0.0	4,190	2,445	0	0	0

Earthwork & Pavement	Unit Cost	(Rp/Km)	:	11,834,201
Timber Bridge	Unit Cost	(Rp/m2)	:	178,878
Concrete Bridge	Unit Cost	(Rp/m2)	:	
Survived Value		(Rp)	:	16,480,070
Maintenance Rate without Bridge		(%)	:	3.73
New Bridge Cost Rate		(%)	:	3.64

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 7 (IIIB-1) LENGTH : 5 Km

UPGRADE : 7.0m road bed, 4.0m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	UNIT COST		COST		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m ²	20000.0	170	91	3,400,000	1,820,000	5,220,000	
Subgrade Preparation	m ²	0.0	22	11	0	0	0	
Normal Fill	m ³	2820.0	1,740	865	4,906,800	2,439,300	7,346,100	
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m ³	3100.0	1,011	524	3,134,100	1,624,400	4,758,500	
Sub Base Course	m ³	1805.0	3,272	1,351	5,905,960	2,438,555	8,344,515	
Base Course	m ³	1400.0	4,500	2,303	6,300,000	3,224,200	9,524,200	
Shoulder	m ²	15000.0	311	146	4,665,000	2,190,000	6,855,000	
Asphalt Patching	m ²	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m ²	20000.0	658	766	13,160,000	15,320,000	28,480,000	
Surface Dressing (Double)	m ²	0.0	814	1,207	0	0	0	
Earth Drain	m	4400.0	925	119	4,070,000	523,600	4,593,600	
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0	
Pipe Culvert Ø80cm	m	0.0	47,928	50,157	0	0	0	
Masonry Culvert (80x80cm)	m	0.0	67,316	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m ³	0.0	48,423	11,706	0	0	0	
Gabion Protection	m ³	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					45,541,860	29,580,055	75,121,915	
Overhead (15%)					6,831,279	4,437,000	11,268,287	
					TOTAL COST	52,373,139	34,017,063	86,390,202

Manual routine maintenance of road	Ka	5.0	149,984	7,260	749,920	36,300	786,220
Routine maintenance of asphalt road	Ka	5.0	384,800	151,500	1,924,000	757,500	2,681,500
			Sub Total		2,673,920	793,800	3,467,720
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	140.0	9,831	2,405	1,236,340	336,700	1,573,040
Maintenance of Concrete Bridge (Exist)	m ²	302.0	4,190	2,445	1,265,360	738,390	2,003,770

Earthwork & Pavement	Unit Cost	(Rp/Ka)	:	17,278,040
Timber Bridge	Unit Cost	(Rp/m ²)	:	
Concrete Bridge	Unit Cost	(Rp/m ²)	:	
Survived Value		(Rp)	:	7,746,000
Maintenance Rate without Bridge		(%)	:	4.01
New Bridge Cost Rate		(%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 31 (IIB-1) LENGTH : 13 Km

UPGRADE : 6.0m road bed, 4.0m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL	
			LOCAL	FOREIGN	LOCAL	FOREIGN		
Site Clearance in Light Bush	m2	0.0	170	91	0	0	0	
Subgrade Preparation	m2	0.0	22	11	0	0	0	
Normal Fill	m3	4893.0	1,740	865	8,513,820	4,232,445	12,746,265	
Fill in Swamp	m3	0.0	2,586	1,055	0	0	0	
Normal Excavation to Spoil	m3	2600.0	1,011	524	2,628,600	1,362,400	3,991,000	
Sub Base Course	m3	2088.0	3,272	1,351	6,831,936	2,820,888	9,652,824	
Base Course	m3	3640.0	4,500	2,303	16,380,000	8,382,920	24,762,920	
Shoulder	m2	26000.0	311	146	8,086,000	3,796,000	11,882,000	
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0	
Surface Dressing (Single)	m2	52000.0	658	766	34,216,000	39,832,000	74,048,000	
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0	
Earth Drain	m	0.0	925	119	0	0	0	
Earth Drain in Swamp (by machine)	m3	0.0	1,231	473	0	0	0	
Pipe Culvert 800cm	m	0.0	47,928	50,157	0	0	0	
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0	
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0	
Retaining Wall and Wing Wall (Masonry)	m3	0.0	48,423	11,706	0	0	0	
Babion Protection	m3	0.0	13,236	121	0	0	0	
New Bridge (Timber)	SET	1.0	--	--	0	0	0	
New Bridge (Concrete)	SET	1.0	--	--	0	0	0	
					Sub Total	76,656,356	60,426,653	137,083,009
Overhead (ISZ)						11,498,453	9,063,997	20,562,450
					TOTAL COST	88,154,809	69,490,650	157,645,459

Manual routine maintenance of road	Ka	13.0	149,984	7,260	1,949,792	94,380	2,044,172
Routine maintenance of asphalt road	Ka	13.0	384,800	151,500	5,002,400	1,969,500	6,971,900
			Sub Total		6,952,192	2,063,880	9,016,072
Maintenance of Timber Bridge (New)	m2	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	174.0	4,190	2,445	729,060	425,430	1,154,490

Earthwork & Pavement Unit Cost (Rp/Km)	:	12,126,574
Timber Bridge Unit Cost (Rp/m2)	:	
Concrete Bridge Unit Cost (Rp/m2)	:	
Survived Value (Rp)	:	11,709,560
Maintenance Rate without Bridge (%)	:	5.72
New Bridge Cost Rate (%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 17 (IIIB-2) LENGTH : 1 Km

UPGRADE : 7.0m road bed, 4.0m road with surface Base Course

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Site Clearance in Light Bush	m ²	4000.0	170	91	680,000	364,000	1,044,000
Subgrade Preparation	m ²	0.0	22	11	0	0	0
Normal Fill	m ³	250.0	1,740	865	435,000	216,250	651,250
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0
Normal Excavation to Spoil	m ³	285.0	1,011	524	288,135	149,340	437,475
Sub Base Course	m ³	332.5	3,272	1,351	1,087,940	449,207	1,537,147
Base Course	m ³	240.0	4,500	2,303	1,080,000	532,720	1,612,720
Shoulder	m ²	3000.0	311	146	933,000	438,000	1,371,000
Asphalt Patching	m ²	0.0	3,848	1,515	0	0	0
Surface Dressing (Single)	m ²	0.0	658	766	0	0	0
Surface Dressing (Double)	m ²	0.0	814	1,207	0	0	0
Earth Drain	m	0.0	925	119	0	0	0
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0
Pipe Culvert Ø80cm	m	6.0	47,928	50,157	287,568	300,942	588,510
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	246	0	0	0
Retaining Wall and Wing Wall (Masonry)	m ³	0.0	48,423	11,706	0	0	0
Gabion Protection	m ³	0.0	13,236	121	0	0	0
New Bridge (Timber)	SET	1.0	--	--	0	0	0
New Bridge (Concrete)	SET	1.0	--	--	0	0	0
			Sub Total		4,791,643	2,470,459	7,262,102
Overhead (15%)					718,746	370,568	1,089,314
			TOTAL COST		5,510,389	2,841,027	8,351,416

Manual routine maintenance of road	Km	1.0	149,984	7,260	149,984	7,260	157,244
Routine maintenance of gravel road	Km	1.0	195,757	88,186	195,757	88,186	283,943
			Sub Total		345,741	95,446	441,187
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m ²	0.0	4,190	2,445	0	0	0

Earthwork & Pavement Unit Cost (Rp/Km)	:	8,351,417
Timber Bridge Unit Cost (Rp/m ²)	:	
Concrete Bridge Unit Cost (Rp/m ²)	:	
Survived Value (Rp)	:	768,573
Maintenance Rate without Bridge (%)	:	5.28
New Bridge Cost Rate (%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 23 (IIIB-1) LENGTH : 5 Km

UPGRADE : 6.5m road bed, 4.0m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<< COST >>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Site Clearance in Light Bush	m ²	5000.0	170	91	850,000	455,000	1,305,000
Subgrade Preparation	m ²	0.0	22	11	0	0	0
Normal Fill	m ³	1980.0	1,740	865	3,445,200	1,712,700	5,157,900
Fill in Swamp	m ³	0.0	2,586	1,055	0	0	0
Normal Excavation to Spoil	m ³	200.0	1,011	524	202,200	104,800	307,000
Sub Base Course	m ³	668.0	3,272	1,351	2,185,696	902,468	3,088,164
Base Course	m ³	1120.0	4,500	2,303	5,040,000	2,579,360	7,619,360
Shoulder	m ²	12500.0	311	146	3,887,500	1,025,000	5,712,500
Asphalt Patching	m ²	12.0	3,848	1,545	46,176	18,180	64,356
Surface Dressing (Single)	m ²	20000.0	658	766	13,160,000	15,320,000	28,480,000
Surface Dressing (Double)	m ²	0.0	814	1,207	0	0	0
Earth Drain	m	2000.0	925	119	1,850,000	238,000	2,088,000
Earth Drain in Swamp (by machine)	m ³	0.0	1,231	475	0	0	0
Pipe Culvert 80cm	m	0.0	47,928	50,157	0	0	0
Masonry Culvert (80x80cm)	m	0.0	67,346	40,314	0	0	0
Retaining Wall and Wing Wall (Timber)	m ²	0.0	16,210	246	0	0	0
Retaining Wall and Wing Wall (Masonry)	m ³	0.0	48,423	11,706	0	0	0
Gabion Protection	m ³	0.0	13,236	121	0	0	0
New Bridge (Timber)	SET	1.0	--	--	0	0	0
New Bridge (Concrete)	SET	1.0	--	--	0	0	0
					Sub Total		
					30,666,772	23,155,508	53,822,280
Overhead (15%)					4,600,015	3,473,326	8,073,341
					TOTAL COST		
					35,266,787	26,628,834	61,895,621

Manual routine maintenance of road	Km	5.0	149,984	7,260	749,920	36,300	786,220
Routine maintenance of asphalt road	Km	5.0	384,800	151,500	1,924,000	757,500	2,681,500
			Sub Total		2,673,920	793,800	3,467,720
Maintenance of Timber Bridge (New)	m ²	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m ²	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m ²	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m ²	12.0	4,190	2,445	50,280	29,340	79,620

Earthwork & Pavement Unit Cost (Rp/Km)	:	12,379,124
Timber Bridge Unit Cost (Rp/m ²)	:	
Concrete Bridge Unit Cost (Rp/m ²)	:	
Survived Value (Rp)	:	3,685,586
Maintenance Rate without Bridge (%)	:	5.60
New Bridge Cost Rate (%)	:	

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 27 (IIIB-1) LENGTH : 5 Km

UPGRADE : 5.5m road bed, 3.5m road with surface Dressing (1)

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Site Clearance in light Bush	m2	0.0	170	91	0	0	0
Subgrade Preparation	m2	11000.0	22	11	242,000	121,000	363,000
Normal Fill	m3	1013.0	1,740	865	1,762,620	876,245	2,638,865
Fill in Swamp	m3	0.0	2,585	1,055	0	0	0
Normal Excavation to Spoil	m3	338.0	1,011	524	341,718	177,112	518,830
Sub Base Course	m3	1511.0	3,272	1,351	4,943,992	2,041,361	6,985,353
Base Course	m3	1225.0	4,500	2,303	5,512,500	2,821,175	8,333,675
Shoulder	m2	10000.0	311	146	3,110,000	1,460,000	4,570,000
Asphalt Patching	m2	0.0	3,848	1,515	0	0	0
Surface Dressing (Single)	m2	17500.0	658	766	11,515,000	13,405,000	24,920,000
Surface Dressing (Double)	m2	0.0	814	1,207	0	0	0
Earth Drain	m	1500.0	925	119	1,387,500	178,500	1,566,000
Earth Drain in Swamp (by machine)	m3	0.0	1,231	475	0	0	0
Pipe Culvert 80cm	m	6.0	47,928	50,157	287,568	300,942	588,510
Masonry Culvert (80x80cm)	m	24.0	67,346	40,314	1,616,304	967,536	2,583,840
Retaining Wall and Wing Wall (Timber)	m2	0.0	16,210	246	0	0	0
Retaining Wall and Wing Wall (Masonry)	m3	2.9	48,423	11,706	140,426	33,947	174,373
Gabion Protection	m3	0.0	13,236	121	0	0	0
New Bridge (Timber)	SET	1.0	--	--	0	0	0
New Bridge (Concrete)	SET	1.0	--	--	0	0	0
			Sub Total		30,859,628	22,382,818	53,242,446
Overhead (15%)					4,628,944	3,357,422	7,986,366
			TOTAL COST		35,488,572	25,740,240	61,228,812

Manual routine maintenance of road	Km	5.0	149,984	7,260	749,920	36,300	786,220
Routine maintenance of asphalt road	Km	5.0	384,800	151,500	1,924,000	757,500	2,681,500
			Sub Total		2,673,920	793,800	3,467,720
Maintenance of Timber Bridge (New)	m2	0.0	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.0	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.0	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	40.0	4,170	2,445	167,600	97,800	265,400

Earthwork & Pavement	Unit Cost	(Rp/Km)	:	12,245,763
Timber Bridge	Unit Cost	(Rp/m2)	:	
Concrete Bridge	Unit Cost	(Rp/m2)	:	
Survived Value		(Rp)	:	6,556,482
Maintenance Rate without Bridge		(%)	:	5.66
New Bridge Cost Rate		(%)	:	

Appendix A-4

CONSTRUCTION AND MAINTENANCE QUANTITIES
FOR ALL PROPOSED ROAD LINKS
(CONSTRUCTION)

PROV : SULAWESI SELATAN KAB : TANA TORAJA

I T E M	UNIT	< 1988 >	< 1989 >	< 1990 >	< 1991 >	< 1992 >	< TOTAL >
EQUIPMENT :							
Bulldozer/Ripper	hr	837.5	1724.4	1684.8	2220.6	7369.8	13837.1
Swamp Bulldozer	hr	0.0	0.0	0.0	0.0	0.0	0.0
Motor Grader	hr	394.4	1278.6	1362.3	1734.3	505.8	5275.4
Hand-guide Vib. Roller	hr	105.0	608.9	578.4	758.7	301.5	2352.5
Tire Roller	hr	511.0	755.5	1131.5	1309.9	0.0	3707.9
Vibratory Roller (D&T)	hr	492.4	1619.5	1608.5	2012.6	4585.4	10318.4
Hydraulic Excavator; Wheel	hr	0.0	0.0	7.8	2.8	0.0	10.6
Wheel Loader	hr	924.8	2482.7	2540.1	3192.7	3582.2	12722.5
Water Tank Truck	hr	228.7	1013.3	996.7	1198.1	2351.3	5788.1
Dump Truck	hr	6085.6	19483.6	19294.3	23793.4	27140.1	95797.0
Flat Bed Truck with Crane	hr	4.8	428.2	348.9	564.8	242.9	1589.6
Flat Bed Truck	hr	615.0	1104.0	1538.0	1827.4	103.1	5187.5
Portable Crusher/Screening	hr	130.1	469.7	453.1	529.0	7.7	1589.6
Concrete Mixer	hr	1.0	170.0	175.6	200.6	62.7	609.9
Water Pump	hr	1.0	132.7	132.9	162.4	51.7	480.7
Concrete Vibrator	hr	1.0	58.3	47.6	86.0	29.9	222.8
Asphalt Sprayer	hr	511.0	755.5	1131.5	1309.9	0.0	3707.9
LABOUR :							
Handur	man day	482.7	1871.2	1824.1	2324.5	2003.7	8506.2
Skilled Labourer	man day	378.0	1061.0	1026.6	1604.7	738.0	4808.3
Carpenter	man day	0.3	219.2	103.6	281.6	341.1	945.8
Mason	man day	0.0	186.2	213.4	191.1	54.7	645.4
Labourer	man day	4873.7	19948.4	19445.7	23083.5	17569.7	84921.0
Driver	man day	1283.4	3944.8	4024.6	4927.1	5375.4	19555.3
Operator	man day	706.7	2040.8	2115.6	2697.7	2886.3	10447.1
MATERIAL :							
Bitumen	l	107408.4	184166.6	257824.8	268566.1	0.0	817965.9
Asphalt Oil	l	20599.9	24933.3	41065.0	53710.0	0.0	140308.2
Kerosene	l	25100.8	36266.6	54784.8	64191.7	0.0	180343.9
Sand	m ³	321.8	684.0	839.2	1254.5	164.4	3263.9
Cement	bag	15.0	921.9	776.1	1328.0	457.9	3498.9
River Stone	m ³	0.0	186.2	213.4	191.1	54.7	645.4
Steel Moulds	set	6.0	340.5	220.3	481.2	174.9	1222.9
Flaber	m ³	0.0	18.1	7.8	22.8	30.0	78.7
Paint	l	0.0	128.4	51.3	170.6	215.1	565.4
Reinforcing Steel	kg	191.4	10861.9	7995.8	15702.3	5579.3	40330.7
Tying Wire	kg	1.7	98.7	72.6	142.7	50.7	366.4
Equivalent Royalty	m ³	5968.8	28493.7	29009.8	34526.2	10061.5	108060.0

CONSTRUCTION AND MAINTENANCE QUANTITIES
FOR ALL PROPOSED ROAD LINKS
(MAINTENANCE)

PROV : SULAWESI SELATAN KAB : TANA TORAJA

I T E M	UNIT	< 1988 >	< 1989 >	< 1990 >	< 1991 >	< 1992 >	< TOTAL >
EQUIPMENT :							
Bulldozer/Ripper	hr	0.0	0.0	0.0	0.0	0.0	0.0
Swamp Bulldozer	hr	0.0	0.0	0.0	0.0	0.0	0.0
Motor Grader	hr	383.3	753.2	827.5	778.5	747.5	3490.0
Hand-guide Vib. Roller	hr	258.7	675.0	780.0	1267.5	1980.0	4961.2
Tire Roller	hr	383.3	753.2	827.5	778.5	747.5	3490.0
Vibratory Roller (D&I)	hr	0.0	0.0	0.0	0.0	0.0	0.0
Hydraulic Excavator; Wheel	hr	0.0	0.0	0.0	0.0	0.0	0.0
Wheel Loader	hr	135.9	279.5	314.0	336.2	382.1	1447.7
Water Tank Truck	hr	0.0	0.0	0.0	0.0	0.0	0.0
Dump Truck	hr	1333.0	3026.6	3442.9	4550.5	6250.0	18603.0
Flat Bed Truck with Crane	hr	1184.7	3050.7	3149.0	3780.6	3921.1	15086.1
Flat Bed Truck	hr	1632.3	3341.6	3698.0	3907.6	4362.8	16942.3
Portable Crusher/Screening	hr	68.4	141.2	158.5	170.7	195.0	733.8
Concrete Mixer	hr	3.1	7.2	7.5	9.5	9.9	37.2
Water Pump	hr	3.1	7.2	7.5	9.5	9.9	37.2
Concrete Vibrator	hr	3.1	7.2	7.5	9.5	9.9	37.2
Asphalt Sprayer	hr	0.0	0.0	0.0	0.0	0.0	0.0
LABOUR :							
Hander	man day	603.7	1306.6	1454.2	1707.4	2108.0	7179.9
Skilled Labourer	man day	275.0	780.5	852.7	1238.1	1700.2	4846.5
Carpenter	man day	52.9	172.7	173.6	204.6	197.5	801.3
Mason	man day	0.0	0.0	0.0	0.0	0.0	0.0
Labourer	man day	7105.4	15257.2	17023.8	20026.8	24908.1	84321.3
Driver	man day	737.9	1691.9	1840.5	2190.2	2576.1	9036.6
Operator	man day	173.8	346.1	382.4	374.4	380.1	1656.8
MATERIAL :							
Bitumen	l	2328.7	6075.0	7020.0	11407.5	17820.0	44651.2
Asphalt Oil	l	0.0	0.0	0.0	0.0	0.0	0.0
Kerosene	l	258.7	675.0	780.0	1267.5	1980.0	4961.2
Sand	m ³	46.2	119.7	137.5	220.7	339.9	864.0
Cement	bag	46.3	105.6	110.8	138.8	144.9	546.4
River Stone	m ³	0.0	0.0	0.0	0.0	0.0	0.0
Steel Moulds	set	0.0	0.0	0.0	0.0	0.0	0.0
Timber	m ³	4.5	15.1	15.2	17.9	17.3	70.0
Paint	l	28.9	99.6	99.6	116.6	111.2	455.9
Reinforcing Steel	kg	237.9	542.9	569.3	713.6	744.8	2808.5
Tying Wire	kg	2.1	4.9	5.1	6.4	6.7	25.2
Equivalent Royalty	m ³	1926.6	3960.7	4448.1	4762.5	5412.0	20509.9

CONSTRUCTION AND MAINTENANCE QUANTITIES
FOR ALL PROPOSED ROAD LINKS
(TOTAL)

PROV : SULAWESI SELATAN KAB : TANA TORAJA

ITEM	UNIT	< 1988 >	< 1989 >	< 1990 >	< 1991 >	< 1992 >	< TOTAL >
EQUIPMENT :							
Bulldozer/Ripper	hr	837.5	1724.4	1684.8	2220.6	7369.8	13837.1
Swamp Bulldozer	hr	0.0	0.0	0.0	0.0	0.0	0.0
Motor Grader	hr	777.7	2031.8	2189.8	2512.8	1253.3	8765.4
Hand-guide Vib. Roller	hr	363.7	1283.9	1358.4	2026.2	2281.5	7313.7
Tire Roller	hr	894.3	1508.7	1959.0	2088.4	747.5	7197.9
Vibratory Roller (D&T)	hr	492.4	1619.5	1608.5	2012.6	4585.4	10318.4
Hydraulic Excavator; Wheel	hr	0.0	0.0	7.8	2.8	0.0	10.6
Wheel Loader	hr	1060.7	2762.2	2854.1	3528.9	3964.3	14170.2
Water Tank Truck	hr	228.7	1013.3	996.7	1198.1	2351.3	5788.1
Dump Truck	hr	7418.6	22510.2	22737.2	28343.9	33390.1	114400.0
Flat Bed Truck with Crane	hr	1189.5	3478.9	3497.9	4345.4	4164.0	16675.7
Flat Bed Truck	hr	2247.3	4445.6	5236.0	5735.0	4465.9	22129.8
Portable Crusher/Screening	hr	198.5	610.9	611.6	699.7	202.7	2323.4
Concrete Mixer	hr	4.1	177.2	183.1	210.1	72.6	647.1
Water Pump	hr	4.1	139.9	140.4	171.9	61.6	517.9
Concrete Vibrator	hr	4.1	65.5	55.1	95.5	39.8	260.0
Asphalt Sprayer	hr	511.0	755.5	1131.5	1309.9	0.0	3707.9
LABOUR :							
Handor	man day	1086.4	3177.8	3278.3	4031.9	4111.7	15686.1
Skilled Labourer	man day	653.0	1841.5	1879.3	2842.8	2438.2	9654.8
Carpenter	man day	53.2	391.9	277.2	486.2	538.6	1747.1
Mason	man day	0.0	186.2	213.4	191.1	54.7	645.4
Labourer	man day	11979.1	35205.6	36469.5	43110.3	42477.8	169242.3
Driver	man day	2021.3	5636.7	5865.1	7117.3	7951.5	28591.9
Operator	man day	880.5	2386.9	2498.0	3072.1	3266.4	12103.9
MATERIAL :							
Bitumen	l	109737.1	190241.6	264844.8	279973.6	17820.0	862617.1
Asphalt Oil	l	20599.9	24933.3	41065.0	53710.0	0.0	140308.2
Kerosene	l	25359.5	36941.6	55564.8	65459.2	1980.0	185305.1
Sand	m ³	368.0	803.7	976.7	1475.2	504.3	4127.9
Cement	bag	61.3	1027.5	886.9	1466.8	602.8	4045.3
River Stone	m ³	0.0	186.2	213.4	191.1	54.7	645.4
Steel Moulds	set	6.0	340.5	220.3	481.2	174.9	1222.9
Flaber	m ³	4.5	33.2	23.0	40.7	47.3	148.7
Paint	l	28.9	228.0	150.9	287.2	326.3	1021.3
Reinforcing Steel	kg	429.3	11404.8	8565.1	16415.9	6324.1	43139.2
Tying Wire	kg	3.8	103.6	77.7	149.1	57.4	391.6
Equivalent Royalty	m ³	7895.4	32454.4	33457.9	39288.7	15473.5	128569.9

Appendix A-5

CONSTRUCTION AND MAINTENANCE COSTS
FOR ALL PROPOSED ROAD LINKS
(CONSTRUCTION)

PROV : SULAWESI SELATAN KAB : TANA TORAJA

(1000 Rp)

I T E M	UNIT	< 1988 >	< 1989 >	< 1990 >	< 1991 >	< 1992 >	< TOTAL >
EQUIPMENT :		84,339	241,321	246,706	306,194	367,911	1,246,471
Bulldozer/Ripper	15585	13,052	26,874	26,257	34,608	114,858	215,649
Swamp Bulldozer	11444	0	0	0	0	0	0
Motor Grader	13321	5,253	17,032	18,147	23,102	6,737	70,271
Hand-guide Vib. Roller	1576	165	959	911	1,195	475	3,705
Tire Roller	10484	5,357	7,920	11,862	13,732	0	38,871
Vibratory Roller (D&T)	6662	3,280	10,789	10,715	13,407	30,547	68,738
Hydraulic Excavator, Wheel	12428	0	0	96	34	0	130
Wheel Loader	16520	15,277	41,014	41,962	52,743	59,177	210,173
Water Tank Truck	3848	880	3,899	3,835	4,610	9,047	22,271
Dump Truck	5329	32,430	103,828	102,819	126,795	144,629	510,501
Flat Bed Truck with Crane	4903	23	2,099	1,710	2,769	1,190	7,791
Flat Bed Truck	3187	1,960	3,518	4,901	5,823	328	16,530
Portable Crusher/Screening	43092	5,606	20,240	19,524	22,795	331	68,496
Concrete Mixer	8943	8	1,520	1,570	1,793	560	5,451
Water Pump	471	0	62	62	76	24	224
Concrete Vibrator	301	0	17	14	25	8	64
Asphalt Sprayer	2052	1,048	1,550	2,321	2,687	0	7,606
LABOUR :		21,931	78,488	77,832	96,044	84,642	358,937
Mandur	3000	1,448	5,613	5,472	6,973	6,011	25,517
Skilled Labourer	2500	945	2,652	2,566	4,011	1,845	12,019
Carpenter	3000	0	657	310	844	1,023	2,834
Mason	3000	0	558	640	573	164	1,935
Labourer	2000	9,747	39,896	38,891	46,167	35,139	169,840
Driver	3500	4,491	13,806	14,086	17,244	18,813	68,440
Operator	7500	5,300	15,306	15,867	20,232	21,647	78,352
MATERIAL :		70,085	137,604	179,765	216,121	18,938	622,513
Bitumen	400	42,963	73,666	103,129	107,426	0	327,184
Asphalt Oil	800	16,479	19,946	32,852	42,968	0	112,245
Kerosene	250	6,275	9,066	13,696	16,047	0	45,084
Sand	8000	2,574	5,472	6,713	10,036	1,315	26,110
Cement	4500	67	4,148	3,492	5,976	2,060	15,743
River Stone	7000	0	1,303	1,493	1,337	382	4,515
Steel Moulds	7000	42	2,383	1,542	3,368	1,224	8,559
Timber	175000	0	3,167	1,365	3,990	5,250	13,772
Paint	2500	0	321	128	426	537	1,412
Reinforcing Steel	1000	191	10,861	7,995	15,702	5,579	40,328
Tying Wire	1500	2	148	108	214	76	548
Equivalent Royalty	250	1,492	7,123	7,252	8,631	2,515	27,013

CONSTRUCTION AND MAINTENANCE COSTS
FOR ALL PROPOSED ROAD LINKS
(MAINTENANCE)

PROV : SULAWESI SELATAN

KAB : TANA TORAJA

(1000 Rp)

I T E M	UNIT	< 1988 >	< 1989 >	< 1990 >	< 1991 >	< 1992 >	< TOTAL >
EQUIPMENT :		32,863	71,496	78,587	88,765	102,156	373,867
Bulldozer/Ripper	15585	0	0	0	0	0	0
Swamp Bulldozer	11444	0	0	0	0	0	0
Motor Grader	13321	5,105	10,033	11,023	10,370	9,957	46,488
Hand-guide Vib. Roller	1576	407	1,063	1,229	1,997	3,120	7,816
Tire Roller	10484	4,018	7,896	8,675	8,161	7,836	36,586
Vibratory Roller (D&T)	6662	0	0	0	0	0	0
Hydraulic Excavator; Wheel	12428	0	0	0	0	0	0
Wheel Loader	16520	2,245	4,617	5,187	5,554	6,312	23,915
Water Tank Truck	3848	0	0	0	0	0	0
Dump Truck	5329	7,103	16,128	18,347	24,249	33,306	99,133
Flat Bed Truck with Crane	4903	5,808	14,957	15,439	18,536	19,225	73,965
Flat Bed Truck	3187	5,202	10,649	11,785	12,453	13,904	53,993
Portable Crusher/Screening	43092	2,947	6,084	6,830	7,355	8,402	31,618
Concrete Mixer	8943	27	64	67	84	88	330
Water Pump	471	1	3	3	4	4	15
Concrete Vibrator	301	0	2	2	2	2	8
Asphalt Sprayer	2052	0	0	0	0	0	0
LABOUR :		20,751	45,418	50,369	59,356	72,848	249,742
Mandur	3000	1,811	3,919	4,362	5,122	6,324	21,538
Skilled Labourer	2500	687	1,951	2,131	3,095	4,250	12,114
Carpenter	3000	158	518	520	613	592	2,401
Mason	3000	0	0	0	0	0	0
Labourer	2000	14,210	30,514	34,047	40,053	49,816	168,640
Driver	3500	2,582	5,921	6,441	7,665	9,016	31,625
Operator	7500	1,303	2,595	2,868	2,808	2,850	12,424
MATERIAL :		3,152	8,460	9,198	12,603	16,406	49,819
Bitumen	400	931	2,430	2,808	4,563	7,128	17,860
Asphalt Oil	800	0	0	0	0	0	0
Kerosene	250	64	168	195	316	495	1,238
Sand	8000	369	957	1,100	1,765	2,719	6,910
Cesent	4500	208	475	498	624	652	2,457
River Stone	7000	0	0	0	0	0	0
Steel Houlds	7000	0	0	0	0	0	0
Timber	175000	787	2,642	2,660	3,132	3,027	12,248
Paint	2500	72	249	249	291	278	1,139
Reinforcing Steel	1000	237	542	569	713	744	2,805
Tying Wire	1500	3	7	7	9	10	36
Equivalent Royalty	250	481	990	1,112	1,190	1,353	5,126

CONSTRUCTION AND MAINTENANCE COSTS
FOR ALL PROPOSED ROAD LINKS
(TOTAL)

PROV : SULAWESI SELATAN KAB : TANA TORAJA

(1000 Rp)

I T E M	UNIT	< 1988 >	< 1989 >	< 1990 >	< 1991 >	< 1992 >	< TOTAL >
EQUIPMENT :							
		117,202	312,817	325,293	394,959	470,067	1,620,338
Bulldozer/Ripper	15585	13,052	26,874	26,257	34,608	114,858	215,649
Swamp Bulldozer	11444	0	0	0	0	0	0
Motor Grader	13321	10,358	27,065	29,170	33,472	16,694	116,759
Hand-guide Vib. Roller	1576	572	2,022	2,140	3,192	3,595	11,521
Tire Roller	10484	9,375	15,816	20,537	21,893	7,836	75,457
Vibratory Roller (D&T)	6662	3,280	10,789	10,715	13,407	30,547	68,738
Hydraulic Excavator; Wheel	12428	0	0	96	34	0	130
Wheel Loader	16520	17,522	45,631	47,149	58,297	65,489	234,088
Water Tank Truck	3848	880	3,899	3,835	4,610	9,047	22,271
Dump Truck	5329	39,533	119,956	121,166	151,044	177,935	609,634
Flat Bed Truck with Crane	4903	5,831	17,056	17,149	21,305	20,415	81,756
Flat Bed Truck	3187	7,162	14,167	16,686	18,276	14,232	70,523
Portable Crusher/Screening	43092	8,553	26,324	26,354	30,150	8,733	100,114
Concrete Mixer	8943	35	1,584	1,637	1,877	648	5,781
Water Pump	471	1	65	65	80	28	239
Concrete Vibrator	301	0	19	16	27	10	72
Asphalt Sprayer	2052	1,048	1,550	2,321	2,687	0	7,606
LABOUR :							
		42,682	123,906	128,201	155,400	157,490	607,679
Handur	3000	3,259	9,532	9,834	12,095	12,335	47,055
Skilled Labourer	2500	1,632	4,603	4,697	7,106	6,095	24,133
Carpenter	3000	158	1,175	830	1,457	1,615	5,235
Mason	3000	0	558	640	573	164	1,935
Labourer	2000	23,957	70,410	72,938	86,220	84,955	338,480
Driver	3500	7,073	19,727	20,527	24,909	27,829	100,065
Operator	7500	6,603	17,901	18,735	23,040	24,497	90,776
MATERIAL :							
		73,237	146,064	188,963	228,724	35,344	672,332
Bitumen	400	43,894	76,096	105,937	111,989	7,128	345,044
Asphalt Oil	800	16,479	19,946	32,852	42,968	0	112,245
Kerosene	250	6,339	9,234	13,891	16,363	495	46,322
Sand	8000	2,943	6,429	7,813	11,801	4,034	33,020
Cement	4500	275	4,623	3,990	6,600	2,712	18,200
River Stone	7000	0	1,303	1,493	1,337	382	4,515
Steel Moulds	7000	42	2,383	1,542	3,368	1,224	8,559
Timber	175000	787	5,809	4,025	7,122	8,277	26,020
Paint	2500	72	570	377	717	815	2,551
Reinforcing Steel	1000	428	11,403	8,564	16,415	6,323	43,133
Tying Wire	1500	5	155	115	223	86	584
Equivalent Royalty	250	1,973	8,113	8,364	9,821	3,868	32,139

Appendix A-6

QUANTITIES OF BRIDGE ON PROPOSED ROAD LINKS

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO	BRIDGE NAME	Km	From	<< TYPE >>		DESIGN LOAD	SPAN CLASS	SPAN LENGTH (m)	SPAN NO	SPAN LENGTH (m)	WIDTH (m)	AREA (EXIST) (m2)	AREA (NEW) (m2)	PIER (no)	ABUT (no)	ROAD CLASS
				(EXIST)	(NEW)											
36	S. KAROKA	5	PSSB	--	TM	10T	(B)	5.00	1	5.00	4.00	0.00	20.00	0	2	IIIC
	S. RATTE	7	PSSB	--	TM	10T	(C)	6.00	1	6.00	4.00	0.00	24.00	0	2	
	S. KANAKA	8	PSSB	--	TM	10T	(C)	11.00	2	5.50	4.00	0.00	44.00	1	2	
	S. PAKKADUA	20	PSSB	--	TM	10T	(B)	4.00	1	4.00	4.00	0.00	16.00	0	2	
	S. HABAYA	25	PSSB	--	TM	10T	(C)	14.00	2	7.00	4.00	0.00	56.00	1	2	
	T. SANDANGAN	30	PSSB	KK				23.00	1	23.00	4.00	92.00		0	2	
	T. SIPE	41	PSSB	KK			13.50	1	13.50	4.00	54.00		0	2		
42	S. KALUA	3	MDDN	KB			4.00	1	4.00	4.00	16.00		0	2	IIIB-2	
54	S. RATTE	17	MAKL	LL	TM	10T	(B)	4.00	1	4.00	4.00	12.00	16.00	0	2	IIIC

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO	BRIDGE NAME	Km	Fros	« TYPE »		DESIGN LOAD	SPAN CLASS	LENGTH (m)	SPAN NO (no)	SPAN LENGTH (m)	WIDTH (m)	AREA	AREA	PIER (no)	ABUT (no)	ROAD CLASS
				(EXIST)	(NEW)							(m ²)	(m ²)			
5	KULESOK I AWAK KARE	9	SEKO	LL				8.00	1	8.00	4.00	32.00		0	2	IIIB-1
		16	SEKO	--	TH	10T	(B)	10.00	2	5.00	4.00	0.00	40.00	1	2	
6	SAPAN DEATA	9	TBN	KK	TH	10T	(B)	10.00	2	5.00	4.00	0.40	40.00	1	2	IIIB-2
7	ALANG-ALANG	6	RPAO	KK				40.00	1	40.00	3.50	140.00		0	2	IIIB-1
	S. PALIPADANG	7	RPAO	KB				4.00	1	4.00	6.00	24.00		0	2	
	S. SOPAI	7	RPAO	RB				40.00	1	40.00	5.00	200.00		0	2	
	S. BULU-BULU	9	RPAO	KB				8.00	1	8.00	6.00	48.00		0	2	
	S. PADEITERAN	12	RPAO	KB				6.00	1	6.00	5.00	30.00		0	2	
23	MAKULAK	4	KDAN	KB				3.00	1	3.00	4.00	12.00		0	2	IIIB-1
29	BONE	1	MKLK	KB				10.00	1	10.00	4.00	40.00		0	2	IIIB-1
31	MALIND I	2	PTGO	KB				9.00	1	9.00	4.00	36.00		0	2	IIIB-1
	MALIND II	3	PTGO	KB				4.00	1	4.00	6.00	24.00		0	2	
	LAMPUNG	4	BTGN	KB				3.00	1	3.00	6.00	18.00		0	2	
	PIRI I	6	KLGG	KB				3.00	1	3.00	6.00	18.00		0	2	
	PIRI II	6	MRRG	KB				15.00	1	15.00	4.00	60.00		0	2	
	BUNGIN	12	TLAD	KB				3.00	1	3.00	6.00	18.00		0	2	
32	PONGRONGRONG	4	DIKL	KB				6.00	1	6.00	3.00	18.00		0	2	IIIA
	MAULU	9	DIKL	KK				47.00	1	47.00	9.99	469.53		0	2	
	DIDOK	9	DIKL	KB				4.00	1	4.00	6.00	24.00		0	2	
33	KAKONG	11	MAKL	KB				40.00	10	4.00	4.00	160.00		9	2	IIIA
34	S. BOMBON	3	ULU	KB				10.00	1	10.00	5.50	55.00		0	2	IIIA
	S. KAREPE	3	ULU	KB				5.00	1	5.00	6.00	30.00		0	2	
	S. TINA	4	ULU	KB				11.00	1	11.00	4.00	44.00		0	2	
	S. DALLE BATE	4	ULU	KB				10.00	1	10.00	4.00	40.00		0	2	
	S. BITURU	5	ULU	KB				4.00	1	4.00	4.00	16.00		0	2	
	S. BEKKA I	5	ULU	KB				4.00	1	4.00	4.00	16.00		0	2	
	S. BEKKA II	5	ULU	KB				10.00	1	10.00	4.00	40.00		0	2	
	S. TENDAN TALLU	6	ULU	KB				3.00	1	3.00	4.00	12.00		0	2	
	S. BOLLO	6	ULU	KB				9.00	1	9.00	4.00	36.00		0	2	
	S. SOLAK	7	ULU	KB				4.00	1	4.00	4.00	16.00		0	2	
	S. TOHAKKA	7	ULU	KB				4.00	1	4.00	4.00	16.00		0	2	
	S. BULO	8	ULU	KB				10.00	1	10.00	4.00	40.00		0	2	
	S. PAROOD	9	ULU	KB				26.00	1	26.00	4.00	104.00		0	2	
	S. PONGSINBOGNG	11	ULU	PB				3.00	1	3.00	4.00	12.00		0	2	
	S. TOBABAQ	14	ULU	KB				9.50	1	9.50	4.00	38.00		0	2	
	S. KONDONGAM	14	ULU	KB				10.00	1	10.00	4.00	40.00		0	2	
	S. RAHELIMRONG	14	ULU	KB				6.00	1	6.00	5.00	30.00		0	2	
S. ROHTTA	17	ULU	KB				8.00	1	8.00	5.00	40.00		0	2		
S. TOPATTUNG	17	ULU	KB				4.00	1	4.00	4.00	16.00		0	2		
S. NANGALA	17	ULU	KB				15.00	1	15.00	4.50	67.50		0	2		
36	T. PARAPPO	1	PRPO	KB				24.00	1	24.00	4.00	96.00		0	2	IIIC
	S. BULO	4	PSSR	--	TH	10T	(C)	6.00	1	6.00	4.00	0.00	24.00	0	2	

Appendix A-7

CONSTRUCTION AND MAINTENANCE COST OF BRIDGES
ON PROPOSED ROAD LINKS

PROV : SULAWESI SELATAN KAB : TANA TORAJA
LINK NO : 5 (IIB-1) LENGTH : 17 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3m; IOT)	m2	0.00	57,099	3,341	0	0	0
Superstructure (Timber; Span 5m; IOT)	m2	40.00	63,246	3,910	2,529,840	158,400	2,686,240
Superstructure (Timber; Span 8m; IOT)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3m; BMSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5m; BMSO)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber; Span 8m; BMSO)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete; Span 3m; BMSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete; Span 5m; BMSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8m; BMSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10m; BMSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15m; BMSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; IOT)	NO	1.00	497,331	32,863	497,331	32,863	530,194
Substructure (Abut; for Timber; IOT)	NO	2.00	1,344,783	154,495	2,689,566	308,990	2,998,556
Substructure (Pier; for Timber; BMSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BMSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BMSO)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BMSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	40.00	10,146	1,121	405,840	44,840	450,680
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	32.00	8,831	2,405	282,592	76,960	359,552
Maintenance of Concrete Bridge (Exist)	m2	0.00	4,190	2,445	0	0	0
(Without Overhead)			TOTAL COST (Timber Bridge)		5,716,737	498,253	6,214,990
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		5,716,737	498,253	6,214,990
(Overhead : 15%)			TOTAL COST (Timber Bridge)		6,574,248	572,991	7,147,238
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		6,574,248	572,991	7,147,238

PROV : SULAWESI BELATAN KAB : TANA TORAJA

LINK NO : 6 (IIIB-2) LENGTH : 16 Km

(Rp)

I T E M	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3m; IOT)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber; Span 5m; IOT)	m2	40.00	63,246	3,910	2,529,840	156,400	2,686,240
Superstructure (Timber; Span 8m; IOT)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3m; BHSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5m; BHSO)	m2	0.00	77,293	4,745	0	0	0
Superstructure (Timber; Span 8m; BHSO)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete; Span 3m; BHSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete; Span 5m; BHSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8m; BHSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10m; BHSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15m; BHSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; IOT)	NO	1.00	497,331	32,863	497,331	32,863	530,194
Substructure (Abut; for Timber; IOT)	NO	2.00	1,344,783	154,495	2,689,566	308,990	2,998,556
Substructure (Pier; for Timber; BHSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BHSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BHSO)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BHSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.40	15,752	1,374	6,300	549	6,849
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	40.00	10,146	1,121	405,840	44,840	450,680
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	0.00	4,190	2,445	0	0	0
<hr/>							
(Without Overhead)		TOTAL COST (Timber Bridge)			5,723,037	498,802	6,221,839
		(Concrete Bridge)			0	0	0
		TOTAL COST (without Maintenance)			5,723,037	498,802	6,221,839
<hr/>							
(Overhead : 15%)		TOTAL COST (Timber Bridge)			6,581,493	573,622	7,155,115
		(Concrete Bridge)			0	0	0
		TOTAL COST (without Maintenance)			6,581,493	573,622	7,155,115

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 7 (IIIB-1) LENGTH : 5 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3m; IOT)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber; Span 5m; IOT)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber; Span 8m; IOT)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3m; BMSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5m; BMSO)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber; Span 8m; BMSO)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete; Span 3m; BMSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete; Span 5m; BMSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8m; BMSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10m; BMSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15m; BMSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; IOT)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut; for Timber; IOT)	NO	0.00	1,344,783	154,495	0	0	0
Substructure (Pier; for Timber; BMSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BMSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BMSO)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BMSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	140.00	8,831	2,405	1,236,340	336,700	1,573,040
Maintenance of Concrete Bridge (Exist)	m2	302.00	4,190	2,445	1,265,380	738,390	2,003,770
(Without Overhead)			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0
(Overhead : 15%)			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 23 (IIIB-1) LENGTH : 5 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3a; 10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber; Span 5a; 10T)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber; Span 8a; 10T)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3a; BMSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5a; BMSO)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber; Span 8a; BMSO)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete; Span 3a; BMSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete; Span 5a; BMSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8a; BMSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10a; BMSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15a; BMSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; 10T)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut; for Timber; 10T)	NO	0.00	1,344,783	154,495	0	0	0
Substructure (Pier; for Timber; BMSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BMSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BMSO)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BMSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	12.00	4,190	2,445	50,280	29,340	79,620
(Without Overhead)			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0
(Overhead : 15%)			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 29 (IIIB-1) LENGTH : 5 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber;Span 3a;10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber;Span 5a;10T)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber;Span 8a;10T)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber;Span 3a;BMS0)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber;Span 5a;BMS0)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber;Span 8a;BMS0)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete;Span 3a;BMS0)	m2	0.00	81,533	105,772	0	0	0
Superstructure (Concrete;Span 5a;BMS0)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete;Span 8a;BMS0)	m2	0.00	84,794	128,925	0	0	0
Superstructure (Concrete;Span10a;BMS0)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete;Span15a;BMS0)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier;for Timber;10T)	m0	0.00	497,331	32,863	0	0	0
Substructure (Abut;for Timber;10T)	m0	0.00	1,344,283	154,495	0	0	0
Substructure (Pier;for Timber;BMS0)	m0	0.00	731,419	48,632	0	0	0
Substructure (Abut;for Timber;BMS0)	m0	0.00	1,521,240	171,666	0	0	0
Substructure (Pier;for Concrete;BMS0)	m0	0.00	1,859,838	467,969	0	0	0
Substructure (Abut;for Concrete;BMS0)	m0	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	40.00	4,190	2,445	167,600	97,800	265,400
<hr/>							
(Without Overhead)		TOTAL COST (Timber Bridge)			0	0	0
		(Concrete Bridge)			0	0	0
		TOTAL COST (without Maintenance)			0	0	0
<hr/>							
(Overhead : 15%)		TOTAL COST (Timber Bridge)			0	0	0
		(Concrete Bridge)			0	0	0
		TOTAL COST (without Maintenance)			0	0	0

PROV : SULAWESI SELATAN

KAB : TANA TORAJA

LINK NO : 31 (111B-1)

LENGTH : 13 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		>>>>> TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber;Span 3m;10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber;Span 5m;10T)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber;Span 8m;10T)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber;Span 3m;BH50)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber;Span 5m;BH50)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber;Span 8m;BH50)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete;Span 3m;BH50)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete;Span 5m;BH50)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete;Span 8m;BH50)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete;Span10m;BH50)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete;Span15m;BH50)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier;for Timber;10T)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut;for Timber;10T)	NO	0.00	1,349,783	154,495	0	0	0
Substructure (Pier;for Timber;BH50)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut;for Timber;BH50)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier;for Concrete;BH50)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut;for Concrete;BH50)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	174.00	4,190	2,445	729,060	425,430	1,154,490
<hr/>							
(Without Overhead)	TOTAL COST (Timber Bridge)				0	0	0
	(Concrete Bridge)				0	0	0
	TOTAL COST (without Maintenance)				0	0	0
<hr/>							
(Overhead : 15%)	TOTAL COST (Timber Bridge)				0	0	0
	(Concrete Bridge)				0	0	0
	TOTAL COST (without Maintenance)				0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 32 (IIIA) LENGTH : 10 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3m; 10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber; Span 5m; 10T)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber; Span 8m; 10T)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3m; BM50)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5m; BM50)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber; Span 8m; BM50)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete; Span 3m; BM50)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete; Span 5m; BM50)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8m; BM50)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10m; BM50)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15m; BM50)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; 10T)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut; for Timber; 10T)	NO	0.00	1,344,783	154,495	0	0	0
Substructure (Pier; for Timber; BM50)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BM50)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BM50)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BM50)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	469.53	8,831	2,405	4,146,419	1,129,219	5,275,638
Maintenance of Concrete Bridge (Exist)	m2	42.00	4,190	2,445	175,980	102,690	278,670
(Without Overhead)							
			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0
(Overhead : 15%)							
			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 33 (IIIA) LENGTH : 7 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3m; 10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber; Span 5m; 10T)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber; Span 8m; 10T)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3m; BH50)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5m; BH50)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber; Span 8m; BH50)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete; Span 3m; BH50)	m2	0.00	81,533	105,772	0	0	0
Superstructure (Concrete; Span 5m; BH50)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8m; BH50)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10m; BH50)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15m; BH50)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; 10T)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut; for Timber; 10T)	NO	0.00	1,344,783	154,495	0	0	0
Substructure (Pier; for Timber; BH50)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BH50)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BH50)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BH50)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	160.00	4,190	2,445	670,400	391,200	1,061,600
<hr/>							
(Without Overhead)	TOTAL COST (Timber Bridge)				0	0	0
	(Concrete Bridge)				0	0	0
	TOTAL COST (without Maintenance)				0	0	0
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(Overhead : 15%)	TOTAL COST (Timber Bridge)				0	0	0
	(Concrete Bridge)				0	0	0
	TOTAL COST (without Maintenance)				0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 34 (IIIA) LENGTH : 20 Km

(Rp)

I T E M	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber;Span 3m;10I)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber;Span 5m;10I)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber;Span 8m;10I)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber;Span 3m;BHSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber;Span 5m;BHSO)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber;Span 8m;BHSO)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete;Span 3m;BHSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete;Span 5m;BHSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete;Span 8m;BHSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete;Span 10m;BHSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete;Span 15m;BHSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier;for Timber;10I)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut;for Timber;10I)	NO	0.00	1,344,783	154,495	0	0	0
Substructure (Pier;for Timber;BHSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut;for Timber;BHSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier;for Concrete;BHSO)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut;for Concrete;BHSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.09	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	72.00	8,831	2,405	635,832	173,160	808,992
Maintenance of Concrete Bridge (Exist)	m2	836.50	4,190	2,445	2,666,935	1,556,242	4,223,177
(Without Overhead)		TOTAL COST (Timber Bridge)			0	0	0
		(Concrete Bridge)			0	0	0
		TOTAL COST (without Maintenance)			0	0	0
(Overhead : 15%)		TOTAL COST (Timber Bridge)			0	0	0
		(Concrete Bridge)			0	0	0
		TOTAL COST (without Maintenance)			0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA
 LINK NO : 36 (IIIC) LENGTH : 42 Km

(Rp)

I T E M	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber;Span 3a;10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber;Span 5a;10T)	m2	36.00	63,246	3,910	2,276,856	140,760	2,417,616
Superstructure (Timber;Span 8a;10T)	m2	148.00	83,772	5,137	12,398,256	760,276	13,158,532
Superstructure (Timber;Span 3a;BMSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber;Span 5a;BMSO)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber;Span 8a;BMSO)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete;Span 3a;BMSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete;Span 5a;BMSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete;Span 8a;BMSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete;Span 10a;BMSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete;Span 15a;BMSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier;for Timber;10T)	NO	2.00	497,331	32,863	994,662	65,726	1,060,308
Substructure (Abut;for Timber;10T)	NO	12.00	1,344,783	154,495	16,137,396	1,853,940	17,991,336
Substructure (Pier;for Timber;BMSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut;for Timber;BMSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier;for Concrete;BMSO)	NO	0.00	1,859,839	467,969	0	0	0
Substructure (Abut;for Concrete;BMSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	184.00	10,146	1,121	1,866,864	206,264	2,073,128
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	242.00	8,831	2,405	2,137,102	582,010	2,719,112
Maintenance of Concrete Bridge (Exist)	m2	0.00	4,190	2,445	0	0	0
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(Without Overhead)	TOTAL COST (Timber Bridge)				31,807,170	2,820,702	34,627,872
	(Concrete Bridge)				0	0	0
	TOTAL COST (without Maintenance)				31,807,170	2,820,702	34,627,872
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(Overhead : 15%)	TOTAL COST (Timber Bridge)				36,578,246	3,243,807	39,822,053
	(Concrete Bridge)				0	0	0
	TOTAL COST (without Maintenance)				36,578,246	3,243,807	39,822,053

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 42 (IIB-2) LENGTH : 4 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber;Span 3m;10T)	m2	0.00	57,099	3,541	0	0	0
Superstructure (Timber;Span 5m;10T)	m2	0.00	63,246	3,910	0	0	0
Superstructure (Timber;Span 8m;10T)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber;Span 3m;BH50)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber;Span 5m;BH50)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber;Span 8m;BH50)	m2	0.00	98,031	6,007	0	0	0
Superstructure (Concrete;Span 3m;BH50)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete;Span 5m;BH50)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete;Span 8m;BH50)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete;Span 10m;BH50)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete;Span 15m;BH50)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier;for Timber;10T)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut;for Timber;10T)	NO	0.00	1,344,783	154,495	0	0	0
Substructure (Pier;for Timber;BH50)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut;for Timber;BH50)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier;for Concrete;BH50)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut;for Concrete;BH50)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	0.00	10,146	1,121	0	0	0
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	16.00	4,190	2,445	67,040	39,120	106,160
(Without Overhead)			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0
(Overhead : 15%)			TOTAL COST (Timber Bridge)		0	0	0
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		0	0	0

PROV : SULAWESI SELATAN KAB : TANA TORAJA

LINK NO : 54 (IIC) LENGTH : 4 Km

(Rp)

ITEM	UNIT	QUANTITY	<<< UNIT COST >>>		<<<<< COST >>>>>		TOTAL
			LOCAL	FOREIGN	LOCAL	FOREIGN	
Superstructure (Timber; Span 3m; IOT)	m2	0.00	37,099	3,541	0	0	0
Superstructure (Timber; Span 5m; IOT)	m2	16.00	63,246	3,910	1,011,936	62,560	1,074,496
Superstructure (Timber; Span 8m; IOT)	m2	0.00	83,772	5,137	0	0	0
Superstructure (Timber; Span 3m; BMSO)	m2	0.00	70,800	4,379	0	0	0
Superstructure (Timber; Span 5m; BMSO)	m2	0.00	77,295	4,745	0	0	0
Superstructure (Timber; Span 8m; BMSO)	m2	0.00	98,631	6,007	0	0	0
Superstructure (Concrete; Span 3m; BMSO)	m2	0.00	61,533	105,772	0	0	0
Superstructure (Concrete; Span 5m; BMSO)	m2	0.00	63,026	118,305	0	0	0
Superstructure (Concrete; Span 8m; BMSO)	m2	0.00	64,794	128,925	0	0	0
Superstructure (Concrete; Span 10m; BMSO)	m2	0.00	70,745	146,523	0	0	0
Superstructure (Concrete; Span 15m; BMSO)	m2	0.00	75,991	172,720	0	0	0
Substructure (Pier; for Timber; IOT)	NO	0.00	497,331	32,863	0	0	0
Substructure (Abut; for Timber; IOT)	NO	2.00	1,344,783	154,495	2,689,566	308,990	2,998,556
Substructure (Pier; for Timber; BMSO)	NO	0.00	731,419	48,632	0	0	0
Substructure (Abut; for Timber; BMSO)	NO	0.00	1,521,240	171,666	0	0	0
Substructure (Pier; for Concrete; BMSO)	NO	0.00	1,859,838	467,969	0	0	0
Substructure (Abut; for Concrete; BMSO)	NO	0.00	3,911,821	984,591	0	0	0
Demolition of Bridge (Timber->Timber)	m2	12.00	15,752	1,374	189,024	16,488	205,512
Demolition of Bridge (Timber->Concrete)	m2	0.00	15,752	1,374	0	0	0
Demolition of Bridge (Concrete)	m2	0.00	93,530	79,848	0	0	0
Maintenance of Timber Bridge (New)	m2	16.00	10,146	1,121	162,336	17,936	180,272
Maintenance of Concrete Bridge (New)	m2	0.00	2,161	3,002	0	0	0
Maintenance of Timber Bridge (Exist)	m2	0.00	8,831	2,405	0	0	0
Maintenance of Concrete Bridge (Exist)	m2	0.00	4,190	2,445	0	0	0
(Without Overhead)			TOTAL COST (Timber Bridge)		3,890,526	388,038	4,278,564
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		3,890,526	388,038	4,278,564
(Overhead : 15%)			TOTAL COST (Timber Bridge)		4,474,105	446,244	4,920,349
			(Concrete Bridge)		0	0	0
			TOTAL COST (without Maintenance)		4,474,105	446,244	4,920,349

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