




Based on the total required SN for the entire pavement , suitable design is obtained by the following equation :

$$SN = a_1D_1 + a_2D_2 + a_3D_3$$


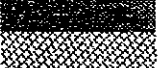

Where , a_1, a_2, a_3 = layer coefficients representative of surface, base and subbase.

D_1, D_2, D_3 = actual thickness, in inches, of surface, base, subbase.



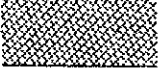
(1) SN = 2.9

	(cm)	D (inches)	a	a x D		
	5	1.97	0.44	0.87	Surface course	Plant mix
	15	5.91	0.135	0.80	Base course	CBR80
	30	11.81	0.11	1.30	Sub-base course	CBR30
Total	50	19.69		2.96		


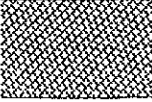
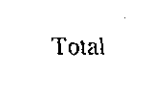
(2) SN = 3.0

	(cm)	D (inches)	a	a x D		
	5	1.97	0.44	0.87	Surface course	Plant mix
	16	6.30	0.135	0.85	Base course	CBR80
	30	11.81	0.11	1.30	Sub-base course	CBR30
Total	51	20.08		3.02		


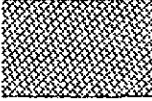
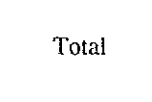
(3) SN = 3.2

	(cm)	D (inches)	a	a x D		
	5	1.97	0.44	0.87	Surface course	Plant mix
	20	7.87	0.135	1.06	Base course	CBR80
	30	11.81	0.11	1.30	Sub-base course	CBR30
Total	55	21.65		3.23		


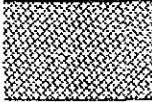
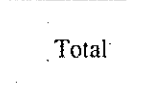
(4) SN = 3.3

	D (cm)	D (inches)	a	a x D		
	5	1.97	0.44	0.87	Surface course	Plant mix
	22	8.66	0.135	1.17	Base course	CBR80
	30	11.81	0.11	1.30	Sub-base course	CBR30
Total	57	22.44		3.33		


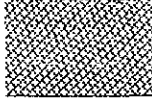

(5) SN = 3.6

	D (cm)	D (inches)	a	a x D		
	5	1.97	0.44	0.87	Surface course	Plant mix
	27	10.63	0.135	1.44	Base course	CBR80
	30	11.81	0.11	1.30	Sub-base course	CBR30
Total	62	24.41		3.60		


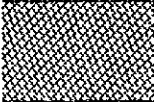
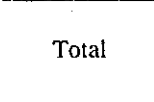
(6) SN = 2.9

	D (cm)	D (inches)	a	a x D		
	5	1.97	0.2	0.39	Surface course	Road mix
	19	7.48	0.135	1.01	Base course	CBR80
	35	13.78	0.11	1.52	Sub-base course	CBR30
Total	59	23.23		2.92		


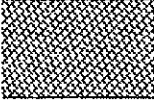
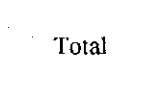
(7) SN = 3.0

	D (cm)	D (inches)	a	a x D		
	5	1.97	0.2	0.39	Surface course	Road mix
	21	8.27	0.135	1.12	Base course	CBR80
	35	13.78	0.11	1.52	Sub-base course	CBR30
Total	61	24.02		3.03		


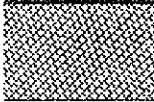
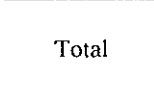
(8) SN = 3.2

	(cm)	D (inches)	a	a x D		
	5	1.97	0.2	0.39	Surface course	Road mix
	25	9.84	0.135	1.33	Base course	CBR80
	35	13.78	0.11	1.52	Sub-base course	CBR30
Total	65	25.59		3.24		


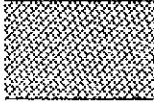
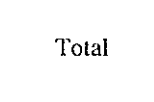
(8-2) SN = 3.2

	(cm)	D (inches)	a	a x D		
	5	1.97	0.2	0.39	Surface course	Road mix
	17	6.69	0.135	0.90	Base course	CBR80
	45	17.72	0.11	1.95	Sub-base course	CBR30
Total	67	26.38		3.25		

(9) SN = 3.3

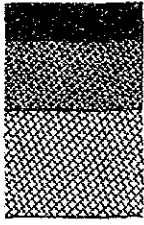
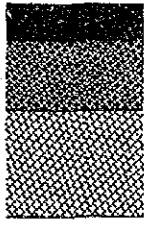
	(cm)	D (inches)	a	a x D		
	5	1.97	0.2	0.39	Surface course	Road mix
	18	7.09	0.135	0.96	Base course	CBR80
	45	17.72	0.11	1.95	Sub-base course	CBR30
Total	68	26.77		3.30		

(10) SN = 3.6

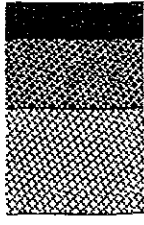
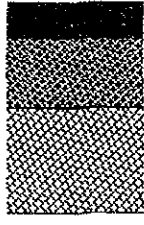
	(cm)	D (inches)	a	a x D		
	5	1.97	0.2	0.39	Surface course	Road mix
	24	9.45	0.135	1.28	Base course	CBR80
	45	17.72	0.11	1.95	Sub-base course	CBR30
Total	74	29.13		3.62		

Comparison of Unit rates for plant-mix and Road-mix Pavement

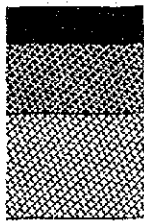
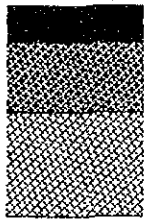
CASE -2
Section-I

Plant mix			Road mix		
	Thickness (cm)	Cost (yen/m ²)		Thickness (cm)	Cost (yen/m ²)
	5	738		5	370
	16	431		21	566
	30	567		35	661
Total =	51	1,736		61	1,597

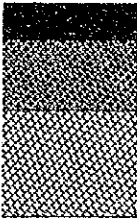
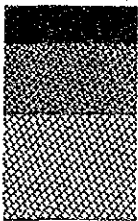
CASE -2
Section-II

Plant mix			Road mix		
	Thickness (cm)	Cost (yen/m ²)		Thickness (cm)	Cost (yen/m ²)
	5	738		5	370
	22	593		18	485
	30	567		45	850
Total =	57	1,898		68	1,705

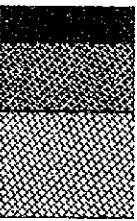
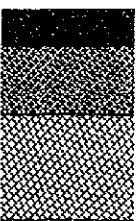
CASE -3
Section-I

Plant mix			Road mix		
	Thickness (cm)	Cost (yen/m ²)		Thickness (cm)	Cost (yen/m ²)
	5	738		5	370
	15	404		19	512
	30	567		35	661
Total =	50	1,709		59	1,543

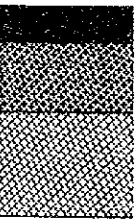
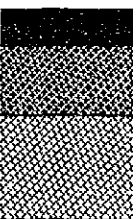
CASE -3
Section-II

Plant mix			Road mix		
	Thickness (cm)	Cost (yen/m ²)		Thickness (cm)	Cost (yen/m ²)
	5	738		5	370
	20	539		17	458
	30	567		45	850
Total =	55	1,844		67	1,678

CASE -4
Section-I

Plant mix			Road mix		
	Thickness (cm)	Cost (yen/m ²)		Thickness (cm)	Cost (yen/m ²)
	5	738		5	370
	20	539		25	674
	30	567		35	661
Total =	55	1,844		65	1,705

CASE -4
Section-II

Plant mix			Road mix		
	Thickness (cm)	Cost (yen/m ²)		Thickness (cm)	Cost (yen/m ²)
	5	738		5	370
	27	728		24	647
	30	567		45	850
Total =	62	2,032		74	1,867

Minimum Thickness (inches)		
Traffic, ESAL'S	Asphalt Concrete	Aggregate Base
Less than 50,000	1.0 (or surface treatment)	4
50,001 - 150,000	2.0	4
150,001 - 500,000	2.5	4
500,001 - 2,000,000	3.0	6
2,000,001 - 7,000,000	3.5	6
Greater than 7,000,000	4.0	6

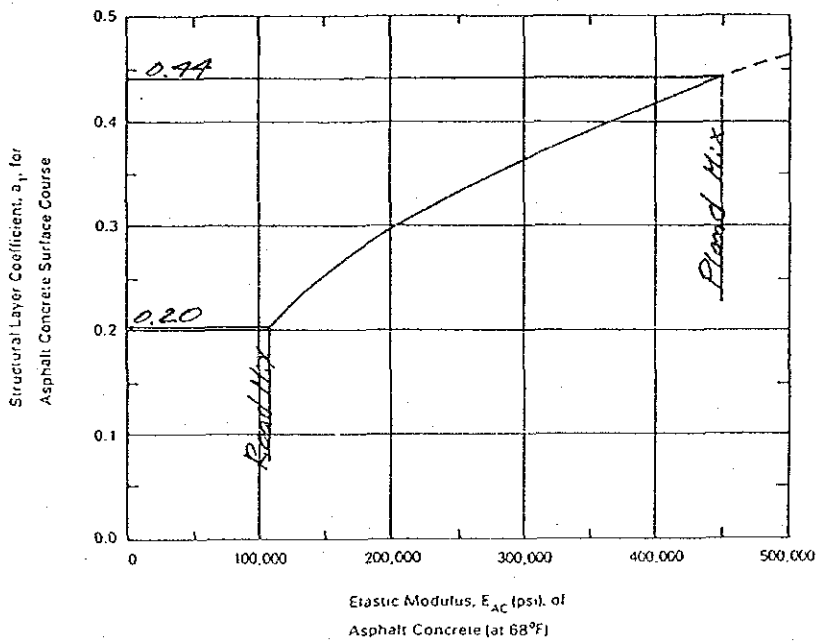


Figure 2.5. Chart for estimating structural layer coefficient of dense-graded asphalt concrete based on the elastic (resilient) modulus (3).

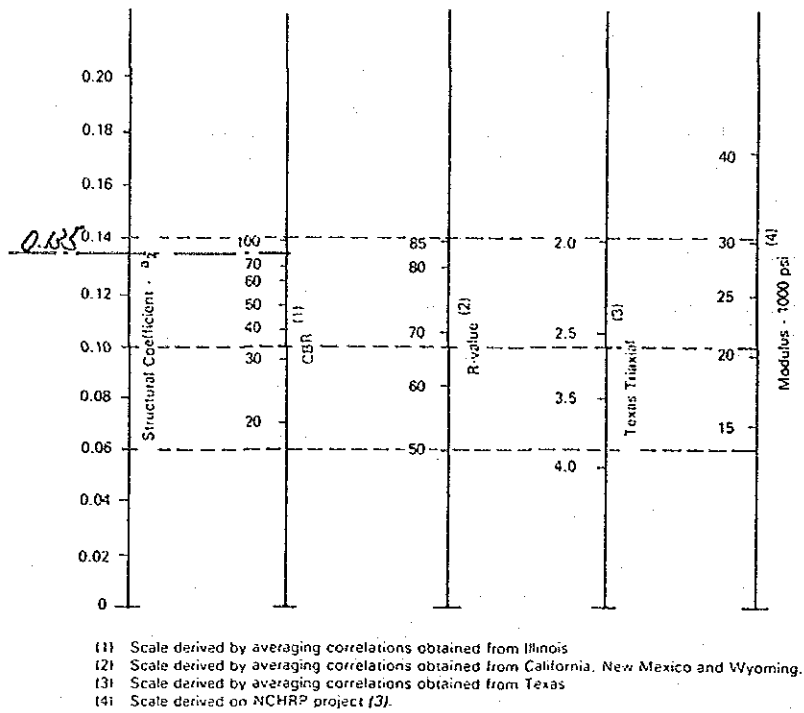


Figure 2.6. Variation in granular base layer coefficient (a_2) with various base strength parameters (3).

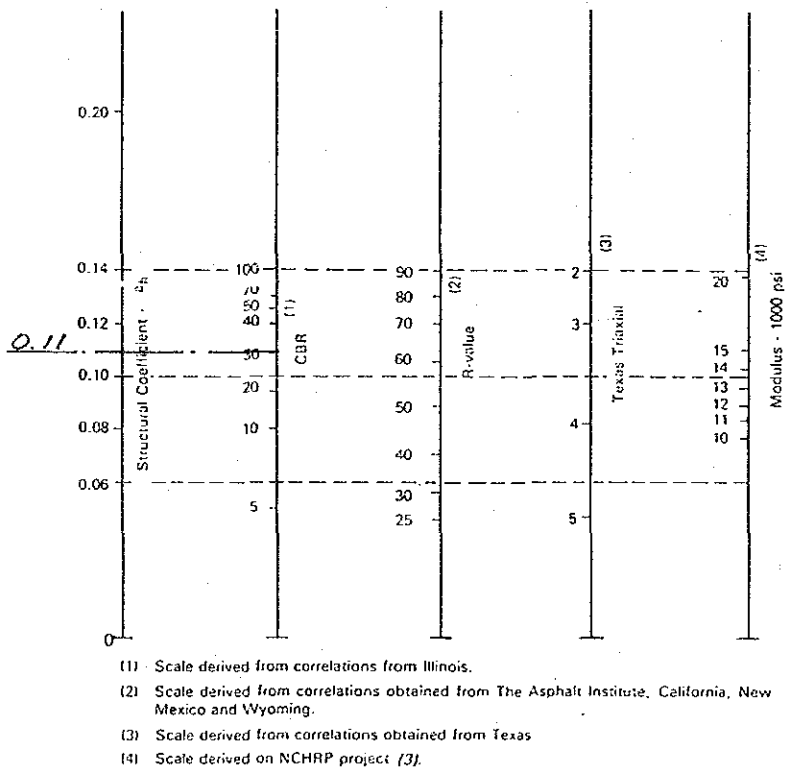


Figure 2.7. Variation in granular subbase layer coefficient (a_3) with various subbase strength parameters (3).

CASE-2 Alternative 3.4 1lane

Section -1

Specific conditions

- (i) The estimated future traffic, W18 : 1,550,116
- (ii) The reliability, R : 80%
- (iii) The overall standard deviation, S0 : 0.45
- (iv) The effective resilient modulus of roadbed material, MR : 10,600
- (v) The design serviceability loss, d PSI=Po-Pt : 2.5

SN= 3.0

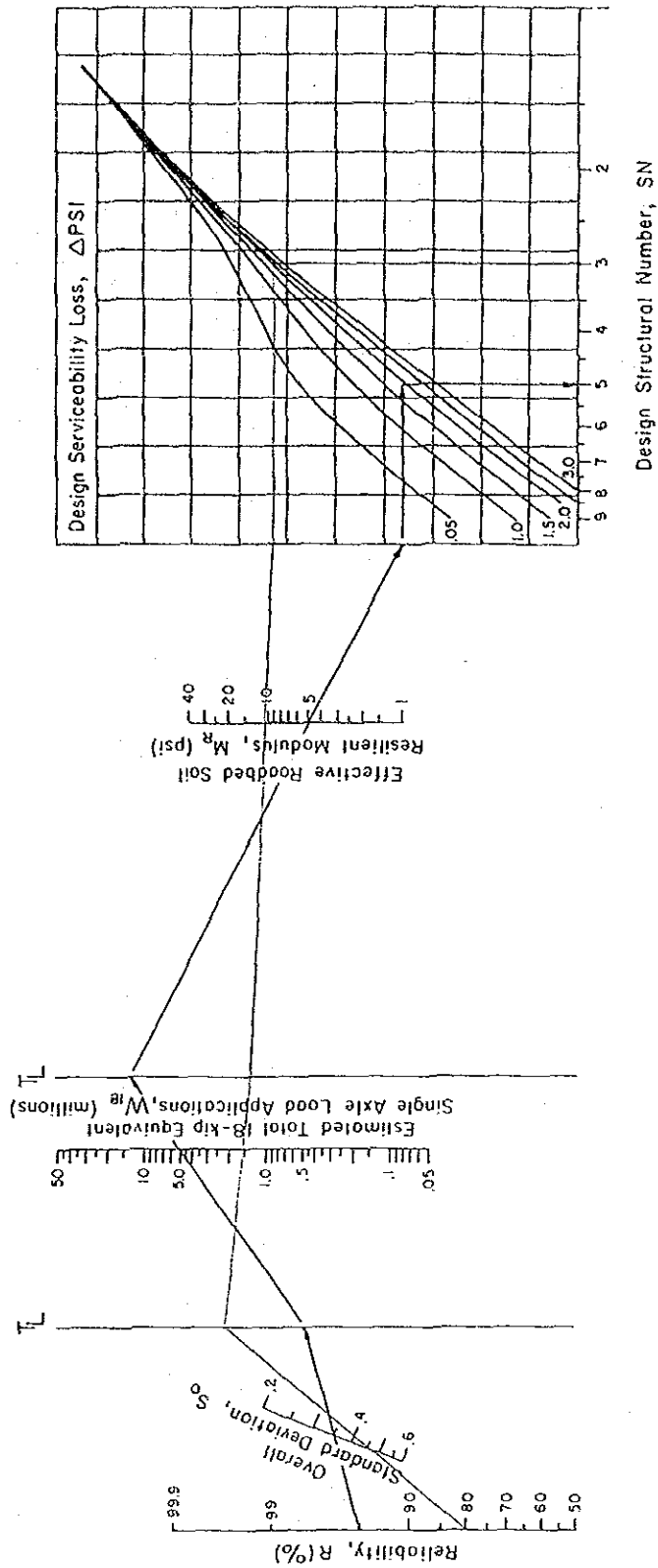


Figure Design chart for flexible pavements

CASE-2 Alternative 3.4 1lane

Section - II

Specific conditions

- (i) The estimated future traffic, W18 : 1,468,775
- (ii) The reliability, R : 80%
- (iii) The overall standard deviation, S0 : 0.45
- (iv) The effective resilient modulus of roadbed material, MR : 7,300
- (v) The design serviceability loss, $\Delta PSI = Po - Pt$: 2.5

SN= 3.3

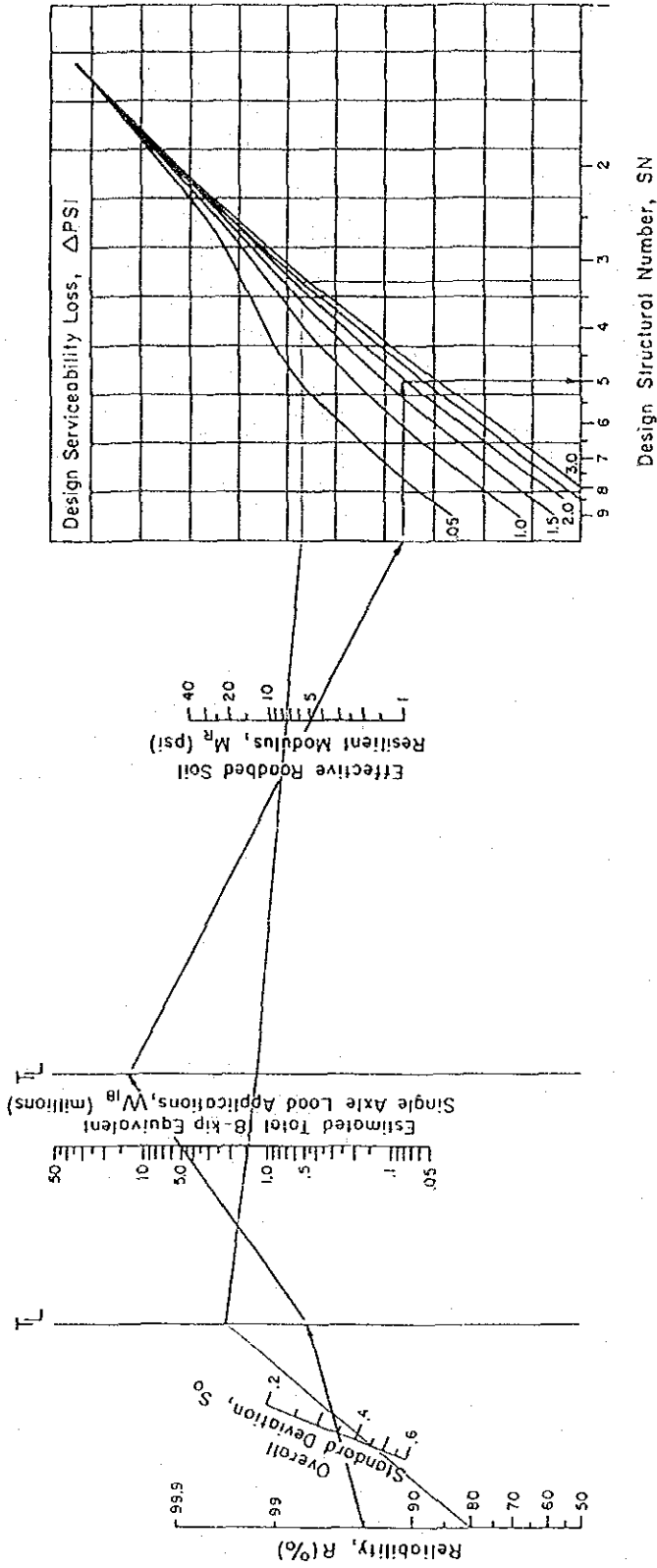


Figure Design chart for flexible pavements

CASE-3 Alternative 5 2lane

Section - I

Specific conditions

- (i) The estimated future traffic, W18 : : 1,299,122
- (ii) The reliability, R : : 80%
- (iii) The overall standard deviation, S0 : : 0.45
- (iv) The effective resilient modulus of roadbed material, MR : : 10,600
- (v) The design serviceability loss, d PSI=Po-Pt : : 2.5

SN= 2.9

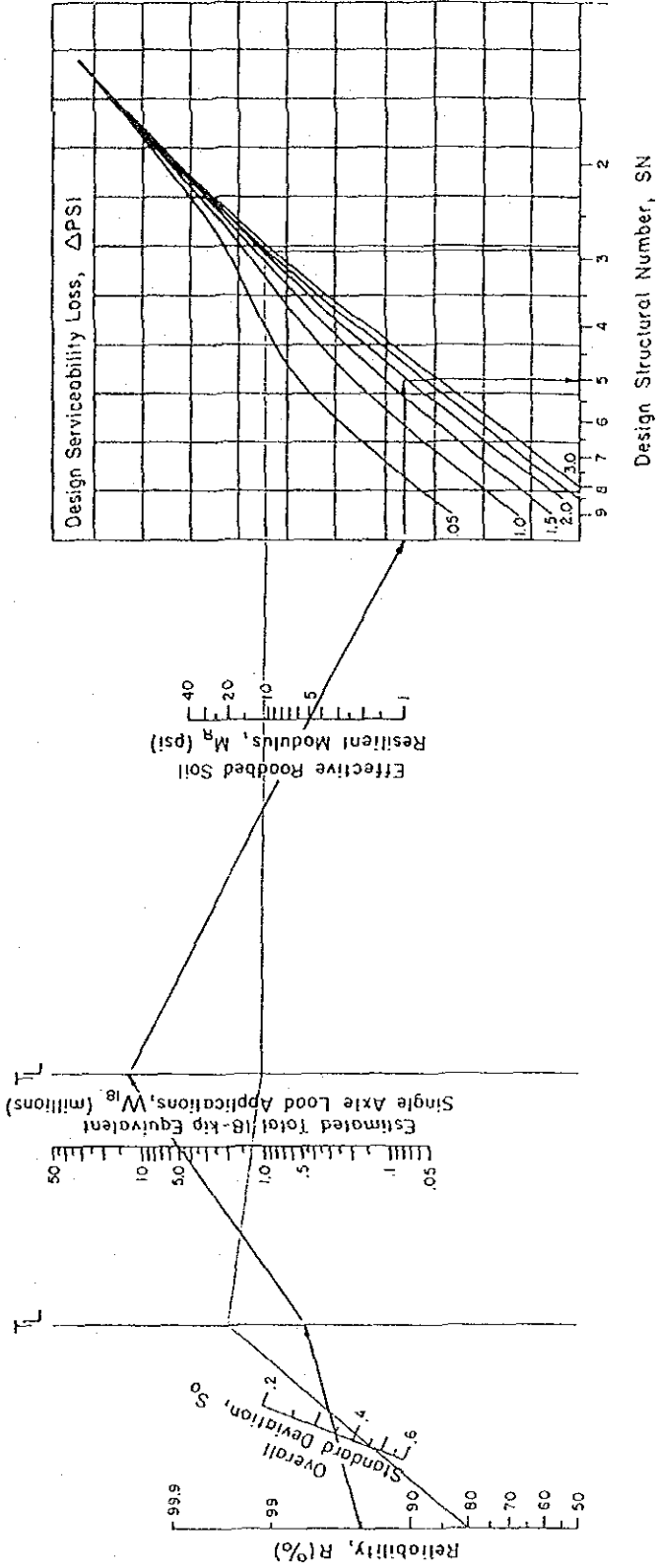


Figure Design chart for flexible pavements

CASE-3 Alternative 5 2-lane

Section - II

Specific conditions

- (i) The estimated future traffic, W18 : 1,229,402
- (ii) The reliability, R : 80%
- (iii) The overall standard deviation, S0 : 0.45
- (iv) The effective resilient modulus of roadbed material, MR : 7,300
- (v) The design serviceability loss, Δ PSI : 2.5

SN= 3.2

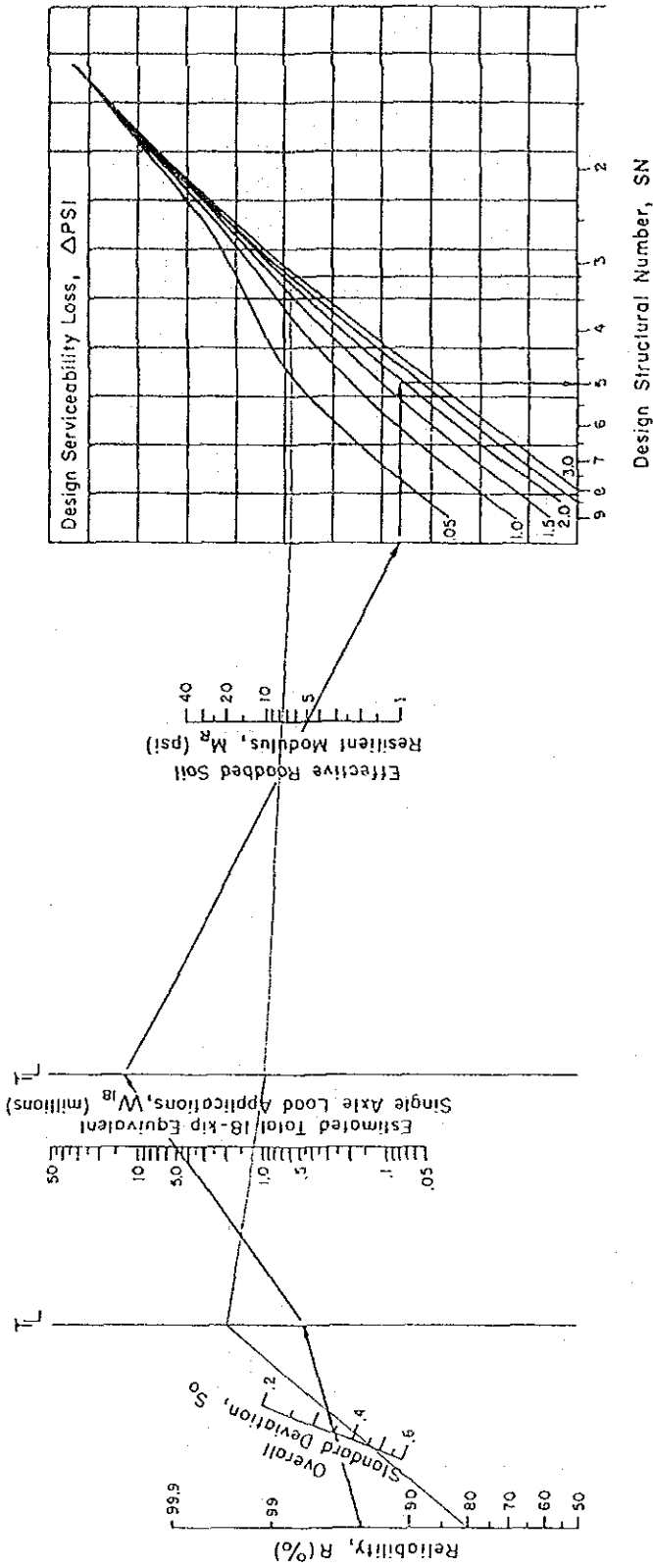


Figure Design chart for flexible pavements

CASE-4 Second stage widening 2lane

Section - I

Specific conditions

- (i) The estimated future traffic, W_{18} : 2,964,277
- (ii) The reliability, R : 80%
- (iii) The overall standard deviation, S_0 : 0.45
- (iv) The effective resilient modulus of roadbed material, M_R : 10,600
- (v) The design serviceability loss, $\Delta PSI = P_o - P_t$: 2.5

SN = 3.2

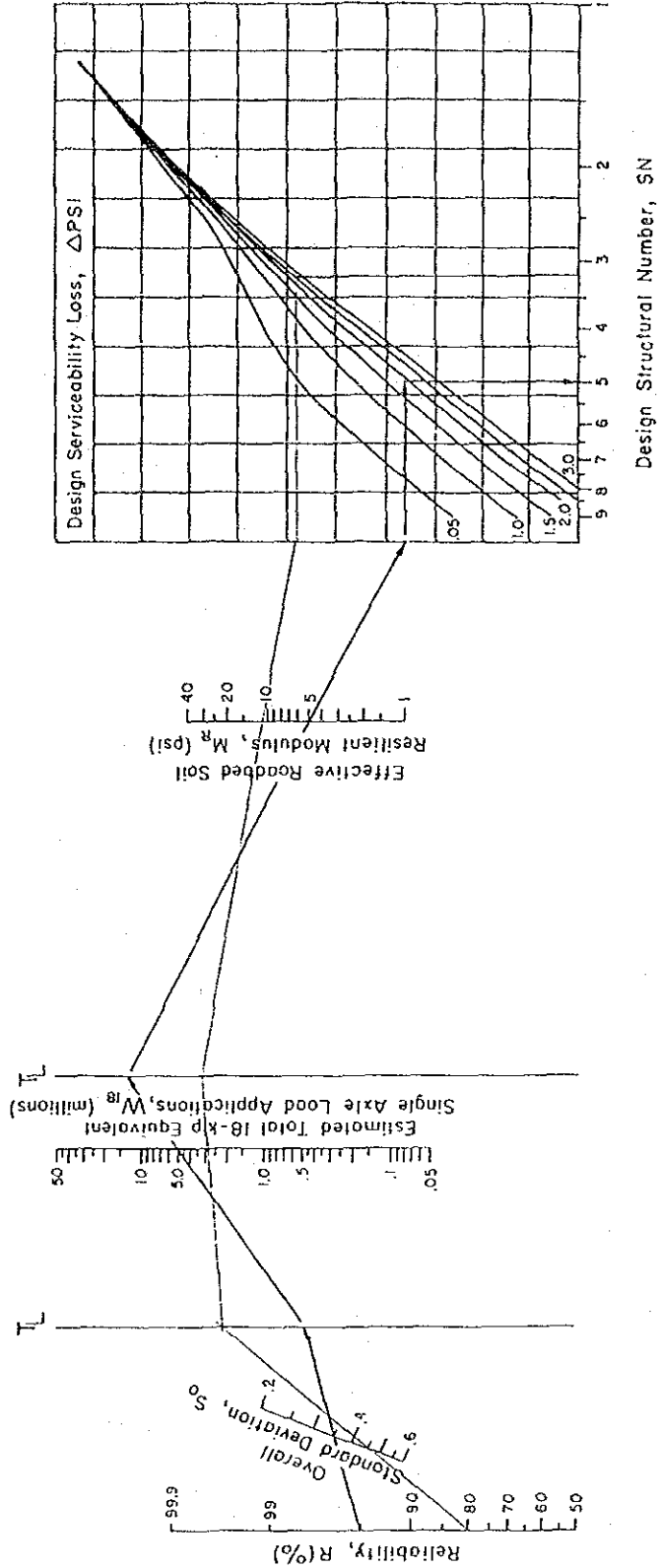


Figure Design chart for flexible pavements

CASE-4 Second stage widening 2lane
Section - II

Specific conditions

- (i) The estimated future traffic, W18 : 2,975,897
- (ii) The reliability, R : 80%
- (iii) The overall standard deviation, S0 : 0.45
- (iv) The effective resilient modulus of roadbed material, MR : 7,300
- (v) The design serviceability loss, d PSI=Po-Pt : 2.5

SN= 3.6

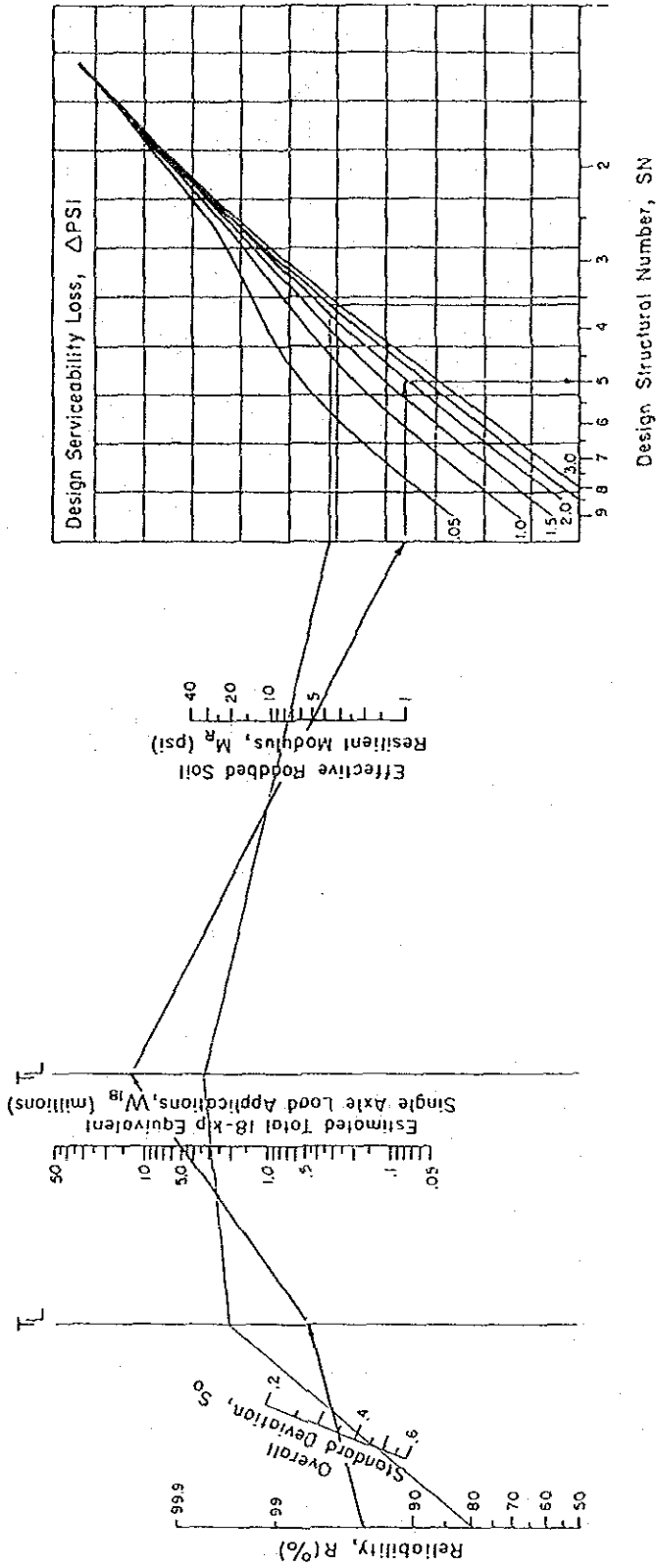


Figure Design chart for flexible pavements

Table 2.2. Suggested levels of reliability for various functional classifications.

Functional Classification	Recommended Level of Reliability	
	Urban	Rural
Interstate and other freeways	85 - 99.9	80 - 99.9
Principal Arterials	80 - 99	75 - 95
Collectors	80 - 95	75 - 95
Local	50 - 80	50 - 80

Note: Results based on a survey of the AASHTO Pavement Design Task Force

Table 4.1. Suggested seasons length (months) for the six U.S. climatic regions.

U.S. Climatic Region	Season (Roadbed Soil Moisture Condition)			
	Winter (Roadbed Frozen)	Spring-Thaw (Roadbed Saturated)	Spring/Fall (Roadbed Wet)	Summer (Roadbed Dry)
I	0.0*	0.0	7.5	4.5
II	1.0	0.5	7.0	3.5
III	2.5	1.5	4.0	4.0
IV	0.0	0.0	4.0	8.0
V	1.0	0.5	3.0	7.5
VI	3.0	1.5	3.0	4.5

*Number of months for the season.

Table 4.3. Effective roadbed soil resilient modulus values, M_R (psi), that may be used in the design of flexible pavements for low-volume roads. Suggested values depend on the U.S. climatic region and the relative quality of the roadbed soil.

U.S. Climatic Region	Relative Quality of Roadbed Soil				
	Very Poor	Poor	Fair	Good	Very Good
I	2,800*	3,700	5,000	6,800	9,500
II	2,700	3,400	4,500	5,500	7,300
III	2,700	3,000	4,000	4,400	5,700
IV	3,200	4,100	5,600	7,900	11,700
V	3,100	3,700	5,000	6,000	8,200
VI	2,800	3,100	4,100	4,500	5,700

*Effective Resilient Modulus in psi

Ave. 7,300 Sec. II 10,600 Sec. I
 Section I CBR 15 $\times 1,500 = 22,500$ (Mr)
 II CBR 8 $\times 1,500 = 12,000$ (Mr)

Table 4.10. Aggregate surfaced road design catalog: recommended aggregate base thickness (in inches) for the six U.S. climatic regions, five relative qualities of roadbed soil and three levels of traffic.

Relative Quality of Roadbed Soil	Traffic Level	U.S. Climatic Region					
		I	II	III	IV	V	VI
Very Good	High	8	10	15	7	9	15
	Medium	6	8	11	5	7	11
	Low	4	4	6	4	4	6
Good	High	11	12	17	10	11	17
	Medium	8	9	12	7	9	12
	Low	4	5	7	4	5	7
Fair	High	13	14	17	12	13	17
	Medium	11	11	12	10	10	12
	Low	6	6	7	5	5	7
Poor	High	**	**	**	**	**	**
	Medium	**	**	**	15	15	**
	Low	9	10	9	8	8	9
Very Poor	High	**	**	**	**	**	**
	Medium	**	**	**	**	**	**
	Low	11	11	10	8	8	9

* Thicknesses of aggregate base required (in inches).

**Higher type pavement design recommended.

Table Worksheet for calculating 18-kip equivalent single axle load(ESAL) applications.

CASE-2 Alternative-3,4 1 lane		Analysis Period =		10	Year
Section - I	ADT= 667				
Vehicle Types	Current Traffic both direction	Growth Factors 7.80%	Design Traffic	E.S.A.L. Factor	Design E.S.A.L.
2300	100	14.35	524,026	0.0065	3,406
2700	150	14.35	786,039	0.0124	9,747
3300	10	14.35	52,403	0.0274	1,436
4700	240	14.35	1,257,662	0.1116	140,355
5300	150	14.35	786,039	0.1798	141,330
6700	10	14.35	52,403	0.4561	23,901
9300	140	14.35	733,636	1.6765	1,229,941
All Vehicles	800		4,192,207		1,550,116

CASE-2 Alternative-3,4 1 lane		Analysis Period =		10	Year
Section - II	ADT= 632				
Vehicle Types	Current Traffic both direction	Growth Factors 7.80%	Design Traffic	E.S.A.L. Factor	Design E.S.A.L.
2300	95	14.35	496,528	0.0065	3,227
2700	142	14.35	744,792	0.0124	9,235
3300	9	14.35	49,653	0.0274	1,360
4700	228	14.35	1,191,668	0.1116	132,990
5300	142	14.35	744,792	0.1798	133,914
6700	9	14.35	49,653	0.4561	22,647
9300	133	14.35	695,140	1.6765	1,165,401
All Vehicles	758		3,972,226		1,468,775

CASE-3 Alternative-5 2 lane			Analysis Period = 10 Year		
Section - I	ADT=	1118	considering stage construction(overlay)		
Vehicle Types	Current Traffic	Growth Factors	Design Traffic	E.S.A.L. Factor	Design E.S.A.L.
	one direction	7.80%			
2300	84	14.35	439,176	0.0065	2,855
2700	126	14.35	658,764	0.0124	8,169
3300	8	14.35	43,918	0.0274	1,203
4700	201	14.35	1,054,023	0.1116	117,629
5300	126	14.35	658,764	0.1798	118,446
6700	8	14.35	43,918	0.4561	20,031
9300	117	14.35	614,847	1.6765	1,030,790
All Vehicles	671		3,513,409		1,299,122

CASE-3 Alternative-5 2 lane			Analysis Period = 10 Year		
Section - II	ADT=	1058	considering stage construction(overlay)		
Vehicle Types	Current Traffic	Growth Factors	Design Traffic	E.S.A.L. Factor	Design E.S.A.L.
	one direction	7.80%			
2300	79	14.35	415,607	0.0065	2,701
2700	119	14.35	623,410	0.0124	7,730
3300	8	14.35	41,561	0.0274	1,139
4700	190	14.35	997,456	0.1116	111,316
5300	119	14.35	623,410	0.1798	112,089
6700	8	14.35	41,561	0.4561	18,956
9300	111	14.35	581,849	1.6765	975,471
All Vehicles	635		3,324,854		1,229,402

CASE-4 widening to 2 lane

Analysis Period = 10 Year

Section - I		ADT= 2551			
Vehicle Types	Current Traffic one direction	Growth Factors 7.80%	Design Traffic	E.S.A.L. Factor	Design E.S.A.L.
2300	191	14.35	1,002,091	0.0065	6,514
2700	287	14.35	1,503,137	0.0124	18,639
3300	19	14.35	100,209	0.0274	2,746
4700	459	14.35	2,405,019	0.1116	268,400
5300	287	14.35	1,503,137	0.1798	270,264
6700	19	14.35	100,209	0.4561	45,705
9300	268	14.35	1,402,928	1.6765	2,352,009
All Vehicles	1,531		8,016,731		2,964,277

CASE-4 widening to 2 lane

Analysis Period = 10 Year

Section - II		ADT= 2561			
Vehicle Types	Current Traffic one direction	Growth Factors 7.80%	Design Traffic	E.S.A.L. Factor	Design E.S.A.L.
2300	192	14.35	1,006,020	0.0065	6,539
2700	288	14.35	1,509,029	0.0124	18,712
3300	19	14.35	100,602	0.0274	2,756
4700	461	14.35	2,414,447	0.1116	269,452
5300	288	14.35	1,509,029	0.1798	271,323
6700	19	14.35	100,602	0.4561	45,885
9300	269	14.35	1,408,428	1.6765	2,361,229
All Vehicles	1,537		8,048,157		2,975,897

Calculation of the current traffic for the each axle loads

	Assumed Weight	Front axle load		Back axle load	
		(ton)	(ton)	(ton)	(ton)
(A) Total traffic volume					
└ Light vehicle 40%(A)					
└ Heavy vehicle 60%(A)					
(B) └ Bus 37.5%(B)	8 ton	2.7	5.3	22.5%(A)	
(C) └ Truck 62.5%(B)	14 ton	4.7	9.3	21.0%(A)	
└ Full load 56%(C)					
└ 50%load 4%(C)	10 ton	3.3	6.7	1.5%(A)	
└ Empty 40%(C)	7 ton	2.3	4.7	15.0%(A)	

The rate was obtain from the previous F/S study report

Equivalence factor of axle loads

3.97

$$\text{Equivalence factor} = (P_i / 8.165)$$

P_i = axle load (ton)

Damaging effect of different axle loads (AASHO Road Test)

Axle load		Equivalence factor
kg	lb	
910	2000	0.0002
1810	4000	0.0025
2720	6000	0.01
3630	8000	0.03
4540	10000	0.09
5440	12000	0.19
6350	14000	0.35
7260	16000	0.61
8160	18000 Standard	1
9070	20000	1.5
9980	22000	2.3
10890	24000	3.2
11790	26000	4.4
12700	28000	5.8
13610	30000	7.6
14520	32000	9.7
15420	34000	12.1
16320	36000	15.0
17230	38000	18.6
18140	40000	22.8

APPENDIX - F-2

QUANTITIES CALCULATION

Table 1 Work Quantities of Alternative-1 First stage

Item No.	Description	Unit	Alternative-1 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff houses(H),offices(O) and laboratories(L)	L.S.		OLH	O	OLH	
				0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m2		387,600	577,000	912,000	1,876,600
102	Clearing in forest area	m2		356,000			356,000
103	Removal of top soil t=20cm	m3		51,400	39,200	61,800	152,400
104	Excavation ,common, side spoil	m3		4,048	48,406	41,911	94,365
105	Excavation,rock,side spoil	m3		1,454	8,758	12,269	22,481
106	Excavation ,common, spoil bank l=1000m	m3		216,008			216,008
107	Excavation,rock,spoil bank l=1000m	m3		77,610			77,610
108	Cutting and filling,common,cross filling	m3		108,944	55,409	108,960	273,313
109	Cutting and filling,rock,cross filling	m3		39,143	10,025	31,897	81,065
110	Cutting and filling,common,l=1000m	m3		354,219	205,317	333,137	892,673
111	Cutting and filling,rock,l=1000m	m3	10,000	126,958	37,147	97,524	271,629
112	Borrow filling,l=500m	m3	300		344,282	200,758	545,340
200	PAVEMENT WORKS						
201	Subgrade preparation	m2	5,700	194,900	158,100	250,600	609,300
202	Subbase course	m3	1,710	58,500	47,500	75,200	182,910
203	Base course	m3					0
204	Surface course, penetration macadam, t=3cm	m2		81,100	47,900	50,500	179,500
205	Surface course, penetration macadam, t=5cm	m2					0
206	Surface course, asphalt concrete, t=3cm	m2					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martal, 0.75x0.50	m					0
302	Side drain,stone masonry with 1:6 martal, 0.50x0.30	m		32,500	21,700	41,300	95,500
303	Side drain,stone masonry with 1:6 martal, 0.40x0.30	m		5,000	10,000	5,000	20,000
304	Grouted riprap lined ditch	m	2,400	10,500	20,000	18,000	50,900
305	Channel,stone mansony with 1:4 martal,type A	m		2,150			2,150
306	Channel,stone mansony with 1:4 martal,type B	m		940			940
307	Channel,gabion wall,type A	m		600			600
308	Channel,gabion wall,type B	m		600			600
309	Subsoil drain,0.3x0.6	m		8,000	3,000	22,000	33,000
310	R.C.C. pipe culvert D=0.6m	pcs.		16	70	181	267
311	R.C.C. pipe culvert D=0.9m	pcs.		2	6	45	53
312	Corrugated pipe culvert D=0.6m	pcs.		176	69	47	292
313	Corrugated pipe culvert D=1.0m	pcs.		22	21	12	55
314	Corrugated arch culvert R=2.5m	pcs.		11	7	4	22
315	Slab culvert S=5m	pcs.		12	15	28	55
316	Slab culvert S=10m	pcs.			1	4	5
317	Box culvert 3.0x3.0	pcs.				1	1
318	Check dam,type-A	pcs.		25	25	70	120
319	Check dam,type-B	pcs.		24	6	6	36
400	SLOPE PROTECTION WORKS						
401	Dry stone wall	m2					0

Table 1 Work Quantities of Alternative-1 First stage

Item No.	Description	Unit	Alternative-1 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
402	Banded dry stone wall	m2			3,000		3,000
403	Stone cement masonry wall	m2			18,800	40,700	59,500
404	Plugged stone concrete wall	m3			12,300	21,300	33,600
405	Gabion wall	m3		93,400	47,400	58,700	199,500
406	Gabion mattress	m3			8,400	13,100	21,500
407	Boulder protection	m3			16,800	26,200	43,000
408	Sodding	m2		188,100	183,500	260,900	632,500
409	Concrete spray	m2					0
410	Concrete spray with rock bolt	m2					0
411	Concrete frame with anchor	m2					0
412	Stone masonry parapet	m3		6,200	3,600	4,500	14,300
413	Land-slide protection Large scale	pcs.		1			1
414	Land-slide protection small scale	pcs.		15	4	27	46
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m		13,000	7,500	9,400	29,900
502	Stone masonry guard block type-B	m		10,000	10,000	15,000	35,000
503	Road traffic sign typeA	pcs.		30	30	30	90
504	Road traffic sign typeB	pcs.		30	30	30	90
505	Distance sign 1km	pcs.		31	25	40	96
506	Distance sign 5km	pcs.		8	6	10	24
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m	850	175	811	545	2,381
602	Vented causeway	m		35	44	66	145
603	Submersible bridge	m				115	115
700	MAJOR BRIDGES (1 lanes)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadeuli bridge (PCB)	L.S	1				1
707	Daune bridge (DECK TRUSS)	L.S				1	1
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (1lane)						
801	Prestressed concrete Tshaped beam ,20m span	m2	160			80	240
802	Steel H shaped beam, 20m span	m2		400		80	480
803	Steel H shaped beam, 25m span	m2				100	100
804	Restoration of existing suspension bridge	L.S				1	1
900	MISCELLANEOUS						
901	maintain of access road	km		19	19	19	57
902	Removal of debris	km		34	22	41	97

Table 2 Work Quantities of Alternative-1 Second stage

Item No.	Description	Unit	Alternative-1 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff houses(H),offices(O) and laboratories(L)	L.S.		O L H	O	O L H	
				0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m ²	677,700	50,300	90,800	153,500	972,300
102	Clearing in forest area	m ²		46,200			46,200
103	Removal of top soil t=20cm	m ³	22,900	4,800	4,500	7,700	39,900
104	Excavation ,common, side spoil	m ³					0
105	Excavation,rock,side spoil	m ³					0
106	Excavation ,common, spoil bank l=1000m	m ³	185,838	184,900	15,900	34,400	421,038
107	Excavation,rock,spoil bank l=1000m	m ³	65,300	247,600	169,200	353,500	835,600
108	Cutting and filling,common,cross filling	m ³	37,500				37,500
109	Cutting and filling,rock,cross filling	m ³	13,200				13,200
110	Cutting and filling,common,l=1000m	m ³	79,600	18,100	32,700	52,300	182,700
111	Cutting and filling,rock,l=1000m	m ³	27,900	24,200			52,100
112	Borrow filling,l=500m	m ³					0
112-2	Realignment of causeway sections	km	0.50	0.50	7.50	3.20	12
200	PAVEMENT WORKS						
201	Subgrade preparation	m ²	277,400	292,100	237,000	375,600	1,182,100
202	Subbase course	m ³	97,090	48,500	39,300	62,300	247,190
203	Base course	m ³	52,706	49,657	40,290	63,852	206,505
204	Surface course, penetration macadam, t=3cm	m ²					0
205	Surface course, penetration macadam, t=5cm	m ²	277,400	292,100	237,000	375,600	1,182,100
206	Surface course, asphalt concrete, t=3cm	m ²					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martal, 0.75x0.50	m	26,400	34,850	24,650	45,000	130,900
302	Side drain,stone masonry with 1:6 martal, 0.50x0.30	m					0
303	Side drain,stone masonry with 1:6 martal, 0.40x0.30	m					0
304	Grouted riprap lined ditch	m	21,400				21,400
305	Channel,stone masonry with 1:4 martal,type A	m					0
306	Channel,stone masonry with 1:4 martal,type B	m					0
307	Channel,gabion wall,type A	m					0
308	Channel,gabion wall,type B	m					0
309	Subsoil drain,0.3x0.6	m					0
310	R.C.C. pipe culvert D=0.6m	pcs.	180				180
311	R.C.C. pipe culvert D=0.9m	pcs.					0
312	Corrugated pipe culvert D=0.6m	pcs.					0
313	Corrugated pipe culvert D=1.0m	pcs.					0
314	Corrugated arch culvert R=2.5m	pcs.					0
315	Slab culvert S=5m	pcs.					0
316	Slab culvert S=10m	pcs.					0
317	Box culvert 3.0x3.0	pcs.					0
318	Check dam,type-A	pcs.					0
319	Check dam,type-B	pcs.					0
400	SLOPE PROTECTION WORKS						

Table 2 Work Quantities of Alternative-1 Second stage

Item No.	Description	Unit	Alternative-1 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
401	Dry stone wall	m2	27,200	12,700	13,100	18,800	71,800
402	Banded dry stone wall	m2	41,500	192,600	89,400	172,200	495,700
403	Stone cement masonry wall	m2					
404	Plugged stone concrete wall	m3					
405	Gabion wall	m3	7,600				
406	Gabion mattress	m3					
407	Boulder protection	m3					
408	Sodding	m2	146,600	12,000	3,000	11,900	173,500
409	Concrete spray	m2	6,600	53,000	26,100	43,800	129,500
410	Concrete spray with rock bolt	m2			2,000		2,000
411	Concrete frame with anchor	m2			2,000		2,000
412	Stone masonry parapet	m3	600	7,100	5,700	9,100	22,500
413	Land-slide protection Large scale	pcs.					
414	Land-slide protection small scale	pcs.					
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m	1,200				
502	Stone masonry guard block type-B	m	10,000				
503	Road traffic sign typeA	pcs.	30				30
504	Road traffic sign typeB	pcs.	30				30
505	Distance sign 1km	pcs.	29				29
506	Distance sign 5km	pcs.	8				8
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m					0
602	Vented causeway	m					0
603	Submersible bridge	m					0
700	MAJOR BRIDGES (2 lanes)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
702-2	(New) Shindhuse Bridge (PCB) 2@25=50	m2	325				325
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadculi bridge (PCB)	L.S	1				1
706-2	(New) Andheriel bridge (PCB) 5@25=125	m2		813			813
706-3	(New) Nigauli bridge (PCB) 6@25=150	m2			975		975
706-4	(New) Arubote bridge (PCB) 5@25=100	m2			650		650
706-5	(New) Khakare bridge (PCB) 2@25=50	m2			325		325
706-6	(New) Bhote bridge (PCB) 3@25=75	m2			488		488
706-7	(New) Gangate bridge (PCB) 2@25=50	m2			325		325
706-8	(New) Dhamile bridge (PCB) 3@25=75	m2			488		488
706-9	(New) Sandi bridge (PCB) 4@25=100	m2			650		650
706-10	(New) Ghyampe bridge (PCB) 10@30=300	m2				1,950	1,950
706-11	(New) Mamti bridge (PCB) 4@25=100	m2				650	650
706-12	(New) Bhyakure bridge (PCB) 4@25=100	m2				650	650
707	Daune bridge (DECK TRUSS)	L.S				1	1

Table 2 Work Quantities of Alternative-1 Second stage

Item No.	Description	Unit	Alternative-1 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (2lane)						
801	Prestressed concrete Tshaped beam, 20m span	m2	160			80	240
802	Steel H shaped beam, 20m span	m2		400		80	480
803	Steel H shaped beam, 25m span	m2				100	100
804	Restoration of existing suspension bridge	L.S					0
900	MISCELLANEOUS						
901	maintain of access road	km					0
902	Removal of debris	km		34	22	41	97

Table 3 Work Quantities of Alternative-2 First stage

Item No.	Description	Unit	Alternative-2 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accommodation and maintain of Engineer's staff houses(H),offices(O) and laboratories(L)	L.S.		OLH	O	OLH	
				0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m ²		387,600	577,000	912,000	1,876,600
102	Clearing in forest area	m ²		356,000			356,000
103	Removal of top soil t=20cm	m ³		51,400	39,200	61,800	152,400
104	Excavation ,common, side spoil	m ³		4,048	48,406	41,911	94,365
105	Excavation,rock,side spoil	m ³		1,454	8,758	12,269	22,481
106	Excavation ,common, spoil bank l=1000m	m ³		216,008			216,008
107	Excavation,rock,spoil bank l=1000m	m ³		77,610			77,610
108	Cutting and filling,common,cross filling	m ³		108,944	55,409	108,960	273,313
109	Cutting and filling,rock,cross filling	m ³		39,143	10,025	31,897	81,065
110	Cutting and filling,common,l=1000m	m ³		354,219	205,317	333,137	892,673
111	Cutting and filling,rock,l=1000m	m ³	10,000	126,958	37,147	97,524	271,629
112	Borrow filling,l=500m	m ³	300		344,282	200,758	545,340
200	PAVEMENT WORKS						
201	Subgrade preparation	m ²	5,700	194,900	158,100	250,600	609,300
202	Subbase course	m ³	1,710	58,500	47,500	75,200	182,910
203	Base course	m ³					0
204	Surface course, penetration macadam, t=3cm	m ²		81,100	47,900	50,500	179,500
205	Surface course, penetration macadam, t=5cm	m ²					0
206	Surface course, asphalt concrete, t=3cm	m ²					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martal, 0.75x0.50	m					0
302	Side drain,stone masonry with 1:6 martal, 0.50x0.30	m		32,500	21,700	41,300	95,500
303	Side drain,stone masonry with 1:6 martal, 0.40x0.30	m		5,000	10,000	5,000	20,000
304	Grouted riprap lined ditch	m	2,400	10,500	20,000	18,000	50,900
305	Channel,stone masonry with 1:4 martal,type A	m		2,150			2,150
306	Channel,stone masonry with 1:4 martal,type B	m		940			940
307	Channel,gabion wall,type A	m		600			600
308	Channel,gabion wall,type B	m		600			600
309	Subsoil drain,0.3x0.6	m		8,000	3,000	22,000	33,000
310	R.C.C. pipe culvert D=0.6m	pcs.		16	70	181	267
311	R.C.C. pipe culvert D=0.9m	pcs.		2	6	45	53
312	Corrugated pipe culvert D=0.6m	pcs.		176	69	47	292
313	Corrugated pipe culvert D=1.0m	pcs.		22	21	12	55
314	Corrugated arch culvert R=2.5m	pcs.		11	7	4	22
315	Slab culvert S=5m	pcs.		12	15	28	55
316	Slab culvert S=10m	pcs.			1	4	5
317	Box culvert 3.0x3.0	pcs.				1	1
318	Check dam,type-A	pcs.		25	25	70	120
319	Check dam,type-B	pcs.		24	6	6	36
400	SLOPE PROTECTION WORKS						
401	Dry stone wall	m ²					0

Table 3 Work Quantities of Alternative-2 First stage

Item No.	Description	Unit	Alternative-2 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
402	Banded dry stone wall	m2			3,000		3,000
403	Stone cement masonry wall	m2			18,800	40,700	59,500
404	Plugged stone concrete wall	m3			12,300	21,300	33,600
405	Gabion wall	m3		93,400	47,400	58,700	199,500
406	Gabion mattress	m3			8,400	13,100	21,500
407	Boulder protection	m3			16,800	26,200	43,000
408	Sodding	m2		188,100	183,500	260,900	632,500
409	Concrete spray	m2					0
410	Concrete spray with rock bolt	m2					0
411	Concrete frame with anchor	m2					0
412	Stone masonry parapet	m3		6,200	3,600	4,500	14,300
413	Land-slide protection Large scale	pcs.		1			1
414	Land-slide protection small scale	pcs.		15	4	27	46
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m		13,000	7,500	9,400	29,900
502	Stone masonry guard block type-B	m		10,000	10,000	15,000	35,000
503	Road traffic sign typeA	pcs.		30	30	30	90
504	Road traffic sign typeB	pcs.		30	30	30	90
505	Distance sign 1km	pcs.		31	25	40	96
506	Distance sign 5km	pcs.		8	6	10	24
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m	850	175	811	545	2,381
602	Vented causeway	m		35	44	66	145
603	Submersible bridge	m				115	115
700	MAJOR BRIDGES (1 lanes considering widening)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
703	Kamala bridge (PCB)	L.S	1				1
704	Phitang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadeuli bridge (PCB)	L.S	1				1
707	Daune bridge (DECK TRUSS)	L.S				1	1
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (1lane considering widdenig)						
801	Prestressed concrete Tshaped beam ,20m span	m2	190			95	285
802	Steel H shaped beam, 20m span	m2		475		95	570
803	Steel H shaped beam, 25m span	m2				119	119
804	Restoration of existing suspension bridge	L.S				1	1
900	MISCELLANEOUS						
901	maintain of access road	km		19	19	19	57
902	Removal of debris	km		34	22	41	97

Table 4 Work Quantities of Alternative-2 Second stage

Item No.	Description	Unit	Alternative-2 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff houses(H),officos(O) and laboratories(L)	L.S.		0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m2	677,700	50,300	90,800	153,500	972,300
102	Clearing in forest area	m2		46,200			46,200
103	Removal of top soil t=20cm	m3	22,900	4,800	4,500	7,700	39,900
104	Excavation, common, side spoil	m3					0
105	Excavation, rock, side spoil	m3					0
106	Excavation, common, spoil bank l=1000m	m3	185,838	184,900	15,900	34,400	421,038
107	Excavation, rock, spoil bank l=1000m	m3	65,300	247,600	169,200	353,500	835,600
108	Cutting and filling, common, cross filling	m3	37,500				37,500
109	Cutting and filling, rock, cross filling	m3	13,200				13,200
110	Cutting and filling, common, l=1000m	m3	79,600	18,100	32,700	52,300	182,700
111	Cutting and filling, rock, l=1000m	m3	27,900	24,200			52,100
112	Borrow filling, l=500m	m3					0
112-2	Realignment of causeway sections	km	0.50	0.50	7.50	3.20	12
200	PAVEMENT WORKS						
201	Subgrade preparation	m2	277,400	292,100	237,000	375,600	1,182,100
202	Subbase course	m3	97,090	48,500	39,300	62,300	247,190
203	Base course	m3	52,706	49,657	40,290	63,852	206,505
204	Surface course, penetration macadam, t=3cm	m2					0
205	Surface course, penetration macadam, t=5cm	m2	277,400	292,100	237,000	375,600	1,182,100
206	Surface course, asphalt concrete, t=3cm	m2					0
300	DRAINAGE WORKS						
301	Side drain, stone masonry with 1:6 martal, 0.75x0.50	m	26,400	34,850	24,650	45,000	130,900
302	Side drain, stone masonry with 1:6 martal, 0.50x0.30	m					0
303	Side drain, stone masonry with 1:6 martal, 0.40x0.30	m					0
304	Grouted riprap lined ditch	m	21,400				21,400
305	Channel, stone masonry with 1:4 martal, type A	m					0
306	Channel, stone masonry with 1:4 martal, type B	m					0
307	Channel, gabion wall, type A	m					0
308	Channel, gabion wall, type B	m					0
309	Subsoil drain, 0.3x0.6	m					0
310	R.C.C. pipe culvert D=0.6m	pcs.	180				180
311	R.C.C. pipe culvert D=0.9m	pcs.					0
312	Corrugated pipe culvert D=0.6m	pcs.					0
313	Corrugated pipe culvert D=1.0m	pcs.					0
314	Corrugated arch culvert R=2.5m	pcs.					0
315	Slab culvert S=5m	pcs.					0
316	Slab culvert S=10m	pcs.					0
317	Box culvert 3.0x3.0	pcs.					0
318	Check dam, type-A	pcs.					0
319	Check dam, type-B	pcs.					0
400	SLOPE PROTECTION WORKS						

Table 4 Work Quantities of Alternative-2 Second stage

Item No.	Description	Unit	Alternative-2 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
401	Dry stone wall	m2	27,200	12,700	13,100	18,800	71,800
402	Banded dry stone wall	m2	41,500	192,600	89,400	172,200	495,700
403	Stone cement masonry wall	m2					
404	Plugged stone concrete wall	m3					
405	Gabion wall	m3	7,600				
406	Gabion mattress	m3					
407	Boulder protection	m3					
408	Sodding	m2	146,600	12,000	3,000	11,900	173,500
409	Concrete spray	m2	6,600	53,000	26,100	43,800	129,500
410	Concrete spray with rock bolt	m2			2,000		2,000
411	Concrete frame with anchor	m2			2,000		2,000
412	Stone masonry parapet	m3	600	7,100	5,700	9,100	22,500
413	Land-slide protection Large scale	pcs.					
414	Land-slide protection small scale	pcs.					
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m	1,200				
502	Stone masonry guard block type-B	m	10,000				
503	Road traffic sign typeA	pcs.	30				30
504	Road traffic sign typeB	pcs.	30				30
505	Distance sign 1km	pcs.	29				29
506	Distance sign 5km	pcs.	8				8
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m					0
602	Vented causeway	m					0
603	Submersible bridge	m					0
700	MAJOR BRIDGES (2 lanes)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
702-2	(New) Shindhuse Bridge (PCB) 2@25=50	m2	325				325
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadeuli bridge (PCB)	L.S	1				1
706-2	(New) Andheriel bridge (PCB) 5@25=125	m2		813			813
706-3	(New) Nigauli bridge (PCB) 6@25=150	m2			975		975
706-4	(New) Arubote bridge (PCB) 5@25=100	m2			650		650
706-5	(New) Khakare bridge (PCB) 2@25=50	m2			325		325
706-6	(New) Bhote bridge (PCB) 3@25=75	m2			488		488
706-7	(New) Gangate bridge (PCB) 2@25=50	m2			325		325
706-8	(New) Dhamile bridge (PCB) 3@25=75	m2			488		488
706-9	(New) Sandi bridge (PCB) 4@25=100	m2			650		650
706-10	(New) Ghyampe bridge (PCB) 10@30=300	m2				1,950	1,950
706-11	(New) Mamti bridge (PCB) 4@25=100	m2				650	650
706-12	(New) Bhyakure bridge (PCB) 4@25=100	m2				650	650
707	Daune bridge (DECK TRUSS)	L.S				1	1

Table 4 Work Quantities of Alternative-2 Second stage

Item No.	Description	Unit	Alternative-2 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (2lane)						
801	Prestressed concrete Tshaped beam ,20m span	m2	160			80	240
802	Steel H shaped beam, 20m span	m2		400		80	480
803	Steel H shaped beam, 25m span	m2				100	100
804	Restoration of existing suspension bridge	L.S					0
900	MISCELLANEOUS						
901	maintain of access road	km					0
902	Removal of debris	km		34	22	41	97

Table 5 Work Quantities of Alternative-3 First stage

Item No.	Description	Unit	Alternative-3 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff			OLH	O	OLH	
	houses(H),offices(O) and laboratories(L)	L.S.		0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m ²		387,600	577,000	912,000	1,876,600
102	Clearing in forest area	m ²		356,000			356,000
103	Removal of top soil t=20cm	m ³		51,400	39,200	61,800	152,400
104	Excavation, common, side spoil	m ³		4,048	48,406	41,911	94,365
105	Excavation, rock, side spoil	m ³		1,454	8,758	12,269	22,481
106	Excavation, common, spoil bank l=1000m	m ³		216,008			216,008
107	Excavation, rock, spoil bank l=1000m	m ³		77,610			77,610
108	Cutting and filling, common, cross filling	m ³		108,944	55,409	108,960	273,313
109	Cutting and filling, rock, cross filling	m ³		39,143	10,025	31,897	81,065
110	Cutting and filling, common, l=1000m	m ³		354,219	205,317	333,137	892,673
111	Cutting and filling, rock, l=1000m	m ³	10,000	126,958	37,147	97,524	271,629
112	Borrow filling, l=500m	m ³	300		344,282	200,758	545,340
200	PAVEMENT WORKS						
201	Subgrade preparation	m ²	185,000	194,900	158,100	250,600	788,600
202	Subbase course	m ³	64,400	87,700	71,100	112,800	336,000
203	Base course	m ³	38,600	35,100	28,500	45,100	147,300
204	Surface course, penetration macadam, t=3cm	m ²					0
205	Surface course, penetration macadam, t=5cm	m ²	185,000	194,900	158,100	250,600	788,600
206	Surface course, asphalt concrete, t=3cm	m ²					0
300	DRAINAGE WORKS						
301	Side drain, stone masonry with 1:6 marial, 0.75x0.50	m					0
302	Side drain, stone masonry with 1:6 marial, 0.50x0.30	m		32,500	21,700	41,300	95,500
303	Side drain, stone masonry with 1:6 marial, 0.40x0.30	m	37,100	5,000	10,000	5,000	57,100
304	Grouted riprap lined ditch	m	2,400	10,500	20,000	18,000	50,900
305	Channel, stone masonry with 1:4 marial, type A	m		2,150			2,150
306	Channel, stone masonry with 1:4 marial, type B	m		940			940
307	Channel, gabion wall, type A	m		600			600
308	Channel, gabion wall, type B	m		600			600
309	Subsoil drain, 0.3x0.6	m		8,000	3,000	22,000	33,000
310	R.C.C. pipe culvert D=0.6m	pcs.		16	70	181	267
311	R.C.C. pipe culvert D=0.9m	pcs.		2	6	45	53
312	Corrugated pipe culvert D=0.6m	pcs.		176	69	47	292
313	Corrugated pipe culvert D=1.0m	pcs.		22	21	12	55
314	Corrugated arch culvert R=2.5m	pcs.		11	7	4	22
315	Slab culvert S=5m	pcs.		12	15	28	55
316	Slab culvert S=10m	pcs.			1	4	5
317	Box culvert 3.0x3.0	pcs.				1	1
318	Check dam, type-A	pcs.		25	25	70	120
319	Check dam, type-B	pcs.		24	6	6	36
400	SLOPE PROTECTION WORKS						
401	Dry stone wall	m ²					0

Table 5 Work Quantities of Alternative-3 First stage

Item No.	Description	Unit	Alternative-3 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
402	Banded dry stone wall	m2			3,000		3,000
403	Stone cement masonry wall	m2			18,800	40,700	59,500
404	Plugged stone concrete wall	m3			12,300	21,300	33,600
405	Gabion wall	m3		93,400	47,400	58,700	199,500
406	Gabion mattress	m3			8,400	13,100	21,500
407	Boulder protection	m3			16,800	26,200	43,000
408	Sodding	m2		188,100	183,500	260,900	632,500
409	Concrete spray	m2					0
410	Concrete spray with rock bolt	m2					0
411	Concrete frame with anchor	m2					0
412	Stone masonry parapet	m3		6,200	3,600	4,500	14,300
413	Land-slide protection Large scale	pcs.		1			1
414	Land-slide protection small scale	pcs.		15	4	27	46
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m		13,000	7,500	9,400	29,900
502	Stone masonry guard block type-B	m		10,000	10,000	15,000	35,000
503	Road traffic sign typeA	pcs.		30	30	30	90
504	Road traffic sign typeB	pcs.		30	30	30	90
505	Distance sign 1km	pcs.		31	25	40	96
506	Distance sign 5km	pcs.		8	6	10	24
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m	850	175	811	545	2,381
602	Vented causeway	m		35	44	66	145
603	Submersible bridge	m				115	115
700	MAJOR BRIDGES (1 lanes)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadouli bridge (PCB)	L.S	1				1
707	Daune bridge (DECK TRUSS)	L.S				1	1
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (1lane)						
801	Prestressed concrete Tshaped beam ,20m span	m2	160			80	240
802	Steel H shaped beam, 20m span	m2		400		80	480
803	Steel H shaped beam, 25m span	m2				100	100
804	Restoration of existing suspension bridge	L.S				1	1
900	MISCELLANEOUS						
901	maintain of access road	km		19	19	19	57
902	Removal of debris	km		34	22	41	97

Table 6 Work Quantities of Alternative-3 Second stage

Item No.	Description	Unit	Alternative-3 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff houses(H),offices(O) and laboratories(L)	L.S.		O L H 0.45	O 0.10	O L H 0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m ²	677,700	50,300	90,800	153,500	972,300
102	Clearingin forest area	m ²		46,200			46,200
103	Removal of top soil t=20cm	m ³	22,900	4,800	4,500	7,700	39,900
104	Excavation ,common, side spoil	m ³					0
105	Excavation,rock,side spoil	m ³					0
106	Excavation ,common, spoil bank l=1000m	m ³	185,838	184,900	15,900	34,400	421,038
107	Excavation,rock,spoil bank l=1000m	m ³	65,300	247,600	169,200	353,500	835,600
108	Cutting and filling,common,cross filling	m ³	37,500				37,500
109	Cutting and filling,rock,cross filling	m ³	13,200				13,200
110	Cutting and filling,common,l=1000m	m ³	79,600	18,100	32,700	52,300	182,700
111	Cutting and filling,rock,l=1000m	m ³	27,900	24,200			52,100
112	Borrow filling,l=500m	m ³					0
112-2	Realignment of causeway sections	km	0.50	0.50	7.50	3.20	12
200	PAVEMENT WORKS						
201	Subgrade preparation	m ²	277,400	292,100	237,000	375,600	1,182,100
202	Subbase course	m ³	23,400	24,600	20,000	31,700	99,700
203	Base course	m ³	15,400	16,200	13,100	20,800	65,500
204	Surface course, penetration macadam, t=3cm	m ²					0
205	Surface course, penetration macadam, t=5cm	m ²	277,400	292,100	237,000	375,600	1,182,100
206	Surface course, asphalt concrete, t=3cm	m ²					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martal, 0.75x0.50	m	26,400	34,850	24,650	45,000	130,900
302	Side drain,stone masonry with1:6 martal, 0.50x0.30	m					0
303	Side drain,stone masonry with1:6 martal, 0.40x0.30	m					0
304	Grouted riprap lined ditch	m					0
305	Channel,stone masonry with 1:4 martal,type A	m					0
306	Channel,stone masonry with 1:4 martal,type B	m					0
307	Channel,gabion wall,type A	m					0
308	Channel,gabion wall,type B	m					0
309	Subsoil drain,0.3x0.6	m					0
310	R.C.C. pipe culvert D=0.6m	pcs.					0
311	R.C.C. pipe culvert D=0.9m	pcs.					0
312	Corrugated pipe culvert D=0.6m	pcs.					0
313	Corrugated pipe culvert D=1.0m	pcs.					0
314	Corrugated arch culvert R=2.5m	pcs.					0
315	Slab culvert S=5m	pcs.					0
316	Slab culvert S=10m	pcs.					0
317	Box culvert 3.0x3.0	pcs.					0
318	Check dam,type-A	pcs.					0
319	Check dam,type-B	pcs.					0
400	SLOPE PROTECTION WORKS						

Table 6 Work Quantities of Alternative-3 Second stage

Item No.	Description	Unit	Alternative-3 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
401	Dry stone wall	m2	27,200	12,700	13,100	18,800	71,800
402	Banded dry stone wall	m2	41,500	192,600	89,400	172,200	495,700
403	Stone cement masonry wall	m2					
404	Plugged stone concrete wall	m3					
405	Gabion wall	m3	7,600				
406	Gabion mattress	m3					
407	Boulder protection	m3					
408	Sodding	m2	146,600	12,000	3,000	11,900	173,500
409	Concrete spray	m2	6,600	53,000	26,100	43,800	129,500
410	Concrete spray with rock bolt	m2			2,000		2,000
411	Concrete frame with anchor	m2			2,000		2,000
412	Stone masonry parapet	m3	600				
413	Land-slide protection Large scale	pcs.					
414	Land-slide protection small scale	pcs.					
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m	1,200				
502	Stone masonry guard block type-B	m	10,000				
503	Road traffic sign typeA	pcs.	30				30
504	Road traffic sign typeB	pcs.	30				30
505	Distance sign 1km	pcs.	29				29
506	Distance sign 5km	pcs.	8				8
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m					0
602	Vented causeway	m					0
603	Submersible bridge	m					0
700	MAJOR BRIDGES (2 lanes)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
702-2	(New) Shindhuse Bridge (PCB) 2@25=50	m2	325				325
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadeuli bridge (PCB)	L.S	1				1
706-2	(New) Andheriel bridge (PCB) 5@25=125	m2		813			813
706-3	(New) Nigauli bridge (PCB) 6@25=150	m2			975		975
706-4	(New) Arubote bridge (PCB) 5@25=100	m2			650		650
706-5	(New) Khakare bridge (PCB) 2@25=50	m2			325		325
706-6	(New) Bhote bridge (PCB) 3@25=75	m2			488		488
706-7	(New) Gangate bridge (PCB) 2@25=50	m2			325		325
706-8	(New) Dhamile bridge (PCB) 3@25=75	m2			488		488
706-9	(New) Sandi bridge (PCB) 4@25=100	m2			650		650
706-10	(New) Ghyampe bridge (PCB) 1:3@30=300	m2				1,950	1,950
706-11	(New) Mamti bridge (PCB) 4@25=100	m2				650	650
706-12	(New) Bhyakure bridge (PCB) 4@25=100	m2				650	650
707	Daune bridge (DECK TRUSS)	L.S				1	1

Table 6 Work Quantities of Alternative-3 Second stage

Item No.	Description	Unit	Alternative-3 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
708	Narke bridge (DECK TRUSS)	LS				1	1
709	Rosi bridge (TRUSS)	LS				1	1
800	MINNER BRIDGES (2lane)						
801	Prestressed concrete Tshaped beam ,20m span	m2	160			80	240
802	Steel H shaped beam, 20m span	m2		400		80	480
803	Steel H shaped beam, 25m span	m2				100	100
804	Restoration of existing suspension bridge	LS					0
900	MISCELLANEOUS						
901	maintain of access road	km					0
902	Removal of debris	km		34	22	41	97

Table 7 Work Quantities of Alternative-4 First stage

Item No.	Description	Unit	Alternative-4 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff houses(H),offices(O) and laboratories(L)	L.S.		0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m ²		387,600	577,000	912,000	1,876,600
102	Clearing in forest area	m ²		356,000			356,000
103	Removal of top soil t=20cm	m ³		51,400	39,200	61,800	152,400
104	Excavation ,common, side spoil	m ³		4,048	48,406	41,911	94,365
105	Excavation,rock,side spoil	m ³		1,454	8,758	12,269	22,481
106	Excavation ,common, spoil bank l=1000m	m ³		216,008			216,008
107	Excavation,rock,spoil bank l=1000m	m ³		77,610			77,610
108	Cutting and filling,common,cross filling	m ³		108,944	55,409	108,960	273,313
109	Cutting and filling,rock,cross filling	m ³		39,143	10,025	31,897	81,065
110	Cutting and filling,common,l=1000m	m ³		354,219	205,317	333,137	892,673
111	Cutting and filling,rock,l=1000m	m ³	10,000	126,958	37,147	97,524	271,629
112	Borrow filling,l=500m	m ³	300		344,282	200,758	545,340
200	PAVEMENT WORKS						
201	Subgrade preparation	m ²	185,000	194,900	158,100	250,600	788,600
202	Subbase course	m ³	64,400	87,700	71,100	112,800	336,000
203	Base course	m ³	38,600	35,100	28,500	45,100	147,300
204	Surface course, penetration macadam, t=3cm	m ²					0
205	Surface course, penetration macadam, t=5cm	m ²	185,000	194,900	158,100	250,600	788,600
206	Surface course, asphalt concrete, t=3cm	m ²					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martial, 0.75x0.50	m					0
302	Side drain,stone masonry with 1:6 martial, 0.50x0.30	m		32,500	21,700	41,300	95,500
303	Side drain,stone masonry with 1:6 martial, 0.40x0.30	m	37,100	5,000	10,000	5,000	57,100
304	Grouted riprap lined ditch	m	2,400	10,500	20,000	18,000	50,900
305	Channel,stone masonry with 1:4 martial,type A	m		2,150			2,150
306	Channel,stone masonry with 1:4 martial,type B	m		940			940
307	Channel,gabion wall,type A	m		600			600
308	Channel,gabion wall,type B	m		600			600
309	Subsoil drain,0.3x0.6	m		8,000	3,000	22,000	33,000
310	R.C.C. pipe culvert D=0.6m	pcs.		16	70	181	267
311	R.C.C. pipe culvert D=0.9m	pcs.		2	6	45	53
312	Corrugated pipe culvert D=0.6m	pcs.		176	69	47	292
313	Corrugated pipe culvert D=1.0m	pcs.		22	21	12	55
314	Corrugated arch culvert R=2.5m	pcs.		11	7	4	22
315	Slab culvert S=5m	pcs.		12	15	28	55
316	Slab culvert S=10m	pcs.			1	4	5
317	Box culvert 3.0x3.0	pcs.				1	1
318	Check dam,type-A	pcs.		25	25	70	120
319	Check dam,type-B	pcs.		24	6	6	36
400	SLOPE PROTECTION WORKS						
401	Dry stone wall	m ²					0

Table 7 Work Quantities of Alternative-4 First stage

Item No.	Description	Unit	Alternative-4 First stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
402	Banded dry stone wall	m2			3,000		3,000
403	Stone cement masonry wall	m2			18,800	40,700	59,500
404	Plugged stone concrete wall	m3			12,300	21,300	33,600
405	Gabion wall	m3		93,400	47,400	58,700	199,500
406	Gabion matress	m3			8,400	13,100	21,500
407	Boulder protection	m3			16,800	26,200	43,000
408	Sodding	m2		188,100	183,500	260,900	632,500
409	Concrete spray	m2					0
410	Concrete spray with rock bolt	m2					0
411	Concrete frame with anchor	m2					0
412	Stone masonry parapet	m3		6,200	3,600	4,500	14,300
413	Land-slide protection Large scale	pcs.		1			1
414	Land-slide protection small scale	pcs.		15	4	27	46
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m		13,000	7,500	9,400	29,900
502	Stone masonry guard block type-B	m		10,000	10,000	15,000	35,000
503	Road traffic sign typeA	pcs.		30	30	30	90
504	Road traffic sign typeB	pcs.		30	30	30	90
505	Distance sign 1km	pcs.		31	25	40	96
506	Distance sign 5km	pcs.		8	6	10	24
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m	850	175	811	545	2,381
602	Vented causeway	m		35	44	66	145
603	Submersible bridge	m				115	115
700	MAJOR BRIDGES (1 lanes considering widdening)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadeuli bridge (PCB)	L.S	1				1
707	Daune bridge (DECK TRUSS)	L.S				1	1
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (1lane considering widdening)						
801	Prestressed concrete Tshaped beam ,20m span	m2	190			95	285
802	Steel H shaped beam, 20m span	m2		475		95	570
803	Steel H shaped beam, 25m span	m2				119	119
804	Restoration of existing suspension bridge	L.S				1	1
900	MISCELLANEOUS						
901	maintain of access road	km		19	19	19	57
902	Removal of debris	km		34	22	41	97

Table 8 Work Quantities of Alternative-4 Second stage

Item No.	Description	Unit	Alternative-4 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accommodation and maintain of Engineer's staff houses(H),offices(O) and laboratories(L)	L.S.		O L H	O	O L H	
				0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m ²	677,700	50,300	90,800	153,500	972,300
102	Clearing in forest area	m ²		46,200			46,200
103	Removal of top soil t=20cm	m ³	22,900	4,800	4,500	7,700	39,900
104	Excavation ,common, side spoil	m ³					0
105	Excavation,rock,side spoil	m ³					0
106	Excavation ,common, spoil bank l=1000m	m ³	185,838	184,900	15,900	34,400	421,038
107	Excavation,rock,spoil bank l=1000m	m ³	65,300	247,600	169,200	353,500	835,600
108	Cutting and filling,common,cross filling	m ³	37,500				37,500
109	Cutting and filling,rock,cross filling	m ³	13,200				13,200
110	Cutting and filling,common,l=1000m	m ³	79,600	18,100	32,700	52,300	182,700
111	Cutting and filling,rock,l=1000m	m ³	27,900	24,200			52,100
112	Borrow filling,l=500m	m ³					0
112-2	Realignment of causeway sections	km	0.50	0.50	7.50	3.20	12
200	PAVEMENT WORKS						
201	Subgrade preparation	m ²	277,400	292,100	237,000	375,600	1,182,100
202	Subbase course	m ³	23,400	24,600	20,000	31,700	99,700
203	Base course	m ³	15,400	16,200	13,100	20,800	65,500
204	Surface course, penetration macadam, t=3cm	m ²					0
205	Surface course, penetration macadam, t=5cm	m ²	277,400	292,100	237,000	375,600	1,182,100
206	Surface course, asphalt concrete, t=3cm	m ²					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martial, 0.75x0.50	m	26,400	34,850	24,650	45,000	130,900
302	Side drain,stone masonry with 1:6 martial, 0.50x0.30	m					0
303	Side drain,stone masonry with 1:6 martial, 0.40x0.30	m					0
304	Grouted riprap lined ditch	m	21,400				21,400
305	Channel,stone masonry with 1:4 martial,type A	m					0
306	Channel,stone masonry with 1:4 martial,type B	m					0
307	Channel,gabion wall,type A	m					0
308	Channel,gabion wall,type B	m					0
309	Subsoil drain,0.3x0.6	m					0
310	R.C.C. pipe culvert D=0.6m	pcs.	180				180
311	R.C.C. pipe culvert D=0.9m	pcs.					0
312	Corrugated pipe culvert D=0.6m	pcs.					0
313	Corrugated pipe culvert D=1.0m	pcs.					0
314	Corrugated arch culvert R=2.5m	pcs.					0
315	Slab culvert S=5m	pcs.					0
316	Slab culvert S=10m	pcs.					0
317	Box culvert 3.0x3.0	pcs.					0
318	Check dam,type-A	pcs.					0
319	Check dam,type-B	pcs.					0
400	SLOPE PROTECTION WORKS						

Table 8 Work Quantities of Alternative-4 Second stage

Item No.	Description	Unit	Alternative-4 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
401	Dry stone wall	m2	27,200	12,700	13,100	18,800	71,800
402	Banded dry stone wall	m2	41,500	192,600	89,400	172,200	495,700
403	Stone cement masonry wall	m2					
404	Plugged stone concrete wall	m3					
405	Gabion wall	m3	7,600				
406	Gabion mattress	m3					
407	Boulder protection	m3					
408	Sodding	m2	146,600	12,000	3,000	11,900	173,500
409	Concrete spray	m2	6,600	53,000	26,100	43,800	129,500
410	Concrete spray with rock bolt	m2			2,000		2,000
411	Concrete frame with anchor	m2			2,000		2,000
412	Stone masonry parapet	m3	600				
413	Land-slide protection Large scale	pcs.					
414	Land-slide protection small scale	pcs.					
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m	1,200				
502	Stone masonry guard block type-B	m	10,000				
503	Road traffic sign typeA	pcs.	30				30
504	Road traffic sign typeB	pcs.	30				30
505	Distance sign 1km	pcs.	29				29
506	Distance sign 5km	pcs.	8				8
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m					0
602	Vented causeway	m					0
603	Submersible bridge	m					0
700	MAJOR BRIDGES (2 lanes)						
701	Bhogate bridge (PCB)	L.S	1				1
702	Ratu bridge (PCB)	L.S	1				1
702-2	(New) Shindhuse Bridge (PCB) 2@25=50	m2	325				325
703	Kamala bridge (PCB)	L.S	1				1
704	Phittang bridge (PCB)	L.S	1				1
705	Buka bridge (PCB)	L.S	1				1
706	Gadeuli bridge (PCB)	L.S	1				1
706-2	(New) Andheriel bridge (PCB) 5@25=125	m2		813			813
706-3	(New) Nigauli bridge (PCB) 6@25=150	m2			975		975
706-4	(New) Arubote bridge (PCB) 5@25=100	m2			650		650
706-5	(New) Khakare bridge (PCB) 2@25=50	m2			325		325
706-6	(New) Bhote bridge (PCB) 3@25=75	m2			488		488
706-7	(New) Gangate bridge (PCB) 2@25=50	m2			325		325
706-8	(New) Dhamile bridge (PCB) 3@25=75	m2			488		488
706-9	(New) Sandi bridge (PCB) 4@25=100	m2			650		650
706-10	(New) Ghyampe bridge (PCB) 10@30=300	m2				1,950	1,950
706-11	(New) Mamti bridge (PCB) 4@25=100	m2				650	650
706-12	(New) Bhyakure bridge (PCB) 4@25=100	m2				650	650
707	Daune bridge (DECK TRUSS)	L.S				1	1

Table 8 Work Quantities of Alternative-4 Second stage

Item No.	Description	Unit	Alternative-4 Second stage				
			Section I	Section II-1	Section II-2	Section II-3	Total
708	Narke bridge (DECK TRUSS)	L.S				1	1
709	Rosi bridge (TRUSS)	L.S				1	1
800	MINNER BRIDGES (2lane)						
801	Prestressed concrete Tshaped beam ,20m span	m2	160			80	240
802	Steel H shaped beam, 20m span	m2		400		80	480
803	Steel H shaped beam, 25m span	m2				100	100
804	Restoration of existing suspension bridge	L.S					0
900	MISCELLANEOUS						
901	maintain of access road	km					0
902	Removal of debris	km		34	22	41	97

Table 9 Work Quantities of Alternative-5

Item No.	Description	Unit	Alternative-5				
			Section I	Section II-1	Section II-2	Section II-3	Total
A	GENERAL						
	Erection, accomodation and maintain of Engineer's staff			OLH	O	OLH	
	houos(F),offices(O) and laboratories(L)	L.S.		0.45	0.10	0.45	1.00
100	EARTH WORKS						
101	Clearing in open area	m2	677,700	437,900	667,800	1,065,400	2,848,800
102	Clearingin forest area	m2		402,100			402,100
103	Removal of top soil t=20cm	m3	22,900	30,500	24,100	38,600	116,100
104	Excavation ,common, side spoil	m3		19,800	81,100	101,000	201,900
105	Excavation,rock,side spoil	m3		11,800	37,800	35,300	84,900
106	Excavation ,common, spoil bank l=1000m	m3	185,838	373,400		72,300	631,538
107	Excavation,rock,spoil bank l=1000m	m3	65,300	261,800		25,300	352,400
108	Cutting and filling,common,ross filling	m3	37,500	113,200	81,100	16,800	248,600
109	Cutting and filling,rock,ross filling	m3	13,200	79,300	37,800	58,700	189,000
110	Cutting and filling,common,t=1000m	m3	79,600	330,000	352,300	458,600	1,220,500
111	Cutting and filling,rock,t=1000m	m3	27,900	175,800	164,000	163,800	531,500
112	Borrow filling,t=500m	m3			188,500		188,500
200	PAVEMENT WORKS						
201	Subgrade preparation	m2	277,400	292,100	237,000	375,600	1,182,100
202	Subbase course	m3	97,090	131,445	106,650	169,020	504,205
203	Base course	m3	52,706	49,657	40,290	63,852	206,505
204	Surface course, penetration macadam, t=3cm	m2					0
205	Surface course, penetration macadam, t=5cm	m2	277,400	292,100	237,000	375,600	1,182,100
206	Surface course, asphalt concrete, t=3cm	m2					0
300	DRAINAGE WORKS						
301	Side drain,stone masonry with 1:6 martal, 0.75x0.50	m	26,400	34,850	24,650	45,000	130,900
302	Side drain,stone masonry with1:6 martal, 0.50x0.30	m					0
303	Side drain,stone masonry with1:6 martal, 0.40x0.30	m		5,000	10,000	5,000	20,000
304	Grouted riprap lined ditch	m	21,400	8,400	10,000		39,800
305	Channel,stone masonry with 1:4 martal,type A	m		2,150			2,150
306	Channel,stone masonry with 1:4 martal,type B	m		940			940
307	Channel,gabion wall,type A	m		500			500
308	Channel,gabion wall,type B	m		500			500
309	Subsoil drain,0.3x0.6	m		8,000	3,000	22,000	33,000
310	R.C.C. pipe culvert D=0.6m	pcs.	180	16	70	181	447
311	R.C.C. pipe culvert D=0.9m	pcs.		2	6	45	53
312	Corrugated pipe culvert D=0.6m	pcs.		176	69	47	292
313	Corrugated pipe culvert D=1.0m	pcs.		22	21	9	52
314	Corrugated arch culvert R=2.5m	pcs.		11	7	4	22
315	Slab culvert S=5m	pcs.		12	15	28	55
316	Slab culvert S=10m	pcs.			1	4	5
317	Box culvert 3.0x3.0	pcs.				1	1
318	Check dam,type-A	pcs.		25	25	70	120
319	Check dam,type-B	pcs.		24	6	6	36
400	SLOPE PROTECTION WORKS						
401	Dry stone wall	m2	27,200	12,700	13,100	18,800	71,800

Table 9 Work Quantities of Alternative-5

Item No.	Description	Unit	Alternative-5				
			Section I	Section II-1	Section II-2	Section II-3	Total
402	Banded dry stone wall	m2	41,500	192,600	89,400	172,200	495,700
403	Stone cement masonry wall	m2			18,800	40,700	59,500
404	Plugged stone concrete wall	m3			12,300	21,300	33,600
405	Gabion wall	m3	7,600	99,000	50,100	62,000	218,700
406	Gabion mattress	m3			8,400	13,100	21,500
407	Boulder protection	m3			16,800	26,200	43,000
408	Sodding	m2	146,600	200,100	186,500	272,800	806,000
409	Concrete spray	m2	6,600	53,000	26,100	43,800	129,500
410	Concrete spray with rock bolt	m2			2,000		2,000
411	Concrete frame with anchor	m2			2,000		2,000
412	Stone masonry parapet	m3	600	6,200	3,600	4,500	14,900
413	Land-slide protection Large scale	pcs.		1			1
414	Land-slide protection small scale	pcs.		15	4	27	46
500	ROAD FURNITURE						
501	Stone masonry guard block type-A	m	1,200	13,000	7,500	9,400	31,100
502	Stone masonry guard block type-B	m	10,000	10,000	10,000	15,000	45,000
503	Road traffic sign typeA	pcs.	30	30	30	30	120
504	Road traffic sign typeB	pcs.	30	30	30	30	120
505	Distance sign 1km	pcs.	29	31	25	40	125
506	Distance sign 5km	pcs.	8	8	6	10	32
600	RIVER CROSSING STRUCTURES						
601	Bed level causeway	m	810	60	90	150	1,110
602	Vented causeway	m				36	36
603	Submersible bridge	m					0
700	MAJOR BRIDGES (2 lanes)						
701	Bhogate bridge (PCB)	m2	325				325
702	Ratu bridge (PCB)	m2	1,138				1,138
702-2	(New) Shindhuse Bridge (PCB) 2@25=50	m2	325				325
703	Kamala bridge (PCB)	m2	780				780
704	Phittang bridge (PCB)	m2	325				325
705	Buka bridge (PCB)	m2	325				325
706	Gadeuli bridge (PCB)	m2	325				325
706-2	(New) Andheriel bridge (PCB) 5@25=125	m2		813			813
706-3	(New) Nigauli bridge (PCB) 6@25=150	m2			975		975
706-4	(New) Arubote bridge (PCB) 5@25=100	m2			650		650
706-5	(New) Khakare bridge (PCB) 2@25=50	m2			325		325
706-6	(New) Bhote bridge (PCB) 3@25=75	m2			488		488
706-7	(New) Gangate bridge (PCB) 2@25=50	m2			325		325
706-8	(New) Dhamile bridge (PCB) 3@25=75	m2			488		488
706-9	(New) Sandi bridge (PCB) 4@25=100	m2			650		650
706-10	(New) Ghyampe bridge (PCB) 10@30=300	m2				1,950	1,950
706-11	(New) Mamti bridge (PCB) 4@25=100	m2				650	650
706-12	(New) Bhyakure bridge (PCB) 4@25=100	m2				650	650
707	Daune bridge (DECK TRUSS)	m2				325	325
708	Narke bridge (DECK TRUSS)	m2				358	358

Table 9 Work Quantities of Alternative-5

Item No.	Description	Unit	Alternative-5				
			Section I	Section II-1	Section II-2	Section II-3	Total
709	Rosi bridge (TRUSS)	m2				423	423
800	MINNER BRIDGES (2lane)						
801	Prestressed concrete Tshaped beam ,20m span	m2	260			130	390
802	Steel H shaped beam, 20m span	m2		650		130	780
803	Steel H shaped beam, 25m span	m2				163	163
804	Restoration of existing suspension bridge	L.S				1	1
900	MISCELLANEOUS						
901	maintain of access road	km		19	19	19	57
902	Removal of debris	km		34	22	41	97

Calculation sheet of Land Acquisition Area

Section I		Section II-1		Section II-2		Section II-3		No.	Area (m2)
No.	Area (m2)	No.	Area (m2)	No.	Area (m2)	No.	Area (m2)	No.	Area (m2)
1	8,058	1	5,760	1	4,787	1	5,294	61	21,640
2	8,158	2	8,790	2	3,820	2	15,182	62	15,029
3	4,350	3	2,812	3	17,661	3	17,936	63	11,725
4	5,096	4	5,458	4	3,205	4	9,789	64	15,428
5	10,279	5	16,515	5	2,510	5	17,698	65	1,128
6	10,510	6	13,060	6	5,869	6	1,061	66	840
7	12,703	7	26,527	7	15,397	7	3,670	67	2,269
8	13,178	8	22,302	8	11,175	8	999	68	10,269
9	4,160	9	28,292	9	1,100	9	18,938	69	7,314
10	2,890	10	16,129	10	4,885	10	4,522	70	3,037
11	3,385	11	48,477	11	19,835	11	4,984	71	13,225
12	3,328	12	13,057	12	17,140	12	20,160	72	9,684
13	4,392	13	3,734	13	7,564	13	2,557	73	4,489
14	11,534	14	3,017	14	2,559	14	6,225	74	1,922
15	12,509	15	2,024	15	7,080	15	25,866	75	916
16	2,078	16	11,500	16	2,929	16	8,616	76	2,642
17	2,092	17	12,363	17	6,563	17	8,760	77	11,755
18	2,827	18	8,221	18	3,156	18	4,338	78	6,581
19	1,005	19	7,503	19	3,244	19	7,606	79	17,937
20	14,546	20	12,986	20	1,436	20	16,538	80	15,515
21	3,904	21	1,254	21	32,740	21	8,122	81	18,522
22	2,377	22	1,320	22	5,601	22	11,379	82	4,560
23	2,681	23	23,328	23	19,181	23	2,147	83	11,640
24	1,239	24	3,282	24	17,296	24	6,682	84	6,105
25	1,756	25	3,583	25	1,013	25	10,260	85	7,908
26	3,358	26	17,834	26	19,638	26	14,692	86	6,340
27	4,101	27	3,228	27	1,650	27	1,643	87	6,728
28	1,665	28	3,107	28	6,470	28	13,156	88	12,004
29	4,217	29	2,860	29	10,730	29	998	89	3,323
30	4,859	30	1,454	30	1,376	30	6,196	90	2,915
31	1,834	31	7,997	31	3,437	31	14,361	91	4,498
32	1,712	32	5,582	32	2,494	32	4,982	92	1,510
33	2,845	33	4,988	33	3,316	33	8,531	93	1,654
34	2,593	34	17,475	34	10,567	34	4,129	94	1,554
35	2,435	35	20,728	35	31,717	35	30,221	95	1,183
36	3,563	36	6,110	36	8,028	36	15,965	96	1,077
37	1,638	37	7,269	37	21,126	37	21,089	97	4,566
38	8,446	38	9,919	38	30,493	38	12,377	98	9,809
39	1,702	39	17,323	39	9,851	39	9,996	99	28,368
40	6,401	40	6,681	40	3,293	40	19,603	100	6,752
41	2,702	41	15,070	41	2,360	41	9,997	101	8,995
42	2,047	42	18,360	42	8,710	42	26,852	102	5,749
43	1,665	43	6,426	43	6,396	43	17,401	103	3,141
44	22,783	44	2,283	44	16,797	44	21,169	104	4,165
45	2,144	45	1,114	45	15,049	45	8,069	105	6,400
46	9,830	46	14,510	46	14,748	46	12,359	106	11,326
47	15,854	47	10,693	47	12,588	47	8,078	107	26,452
48	5,609	48	8,907	48	6,180	48	14,131	108	27,157
49	9,690	49	4,914	49	1,895	49	9,097	109	5,321
50	675	50	6,389			50	2,117	110	1,218
51	5,504	51	8,427			51	5,469	111	9,019
52	1,270	52	12,301			52	2,220	112	6,095
		53	21,312			53	5,518	113	13,572
		54	20,305			54	987	114	2,581
		55	19,946			55	656	115	12,103
		56	10,513			56	4,946	116	2,818
		57	3,904			57	2,075	117	32,573
		58	3,351			58	7,984	118	5,757
						59	35,927	119	16,953
						60	30,685	120	17,737
Total	280,177	Total	622,574	Total	466,655	Total		Total	1,176,498
							Total Land Acquisition Area (m2) =		2,545,904

Number of Houses to be compensated (ROW = 50m)

Section I	380 nos.	Total	1,003 nos.
Section II-1	196 nos.		
Section II-2	185 nos.		
Section II-3	242 nos.		

Land acquisition and house compensation cost

Section I	Land acquisition		House compensation	
	Area(m2)	280,177	Number	380
	Rate(Nrs)	55	Rate(Nrs)	200,000
	Cost	15,409,735	Cost	76,000,000
			Total	91,409,735
Section II-1	Land acquisition		House compensation	
	Area(m2)	622,574	Number	196
	Rate(Nrs)	20	Rate(Nrs)	200,000
	Cost	12,451,480	Cost	39,200,000
			Total	51,651,480
Section II-2	Land acquisition		House compensation	
	Area(m2)	466,655	Number	185
	Rate(Nrs)	20	Rate(Nrs)	200,000
	Cost	9,333,100	Cost	37,000,000
			Total	46,333,100
Section II-3	Land acquisition		House compensation	
	Area(m2)	1,176,498	Number	242
	Rate(Nrs)	35 (2/3-20,1/3-60)	Rate(Nrs)	200,000
	Cost	41,177,430	Cost	48,400,000
			Total	89,577,430
			Section II Total	187,562 (1,000NRs)

APPENDIX – G

RESULT OF ECONOMIC EVALUATION

Alternative 1 - Total Evaluation -

Unit: Million NRs.

YEAR	E.S.	CON COS	OM COS	TOT COS	BE VOC	BE TIME	TO BEN	NET BEN
1993	142.0	0.0	0.0	142.0	0.0	0.0	0.0	-142.0
1994	36.0	575.0	0.0	611.0	0.0	0.0	0.0	-611.0
1995	36.0	575.0	0.0	611.0	0.0	0.0	0.0	-611.0
1996	36.0	575.0	0.0	611.0	0.0	0.0	0.0	-611.0
1997	36.0	575.0	0.0	611.0	0.0	0.0	0.0	-611.0
1998	36.0	575.0	0.0	611.0	0.0	0.0	0.0	-611.0
1999	34.0	582.0	115.0	731.0	163.8	9.4	173.2	-557.8
2000	0.0	0.0	26.0	26.0	177.5	10.1	187.6	161.6
2001	0.0	0.0	26.0	26.0	192.5	10.8	203.3	177.3
2002	0.0	0.0	26.0	26.0	208.6	11.4	220.0	194.0
2003	0.0	0.0	26.0	26.0	226.2	12.2	238.4	212.4
2004	0.0	0.0	26.0	26.0	245.1	13.1	258.2	232.2
2005	204.0	0.0	26.0	230.0	265.7	13.9	279.6	49.6
2006	78.0	1245.0	26.0	1349.0	288.0	14.8	302.8	-1046.2
2007	78.0	1245.0	26.0	1349.0	312.2	15.8	328.0	-1021.0
2008	76.0	1244.0	15.0	1335.0	338.5	16.9	355.4	-979.6
2009	76.0	1244.0	10.0	1330.0	366.9	18.0	384.9	-945.1
2010	0.0	0.0	7.0	7.0	901.1	101.1	1002.2	995.2
2011	0.0	0.0	7.0	7.0	976.8	107.9	1084.7	1077.7
2012	0.0	0.0	7.0	7.0	1058.4	115.1	1173.5	1166.5
2013	0.0	0.0	7.0	7.0	1147.8	122.8	1270.6	1263.6
2014	0.0	0.0	7.0	7.0	1244.2	131.0	1375.2	1368.2
2015	0.0	0.0	7.0	7.0	1348.7	139.8	1488.5	1481.5
2016	0.0	0.0	221.0	221.0	1462.0	149.2	1611.2	1390.2
2017	0.0	0.0	7.0	7.0	1584.8	159.2	1744.0	1737.0
2018	0.0	0.0	7.0	7.0	1717.9	169.9	1887.8	1880.8
2019	0.0	0.0	7.0	7.0	1862.2	181.2	2043.4	2036.4
2020	0.0	0.0	7.0	7.0	2018.7	193.4	2212.1	2205.1
2021	0.0	0.0	7.0	7.0	2188.2	206.3	2394.5	2387.5
2022	0.0	0.0	7.0	7.0	2372.1	220.2	2592.3	2585.3
2023	0.0	0.0	7.0	7.0	2571.3	234.9	2806.2	2799.2
							IRR	0.08079

Alternative 1 -- Partial Evaluation --

Unit: Million NRs.

YEAR	E.S.	CON COS	OM COS	TOT COS	BE VOC	BE TIME	TO BEN	NET BEN
1993	142.0	0.0	0.0	142.0	0.0	0.0	0.0	-142.0
1994	36.0	577.0	0.0	613.0	0.0	0.0	0.0	-613.0
1995	36.0	577.0	0.0	613.0	0.0	0.0	0.0	-613.0
1996	36.0	576.0	0.0	612.0	0.0	0.0	0.0	-612.0
1997	36.0	576.0	0.0	612.0	0.0	0.0	0.0	-612.0
1998	36.0	576.0	0.0	612.0	0.0	0.0	0.0	-612.0
1999	34.0	576.0	115.0	725.0	163.8	9.4	173.2	-551.8
2000	0.0	0.0	26.0	26.0	177.5	10.1	187.6	161.6
2001	0.0	0.0	26.0	26.0	192.5	10.8	203.3	177.3
2002	0.0	0.0	26.0	26.0	208.6	11.4	220.0	194.0
2003	0.0	0.0	178.0	178.0	226.2	12.2	238.4	60.4
2004	0.0	0.0	26.0	26.0	245.1	13.1	258.2	232.2
2005	0.0	0.0	26.0	26.0	265.7	13.9	279.6	253.6
2006	0.0	0.0	26.0	26.0	288.0	14.8	302.8	276.8
2007	0.0	0.0	26.0	26.0	312.2	15.8	328.0	302.0
2008	0.0	0.0	178.0	178.0	338.5	16.9	355.4	177.4
2009	0.0	0.0	26.0	26.0	366.9	18.0	384.9	358.9
2010	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2011	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2012	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2013	0.0	0.0	178.0	178.0	396.8	19.2	416.0	238.0
2014	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2015	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2016	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2017	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2018	0.0	0.0	178.0	178.0	396.8	19.2	416.0	238.0
2019	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2020	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2021	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2022	0.0	0.0	26.0	26.0	396.8	19.2	416.0	390.0
2023	0.0	0.0	178.0	178.0	396.8	19.2	416.0	238.0

IRR 0.04187

Alternative 2 - Total Evaluation -

Unit: Million NRs.

YEAR	E.S.	CON COS	OM COS	TOT COS	BE VOC	BE TIME	TOT BEN	NET BEN
1993	151.0	0.0	0.0	151.0	0.0	0.0	0.0	-151.0
1994	38.0	614.0	0.0	652.0	0.0	0.0	0.0	-652.0
1995	38.0	614.0	0.0	652.0	0.0	0.0	0.0	-652.0
1996	38.0	614.0	0.0	652.0	0.0	0.0	0.0	-652.0
1997	38.0	613.0	0.0	651.0	0.0	0.0	0.0	-651.0
1998	38.0	613.0	0.0	651.0	0.0	0.0	0.0	-651.0
1999	38.0	613.0	115.0	766.0	170.3	15.4	185.7	-580.3
2000	0.0	0.0	26.0	26.0	184.5	16.4	200.9	174.9
2001	0.0	0.0	26.0	26.0	200.1	17.5	217.6	191.6
2002	0.0	0.0	26.0	26.0	216.9	18.6	235.5	209.5
2003	0.0	0.0	26.0	26.0	235.1	20.0	255.1	229.1
2004	0.0	0.0	26.0	26.0	254.9	21.3	276.2	250.2
2005	194.0	0.0	26.0	220.0	276.2	22.7	298.9	78.9
2006	73.0	1187.0	26.0	1286.0	299.4	24.2	323.6	-962.4
2007	72.0	1186.0	26.0	1284.0	323.8	25.8	349.6	-934.4
2008	72.0	1186.0	15.0	1273.0	351.6	27.6	379.2	-893.8
2009	72.0	1186.0	10.0	1268.0	381.4	29.4	410.8	-857.2
2010	0.0	0.0	7.0	7.0	901.1	101.1	1002.2	995.2
2011	0.0	0.0	7.0	7.0	976.8	107.9	1084.7	1077.7
2012	0.0	0.0	7.0	7.0	1058.4	115.1	1173.5	1166.5
2013	0.0	0.0	7.0	7.0	1147.8	122.8	1270.6	1263.6
2014	0.0	0.0	7.0	7.0	1244.2	131.0	1375.2	1368.2
2015	0.0	0.0	7.0	7.0	1348.7	139.8	1488.5	1481.5
2016	0.0	0.0	221.0	221.0	1462.0	149.2	1611.2	1390.2
2017	0.0	0.0	7.0	7.0	1584.8	159.2	1744.0	1737.0
2018	0.0	0.0	7.0	7.0	1717.9	169.9	1887.8	1880.8
2019	0.0	0.0	7.0	7.0	1862.2	181.2	2043.4	2036.4
2020	0.0	0.0	7.0	7.0	2018.7	193.4	2212.1	2205.1
2021	0.0	0.0	7.0	7.0	2188.2	206.3	2394.5	2387.5
2022	0.0	0.0	7.0	7.0	2372.1	220.2	2592.3	2585.3
2023	0.0	0.0	7.0	7.0	2571.3	234.9	2806.2	2799.2
							IRR	0.08241

Alternative 2 – Partial Evaluation –

Unit: Million NRs.

YEAR	E.S.	CON COS	OM COS	TOT COS	BE VOC	BE TIME	TOT BEN	NET BEN
1993	151.0	0.0	0.0	151.0	0.0	0.0	0.0	-151.0
1994	38.0	614.0	0.0	652.0	0.0	0.0	0.0	-652.0
1995	38.0	614.0	0.0	652.0	0.0	0.0	0.0	-652.0
1996	38.0	614.0	0.0	652.0	0.0	0.0	0.0	-652.0
1997	38.0	613.0	0.0	651.0	0.0	0.0	0.0	-651.0
1998	38.0	613.0	0.0	651.0	0.0	0.0	0.0	-651.0
1999	38.0	613.0	115.0	766.0	170.3	15.4	185.7	-580.3
2000	0.0	0.0	26.0	26.0	184.5	16.4	200.9	174.9
2001	0.0	0.0	26.0	26.0	200.1	17.5	217.6	191.6
2002	0.0	0.0	26.0	26.0	216.9	18.6	235.6	209.6
2003	0.0	0.0	178.0	178.0	235.1	20.0	255.1	77.1
2004	0.0	0.0	26.0	26.0	254.9	21.3	276.2	250.2
2005	0.0	0.0	26.0	26.0	276.2	22.7	298.9	272.9
2006	0.0	0.0	26.0	26.0	299.4	24.2	323.6	297.6
2007	0.0	0.0	26.0	26.0	323.8	25.8	349.6	323.6
2008	0.0	0.0	178.0	178.0	351.6	27.6	379.1	201.1
2009	0.0	0.0	26.0	26.0	381.4	29.4	410.8	384.8
2010	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2011	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2012	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2013	0.0	0.0	178.0	178.0	413.3	31.3	444.6	266.6
2014	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2015	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2016	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2017	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2018	0.0	0.0	178.0	178.0	413.3	31.3	444.6	266.6
2019	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2020	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2021	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2022	0.0	0.0	26.0	26.0	413.3	31.3	444.6	418.6
2023	0.0	0.0	178.0	178.0	413.3	31.3	444.6	266.6
							IRR	0.04316

Alternative 3 - Total Evaluation -

Unit: Million NRs.

YEAR	E.S.	CON	COS	OM	COS	TOT	COS	BE	VOC	BE	TIME	TOT	BEN	NET	BEN
1993	167.0		0.0		0.0	167.0		0.0		0.0		0.0	0.0	-167.0	
1994	42.0	677.0			0.0	719.0		0.0		0.0		0.0	0.0	-719.0	
1995	42.0	677.0			0.0	719.0		0.0		0.0		0.0	0.0	-719.0	
1996	42.0	677.0			0.0	719.0		0.0		0.0		0.0	0.0	-719.0	
1997	42.0	676.0			0.0	718.0		0.0		0.0		0.0	0.0	-718.0	
1998	42.0	676.0			0.0	718.0		0.0		0.0		0.0	0.0	-718.0	
1999	41.0	676.0		115.0		832.0		233.0		25.9		258.9		-573.1	
2000	0.0	0.0		20.0		20.0		252.6		27.6		280.2		260.2	
2001	0.0	0.0		20.0		20.0		273.8		29.5		303.3		283.3	
2002	0.0	0.0		20.0		20.0		296.7		31.5		328.2		308.2	
2003	0.0	0.0		20.0		20.0		321.7		33.6		355.3		335.3	
2004	0.0	0.0		20.0		20.0		348.8		35.8		384.6		364.6	
2005	184.0	0.0		20.0		204.0		378.0		38.2		416.2		212.2	
2006	70.0	1125.0		20.0		1215.0		409.7		40.8		450.5		-764.5	
2007	69.0	1124.0		20.0		1213.0		441.2		43.6		484.8		-728.2	
2008	69.0	1124.0		15.0		1208.0		481.5		46.5		528.0		-680.0	
2009	69.0	1124.0		10.0		1203.0		522.0		49.5		571.5		-631.5	
2010	0.0	0.0		7.0		7.0		901.1		101.1		1002.2		995.2	
2011	0.0	0.0		7.0		7.0		976.8		107.9		1084.7		1077.7	
2012	0.0	0.0		7.0		7.0		1058.4		115.1		1173.5		1166.5	
2013	0.0	0.0		7.0		7.0		1147.8		122.8		1270.6		1263.6	
2014	0.0	0.0		7.0		7.0		1244.2		131.0		1375.2		1368.2	
2015	0.0	0.0		7.0		7.0		1348.7		139.8		1488.5		1481.5	
2016	0.0	0.0		221.0		221.0		1462.0		149.2		1611.2		1390.2	
2017	0.0	0.0		7.0		7.0		1584.8		159.2		1744.0		1737.0	
2018	0.0	0.0		7.0		7.0		1717.9		169.9		1887.8		1880.8	
2019	0.0	0.0		7.0		7.0		1862.2		181.2		2043.4		2036.4	
2020	0.0	0.0		7.0		7.0		2018.7		193.4		2212.1		2205.1	
2021	0.0	0.0		7.0		7.0		2188.2		206.3		2394.5		2387.5	
2022	0.0	0.0		7.0		7.0		2372.1		220.2		2592.3		2585.3	
2023	0.0	0.0		7.0		7.0		2571.3		234.9		2806.2		2799.2	
															IRR 0.08506

Alternative 3 -- Partial Evaluation --

Unit: Million NRs.

YEAR	E.S.	CON	COS	OM	COS	TOT	COS	BE	VOC	BE	TIME	TOT	BEN	NET	BEN
1993	167.0		0.0		0.0	167.0			0.0		0.0		0.0	-167.0	
1994	42.0		677.0		0.0	719.0			0.0		0.0		0.0	-719.0	
1995	42.0		677.0		0.0	719.0			0.0		0.0		0.0	-719.0	
1996	42.0		677.0		0.0	719.0			0.0		0.0		0.0	-719.0	
1997	42.0		676.0		0.0	718.0			0.0		0.0		0.0	-718.0	
1998	42.0		676.0		0.0	718.0			0.0		0.0		0.0	-718.0	
1999	41.0		676.0		115.0	832.0		233.0		25.9		258.9		-573.1	
2000	0.0		0.0		20.0	20.0		252.6		27.6		280.2		260.2	
2001	0.0		0.0		20.0	20.0		273.8		29.5		303.3		283.3	
2002	0.0		0.0		20.0	20.0		296.7		31.5		328.2		308.2	
2003	0.0		0.0		20.0	20.0		321.7		33.6		355.3		335.3	
2004	0.0		0.0		20.0	20.0		348.8		35.8		384.6		364.6	
2005	0.0		0.0		20.0	20.0		378.0		38.2		416.2		396.2	
2006	0.0		0.0		195.0	195.0		409.7		40.8		450.5		255.5	
2007	0.0		0.0		20.0	20.0		441.2		43.6		484.8		464.8	
2008	0.0		0.0		20.0	20.0		481.5		46.5		528.0		508.0	
2009	0.0		0.0		20.0	20.0		522.0		49.5		571.5		551.5	
2010	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2011	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2012	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2013	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2014	0.0		0.0		195.0	195.0		565.8		52.9		618.7		423.7	
2015	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2016	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2017	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2018	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2019	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2020	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2021	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
2022	0.0		0.0		195.0	195.0		565.8		52.9		618.7		423.7	
2023	0.0		0.0		20.0	20.0		565.8		52.9		618.7		598.7	
															IRR 0.06739

Alternative 4 - Total Evaluation -

Unit: Million NRS.

YEAR	E. S.	CON COS	OM COS	TOT COS	BE VOC	BE TIME	TOT BEN	NET BEN
1993	176.0	0.0	0.0	176.0	0.0	0.0	0.0	-176.0
1994	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1995	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1996	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1997	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1998	44.0	713.0	0.0	757.0	0.0	0.0	0.0	-757.0
1999	45.0	713.0	115.0	873.0	251.7	30.2	281.9	-591.1
2000	0.0	0.0	20.0	20.0	272.8	32.3	305.1	285.1
2001	0.0	0.0	20.0	20.0	295.8	34.5	330.3	310.3
2002	0.0	0.0	20.0	20.0	320.6	36.8	357.4	337.4
2003	0.0	0.0	20.0	20.0	347.5	39.2	386.7	366.7
2004	0.0	0.0	20.0	20.0	376.7	41.9	418.6	398.6
2005	179.0	0.0	20.0	199.0	408.4	44.6	453.0	254.0
2006	67.0	1080.0	20.0	1167.0	443.4	47.6	491.0	-676.0
2007	67.0	1080.0	20.0	1167.0	479.9	50.8	530.7	-636.3
2008	66.0	1080.0	15.0	1161.0	520.2	54.2	574.4	-586.6
2009	66.0	1079.0	10.0	1155.0	563.9	57.8	621.7	-533.3
2010	0.0	0.0	7.0	7.0	901.1	101.1	1002.2	995.2
2011	0.0	0.0	7.0	7.0	976.8	107.9	1084.7	1077.7
2012	0.0	0.0	7.0	7.0	1058.4	115.1	1173.5	1166.5
2013	0.0	0.0	7.0	7.0	1147.8	122.8	1270.6	1263.6
2014	0.0	0.0	7.0	7.0	1244.2	131.0	1375.2	1368.2
2015	0.0	0.0	7.0	7.0	1348.7	139.8	1488.5	1481.5
2016	0.0	0.0	221.0	221.0	1462.0	149.2	1611.2	1390.2
2017	0.0	0.0	7.0	7.0	1584.8	159.2	1744.0	1737.0
2018	0.0	0.0	7.0	7.0	1717.9	169.9	1887.8	1880.8
2019	0.0	0.0	7.0	7.0	1862.2	181.2	2043.4	2036.4
2020	0.0	0.0	7.0	7.0	2018.7	193.4	2212.1	2205.1
2021	0.0	0.0	7.0	7.0	2188.2	206.3	2394.5	2387.5
2022	0.0	0.0	7.0	7.0	2372.1	220.2	2592.3	2585.3
2023	0.0	0.0	7.0	7.0	2571.3	234.9	2806.2	2799.2
							IRR	0.08779

Alternative 4 - Partial Evaluation -

Unit: Million NRs.

YEAR	E.S.	CON COS	OM COS	TOT COS	BE VOC	BE TIME	TOT BEN	NET BEN
1993	176.0	0.0	0.0	176.0	0.0	0.0	0.0	-176.0
1994	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1995	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1996	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1997	44.0	714.0	0.0	758.0	0.0	0.0	0.0	-758.0
1998	44.0	713.0	0.0	757.0	0.0	0.0	0.0	-757.0
1999	45.0	713.0	115.0	873.0	251.7	30.2	281.9	-591.1
2000	0.0	0.0	20.0	20.0	272.8	32.3	305.1	285.1
2001	0.0	0.0	20.0	20.0	295.8	34.5	330.3	310.3
2002	0.0	0.0	20.0	20.0	320.6	36.8	357.4	337.4
2003	0.0	0.0	20.0	20.0	347.5	39.2	386.7	366.7
2004	0.0	0.0	20.0	20.0	376.7	41.9	418.6	398.6
2005	0.0	0.0	20.0	20.0	408.4	44.6	453.0	433.0
2006	0.0	0.0	195.0	195.0	443.4	47.6	491.0	296.0
2007	0.0	0.0	20.0	20.0	479.9	50.8	530.7	510.7
2008	0.0	0.0	20.0	20.0	520.2	54.2	574.4	554.4
2009	0.0	0.0	20.0	20.0	563.9	57.8	621.7	601.7
2010	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2011	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2012	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2013	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2014	0.0	0.0	195.0	195.0	611.2	61.7	672.9	477.9
2015	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2016	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2017	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2018	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2019	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2020	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2021	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
2022	0.0	0.0	195.0	195.0	611.2	61.7	672.9	477.9
2023	0.0	0.0	20.0	20.0	611.2	61.7	672.9	652.9
							IRR	0.07053

Alternative 5 - Total Evaluation -

Unit: Million NRs.

YEAR	E.S.	CON	COS	OM	COS	TOT	COS	BE	VOC	BE	TIME	TOT	BEN	NET	BEN
1993	302.0		0.0		0.0	302.0			0.0		0.0		0.0	-302.0	
1994	76.0	919.0			0.0	995.0			0.0		0.0		0.0	-995.0	
1995	76.0	919.0			0.0	995.0			0.0		0.0		0.0	-995.0	
1996	76.0	918.0			0.0	994.0			0.0		0.0		0.0	-994.0	
1997	76.0	918.0			0.0	994.0			0.0		0.0		0.0	-994.0	
1998	76.0	918.0			0.0	994.0			0.0		0.0		0.0	-994.0	
1999	75.0	918.0			7.0	1000.0			0.0		0.0		0.0	-1000.0	
2000	0.0	918.0			7.0	925.0			0.0		0.0		0.0	-925.0	
2001	0.0	918.0			7.0	925.0			0.0		0.0		0.0	-925.0	
2002	0.0	0.0			7.0	7.0		473.6		59.9		533.5		526.5	
2003	0.0	0.0			7.0	7.0		513.3		63.9		577.2		570.2	
2004	0.0	0.0			7.0	7.0		556.5		68.2		624.7		617.7	
2005	0.0	0.0			7.0	7.0		603.2		72.8		676.0		669.0	
2006	0.0	0.0		221.0		221.0		653.9		77.6		731.5		510.5	
2007	0.0	0.0		7.0		7.0		708.8		82.8		791.6		784.6	
2008	0.0	0.0		7.0		7.0		768.4		88.4		856.8		849.8	
2009	0.0	0.0		7.0		7.0		832.9		94.3		927.2		920.2	
2010	0.0	0.0		7.0		7.0		901.1		101.1		1002.2		995.2	
2011	0.0	0.0		7.0		7.0		976.8		107.9		1084.7		1077.7	
2012	0.0	0.0		7.0		7.0		1058.4		115.1		1173.5		1166.5	
2013	0.0	0.0		7.0		7.0		1147.8		122.8		1270.6		1263.6	
2014	0.0	0.0		221.0		221.0		1244.2		131.0		1375.2		1154.2	
2015	0.0	0.0		7.0		7.0		1348.7		139.8		1488.5		1481.5	
2016	0.0	0.0		7.0		7.0		1462.0		149.2		1611.2		1604.2	
2017	0.0	0.0		7.0		7.0		1584.8		159.2		1744.0		1737.0	
2018	0.0	0.0		7.0		7.0		1717.9		169.9		1887.8		1880.8	
2019	0.0	0.0		7.0		7.0		1862.2		181.2		2043.4		2036.4	
2020	0.0	0.0		7.0		7.0		2018.7		193.4		2212.1		2205.1	
2021	0.0	0.0		7.0		7.0		2188.2		206.3		2394.5		2387.5	
2022	0.0	0.0		221.0		221.0		2372.1		220.2		2592.3		2371.3	
2023	0.0	0.0		7.0		7.0		2571.3		234.9		2806.2		2799.2	
2024	0.0	0.0		7.0		7.0		2787.3		250.6		3037.9		3030.9	
2025	0.0	0.0		7.0		7.0		3021.4		267.4		3288.8		3281.8	
													IRR		0.08452

APPENDIX - H

SUPPORTING DATA
OF
IMPLEMENTATION PROGRAM

Table H-1 Cost Breakdown of Equipment and Materials Supply

Equipments and Materials Supply Cost Case A,B (Section I)

Material supply		Quantity	Unit rate(NRs)	Amount(1000NRs)
Cement	ton	1,530	4,400	6,732
Reinforcement bar	ton	220	32,332	7,113
GI wire	ton	88	37,000	3,256
			Total	17,101
Equipment supply		Quantity	Unit rate(1000Yen)	Amount(1000NRs)
Backhoe 0.6m3	no.	1	14,600	6,403
Dump truck 11ton	no.	2	8,600	7,543
Truck 8ton	no.	1	4,700	2,061
Truck crane 20ton	no.	1	23,300	10,219
Diesel generator 10kva	no.	1	900	395
Breaker 1,300kg with base equipment	no.	1	6,000	2,631
Concrete mixer	no.	1	3,000	1,316
			Total	30,568
Total equipment and materials supply cost				47,669

Equipments and Materials Supply Cost Case C (Section II-3)

Material supply		Quantity	Unit rate(NRs)	Amount(1000NRs)
Cement	ton	3,000	4,400	13,200
Asphalt emulsion	ton	740	14,150	10,471
Reinforcement bar	ton	420	32,332	13,579
GI wire	ton	2,000	37,000	74,000
Corrgated pipe dia.600	m	1,400	4,164	5,830
Corrgated pipe dia.1000	m	700	7,907	5,535
			Total	122,615
Equipment supply (Transportation cost 10% of FOB)		Quantity	Unit rate(1000Yen)	Amount(1000NRs)
Bulldozer 15ton	no.	1	154,000	67,540
Bulldozer 21ton	no.	1	24,700	10,833
Backhoe 0.6m3	no.	6	14,600	38,419
Tractor shovel 1.4m3	no.	1	10,700	4,693
Dump truck 11ton	no.	11	8,670	41,826
Truck 8ton	no.	16	4,770	33,472
Truck crane 20ton	no.	1	8,600	3,772
Motor grader 3.1m	no.	1	10,700	4,693
Macadam roller 10ton	no.	1	6,960	3,052
Tire roller 8-20ton	no.	1	7,800	3,421
Vibrating roller 1ton	no.	2	1,460	1,281
Asphalt sprayer 200litre	no.	1	163	71
Air compressor 10m3/min	no.	1	1,610	706
Diesel generator 10kva	no.	1	928	407
Diesel generator 45kva	no.	1	2290	1,004
Breaker 1,300kg with base equipment	no.	1	6090	2,671
			Total	217,860
Total equipment and materials supply cost				340,475

Table H-2 Maintenance Office and Maintenance Equipment/Materials Supply

Type	Unit Cost NRs. million	Sec. 1						Sec. 2						TOTAL						
		Main Maintenance office Bardibus			Sub-maintenance office Sindhuli Bazar			Sub-maintenance office Banepa			Field office Nepalthok			Field office Khuikot						
		No.	Amount		No.	Amount		No.	Amount		No.	Amount		No.	Amount		No.	Amount		
		Total (A)			Total (B)			Total (C)			Total (A)+(B)+(C)			Total						
Construction cost																				
Office	10	0	1	10	0	1	10	0	1	10	0	1	10	0	1	10	0	1	10	0
Residence	5	0	2	6	0	3	6	0	3	6	0	3	6	0	3	6	0	3	6	0
	3	0	2	6	0	3	6	0	3	6	0	3	6	0	3	6	0	3	6	0
	2	0	3	6	0	3	6	0	3	6	0	3	6	0	3	6	0	3	6	0
	1	0	5	5	0	5	5	0	5	5	0	5	5	0	5	5	0	5	5	0
Total (A)				27			27			27			27			27			27	
Equipment Supply																				
Whele loader	6	1.4 m3	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6
Backhoe	9	0.6 m3	1	9	1	9	1	9	1	9	1	9	1	9	1	9	1	9	1	9
Grader	6	2.5 m	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6
Dump Truck	3	8 ton	3	9	3	9	3	9	3	9	3	9	3	9	3	9	3	9	3	9
Land Cruiser	2	6000cc	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6	3	6
Compactor	2	5-6 ton	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Movable Crusher	10	10 ton/hr	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concrete mixer	2	0.5 m3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Truckcrane	3	4ton	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3
Generator	1	60KVA	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Miscellaneous(tools)	2		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Spare parts (25% of equip.)	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total (B)				58			48			48			26			26			58	
Materials																				
Gabion wire	2	L.S	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Cement	1	L.S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Others	2	L.S	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Total (C)				5		5	5		5	5		5	5		5	5		5	5	
Total of Materials/Equipment (B)+(C)				63		63	53		53	31		31	43		43	63		63	168	
Grand Total (A)+(B)+(C)				63		63	80		80	43		43	63		63	246		246	309	
Operation and Maintenance Cost																				
Office	2	Type A	0	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1
	1	Type B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residence	1	Type A	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	1	Type B	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	1	Type C	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Total			0	0	12	12	12	12	12	11	11	11	11	11	11	11	11	11	11	11

Table H-3 Summary of Construction Cost on Force Account Basis

Case- A,B

Description			Partial Force	Full Turn-key
			Account Basis	Basis
			(1000NRs.)	(1000NRs.)
Section I	- Bridge	Turn-key Basis	308,730	308,730
	- Causeway & Earthwork	Force Account Basis	23,784	62,100
Section II-1		Turn-key Basis	1,164,316	1,164,316
Section II-2		Turn-key Basis	736,771	736,771
Section II-3		Turn-key Basis	1,290,142	1,290,142
Total construction Cost			3,523,743	3,562,059
Equipment & material supply for Section I			47,700	
Total			3,571,443	3,562,059

Case- C

Description			Partial Force	Full Turn-key
			Account Basis	Basis
			(1000NRs.)	(1000NRs.)
Section I	- Bridge	Turn-key Basis	308,730	308,730
	- Causeway & Earthwork	Force Account Basis	23,784	62,100
Section II-1		Turn-key Basis	1,164,316	1,164,316
Section II-2		Turn-key Basis	736,771	736,771
Section II-3	- Bridge	Turn-key Basis	169,027	169,027
	- Causeway & Earthwork	Force Account Basis	572,727	1,121,115
Total construction Cost			2,975,355	3,562,059
Equipment & material supply for Section I			47,700	
Equipment & material supply for Section II-3			340,500	
Total			3,363,555	3,562,059

Table H-4 Construction Cost of Sec. 1 on Force Account Basis

US\$ 1.0 = IN\$ 65.58 = Yen 115.00

Description	Section I						Section II-1						Section II-2						Section II-3						Total										
	Local		Foreign		Equip.		Local		Foreign		Equip.		Local		Foreign		Equip.		Local		Foreign		Equip.		Local		Foreign		Equip.						
	Cost	Tax	Cost	Tax	Yes	No	Cost	Tax	Cost	Tax	Yes	No	Cost	Tax	Cost	Tax	Yes	No	Cost	Tax	Cost	Tax	Yes	No	Cost	Tax	Cost	Tax	Yes	No					
GENERAL	0	0	0	0	0	0	2,700	2,700	2,700	0	5,400	13,500	12,150	12,150	0	24,300	44,925	27,000	27,000	0	24,300	44,925	27,000	27,000	0	54,000	115,245	54,000	115,245	0	54,000	115,245			
HAZILL WORKS	3,659	906	90	4,655	11,684	0	5,087	51,916	5,087	450,250	1,131,380	284,190	36,985	3,778	324,953	815,632	881,595	114,403	11,741	1,007,739	2,529,425	2,529,425	0	0	0	0	0	0	0	0	0	0	0	0	
PAVEMENT WORKS	908	149	18	1,075	2,696	0	5,889	7,622	1,319	81,102	203,566	82,902	6,902	1,230	93,134	233,766	211,269	22,562	3,616	237,447	595,992	595,992	0	0	0	0	0	0	0	0	0	0	0	0	0
DRAINAGE WORKS	869	723	27	1,610	4,041	0	25,184	32,178	7,565	176,265	442,425	151,446	39,777	10,049	201,272	505,193	390,802	96,102	23,584	512,548	1,246,495	1,246,495	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOPE PROTECTION WORKS	0	0	0	0	0	0	46,196	79,893	14,586	260,232	660,712	193,269	72,310	21,450	287,869	722,551	480,270	199,259	48,996	725,568	1,822,706	1,822,706	0	0	0	0	0	0	0	0	0	0	0	0	0
ROAD FURNITURE	0	0	0	0	0	0	2,510	2,932	408	9,838	24,693	8,081	3,662	570	12,503	30,780	20,229	9,154	1,286	30,669	76,979	76,979	0	0	0	0	0	0	0	0	0	0	0	0	0
RAIL CROSSING STRUCTURES	11,212	4,904	208	16,414	41,274	0	6,867	13,275	2,051	16,251	40,790	62,263	8,153	3,716	74,162	186,147	129,494	23,605	8,058	159,557	402,483	402,483	0	0	0	0	0	0	0	0	0	0	0	0	0
MAJOR BRIDGE	281,607	2,160	712	284,512	714,200	0	0	0	0	0	0	12,124	688	26	122,138	306,566	402,881	2,851	948	406,680	1,020,767	1,020,767	0	0	0	0	0	0	0	0	0	0	0	0	0
MINOR BRIDGE	23,355	324	109	24,188	60,712	0	0	1,807	372	51,209	129,863	43,574	2,642	603	66,889	117,691	117,689	4,013	1,114	122,816	308,208	308,208	0	0	0	0	0	0	0	0	0	0	0	0	0
MISCELLANEOUS (see index of access road)	0	0	0	0	0	0	7,418	9,307	946	96,839	238,086	91,481	10,568	1,113	103,162	238,937	233,646	27,393	2,720	266,719	661,935	661,935	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	305,422	2,497	821	308,740	774,912	0	121,690	199,176	31,208	1,164,316	2,922,033	1,050,510	198,807	42,825	1,295,142	3,238,266	2,978,169	520,160	101,630	3,499,959	8,784,897	8,784,897	0	0	0	0	0	0	0	0	0	0	0	0	0
DXR	16,669	6,682	603	23,734	59,698	0	0	0	0	0	0	0	0	0	0	0	16,669	6,682	433	23,784	59,698	59,698	0	0	0	0	0	0	0	0	0	0	0	0	

□ : Part of DXR force account basis work

Notes: The force account basis cost is calculated with following conditions.
 #1 To be supplied all equipments.
 #2 To be supplied consumable materials such as cement, asphalt emulsion, galvanized wire, reinforcement.
 #3 Indirect cost is 10% of direct cost.

Table H-5 Construction cost of Sec. 2-3 on Force Account Basis

USS 1.0 = MKR-45.88 = Yen 115.078

Description	Section 1				Section 1-1				Section 1-2				Section 1-3				Total							
	Foreign	Local	Day & Tax	Total	Foreign	Local	Day & Tax	Total	Foreign	Local	Day & Tax	Total	Foreign	Local	Day & Tax	Total	Foreign	Local	Day & Tax	Total				
	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)	(US\$)(M)			
GENERAL	0	0	0	0	12,150	12,150	0	24,300	64,963	2,700	2,700	0	5,400	13,551	9,800	9,800	0	19,600	47,696	24,750	24,750	0	49,500	120,245
EARTH WORKS	3,659	906	90	4,655	707,747	51,916	5,087	764,750	1,331,383	199,999	24,596	2,786	227,381	570,226	140,132	31,520	5,427	180,079	451,998	740,537	110,938	11,399	862,865	2,165,791
PAVEMENT WORKS	908	109	18	1,035	72,161	7,622	1,319	81,102	240,566	55,298	5,809	949	62,136	158,961	41,567	7,196	835	49,798	124,691	169,934	20,856	3,121	193,911	486,717
DRAINAGE WORKS	860	723	27	1,610	136,522	32,178	7,465	176,265	442,423	101,974	25,084	5,943	133,001	339,837	51,977	31,966	1,811	85,584	214,816	291,233	90,281	15,366	396,860	996,119
SLOPE PROTECTION WORKS	0	0	0	0	168,753	79,893	14,586	263,232	640,712	118,311	46,196	12,960	177,467	465,842	60,262	59,927	1,539	121,828	305,783	347,426	186,016	29,085	562,227	1,411,943
ROAD RECONSTRUCTION	0	0	0	0	6,078	2,452	408	9,838	20,693	5,670	2,540	358	8,568	21,566	3,433	2,963	102	6,498	16,310	15,561	8,355	868	24,964	62,509
RIVER CROSSING STRUCTURES	11,202	4,984	298	16,484	13,275	2,051	925	16,251	40,790	42,711	6,867	3,119	55,700	132,277	18,275	6,490	417	25,282	43,458	85,686	36,312	4,759	110,677	277,799
MAJOR BRIDGE	281,667	2,163	712	284,542	0	0	0	0	0	0	0	0	0	0	121,214	688	256	122,138	308,566	402,861	2,951	948	406,860	1,030,763
MINOR BRIDGE	23,755	324	109	24,188	50,240	1,067	372	51,739	129,865	0	0	0	0	0	43,574	2,682	633	46,889	117,691	117,689	4,013	1,114	122,816	308,264
MISCELLANEOUS (see reverse of sheet used)	0	0	0	0	80,486	9,407	966	93,859	228,486	61,639	7,418	661	69,718	174,992	74,549	8,611	907	84,058	210,956	216,665	25,436	2,514	244,615	613,984
TOTAL	305,422	2,087	821	308,330	913,942	199,176	31,208	1,164,316	2,922,413	588,205	121,090	26,776	736,771	1,809,295	164,258	3,270	869	169,027	424,258	1,995,467	326,723	59,674	2,378,848	5,970,899
DKR	16,669	6,682	433	23,784	0	0	0	0	0	0	0	0	0	0	403,186	164,803	9,038	572,727	1,331,545	419,855	167,185	9,471	596,511	1,497,240

DKR : 1% of DKR force account basis work

Notes: The force account basis cost is calculated with following conditions.

#1 To be supplied all equipments.

#2 To be applied construction materials such as cement, asphalt emulsion, gabion wire, corrugated pipe, reinforcement.

#3 Indirect cost is 10% of direct cost.

JICA