A.3.4.3 **Geometric Characteristics of Improved Alignment**

Caractéristiques Géométriques du Tracé Amélioré

NOTE

Location / Emplacement : based on the existing kilometer post / suivant au poste kilomètre existante

R : Radius of improved alignment / Rayon d'alignement amélioré

L_o : Section length along the existing road / Longueur de tronçon le long de la route existante

L_1 : Section length after improvement / Longueur de tronçon aprés amélioration

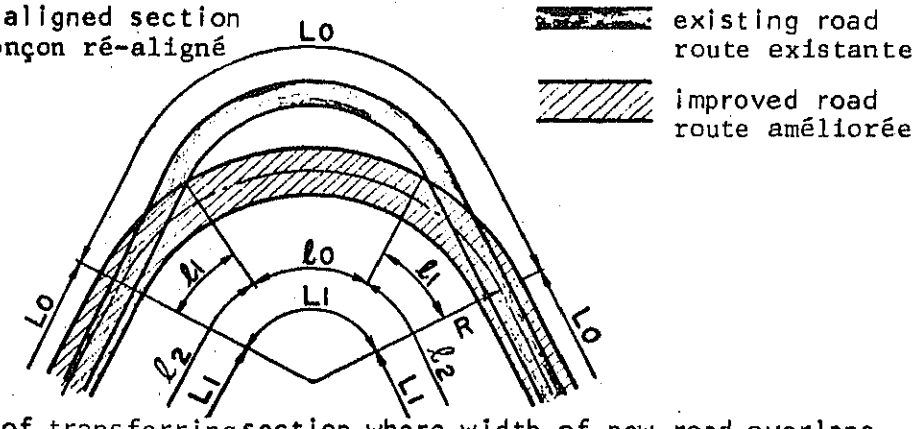
ΔL : $= L_1 - L_o =$ Reducted road length by improvement / Longueur de la route réduite d'amélioration

ℓo : Length of re-aligned section where road width of improved road does not overlap on existing road width / Longueur de ré-aligné de tronçon où largeur de route améliorée ne recouvrement pas sur largeur de route existante

T : Types of improvement / Type d'amélioration

- a : widening of eixsting road width / elargissement largueur de route existante
- b : improvement of horizontal alignment / amélioration d'alignement horizontal
- c : improvement of vertical alignment / amélioration d'alignement vertical
- d : new construction by re-alignment (ℓo section) / nouvelle construction de ré-aligné (ℓo tronçon)

Illustration of re-aligned section / Illustration de tronçon ré-aligné



"ℓ_1" is the length of transferring section where width of new road overlaps partially on the existing road. "ℓ_1" is not shown in Table A-6-6, but is included in the length of widening section "ℓ_2" and is calculated as follow:

"ℓ_1" est largueur de tronçon transféré où largueur de nouvelle route recouvrement partial sur route existante. "ℓ_1" n'est pas fait entrer Tableau A-6-6, mais y compris dans la longueur de tronçon "ℓ_2" est calculée comme suit:

$$\Sigma \ell_2 = \Sigma L_1 - \Sigma \ell o$$

Geometric Characteristics of Improved Alignment

Caractéristiques Géométriques du Tracé Amélioré

(Section / Tronçon #10)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
Kisangani	3.60 -	3.75	150	150	150			a,b
	3.75 -	3.83	∞	80	80			a,b
	3.83 -	3.93	250	100	100			a,b
	3.93 -	4.33	400	400	390	-10		a,b
	4.33 -	6.05	∞	1,720	1,720			a,c
	6.05 -	7.10	1,500	1,050	1,045	-5	250	a,b,d
	7.10 -	7.30	∞	200	200		150	a,d
	7.30 -	7.75	500	450	400	-50		a,b
	7.75 -	8.23	∞	480	480			a
	8.23 -	8.75	1,000	520	515	-5	150	a,b,d
	8.75 -	13.00		4,250	4,250			a,c
	13.00 -	13.78	2,000	780	770	-10	350	a,b,d
	13.78 -	16.55		2,770	2,770			a
	16.55 -	16.75	2,000	200	200			a,b
	16.75 -	23.86		7,110	7,110			a
Batiamaduka	23.86 -	24.75	∞	890	880	-10	800	a,b,c,d
	24.75 -	25.45	2,000	700	695	-5		a,b
	25.45 -	27.60		2,150	2,150			a
	27.60 -	28.23	1,000	630	620	-10		a,b,
	28.23 -	28.50	∞	270	260	-10	600	a,b,d,
	28.50 -	29.00	1,000	500	470	-30		a,d
	29.00 -	29.90	3,000	900	890	-10	400	a,d
	29.90 -	31.00	∞	1,100	1,095	-5		a,b
	31.00 -	33.00		2,000	2,000			a
	33.00 -	34.00		1,000	1,000			a,c
	34.00 -	35.50		1,500	1,500			a
	35.50 -	35.90		400	400			a,c
Basiku	35.90 -	36.60	500	700	680	-20		a,b,c

(continued / continuée)

(Section / Tronçon #10)

Location / Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
Basiku	36.60	36.90		300	300			a,c
	36.90	38.00	1,000					d
	38.00	40.00	1,000					d
	40.00	40.70	1,500					d
	40.70	43.30	∞	13,100	11,800	-1,300	11,800	d
	43.30	47.90	2,500					d
	47.90	48.60	∞					d
	48.60	50.00	3,000					d
Bengamisa	Total			46,400	44,920	-1,480	14,500	

(Section / Tronçon #9)

Location / Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
Bengamisa	50.00	50.20	3,000	200	200		200	a,c,d
	50.20	50.80	∞	600	585	-15		a,b,c
	50.80	51.50	1,000	700	700		200	a,b,c,d
	51.50	52.55	∞	1,050	1,040	-10		a,b,d
	52.55	53.10	3,000	550	495	-55	300	a,b,d
	53.10	53.65	∞	550	550			a,b
	53.65	54.15	500	500	485	-15		a,b,c
	54.15	54.30	∞	150	150			a
	54.30	54.70	400	400	390	-10		a,b
	54.70	55.10	∞	400	395	-5		a,b
Bakweme	55.10	55.45	350	350	345	-5		a,b
	55.45	55.75	∞	300	295	-5		a,b
	55.75	56.35	1,500	600	585	-15		a,b
	56.35	57.20	∞	850	830	-20	200	a,b,d
	57.20	59.40	2,000	2,200	1,700	-500	1,700	d

(Section / Tronçon #9)

Location Tracement	PK	PK	R m	L_o m	L_1 m	ΔL m	ℓ_o m	T
	59.40	59.60	∞	200	200			a,b
	59.60	60.14	∞	540	535	-5		a,b
	60.14	60.58	1,000	440	410	-30	150	a,b,d
	60.58	61.15	∞	570	550	-20	150	a,b,c,d
Bangwade	61.15	62.65	3,000	1,500	1,475	-25		a,b,c
	62.65	63.15	∞	500	495	-5		a,b,c
	63.15	63.36	300	210	205	-5		a,b,c
	63.36	63.48	∞	120	120			a,b,c,
	63.48	63.65	300	170	160	-10		a,b,c
	63.65	64.95	∞	1,300	1,290	-10		a,b,c
	64.95	65.145	500	195	185	-10		a,b,c
	65.145	65.50	∞	355	355			a
	65.50	66.45	550	950	975	+25	450	a,b,c,d
	66.45	66.69	∞	240	240			a,c
	66.69	67.60	900	910	905	-5		a,b,c
	67.60	68.10	∞	500	495	-5	200	a,b,c,d
	68.10	69.60	1,500	1,500	1,470	-30	1,400	a,b,d
	69.60	70.60	∞	1,000	970	-30		a,b,d
	70.60	71.30	1,500	700	660	-40	500	a,b,d
	71.30	72.75	∞	1,450	1,435	-15		a,b
	72.75	74.05	2,500	1,300	1,275	-25		a,b,d
	74.05	75.75	∞	1,700	1,685	-15		a,b,d
Badombila	75.75	76.75	3,000	1,000	995	-5	2,300	a,b,d
	76.75	77.20	∞	450	450			a,b,d
	77.20	77.65	500	450	450			a,b,d
	77.65	78.20	∞	550	540	-10		a,b
	78.20	78.80	2,500	600	595	-5	150	a,b,d
	78.80	79.50	∞	700	695	-5		a,b
	79.50	79.77	500	270	265	-5		a,b
	79.77	80.08	∞	310	310			a,b
	80.08	80.50	500	420	410	-10		a,b
	80.50	80.80	∞	300	290	-10		a,b

(continued / continuée)

(Section / Tronçon #9)

Location / Tracement	(PK)	(PK)	R (m)	L_o (m)	L_1 (m)	ΔL (m)	ℓ_o (m)	T
	80.80	81.35	480	550	575	+25	1,100	a,b,d
Bambwe	81.35	83.00	∞	1,650	1,635	-15		a,b,c,d
	83.00	84.22	1,000	1,220	1,230	+10	800	a,b,c,d
	84.22	84.35	∞	130	130			a,b
	84.35	84.62	250	270	265	-5		a,b
	84.62	84.88	∞	260	260			a,b
	84.88	85.80	600	920	925	+5	500	a,b,d
	85.80	86.34	∞	540	540			a,b
Bangamboli	86.34	87.21	1,000	870	855	-15		a,b
	87.21	87.38	∞	170	165	-5		a,b
	87.38	88.70	1,500	1,320	1,310	-10	500	a,b,d
	88.70	88.80	∞	100	100			a,b
	88.80	89.90	2,500	1,100	1,095	-5	400	a,b,c,d
	89.90	90.35	∞	450	445	-5		a,b
	90.35	90.93	1,000	580	565	-15		a,b
	90.93	91.17	∞	240	240			a,b
	91.17	91.42	250	250	250			a,b
	91.42	91.60	∞	180	180			a,b
	91.60	91.90	500	300	295	-5		a,b
	91.90	93.40	∞	1,500	1,500			a,c
Bahume	93.40	93.80	1,000	400	395	-5		a,b,c
	93.80	94.33	∞	530	525	-5		a,b
	94.33	94.90	1,500	570	560	-10		a,b
	94.90	95.30	∞	400	395	-5		a,b
	95.30	96.62	3,000	1,320	1,290	-30	1,000	a,b,d
	96.62	99.05	∞	2,430	2,400	-30	1,200	a,b,c,d
	99.05	99.37	1,000	320	320			a,b
	99.37	99.43	∞	60	60			a
	99.43	100.30	1,500	870	860	-10		a,b
	100.30	102.40	∞	2,100	2,100		800	a,b,c,d
	102.40	103.20	1,500	800	790	-10		a,b,c
	103.20	103.62	∞	420	420			a,c

(continued / continuée)

(Section / Tronçon #9)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	103.62	104.40	4,500	780	770	-10		a,b
	104.40	104.85	∞	450	450			a
	104.85	105.18	500	330	320	-10		a,b
	105.18	105.28	∞	100	100			a
Badjange	105.28	106.10	1,500	820	805	-15		a,b
	106.10	106.77	∞	670	670			a,c
	106.77	107.26	1,500	490	485	-5		a,b,c
	107.26	110.63	∞	3,370	3,360	-10	500	a,b,c,d
	110.63	111.05	750	420	400	-20		a,b,c
	111.05	111.44	∞	390	390			a,c
	111.44	111.70	750	260	260			a,b,c
	111.70	112.15	∞	450	450			a,c
	112.15	112.82	4,500	670	660	-10		a,b
Badzamane	112.82	115.52	∞	2,700	2,680	-20	700	a,b,d
	115.52	115.90	750	380	370	-10		a,b
	115.90	116.28	∞	380	375	-5		a,b
	116.28	116.43	275	150	150			a,b
	116.43	116.68	∞	250	250			a,b
	116.68	116.85	250	170	170			a,b
	116.85	117.00	∞	150	145	-5		a,b
	117.00	117.47	750	470	455	-15	500	a,b,d
	117.47	117.95	∞	480	480			a,b,d
	117.95	118.27	500	320	315	-5		a,b
	118.27	118.59	∞	320	315	-5		a,b,c
	118.59	119.00	400	410	405	-5		a,b
	119.00	119.60	∞	600	595	-5		a,b
Bobande	119.60	120.00	500	400	400			a,b
	120.00	120.30	∞	300	300			a,b
	120.30	120.93	500	630	630			a,b
	120.93	121.35	∞	420	420			a,b
	121.35	122.10	3,000	750	750			a,b
	122.10	122.60	∞	500	500			a

(continued / continuée)

(Section / Tronçon #9)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
	PK - PK	m	m	m	m	m	
	122.60 - 123.15	2,000	550	550			a,b
	123.15 - 123.30	∞	150	150			a
	123.30 - 124.80	2,500	1,500	1,490	-10		a,b,d
	124.80 - 124.84	∞	40	40		600	a,d
	124.84 - 125.22	400	380	370	-10		a,b,d
	125.22 - 125.83	∞	610	610			a,b
	125.83 - 126.20	250	370	360	-10		a,b
Bokobana	126.20 - 128.05	∞	1,850	1,840	-10		a,b
	128.05 - 128.45	4,000	400	395	-5		a,b
	128.45 - 128.85	∞	400	400			a
Banalia	128.85 - 129.00	100	150	150			a,b
	Total		79,000	77,690	-1,310	16,500	

(Section / Tronçon #8)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
	PK - PK	m	m	m	m	m	
Banalia	Aruwimi Rv.						
	129.00 - 129.15	100	150	150			a,b
	129.15 - 129.50	∞	350	350			a,b
	129.50 - 129.95	500	450	450			a,b
Bobenge	129.95 - 130.30	∞	350	350			a,b
	130.30 - 131.20	1,000	900	900		200	a,b,d
	131.20 - 131.40	∞	200	200			a,b
	131.40 - 132.10	1,000	700	690	-10	150	a,b,d
	132.10 - 132.65	∞	550	545	-5		a,b
	132.65 - 133.42	1,000	770	760	-10	200	a,b,d
	133.42 - 133.60	∞	180	175	-5		a,b
	133.60 - 133.91	500	310	305	-5		a,b

(continued / continuée)

(Section / Tronçon #8)

Location / Tracement	(PK)	(PK)	R (m)	L_o (m)	L_1 (m)	ΔL (m)	ℓ_o (m)	T
	133.91	138.00	∞	4,090	4,050	-40	600	a,b,d
	138.00	139.15	1,500	1,150	1,120	-30	1,000	a,b,d
	139.15	139.50	∞	350	345	-5	350	a,b,d
	139.50	140.32	1,500	820	810	-10	500	a,b,d
	140.32	140.82	∞	500	500			a,b
	140.82	141.34	450	520	505	-15		a,b
	141.34	142.30	∞	960	950	-10		a,b
	142.30	143.23	1,000	930	915	-15		a,b
	143.23	144.72	∞	1,490	1,480	-10	1,300	a,b,d
	144.72	145.46	3,000	740	740			a,b
Bopando	145.46	146.85	∞	1,390	1,380	-10	300	a,b,d
	146.85	147.80	2,000	950	940	-10		a,b
	147.80	148.51	∞	710	700	-10		a,b
	148.51	149.70	3,000	1,190	1,180	-10	650	a,b,d
	149.70	150.65	∞	950	940	-10	200	a,b,d
	150.65	151.30	4,500	650	650		600	a,b,d
	151.30	152.00	∞	700	695	-5		a,b
	152.00	155.80	∞					d
	155.80	157.45	1,500	6,700	5,600	-1,100	5,600	d
	157.45	158.30	∞					d
	158.30	158.70	1,500					d
	158.70	158.80	1,500	100	100			a,b
	158.80	159.08	∞	280	275	-5		a,b
	159.08	159.35	500	270	275	+5		a,b
Zambeke	159.35	161.45		2,100	2,100			a
	161.45	163.26	∞	1,810	1,790	-20	1,200	a,b,d
	163.26	163.80	2,000	540	540			a,b
	163.80	164.50	∞	700	700			a,b
	164.50	164.73	300	230	230			a,b
	164.73	165.00	∞	270	270			a
	165.00	165.43	400	430	420	-10		a,b
	165.43	165.59	∞	160	160			a,b

(continued / continuée)

(Section / Tronçon #8)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	165.59	166.02	1,200	430	430			a,b
	166.02	166.24	∞	220	220			a
	166.24	167.05	3,000	810	795	-15		a,b
	167.05	167.75	∞	700	700			a
	167.75	168.50	4,500	750	740	-10		a,b
	168.50	171.63	∞	3,130	3,080	-50		d
Bodomili	171.63	177.90	10,000	6,270	6,040	-230		d
	177.90	179.50	2,500	1,600	1,480	-120	11,300	d
	179.50	181.90	∞	2,400	2,350	-50		d
	181.90	182.00	1,000	100	100			d
	182.00	183.00	∞					d
	183.00	185.30	2,000	7,800	6,600	-1,200	6,600	d
	185.30	189.80	∞					d
	189.80	191.60	∞	1,800	1,770	-30		a,b,d
	191.60	195.50	4,000	3,900	3,780	-120	4,400	d
	195.50	196.20	∞	700	695	-5		a,b,d
	196.20	197.40	1,500	1,200	1,185	-15	200	a,b,d
	197.40	198.79	∞	1,390	1,370	-20	600	a,b,d
	198.79	199.20	500	410	395	-15		a,b
	199.20	200.40	∞	1,200	1,180	-20	1,000	d
	200.40	202.70	4,000	2,300	2,220	-80	1,550	d
	202.70	203.33	∞	630	615	-15	250	d
	203.33	203.60	1,000	270	265	-5	200	d
Kole	203.60	206.00	∞	2,400	2,000	-400	2,000	d
	Total			77,000	73,245	-3,755	41,050	

(continued / continuée)

(Section / Tronçon #7)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
Kole	206.00 - 208.00	2,000					d
	208.00 - 211.00	∞	8,600	7,400	-1,200	7,400	d
	211.00 - 212.00	2,000					d
	212.00 - 214.60	∞					d
	214.60 - 215.52	∞	920	905	-15		a,b
Momboloso	215.52 - 215.85	500	330	330			a,b
	215.85 - 216.05	∞	200	200			a,b
	216.05 - 216.59	750	540	520	-20		a,b
	216.59 - 217.10	∞	510	500	-10		a,b
	217.10 - 218.02	2,500	920	910	-10		a,b
	218.02 - 218.40	∞	380	380			a
	218.40 - 219.30	1,500	900	880	-20		a,b
	219.30 - 219.86	∞	560	550	-10		a,b
	219.86 - 220.75	2,000	890	875	-15	400	a,b,d
	220.75 - 221.65	∞	900	900		200	a,d
	221.65 - 224.00	3,000	2,350	2,315	-35	1,100	a,b,d
	224.00 - 224.60	∞	600	600		600	a,b,d
	224.60 - 230.50	8,000	5,900	5,700	-200	4,400	d
	230.50 - 231.05	∞	550	530	-20		a,b,d
	231.05 - 232.43	2,000	1,380	1,325	-55	1,300	a,b,d
	232.43 - 235.00	∞	2,570	2,570			a,d
Tele	235.00 - 235.80	6,000	800	800			a,b
	Total		29,800	28,190	-1,610	15,400	

(continued / continuée)

(Section / Tronçon #6)

	Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
Tele	235.80	241.15	6,000	5,350	5,075	-275	2,700	a,b,d
	241.15	241.70	∞	550	545	-5		a,b
	241.70	242.30	1,000	600	590	-10	100	a,b,c,d
	242.30	242.48	∞	180	180			a,b,d
	242.48	243.20	1,000	720	710	-10		a,b
	243.20	246.85	∞	3,650	3,600	-50	2,150	a,b,d
	246.85	247.70	750	850	815	-35	400	a,b,d
	247.70	248.60	∞	900	890	-10		a,b
	248.60	251.00	1,500	2,400	2,150	-250	1,450	a,b,d
	251.00	251.20	∞	200	200			a,b
	251.20	252.65	1,500	1,450	1,335	-115	1,000	d
	252.65	254.20	∞	1,550	1,550			a
	254.20	254.50	500	300	290	-10		a,b
	254.50	254.65	∞	150	145	-5		a,b
	254.65	255.05	350	400	420	+20		a,b
	255.05	256.00	∞	950	940	-10		a,b
	256.00	256.38	1,000	380	380			a,b
	256.38	256.72	∞	340	325	-15		a,b
	256.72	257.20	2,000	480	480			a,b
	257.20	258.40	∞	1,200	1,200			a
	258.40	260.00	2,000	1,600	1,585	-15	300	a,b,d
	260.00	260.55	∞	550	545	-5		a,b
	260.55	260.95	500	400	390	-10		a,b
	260.95	261.30	∞	350	350			a,b
Besore	261.30	262.05	750	750	740	-10		a,b
	262.05	262.45	∞	400	400			a,b
	262.45	263.70	1,500	1,250	1,170	-80	700	a,b,d
	263.70	264.20	∞	500	495	-5		a,b
	264.20	264.75	400	550	535	-15		a,b
	264.75	264.85	∞	100	100			a
	264.85	265.65	1,000	800	790	-10		a,b
	265.65	265.85	∞	200	200			a,b

(continued / continuée)

(Section / Tronçon #6)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
PK	PK	m	m	m	m	m	
	265.85 - 266.89	1,500	1,040	1,010	-30	500	a,b,d
	266.89 - 267.10	∞	210	210			a
	267.10 - 269.05	1,500	1,950	1,900	-50	1,150	a,b,d
	269.05 - 270.05	∞	1,000	990	-10		d
	270.05 - 271.90	3,000	1,850	1,725	-125	2,400	d
	271.90 - 273.15	1,500	1,250	1,230	-20		d
	273.15 - 273.83	∞	680	680			a,b
	273.83 - 274.16	350	330	320	-10		a,b
	274.16 - 274.60	∞	440	440			a
	274.60 - 275.30	1,000	700	690	-10		a,b
	275.30 - 276.65	∞	1,350	1,340	-10		a,b
	276.65 - 276.95	250	300	290	-10		a,b
	276.95 - 277.20	∞	250	250			a
	277.20 - 277.50	750	300	295	-5		a,b
	277.50 - 277.57	∞	70	70			a,b
	277.57 - 277.90	750	330	335	+5		a,b
	277.90 - 278.90	∞	1,000	995	-5		a,b
	278.90 - 279.42	1,000	520	515	-5		a,b
	279.42 - 279.70	∞	280	280			a,b
	279.70 - 280.06	400	360	345	-15		a,b
	280.06 - 280.45	∞	390	390			a
	280.45 - 280.95	1,000	500	495	-5		a,b
	280.95 - 281.13	∞	180	180			a
	281.13 - 282.00	1,000	870	850	-20		a,b
Bangbagatome	282.00 - 283.58	∞	1,580	1,570	-10	700	a,b,d
	283.58 - 284.21	2,000	630	615	-15		a,b
	284.21 - 284.50	∞	290	285	-5		a,b
	284.50 - 285.15	1,000	650	635	-15	250	a,b,d
	285.15 - 285.52	∞	370	360	-10		a,b
	285.52 - 285.80	500	280	275	-5		a,b
	285.80 - 286.60	∞	800	795	-5		a,b
	286.60 - 289.00	8,000	2,400	2,240	-160	2,500	d
	289.00 - 290.19	∞	1,190	1,150	-40		d

(continued / continuée)

(Section / Tronçon #6)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	290.19	290.64	500	450	440	-10		a,b
	290.64	291.83	∞	1,190	1,170	-20		a,b
	291.83	292.35	2,000	520	520			a,b
	292.35	293.54	∞	1,190	1,185	-5		a,b
	293.54	294.06	2,500	520	500	-20		a,b
	294.06	294.60	∞	540	530	-10		a,b
	294.60	295.31	1,000	710	690	-20		a,b
Mangbondwa	295.31	297.05	∞	1,740	1,670	-70	500	a,b,d
	297.05	297.95	3,000	900	890	-10		a,b
	297.95	298.20	∞	250	250			a
	298.20	300.30	3,000	2,100	2,020	-80	2,100	a,b,d
	300.30	302.70	∞	2,400	2,340	-60		a,b,d
	302.70	303.35	750	650	650			a,b
Mese	303.35	303.63	∞	280	280			a
	303.63	304.50	1,500	870	850	-20		a,b
	304.50	304.67	∞	170	170			a,b
	304.67	305.25	1,000	580	580		1,000	d
	305.25	306.20	∞	950	920	-30		d
Yeme	306.20	307.35	1,000	1,150	1,130	-20		a,b
	307.35	307.63	∞	280	270	-10		a,b
	307.63	308.06	1,000	430	410	-20		a,b
	308.06	308.40	∞	340	335	-5		a,b
	308.40	308.65	1,000	250	250			a,b
	308.65	309.40	∞	750	745	-5		a,b
	309.40	310.06	2,000	660	650	-10	400	a,b,d
	310.06	310.90	∞	840	820	-20		a,b
	310.90	311.65	2,500	750	730	-20	400	a,b,d
	311.65	313.66	∞	2,010	1,985	-25		a,b,d
	313.66	314.60	2,500	940	900	-40	2,200	d
	314.60	315.00	∞	400	400			d
	315.00	315.38	1,000	380	355	-25		a,b
	315.38	316.10	3,000	720	720			a,b

(continued / continuée)

(Section / Tronçon #6)

Location Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
	316.10	- 318.30	∞	2,200	2,175	-25	500	a,b,d
	318.30	- 318.67	1,500	370	355	-15		a,b
	318.67	- 319.70	∞	1,030	1,030			a,b
	319.70	- 320.80	2,000	1,100	1,090	-10		a,b
	320.80	- 321.00	∞	200	200			a,b
	321.00	- 322.45	1,500	1,450	1,455	+5		a,b,c
	322.45	- 323.20	∞	750	745	-5		a,b
	323.20	- 323.45	500	250	250			a
Buta	323.45	- 324.30		850	850			a
	Total			88,500	86,375	-2,125	23,400	

(Section / Tronçon #5)

Location Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
Buta	0	- 1.40	∞	1,400	1,400			a
	1.40	- 2.10	1,000	700	690	-10		a,b
	2.10	- 2.70	∞	600	595	-5		a,b
	2.70	- 3.45	750	750	730	-20		a,b
	3.45	- 4.90	∞	1,450	1,400	-50	800	a,b,d
Makala	4.90	- 5.20	750	300	305	+5		a,b
	5.20	- 5.80	∞	600	600			a,b
	5.80	- 6.30	1,500	500	490	-10		a,b,c
	6.30	- 7.66	∞	1,360	1,360			a,b
	7.66	- 8.42	1,000	760	740	-20		a,b
	8.42	- 8.70	∞	280	280			a
	8.70	- 9.10	3,000	400	390	-10		a,b
	9.10	- 10.80	∞	1,700	1,680	-20		a,b
	10.80	- 11.25	1,500	450	435	-15		a,b

(continued / continuée)

(Section / Tronçon #5)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	11.25	11.85	∞	600	590	-10		a,b
	11.85	12.30	500	450	435	-15		a,b
	12.30	12.40	∞	100	100			a
	12.40	13.00	750	600	570	-30		a,b,c
	13.00	13.30	∞	300	295	-5		a,b,c
Balia	13.30	14.70	4,000	1,400	1,380	-20		a,b,c
	14.70	15.90	∞	1,200	1,200			a
	15.90	16.60	1,500	700	690	-10		a,b
	16.60	16.80	∞	200	200			a
	16.80	18.80	2,500	2,000	2,000			a,b
	18.80	19.30	∞	500	490	-10		a,b
	19.30	19.80	1,500	500	480	-20		a,b
	19.80	21.45	∞	1,650	1,625	-25		a,b
	21.45	22.70	1,500	1,250	1,225	-25		a,b
	22.70	23.04	∞	340	330	-10		a,b
	23.04	23.60	1,000	560	545	-15		a,b
	23.60	25.35	∞	1,750	1,750			a
	25.35	25.70	500	350	340	-10		a,b
	25.70	27.30	∞	1,600	1,600			a
	27.30	28.65	1,500	1,350	1,355	+5	300	a,b,d
Paigba	28.65	30.20	∞	1,550	1,550			a
	30.20	31.05	3,000	850	830	-20		a,b
	31.05	32.85	∞	1,800	1,800			a
	32.85	33.40	1,000	550	525	-25		a,b
	33.40	34.40	∞	1,000	980	-20		a,b
	34.40	35.05	2,000	650	620	-30		a,b
	35.05	37.00	∞	1,950	1,930	-20		a,b
	37.00	37.55	2,000	550	550			a,b
Gombo	37.55	38.00	∞	450	445	-5		a,b
	38.00	38.75	1,500	750	730	-20		a,b
	38.75	39.00	∞	250	250			a,b
	39.00	39.35	750	350	340	-10		a,b

(continued / continuée)

(Section / Tronçon #5)

Location Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	39.35	40.05	1,500	700	700			a,b
	40.05	40.20	∞	150	150			a,b
	40.20	42.00	2,500	1,800	1,755	-45		a,b,c
	42.00	42.90	∞	900	895	-5		a,b
	42.90	43.40	2,000	500	490	-10		a,b
	43.40	43.60	∞	200	200			a,b
	43.60	44.60	750	1,000	980	-20	200	a,b,d
	44.60	45.20	∞	600	580	-20		a,b
	45.20	45.75	2,000	550	540	-10	400	a,b
	45.75	46.65	∞	900	900			a
	46.65	47.30	2,000	650	635	-15		a,b
	47.30	47.95	∞	650	650			a,b
	47.95	48.40	1,000	450	450			a,b
	48.40	49.70		1,300	1,300			a
	49.70	50.10	1,000	400	385	-15		a,b
Bweke	50.10	52.80		2,700	2,700			a
	52.80	53.20	1,000	400	400			a,b
	53.20	54.15	∞	950	930	-20		a,b
	54.15	54.95	3,000	800	775	-25		a,b
	54.95	56.90		1,950	1,950			a
	56.90	57.50	1,000	600	570	-30		a,b
	57.50	57.70	∞	200	195	-5		a,b
	57.70	58.30	1,000	600	600			a,b
	58.30	58.75	∞	450	440	-10		a,b
	58.75	59.30	2,000	550	530	-20		a,b
	59.30	65.85		6,550	6,550			a
	65.85	67.00	∞	1,150	1,060	-90	800	a,b,c,d
	67.00	68.95	∞	1,950	1,950			a
	68.95	69.50		550	550			a,c
	69.50	74.50		5,000	5,000			a
	74.50	74.95	1,000	450	430	-20		a,b
Dulia	74.95	75.50	∞	550	535	-15		a,b
	Total			75,500	74,620	-880	2,500	

(continued / continuée)

(Section / Tronçon #4)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
Dulia	0	- 1.40	∞	1,400	1,365	-35		a,b
	1.40	- 1.80	1,000	400	400			a,b
	1.80	- 3.00	∞	1,200	1,170	-30	750	a,b,d
	3.00	- 4.70	1,500	1,700	1,705	+5	600	a,b,d
	4.70	- 5.45	∞	750	750			a
	5.45	- 5.90	750	450	445	-5		a,b,c
	5.90	- 6.20	∞	300	300			a,c
	6.20	- 6.65	750	450	430	-20		a,b
Masipiri	6.65	- 11.90		5,250	5,250			a
	11.90	- 12.20	350	300	275	-25		a,b
	12.20	- 13.30	∞	1,100	1,100			a
	13.30	- 14.75		1,450	1,450			a,c
	14.75	- 16.50		1,750	1,750			a
	16.50	- 16.70	350	200	180	-20		a,b
	16.70	- 16.90	∞	200	200			a
	16.90	- 19.00	8,000	2,100	2,070	-30	1,500	a,b
	19.00	- 19.15	∞	150	150			a
	19.15	- 20.85	2,000	1,700	1,665	-35		a,b
	20.85	- 21.65	∞	800	775	-25	550	a,b,c
Sasa	21.65	- 27.40		5,750	5,750			a
	27.40	- 27.60	400	200	185	-15		a,b
	27.60	- 28.10		500	500			a,c
	28.10	- 29.25		1,150	1,150			a
	29.25	- 29.75		500	500			a,c
	29.75	- 30.40		650	650			a
	30.40	- 30.75		350	350			a,c
	30.75	- 33.25		2,500	2,500			a
	33.25	- 33.40	∞	150	140	-10		a,b
	33.40	- 33.70	500	300	300			a,b
	33.70	- 33.85	∞	150	150			a,b
	33.85	- 34.20	500	350	335	-15	200	a,b,d
	34.20	- 34.60	∞	400	390	-10		a,b

(continued / continuée)

(Section / Tronçon #4)

Location Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	34.60	34.90	500	300	290	-10		a,b
	34.90	37.30		2,400	2,400			a
	37.30	37.55	750	250	220	-30		a,b
Nziro	37.55	38.80	∞	1,250	1,250			a
	38.80	39.10	350	300	265	-35	200	a,b,d
	39.10	41.90	∞	2,800	2,770	-30	600	a,b,d
	41.90	42.55	2,000	650	650			a,b
	42.55	42.85	∞	300	295	-5		a,b
	42.85	44.45	3,000	1,600	1,580	-20		a,b
	44.45	44.70	1,000	250	240	-10		a,b
	44.70	44.85	∞	150	150			a
	44.85	45.15	250	300	275	-25		a,b
	45.15	48.25		3,100	3,100			a
	48.25	48.70	750	450	430	-20		a,b
	48.70	50.30		1,600	1,600			a
	50.30	50.55	750	250	235	-15		a,b
	50.55	52.85	∞	2,300	2,295	-5	400	a,b,d
	52.85	53.20	750	350	325	-25		a,b
Banangi	53.20	59.70		6,500	6,500			a
	59.70	60.10	250	400	370	-30	200	a,b
	60.10	64.70		4,600	4,600			a,b,c
	64.70	65.20	250	500	360	-140		a,b
	65.20	65.50		300	300		200	a,d
Likati	Total			65,500	64,830	-670	5,200	

(continued / continuée)

(Section / Tronçon #3)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
Likati	65.50	66.00	∞	500	500			a
	66.00	66.50	2,000	500	480	-20		a,b
	66.50	68.90		2,400	2,400			a
	68.90	69.40	1,000	500	485	-15		a,b,c
	69.40	70.00		600	600			a
	70.00	70.80		800	800			a,c
	70.80	74.10		3,300	3,300			a
	74.10	74.70	1,000	600	595	-5		a,b
	74.70	74.80	∞	100	100			a,b
	74.80	75.30	750	500	480	-20		a,b
	75.30	75.50	∞	200	195	-5		a,b
	75.50	76.00	1,500	500	480	-20		a,b
Libogo	76.00	77.30		1,300	1,300			a
	77.30	78.10		800	800			a
	78.10	78.45	∞	350	340	-10		a,b
	78.45	78.70	1,500	250	250			a,b
	78.70	78.90	∞	200	200			a
	78.90	79.60	1,500	700	670	-30		a,b
	79.60	80.10		500	480	-20		a,b
	80.10	80.75	3,000	650	650			a,b
	80.75	81.90	∞	1,150	1,130	-20		a,b
	81.90	82.10	500	200	180	-15		a,b
	82.10	82.30	∞	200	200			a,b
	82.30	82.70	750	400	390	-10		a,b
	82.70	83.40	∞	700	695	-5		a,b
	83.40	83.60	400	200	200			a,b
	83.60	83.70	∞	100	95	-5		a,b
	83.70	85.10	2,000	1,400	1,375	-25		a,b
	85.10	85.50	∞	400	385	-15		a,b
	85.50	86.45	3,000	950	930	-20		a,b
	86.45	87.00	∞	550	550			a
	87.00	87.70	750	700	670	-30		a,b

(continued / continuée)

(Section / Tronçon #3)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	87.70	87.90	∞	200	200			a,b
	87.90	89.00	1,500	1,100	1,065	-35		a,b
	89.00	89.10	∞	100	100			a
	89.10	90.50	3,000	1,400	1,375	-25	500	a,b,d
Nzongfa	90.50	90.75	∞	250	240	-10		a,b
	90.75	91.50	1,000	750	730	-20		a,b
	91.50	91.75	∞	250	250			a
	91.75	92.15	500	400	380	-20		a,b
	92.15	93.25	∞	1,100	1,100			a
	93.25	93.60	750	350	335	-15		a,b
	93.60	93.80	∞	200	195	-5		a,b
	93.80	94.05	500	250	230	-20		a,b
	94.05	96.70		2,650	2,650			a
	96.70	96.80	∞	100	95	-5		a,b
	96.80	97.40	1,500	600	575	-25		a,b
	97.40	98.25	∞	850	845	-5		a,b
	98.25	98.75	750	500	495	-5		a,b
	98.75	98.95	∞	200	195	-5		a,b
	98.95	99.50	1,500	550	550			a,b
	99.50	99.70	∞	200	200			a,b
Binga	99.70	100.05	750	350	340	-10		a,b
	100.05	100.20	∞	150	150			a
	100.20	101.00	1,500	800	785	-15		a,b
	101.00	101.20	∞	200	190	-10		a,b
	101.20	101.60	1,000	400	400			a,b
	101.60	101.85	∞	250	245	-5		a,b
	101.85	102.60	750	750	725	-25		a,b
	102.60	102.80	∞	200	190	-10		a,b
	102.80	103.10	750	300	300			a,b
	103.10	103.25	∞	150	145	-5		a,b
	103.25	104.00	1,000	750	750		400	a,b,d
	104.00	104.30	∞	300	290	-10		a,b

(continued / continuée)

(Section / Tronçon #3)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	104.30	105.40	1,000	1,100	1,075	-25		a,b
	105.40	106.95	∞	1,550	1,515	-35		a,b
	106.95	108.10	1,500	1,150	1,140	-10		a,b
	108.10	108.60	∞	500	495	-5		a,b
	108.60	109.20	2,500	600	585	-15		a,b
	109.20	109.85	∞	650	645	-5		a,b
	109.85	110.15	750	300	295	-5		a,b
	110.15	110.40	∞	250	240	-10		a,b
	110.40	110.80	1,000	400	395	-5		a,b
	110.80	111.05	∞	250	240	-10		a,b
	111.05	112.10	1,500	1,050	1,020	-30	500	a,b,d
Djete-Mondila	112.10	112.80	∞	700	685	-15		a,b
	112.80	113.30	750	500	490	-10		a,b
	113.30	113.40	∞	100	95	-5		a,b
	113.40	114.25	1,000	850	830	-20		a,b
	114.25	114.75	∞	500	485	-15		a,b
	114.75	115.10	750	350	340	-10		a,b
	115.10	116.75	∞	1,650	1,625	-25	500	a,b,d
	116.75	117.90	750	1,150	1,120	-30	400	a,b,d
	117.90	118.30	∞	400	395	-5		a,b
	118.30	118.75	750	450	445	-5		a,b
	118.75	118.95	∞	200	200			a,b
	118.95	119.45	1,500	500	490	-10	700	a,b,d
	119.45	120.05	∞	600	590	-10		a,b,d
	120.05	120.70	750	650	635	-15		a,b
	120.70	121.00	∞	300	290	-10		a,b
	121.00	121.55	750	550	530	-20	200	a,b,d
	121.55	121.70	∞	150	140	-10		a,b
	121.70	122.05	750	350	350			a,b
	122.05	122.50	∞	450	435	-15	500	a,b,d
	122.50	122.80	750	300	290	-10		a,b
	122.80	123.00		200	195	-5		a,b

(continued / continuée)

(Section / Tronçon #3)

Location / Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
	123.00	123.55	750	550	530	-20		a,b
	123.55	123.75	∞	200	195	-5		a,b
	123.75	124.00	300	250	240	-10		a,b
	124.00	124.10	∞	100	100			a,b
	124.10	124.40	300	300	290	-10		a,b
	124.40	124.80	700	400	385	-15		a,b
Bondo	124.80	125.00	∞	200	200			a,b
	Uele Rv.							
	Total			59,500	58,465	-1,035	3,700	

(Section / Tronçon #2)

Location / Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
Bondo	125.00	128.10		3,100	3,100			a
	128.10	128.70	300	600	590	-10		a,b
	128.70	129.35	∞	650	650			a,b
	129.35	130.05	1,000	700	690	-10		a,b
	130.05	130.25	∞	200	200			a,b
	130.25	131.50	1,500	1,250	1,220	-30	100	a,b,d
	131.50	131.70	∞	200	200			a
	131.70	132.40	750	700	680	-20		a,b
	132.40	133.10	∞	700	680	-20		a,b
	133.10	134.50	2,500	1,400	1,400			a,b
Zakila	134.50	135.60	∞	1,100	1,085	-15		a,b
	135.60	136.50	1,000	900	860	-40	650	a,b,d
	136.50	138.00	∞	1,500	1,450	-50	600	a,b,d
	138.00	138.90	1,000	900	860	-40	2,000	d
	138.90	140.25	∞	1,350	1,330	-20		d

(continued / continuée)

(Section / Tronçon #2)

Location / Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
	140.25	140.90	3,000	650	625	-25		a,b
	140.90	142.55	∞	1,650	1,615	-35	800	a,b,d
	142.55	143.85	2,500	1,300	1,280	-20		a,b
	143.85	144.95	∞	1,100	1,070	-30		a,b
	144.95	145.40	2,000	450	450			a,b
Dekare	145.40	145.90	∞	500	495	-5		a,b
	145.90	146.30	350	400	390	-10		a,b
	146.30	146.50	∞	200	175	-25		a,b
	146.50	147.80	2,000	1,300	1,295	-5	2,000	d
	147.80	149.00	∞	1,200	1,175	-25		d
	149.00	149.60	1,000	600	580	-20		a,b
	149.60	150.80	∞	1,200	1,200		300	a,d
	150.80	151.00	3,000	200	185	-15		a,b,d
	151.00	151.70	∞	700	700			a,b
	151.70	152.60	1,500	900	875	-25		a,b
	152.60	153.00	∞	3,200	2,400	-800	2,400	d
	153.00	154.00	1,500					d
	154.00	155.80	∞					d
	155.80	156.90	∞	1,100	1,100			a,b
	156.90	157.15	500	250	240	-10		d
	157.15	157.95	∞	800	795	-5		d
	157.95	158.20	250	250	235	-15		a,b
	158.20	158.30	∞	100	100			a,b
	158.30	158.50	250	200	200			a,b
	158.50	158.75	∞	250	240	-10		a,b
	158.75	159.40	1,500	650	645	-5		a,b
	159.40	160.30	∞	900	900			a,b,c
Mangala	160.30	161.35	1,000	1,050	1,035	-15		a,b,c
	161.35	161.40	∞	50	50			a,b
	161.40	161.70	300	300	290	-10		a,b
	161.70	162.50	∞	800	780	-20		a,b
	162.50	162.75	250	250	250		350	a,b,d
	162.75	162.85	∞	100	100			a,b,d

(continued / continuée)

(Section / Tronçon #2)

	Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
	162.85	163.20	250	350	345	-5		a,b
	163.20	163.40	∞	200	200			a,b
	163.40	163.75	1,000	350	335	-15		a,b
	163.75	164.70	∞	950	945	-5		a,b
	164.70	165.15	750	450	450			a,b
	165.15	165.30	∞	150	150			a
	165.30	166.85	2,000	1,550	1,545	-5	2,000	a,b,d
	166.85	168.00	∞	1,150	1,120	-30		a,b,d
	168.00	168.25	300	250	235	-15		a,b
	168.25	169.70	∞	1,450	1,450			a,b
Zongo	169.70	170.30	1,000	600	600			a,b
	170.30	170.95	∞	650	645	-5		a,b
	170.95	171.40	1,000	450	445	-5		a,b
	171.40	171.65	∞	250	250			a,b
	171.65	172.30	1,500	650	650			a,b
	172.30	174.00	∞	1,700	1,695	-5		a,b
	174.00	174.50	750	500	490	-10		a,b
	174.50	174.90	∞	400	380	-20	200	a,b,d
	174.90	175.10	250	200	175	-25		a,b,d
	175.10	175.30	∞	200	200			a
	175.30	176.40	1,000	1,100	1,100			a,b,c
	176.40	176.70	∞	300	300			a,b,c
	176.70	177.15	350	450	420	-30	100	a,b,d
Mokozo	177.15	178.00	∞	850	850			a,b
	178.00	178.60	∞	600	600			a,b,c
	178.60	179.30	1,500	700	690	-10	700	a,b,c,d
	179.30	180.40	∞	1,100	1,095	-5		a,b,d
	180.40	180.75	350	350	350			a,b
	180.75	181.60	∞	850	840	-10		a,b
	181.60	181.95	500	350	350			a,b
	181.95	182.10	∞	150	150			a,b
	182.10	182.45	1,000	350	350			a,b

(continued / continuée)

(Section / Tronçon #2)

Location / Tracement	PK	PK	R	L_o	L_1	ΔL	ℓ_o	T
			m	m	m	m	m	
	182.45	183.35	∞	900	895	-5		a,b,c
	183.35	184.60	4,000	1,250	1,220	-30	2,100	d
	184.60	186.80	∞	2,200	2,080	-120		a,b,d
	186.80	187.45	500	650	625	-25		a,b
Pelepele	187.45	188.30	∞	850	840	-10	400	a,b,d
	188.30	188.85	1,000	550	540	-10		a,b,c
	188.85	189.65	∞	800	790	-10		a,b
	189.65	190.05	1,000	400	400			a,b
	190.05	191.00	∞	950	950			a
	191.00	191.55	750	550	540	-10		a,b
	191.55	192.60	∞	1,050	1,050			a,b
	192.60	193.10	1,000	500	495	-5	500	a,b,d
	193.10	193.90	∞	800	790	-10		a,b,d
	193.90	194.30	750	400	400			a,b,c
	194.30	194.55	∞	250	250			a
	194.55	195.05	2,000	500	490	-10		a,b
	195.05	196.25	∞	1,200	1,195	-5		a,b,c
	196.25	196.55	750	300	290	-10		a,b
	196.55	196.75	∞	200	190	-10		a,b
	196.75	197.45	750	700	695	-5		a,b,c
	197.45	198.30	∞	850	850		200	a,d
	198.30	198.95	750	650	635	-15	100	a,b,d
	198.95	200.00	∞	1,050	1,035	-15		a,b
	200.00	200.80	750	800	770	-30	400	a,b,c,d
	200.80	201.15	∞	350	350			a,b,c
	201.15	202.05	1,500	900	885	-15		a,b,c
Bangwan	202.05	202.95	∞	900	895	-5		a,b
	202.95	203.45	1,000	500	495	-5		a,b
	203.45	204.05	∞	600	590	-10		a,b
	204.05	204.55	750	500	490	-10	200	a,b,d
	204.55	204.65	∞	100	100			a,b
	204.65	205.20	1,000	550	540	-10		a,b

(continued / continuée)

(Section / Tronçon #2)

Location / Tracement	PK	PK	R m	L_o m	L_1 m	ΔL m	ℓ_o m	T
	205.20	205.80	∞	600	590	-10		a,b
	205.80	206.25	500	450	445	-5		a,b
	206.25	206.60	∞	350	350			a,b
	206.60	208.05	2,000	1,450	1,420	-30	800	a,b,d
	208.05	210.15	∞	2,100	2,085	-15		a,b
	210.15	211.55	1,500	1,400	1,385	-15		a,b
	211.55	212.05	∞	500	490	-10		a,b
	212.05	212.50	500	450	450			a,b
	212.50	212.80	∞	300	300			a
Lobi	212.80	213.45	1,500	650	650			a,b
	213.45	215.25	∞	1,800	1,775	-25	400	a,b,d
	215.25	215.40	250	150	145	-5		a,b,d
	215.40	217.30	∞	1,900	1,865	-35	1,200	a,b,d
	217.30	217.70	1,000	400	385	-15		a,b,d
	217.70	218.00	∞	300	295	-5		a,b,d
Gaya	218.00	218.40	1,000	400	395	-5		a,b
	218.40	219.05	∞	650	640	-10		a,b
	219.05	219.30	350	250	240	-10	500	a,b,d
	219.30	219.80	∞	500	485	-15		a,b,d
	219.80	220.10	500	300	280	-20		a,b
	220.10	220.90	∞	800	785	-15	500	a,b,d
	220.90	221.60	750	700	680	-20	500	a,b,d
	221.60	222.20	∞	600	580	-20		a,b
	222.20	222.90	1,500	700	690	-10		a,b
	222.90	223.75	∞	850	850			a,b
	223.75	224.15	4,000	400	400			a,b
	224.15	226.50	∞	2,350	2,335	-15	900	a,b,d
	226.50	226.80	750	300	300			a,b
	226.80	227.35	∞	550	540	-10	1,000	a,b,d
	227.35	228.30	2,000	950	920	-30		a,b,d
	228.30	229.00	∞	700	700			a,b
	229.00	229.20	500	200	190	-10		a,b

(continued / continuée)

(Section / Tronçon #2)

Location Tracement	PK	PK	R m	L_o m	L_1 m	ΔL m	ℓ_o m	T
	229.20	230.70	∞	1,500	1,500			a
	230.70	230.90	300	200	190	-10		a,b
	230.90	231.45	∞	550	550			a
	231.45	232.15	750	700	680	-20		a,b
	232.15	232.50	∞	350	350			a
	232.50	232.75	750	250	245	-5		a,b
	232.75	232.85	∞	100	100			a,b
	232.85	233.35	750	500	490	-10		a,b
	233.35	233.60	300	250	250			a,b
Faka	233.60	233.80	∞	200	200			a
	Bili Rv.							
	233.80	234.50	∞	700	690	-10		a,b
	234.50	235.00	400	500	480	-20		a,b
	235.00	235.40	∞	400	395	-5		a,b
	235.40	235.70	250	300	290	-10	250	a,b,d
	235.70	236.55	∞	850	760	-90		a,b,d
	236.55	236.90	250	350	345	-5	700	a,b,d
	236.90	237.05	∞	150	150			a
	237.05	237.35	400	300	295	-5		a
	237.35	238.20	∞	850	850			a,b,c,d
	238.20	238.65	500	450	445	-5	600	a,b,d
	238.65	239.15	∞	500	495	-5		a,b,d
	239.15	239.90	750	750	750			a,b
	239.90	240.30	∞	400	395	-5		a,b,c
Tanza	240.30	240.80	1,000	500	500			a,b,c
	240.80	240.90	∞	100	95	-5		a,b
	240.90	241.20	1,500	300	300			a,b
	241.20	242.45	∞	1,250	1,245	-5		a,b
	242.45	243.00	750	550	530	-20		a,b,d
	243.00	243.10	∞	100	95	-5	300	a,b,d
	243.10	243.40	300	300	290	-10		a,b,d
	243.40	244.05	∞	650	645	-5		a,b,d

(continued / continuée)

(Section / Tronçon #2)

Location Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
	244.05	244.30	300	250	245	-5		a,b,d
	244.30	246.60		2,300	2,300			a,b,c
	246.60	247.40	750	800	790	-10		a,b
	247.40	247.70	∞	300	295	-5		a,b
	247.70	247.95	230	250	225	-25	500	a,b,d
	247.95	248.30	∞	350	335	-15		a,b,d
	248.30	248.80	750	500	485	-15		a,b,d
Monga	248.80	250.00		1,200	1,200			a,b
	Total			125,000	122,335	-2,665	24,250	

(Section / Tronçon #1)

Location Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
Monga	250.00	250.15	∞	150	145	-5		a,b
	250.15	250.40	230	250	245	-5		a,b
	250.40	250.85	∞	450	450			a
	250.85	251.25	350	400	390	-10		a,b
	251.25	251.65	∞	400	395	-5		a,b
	251.65	252.00	750	350	345	-5		a,b
	252.00	252.30	∞	300	300			a
	252.30	252.55	750	250	250			a,b
	252.55	252.75	∞	200	190	-10		a,b,c
	252.75	253.15	1,000	400	385	-15		a,b
	253.15	253.70	∞	550	550			a,b
	253.70	254.05	1,000	350	345	-5		a,b
Lumande	254.05	254.55	∞	500	495	-5		a,b
	254.55	254.80	750	250	250			a,b
	254.80	254.95	∞	150	145	-5		a,b

(continued / continuée)

(Section / Tronçon #1)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
	PK - PK	m	m	m	m	m	
	254.95 - 255.20	750	250	245	-5		a,b
	255.20 - 256.10	∞	900	895	-5		a,b
	256.10 - 257.10	2,000	1,000	980	-20		a,b
Fakula	257.10 - 258.65	∞	1,550	1,535	-15		a,b
	258.65 - 259.10	500	450	435	-15		a,b,c
	259.10 - 259.70	∞	600	600			a,b
	259.70 - 260.10	1,000	400	395	-5		a,b
	260.10 - 260.30	∞	200	190	-10		a,b
	260.30 - 260.80	1,000	500	485	-15		a,b
	260.80 - 261.20	∞	400	400			a,b
	261.20 - 261.40	350	200	195	-5		a,b
	261.40 - 262.15	∞	750	740	-10		a,b
	262.15 - 262.60	750	450	435	-15		a,b
	262.60 - 265.10	∞	2,500	2,500			a,b,c
	265.10 - 265.95	750	850	850		800	a,b,d
	265.95 - 266.15	∞	200	195	-5		a,b
	266.15 - 266.50	750	350	340	-10		a,b
	266.50 - 267.10	∞	600	600			a
	267.10 - 267.55	1,000	450	430	-20		a,b
	267.55 - 267.75	∞	200	200			a,b
	267.75 - 268.85	2,000	1,100	1,095	-5		a,b
	268.85 - 270.00	∞	1,150	1,120	-30	500	a,b,c,d
	270.00 - 270.55	1,000	550	455	-95		a,b,c
	270.55 - 270.90	500	350	340	-10		a,b
	270.90 - 271.10	∞	200	200			a,b,d
	271.10 - 271.55	350	450	420	-30	300	a,b,d
	271.55 - 271.85	∞	300	290	-10		a,b
	271.85 - 272.25	500	400	380	-20		a,b
	272.25 - 272.35	∞	100	100			a
	272.35 - 273.80	3,000	1,450	1,450		500	a,b,d
	273.80 - 274.00	∞	200	190	-10		a,b
	274.00 - 283.00	∞	10,300	7,500	-2,800	7,500	d
	283.00 - 284.30	2,000					d

(continued / continuée)

(Section / Tronçon #1)

Location / Tracement			R	L_o	L_1	ΔL	ℓ_o	T
	PK	PK	m	m	m	m	m	
	284.30	285.55	4,000	1,250	1,230	-20		a,b
Dogba	285.55	286.00	∞	450	435	-15		a,b
	286.00	287.40	1,500	1,400	1,370	-30	1,800	a,b,d
	287.40	288.20	∞	800	765	-35		a,b,d
	288.20	289.00	2,000	800	770	-30	150	a,b,d
	289.00	291.15	∞	2,150	2,130	-20	1,500	a,b,d
	291.15	291.90	1,500	750	740	-10		a,b
	291.90	292.30	∞	400	390	-10		a,b
	292.30	292.70	500	400	390	-10		a,b,c
	292.70	292.95	∞	250	240	-10		a,b,c
	292.95	293.10	300	150	145	-5		a,b,c
	293.10	293.20	∞	100	95	-5		a,b,c
	293.20	293.35	250	150	145	-5		a,b
	293.35	293.50	∞	150	150			a,b
	293.50	294.00	750	500	495	-5		a,b
	294.00	294.20	∞	200	200			a,b
	294.20	294.60	750	400	395	-5		a,b
	294.60	294.70	∞	100	100			a,b
	294.70	295.15	750	450	445	-5		a,b,c
	295.15	296.80	∞	1,650	1,620	-30		a,b
	296.80	297.30	4,000	500	500			a,b
	297.30	298.15	∞	850	840	-10		a,b,c
	298.15	298.55	250	400	395	-5		a,b,c
	298.55	298.65	∞	100	100			a
	298.65	300.05	1,000	1,400	1,370	-30		a,b
	300.05	301.25	1,500	1,200	1,170	-30	400	a,b,d
	301.25	301.50	∞	250	250		200	a,b,d
	301.50	302.00	500	500	500			a,b
	302.00	302.50	∞	500	490	-10		a,b
	302.50	303.10	750	600	580	-20		a,b
	303.10	304.15	∞	1,050	1,030	-20		a,b,c
	304.15	304.40	500	250	250			a,b,c
	304.40	304.60	∞	200	200			a,b,c

(continued / continuée)

(Section / Tronçon #1)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
PK	PK	m	m	m	m	m	
304.60 -	304.80	750	200	190	-10		a,b,c
304.80 -	305.25	∞	450	450			a
305.25 -	306.55	2,500	1,300	1,275	-25		a,b
306.55 -	306.95	∞	400	385	-15		a,b,d
306.95 -	307.40	450	450	435	-15	450	a,b,d
307.40 -	307.90	∞	500	490	-10		a,b
307.90 -	308.60	750	700	705	+5		a,b,c
308.60 -	308.80	∞	200	195	-5		a,b
308.80 -	309.05	250	250	240	-10		a,b
309.05 -	309.55	∞	500	490	-10		a,b
309.55 -	309.75	230	200	195	-5		a,b
309.75 -	309.90	∞	150	150			a,b
309.90 -	310.25	230	350	345	-5	200	a,b
310.25 -	310.45	∞	200	195	-5		a,b
310.45 -	311.25	1,000	800	785	-15	300	a,b
311.25 -	311.90	∞	650	645	-5		a,b
311.90 -	312.70	2,500	800	790	-10		a,b
312.70 -	313.60	∞	900	780	-120		a,b
313.60 -	313.90	400	300	200	-100		a,b
313.90 -	314.10	∞	200	190	-10		a,b
314.10 -	314.50	500	400	400			a,b
314.50 -	314.80	∞	300	300			a
Soa 314.80 -	315.20	1,500	400	395	-5		a,b
315.20 -	315.35	∞	150	150			a
315.35 -	316.95	2,000	1,600	1,550	-50		a,b,c
316.95 -	318.15	∞	1,200	1,185	-15		a,b,c
318.15 -	318.30	350	150	140	-10		a,b
318.30 -	318.80	∞	500	500			a
318.80 -	319.10	500	300	290	-10		a,b
319.10 -	319.35	∞	250	245	-5		a,b
319.35 -	319.75	300	400	390	-10		a,b
319.75 -	321.15	∞	1,400	1,390	-10		a,b

(continued / continuée)

(Section / Tronçon #1)

Location / Tracement		R	L_o	L_1	ΔL	ℓ_o	T
	PK PK	m	m	m	m	m	
	321.15 - 321.50	250	350	335	-15		a,b
	321.50 - 322.00	∞	500	500			a,b
Ndu	322.00 - 322.40	250	400	395	-5		a,b
Bangassou	Bomu Rv.						
	Total		72,400	68,285	-4,115	14,600	
	G. Total		718,600	698,955	-19,645	161,100	

A.3.4.4 Culverts

(1) Calculation of Run-Off

The run-off can be calculated by several methods, but the rational formula was adopted in this study, taking into account the hydrologic data obtained.

$$Q = \frac{1}{3.6} \cdot C \cdot r \cdot A$$

where, Q = Peak amount of run-off (m^3/sec)
C = Coefficient of run-off = 0.1
r = Average rainfall intensity during flood reaching time (mm/h)
A = Basin area (Km^2)

(2) Longitudinal Slope of Rivers

Since the longitudinal slope of rivers cannot be obtained from the available maps on scale of 1:50,000 without contour-line, major rivers were measured, and the results were used to estimate the longitudinal slopes of other rivers as follows:

Name of River	Distance from Kisangani (Km)	Measured Slope of Water Surface (%)	Average Slope of Water Surface (%)
Lindi	36.8	0.04	
Ngula	58.2	0.025	
Aruwimi	129.0	0.025	
Zambeke	159.1	0.025	
Kole	196.4	0.010	
Tele	235.9	0.033	0.024
Yeme	309.1	0.017	
Rubi	323.9	0.025	
Makala	327.5	0.017	
Longa	332.3	0.020	
			PK 8 + 0.00 (from Buta)

Name of River	Distance from Kisangani (Km)	Measured Slope of Water Surface (%)	Average Slope of Water Surface (%)
Kotili	352.1	0.010	
Bilo	370.5	0.010	0.010
Likati	464.3	0.025	
Likati	477.6	0.025	PK 46 + 2.00 (from Buta)
Uélé	524.8	0.025	0.021
Bili	633.6	0.010	
			PK 372 + 0.00 (from Dulia)

(3) Calculation of Rainfall Duration (Flood Reaching Time)

The flood reaching time can be calculated by various methods, but since there are only a few available data for calculation, the following method was adopted:

$t = L/v$ (hr)

where: t = Flood reaching time (hr)

L = Distance from the uppermost upstream point of a river (Km)

v = Flood reaching velocity (Km/h)

$= 72\ (H/L)^{0.6}$

H = Fall (Km)

H/L = Slope of river

The slope of rivers calculated by using the above estimated values are as follows:

Section	H/L	$(H/L)^{0.6}$	v (KM/h)
from Kisangani PK 36 + 800~ from Buta PK 8 + 0	0.00024	0.0067	0.482
from Buta PK 8 + 0 ~ from Dulia PK64 + 200	0.00021	0.0060	0.432
PK 64 + 200 ~ from Dulia PK 322 + 0	0.0001	0.0039	0.281

(4) Probable Rainfall Intensity

According to L'Intensité des Plivies au Congo et au Ruanda-Urundi, the probable rainfall intensity observed at weather stations in Haut Zaire are as given in the following table:

The above values were converted into 60-minute rainfall intensity by the following formula, and they were plotted on logarithmic normal probability paper to obtain the probable rainfall intensity graph of respective return year. (See Plate A.3.4.4-(1))

$$I = R \times \frac{60}{t} \quad (mm/h)$$

Where: I = 60 minutes rainfall intensity (mm/h)

R = Probable rainfall (mm)

t = Rainfall duration (min)

Probable Rainfall Intensity (mm/hour)

Location	Return year: 2 years				5 years				10 years			
	Duration of rain fall (minutes)											
	10	30	60	90	10	30	60	90	10	30	60	90
LIBENGE	24.5	47.7	63.0	76.6	28.7	56.0	80.5	91.1	31.9	62.3	90.1	102.1
BUNIA	21.0	40.8	51.0	55.3	24.4	47.7	59.7	64.9	26.9	52.9	66.3	72.1
KINDU	23.4	49.3	63.9	69.7	27.6	58.5	76.1	83.1	30.7	65.4	85.3	93.2
BOENDE	27.1	54.3	68.8	72.6	31.6	63.2	80.4	84.7	34.9	70.3	89.2	93.8
MBANDAKA	24.1	47.2	59.2	66.4	28.1	55.1	69.3	77.8	31.1	61.1	76.9	86.4
KISANGANI	24.1	47.0	64.3	69.4	28.1	54.9	75.5	81.5	31.1	60.8	84.0	90.6
BASOKO	23.0	46.6	56.0	63.5	26.9	54.6	65.6	74.6	29.7	60.6	72.8	82.6

(5) Design of Crossing Culverts

For calculation of the cross-sectional areas of crossing culverts, the culvert diameters were determined by the graph (Plate A.3.4.4-(2), (3)) by the following Manning's formula:

$$Q_O = \frac{1}{n} \cdot R^{\frac{2}{3}} \cdot I^{\frac{1}{2}} \cdot a$$

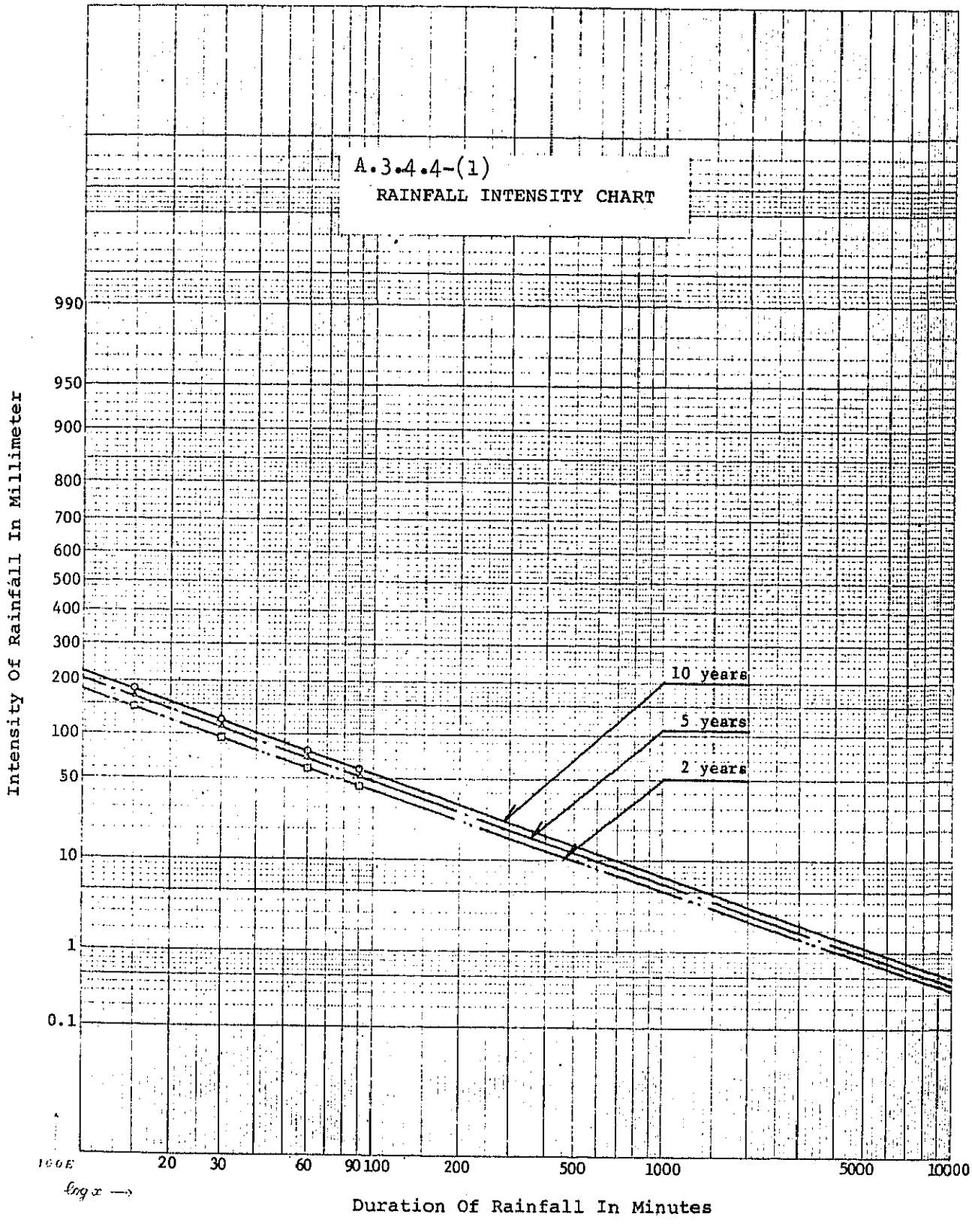
Where: Q_O = Flowing capacity of culvert (m^3/sec)
n = Coefficient of roughness = 0.1
R = Hydraulic mean depth (m)
I = Slope of culvert
A = Cross-sectional area of culvert (m^2)

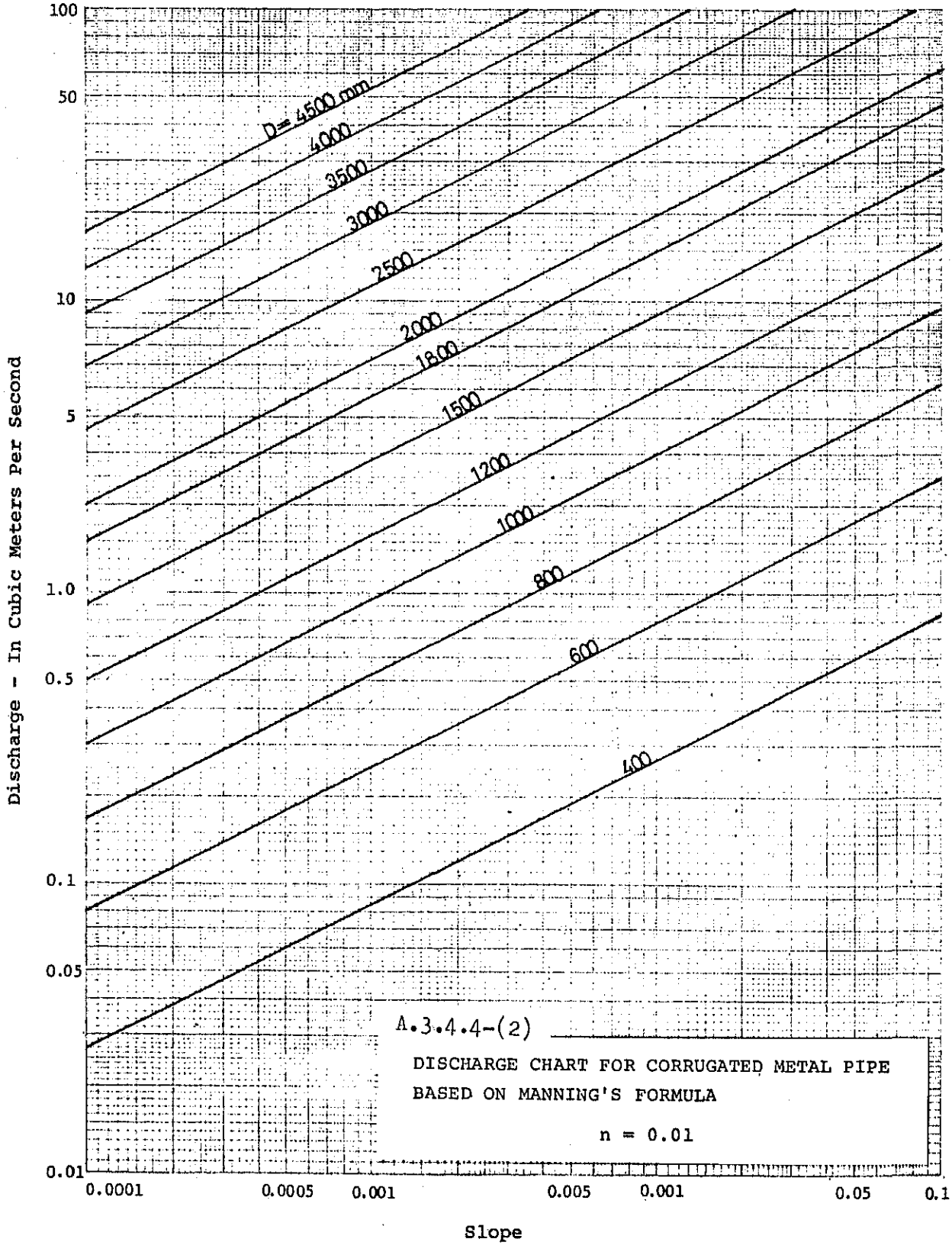
The culverts shown in Calculation Table A.3.4.4-(4) are only those for the rivers which can be recognized as rivers on the available maps on a scale of 1:50,000. Therefore, these culverts in the Table 3.4.4-(2) are not all of the existing ones, and the rest existing culverts and those for the places requiring additional culverts where the crossing streams flow over the road, and those recognized their existance on the spot are all included in Plates B.1.1 to B.1.19.

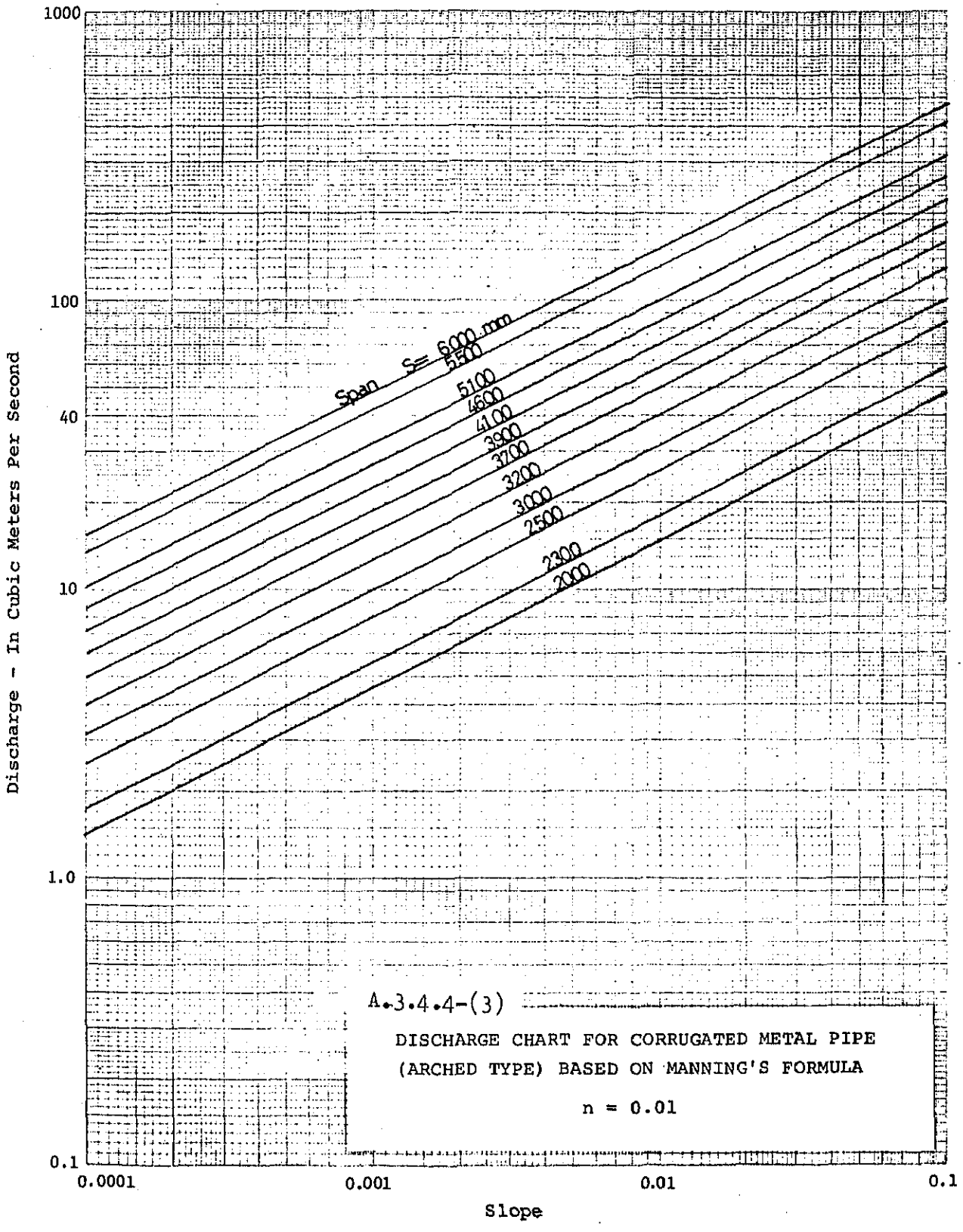
Of the sizes of culverts in Calculation Table;

Alternative (a): Culverts diameters were determined by calculation of run-off from the maps on a scale of 1:50,000.

Alternative (b): Culverts diameters were determined by finding the past flood marks found on the spots or informed by local inhabitants to estimate the run-off at the time of flood.


A.3.4.4-(1)
RAINFALL INTENSITY CHART
Intensity Of Rainfall In Millimeter
990
950
900
800
700
600
500
400
300
200
100
50
10
1
0.1
10 years
5 years
2 years
20
30
60
90
100
200
500
1000
5000
10000
Duration Of Rainfall In Minutes
log x


100
50
10
5
1.0
0.5
0.1
0.05
0.01
D= 4500 mm
4000
3500
3000
2500
2000
1800
1500
1200
1000
800
600
400
0.0001
0.0005
0.001
0.005
0.001
0.05
0.1
Slope
Discharge - In Cubic Meters Per Second
A.3.4.4-(2)
DISCHARGE CHART FOR CORRUGATED METAL PIPE
BASED ON MANNING'S FORMULA
n = 0.01



A.3.4.4-(3)

DISCHARGE CHART FOR CORRUGATED METAL PIPE
(ARCHED TYPE) BASED ON MANNING'S FORMULA

n = 0.01

A.3.4.4-(4)

Run-off Calculation and Size of Culverts for Existing Streams

Calcul de ruissellement et Grosseur des ponceaux pour tube de courant existant

$Q = \frac{1}{3.6} \times C \times \gamma \times A$ (m^3/sec)

C : Run off coefficient 0.1
Coefficient de ruissellement 0.1

γ : Average rainfall intensity (mm/h)
Intensité de la pluie moyenne

A : Basin area (KM^2)
Bassin versant

$t = \frac{L}{V}$: Duration of rainfall (min)
Durée de précipitation pluviale

L : Run off distance (m)
Longueur en thalweg principal

V : Average run off velocity (m/sec)
Vélocité du courant moyenne

ø : Diameter of pipe (m)
Diamètre de tuyau

Pcor : Corrugated metal pipe
Tuyau ondulé en fer

PC : Concrete pipe
Tuyau en béton

C-Bx : Reinforced concrete box culvert
Dalot en béton armé

S : Corrugated metal pipe (arched type)
Tuyau onduleé en métal

A.3.4.4-(4)

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarque
50 + 200		12.0	1,492.0	4.9	55.0	7.4	Pcor ø2.5	Pcor ø2.9	
+ 500		13.5	1,680.0	4.4	26.0	3.1	4-ø1.2	4-ø1.2	
+ 900		29.0	3,610.0	1.9	92.0	4.9	ø2.5	2-ø2.7	
54 + 600		25.0	3,112.0	2.2	44.0	2.7	4-ø1.2	4-ø1.2	
55 + 200		15.0	1,867.2	3.8	16.0	1.7	ø1.8	2-ø2.0	
61 + 450	Angwande	4.0	497.9	15.0	10.9	4.2	6-ø1.2	3-ø1.2	
63 + 250	Azame	8.0	995.0	7.1	12.6	2.5	ø2.0	C-Box 2-(0.8x1.3)	
64 + 600	Abolo	10.0	1,244.8	5.6	14.6	2.3	ø1.8	8-ø0.6	
66 + 500	Takao	21.0	2,614.1	1.6	58.2	2.6	ø2.0	S-ø4.5	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarque
70 + 600		1.5	186.7	25.0	1.6	1.1	Pcor ø1.5	PC ø0.6	
79 + 100		2.3	286.3	19.0	2.0	1.0	" ø1.5		
80 + 400		1.3	161.8	38.0	0.6	0.6	PC ø0.8	PC ø0.6	
80 + 550		6.5	809.1	8.9	12.7	3.1	Pcor 5-ø1.2	Pcor 5-ø0.9	
92 + 450	Tongbala	6.0	746.8	9.4	12.3	3.2	" 2-ø1.5	" 2-ø1.0	
+ 800		2.0	249.0	1.5	27.0	1.1	" ø1.5		
93 + 450		1.5	186.7	34.0	1.0	0.9	" ø1.5	Pcor ø1.2	
98 + 650	Bode	12.0	1,493.8	4.9	58.0	7.9	" 2-S3.0	" 2-S3.6	
99 + 800		5.5	684.6	12.0	12.1	4.0	" 2-ø1.8	" ø1.5	
101 + 400		2.0	248.9	28.0	1.3	1.0	" ø1.5	PC ø0.6	
102 + 600		2.5	311.2	22.0	1.8	1.1	" ø1.5	Pcor ø0.9	
105 + 750	Mobe	14.5	1,804.9	4.0	43.4	4.8	" ø2.5	" ø3.0	
106 + 800		0.7	87.1	61.0	0.3	0.5	" ø1.2	PC ø0.6	
111 + 180	Ambisode	11.5	1,431.5	5.0	28.5	4.0	" 2-S1.8	Pcor 3-S1.8	
113 + 0	Anbutuge	18.5	2,302.9	3.0	36.4	3.0	" 2-S1.5	" 2-S1.5	
+ 500	Atemae	8.5	1,058.0	6.9	9.9	1.9	" 2-ø1.5	" 2-ø1.2	
114 + 900		2.0	249.0	27.0	1.2	0.9	" ø1.5	PC ø0.6	
116 + 150		7.0	871.4	8.2	9.9	2.2	" ø1.8	Pcor ø1.2	
117 + 300		1.0	124.5	47.0	0.7	0.9	" 2-ø1.0	PC ø0.8	
118 + 650	Andakode	5.0	622.4	11.0	8.5	2.6	" 2-ø1.5	Pcor ø1.2	

Station Position	River Rivière	L (KM)	t (min)	ℓ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarque
124 + 900	Akolia	12.0	1,493.8	4.9	32.3	4.4	Pcor S-3.0	Pcor S-1.8	
135 + 50	Menueke	2.0	249.0	27.0	1.7	1.2	" 2-ø1.2		
143 + 400		20.0	2,489.6	1.8	55.2	2.7	" S-2.3	" S-4.8	
144 + 800		4.0	497.9	15.0	7.8	3.2	" S-3.2		
148 + 400		15.0	1,867.2	3.7	39.9	4.1	" S-3.0	" 2-S3.6	
173 + 100	Sangara	3.0	373.4	19.0	3.2	1.7	" ø1.8	" ø1.2 " 2-ø1.0	
174 + 900		1.3	161.8	39.0	0.7	0.8	" ø1.2	" ø1.0	
175 + 800	Mombulubulu	5.0	622.4	12.0	7.4	2.5	" ø2.0	" ø1.0	
178 + 700	Saela	6.0	746.9	9.4	13.7	3.6	" 2-ø1.8	" 2-ø1.8	
181 + 800	Malembazabene	6.0	746.9	9.4	10.6	2.8	" 2-ø1.5	" 2-ø1.0	
185 + 900	Lengelewa	3.0	373.4	19.0	3.9	2.0	" 2-ø1.5	" ø1.0	
188 + 200		8.5	1,058.1	6.9	29.2	5.6	" 2-ø2.0	" ø2.0	
194 + 500		20.0	2,489.6	2.8	120.0	9.3	" S-4.1	" S-4.3	
198 + 500		2.0	249.0	27.0	2.4	1.8	" ø1.8	" ø1.0	
201 + 100		1.0	124.5	47.0	1.0	1.3	" ø1.5		
202 + 100	Bengolobo	3.5	435.7	17.0	4.2	2.0	" 2-ø1.5	PC 2-ø0.8	
203 + 900	Kole	15.5			39.5				
231 + 600	Banzua	12.0	1,493.8	4.8	23.9	3.2	" S-2.5	Pcor 2-S2.4	
232 + 600		9.0	1,120.0	6.5	70.0	12.6	" 2-ø2.26	" 2-ø2.6	
236 + 800	Mopondo	19.5	2,427.4	2.9	102.3	8.2	" 2-ø2.5	" 2-ø3.8	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Sulverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarques
237 + 800	Lembumbu	9.5	1,182.6	6.0	18.4	3.1	Pcor 2-ø1.5	PC 2-ø0.8	
242 + 700		2.5	311.2	22.0	11.1	6.8	" 2-ø2.0	Pcor 2-ø1.2	
243 + 800		3.5	435.7	17.0	4.9	2.3	" 2-ø1.5	" 2-ø1.2	
245 + 500		6.0	746.9	9.5	11.7	3.1	" 2-ø1.5	" 2-ø1.2	
249 + 600	Mbe	11.0	1,369.3	5.3	64.1	9.4	" S-4.0		
251 + 700		3.0	373.4	19.0	2.5	1.3	" 3-ø1.0	" 3-ø1.0	
261 + 900	Ejongo	10.0	1,244.8	5.3	27.5	4.0	" 3-ø1.5	" 3-ø1.8	
262 + 800	Bnogamaga	6.5	809.1	8.9	12.7	3.1	" 3-ø1.5	" 3-ø0.9	
266 + 100	Bondo	5.5	684.6	11.0	6.4	1.9	" 3-ø1.2	" 3-ø1.0	
268 + 0	Bondua	5.0	622.4	11.0	8.0	2.9	" ø1.8	" ø1.8	
270 + 0		1.5	186.7	34.0	1.0	0.9	" 2-ø1.0	" 2-ø1.0	
271 + 500		1.0	124.5	47.0	1.5	1.9	" 2-ø1.5	" 2-ø1.0	
277 + 0	Bode	6.0	746.9	9.5	11.4	3.0	" S-2.5	" S-4.0	
+ 200	Bode-Manene	5.5	684.6	12.0	5.7	1.9	" S-ø1.2	" S-ø1.0	
288 + 200	Yagi	4.5	560.1	13.0	5.7	2.0	" S-2.0	" S-4.0	
292 + 700		4.5	560.1	13.0	12.9	4.7	" S-3.0	" S-4.0	
294 + 900		20.0	2,489.6	1.8	99.0	5.0	" S-3.2	" 2S-5.0	
299 + 300		6.0	746.9	9.5	9.7	2.6	" ø2.0	" ø3.0	
302 + 550		7.5	933.6	7.8	12.6	3.2	" 2-ø1.5	" 2-ø1.0	
310 + 600	Mabagamu	4.0	497.9	15.0	7.7	3.2	" ø2.5	" ø3.0	
315 + 800		5.5	684.6	12.0	12.0	4.0	" 3-ø1.5	" ø1.0	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarques
317 + 400									
From de Buta									
2 + 600		1.8	252.3	27.0	1.0	0.8	Pcor ø1.2		
13 + 50	Nguru	4.0	827.6	8.8	3.0	0.7	" ø1.5	Pcor ø1.9	
14 + 0	Malikuta	8.0	1,655.2	4.4	18.7	2.3	" ø2.5	" ø3.0	
19 + 500	Lingiba	5.5	1,137.9	6.5	12.4	2.2	" ø2.5	" ø3.0	
22 + 100	Kon	3.0	620.7	11.0	2.0	0.6	" ø1.5	" ø1.2	
41 + 300	Gombo	7.5	1,551.7	4.6	27.4	3.5	" S-3.2	" S-3.0	
54 + 700	Maze	100.0	13,953.5	0.3	350.0	2.9	" ø2.0	" 2-ø3.5	
58 + 150	Mafari	11.5	1,604.7	4.8	27.2	3.6	" ø2.5	" ø3.0	
66 + 50	Bilo	40.0	5,581.4	1.0	510.0	14.1	" 3-ø3.0	" 3-ø4.0	
69 + 250		2.0	279.1	24.0	2.3	1.7	ø1.8	" ø1.2	
From de Dulia									
2 + 300	Mogengia	4.0	558.1	14.0	4.5	1.8	Pcor 2-ø1.8	Pcor 2-ø1.0	
11 + 800	Masipiri	1.0	139.5	43.0	0.6	0.7	" 2-ø1.0	" 2-ø1.0	
13 + 900	Maburuka	18.5	2,581.4	2.7	77.0	5.7	" S-3.0	" S-3.2	
16 + 900	Nabuma	15.0	2,093.0	3.5	44.5	4.3	" S-3.0	" S-3.0	
21 + 0	Makusi	3.0	418.6	18.0	3.0	1.5	" ø1.5	" ø1.0	
26 + 800	Nagobero	15.0	2,093.0	3.5	45.5	4.4	" S-3.0	" S-3.0	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Sulverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarques
29 + 500		1.0	139.5	43.0	0.8	0.9	Pcor 2-ø1.0	Pcor 2-ø1.0	
30 + 550	Nangende	1.0	139.5	43.0	0.6	0.7	" 2-ø1.0	" 2-ø1.0	
33 + 450		8.5	1,186.0	6.0	22.3	3.7	" ø2.5	" ø1.5	
37 + 250		1.0	139.5	43.0	0.4	0.5	" ø1.2		
38 + 750		0.7	97.7	55.0	0.2	0.3	" ø1.0	" ø1.0	
39 + 200	Mango	20.0	2,790.7	2.6	65.0	4.7	" S-3.0	" S-3.0	
43 + 400	Namenimbala	21.0	2,930.0	2.3	56.0	3.6	" ø2.5	" ø1.8	
47 + 300	Kpoyo	11.0	1,534.9	4.8	39.7	5.3	" ø2.5	" ø2.5	
48 + 700		4.0	558.1	14.0	5.8	2.2	" 2-ø1.5	" 2-ø1.0	
+ 900		5.0	697.7	10.0	3.9	1.1	" ø1.5	" 2-ø1.0	
51 + 600		2.0	279.1	25.0	3.0	2.1	" ø1.8	" ø1.5	
52 + 900		4.5	627.9	11.5	11.0	3.5	" ø2.5	" ø1.0	
55 + 600		4.5	627.9	11.5	9.0	2.9	" ø2.0	" ø1.0	
66 + 500		3.0	418.6	18.0	4.8	2.4	" ø1.8	" ø1.0	
69 + 300		4.0	558.1	14.0	11.3	4.4	" ø2.5	" ø1.0	
70 + 300	Malikambe	7.5	1,046.5	6.9	12.3	2.4	" ø1.8	" 2-ø1.0	
75 + 100	Bolongo	5.0	697.7	10.0	10.0	2.8	" ø2.0	" 2-ø1.0	
82 + 200	Maniuna	8.0	1,116.2	6.5	4.7	0.8	" ø1.5	" ø1.5	
83 + 600		23.5	3,279.0	2.1	78.0	4.6	" ø2.5	" ø2.5	
88 + 80		1.0	139.5	43.0	0.3	0.4	" ø1.0	" ø1.0	
90 + 400		4.0	558.1	13.0	3.0	0.4	" ø1.0	" ø1.0	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarques
91 + 500		8.0	1,116.2	6.2	10.5	1.8	Pcor 2-ø1.2	Pcor 2-ø1.0	
98 + 700	Kulumonene	5.5	767.4	9.4	8.8	2.3	" 2-ø1.2	" 2-ø1.0	
106 + 300		2.0	279.1	25.0	2.0	1.4	" ø1.5		
108 + 400		2.3	320.9	21.5	2.5	1.5	" ø1.5	" ø1.0	
110 + 0		3.5	488.3	15.0	5.1	2.1	" ø1.8	" ø1.0	
111 + 0		2.0	279.1	25.0	1.4	1.0	" ø1.5	" ø1.0	
113 + 0		8.0	1,116.2	6.5	18.7	3.4	" 2-ø1.8	" ø1.0	
118 + 400	Keda	4.5	627.9	11.5	10.8	3.4	" 2-ø1.8		
120 + 550	Mizaka	5.5	767.4	9.4	6.3	1.6	" 2-ø1.2	" 2-ø1.0	
124 + 80	Masingi	2.0	279.0	25.0	1.6	1.1	" 2-ø1.0	" 2-ø1.0	
131 + 500	Kule	12.0	1,674.4	4.3	39.1	4.6	" ø2.5	" ø1.5	
135 + 400	Bangoloma	3.5	488.3	15.0	3.6	1.5	" 2-ø1.2	" ø1.0	
137 + 100	Gindi	6.0	837.2	8.7	6.8	1.6	" 2-ø1.5	" 2-ø1.0	
141 + 300	Kingile	20.0	2,790.7	2.6	139.4	10.0	" S-4.6	" ø1.0	
143 + 900		1.0	139.5	43.0	0.2	0.2	" ø1.0	" 2-ø1.0	
146 + 500	Mangalo	11.0	1,534.9	4.8	27.3	3.0	" 2-ø1.5	" 2-ø1.0	
147 + 700	Dibgo	5.0	697.7	10.0	10.1	2.8	" 2-ø1.5	" ø1.5	
151 + 0	Mabali	1.0	139.5	43.0	0.8	1.0	" ø1.5	" ø1.0	
152 + 900	Maluga	17.0	2,372.1	3.3	54.9	5.0	" ø2.5	" ø3.5	
160 + 600	Bagu	1.0	139.5	43.0	0.9	1.1	" ø1.5	" ø1.0	
162 + 200		2.2	307.0	22.0	2.6	1.6	" ø1.5	" ø1.0	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A_2 (KM^2)	Q (m^3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarque
162 + 750	Mangoli	4.5	627.9	11.5	7.6	2.4	Pcor ø2.0	Pcor ø1.0	
163 + 100	Bavula	2.0	279.1	25.0	1.4	1.0	" ø1.5	" ø1.0	
+ 900	"	4.5	627.9	11.5	6.1	1.9	" 2-ø1.5	" 2-ø1.0	
165 + 700	Namangava	2.5	348.8	20.0	2.5	1.4	" ø1.5	" ø1.0	
167 + 900	Mambia	12.5	1,744.2	4.1	12.4	1.4	" ø1.5	" ø1.5	
176 + 0		0.7	97.7	56.0	0.2	0.3	" ø1.0	" ø1.0	
+ 500		0.7	97.7	56.0	0.2	0.3	" ø1.0	" ø1.0	
181 + 400	Lobi	3.0	418.6	18.0	3.3	1.6	" ø1.8		
184 + 800	"	0.5	69.7	71.0	0.2	0.4	" ø1.0	" ø1.0	
186 + 950	Duo (Nduo)	8.0	1,116.2	6.5	16.7	3.0	" ø2.5	" ø1.0	
188 + 500	Yangola	11.0	1,534.9	4.8	29.2	3.9	" ø2.5	" ø1.5	
192 + 600	Monbulu	7.0	976.7	7.2	13.6	2.7	" 2-ø1.5	" 2-ø1.0	
193 + 100	Mabulu	2.0	279.1	25.0	1.6	1.1	" ø1.5	" ø1.0	
194 + 200	"	2.5	348.8	20.0	1.7	0.9	" ø1.5	" ø1.0	
195 + 900		1.0	139.5	43.0	0.3	0.4	" ø1.0	" ø1.0	
197 + 100	Digbala	8.0	1,116.2	6.5	10.5	1.8	" 2-ø1.5	" ø1.0	
198 + 150		1.8	251.1	27.0	1.1	0.8	" ø1.5	" ø1.0	
199 + 900	Digbala	8.0	1,116.2	6.5	1.4	0.3	" ø1.0	" 2-ø1.0	
204 + 600		2.0	279.1	25.0	2.5	1.7	" 2-ø1.5	" ø1.0	
212 + 100	Lobi	50.0	6,976.7	0.8	450.0	10.0	" S-3.7	" S-3.7	
216 + 300		1.5	209.3	32.0	0.5	0.4	" ø1.0	" ø1.0	

Station Position	River Rivière	L (KM)	t (min)	γ (mm/h)	A (KM^2)	Q (m^3/sec)	Size of Culverts Grosseur de ponceaux Alternative (a)	Alternative (b)	Remarks Remarque
222 + 600		1.0	139.5	43.0	0.3	0.4	Pcor ø1.0	Pcor ø1.0	
230 + 900	Pangabiso	3.5	488.3	15.0	3.1	1.3	" ø1.5	" ø1.0	
236 + 600		2.5	348.8	20.0	3.1	1.7	" ø1.8	" ø1.0	
237 + 900	Duku	8.0	1,116.2	6.5	21.0	3.8	" 2-ø1.8	" ø1.8	
240 + 300	Makuru	1.5	209.3	32.0	0.8	0.7	" ø1.2	" ø1.0	
243 + 100	Bafumbu	4.5	627.9	11.5	5.9	1.9	" ø1.8	" 2-ø1.0	
245 + 500	Ingumbio	8.5	1,186.0	6.0	15.6	2.6	" 2-ø1.5	" ø1.0	
248 + 400		8.0	1,116.2	6.5	13.4	2.4	" 2-ø1.5	" S-3.7	
250 + 400	Dindo (II)	5.0	697.7	10.0	6.0	1.7	" ø1.8	" S-3.0	
252 + 700	" (III)	4.0	558.1	13.0	6.3	2.3	" 2-ø1.5	" ø1.0	
265 + 100	Logbo	11.0	1,534.9	4.8	56.5	7.5	" S-3.9	" ø1.5	
276 + 100	Luba	11.0	1,534.9	4.8	43.4	5.8	" S-3.2	" S-3.2	
292 + 800	Balinga (Boloko)	32.0	4,465.1	1.4	189.0	7.4	" S-3.9	" S-3.2	
295 + 0	Bainga	6.0	837.2	8.7	10.6	2.6	" ø2.0	" ø1.5	
300 + 500	Popwo	5.0	697.7	10.0	13.3	3.7	" ø2.5	" ø1.8	
303 + 500		21.0	2,930.2	2.3	122.6	7.8	" S-3.9	" S-3.0	
316 + 600	Yabongo	6.5	907.0	7.2	17.7	3.5	" S-2.5	" S-3.0	

Total 167 locations

In this project road improvement additional pipes of ø1.0m are constructed at 406 locations where are considered to be necessary through the field survey and are all shown in Plates B.1.1 - B.1.19.

Dans la route ameliorée de projet additionnelle les tuyaux de ø1.0m ont construit à locations 406 où ils ont considéré nécessaire à cause de additionnelle les tuyaux de ø1.0m ont construit à locations qui ont indiqué toutes les Planches B.1.1 - B.1.19.

A.3.4.5

Distribution of Soils along Project Road and Appropriate Pavement Types

Distribution des sols le long de la Route de projet et types du revêtement approprié

Section / Tronçon	Station / Point d'étude	Length along Existing Road / Longueur du long de route existante	Soils Classification / Classification des Sols — AASHO								Pavement Types / Types du revêtement				
			A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	I	II	III	IV	V
(Kisangani)	PK PK	km									Alternative I / Alternative II				
	3.6 - 28.5	24.9					o			SC			o		II
10	28.5 - 35.0	6.5		o						SC	o				
	35.0 - 50.0	15.0	o							SC	o				
	Total	46.4													
(Bengamisa)															
	50.0 - 54.0	4.0	o							SC	o				
	54.0 - 68.0	14.0					o			SC			o		
	68.0 - 89.3	21.3					o			CL			o		
9	89.3 - 102.8	13.5				o				SC		o			
	102.8 - 104.75	1.95		o						SC	o				
	104.75 -123.9	19.15					o			SC			o		
	123.9 - 129.0	5.1	o							SC	o				
	Total	79.0													
(Banalia)											Alternative I				Alternative II
8	129.0 - 148.0	19.0			o					SC		o			o
	148.0 - 154.0	6.0							o	SC			o		o

Section / Tronçon	Station / Point d'étude	Length along Existing Road / Longueur du long de route existante	Soils Classification / Classification des Sols — AASHO								Pavement Types / Types du revêtement				
			A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	I	II	III	IV	V
	PK PK	km									Alternative I				Alternative II
	154.0 - 158.0	4.0			o					SC		o			o
	158.0 - 159.0	1.0							o	SC			o		o
	159.0 - 160.7	1.7			o					SC		o			o
	160.7 - 161.75	1.05					o			SC			o		o
	161.75 -162.8	1.05			o					SC		o			o
8	162.8 - 165.1	2.3					o			SC			o		o
	165.1 - 168.1	3.0			o					SC		o			o
	168.1 - 180.4	12.3							o	SC			o		o
	180.4 - 188.3	7.9		o						SC	o				o
	188.3 - 191.5	3.2					o			SC			o		o
	191.5 - 206.0	14.5		o						SC	o				o
	Total	77.0													
(Kole)															
7	206.0 - 230.0	24.0		o						SC	o				o
	230.0 - 235.8	5.8					o			SC			o		o
	Total	29.8													
(Tele)															
	235.8 - 237.0	1.2					o			SC			o		o
6	237.0 - 238.5	1.5		o						SC	o				o
	238.5 - 240.5	2.0					o			SC			o		o
	240.5 - 246.9	6.4		o						SC	o				o

Section / Tronçon	Station / Point d'étude PK	PK	Length along Existing Road / Longueur du long de route existante km	Soils Classification / Classification des sols — AASHO A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	Pavement Types / Types du revêtement — I	II	III	IV	V
												Alternative I				Alternative II
	246.9	251.4	4.5					o			SC			o		o
	251.4	280.0	28.6			o					GC		o			o
	280.0	299.0	19.0			o					SC		o			o
6	299.0	302.0	3.0							o	SC			o		o
	302.0	309.5	7.5		o						SC	o				o
	309.5	310.85	1.35					o			SC			o		o
	310.85	314.4	3.55		o						SC	o				o
	314.4	317.4	3.0					o			SC			o		o
	317.4	324.3	6.9			o					SC		o			o
	Total		88.5													
(Buta)												I	II	III	IV	VI
	0	7.0	7.0			o					SC		o			o
	7.0	33.0	26.0		o						SC	o				o
5	33.0	36.0	3.0					o			SC			o		o
	36.0	74.0	38.0		o						SC	o				o
	74.0	75.5	1.5		o						SM	o				o
	Total		75.5													
(Dulia)																
	0	5.95	5.95		o						SM	o				o
4	5.95	12.2	6.25		o						SC	o				o
	12.2	18.6	6.4					o			SC			o		o
	18.6	20.2	1.6		o						SC	o				o

Section Tronçon	Station Point d'étude	Length along Existing Road Longueur de long de route existante	Soils Classification Classification des sols AASHO								Pavement Types Types du revêtement				
			A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	I	II	III	IV	VI
	PK PK	km									Alternative I				Alternative II
	20.2 - 21.95	1.75					o			SC			o		o
	21.95- 26.85	4.9		o						SC	o				o
	26.85- 34.5	7.65					o			SC			o		o
	34.5 - 35.15	0.65		o						SC	o				o
4	35.15- 44.0	8.85					o			SC			o		o
	44.0 - 46.0	2.0		o						SC	o				o
	46.0 - 49.5	3.5					o			SC			o		o
	49.5 - 53.5	4.0		o						SC	o				o
	53.5 - 58.8	5.3					o			SC			o		o
	58.8 - 61.3	2.5		o						SC	o				o
	61.3 - 65.5	4.2					o			SC			o		o
	Total	65.5													
(Likati)															
	65.5 - 69.5	4.0			o					SC		o			o
	69.5 - 77.6	8.1					o			SC			o		o
	77.6 - 78.6	1.0		o						SC	o				o
3	78.6 - 80.55	1.95					o			SC			o		o
	80.55- 83.2	2.65		o						SC	o				o
	83.2 - 86.95	3.75					o			SC			o		o
	86.95- 95.85	8.9		o						SW	o				o
	95.85- 117.9	22.05			o					SC		o			o

Section Tronçon	Station Point d'étude PK PK	Length along Existing Road Longueur du long de route existante km	Soils Classification Classification des Sols AASHO A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	Pavement Types Types du revêtement I	II	III	IV	VI
											Alternative I				Alternative II
3	117.9 - 125.0	7.1							o	CL			o		o
	Total	59.5													
(Bondo)															
	125.0 - 129.0	4.0							o	CL			o		o
	129.0 - 131.7	2.7		o						SC	o				o
	131.7 - 139.3	7.6							o	SC			o		o
	139.3 - 163.25	23.95		o						SC	o				o
	163.25- 166.0	2.75		o						GC	o				o
	166.0 - 169.2	3.2					o			SC			o		o
	169.2 - 169.95	0.75	o							SC	o				o
2	169.95- 175.2	5.25					o			SC			o		o
	175.2 - 179.2	4.0		o						SC	o				o
	179.2 - 180.15	0.95							o	SC			o		o
	180.15- 194.7	14.55		o						SC	o				o
	194.7 - 197.55	2.85					o			SC			o		o
	197.55- 200.0	2.45		o						SC	o				o
	200.0 - 201.0	1.0					o			SC			o		o
	201.0 - 209.5	8.5		o						SC	o				o
	209.5 - 210.75	1.25							o	SC			o		o
	210.75- 231.25	20.5		o						SC	o				o
	231.25- 234.0	2.75					o			SC			o		o
	234.0 - 240.2	6.2		o						SC	o				o

Section Tronçon	Station Point d'étude	Length along Existing Road Longueur du long de route existante	Soils Classification Classification des sols AASHO								Pavement Types Types du revêtement				
			A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	I	II	III	IV	VI
	PK PK	km									Alternative I				Alternative II
	240.2 - 240.95	0.75					o			SC			o		o
2	240.95- 247.25	6.3		o						SC	o				o
	247.25- 250.0	2.75							o	SC			o		o
	Total	125.0													
(Monga)															
	250.0 - 254.0	4.0							o	SC			o		o
	254.0 - 284.8	30.8		o						GW				o	o
	284.8 - 285.1	0.3							o	CL			o		o
	285.1 - 292.6	7.5		o						GW				o	o
	292.6 - 292.9	0.3					o			SC			o		o
	292.9 - 294.6	1.7		o						SC	o				o
	294.6 - 295.25	0.65					o			SC			o		o
	295.25- 300.0	4.75		o						SC	o				o
	300.0 - 301.7	1.7						o		CH			o		o
	301.7 - 303.4	1.7		o						SC	o				o
	303.4 - 303.7	0.3					o			SC			o		o
	303.7 - 313.25	9.55		o						SC	o				o
	313.25- 314.45	1.2					o			SC			o		o
	314.45- 316.4	1.95		o						SC	o				o
	316.4 - 317.6	1.2					o			SC			o		o
	317.6 - 319.0	1.4							o	SC			o		o

Section Tronçon (Ndu)	Station Point d'étude PK PK	Length along Existing Road Longueur du long de route existante km	Soils Classification Classification des sols AASHO A-2-4	A-2-6	A-2-7	A-4	A-6	A-7-5	A-7-6	Casagrande	Pavement Types Types du revêtement I	II	III	IV	VI
											Alternative I				Alternative II
	319.0 - 322.4	3.4		o						SC	o				o
	Total	72.4													

Note: 1. Pavement Types I, II, III and IV shown in the Table are in the case of Alternative I.

Types du revêtement I, II, III et IV ont indiqué dans le Tableau sont dans le cas d'Alternative I.

2. In the case of Alternative II, pavement types of sections of #10 and #9 in Alternative I are adopted. The rest sections are not paved in Phase I, and sections #8, #7 and #6 are paved with Type V in Phase III.

Dans le cas d'Alternative II, types du revêtement de tronçons 10 et 9 dans le Alternative I ont adopté. Le reste des tronçons n'a pas pavé dans Phase I, et tronçons 8, 7 et 6 n'ont pas pavés avec Type V dans Phase III.

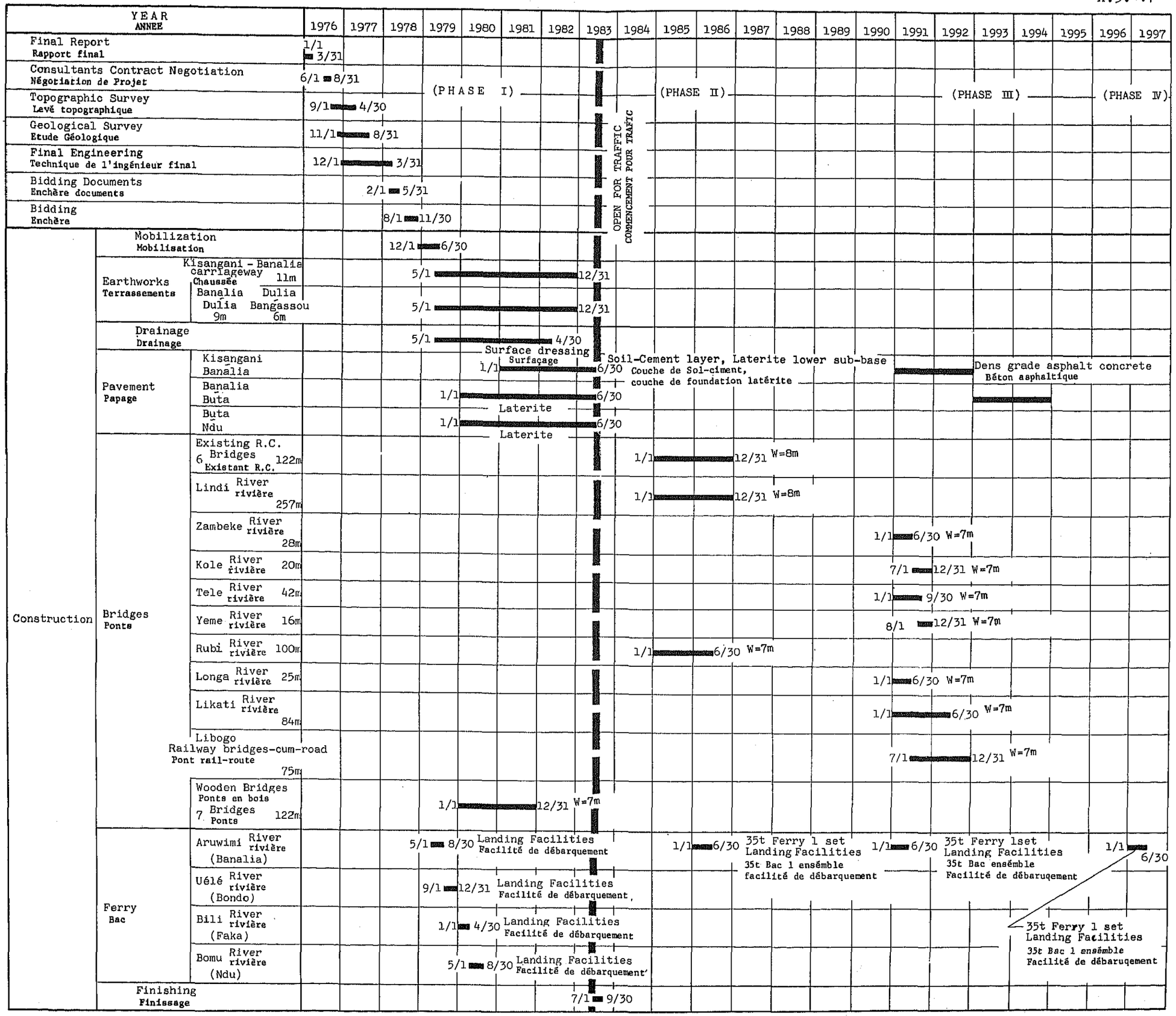
A.3.4.6 (ALTERNATIVE-I) CONSTRUCTION SCHEDULE
PLAN DE CONSTRUCTION

YEAR / ANNEE			1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Final Report / Rapport final			1/1 3/31																			
Consultants Contract Negotiation / Négotiation de Projet			6/1 8/31																			
Topographic Survey / Levé Topographique			9/1 4/30			(P H A S E I)											(PHASE II)					
Geological Survey / Etude Géologique			11/1 8/31																			
Detailed Design / Technique de l'ingénieur final			12/1 3/31																			
Bidding Documents / Enchère document				2/1 5/31																		
Bidding / Enchère					8/1 11/30																	
Construction	Mobilization / Mobilisation				12/1 6/30																	
	Earthworks / Terrassements				4/1 12/31																	
	Drainage / Drainage				5/1 12/31																	
	Pavement / Papage	Surface Dressing / Surfaçage					7/1 6/30 Lower sub-base includes Soil cement layer / Sous-couche de Sol-ciment															
		Dense Grade Asphalt Concrete / Béton asphaltique															1/1 12/31 Kisangani - Banalia					
	Bridges / Ponts	Lindi River / rivière 257m				1/1 12/31																
		Aruwimi River / rivière 640m				1/1 12/31																
		Rubi River / rivière 100m					7/1 12/31															
		Likati River / rivière 84m				1/1 6/30																
		Libogo River / rivière 75m					7/1 12/31															
		Small Bridges / Petits Ponts 18 Bridges 375m				1/1 12/31																
	Ferry / Bac	Uélé River / rivière (Bondo)				9/1 12/31 Landing Facilities / Facilité de débarquement																
		Bili River / rivière (Faka)				1/1 4/30 Landing Facilities / Facilité de débarquement																
		Bomu River / rivière (Ndu)				5/1 8/30 Landing Facilities / Facilité de débarquement																
	Finishing / Finissage									7/1 9/30												

OPEN FOR TRAFFIC COMMENCEMENT POUR TRAFIC

A.3.4.7 (ALTERNATIVE-II) CONSTRUCTION SCHEDULE
PLAN DE CONSTRUCTION

A.3.4.7



A.3.4.8 Number of Curves on Existing and Improved Road by Radius

Nombre de places de courbure sur route existante et améliorée par rayon

Section / Tronçon		R<230m	230m≦R<380m	380m≦R<500m	500m≦R<1,000m	1,000m≦R<3,000m	3,000m<R	Total
10	Existing Road/Route existante	53	5			9		67
	Improved Road/Route améliorée	1	1	7	2	11	2	24
9	Existing Road/Route existante	108	16			69		193
	Improved Road/Route améliorée	1	7	5	17	22	9	61
8	Existing Road/Route existante	99	17			53		169
	Improved Road/Route améliorée	1	1	2	4	17	8	33
7	Existing Road/Route existante	74	3			12		89
	Improved Road/Route améliorée	0	0	0	2	6	3	11
6	Existing Road/Route existante	155	7			30		192
	Improved Road/Route améliorée	0	3	2	10	33	6	54
5	Existing Road/Route existante	77	2			36		115
	Improved Road/Route améliorée	0	6	11	7	26	4	54
4	Existing Road/Route existante	49	7			19		75
	Improved Road/Route améliorée	0	7	31	9	5	2	54
3	Existing Road/Route existante	98	9			40		147
	Improved Road/Route améliorée	0	3	17	22	21	3	66
2	Existing Road/Route existante	176	11			43		230
	Improved Road/Route améliorée	4	20	8	27	37	4	100
1	Existing Road/Route existante	133	7			33		173
	Improved Road/Route améliorée	0	14	15	21	19	3	72
Total	Existing Road/Route existante	1,022	84			344		1,450
	Improved Road/Route améliorée	7	62	98	121	197	44	529

A-3-5-1 ACCUMULATED LENGTH BY TERRAIN OF EXISTING AND IMPROVED ROADS
LONGUE ACCUMULEE PAR DE ROUTE EXISTANTE ET AMELIOREE

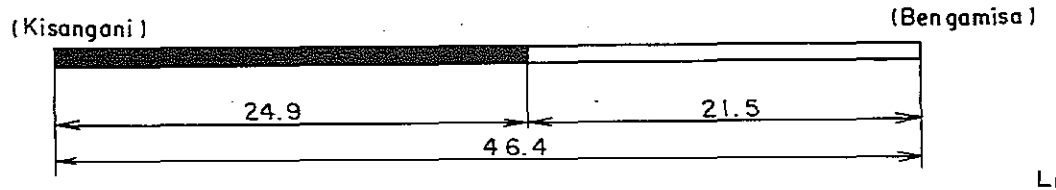
Unit ; m
Unité

SECTION TRONÇON	EXISTING ROAD ROUTE EXISTANTE	TYPE	IMPROVED ROADS / ROUTE PROPOSEE				ROAD LENGTH IN FOREST LONGUEUR DE ROUTE AUX FORÊT		
			VILLAGE	FOREST FORÊT	BRIDGE PONT	TOTAL	SPARCE CLAIRSEMEE	MEDIUM MOYENNE	DENSE FORTE
10	Kisangani 46,400	EXISTING ROUTE / EXISTANTE	3,038	27,106	276	30,420	12,471	11,375	3,260
		IMPROVED ROUTE / AMELIOREE	939	13,561	0	14,500	4,450	6,780	2,331
		Total	3,977	40,667	276	44,920	16,921	18,155	5,591
9	79,000	EXISTING ROUTE / EXISTANTE	3,274	57,880	36	61,190	24,514	24,080	9,286
		IMPROVED ROUTE / AMELIOREE	2,768	13,705	27	16,500	7,776	4,251	1,678
		Total	6,042	71,585	63	77,690	32,290	28,331	10,964
8	Banalia 77,000	EXISTING ROUTE / EXISTANTE	3,641	28,506	48	32,195	12,794	9,421	6,291
		IMPROVED ROUTE / AMELIOREE	5,055	35,995	(640) 0	41,050	7,259	10,889	17,847
		Total	8,696	64,501	(640) 48	73,245	20,053	20,310	24,138
7	29,800	EXISTING ROUTE / EXISTANTE	692	12,056	42	12,790	4,632	5,087	2,337
		IMPROVED ROUTE / AMELIOREE	2,593	12,807	0	15,400	3,346	6,000	3,461
		Total	3,285	24,863	42	28,190	7,978	11,087	5,798
6	88,500	EXISTING ROUTE / EXISTANTE	1,962	60,897	116	62,975	20,773	26,764	13,360
		IMPROVED ROUTE / AMELIOREE	3,587	19,813	0	23,400	5,387	9,180	5,246
		Total	5,549	80,710	116	86,375	26,160	35,944	18,606
5	Buta 75,500	EXISTING ROUTE / EXISTANTE	3,645	68,369	106	72,120	30,322	30,463	7,584
		IMPROVED ROUTE / AMELIOREE	1,768	732	0	2,500	110	73	549
		Total	5,413	69,101	106	74,620	30,432	30,536	8,133
4	65,500	EXISTING ROUTE / EXISTANTE	2,523	57,006	101	59,630	20,347	24,264	12,395
		IMPROVED ROUTE / AMELIOREE	902	4,298	0	5,200	337	2,528	1,433
		Total	3,425	61,304	101	64,830	20,684	26,792	13,828
3	59,500	EXISTING ROUTE / EXISTANTE	3,445	51,245	75	54,765	19,614	20,202	11,429
		IMPROVED ROUTE / AMELIOREE	1,209	2,491	0	3,700	1,150	862	479
		Total	4,654	53,736	75	58,465	20,764	21,064	11,908
2	Bondo 125,000	EXISTING ROUTE / EXISTANTE	3,700	94,361	24	98,085	35,218	37,970	21,173
		IMPROVED ROUTE / AMELIOREE	7,734	16,516	0	24,250	4,204	8,308	4,004
		Total	11,434	110,877	24	122,335	39,422	46,278	25,177
1	72,400 Ndu	EXISTING ROUTE / EXISTANTE	1,948	51,737	0	53,685	24,400	15,298	12,039
		IMPROVED ROUTE / AMELIOREE	1,078	13,522	0	14,600	8,874	3,381	1,267
		Total	3,026	65,259	0	68,285	33,274	18,679	13,306
TOTAL	718,600	EXISTING ROUTE / EXISTANTE	27,868	509,163	824	537,855	205,085	204,924	99,154
		IMPROVED ROUTE / AMELIOREE	27,633	133,440	(640) 27	161,100	42,893	52,252	38,295
		Total	55,501	642,603	(640) 851	698,955	247,978	257,176	137,449

A.3.5.1-(2) Weighted Average Distance of Long-Haul Earth Moving

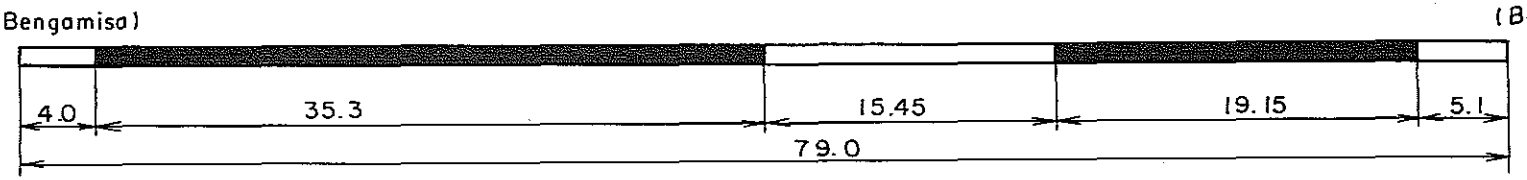
(See Vol 3. Table A.3.4.5)

Section # 10



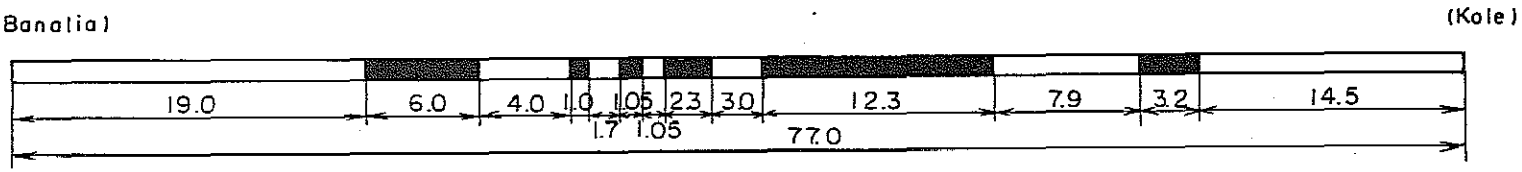
$$L_{10} = \frac{24.9}{2} = 12.45\,km$$

Section # 9



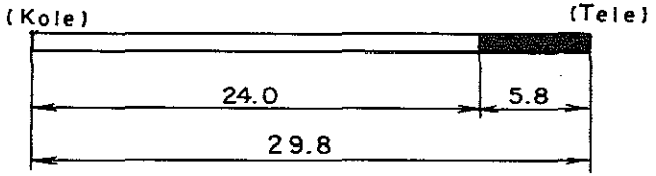
$$L_9 = \frac{35.3 \times \frac{35.3}{4} + 19.15 \times \frac{19.15}{4}}{35.3 + 19.15} = 7.4\ km$$

Section # 8



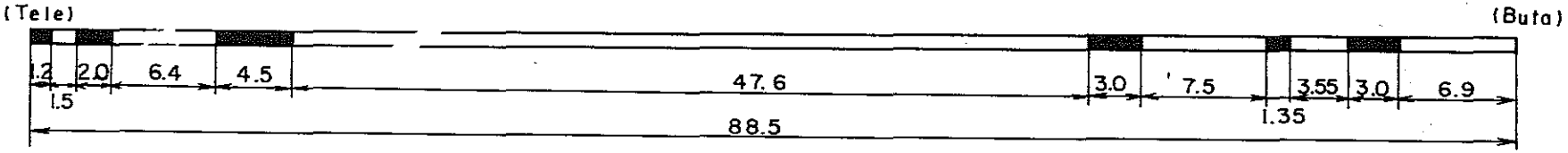
$$L_8 = \frac{6.0 \times \frac{6.0}{4} + 1.0 \times \frac{1.0}{4} + 1.05 \times \frac{1.05}{4} + 2.3 \times \frac{2.3}{4} + 12.3 \times \frac{12.3}{4} \times 3.2 \times \frac{3.2}{4}}{6.0 + 1.0 + 1.05 + 2.3 + 12.3 + 3.2} = 2.0\ km$$

Section # 7



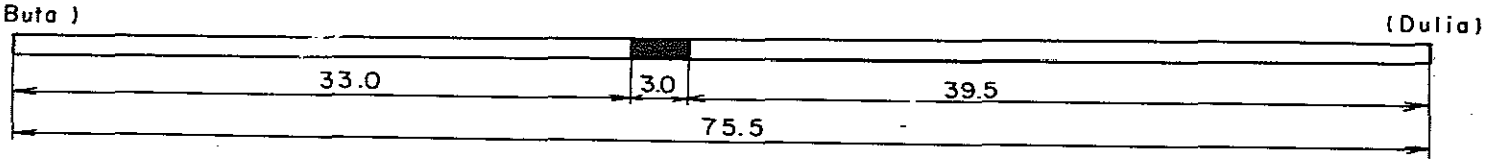
$$L_7 = \frac{5.8}{2} = 2.9 \text{ km}$$

Section # 6



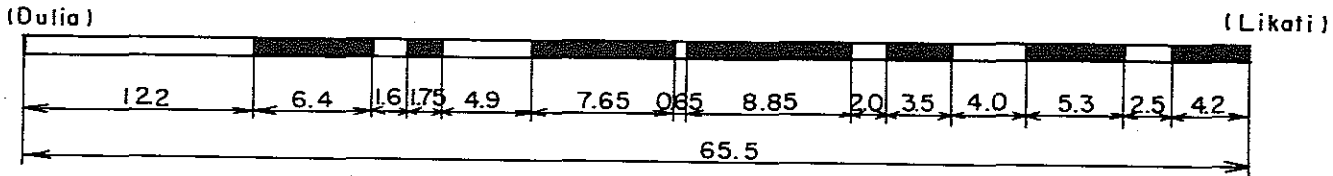
$$L_6 = \frac{1.2\times\frac{1.2}{2}+2.0\times\frac{2.0}{4}+4.5\times\frac{4.5}{4}+3.0\times\frac{3.0}{4}+1.35\times\frac{1.35}{4}+3.0\times\frac{3.0}{4}}{1.2+2.0+4.5+3.0+1.35+3.0} = 0.8 \text{ km}$$

Section # 5



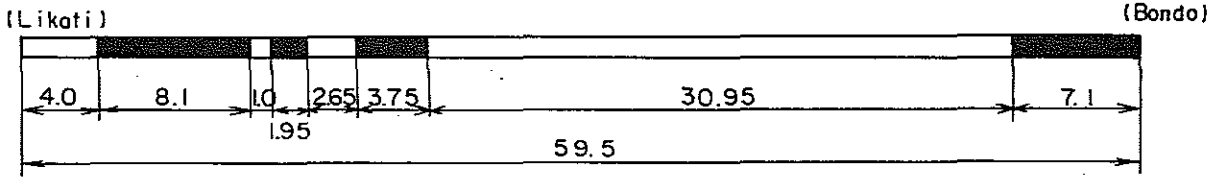
$$L_5 = \frac{3.0}{4} \fallingdotseq 0.8 \text{ km}$$

Section # 4



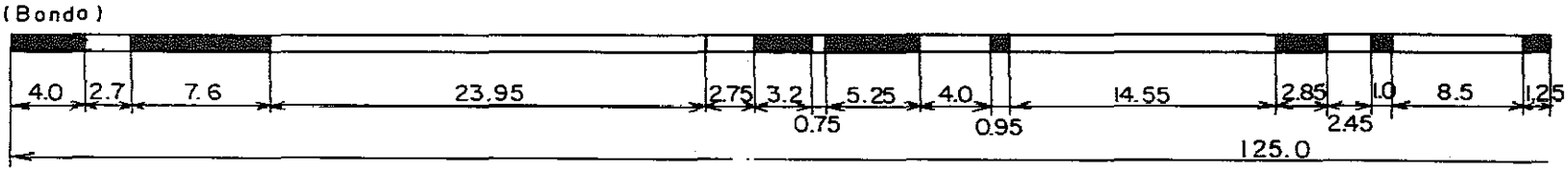
$$L_4 = \frac{6.4\times\frac{6.4}{4}+1.75\times\frac{1.75}{4}+7.65\times\frac{7.65}{4}+8.85\times\frac{8.85}{4}+3.5\times\frac{3.5}{4}+5.3\times\frac{5.3}{4}+4.2\times\frac{4.2}{2}}{6.4+1.75+7.65+8.85+3.5+5.3+4.2} = 1.7 \text{ km}$$

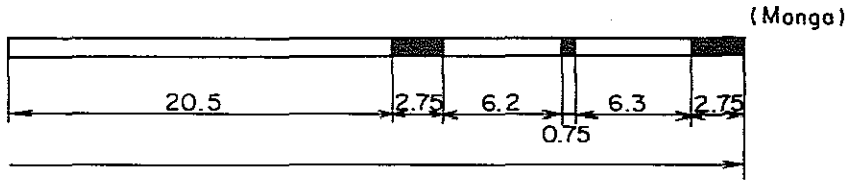
Section # 3



$$L_3 = \frac{\frac{8.1^2}{4} + \frac{1.95^2}{4} + \frac{3.75}{4} + \frac{7.1^2}{4}}{8.1 + 1.95 + 3.75 + 7.1} = 2.2 \text{ km}$$

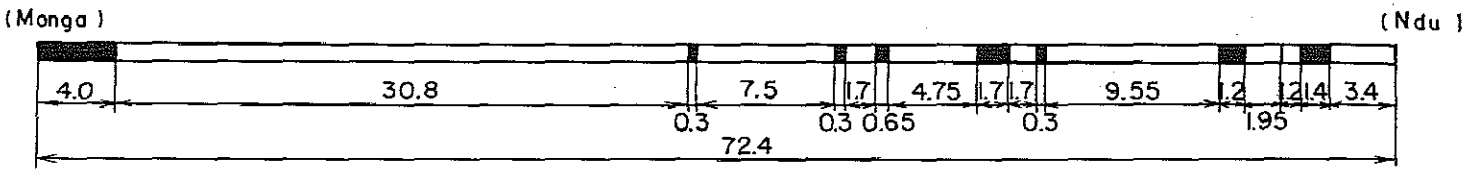
Section # 2





$$L_2 = \frac{\frac{4.0^2}{2} + \frac{7.6^2}{4} + \frac{3.2^2}{4} + \frac{5.25^2}{4} + \frac{0.75^2}{4} + \frac{2.85^2}{4} + \frac{1.0^2}{4} + \frac{1.25^2}{4} + \frac{2.75^2}{4} + \frac{0.75^2}{4} + \frac{2.75^2}{2}}{4.0 + 7.6 + 3.2 + 5.25 + 0.95 + 2.85 + 1.0 + 1.25 + 2.75 + 0.75 + 2.75} = 1.3 \text{ km}$$

Section # 1



$$L_1 = \frac{\frac{4.0^2}{2}+\frac{0.3^2}{4}+\frac{0.3^2}{4}+\frac{0.65^2}{4}+\frac{1.7^2}{4}+\frac{0.3^2}{4}+\frac{1.2^2}{4}+\frac{2.6^2}{4}}{4.0+0.3+0.3+0.65+1.7+0.3+1.2+2.6} = 1.0 \text{ km}$$

Section	Length of Improved Road	Accumulated Length		Average Long-Haul Distance of Laterite
		Lateritic Sections	Silty Sections	
# 10	44.92 km	20.81 km	24.11 km	12.45 km
# 9	77.69	24.14	53.55	7.4
# 8	73.245	48.655	24.59	2.0
# 7	28.19	5.49	22.7	2.9
# 6	86.375	71.685	14.69	0.8
# 5	74.62	71.66	2.96	0.8
# 4	64.83	27.57	37.26	1.7
# 3	58.465	37.93	20.535	2.2
# 2	122.335	90.675	31.66	1.3
# 1	68.285	57.865	10.42	1.0
Total	698.955	456.48	242.475	

A.3.5.2 (ALTERNATIVE I) PHASE I NET COSTS OF IMPROVEMENT / COÛTS NETS D'AMELIORATION From de Kisangani To à Bangassou (698.955 km) Unit Unité: Zaire

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	DIVISION - IV		DIVISION - III		DIVISION - II		DIVISION - I		TOTAL	
			QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT
CLEARING DEBOISEMENT				210,670		396,850		350,010		363,450		1,320,980
Clearing Deboisement	**Medium Vegetation Végétation moyenne**	m^2	1,123,000	56,150	1,701,000	85,050	1,841,000	92,050	1,761,000	88,050	6,426,000	321,300
Clearing & Grubbing Déboisement & l'essouchment	Sparse Forest **Végétation clairsemée**	m^2	996,000	39,840	1,168,000	46,720	1,383,000	55,320	1,584,000	63,360	5,131,000	205,240
	Medium Forest **Végétation moyenne**	m^2	934,000	74,720	1,524,000	121,920	1,528,000	122,240	1,416,000	113,280	5,402,000	432,160
"	Dense Forest **Végétation forte**	m^2	333,000	39,960	1,193,000	143,160	670,000	80,400	823,000	98,760	3,019,000	362,280
EARTHWORKS TERRASSEMENTS				5,221,490		2,707,355		1,861,980		2,366,455		12,157,280
Embankment Remblai	**Short Haul Transport court**	m^3	502,000	602,400	981,000	1,177,200	734,000	880,800	1,404,000	1,684,800	3,621,000	4,345,200
"	**Long Haul Transport long**	m^3	934,000	4,613,000	444,000	1,528,300	332,000	726,000	332,000	639,550	2,042,000	7,506,850
Cut Déblai		m^3	17,400	6,090	5,300	1,855	14,800	5,180	120,300	42,105	157,800	55,230
Subgrade Replacement Herrison de replacement		m^3	-	-	-	-	19,500	250,000	-	-	19,500	250,000
SIDE SLOPES TALUS				157,900		245,100		281,000		272,300		956,800
Slope Shaping Façonnage d'un talus	**Manual Labor Travail de manoeuvre**	m^2	1,042,000	104,200	1,625,000	162,500	1,945,000	194,508	1,885,000	188,500	6,497,000	649,700
Grassing Gazonnement		m^2	537,000	53,700	826,000	82,600	870,000	87,000	838,000	83,800	3,071,000	307,100
DRAINAGE DRAINAGE				1,295,900		1,657,842		1,447,674		1,646,230		6,047,646
Side-ditch Excavation Contre-fossé	**Laterite Latérite**	lm	40,900	61,350	114,300	171,450	127,600	191,400	137,500	206,250	420,300	630,450
"	**Silt Limon**	lm	71,400	185,640	55,700	144,820	56,500	146,900	38,600	100,360	222,200	577,720
Side-ditch in Village Area Contre-fossé au village		lm	10,000	256,000	17,500	523,900	13,500	353,000	14,400	369,000	55,400	1,501,900
Stone-pitched Ditch Fossé maçonne en pierre		lm	6,700	249,600	900	63,600	3,800	144,100	7,600	300,200	19,000	757,500

Note: In unit in ditches is indicated in linear meter of road, consequently the real length of ditches is two times of the figure in the table.
Unité en dans les fossés a indiqué dans mètre linéaire de la longueur de route, par conséquent bobine de longueur de fossé est deux temps de ces figures dans le tableau.

(continued)
(continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	DIVISION - IV		DIVISION - III		DIVISION - II		DIVISION - I		TOTAL	
			QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT	QUANTITY QUANTITE	COST COÛT
Pipe-Culvert **Pipe-ondulée**	**ø0.6m**	lm	72	1,728	13	312	-	-	-	-	85	2,040
	ø0.8	lm	-	-	13	494	-	-	-	-	13	494
	ø1.0	lm	2,006	174,522	2,058	179,046	2,352	204,624	2,310	200,970	8,726	759,162
	ø1.2	lm	559	55,900	252	25,200	147	14,700	63	6,300	1,021	102,100
	ø1.5	lm	441	83,790	504	95,760	231	43,890	651	123,690	1,827	347,130
	ø1.8	lm	124	27,280	147	32,340	189	41,580	105	23,100	565	124,300
	ø2.0	lm	63	15,750	210	52,500	42	10,500	42	10,500	357	89,250
	ø2.5	lm	-	-	105	36,750	168	58,800	84	29,400	357	124,950
	ø3.0	lm	105	59,850	42	23,940	126	71,820	63	35,910	336	191,520
	ø4.0	lm	42	39,060	147	136,710	105	97,650	147	136,710	441	410,130
	ø5.0	lm	21	29,400	42	58,800	-	-	21	29,400	84	117,600
Inlet & Outlet **Entrée & sortie**	**ø0.6**	piece	10	360	2	120	-	-	-	-	12	480
	ø0.8	piece	-	-	2	150	-	-	-	-	2	150
	ø1.0	piece	202	13,440	192	21,640	224	16,860	220	16,840	838	68,780
	ø1.2	piece	60	6,230	24	4,170	14	1,560	6	600	104	12,560
	ø1.5	piece	42	10,420	48	17,200	22	5,660	62	15,700	174	48,980
	ø1.8	piece	14	4,480	14	6,320	18	6,030	10	3,200	56	20,030
	ø2.0	piece	6	2,700	20	12,440	4	1,960	4	2,060	34	19,160
	ø2.5	piece	-	-	10	8,260	16	10,720	8	5,440	34	24,420
	ø3.0	piece	10	8,800	4	4,920	12	10,920	6	6,000	32	30,640
	ø4.0	piece	4	5,600	14	27,800	10	15,000	14	20,800	42	69,200
	ø5.0	piece	2	4,000	4	9,200	-	-	2	3,800	8	17,000
PAVEMENT PAVAGE				6,359,700		8,603,100		7,767,700		6,571,750		29,302,250
Type - I	**Short Haul** **Transport court**	m^2	221,000	1,106,300	442,000	2,503,950	754,000	3,824,700	814,000	3,850,350	2,231,000	11,285,300
Type - II	**Short Haul** **Transport court**	m^2	96,000	504,000	583,000	3,449,650	234,000	1,205,900	-	-	913,000	5,159,550
Type - III	**Long Haul** **Transport long**	m^2	562,000	4,749,400	325,000	2,649,500	436,000	2,737,100	306,000	1,889,800	1,629,000	12,025,800
Type - IV	**Short Haul** **Transport court**	m^2	-	-	-	-	-	-	252,000	831,600	252,000	831,600
BRIDGES **PONTS**				2,009,250		5,229,000		1,458,500		108,000		8,804,750
Angokpa	**R.C. 1 span** **R.C. 1 travée**	lm	7.5	30,000	-	-	-	-	-	-	7.5	30,000
Aqudi	**R.C. 1 span** **R.C. 1 travée**	lm	10.5	42,000	-	-	-	-	-	-	10.5	42,000
Lindi	**Plate G. 6 spans** **Poutre entôles 6 travées**	lm	257.5	1,673,750	-	-	-	-	-	-	257.5	1,673,750
Gula	**P.C. 1 span** **P.C. 1 travée**	lm	27	121,500	-	-	-	-	-	-	27	121,500
Badjoge	**R.C. 1 span** **R.C. 1 travée**	lm	10	40,000	-	-	-	-	-	-	10	40,000

(continued)
(continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	DIVISION - IV		DIVISION - III		DIVISION - II		DIVISION - I		TOTAL	
			QUANTITY QUANTITE	COST COUT	QUANTITY QUANTITE	COST COUT	QUANTITY QUANTITE	COST COUT	QUANTITY QUANTITE	COST COUT	QUANTITY QUANTITE	COST COUT
Longala	R.C. 1 span R.C. 1 travée	lm	13	52,000	-	-	-	-	-	-	13	52,000
Bokokua	R.C. 1 span R.C. 1 travée	lm	12.5	50,000	-	-	-	-	-	-	12.5	50,000
Aruwimi	Plate G. 16 spans Poutre entoles 16 travées	lm	-	-	640	4,160,000	-	-	-	-	640	4,160,000
Zambeke	P.C. 2 spans P.C. 2 travées	lm	-	-	28	126,000	-	-	-	-	28	126,000
Kole	R.C. 1 span R.C. 1 travée	lm	-	-	20	90,000	-	-	-	-	20	90,000
Tele	P.C. 4 spans P.C. 4 travées	lm	-	-	42	189,000	-	-	-	-	42	189,000
Yeme	R.C. 1 span R.C. 1 travée	lm	-	-	16	64,000	-	-	-	-	16	64,000
Rubi	P.C. 4 spans P.C. 4 travées	lm	-	-	100	600,000	-	-	-	-	100	600,000
Makala	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	16	64,000	-	-	16	64,000
Longa	P.C. 1 span P.C. 1 travée	lm	-	-	-	-	25	112,500	-	-	25	112,500
Koteli	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	18	72,000	-	-	18	72,000
Maze II	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	18	72,000	-	-	18	72,000
Bilo II	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	17	68,000	-	-	17	68,000
Bilo III	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	12	48,000	-	-	12	48,000
Mborge	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	17	68,000	-	-	17	68,000
Likati	P.C. 3 spans P.C. 3 travées	lm	-	-	-	-	84	504,000	-	-	84	504,000
Libogo	P.C. 3 spans P.C. 3 travées	lm	-	-	-	-	75	450,000	-	-	75	450,000
Zakili	P.C. 1 span P.C. 1 travée	lm	-	-	-	-	-	-	24	108,000	24	108,000
FERRY BAC								18,000		23,000		41,000
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm	-	-	-	-	120	18,000	-	-	120	18,000
Bili (Faka)	Landing Facilities Facilité du débarquement	lm	-	-	-	-	-	-	50	7,000	50	7,000
Bomu (Ndu)	Landing Facilities Facilité du débarquement	lm	-	-	-	-	-	-	100	16,000	100	16,000
TOTAL				15,254,910		18,839,247		13,185,364		11,351,185		58,630,706

Note: Net cost of improvement do not include contingencies, and costs of final engineering and supervision of construction.
Coûts nets d'amélioration non compris faux frais divers et surveillance de construction.

A.3.5.3-(1) (ALTERNATIVE I PHASE I) DIVISION IV NET COSTS OF IMPROVEMENT BY DIVISION
COÛTS NETS D'AMELIORATION PAR DIVISION

From de Kisangani To à Banalia (122.610 km) Unit Unité : Zaire

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 10			SECTION TRONÇON - 9									TOTAL	
			QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT							QUANTITY QUANTITE	COST COÛT
CLEARING DEBOISEMENT					80,950			129,720								210,670
Clearing Deboisement	**Medium Vegetation Végétation moyenne**	m^2	409,000	0.05	20,350	716,000	0.05	35,800							1,123,000	56,150
Clearing & Grubbing Deboisement & l'essouchment	Sparse Forest **Végétation clairsemée**	m^2	346,000	0.04	13,840	650,000	0.04	26,000							996,000	39,840
"	Medium Forest **Végétation moyenne**	m^2	397,000	0.08	31,760	537,000	0.08	42,960							934,000	74,720
	Dense Forest **Végétation forte**	m^2	125,000	0.12	15,000	208,000	0.12	24,960							333,000	39,960
EARTHWORKS TERRASSEMENTS					1,546,760			3,674,730								5,221,490
Embankment Remblai	**Short Haul Transport court**	m^3	174,000	1.20	208,800	328,000	1.20	393,600							502,000	602,400
"	**Long Haul Transport long**	m^3	205,000	6.50	1,332,500	729,000	4.50	3,280,500							934,000	4,613,000
Cut Déblai		m^3	15,600	0.35	5,460	1,800	0.35	630							17,400	6,090
Subgrade replacement Herisson de replacement		lm	-	-	-	-	-	-							-	-
SIDE SLOPES TALUS					58,600			99,300								157,900
Slope Shaping Façonnage d'un talus	**Manual Labor Travail de manoeuvre**	m^2	390,000	0.10	39,000	652,000	0.10	65,200							1,042,000	104,200
Grassing Gazonnement		m^2	196,000	0.10	19,600	341,000	0.10	34,100							537,000	53,700
DRAINAGE DRAINAGE					313,766			982,134								1,295,900
Side-ditch Excavation Contre-fossé	**Laterite Latérite**	lm	18,700	1.50	28,050	22,200	1.50	33,300							40,900	61,350
"	**Silt Limon**	lm	22,000	2.60	57,200	49,400	2.60	128,440							71,400	185,640
Side-ditch in Village Area Contre-fossé au village		lm	4,000	25.-	100,000	6,000	26.-	156,000							10,000	256,000
Stone-pitched Ditch Fossé maçonne en pierre		lm	1,300	30.-	39,000	5,400	39.-	210,600							6,700	249,600

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 10 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	SECTION TRONÇON - 9 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT				TOTAL QUANTITY QUANTITE	COST COÛT
Pipe-Culvert Pipe-ondulée	**ø0.6m**	lm	59	24.-	1,416	13	24.-	312				72	1,728
	ø0.8	lm	-	-	-	-	-	-				-	-
	ø1.0	lm	620	87.-	53,940	1,386	87.-	120,582				2,006	174,522
	ø1.2	lm	104	100.-	10,400	455	100.-	45,500				559	55,900
	ø1.5	lm	84	190.-	15,960	357	190.-	67,830				441	83,790
	ø1.8	lm	-	-	-	124	220.-	27,280				124	27,280
	ø2.0	lm	-	-	-	63	250.-	15,750				63	15,750
	ø2.5	lm	-	-	-	-	-	-				-	-
	ø3.0	lm	-	-	-	105	570.-	59,850				105	59,850
	ø4.0	lm	-	-	-	42	930.-	39,060				42	39,060
	ø5.0	lm	-	-	-	21	1,400.-	29,400				21	29,400
Inlet & Outlet Entree & sortie	**ø0.6**	piece	8	35.-	280	2	40.-	80				10	360
	ø0.8	piece	-	-	-	-	-	-				-	-
	ø1.0	piece	70	60.-	4,200	132	70.-	9,240				202	13,440
	ø1.2	piece	14	100.-	1,400	46	105.-	4,830				60	6,230
	ø1.5	piece	8	240.-	1,920	34	250.-	8,500				42	10,420
	ø1.8	piece	-	-	-	14	320.-	4,480				14	4,480
	ø2.0	piece	-	-	-	6	450.-	2,700				6	2,700
	ø2.5	piece	-	-	-	-	-	-				-	-
	ø3.0	piece	-	-	-	10	880.-	8,800				10	8,800
	ø4.0	piece	-	-	-	4	1,400.-	5,600				4	5,600
	ø5.0	piece	-	-	-	2	2,000.-	4,000				2	4,000
PAVEMENT PAVAGE					2,320,500			4,039,200					6,359,700
Type - I	**Short Haul Transport court**	m^2	143,000	4.90	700,700	78,000	5.20	405,600				221,000	1,106,300
Type - II	**Short Haul Transport court**	m^2	-	-	-	96,000	5.25	504,000				96,000	504,000
Type - III	**Long Haul Transport long**	m^2	178,000	9.10	1,619,800	384,000	8.15	3,129,600				562,000	4,749,400
Type - IV	**Short Haul Transport court**	m^2	-	-	-	-	-	-				-	-
BRIDGES PONTS					1,745,750			263,500					2,009,250
Angokpa	**R.C. 1 span R.C. 1 travée**	lm	7.5	4,000.-	30,000	-	-	-				7.5	30,000
Aqudi	**R.C. 1 span R.C. 1 travée**	lm	10.5	4,000.-	42,000	-	-	-				10.5	42,000
Lindi	**Plate G. 6 spans Poutre entôles 6 travées**	lm	257.5	6,500.-	1,673,750	-	-	-				257.5	1,673,750
Gula	**P.C. 1 span P.C. 1 travée**	lm	-	-	-	27	4,500.-	121,500				27	121,500
Badjoge	**R.C. 1 span R.C. 1 travée**	lm	-	-	-	10	4,000.-	40,000				10	40,000

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 10 QUANTITY QUANTITE	SECTION TRONÇON - 10 UNIT COST PRIX UNIT.	SECTION TRONÇON - 10 COST COÛT	SECTION TRONÇON - 9 QUANTITY QUANTITE	SECTION TRONÇON - 9 UNIT COST PRIX UNIT.	SECTION TRONÇON - 9 COST COÛT				TOTAL QUANTITY QUANTITE	TOTAL COST COÛT
Longala	R.C. 1 span R.C. 1 travée	lm	-	-	-	13	4,000.-	52,000				13	52,000
Bokokua	R.C. 1 span R.C. 1 travée	lm	-	-	-	12.5	4,000.-	50,000				12.5	50,000
Aruwimi	Plate G. 16 spans Poutre entoles 16 travées	lm											
Zambeke	P.C. 2 spans P.C. 2 travées	lm											
Kole	R.C. 1 span R.C. 1 travée	lm											
Tele	P.C. 4 spans P.C. 4 travées	lm											
Yeme	R.C. 1 span R.C. 1 travée	lm											
Rubi	P.C. 4 spans P.C. 4 travées	lm											
Makala	R.C. 1 span R.C. 1 travée	lm											
Longa	P.C. 1 span P.C. 1 travée	lm											
Kotelí	R.C. 1 span R.C. 1 travée	lm											
Maze II	R.C. 1 span R.C. 1 travée	lm											
Bilo II	R.C. 1 span R.C. 1 travée	lm											
Bilo III	R.C. 1 span R.C. 1 travée	lm											
Mborge	R.C. 1 span R.C. 1 travée	lm											
Likati	P.C. 3 spans P.C. 3 travées	lm											
Libogo	P.C. 3 spans P.C. 3 travées	lm											
Zakili	P.C. 1 span P.C. 1 travée	lm											
FERRY BAC													
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm											
Bili (Faka)	Landing Facilities Facilité du débarquement	lm											
Bomu (Ndu)	Landing Facilities Facilité du débarquement	lm											
TOTAL					6,066,326			9,188,584					15,254,910

A.3.5.3-(2) (ALTERNATIVE I PHASE I) DIVISION III NET COSTS OF IMPROVEMENT BY DIVISION
COÛTS NETS D'AMELIORATION PAR DIVISION From de Banalia To à Buta (187.810 km) Unit Unité: Zaire

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 8			SECTION TRONÇON - 7			SECTION TRONCON - 6			TOTAL	
			QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	COST COÛT
CLEARING DEBOISEMENT					167,730			59,010			170,110		396,850
Clearing Deboisement	**Medium Vegetation Végétation moyenne**	m^2	645,000	0.05	32,250	249,000	0.05	12,450	807,000	0.05	40,350	1,701,000	85,050
Clearing & Grubbing Deboisement & l'essouchment	Sparse Forest Végétation clairsemée	m^2	448,000	0.04	17,920	184,000	0.04	7,360	536,000	0.04	21,440	1,168,000	46,720
"	Medium Forest Végétation moyenne	m^2	496,000	0.08	39,680	271,000	0.08	21,680	757,000	0.08	60,560	1,524,000	121,920
	Dense Forest Végétation forte	m^2	649,000	0.12	77,880	146,000	0.12	17,520	398,000	0.12	47,760	1,193,000	143,160
EARTHWORKS TERRASSEMENTS					1,536,860			340,750			829,745		2,707,355
Embankment Remblai	Short Haul Transport court	m^3	421,000	1.20	505,200	28,000	1.20	33,600	532,000	1.20	638,400	981,000	1,177,200
"	Long Haul Transport long	m^3	217,000	4.75	1,030,750	118,000	2.60	306,800	109,000	1.75	190,750	444,000	1,528,300
Cut Déblai		m^3	2,600	0.35	910	1,000	0.35	350	1,700	0.35	595	5,300	1,855
Subgrade Replacement Harrison de replacement		lm	-	-	-	-	-	-	-	-	-	-	-
SIDE SLOPES TALUS					98,300			37,500			109,300		245,100
Slope Shaping Façonnage d'un talus	**Manual Labor Travail de manoeuvre**	m^2	661,000	0.10	66,100	251,000	0.10	25,100	713,000	0.10	71,300	1,625,000	162,500
Grassing Gazonnement		m^2	322,000	0.10	32,200	124,000	0.10	12,400	380,000	0.10	38,000	826,000	82,600
DRAINAGE DRAINAGE					609,258			240,433			808,151		1,657,842
Side-ditch Excavation Contre-fossé	**Laterite Latérite**	lm	42,600	1.50	63,900	4,700	1.50	7,050	67,000	1.50	100,500	114,300	171,450
"	**Silt Limon**	lm	21,900	2.60	56,940	20,100	2.60	52,260	13,700	2.60	35,620	55,700	144,820
Side-ditch in Village Area Contre-fossé au village		lm	8,700	30.-	261,000	3,300	28.-	92,400	5,500	31.-	170,500	17,500	523,900
Stone-pitched Ditch Fossé maçonne en pierre		lm	600	70.-	42,000	-	-	-	300	72.-	21,600	900	63,600

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION - 8 TRONCON QUANTITY QUANTITE	SECTION - 8 TRONCON UNIT COST PRIX UNIT.	SECTION - 8 TRONCON COST COÛT	SECTION - 7 TRONCON QUANTITY QUANTITE	SECTION - 7 TRONCON UNIT COST PRIX UNIT.	SECTION - 7 TRONCON COST COÛT	SECTION - 6 TRONCON QUANTITY QUANTITE	SECTION - 6 TRONCON UNIT COST PRIX UNIT.	SECTION - 6 TRONCON COST COÛT	TOTAL QUANTITY QUANTITE	TOTAL COST COUT
Pipe-Culvert Pipe-ondulée	**ø0.6m**	lm	13	24.-	312	-	-	-	-	-	-	13	312
	ø0.8	lm	-	-	-	13	38.-	494	-	-	-	13	494
	ø1.0	lm	798	87.-	69,426	357	87.-	31,059	903	87.-	78,561	2,058	179,046
	ø1.2	lm	21	100.-	2,100	42	100.-	4,200	189	100.-	18,900	252	25,200
	ø1.5	lm	84	190.-	15,960	-	-	-	420	190.-	79,800	504	95,760
	ø1.8	lm	63	220.-	13,860	-	-	-	84	220.-	18,480	147	32,340
	ø2.0	lm	105	250.-	26,250	42	250.-	10,500	63	250.-	15,750	210	52,500
	ø2.5	lm	-	-	-	84	350.-	29,400	21	350.-	7,350	105	36,750
	ø3.0	lm	21	570.-	11,970	-	-	-	21	570.-	11,970	42	23,940
	ø4.0	lm	21	930.-	19,530	-	-	-	126	930.-	117,180	147	136,710
	ø5.0	lm	-	-	-	-	-	-	42	1,400.-	58,800	42	58,800
Inlet & Outlet Entree & sortie	**ø0.6**	piece	2	60.-	120	-	-	-	-	-	-	2	120
	ø0.8	piece	-	-	-	2	75.-	150	-	-	-	2	150
	ø1.0	piece	72	110.-	7,920	34	100.-	3,400	86	120.-	10,320	192	21,640
	ø1.2	piece	2	165.-	330	4	150.-	600	18	180.-	3,240	24	4,170
	ø1.5	piece	8	350.-	2,800	-	-	-	40	360.-	14,400	48	17,200
	ø1.8	piece	6	440.-	2,640	-	-	-	8	460.-	3,680	14	6,320
	ø2.0	piece	10	600.-	6,000	4	590.-	2,360	6	680.-	4,080	20	12,440
	ø2.5	piece	-	-	-	8	820.-	6,560	2	850.-	1,700	10	8,260
	ø3.0	piece	2	1,200.-	2,400	-	-	-	2	1,260.-	2,520	4	4,920
	ø4.0	piece	2	1,900.-	3,800	-	-	-	12	2,000.-	24,000	14	27,800
	ø5.0	piece	-	-	-	-	-	-	4	2,300.-	9,200	4	9,200
PAVEMENT PAVAGE					3,671,350			1,149,700			3,782,050		8,603,100
Type - I	Short Haul Transport court	m^2	147,000	5.90	867,300	162,000	5.30	858,600	133,000	5.85	778,050	442,000	2,503,950
Type - II	Short Haul Transport court	m^2	199,000	5.95	1,184,050	-	-	-	384,000	5.90	2,265,600	583,000	3,449,650
Type - III	Long Haul Transport long	m^2	180,000	9.-	1,620,000	41,000	7.10	291,000	104,000	7.10	738,400	325,000	2,649,500
Type - IV	Short Haul Transport court	m^2	-	-	-	-	-	-	-	-	-	-	-
BRIDGES PONTS					4,736,000			189,000			664,000		5,229,000
Angokpa	R.C. 1 span R.C. 1 travée	lm											
Aqudi	R.C. 1 span R.C. 1 travée	lm											
Lindi	Plate G. 6 spans Poutre entôles 6 travées	lm											
Gula	P.C. 1 span P.C. 1 travée	lm											
Badjoge	R.C. 1 span R.C. 1 travée	lm											

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION - 8 TRONÇON			SECTION - 7 TRONÇON			SECTION - 6 TRONÇON			TOTAL	
			QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	COST COÛT
Longala	R.C. 1 span R.C. 1 travée	lm											
Bokokua	R.C. 1 span R.C. 1 travée	lm											
Aruwimi	Plate G. 16 spans Poutre entoles 16 travées	lm	640	6,500.-	4,160.000	-	-	-	-	-	-	640	4,160,000
Zambeke	P.C. 2 spans P.C. 2 travées	lm	28	4,500.-	126,000	-	-	-	-	-	-	28	126,000
Kole	R.C. 1 span R.C. 1 travée	lm	20	4,500.-	90,000	-	-	-	-	-	-	20	90,000
Tele	P.C. 4 spans P.C. 4 travée	lm	-	-	-	42	4,500.-	189,000	-	-	-	42	189,000
Yeme	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	-	-	16	4,000.-	64,000	16	64,000
Rubi	P.C. 4 spans P.C. 4 travées	lm	-	-	-	-	-	-	100	6,000.-	600,000	100	600,000
Makala	R.C. 1 span R.C. 1 travée	lm											
Longa	P.C. 1 span P.C. 1 travée	lm											
Koteli	R.C. 1 span R.C. 1 travée	lm											
Maze II	R.C. 1 span R.C. 1 travée	lm											
Bilo II	R.C. 1 span R.C. 1 travée	lm											
Bilo III	R.C. 1 span R.C. 1 travée	lm											
Mborge	R.C. 1 span R.C. 1 travée	lm											
Likati	P.C. 3 spans P.C. 3 travées	lm											
Libogo	P.C. 3 spans P.C. 3 travées	lm											
Zakili	P.C. 1 span P.C. 1 travée	lm											
FERRY BAC													
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm											
Bili (Faka)	Landing Facilities Facilité du débarquement	lm											
Bomu (Ndu)	Landing Facilities Facilité du débarquement	lm											
TOTAL					10,459,498			2,016,393			6,363,356		18,839,247

A.3.5.3-(3) (ALTERNATIVE I PHASE I) DIVISION II NET COSTS OF IMPROVEMENT BY DIVISION / COÛTS NETS D'AMELIORATION PAR DIVISION From / de Buta To / à Bondo (197.915 km) Unit / Unité: Zaire

ITEM / ARTICLE	DESCRIPTION	UNIT / UNITE	SECTION / TRONÇON - 5			SECTION / TRONÇON - 4			SECTION / TRONÇON - 3			TOTAL	
			QUANTITY / QUANTITE	UNIT COST / PRIX UNIT.	COST / COÛT	QUANTITY / QUANTITE	UNIT COST / PRIX UNIT.	COST / COÛT	QUANTITY / QUANTITE	UNIT COST / PRIX UNIT.	COST / COÛT	QUANTITY / QUANTITE	COST / COÛT
CLEARING / DEBOISEMENT					123,510			122,850			103,650		350,010
Clearing / Deboisement	**Medium Vegetation / Végétation moyenne**	m^2	691,000	0.05	34,550	613,000	0.05	30,650	537,000	0.05	26,850	1,841,000	92,050
Clearing & Grubbing / Deboisement & l'essouchment	Sprase Forest / **Végétation clairsemée**	m^2	579,000	0.04	23,160	397,000	0.04	15,880	407,000	0.04	16,280	1,383,000	55,320
"	Medium Forest / **Végétation moyenne**	m^2	581,000	0.08	46,480	537,000	0.08	42,960	410,000	0.08	32,800	1,528,000	122,240
	Dense Forest / **Végétation forte**	m^2	161,000	0.12	19,320	278,000	0.12	33,360	231,000	0.12	27,720	670,000	80,400
EARTHWORKS / TERRASSEMENTS					437,960			750,580			673,440		1,861,980
Embankment / Remblai	**Short Haul / Transport court**	m^3	347,000	1.20	416,400	142,000	1.20	170,400	245,000	1.20	294,000	734,000	880,800
"	**Long Haul / Transport long**	m^3	12,000	1.75	21,000	188,000	2.10	394,800	132,000	2.35	310,200	332,000	726,000
Cut / Déblai		m^3	1,600	0.35	560	11,800	0.35	4,130	1,400	0.35	490	14,800	5,180
Subgrade replacement / Hérisson de replacement		lm	-	-	-	14,500	12.50	181,250	5,000	13.75	68,750	19,500	250,000
SIDE SLOPES / TALUS					105,900			92,600			83,000		281,500
Slope Shaping / Façonnage d'un talus	**Manual Labor / Travail de manoeuvre**	m^2	731,000	0.10	73,100	641,000	0.10	64,100	573,000	0.10	57,300	1,945,000	194,500
Grassing / Gazonnement		m^2	328,000	0.10	32,800	285,000	0.10	28,500	257,000	0.10	25,700	870,000	87,000
DRAINAGE / DRAINAGE					596,081			459,969			391,624		1,447,674
Side-ditch Excavation / Contre-fossé	**Laterite / Latérite**	lm	66,300	1.50	99,450	26,400	1.50	39,600	34,900	1.50	52,350	127,600	191,400
"	**Silt / Limon**	lm	2,800	2.60	7,280	34,900	2.60	90,740	18,800	2.60	48,880	56,500	146,900
Side-ditch In Village Area / Contre-fossé au village		lm	5,400	27.-	145,800	3,400	25.-	85,000	4,700	26.-	122,200	13,500	353,000
Stone-pitched Ditch / Fossé maçonne en pierre		lm	1,900	44.-	83,600	1,300	29.-	37,700	600	38.-	22,800	3,800	144,100

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(continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 5 QUANTITY QUANTITE	 UNIT COST PRIX UNIT.	 COST COÛT	SECTION TRONÇON - 4 QUANTITY QUANTITE	 UNIT COST PRIX UNIT.	 COST COÛT	SECTION TRONÇON - 3 QUANTITY QUANTITE	 UNIT COST PRIX UNIT.	 COST COÛT	TOTAL QUANTITY QUANTITE	 COST COÛT
Pipe-Culvert **Pipe-ondulée**	**ø0.6m**	lm	-	-	-	-	-	-	-	-	-	-	-
	ø0.8	lm	-	-	-	-	-	-	-	-	-	-	-
	ø1.0	lm	903	87.-	78,561	777	87.-	67,599	672	87.-	58,464	2,352	204,624
	ø1.2	lm	21	100.-	2,100	-	-	-	126	100.-	12,600	147	14,700
	ø1.5	lm	42	190.-	7,980	105	190.-	19,950	84	190.-	15,960	231	43,890
	ø1.8	lm	21	220.-	4,620	63	220.-	13,860	105	220.-	23,100	189	41,580
	ø2.0	lm	-	-	-	21	250.-	5,250	21	250.-	5,250	42	10,500
	ø2.5	lm	42	350.-	14,700	84	350.-	29,400	42	350.-	14,700	168	58,800
	ø3.0	lm	42	570.-	23,940	84	570.-	47,880	-	-	-	126	71,820
	ø4.0	lm	105	930.-	97,650	-	-	-	-	-	-	105	97,650
	ø5.0	lm	-	-	-	-	-	-	-	-	-	-	-
Inlet & Outlet **Entree & sortie**	**ø0.6**	piece	-	-	-	-	-	-	-	-	-	-	-
	ø0.8	piece	-	-	-	-	-	-	-	-	-	-	-
	ø1.0	piece	86	80.-	6,880	74	70.-	5,180	64	75.-	4,800	224	16,860
	ø1.2	piece	2	120.-	240	-	-	-	12	110.-	1,320	14	1,560
	ø1.5	piece	4	270.-	1,080	10	250.-	2,500	8	260.-	2,080	22	5,660
	ø1.8	piece	2	340.-	680	6	325.-	1,950	10	340.-	3,400	18	6,030
	ø2.0	piece	-	-	-	2	480.-	960	2	500.-	1,000	4	1,960
	ø2.5	piece	4	700.-	2,800	8	650.-	5,200	4	680.-	2,720	16	10,720
	ø3.0	piece	4	930.-	3,720	8	900.-	7,200	-	-	-	12	10,920
	ø4.0	piece	10	1,500.-	15,000	-	-	-	-	-	-	10	15,000
	ø5.0	piece	-	-	-	-	-	-	-	-	-	-	-
PAVEMENT PAVAGE					2,874,850			2,520,800			2,372,050		7,767,700
Type - I	**Short Haul** **Transport court**	m^2	466,000	5.30	2,469,800	199,000	4.55	905,450	89,000	5.05	449,450	754,000	3,824,700
Type - II	**Short Haul** **Transport court**	m^2	50,000	5.35	267,500	-	-	-	184,000	5.10	938,400	234,000	1,205,900
Type - III	**Long Haul** **Transport long**	m^2	21,000	6.55	137,550	267,000	6.05	1,615,350	148,000	6.65	984,200	436,000	2,737,100
Type - IV	**Short Haul** **Transport court**	m^2	-	-	-	-	-	-	-	-	-	-	-
BRIDGES **PONTS**					436,500			572,000			450,000		1,458,500
Angokpa	**R.C. 1 span** **R.C. 1 travée**	lm											
Aqudi	**R.C. 1 span** **R.C. 1 travée**	lm											
Lindi	**Plate G. 6 spans** **Poutre entôles 6 travées**	lm											
Gula	**P.C. 1 span** **P.C. 1 travée**	lm											
Badjoge	**R.C. 1 span** **R.C. 1 travée**	lm											

(continuée)
(continued)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION - 5 TRONÇON			SECTION - 4 TRONÇON			SECTION - 3 TRONÇON			TOTAL	
			QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	QUANTITY QUANTITE	UNIT COST PRIX UNIT	COST COÛT	QUANTITY QUANTITE	COST COÛT
Longala	R.C. 1 span R.C. 1 travée.	lm											
Bokokua	R.C. 1 span R.C. 1 travée	lm											
Aruwimi	Plate G. 16 spans Poutre entoles 16 travées	lm											
Zambeke	P.C. 2 spans P.C. 2 travées	lm											
Kole	R.C. 1 span R.C. 1 travée	lm											
Tele	P.C. 4 spans P.C. 4 travées	lm											
Yeme	R.C. 1 span R.C. 1 travée	lm											
Rubi	P.C. 4 spans P.C. 4 travées	lm											
Makala	R.C. 1 span R.C. 1 travée	lm	16	4,000 -	64,000	-	-	-	-	-	-	16	64,000
Longa	P.C. 1 span P.C. 1 travée	lm	25	4,500 -	112,500	-	-	-	-	-	-	25	112,500
Kotell	R.C. 1 span R.C. 1 travée	lm	18	4,000 -	72,000	-	-	-	-	-	-	18	72,000
Maze II	R.C. 1 span R.C. 1 travée	lm	18	4,000 -	72,000	-	-	-	-	-	-	18	72,000
Bilo II	R.C. 1 span R.C. 1 travée	lm	17	4,000 -	68,000	-	-	-	-	-	-	17	68,000
Bilo III	R.C. 1 span R.C. 1 travée	lm	12	4,000 -	48,000	-	-	-	-	-	-	12	48,000
Mborge	R.C. 1 span R.C. 1 travée	lm	-	-	-	17	4,000 -	68,000	-	-	-	17	68,000
Likati	P.C. 3 spans P.C. 3 travées	lm	-	-	-	84	6,000 -	504,000	-	-	-	84	504,000
Libogo	P.C. 3 spans P.C. 3 travées	lm	-	-	-	-	-	-	75	6,000 -	450,000	75	450,000
Zakili	P.C. 1 span P.C. 1 travée	lm											
FERRY BAC											18,000		18,000
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm	-	-	-	-	-	-	120	150 -	18,000	120	18,000
Bili (Faka)	Landing Facilities Facilité du débarquement	lm											
Bomu (Ndu)	Landing Facilities Facilité du débarquement	lm											
TOTAL					4,574,801			4,518,799			4,091,764		13,185,364

A.3.5.3-(4) (ALTERNATIVE I PHASE I) DIVISION I NET COSTS OF IMPROVEMENT BY DIVISION / COÛTS NETS D'AMELIORATION PAR DIVISION From / de Bondo To / à Bangassou (190.620 km) Unit / Unité : Zaire

ITEM / ARTICLE	DESCRIPTION	UNIT / UNITE	SECTION / TRONÇON - 2			SECTION / TRONÇON - 1						TOTAL	
			QUANTITY / QUANTITE	UNIT COST / PRIX UNIT.	COST / COÛT	QUANTITY / QUANTITE	UNIT COST / PRIX UNIT.	COST / COÛT				QUANTITY / QUANTITE	COST / COÛT
CLEARING / DEBOISEMENT					234,650			128,800					363,450
Clearing / Deboisement	**Medium Vegetation / Végétation moyenne**	m^2	1,109,000	0.05	55,450	652,000	0.05	32,600				1,761,000	88,050
Clearing & Grubbing / Deboisement & l'essouchment	Sparse Forest / **Végétation clairsemée**	m^2	830,000	0.04	33,200	754,000	0.04	30,160				1,584,000	63,360
"	Medium Forest / **Végétation moyenne**	m^2	1,009,000	0.08	80,720	407,000	0.08	32,560				1,416,000	113,280
"	Dense Forest / **Végétation forte**	m^2	544,000	0.12	65,280	279,000	0.12	33,480				823,000	98,760
EARTHWORKS / TERRASSEMENTS					965,390			1,401,065					2,366,455
Embankment / Remblai	**Short Haul / Transport court**	m^3	488,000	1.20	585,600	916,000	1.20	1,099,200				1,404,000	1,684,800
"	**Long Haul / Transport long**	m^3	169,000	2.-	338,000	163,000	1.85	301,550				332,000	639,550
Cut / Déblai		m^3	119,400	0.35	41,790	900	0.35	315				120,300	42,105
Subgrade Replacement / Hérisson de replacement		lm	-	-	-	-	-	-				-	-
SIDE SLOPES / TALUS					174,000			98,300					272,300
Slope Shaping / Façonnage d'un talus	**Manual Labor / Travail de manoeuvre**	m^2	1,202,000	0.10	120,200	683,000	0.10	68,300				1,885,000	188,500
Grassing / Gazonnement		m^2	538,000	0.10	53,800	300,000	0.10	30,000				838,000	83,800
DRAINAGE / DRAINAGE					1,045,108			601,122					1,646,230
Side-ditch Excavation / Contre-fossé	**Laterite / Latérite**	lm	82,000	1.50	123,000	55,500	1.50	83,250				137,500	206,250
"	**Silt / Limon**	lm	28,800	2.60	74,880	9,800	2.60	25,480				38,600	100,360
Side-ditch in Village Area / Contre-fossé au village		lm	11,400	25.-	285,000	3,000	28.-	84,000				14,400	369,000
Stone-pitched Ditch / Fossé maçonne en pierre		lm	3,400	29.-	98,600	4,200	48.-	201,600				7,600	300,200

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION - 2 TRONÇON - 2 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	SECTION - 1 TRONÇON - 1 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	TOTAL QUANTITY QUANTITE	TOTAL COST COÛT
Pipe-Culvert **Pipe-ondulée**	**ø0.6m**	lm	-	-	-	-	-	-	-	-
	ø0.8	lm	-	-	-	-	-	-	-	-
	ø1.0	lm	1,554	87.-	135,198	756	87.-	65,772	2,310	200,970
	ø1.2	lm	63	100.-	6,300	-	-	-	63	6,300
	ø1.5	lm	609	190.-	115,710	42	190.-	7,980	651	123,690
	ø1.8	lm	105	220.-	23,100	-	-	-	105	23,100
	ø2.0	lm	21	250.-	5,250	21	250.-	5,250	42	10,500
	ø2.5	lm	63	350.-	22,050	21	350.-	7,350	84	29,400
	ø3.0	lm	-	-	-	63	570.-	35,910	63	35,910
	ø4.0	lm	84	930.-	78,120	63	930.-	58,590	147	136,710
	ø5.0	lm	21	1,400.-	29,400	-	-	-	21	29,400
Inlet & Outlet **Entree & sortie**	**ø0.6**	piece	-	-	-	-	-	-	-	-
	ø0.8	piece	-	-	-	-	-	-	-	-
	ø1.0	piece	148	70.-	10,360	72	90.-	6,480	220	16,840
	ø1.2	piece	6	100.-	600	-	-	-	6	600
	ø1.5	piece	58	250.-	14,500	4	300.-	1,200	62	15,700
	ø1.8	piece	10	320.-	3,200	-	-	-	10	3,200
	ø2.0	piece	2	470.-	940	2	560.-	1,120	4	2,060
	ø2.5	piece	6	650.-	3,900	2	770.-	1,540	8	5,440
	ø3.0	piece	-	-	-	6	1,000.-	6,000	6	6,000
	ø4.0	piece	8	1,400.-	11,200	6	1,600.-	9,600	14	20,800
	ø5.0	piece	2	1,900.-	3,800	-	-	-	2	3,800
PAVEMENT PAVAGE					4,380,050			2,191,700		6,571,750
Type - I	**Short Haul** **Transport court**	m^2	651,000	4.60	2,994,600	163,000	5.25	855,750	814,000	3,850,350
Type - II	**Short Haul** **Transport court**	m^2	-	-	-	-	-	-	-	-
Type - III	**Long Haul** **Transport long**	m^2	229,000	6.05	1,385,450	77,000	6.55	504,350	306,000	1,889,800
Type - IV	**Short Haul** **Transport court**	m^2	-	-	-	252,000	3.30	831,660	252,000	831,600
BRIDGES **PONTS**					108,000			-		108,000
Angokpa	R.C. 1 span R.C. 1 travée	lm								
Aqudi	R.C. 1 span R.C. 1 travée	lm								
Lindi	Plate G. 6 spans Poutre entôles 6 travées	lm								
Gula	P.C. 1 span P.C. 1 travée	lm								
Badjoge	R.C. 1 span R.C. 1 travée	lm								

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION - 2 TRONÇON QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	SECTION - 1 TRONÇON QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT				TOTAL QUANTITY QUANTITE	TOTAL COST COÛT
Longala	R.C. 1 span R.C. 1 travée	lm											
Bokokua	R.C. 1 span R.C. 1 travée	lm											
Aruwimi	Plate G. 16 spans Poutre entoles 16 travées	lm											
Zambeke	P.C. 2 spans P.C. 2 travées	lm											
Kole	R.C. 1 span R.C. 1 travée	lm											
Tele	P.C. 4 spans P.C. 4 travées	lm											
Yeme	R.C. 1 span R.C. 1 travée	lm											
Rubi	P.C. 4 spans P.C. 4 travées	lm											
Makala	R.C. 1 span R.C. 1 travée	lm											
Longa	P.C. 1 span P.C. 1 travée	lm											
Koteli	R.C. 1 span R.C. 1 travée	lm											
Maze II	R.C. 1 span R.C. 1 travée	lm											
Bilo II	R.C. 1 span R.C. 1 travée	lm											
Bilo III	R.C. 1 span R.C. 1 travée	lm											
Mborge	R.C. 1 span R.C. 1 travée	lm											
Likati	P.C. 3 spans P.C. 3 travées	lm											
Libogo	P.C. 3 spans P.C. 3 travées	lm											
Zakili	P.C. 1 span P.C. 1 travée	lm	24	4,500.-	108,000	-	-	-				24	108,000
FERRY BAC					7,000			16,000					23,000
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm											
Bili (Faka)	Landing Facilities Facilité du débarquement	lm	50	140.-	7,000	-	-	-				50	7,000
Bomu (Ndu)	Landing Facilities Facilité du débarquement	lm	-	-	-	100	160.-	16,000				100	16,000
TOTAL					6,914,198			4,436,987					11,351,185

A.3.5.4 (ALTERNATIVE-I PHASE-II) NET COSTS OF IMPROVEMENT
COÛTS NETS D'AMERIORATION

(Unit unité : Zaire)

ITEM		DESCRIP-TION	UNIT UNITE	DIVISION IV						TOTAL
				SECTION 10			SECTION 9			
				QUANTITY QUANTITE	UNIT PRICE PRIX UNITAIRE	COST COUT	QUANTITY QUANTITE	UNIT PRICE PRIX UNITAIRE	COST COUT	
PAVEMENT PAPAGE	Densegrade asphalt-concrete Béton asphaltique	t=5cm	m2	321,000	3:03	972,630	558,000	3:62	2,019,960	2,992,590

A.3.5.5 Alternative I Gross Costs of Improvement

Coûts brut d'amélioration

(unit / unité : Zaire)

		Division IV	Division III	Division II	Division I	Total
Net Improvement Cost / Coûts nets d'amélioration	Phase I	15,254,910	18,839,247	13,185,364	11,351,185	58,630,706
	Phase II	2,992,590	-	-	-	2,992,590
	Sub / Sous-Total	18,247,500	18,839,247	13,185,364	11,351,185	61,623,296
Contingency / Faux frais divers		2,737,130	2,825,890	1,977,837	1,702,670	9,243,527
Total		20,984,630	21,665,137	15,163,201	13,053,855	70,866,823
Final Engineering / Technique de l'ingénieur finale		1,094,850	1,130,350	791,122	681,071	3,697,393
Supervision / Surveillance		912,360	941,913	659,287	567,534	3,081,094
Total		2,007,210	2,072,263	1,450,409	1,248,605	6,778,487
Grand Total / Coût total		22,991,840	23,737,400	16,613,610	14,302,460	77,645,310

A.3.5.6

ALTERNATIVE II PHASE I NET COSTS OF IMPROVEMENT / COÛTS NETS D'AMELIORATION From / de Kisangani To / à Bangassou (698.955 km) Unit / Unité: Zaire

ITEM / ARTICLE	DESCRIPTION	UNIT / UNITE	DIVISION-IV		DIVISION-III		DIVISION-II		DIVISION-I		TOTAL	
			QUANTITY / QUANTITE	COST / COÛT	QUANTITY / QUANTITE	COST / COÛT	QUANTITY / QUANTITE	COST / COÛT	QUANTITY / QUANTITE	COST / COÛT	QUANTITY / QUANTITE	COST / COÛT
CLEARING / DEBOISEMENT				168,630		279,570		237,330		227,890		913,420
Clearing / Deboisement	Medium Vegetation / Végétation moyenne	m^2	1,123,000	56,150	1,701,000	85,050	1,841,000	92,050	1,761,000	88,050	6,426,000	321,300
Clearing & Grubbing	Light Vegetation / Végétation clairsemée	m^2	725,000	29,000	725,000	29,000	790,000	31,600	805,000	32,200	3,045,000	121,800
Deboisement & l'essouchment	Medium Vegetation / Végétation moyenne	m^2	679,000	54,320	950,000	76,000	866,000	69,280	720,000	57,600	3,215,000	257,200
"	Heavy Vegetation / Végétation forte	m^2	243,000	29,160	746,000	89,520	370,000	44,400	417,000	50,040	1,776,000	213,120
EARTHWORKS / TERRASSEMENTS				4,071,590		1,342,355		1,037,230		1,665,705		8,116,980
Embankment / Remblai	Short Haul / Transport court	m^3	395,000	474,000	466,000	559,200	431,000	517,200	993,000	,191,600	2,285,000	2,742,000
"	Long Haul / Transport long	m^3	719,000	3,591,500	232,000	781,300	127,000	264,950	216,000	432,000	1,294,000	5,069,750
Cut / Déblai		m^3	17,400	6,090	5,300	1,855	14,800	5,180	120,300	42,105	157,800	55,230
Subgrade Replacement / Hériason de replacement		m^3	-	-	-	-	19,500	250,000	-	-	19,500	250,000
SIDE SLOPES / TALUS				116,300		151,800		129,700		103,300		501,100
Slope Shaping / Façonnage d'un talus	Manual Labor / Travail de manoeuvre	m^2	625,000	62,500	955,000	95,500	1,073,000	107,300	1,033,000	103,300	3,686,000	368,600
Grassing / Gazonnement		m^2	538,000	53,800	563,000	56,300	224,000	22,400	-	-	1,325,000	132,500
DRAINAGE / DRAINAGE				1,178,071		1,547,239		,225,500		,365,721		5,316,531
Side-ditches Excavation / Contre-fossés	Laterite / Latérite	lm	40,900	61,350	114,300	171,450	127,600	191,400	137,500	206,250	420,300	630,450
"	Silt / Limon	lm	71,400	185,640	55,700	144,820	56,500	146,900	38,600	100,360	222,200	577,720
Side-ditches in Village Area / Contre-fossés au village		lm	10,000	256,000	17,500	523,900	13,500	353,000	14,400	369,000	55,400	1,501,900
Stone-pitched Ditches / Fossés maçonne en pierre		lm	6,700	249,600	900	63,600	3,800	144,100	7,600	300,200	19,000	757,500
Pipe-Culverts / Fûts	ø0.6m	lm	47	1,128	7	168	-	-	-	-	54	1,296
	ø0.8	lm	-	-	7	266	-	-	-	-	7	266
	ø1.0	lm	1,554	135,198	1,540	133,980	1,400	121,800	1,243	108,141	5,737	499,119
	ø1.2	lm	442	44,220	182	18,200	66	6,600	33	3,300	723	72,300
	ø1.5	lm	341	64,790	308	58,520	116	22,040	341	64,790	1,106	210,140
	ø1.8	lm	116	25,520	98	21,560	116	25,520	55	12,100	385	84,700
	ø2.0	lm	48	12,000	140	35,000	22	5,500	22	5,500	232	58,000
	ø2.5	lm	-	-	84	29,400	94	32,900	44	15,400	222	77,700
	ø3.0	lm	82	46,740	42	23,940	72	41,040	33	18,810	229	130,530
	ø4.0	lm	34	31,620	140	130,200	70	65,100	77	71,610	321	298,530
	ø5.0	lm	9	12,600	42	58,800	-	-	11	15,400	62	86,800

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	DIVISION-IV QUANTITY QUANTITE	DIVISION-IV COST COÛT	DIVISION-III QUANTITY QUANTITE	DIVISION-III COST COÛT	DIVISION-II QUANTITY QUANTITE	DIVISION-II COST COÛT	DIVISION-I QUANTITY QUANTITE	DIVISION-I COST COÛT	TOTAL QUANTITY QUANTITE	TOTAL COST COÛT
Inlets & Outlets Entreés & sorties	ø0.6	piece	6	215	1	60	-	-	-	-	7	275
	ø0.8	piece	-	-	1	75	-	-	-	-	1	75
	ø1.0	piece	191	12,760	220	24,700	230	17,330	226	17,260	867	72,050
	ø1.2	piece	55	5,710	26	4,400	16	1,800	6	600	103	12,550
	ø1.5	piece	38	9,420	44	15,760	20	5,160	62	15,700	164	46,040
	ø1.8	piece	14	4,480	14	6,320	20	6,710	10	3,200	58	20,710
	ø2.0	piece	6	2,700	20	12,440	4	1,960	4	2,060	34	19,160
	ø2.5	piece	-	-	12	9,920	16	10,720	8	5,440	36	26,080
	ø3.0	piece	10	8,800	6	7,320	12	10,920	6	6,000	34	33,040
	ø4.0	piece	4	5,600	20	38,800	10	15,000	14	20,800	48	80,200
	ø5.0	piece	1	2,000	6	13,600	-	-	2	3,800	9	19,400
PAVEMENTS PAVAGES				6,359,700		1,371,450		1,838,100		1,790,900		11,360,150
Type - I	Short Haul Transport court	m^2	221,000	1,106,300	-	-	-	-	-	-	221,000	1,106,300
Type - II	Short Haul Transport court	m^2	96,000	504,000	-	-	-	-	-	-	96,000	504,000
Type - III	Long Haul Transport long	m^2	562,000	4,749,400	-	-	-	-	-	-	562,000	4,749,400
Laterite lower Subbase	t=40cm short haul " transport court	m^2	-	-	752,000	752,000	-	-	-	-	752,000	752,000
Latérite sous-couche	t=40cm long haul " transport long	m^2	-	-	374,000	619,450	-	-	-	-	374,000	619,450
TYPE VI	t=50cm short haul " transport court	m^2	-	-	-	-	890,000	1,157,000	,040,000	1,352,000	1,930,000	2,509,000
	t=50cm long haul " transport long	m^2	-	-	-	-	419,000	681,000	295,000	438,000	714,000	1,120,000
BRIDGES PONTS				-		-		343,000		96,000		439,000
Makala	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	16	56,000	-	-	16	56,000
Kotell	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	18	63,000	-	-	18	63,000
Maze II	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	18	63,000	-	-	18	63,000
Bilo II	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	17	59,500	-	-	17	59,500
Bilo III	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	12	42,000	-	-	12	42,000
Mborge	R.C. 1 span R.C. 1 travée	lm	-	-	-	-	17	59,500	-	-	17	59,500
Zakili	P.C. 1 span P.C. 1 travée	lm	-	-	-	-	-	-	24	96,000	24	96,000
FERRIES BACS				-		16,800		18,000		23,000		57,800
Aruwimi (Banalia)	Landing Facilities Facilité du débarquement	lm	-	-	120	16,800	-	-	-	-	120	16,800
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm	-	-	-	-	120	18,000	-	-	120	18,000
Bili (Faka)	Landing Facilities Facilité du débarquement	lm	-	-	-	-	-	-	50	7,000	50	7,000
Bomu (Ndu)	Landing Facilities Facilité du débaruqement	lm	-	-	-	-	-	-	100	16,000	100	16,000
TOTAL			—	11,894,291	—	4,709,214	—	4,828,960	—	5,272,516	—	26,704,981

A.3.5.7-(1)

ALTERNATIVE II PHASE I

NET COSTS OF IMPROVEMENT
COÛTS NETS D''AMELIORATION

DIVISION IV

From de Kisangani To à Banalia (122.610 km) Unit Unité : Zaire

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 10 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	SECTION TRONÇON - 9 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	TOTAL QUANTITY QUANTITE	TOTAL COST COÛT
CLEARING DEBOISEMENT					64,950			103,680		103,680
Clearing Deboisement	Medium Vegetation Végétation moyenne	m^2	407,000	0.05	20,350	716,000	0.05	35,800	1,123,000	56,150
Clearing & Grubbing Deboisement & l'essouchment	Light Vegetation Végétation clairsemée	m^2	252,000	0.04	10,080	473,000	0.04	18,920	725,000	29,000
"	Medium Vegetation Végétation moyenne	m^2	292,000	0.08	23,360	387,000	0.08	30,960	679,000	54,320
	Heavy Vegetation Végétation forte	m^2	93,000	0.12	11,160	150,000	0.12	18,000	243,000	29,160
EARTHWORKS TERRASSEMENTS					1,344,860			2,726,730		4,071,590
Embankment Remblai	Short Haul Transport court	m^3	152,000	1.20	182,400	243,000	1.20	291,600	395,000	474,000
"	Long Haul Transport long	m^3	178,000	6.50	1,157,000	541,000	4.50	2,434,500	719,000	3,591,500
Cut Déblai		m^3	15,600	0.35	5,460	1,800	0.35	630	17,400	6,090
Subgrade Replacement Hérisson de replacement		lm	-	-	-	-	-	-	-	-
SIDE SLOPES TALUS					43,100			73,200		116,300
Slope Shaping Façonnage d'un talus	Manual Labor Travail de manoeuvre	m^2	235,000	0.10	23,500	390,000	0.10	39,000	625,000	62,500
Grassing Gazonnement		m^2	196,000	0.10	19,600	342,000	0.10	34,200	538,000	53,800
DRAINAGE DRAINAGE					298,499			879,572		1,178,071
Side-ditches Excavation Contre-fossés	Laterite Latérite	lm	18,700	1.50	28,050	22,200	1.50	33,300	40,900	61,350
"	Silt Limon	lm	22,000	2.60	57,200	49,400	2.60	128,440	71,400	185,640
Side-ditches In Village Area Contre-fossés au village		lm	4,000	25.-	100,000	6,000	26.-	156,000	10,000	256,000
Stone-pitched Ditches Fossés maçonne en pierre		lm	1,300	30.-	39,000	5,400	39.-	210,600	6,700	249,600
Pipe-Culverts Fûts	ø0.6m	lm	38	24.-	912	9	24.-	216	47	1,128
	ø0.8	lm	-	-	-	-	-	-	-	-
	ø1.0	lm	496	87.-	43,152	1,058	87.-	92,046	1,554	135,198
	ø1.2	lm	104	100.-	10,400	338	100.-	33,800	442	44,200
	ø1.5	lm	67	190.-	12,730	274	190.-	52,060	341	64,790
	ø1.8	lm	-	-	-	116	220.-	25,520	116	25,520
	ø2.0	lm	-	-	-	48	250.-	12,000	48	12,000
	ø2.5	lm	-	-	-	-	-	-	-	-
	ø3.0	lm	-	-	-	82	570.-	46,740	82	46,740
	ø4.0	lm	-	-	-	34	930.-	31,620	34	31,620
	ø5.0	lm	-	-	-	9	1,400.-	12,600	9	12,600

(continued / continuée)

ITEM ARTICLE	DESCRIPTION	UNIT UNITE	SECTION TRONÇON - 10 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT	SECTION TRONÇON - 9 QUANTITY QUANTITE	UNIT COST PRIX UNIT.	COST COÛT				TOTAL QUANTITY QUANTITE	TOTAL COST COÛT
Inlets & Outlets Entreés & sorties	ø0.6	piece	5	35.-	175	1	40.-	40				6	215
	ø0.8	piece	-	-	-	-	-	-				-	-
	ø1.0	piece	61	60.-	3,660	130	70.-	9,100				191	12,760
	ø1.2	piece	13	100.-	1,300	42	105.-	4,410				55	5,710
	ø1.5	piece	8	240.-	1,920	30	250.-	7,500				38	9,420
	ø1.8	piece	-	-	-	14	320.-	4,480				14	4,480
	ø2.0	piece	-	-	-	6	450.-	2,700				6	2,700
	ø2.5	piece	-	-	-	-	-	-				-	-
	ø3.0	piece	-	-	-	10	880.-	8,800				10	8,800
	ø4.0	piece	-	-	-	4	1,400.-	5,600				4	5,600
	ø5.0	piece	-	-	-	1	2,000.-	2,000				1	2,000
PAVEMENTS PAVAGES					2,320,500			4,039,200					6,359,700
Type - I	Short Haul Transport court	m^2	143,000	4.90	700,700	78,000	5.20	405,600				221,000	1,106,300
Type - II	Short Haul Transport court	m^2	-	-	-	96,000	5.25	504,000				96,000	504,000
Type - III	Long Haul Transport long	m^2	178,000	9.10	1,619,800	384,000	8.15	3,129,600				562,000	4,749,400
Laterite lower Subbase	t=40cm short haul " transport court	m^2	-	-	-	-	-	-				-	-
Latérite sous-couche	t=40cm long haul " transport long	m^2	-	-	-	-	-	-				-	-
TYPE VI	t=50cm short haul " transport court	m^2	-	-	-	-	-	-				-	-
	t=50cm long haul " transport long	m^2	-	-	-	-	-	-				-	-
BRIDGES PONTS													
Makala	R.C. 1 span R.C. 1 travée	lm											
Kotelí	R.C. 1 span R.C. 1 travée	lm											
Maze II	R.C. 1 span R.C. 1 travée	lm											
Bilo II	R.C. 1 span R.C. 1 travée	lm											
Bilo III	R.C. 1 span R.C. 1 travée	lm											
Mborge	R.C. 1 span R.C. 1 travée	lm											
Zakili	P.C. 1 span P.C. 1 travée	lm											
FERRIES BACS													
Aruwimi (Banalia)	Landing Facilities Facilité du débarquement	lm											
Uele (Bondo)	Landing Facilities Facilité du débarquement	lm											
Bili (Faka)	Landing Facilities Facilité du débarquement	lm											
Bomu (Ndu)	Landing Facilities Facilité du débaruqement	lm											
TOTAL			—	—	4,071,909	—	—	7,822,382	—	—	—	—	11,894,291

Note: Net costs of improvement do not include contingency and costs of final engineering and supervision of construction.
Coûts nets d'amélioration non inclu faux frais divers et surveillance de construction.