Summary from the Improvement Plan - Batch 2
MAUNDU MERI - SOSIAN LOT 1 BATCH 2

Item		04-50-003		04-50-004	04-50-006	04-50-007	04-50-009	05-50-004	05-05-002	05-05-003
KM	Bush/Site Clearing M2						Grubbing	ETL	Drains m3	
	Light	Heavy		Total	200-450	>450	m^2	m^3	Soft	Hard
1	8,000	800		8,800	-	-	7,000	10	1,874	187
2	8,000	800		8,800	-	-	7,000	10	1,744	174
3	8,000	800		8,800	-	-	7,000	10	1,561	156
4	8,000	800		8,800	-	-	7,000	10	1,420	142
5	8,000	800		8,800	-	-	7,000	10	2,392	239
6	8,000	800		8,800	-	-	7,000	10	2,392	239
7	8,000	800		8,800	-	-	7,000	10	2,392	239
8	8,000	800		8,800	-	-	7,000	10	2,392	239
9	8,000	800		8,800	-	-	7,000	10	2,392	239
10	8,000	800		8,800	-	-	7,000	10	1,874	187
11										
12										
13										
14										
15										
16										
17										
18										
19										
Total	**80,000**	**8,000**	**-**	**88,000**	**-**	**-**	**70,000**	**100**	**20,436**	**2,044**

Item		08-60-025						08-80-001	08-60-019 & 08-60-020			08-50-005	08-50-006	08-70-009		10-60-001
KM	CULVERTS(M)					Type (No)			T1 No	T2 No	T4 No	MITRE	C/ W	S/ C		Gravel (150mm)
	1200	900	600	450	Total	CD	AC	AD				No	m	L No	R No	m3
1	-	-	-	-	-	3	-	-	3	3	-	-	-	-	-	720
2	-	8	15	-	23	3	-	-	3	3	-	-	-	-	-	720
3	-	22	-	-	22	4	-	-	4	4	-	-	-	-	-	720
4	-	9	-	-	9	1	-	-	1	1	-	-	-	-	-	150
5	-	24	-	15	39	8	-	-	8	8	-	-	-	-	-	-
6	-	15	7	-	22	4	-	-	4	4	-	-	-	-	-	720
7	-	16	-	-	16	2	-	-	2	2	-	-	-	-	-	720
8	-	49	-	-	49	8	-	-	8	8	-	-	-	-	-	720
9	-	16	6	-	22	2	1	-	2	2	2	-	-	-	-	-
10	-	16	-	-	16	2	-	-	2	2	-	-	-	-	-	360
Total	**-**	**175**	**28**	**15**	**218**	**37**	**1**	**-**	**37**	**37**	**2**	**-**	**-**	**-**	**-**	**4,830**

Road Improvement Plan | **Road No.** | **County** Laikipia | **From:** 0+000 | **To:** 1+000 | **Page:** 1

Chain-age			(kilometres) / (metres)						0+100					0+200					0+300					0+400					0+500					0+600					0+700					0+800					0+900					1+000
Road form.			Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
			Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping			Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
			Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			Volume of ETL or Fill (m3/m)																																																			
Gravel	Total		Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720		Source (quarry No.)																																																		
Improved Subgrade	Total		Thickness (cm,comp.)																																																		
			Source (quarry No.)																																																		
Longitudinal gradient (in %)									-0.37					0.66					0.54					1.70					-0.08					0.32					-1.03					-1.21					1.01					-0.23
Mitre drains	Total		Number left =																									LUGGAH																									
			Number right =																																																		
Catch water	Total		Length of drain left =																																																		
			Length of drain right =																																																		
Culverts	N/Ex		Chainage (m) = New / Existing line																				0+400N				0+475EX			0+530N																								
	CD	3	= Cross drainage																				CD				CD			CD																								
	AC	0	= Access culvert/drift																																																		
	AD	0	= Left/right																																																		
	Length (m)	-	Ø 450 mm																																																		
		-	Ø 600mm																																																		
		-	Ø 900 mm																																																			
		28	Ø 1200 mm																				14				7.1			7.1																								
	Ramp		Earth fill (m3)																																																		
			Haunch Type																				IV				IV			IV																								
Head-walls	T4=	T3=	Inlet (Material/Type)																				1				1			1																								
	T2= 1	T1= 1	Outlet (Material/Type)																				1				1			1																								
Additional Instruction as per Reference																																																						

Quantity Asssessment	Road No.	County	Laikipia	From:	0+000	To:	1+000	Page:	1

Chainage:	0+000	0+200	0+400	0+600	0+800	1+000

Measurements for Clearing: — **Free Clearance Width for Calculating areas**

		Aver. (m)	1 to 4 readings*)																								
	Bush Clearing	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m
	Grass Cutting						m						m						m						m						m						m
	Grubbing	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m
0	Tree and Stump Removal	0					m	0					m	0					m	0					m	0					m	0					m

*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: — **Height of Cut for calculating volumes**

	Height of cut < 0.25m	6					cm	8					cm	14					cm	19					cm	19					cm						cm

For Reshaping: — **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

	Existing Roads	9						24						28						17					cm	17					cm						cm

Quantities

											Total this page
	Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
	Grass Cutting		m2		m2		m2		m2		0
	Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
	Tree and Stump Removal	0	No.	0	No.	0	No.	0	No.	0	0
											0
	Height of cut < 0.25m	0	m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Reshaping by Labour	443	m3 (insitu)	281	m3 (insitu)	238	m3 (insitu)	356	m3 (insitu)	356	1,674
	By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor	Name:	Date:	Signature:
For the Employer	Name:	Date:	Signature:

Road Improvement Plan County Laikipia From: 1+000 To: 2+000 Page: 2

Chain-age		(kilometres)					1+100					1+200					1+300					1+400					1+500					1+600					1+700					1+800					1+900					2+000
		(metres)																																																
Road form.		Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping		Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
		Volume of ETL or Fill (m3/m)																																																
Gravel	Total	Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720	Source (quarry No.)																																																
Improved Subgrade	Total	Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	1800	Source (quarry No.)																																																
Longitudinal gradient (in %)							-0.95					-1.57					0.09					0.65					0.77					-0.80					0.25					-0.58					0.27					-0.44
Mitre drains	Total	Number left =																																																
		Number right =																																																
Catch water	Total	Length of drain left =																																																
		Length of drain right =																																																
Culverts	N/Ex	Chainage (m) = New / Existing line									1+200EX																										1+730EX										1+940EX				
	CD 3	= Cross drainage									CD																										CD										CD				
	AC	= Access culvert/drift																																																
	AD	= Left/right																																																
	Length (m) -	Ø 450 mm																																																
	15	Ø 600mm																																			8										7.2				
	8	Ø 900 mm									7.8																																							
	-	Ø 1200mm																																																
	Ramp	Earth fill (m3)																																																
		Haunch Type									IV																										IV										IV				
Head-walls	T4 = 6 T3=	Inlet (Material/Type)									1																										1										1				
	T2 = 1 T1= 1	Outlet (Material/Type)									1																										1										1				
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																																																
		Spacing right (m) = =Total No. this sheet																																																
Additional Instruction as per Reference																																																		

Quantity Asssessment	County	Laikipia	From:	1+000	To:	2+000	Page:	2

Chainage:	1+000	1+200	1+400	1+600	1+800	2+000

Measurements for Clearing:

Free Clearance Width for Calculating areas

1 to 4 readings*)

		Aver. (m)	1 to 4 readings*)						Aver. (m)							Aver. (m)						
	Bush Clearing	8	8		8			m	8	8		8			m	8	8		8			m
	Grass Cutting							m							m							m
	Grubbing	7	7		7			m	7	7		7			m	7	7		7			m
0	**Tree and Stump Removal**	0						m	0						m	0						m

	Aver. (m)							Aver. (m)	1 to 4 readings*)				
Bush Clearing	8	8		8			m	8	8		8		m
Grass Cutting							m						m
Grubbing	7	7		7			m	7	7		7		m
Tree and Stump Removal	0						m	0					m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill:

Height of Cut for calculating volumes

Height of cut < 0.25m			cm	14		cm			cm	16		cm	18		cm

For Reshaping:

Difference in Level between Exist. Camber and Side Drain for calculating volumes

Existing Roads	13			36			10			20		cm	28		cm

Quantities

										Total this page
Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
Grass Cutting		m2		m2		m2		m2		0
Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
										0
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Reshaping by Labour	400	m3 (insitu)	151	m3 (insitu)	432	m3 (insitu)	324	m3 (insitu)	238	1,544
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor	**Name:**	**Date:**	**Signature:**
For the Employer	**Name:**	**Date:**	**Signature:**

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Chain-age		(kilometres) (metres)					2+100					2+200					2+300					2+400					2+500					2+600					2+700					2+800					2+900					3+000
Road form.		Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping		Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
		Volume of ETL or Fill (m3/m)																																																		
Gra-vel	Total	Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720	Source (quarry No.)																																																		
Improved Subgrade	Total	Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	1800	Source (quarry No.)																																																		
Longitudinal gradient (in %)							2.71					-0.42					0.39					0.93					-0.15					1.14					0.25					0.15					-1.91					-1.93
Mitre drains	Total	Number left =																																																		
		Number right =										SWAMP																																			LUGGAH					
Catch water	Total	Length of drain left =																																																		
		Length of drain right =																																																		
Culverts	N/Ex	Chainage (m) New / Existing line					2+120EX																									2+640EX												2+880EX		2+905N					
	CD 4	= Cross drainage					CD																									CD												CD		CD					
	AC	= Access culvert/drift																																																		
	AD	= Left/right																																																		
	Length (m) -	Ø 450 mm																																																		
	-	Ø 600mm																																																		
	22	Ø 900 mm					8																									8														6.3					
	13	Ø 1200 mm																																										12.5							
	Ramp	Earth fill (m3)																																																		
		Haunch Type					IV																									IV												IV		IV					
Head-walls	T4=2 T3=	Inlet (Material/Type)					1																									1												1		1					
	T2= T1=	Outlet (Material/Type)					1																									1												1		1					

Quantity Asssessment		County	Laikipia	From:	2+000	To:	3+000	Page:	3

Chainage:	2+000	2+200	2+400	2+600	2+800	3+000

Measurements for Clearing: ####, 1 to 4 readings*) — **Free Clearance Width for Calculating areas** — Aver. (m), 1 to 4 readings*)

	Bush Clearing	8	8			8		m	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m
	Grass Cutting							m						m						m						m						m
	Grubbing	7	7			7		m	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m
0	Tree and Stump Removal	0						m	0					m	0					m	0					m	0					m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: — **Height of Cut for calculating volumes**

	Height of cut < 0.25m	23						cm	21					cm	8					cm						cm	8					cm

For Reshaping: — **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

	Existing Roads	30							21						3						29					cm	21					cm

Quantities

										Total this page
	Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
	Grass Cutting		m2		m2		m2		m2		0
	Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
	Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
											0
	Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Reshaping by Labour		m3 (insitu)	313	m3 (insitu)	508	m3 (insitu)	227	m3 (insitu)	313	1,361
	By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor — Name: — Date: — Signature:

For the Employer — Name: — Date: — Signature:

Road Improvement Plan	County	Laikipia	From:	3+000	To:	4+000	Page:	4

Section		Item					3+100					3+200					3+300					3+400					3+500
Chain-age		(kilometres) (metres)																									
Road form.		Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping		Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
		Volume of ETL or Fill (m3/m)																									
RC Slab	Total	Thickness (cm,comp.)	100	100	100	100	100	100	100	100	100	100	100	100													
	150	Source (quarry No.)																									
Heavy Grading (HG)	Total	Thickness (cm,comp.)													HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG
		Source (quarry No.)																									
Longitudinal gradient (in %)							-0.15					0.41					1.89					1.92					2.58
Mitre drains	Total	Number left =																									
		Number right =																									
Catch water	Total	Length of drain left =																									
		Length of drain right =																									
Culverts	N/Ex	Chainage (m) = New / Existing line															3+320EX										
	CD 1	= Cross drainage															CD										
	AC	= Access culvert/drift																									
	AD	= Left/right																									
	Length (m) -	Ø 450 mm																									
	-	Ø 600mm																									
	9	Ø 900 mm															9										
	-	Ø 1200 mm																									
	Ramp	Earth fill (m3)																									
		Haunch Type															IV										
Head-walls	T4=6 T3=	Inlet (Material/Type)															1										
	T2=1 T1=1	Outlet (Material/Type)															1										
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																									
	0	Spacing right (m) = =Total No. this sheet																									
Additional Instruction as per Reference																											

Section		Item					3+600					3+700					3+800					3+900					4+000
Chain-age		(kilometres) (metres)																									
Road form.		Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping		Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
		Volume of ETL or Fill (m3/m)																									
RC Slab	Total	Thickness (cm,comp.)																									
	150	Source (quarry No.)																									
Heavy Grading (HG)	Total	Thickness (cm,comp.)	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG
		Source (quarry No.)																									
Longitudinal gradient (in %)							1.74					1.19					1.34					0.09					1.22
Mitre drains	Total	Number left =																		MARURA NAROK PRIMARY SCHOOL							
		Number right =																									
Catch water	Total	Length of drain left =																									
		Length of drain right =																									
Culverts	N/Ex	Chainage (m) = New / Existing line																									
	CD 1	= Cross drainage																									
	AC	= Access culvert/drift																									
	AD	= Left/right																									
	Length (m) -	Ø 450 mm																									
	-	Ø 600mm																									
	9	Ø 900 mm																									
	-	Ø 1200 mm																									
	Ramp	Earth fill (m3)																									
		Haunch Type																									
Head-walls	T4=6 T3=	Inlet (Material/Type)																									
	T2=1 T1=1	Outlet (Material/Type)																									
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																									
	0	Spacing right (m) = =Total No. this sheet																									
Additional Instruction as per Reference																											

Quantity Asssessment	County	Laikipia	From:	3+000	To:	4+000	Page:	4

Chainage:	3+000	3+200	3+400	3+600	3+800	4+000

Measurements for Clearing: — Free Clearance Width for Calculating areas

Estimated measurements for small cut to fill: — Height of Cut for calculating volumes

For Reshaping: — Difference in Level between Exist. Camber and Side Drain for calculating volumes

Section 3+000 – 3+200

	####	1 to 4 readings*)				
Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
0 Tree and Stump Removal	0					m
Height of cut < 0.25m						cm
Existing Roads	16					

Section 3+200 – 3+400

Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m
Height of cut < 0.25m	22					cm
Existing Roads	36					

Section 3+400 – 3+600

Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m
Height of cut < 0.25m	7					cm
Existing Roads	44					

Section 3+600 – 3+800

Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m
Height of cut < 0.25m	18					cm
Existing Roads	18					cm

Section 3+800 – 4+000

	Aver. (m)	1 to 4 readings*)				
Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m
Height of cut < 0.25m	8					cm
Existing Roads	23					cm

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Quantities										Total this page
Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
Grass Cutting		m2		m2		m2		m2		0
Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
										0
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)	9	m3 (insitu)	4	13
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Reshaping by Labour	367.2	m3 (insitu)	151	m3 (insitu)	65	m3 (insitu)	346	m3 (insitu)	292	1,220
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor	Name:	Date:	Signature:
For the Employer	Name:	Date:	Signature:

Road Improvement Plan | **County** Laikipia | **From:** 4+000 | **To:** 5+000 | **Page:** 5

Chainage (kilometres)					4+100					4+200					4+300					4+400					4+500
Chainage (metres)																									
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping: Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Volume of ETL or Fill (m3/m)																									
Gra-vel Total: Thickness (cm,comp.)																									
Source (quarry No.)																									
Heavy Grading (HG) Total: Thickness (cm,comp.)	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG
Source (quarry No.)																									
Longitudinal gradient (in %)					-1.73					0.71					-0.94					-1.28					-3.06
Mitre drains Total: Number left =																									
Number right =																									
Catch water Total: Length of drain left =																									
Length of drain right =																									
Culverts N/Ex: Chainage (m) = New / Existing line									4+200N																
CD 8 = Cross drainage									CD																
AC = Access culvert/drift																									
AD 0 = Left/right																									
Length (m) 15 Ø 450 mm																									
- Ø 600mm																									
24 Ø 900 mm									8																
38 Ø 1200 mm																									
Ramp: Earth fill (m3)																									
Haunch Type									IV																
Head-walls T4=8 T3= Inlet (Material/Type)									1																
T2=1 T1=1 Outlet (Material/Type)									1																
Scour Checks SM = Material this sheet/ Spacing left (m) =																									
0 Spacing right (m) = =Total No. this sheet																									
Additional Instruction as per Reference																									

Chainage (kilometres)					4+600					4+700					4+800					4+900					5+000
Chainage (metres)																									
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping: Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Volume of ETL or Fill (m3/m)																									
Gra-vel Total: Thickness (cm,comp.)																									
Source (quarry No.)																									
Heavy Grading (HG) Total: Thickness (cm,comp.)	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG
Source (quarry No.)																									
Longitudinal gradient (in %)					0.09					4.11					0.03					-0.49					0.28
Mitre drains Total: Number left =							LUGGAH																		
Number right =																									
Catch water Total: Length of drain left =																									
Length of drain right =																									
Culverts N/Ex: Chainage (m) = New / Existing line			4+563Ex	4+582Ex	4+620N		4+660Ex		4+700N													4+960N		5+000Ex	
CD 8 = Cross drainage			CD	CD	CD		CD		CD													CD		CD	
AC = Access culvert/drift																									
AD 0 = Left/right																									
Length (m) 15 Ø 450 mm			7.3	7.4																					
- Ø 600mm																									
24 Ø 900 mm																						8		8.2	
38 Ø 1200 mm					18		14		6																
Ramp: Earth fill (m3)																									
Haunch Type			IV	IV	IV		IV		IV													IV		IV	
Head-walls T4=8 T3= Inlet (Material/Type)			1	1	1		1		1													1		1	
T2=1 T1=1 Outlet (Material/Type)			1	1	1		1		1													1		1	
Scour Checks SM = Material this sheet/ Spacing left (m) =																									
0 Spacing right (m) = =Total No. this sheet																									
Additional Instruction as per Reference																									

Quantity Asssessment			County	Laikipia	From:	4+000	To:	5+000	Page:	5

Chainage:	4+000	4+200	4+400	4+600	4+800	5+000

Measurements for Clearing: — 1 to 4 readings*) — **Free Clearance Width for Calculating areas** — Aver. (m) — 1 to 4 readings*)

	Bush Clearing	8	8		8			m	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m
	Grass Cutting							m						m						m						m						m
	Grubbing	7	7		7			m	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m
0	Tree and Stump Removal	0						m	0					m	0					m	0					m	0					m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: — **Height of Cut for calculating volumes**

	Height of cut < 0.25m	7						cm	9					cm						cm	1					cm	16					cm

For Reshaping: — **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

	Existing Roads	12							10						7						10					cm	8					cm

Quantities

										Total this page
	Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
	Grass Cutting		m2		m2		m2		m2		0
	Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
	Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
											0
	Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Reshaping by Labour	410	m3 (insitu)	432	m3 (insitu)	464	m3 (insitu)	432	m3 (insitu)	454	2,192
	By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor — Name: — Date: — Signature:

For the Employer — Name: — Date: — Signature:

Road Improvement Plan | County: Laikipia | From: 5+000 | To: 6+000 | Page: 6

Chain-age			(kilometres)					5+100					5+200					5+300					5+400					5+500					5+600					5+700					5+800					5+900					6+000
			(metres)																																																		
Road form.			Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
			Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping			Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
			Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			Volume of ETL or Fill (m3/m)																																																		
Gra- vel	Total		Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720		Source (quarry No.)																																																		
Improved Subgrade	Total		Thickness (cm,comp.)																																																	
			Source (quarry No.)																																																	
Longitudinal gradient (in %)								1.41					0.21					0.17					0.23					-0.18					-0.07					-0.94					-0.28					-1.76					-0.99
Mitre drains	Total		Number left =																																						LUGGAH											
			Number right =																																																	
Catch water	Total		Length of drain left =																																																	
			Length of drain right =																																																	
Culverts	N/Ex		Chainage (m) = New / Existing line															5+305Ex																								5+800N	5+810Ex						5+935N				
	CD	4	= Cross drainage															CD																								CD	CD						CD				
	AC		= Access culvert/drift																																																		
	AD	0	= Left/right																																																	
	Length (m)	-	Ø 450 mm																																																	
		7	Ø 600mm															6.6																																			
		15	Ø 900 mm																																								7						8				
		21	Ø 1200 mm																																							21											
	Ramp		Earth fill (m3)																																																	
			Haunch Type															IV																								IV	IV						IV				
Head- walls	T4=8	T3=	Inlet (Material/Type)															1																								1	1						1				
	T2=1	T1=1	Outlet (Material/Type)															1																								1	1						1				
Scour Checks	SM		= Material this sheet/ Spacing left (m) =																																																	
	0		Spacing right (m) = =Total No. this sheet																																																	
Additional Instruction as per Reference																																																			

Quantity Asssessment	County	Laikipia	From:	5+000	To:	6+000	Page:	6

Chainage:	5+000	5+200	5+400	5+600	5+800	6+000

Measurements for Clearing: **Free Clearance Width for Calculating areas**

	5+000 Aver. (m)	1 to 4 readings*)					5+200 Aver. (m)					5+400 Aver. (m)					5+600 Aver. (m)					5+800 Aver. (m)	1 to 4 readings*)			
Bush Clearing	8	8		8		m	8	8		8	m	8	8		8	m	8	8		8	m	8	8		8	m
Grass Cutting						m					m					m					m					m
Grubbing	7	7		7		m	7	7		7	m	7	7		7	m	7	7		7	m	7	7		7	m
0 Tree and Stump Removal	0					m	0				m	0				m	0				m	0				m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: **Height of Cut for calculating volumes**

	5+000		5+200		5+400		5+600		5+800	
Height of cut < 0.25m	7	cm	9	cm		cm	1	cm	16	cm

For Reshaping: **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

	5+000		5+200		5+400		5+600		5+800	
Existing Roads	12		10		7		10	cm	8	cm

Quantities										Total this page
Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
Grass Cutting		m2		m2		m2		m2		0
Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
										0
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Reshaping by Labour	410	m3 (insitu)	432	m3 (insitu)	464	m3 (insitu)	432	m3 (insitu)	454	2,192
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor	Name:	Date:	Signature:
For the Employer	Name:	Date:	Signature:

Road Improvement Plan				County	Laikipia	From:	6+000	To:	7+000	Page:	7

Section			Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Chain-age			(kilometres)					6+100					6+200					6+300					6+400					6+500					6+600					6+700					6+800					6+900					7+000
			(metres)																																																		
Road form.			Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
			Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping			Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
			Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			Volume of ETL or Fill (m3/m)																																																		
Gra- vel	Total		Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720		Source (quarry No.)																																																		
Improved Subgrade	Total		Thickness (cm,comp.)																																																		
			Source (quarry No.)																																																		
Longitudinal gradient (in %)								-3.11					2.24					-0.96					0.09					-1.53					1.96					0.52					1.77					1.10					0.85
Mitre drains	Total		Number left =																											SWAMP																							
			Number right =																																																		
Catch water	Total		Length of drain left =																																																		
			Length of drain right =																																																		
Culverts	N/Ex		Chainage (m) = New / Existing line									6+200Ex										6+400N				6+495Ex																											
	CD	2	= Cross drainage									CD										CD				CD																											
	AC		= Access culvert/drift																																																	
	AD	0	= Left/right																																																	
	Length (m)	-	Ø 450 mm																																																	
		-	Ø 600mm																																																	
		16	Ø 900 mm																			8				7.8																											
		8	Ø 1200 mm									7.8																																							
	Ramp		Earth fill (m3)																																																	
			Haunch Type									IV										IV				IV																											
Head-walls	T4=8	T3=	Inlet (Material/Type)									1										1				1																											
	T2=1	T1=1	Outlet (Material/Type)									1										1				1																											
Scour Checks	SM		= Material this sheet/ Spacing left (m) =																																																	
	0		Spacing right (m) = =Total No. this sheet																																																	
Additional Instruction as per Reference																																																					

Quantity Asssessment	County	Laikipia	From:	6+000	To:	7+000	Page:	7

Chainage:	6+000	6+200	6+400	6+600	6+800	7+000

Measurements for Clearing: 1 to 4 readings*) **Free Clearance Width for Calculating areas** Aver. (m) 1 to 4 readings*)

		Aver.	Readings					Aver.	Readings					Aver.	Readings					Aver.	Readings					Aver.	Readings				
	Bush Clearing	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m
	Grass Cutting						m						m						m						m						m
	Grubbing	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m
0	Tree and Stump Removal	0					m	0					m	0					m	0					m	0					m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: **Height of Cut for calculating volumes**

Height of cut < 0.25m	7 cm	9 cm	cm	1 cm	16 cm

For Reshaping: **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

Existing Roads	12	10	7	10 cm	8 cm

Quantities

	6+000		6+200		6+400		6+600		6+800		Total this page
Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600		8,000
Grass Cutting		m2		m2		m2		m2			0
Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400		7,000
Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0		0
											0
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			0
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			0
Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			0
Reshaping by Labour	410	m3 (insitu)	432	m3 (insitu)	464	m3 (insitu)	432	m3 (insitu)	454		2,192
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			0
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			0

Quantities verfied and accepted by the Contractor	Name:	Date:	Signature:
For the Employer	Name:	Date:	Signature:

Road Improvement Plan | **County** | **Laikipia** | **From:** 7+000 | **To:** 8+000 | **Page:** 8

Group		Item																									
Chain-age		(kilometres)					7+100					7+200					7+300					7+400					7+500
		(metres)																									
Road form.		Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping		Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
		Volume of ETL or Fill (m3/m)																									
Gra- vel	Total	Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720	Source (quarry No.)																									
Improved Subgrade	Total	Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	1800	Source (quarry No.)																									
Longitudinal gradient (in %)							-0.42					-2.45					-1.19					-1.80					-1.95
Mitre drains	Total	Number left =																									
		Number right =																									
Catch water	Total	Length of drain left =																									
		Length of drain right =																									
Culverts	N/Ex	Chainage (m) = New / Existing line		7+038Ex						7+178N											7+400N					7+500N	
	CD 8	= Cross drainage		CD						CD											CD					CD	
	AC	= Access culvert/drift																									
	AD 0	= Left/right																									
	Length (m) -	Ø 450 mm																									
	-	Ø 600mm																									
	49	Ø 900 mm		8.7																	6					6	
	8	Ø 1200 mm								8																	
	Ramp	Earth fill (m3)																									
		Haunch Type		IV						IV											IV					IV	
Head-walls	T4=8 T3=	Inlet (Material/Type)		1						1											1					1	
	T2=1 T1=1	Outlet (Material/Type)		1						1											1					1	
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																									
	0	Spacing right (m) = =Total No. this sheet																									
Additional Instruction as per Reference																											

Group		Item																									
Chain-age		(kilometres)					7+600					7+700					7+800					7+900					8+000
		(metres)																									
Road form.		Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping		Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
		Volume of ETL or Fill (m3/m)																									
Gra- vel	Total	Thickness (cm,comp.)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
	720	Source (quarry No.)																									
Improved Subgrade	Total	Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
	1800	Source (quarry No.)																									
Longitudinal gradient (in %)							-3.12					-1.47					-1.45					-0.71					-1.41
Mitre drains	Total	Number left =																			CONTAINER AREA						
		Number right =																									
Catch water	Total	Length of drain left =																									
		Length of drain right =																									
Culverts	N/Ex	Chainage (m) = New / Existing line				7+600N														7+870N	7+900N				6		
	CD 8	= Cross drainage				CD														CD	CD				CD		
	AC	= Access culvert/drift																									
	AD 0	= Left/right																									
	Length (m) -	Ø 450 mm																									
	-	Ø 600mm																									
	49	Ø 900 mm				7														8	7				6		
	8	Ø 1200 mm																									
	Ramp	Earth fill (m3)																									
		Haunch Type				IV														IV	IV				IV		
Head-walls	T4=8 T3=	Inlet (Material/Type)				1														1	1				1		
	T2=1 T1=1	Outlet (Material/Type)				1														1	1				1		
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																									
	0	Spacing right (m) = =Total No. this sheet																									
Additional Instruction as per Reference																											

Quantity Asssessment			County	Laikipia	From:	7+000	To:	8+000	Page:	8

Chainage:	7+000	7+200	7+400	7+600	7+800	8+000

Measurements for Clearing: — **Free Clearance Width for Calculating areas**

		7+000 (1 to 4 readings*)						7+200					7+400					7+600					7+800 (Aver. (m))	8+000 (1 to 4 readings*)				
	Bush Clearing	8	8		8			m	8	8		8		m	8	8		8		m	8	8		8		m	8	8		8		m
	Grass Cutting							m						m						m						m						m
	Grubbing	7	7		7			m	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m
0	Tree and Stump Removal	0						m	0					m	0					m	0					m	0					m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: — **Height of Cut for calculating volumes**

		7+000						7+200					7+400					7+600					7+800					8+000	
	Height of cut < 0.25m	7					cm	9				cm						cm	1					cm	16					cm

For Reshaping: — **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

	Existing Roads	12						10					7					10					cm	8					cm

Quantities

		7+000		7+200		7+400		7+600		7+800	Total this page
	Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
	Grass Cutting		m2		m2		m2		m2		0
	Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
	Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
											0
	Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	Reshaping by Labour	410	m3 (insitu)	432	m3 (insitu)	464	m3 (insitu)	432	m3 (insitu)	454	2,192
	By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
	By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor — Name: — Date: — Signature:

For the Employer — Name: — Date: — Signature:

Road Improvement Plan	County	Laikipia	From:	8+000	To:	9+000	Page:	9

Chain-age			(kilometres)					8+100					8+200					8+300					8+400					8+500					8+600					8+700					8+800					8+900					9+000
			(metres)																																																		
Road form.			Subgrade	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
			Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earthworks / Reshaping			Method: RES, ETL or Fill	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
			Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
			Volume of ETL or Fill (m3/m)																																																		
Heavy Grading (HG)	Total		Thickness (cm,comp.)	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG	HG
	0		Source (quarry No.)																																																		
Improved Subgrade	Total		Thickness (cm,comp.)																																																		
	2200		Source (quarry No.)																																																		
Longitudinal gradient (in %)								-0.94					0.59					0.67					0.65					0.26					-0.18					1.18					0.28					0.10					0.31
Mitre drains	Total		Number left =																																																		
			Number right =																																																		
Catch water	Total		Length of drain left =																																																		
			Length of drain right =																																																		
Culverts	N/Ex		Chainage (m) = New / Existing line			8+080N																	8+420Ex															8+715N															
	CD	2	= Cross drainage			CD																																CD															
	AC	1	= Access culvert/drift																				AC																														
	AD	0	= Left/right																				L																														
	Length (m)	-	Ø 450 mm																																																		
		6	Ø 600mm																				6																														
		16	Ø 900 mm			8																																8															
		-	Ø 1200 mm																																																		
	Ramp		Earth fill (m3)																																																		
			Haunch Type			IV																	IV															IV															
Head-walls	T4=8	T3=	Inlet (Material/Type)			1																	1															1															
	T2=1	T1=1	Outlet (Material/Type)			1																	1															1															
Scour Checks	SM		= Material this sheet/ Spacing left (m) =																																																		
	0		Spacing right (m) = =Total No. this sheet																																																		
Additional Instruction as per Reference																																																					

Quantity Asssessment	County	Laikipia	From:	8+000	To:	9+000	Page:	9

Chainage:	8+000	8+200	8+400	8+600	8+800	9+000

Measurements for Clearing: **Free Clearance Width for Calculating areas**

Section 8+000 – 8+200 (1 to 4 readings*))

Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
0 Tree and Stump Removal	0					m

Section 8+200 – 8+400

Bush Clearing	8	8		8	m
Grass Cutting					m
Grubbing	7	7		7	m
Tree and Stump Removal	0				m

Section 8+400 – 8+600

Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m

Section 8+600 – 8+800

Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m

Section 8+800 – 9+000

	Aver. (m)	1 to 4 readings*)				
Bush Clearing	8	8		8		m
Grass Cutting						m
Grubbing	7	7		7		m
Tree and Stump Removal	0					m

Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).

Estimated measurements for small cut to fill: **Height of Cut for calculating volumes**

	8+000 – 8+200		8+200 – 8+400		8+400 – 8+600		8+600 – 8+800		8+800 – 9+000	
Height of cut < 0.25m	7	cm	9	cm		cm	1	cm	16	cm

For Reshaping: **Difference in Level between Exist. Camber and Side Drain for calculating volumes**

	8+000 – 8+200		8+200 – 8+400		8+400 – 8+600		8+600 – 8+800		8+800 – 9+000	
Existing Roads	12		10		7		10	cm	8	cm

Quantities										Total this page
Bush Clearing	1600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	8,000
Grass Cutting		m2		m2		m2		m2		0
Grubbing	1400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	7,000
Tree and Stump Removal		No.	0	No.	0	No.	0	No.	0	0
										0
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Drains full re-construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Reshaping by Labour	410	m3 (insitu)	432	m3 (insitu)	464	m3 (insitu)	432	m3 (insitu)	454	2,192
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0

Quantities verfied and accepted by the Contractor	Name:	Date:	Signature:
For the Employer	Name:	Date:	Signature: