Summary from the Improvement Plan - Batch 2
KACHULU GOTU 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
7	8,000	800	8,800	-	-	7,000	10	1,874	187
8	8,000	800	8,800	-	-	7,000	10	1,744	174
9	8,000	800	8,800	-	-	7,000	10	1,561	156
10	8,000	800	8,800	-	-	7,000	10	1,420	142
11	8,000	800	8,800	-	-	7,000	10	2,392	239
12	8,000	800	8,800	-	-	7,000	10	2,392	239
13	8,000	800	8,800	-	-	7,000	10	2,392	239
14	8,000	800	8,800	-	-	7,000	10	2,392	239
15	8,000	800	8,800	-	-	7,000	10	2,392	239
16	8,000	800	8,800	-	-	7,000	10	2,392	239
17	8,000	800	8,800	-	-	7,000	10	2,392	239
18	8,000	800	8,800	-	-	7,000	10	2,392	239
19									
Total	**96,000**	**9,600**	**105,600**	**-**	**-**	**84,000**	**120**	**25,739**	**2,574**

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)
	900	600	Total	CD	AC	AD				No	m	L No	R No	m3
7	-	-	-	-	-	-	-	-	-	-	-	-	-	729
8	16	-	16	1	-	-	1	1	-	-	-	-	-	1,200
9	14	-	14	1	-	-	1	1	-	-	-	-	-	816
10	-	-	-	-	-	-	-	-	-	-	-	-	-	240
11	-	-	-	-	-	-	-	-	-	-	-	-	-	1,200
12	-	-	-	-	-	-	-	-	-	-	-	-	-	591
13	-	-	-	-	-	-	-	-	-	-	-	-	-	730
14	-	13	13	-	-	-	-	-	-	-	-	-	-	1,200
15	-	-	-	-	-	-	-	-	-	-	-	-	-	720
16	-	-	-	-	-	-	-	-	-	-	-	-	-	730
17	-	-	-	-	-	-	-	-	-	-	-	-	-	1,140
18	-	-	-	-	-	-	-	-	-	-	-	-	-	906
19														
Total	**30**	**13**	**43**	**2**	**-**	**-**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**10,202**

Road Improvement Plan — **Road No.** — **County** Meru — **From:** 6+000 — **To:** 7+000 — **Page:** 1

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	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	200
	729	Source (quarry No.)																																																			
Improved Subgrade	Total	Thickness (cm,comp.)																																																			300
	1800	Source (quarry No.)																																																		
		Longitudinal gradient (in %)					-5.49					-4.80					-4.64					-3.41					-3.22					-3.00					-2.06					-1.96					-2.02					-2.00	
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																																																		
	CD 0	= Cross drainage																																																		
	AC 0	= Access culvert/drift																																																		
	AD 0	= Left/right																																																		
	Length (m) -	Ø 450 mm																																																		
	-	Ø 600mm																																																		
	-	Ø 900 mm																																																		
	Ramp	Earth fill (m3)																																																		
		Haunch Type																																																			
Head-walls	T4= T3=	Inlet (Material/Type)																																																		
	T2= 1 T1= 1	Outlet (Material/Type)																																																		
		Additional Instruction as per Reference																																																			

Quantity Asssessment	Road No.	County	Meru	From:	6+000	To:	7+000	Page:	1

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

Measurements for Clearing:	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 < 0.25m	6					cm	8					cm	14					cm	19					cm	19					cm						cm

For Reshaping:																																			
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** **Meru** **From:** **7+000** **To:** **8+000** **Page:** **2**

Chain-age			**(kilometres) (metres)**					7+100					7+200					7+300					7+400					7+500					7+600					7+700					7+800					7+900					8+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)																																																		
Gravel	Total		**Thickness (cm,comp.)**	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	1200		**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 %)				-1.65					-1.82					-1.66					-1.71					-1.77					-1.51					-2.06					-1.67					-1.63					-1.59	
Mitre drains	Total		**Number left =**																																											Drain					
			Number right =																																																		
Catch water	Total		**Length of drain left =**																																																		
			Length of drain right =																																																		
Culverts	N/Ex		**Chainage (m) = New / Existing line**																																												7+933.748				
	CD	1	**= Cross drainage**																																												1				
	AC	0	**= Access culvert/drift**																																																		
	AD	0	**= Left/right**																																																		
	Length (m)	-	**Ø 450 mm**																																																		
		-	**Ø 600mm**																																																		
		16	**Ø 900 mm**																																												16				
	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) =**																																																		
			Spacing right (m) = =Total No. this sheet																																																		
			Additional Instruction as per Reference																																																		

Quantity Asssessment			County	Meru	From:	7+000	To:	8+000	Page:	2

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

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

		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	Aver. (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							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:**

Road Improvement Plan					County	Meru	From:	8+000	To:	9+000	Page:	3

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 A FILL L	G A FILL L	G A FILL L	G A FILL L	G A FILL L	G A FILL L	G A FILL L	G A FILL L	G A FILL L	G A FILL L
			Cross section	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
			Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L	L
			Volume of ETL or Fill (m3/m)											
Gravel	Total		Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200	200
	816		Source (quarry No.)								Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading
Improved Subgrade	Total		Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300	300
	1260		Source (quarry No.)				-1.98	-0.57	-2.00	-0.98	-1.00	-3.69	2.96	2.21
Longitudinal gradient (in %)				-2.72	3.72									
Mitre drains	Total		Number left =											
			Number right =			Drain								
Catch water	Total		Length of drain left =											
			Length of drain right =											
Culverts	N/Ex		Chainage (m) = New / Existing line								8+700N			
	CD	1	= Cross drainage								1			
	AC	0	= Access culvert/drift											
	AD	0	= Left/right											
	Length (m)	0.0	Ø 450 mm											
		0.0	Ø 600mm											
		14.0	Ø 900 mm								14			
	Ramp		Earth fill (m3)											
			Haunch Type								IV			
Head-walls	T4=2	T3=	Inlet (Material/Type)								1			
	T2=	T1=	Outlet (Material/Type)								1			

Quantity Asssessment	County	Meru	From:	8+000	To:	9+000	Page:	3

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

Measurements for Clearing: #### 1 to 4 readings*)

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

		Aver.						Aver.						Aver.						Aver.						Aver.					
	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** | **Meru** | **From:** | **9+000** | **To:** | **10+000** | **Page:** | **4**

Chain-age		(kilometres)					9+100					9+200					9+300					9+400					9+500					9+600					9+700					9+800					9+900					10+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.)	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	200	200	200	200	200	200	200	200	200	200	200
	240	Source (quarry No.)																																																	
Improved Subgrade	Total	Thickness (cm,comp.)																																							300	300	300	300	300	300	300	300	300	300	300
	360	Source (quarry No.)																																																	
Longitudinal gradient (in %)						0.85					1.61					0.01					-4.23					0.21					-0.80					-2.33					-1.07					-0.71					-0.77	
Mitre drains	Total	Number left = 8																																																	
		Number right = 0																																																	
Catch water	Total	Length of drain left = 25																																																	
		Length of drain right =0																																																	
Culverts	N/Ex	Chainage (m) = New / Existing line																																																	
	CD	0 = Cross drainage																																																	
	AC	0 = Access culvert/drift																																																	
	AD	0 = Left/right																																																	
	Length (m)	0.0 Ø 450 mm																																																	
		0.0 Ø 600mm																																																	
		0.0 Ø 900 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	Meru	From:	9+000	To:	10+000	Page:	4

Chainage:	9+000	9+200	9+400	9+600	9+800	10+000

Measurements for Clearing: Free Clearance Width for Calculating areas

		#### / Aver. (m)	1 to 4 readings*)		Unit	Aver. (m)	1 to 4 readings*)		Unit	Aver. (m)	1 to 4 readings*)		Unit	Aver. (m)	1 to 4 readings*)		Unit	Aver. (m)	1 to 4 readings*)		Unit
	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		cm	22	cm	7	cm	18	cm	8		cm

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

Existing Roads	16		36		44		18	cm	23		cm

Quantities

	9+000		9+200		9+400		9+600		9+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)	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** | **Meru** | **From:** | **10+000** | **To:** | **11+000** | **Page:** | **5**

Chainage (kilometres)					10+100					10+200
Chainage (metres)										
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	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
Earthworks / Reshaping Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L
Earthworks / Reshaping Volume of ETL or Fill (m3/m)										
Gravel Total Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200
Gravel 1200 Source (quarry No.)										
Improved Subgrade Total Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300
Improved Subgrade 1800 Source (quarry No.)										
Longitudinal gradient (in %)				###					-1.37	
Mitre drains Total Number left =										
Mitre drains Number right =										
Catch water Total Length of drain left =										
Catch water Length of drain right =										
Culverts N/Ex Chainage (m) = New / Existing line										
Culverts CD 0 = Cross drainage										
Culverts AC 0 = Access culvert/drift										
Culverts AD 0 = Left/right										
Culverts Length (m) - Ø 450 mm										
Culverts Length (m) - Ø 600mm										
Culverts Length (m) - Ø 900 mm										
Culverts Ramp Earth fill (m3)										
Culverts Ramp Haunch Type										
Head-walls T4=8 T3= Inlet (Material/Type)										
Head-walls T2=1 T1=1 Outlet (Material/Type)										
Scour Checks SM = Material this sheet/ Spacing left (m) =										
Scour Checks 0 Spacing right (m) = =Total No. this sheet										
Additional Instruction as per Reference										

Chainage (kilometres)					10+300					10+400
Chainage (metres)										
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	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
Earthworks / Reshaping Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L
Earthworks / Reshaping Volume of ETL or Fill (m3/m)										
Gravel Total Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200
Gravel 1200 Source (quarry No.)										
Improved Subgrade Total Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300
Improved Subgrade 1800 Source (quarry No.)										
Longitudinal gradient (in %)				-0.79					-0.33	
Mitre drains Total Number left =										
Mitre drains Number right =										
Catch water Total Length of drain left =										
Catch water Length of drain right =										
Culverts N/Ex Chainage (m) = New / Existing line										
Culverts CD 0 = Cross drainage										
Culverts AC 0 = Access culvert/drift										
Culverts AD 0 = Left/right										
Culverts Length (m) - Ø 450 mm										
Culverts Length (m) - Ø 600mm										
Culverts Length (m) - Ø 900 mm										
Culverts Ramp Earth fill (m3)										
Culverts Ramp Haunch Type										
Head-walls T4=8 T3= Inlet (Material/Type)										
Head-walls T2=1 T1=1 Outlet (Material/Type)										
Scour Checks SM = Material this sheet/ Spacing left (m) =										
Scour Checks 0 Spacing right (m) = =Total No. this sheet										
Additional Instruction as per Reference										

Chainage (kilometres)					10+500					10+600
Chainage (metres)										
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	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
Earthworks / Reshaping Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L
Earthworks / Reshaping Volume of ETL or Fill (m3/m)										
Gravel Total Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200
Gravel 1200 Source (quarry No.)										
Improved Subgrade Total Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300
Improved Subgrade 1800 Source (quarry No.)										
Longitudinal gradient (in %)				-0.48					-0.52	
Mitre drains Total Number left =										
Mitre drains Number right =										
Catch water Total Length of drain left =										
Catch water Length of drain right =										
Culverts N/Ex Chainage (m) = New / Existing line										
Culverts CD 0 = Cross drainage										
Culverts AC 0 = Access culvert/drift										
Culverts AD 0 = Left/right										
Culverts Length (m) - Ø 450 mm										
Culverts Length (m) - Ø 600mm										
Culverts Length (m) - Ø 900 mm										
Culverts Ramp Earth fill (m3)										
Culverts Ramp Haunch Type										
Head-walls T4=8 T3= Inlet (Material/Type)										
Head-walls T2=1 T1=1 Outlet (Material/Type)										
Scour Checks SM = Material this sheet/ Spacing left (m) =										
Scour Checks 0 Spacing right (m) = =Total No. this sheet										
Additional Instruction as per Reference										

Chainage (kilometres)					10+700					10+800
Chainage (metres)										
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	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
Earthworks / Reshaping Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L
Earthworks / Reshaping Volume of ETL or Fill (m3/m)										
Gravel Total Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200
Gravel 1200 Source (quarry No.)										
Improved Subgrade Total Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	300
Improved Subgrade 1800 Source (quarry No.)										
Longitudinal gradient (in %)				-0.55					-0.68	
Mitre drains Total Number left =										
Mitre drains Number right =										
Catch water Total Length of drain left =										
Catch water Length of drain right =										
Culverts N/Ex Chainage (m) = New / Existing line										
Culverts CD 0 = Cross drainage										
Culverts AC 0 = Access culvert/drift										
Culverts AD 0 = Left/right										
Culverts Length (m) - Ø 450 mm										
Culverts Length (m) - Ø 600mm										
Culverts Length (m) - Ø 900 mm										
Culverts Ramp Earth fill (m3)										
Culverts Ramp Haunch Type										
Head-walls T4=8 T3= Inlet (Material/Type)										
Head-walls T2=1 T1=1 Outlet (Material/Type)										
Scour Checks SM = Material this sheet/ Spacing left (m) =										
Scour Checks 0 Spacing right (m) = =Total No. this sheet										
Additional Instruction as per Reference										

Chainage (kilometres)					10+900					11+000
Chainage (metres)										
Road form. Subgrade	G	G	G	G	G	G	G	G	G	G
Road form. Cross section	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
Earthworks / Reshaping Choice of reshaping: L, T or E	L	L	L	L	L	L	L	L	L	L
Earthworks / Reshaping Volume of ETL or Fill (m3/m)										
Gravel Total Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	Heavy Grading
Gravel 1200 Source (quarry No.)										
Improved Subgrade Total Thickness (cm,comp.)	300	300	300	300	300	300	300	300	300	
Improved Subgrade 1800 Source (quarry No.)										
Longitudinal gradient (in %)				-0.04					0.38	
Mitre drains Total Number left =										
Mitre drains Number right =										
Catch water Total Length of drain left =										
Catch water Length of drain right =										
Culverts N/Ex Chainage (m) = New / Existing line										
Culverts CD 0 = Cross drainage										
Culverts AC 0 = Access culvert/drift										
Culverts AD 0 = Left/right										
Culverts Length (m) - Ø 450 mm										
Culverts Length (m) - Ø 600mm										
Culverts Length (m) - Ø 900 mm										
Culverts Ramp Earth fill (m3)										
Culverts Ramp Haunch Type										
Head-walls T4=8 T3= Inlet (Material/Type)										
Head-walls T2=1 T1=1 Outlet (Material/Type)										
Scour Checks SM = Material this sheet/ Spacing left (m) =										
Scour Checks 0 Spacing right (m) = =Total No. this sheet										
Additional Instruction as per Reference										

Quantity Asssessment		County	Meru	From:	10+000	To:	11+000	Page:	5

Chainage:	10+000	10+200	10+400	10+600	10+800	11+000

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

		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	7						cm	9					cm						cm	1					cm	16					cm						cm

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

	Existing Roads	12							10						7						10					cm	8					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	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** Meru | **From:** 11+000 | **To:** 12+000 | **Page:** 6

Section		(kilometres) / (metres)					11+100					11+200					11+300					11+400					11+500
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
Earthworks / Reshaping		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
Earthworks / Reshaping		Volume of ETL or Fill (m3/m)																									
Gravel	Total	Thickness (cm,comp.)	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	200
Gravel	590.8	Source (quarry No.)																									
Improved Subgrade	Total	Thickness (cm,comp.)																									300
Improved Subgrade	900	Source (quarry No.)																									
		Longitudinal gradient (in %)				1.62					0.85					-1.87					-1.13					0.02	
Mitre drains	Total	Number left =																									
Mitre drains		Number right =																									
Catch water	Total	Length of drain left =																									
Catch water		Length of drain right =																									
Culverts	N/Ex	Chainage (m) = New / Existing line																									
Culverts	CD 0	= Cross drainage																									
Culverts	AC 0	= Access culvert/drift																									
Culverts	AD 0	= Left/right																									
Culverts	Length (m) -	Ø 450 mm																									
Culverts	Length (m) -	Ø 600mm																									
Culverts	Length (m) -	Ø 900 mm																									
Culverts	Ramp	Earth fill (m3)																									
Culverts	Ramp	Haunch Type																									
Head-walls	T4=8 T3=	Inlet (Material/Type)																									
Head-walls	T2=1 T1=1	Outlet (Material/Type)																									
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																									
Scour Checks	0	Spacing right (m) = =Total No. this sheet																									
		Additional Instruction as per Reference																									

Section		(kilometres) / (metres)					11+600					11+700					11+800					11+900					12+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
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
Earthworks / Reshaping		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
Earthworks / Reshaping		Volume of ETL or Fill (m3/m)																									
Gravel	Total	Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	120
Gravel	590.8	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	
Improved Subgrade	900	Source (quarry No.)																									
		Longitudinal gradient (in %)				0.22					-0.28					1.67					0.48					0.95	
Mitre drains	Total	Number left =																									
Mitre drains		Number right =																									
Catch water	Total	Length of drain left =																									
Catch water		Length of drain right =																									
Culverts	N/Ex	Chainage (m) = New / Existing line																									
Culverts	CD 0	= Cross drainage																									
Culverts	AC 0	= Access culvert/drift																									
Culverts	AD 0	= Left/right																									
Culverts	Length (m) -	Ø 450 mm																									
Culverts	Length (m) -	Ø 600mm																									
Culverts	Length (m) -	Ø 900 mm																									
Culverts	Ramp	Earth fill (m3)																									
Culverts	Ramp	Haunch Type																									
Head-walls	T4=8 T3=	Inlet (Material/Type)																									
Head-walls	T2=1 T1=1	Outlet (Material/Type)																									
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																									
Scour Checks	0	Spacing right (m) = =Total No. this sheet																									
		Additional Instruction as per Reference																									

Quantity Asssessment		County	Meru	From:	11+000	To:	12+000	Page:	6

Chainage:	11+000	11+200	11+400	11+600	11+800	12+000

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

		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	7						cm	9					cm						cm	1					cm	16					cm						cm

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

	Existing Roads	12							10						7						10					cm	8					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	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** **Meru** **From:** **12+000** **To:** **13+000** **Page:** **7**

Chain-age		(kilometres)					12+100					12+200					12+300					12+400					12+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)																									
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
	729.6	Source (quarry No.)																									
Improved Subgrade	Total	Thickness (cm,comp.)																									
	1800	Source (quarry No.)																									
		Longitudinal gradient (in %)				0.87					0.41					-0.21					-2.05					-2.67	
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																									
	CD	0 = Cross drainage																									
	AC	0 = Access culvert/drift																									
	AD	0 = Left/right																									
	Length (m)	- Ø 450 mm																									
		- Ø 600mm																									
		- Ø 900 mm																									
	Ramp	Earth fill (m3)																									
		Haunch Type																									
Head-walls	T4=8 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																									

Chain-age		(kilometres)					12+600					12+700					12+800					12+900					13+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)																									
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	200
	729.6	Source (quarry No.)																									
Improved Subgrade	Total	Thickness (cm,comp.)																									300
	1800	Source (quarry No.)																									
		Longitudinal gradient (in %)				-2.78					-2.02					-0.58					0.33					1.62	
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																									
	CD	0 = Cross drainage																									
	AC	0 = Access culvert/drift																									
	AD	0 = Left/right																									
	Length (m)	- Ø 450 mm																									
		- Ø 600mm																									
		- Ø 900 mm																									
	Ramp	Earth fill (m3)																									
		Haunch Type																									
Head-walls	T4=8 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	Meru	From:	12+000	To:	13+000	Page:	7

Chainage:	12+000	12+200	12+400	12+600	12+800	13+000

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

		12+000	1 to 4 readings*)					12+200						12+400						12+600						12+800	Aver. (m)	13+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**

	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** | **Meru** | **From:** | **13+000** | **To:** | **14+000** | **Page:** | **8**

Chainage		(kilometres) / (metres)					13+100					13+200					13+300					13+400					13+500					13+600					13+700					13+800					13+900					14+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
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	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
Earthworks / Reshaping		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
Earthworks / Reshaping		Volume of ETL or Fill (m3/m)																																																		
Gravel	Total	Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	Heavy Grading
Gravel	1200	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	
Improved Subgrade	1800	Source (quarry No.)																																																		
		Longitudinal gradient (in %)				1.13					1.13					0.24					0.44					0.80					1.72					1.63					1.49					1.44					2.10	
Mitre drains	Total	Number left = 4																																																		
Mitre drains		Number right = 0																																																		
Catch water	Total	Length of drain left = 30																																																		
Catch water		Length of drain right =0																																																		
Culverts	N/Ex	Chainage (m) = New / Existing line																																																		
Culverts	CD	0 = Cross drainage																																																		
Culverts	AC	0 = Access culvert/drift																																																		
Culverts	AD	0 = Left/right																																																		
Culverts	Length (m)	Ø 450 mm																																																		
Culverts	Length (m)	13 Ø 600mm																																																		
Culverts	Length (m)	- Ø 900 mm																																																		
Culverts	Ramp	Earth fill (m3)																																																		
Culverts	Ramp	Haunch Type																																																		
Head-walls	T4=8	T3= Inlet (Material/Type)																																																		
Head-walls	T2=1	T1=1 Outlet (Material/Type)																																																		
Scour Checks	SM	= Material this sheet/ Spacing left (m) =																																																		
Scour Checks	0	Spacing right (m) = =Total No. this sheet																																																		
		Additional Instruction as per Reference																																																		

Quantity Asssessment			County	Meru	From:	13+000	To:	14+000	Page:	8

Chainage:	13+000	13+200	13+400	13+600	13+800	14+000

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

		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	7						cm	9					cm						cm	1					cm	16					cm					cm

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

	Existing Roads	12							10						7						10					cm	8					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	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: Meru | From: 14+000 | To: 15+000 | Page: 9

Chain-age		(kilometres)					14+100					14+200					14+300					14+400					14+500					14+600					14+700					14+800					14+900					15+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.)	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	Heavy Grading	120
	720	Source (quarry No.)																																																	
Improved Subgrade	Total	Thickness (cm,comp.)																																																	
	#####	Source (quarry No.)																																																	
		Longitudinal gradient (in %)				0.05						0.20					-2.89					-1.76					-2.37					-0.49					-1.25					-2.85					-3.05					-2.60	
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																																																	
	CD 0	= Cross drainage																																																	
	AC 0	= Access culvert/drift																																																	
	AD 0	= Left/right																																																	
	Length (m) -	Ø 450 mm																																																	
	-	Ø 600mm																																																	
	-	Ø 900 mm																																																	
	Ramp	Earth fill (m3)																																																	
		Haunch Type																																																	
Head-walls	T4=8 T3=	Inlet (Material/Type)																																																	
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Scour Checks	SM	= Material this sheet/ Spacing left (m) =																																																	
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		Additional Instruction as per Reference																																																	

Quantity Asssessment		County	Meru	From:	8+000	To:	15+000	Page:	9

Chainage:	14+000	14+200	14+400	14+600	14+800	15+000

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

		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	7						cm	9					cm						cm	1					cm	16					cm						cm

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

	Existing Roads	12							10						7						10					cm	8					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	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** **Meru** **From:** **15+000** **To:** **16+000** **Page:** **10**

Chain-age		(kilometres) (metres)					15+100					15+200					15+300					15+400					15+500					15+600					15+700					15+800					15+900					16+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)																																																		
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	200
	729.6	Source (quarry No.)																																																		
Improved Subgrade	Total	Thickness (cm,comp.)																																																		300
	1800	Source (quarry No.)																																																		
		Longitudinal gradient (in %)				###					-0.39					-1.46					-1.38					-2.98					-7.55					-9.16					-6.87					-5.11					-4.62	
Mitre drains	Total	Number left =																																	Concrete Slab																
		Number right =																																																		
Catch water	Total	Length of drain left =																																																	
		Length of drain right =																																																	
Culverts	N/Ex	Chainage (m) = New / Existing line																																																	
	CD	0 = Cross drainage																																																	
	AC	0 = Access culvert/drift																																																	
	AD	0 = Left/right																																																	
	Length (m)	- Ø 450 mm																																																	
		- Ø 600mm																																																	
		- Ø 900 mm																																																	
	Ramp	Earth fill (m3)																																																	
		Haunch Type																																																	
Head-walls	T4=8	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	Meru	From:	15+000	To:	16+000	Page:	10

Chainage:	15+000	15+200	15+400	15+600	15+800	16+000

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

		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

Aver. (m) — 1 to 4 readings*)

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	Meru	From:	16+000	To:	17+000	Page:	11

Chain-age	(kilometres)	(metres)					16+100					16+200					16+300					16+400					16+500					16+600					16+700					16+800					16+900					17+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)																																																		
Gravel	Total	Thickness (cm,comp.)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	100	100	100	100	100	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
	1140	RC SLAB (RC)																				RC	RC	RC	RC	RC																										
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 %)				###						-2.15				-1.08					0.13					-1.12					-0.39					-1.15					-1.18					0.46					-0.35	
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																																																	
	CD 0	= Cross drainage																																																	
	AC 0	= Access culvert/drift																																																	
	AD 0	= Left/right																																																	
	Length (m) -	Ø 450 mm																																																	
	-	Ø 600mm																																																	
	-	Ø 900 mm																																																	
	Ramp	Earth fill (m3)																																																	
		Haunch Type																																																	
Head-walls	T4=8 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	Meru	From:	16+000	To:	17+000	Page:	11

Chainage:	16+000	16+200	16+400	16+600	16+800	17+000

Measurements for Clearing: Free Clearance Width for Calculating areas

(Aver. (m) / 1 to 4 readings*))

		Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings*)					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

	16+000		16+200		16+400		16+600		16+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

	16+000		16+200		16+400		16+600		16+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: Meru | From: 17+000 | To: 18+000 | Page: 12

Chain-age		(kilometres) / (metres)					17+100					17+200					17+300					17+400					17+500					17+600					17+700					17+800					17+900					18+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
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	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.)	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	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	
	906.1	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																															
	720	Source (quarry No.)																																																	
		Longitudinal gradient (in %)				###					-0.72					-0.70					-0.38					-0.85					-0.99					-1.16					-0.80					####					-0.24	
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																																																	
	CD 0	= Cross drainage																																																	
	AC 0	= Access culvert/drift																																																	
	AD 0	= Left/right																																																	
	Length (m) -	Ø 450 mm																																																	
	-	Ø 600mm																																																	
	-	Ø 900 mm																																																	
	Ramp	Earth fill (m3)																																																	
		Haunch Type																																																	
Head-walls	T4=8 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	Meru	From:	17+000	To:	18+000	Page:	12

Chainage:	17+000	17+200	17+400	17+600	17+800	18+000

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

		17+000 (Aver. (m))	1 to 4 readings*)		17+200 (Aver. (m))	1 to 4 readings*)		17+400 (Aver. (m))	1 to 4 readings*)		17+600 (Aver. (m))	1 to 4 readings*)		17+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**

	17+000		17+200		17+400		17+600		17+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**

	17+000		17+200		17+400		17+600		17+800	
Existing Roads	12		10		7		10	cm	8	cm

Quantities

	17+000		17+200		17+400		17+600		17+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** **Meru** **From:** **18+000** **To:** **18+384** **Page:** **13**

Chain-age			(kilometres)					18+100					18+200					18+300					18+400					18+500					18+600					18+700					18+800					18+900					19+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.)																																																		
	#####		Source (quarry No.)																																																		
Improved Subgrade	Total		Thickness (cm,comp.)																																																		
	#####		Source (quarry No.)																																																		
			Longitudinal gradient (in %)				-0.25					-0.13					-0.50																																						
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																																																		
	CD	0	= Cross drainage																																																		
	AC	0	= Access culvert/drift																																																		
	AD	0	= Left/right																																																		
	Length (m)	-	Ø 450 mm																																																		
		-	Ø 600mm																																																		
		-	Ø 900 mm																																																		
	Ramp		Earth fill (m3)																																																		
			Haunch Type																																																		
Head-walls	T4=8	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	Meru	From:	18+000	To:	18+384	Page:	13

Chainage:	18+000	18+200	18+400	18+600	18+800	19+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						m						m						m
Grass Cutting							m						m						m						m						m
Grubbing	7	7		7			m	7	7		7		m						m						m						m
0 Tree and Stump Removal	0						m	0					m						m						m						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						cm						cm
For Reshaping:											**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																				
Existing Roads	12							10																	cm						cm

Quantities										Total this page
Bush Clearing	1600	m2	1,472	m2		m2		m2		3,072
Grass Cutting		m2		m2		m2		m2		0
Grubbing	1400	m2	1,288	m2		m2		m2		2,688
Tree and Stump Removal		No.	0	No.		No.		No.		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)	397	m3 (insitu)		m3 (insitu)		m3 (insitu)		808
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: