DETAILED IMPROVEMENT PLAN

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Road Name: ISIOLO - MLANGO - OLDONYIRO | County: ISIOLO | From: 1+000 | To: 2+000

Chain-age		(kilometres)	0																																													
		(metres)	0 + 0				0 + 100				0 + 200				0 + 300				0 + 400				0 + 500				0 + 600				0 + 700				0 + 800				0 + 900				1 + 0
Road form.		Subgrade	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E	L/E
		Volume of ETL or Fill (m3/m)																																														
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15							15				
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1							
Longitudinal gradient (in %)			-1		-1				-2				0		1				2								3				3				-3				-2							
Mitre drains	Total	Number left =																																					1							
	18	Number right =	1	1	1	1	1	1	1	1	1	1	1	1					1								1				1				1				1							
Catch water	Total	Length of drain left =																																														
	0	Length of drain right =								0+180Ex Twi																																						
Culverts	N	Chainage (m) = New line																																														
	Ex	= Existing line																																														
	CD	= Cross drainage								Retain																																						
	AC/D	= Access culvert/ drift																																														
	L/R	= Left/ right																																														
	Length (m)	Ø 450mm																																														
		Ø 600mm																																														
		Ø 900mm																																														
	Ramp	Earth fill (m3)																																														
		H. Concrete (m3)																																														
Head-walls		Inlet (Material/Type)																																														
		Outlet (Material/Type)																																														
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																														
	0	Spacing right (m) = =Total No. this sheet																																														
Additional Instruction as per Reference																																															

Quantity Assessment	-	-	-	#	#	-	#	-	Page: 1

Chainage:	0.0	0.2	0.4	0.6	0.8	1.0

Input Measurements:	Free Clearance Width for Calculating areas																							
	Aver. (m)	1 to 4 readings*)																			Aver. (m)	1 to 4 readings				
Bush Clearing	8.25	8.5		8		m	8	6			10	m	9	9			9	m	8.75	8.5		9		m	8.5	8.5			9	m
Grass Cutting						m						m						m						m						m
Grubbing	8	8		8		m	8	6			10	m	8	8			8	m	8	8		8		m	8	8			8	m
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).

Measurements for small cut to fill:	Height of Cut / Differences in Levels for calculating volumes																							
	Aver. (m)	1 to 4 readings*)																			Aver. (m)	1 to 4 readings*)				
Height of cut < 0.25m	0					cm	0					cm	0					cm	0					cm	0					cm
For Reshaping :	Difference in Level between Exist. Camber and Side Drain for calculating volumes																							
Existing Roads	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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:	Quantities									Total this page
Bush Clearing	1,150	m2	1,200	m2	1,000	m2	1,050	m2	1,100	5,500
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,000	m2	1,000	m2	1,000	m2	1,000	m2	1,000	5,000
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	0

	Quantities									Total this page
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	1,190
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

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

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

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	1				1				1				1				1				1				1				1				1				1				1				2
		(metres)	+ 0				+ 100				+ 200				+ 300				+ 400				+ 500				+ 600				+ 700				+ 800				+ 900				+ 0
Road form.		Subgrade	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																												
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15			15								
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1							
Longitudinal gradient (in %)			-2				-2				-2								-2				-2																-2				-2			
Mitre drains	Total	Number left =	1								1								1				1								1															1
	7	Number right =													1																															
Catch water	Total	Length of drain left =																																												
	0	Length of drain right =																																												
Culverts	N	Chainage (m) = New line												1+290 N				1 + 380 N													1 + 700 N	TO REPARUA COMMUNITY CONSERVANC							1 + 900 N				
	Ex	= Existing line																																												
	CD	= Cross drainage																																					CD							
	AC/D	= Access culvert/ drift												AC				AC													AC														
	L/R	= Left/ right												R				L													R/L														
	Length (m)	Ø 450mm																																												
		Ø 600mm												6				6													14														
		Ø 900mm																																					12							
	Ramp	Earth fill (m3)																																												
		H. Concrete (m3)												IV				IV													IV								IV							
Head-walls		Inlet (Material/Type)												I				I													I								I							
		Outlet (Material/Type)												I				I													I								I							
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																												
	0	Spacing right (m) = =Total No. this sheet																																												
Additional Instruction as per Reference																																														

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 2
Chainage:	1.0	1.2	1.4	1.6	1.8	2.0			

Input Measurements:	Aver. (m)	1 to 4 readings*)				**Free Clearance Width for Calculating areas**																							
Bush Clearing	7	7			7	m	7.5	7		8		m	7	7			7	m	7	6			8	m	7	7		7		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	7.5	7		8		m
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).

Measurements for small cut to fill:	Aver. (m)	1 to 4 readings*)				**Height of Cut / Differences in Levels for calculating volumes**																							
Height of cut < 0.25m	0					cm	0					cm	0					cm	0					cm	0					cm
For Reshaping :						**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																							
Existing Roads	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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:	**Quantities**									**Total this page**
Bush Clearing	1,400	m2	1,300	m2	1,400	m2	1,400	m2	1,400	6,900
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,200	m2	1,200	m2	1,200	m2	1,200	m2	1,100	5,900
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	0

	Quantities									**Total this page**
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	1,190
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

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

For the Employer **Regional Manager KeRRA** **Name:** ..... **Date:** ..... **Signature:** .....

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County: ISIOLO** **From: 1+000** **To: 2+000**

Chain-age		(kilometres)	2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				3 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																										
Gra-vel	Total	Thickness (cm,comp.)	15				23				15				15							15					15				15				15				15						
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1								1		
Longitudinal gradient (in %)							-1																-2								-4				-5				-5				-5
Mitre drains	Total	Number left =		1							1				1																													
	5	Number right =		1											1																													
Catch water	Total	Length of drain left =																																										
	0	Length of drain right =																																										
Culverts		Chainage (m)																																										
	N	= New line																																										
	Ex	= Existing line																																										
	CD	= Cross drainage																																										
	AC/D	= Access culvert/ drift																																										
	L/R	= Left/ right																																										
	Length (m)	Ø 450mm																																										
		Ø 600mm																																										
		Ø 900mm																																										
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)																																										
Head-walls		Inlet (Material/Type)																																										
		Outlet (Material/Type)																																										
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																	20				20				20	20
	8	Spacing right (m) = =Total No. this sheet																																	20				20				20	20
Additional Instruction as per Reference																																												

Quantity Assessment	-	#	-	#	-	-	#	-	Page: 3

Chainage:	2.0	2.2	2.4	2.6	2.8	3.0

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

	Aver. (m)	1 to 4 readings*)																												
Bush Clearing	7	7		7		m	7	7		7		m	8	8		8		m	7	7		7		m	7	7		7		m
Grass Cutting						m						m						m						m						m
Grubbing	6	6		6		m	6	6		6		m	6.5	7		6		m	6	6		6		m	6	6		6		m
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).

Measurements for small cut to fill: — **Height of Cut / Differences in Levels for calculating volumes**

	Aver. (m)	1 to 4 readings*)																												
Height of cut < 0.25m	0					cm	0					cm	0					cm	0					cm	0					cm

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

Existing Roads	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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:	Quantities									Total this page
Bush Clearing	1,400	m2	1,400	m2	1,200	m2	1,120	m2	1,120	6,240
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,300	m2	1,120	m2	1,120	6,340
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	0

	Quantities									Total this page
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	119	m3 (insitu)	119	952
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

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

For the Employer — **Regional Manager KeRRA** — **Name:** ..... **Date:** ..... **Signature:** .....

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +				4 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
		Cross section	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																									
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15			15						
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1					
Longitudinal gradient (in %)							0				1								2								2																	
Mitre drains	Total	Number left =																																	2				2					
	4	Number right =																																										
Catch water	Total	Length of drain left =																																										
	0	Length of drain right =																																										
Culverts	N	Chainage (m) = New line					3+100																3+520				3+600																	
	Ex	= Existing line					Ex																Ex				N																	
	CD	= Cross drainage					Retain																Retain				CD			JCN TO TASSIA ON LHS														
	AC/D	= Access culvert/ drift																																										
	L/R	= Left/ right																																										
	Length (m)	Ø 450mm																																										
		Ø 600mm																																										
		Ø 900mm																									8																	
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)																									IV																	
Head-walls		Inlet (Material/Type)																									I																	
		Outlet (Material/Type)																									I																	
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																										
	0	Spacing right (m) = =Total No. this sheet																																										
Additional Instruction as per Reference																																												

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 4

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

Input Measurements:	Free Clearance Width for Calculating areas																							
	Aver. (m)	1 to 4 readings*)																	Aver. (m)	1 to 4 readings				
Bush Clearing	7	7		7		m	7	7		7		m	7	7		7		m	7	7		7		m	6.5	6		7		m
Grass Cutting						m						m						m						m						m
Grubbing	6	6		6		m	6	6		6		m	6	6		6		m	6	6		6		m	6.5	6		7		m
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).

Measurements for small cut to fill:	Height of Cut / Differences in Levels for calculating volumes																							
	Aver. (m)	1 to 4 readings*)																	Aver. (m)	1 to 4 readings*)				
Height of cut < 0.25m	0					cm	0					cm	0					cm	0					cm	0					cm
For Reshaping :	Difference in Level between Exist. Camber and Side Drain for calculating volumes																							
Existing Roads	40	40			40	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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:	Quantities									Total this page
Bush Clearing	1,120	m2	1,120	m2	1,120	m2	1,120	m2	1,500	5,980
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,120	m2	1,120	m2	1,120	m2	1,120	m2	1,300	5,780
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	0

	Quantities									Total this page
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m		m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	0
Embankment	240	m3 (insitu)	0	m3 (insitu)		m3 (insitu)		m3 (insitu)		240
Drains full re-construction	119	m3 (insitu)	119	m3 (insitu)	119	m3 (insitu)	119	m3 (insitu)	238	714
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

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

For the Employer — Regional Manager KeRRA — Name: ..... Date: ..... Signature: .....

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **Count** ISIOLO **From** 1+000 **To:** 2+000

Chain-age	(kilometres)		4				4				4				4				4				4				4				4				4				4				5
	(metres)		+ 0				+ 100				+ 200				+ 300				+ 400				+ 500				+ 600				+ 700				+ 800				+ 900				+ 0
Road form.	Subgrade		CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC
	Cross section		B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works	Method: RES, ETL or FILL		RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
	Choice of reshaping: L, T or E		E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Volume of ETL or Fill (m3/m)																																											
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15			15						
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1					
	Longitudinal gradient (in %)		-2				-2				-2								-2	-2	-2	-2	-2	-2	-2	-2					-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Mitre drains	Total	Number left =	1				1				1				1				1				1				1				1								1				1
	17	Number right =							1						1				1									1				1							1				1
Catch water	Total	Length of drain left =																																										
	0	Length of drain right =																																										
Culverts	N	Chainage (m) = New line																																										
	Ex	= Existing line																																										
	CD	= Cross drainage																																										
	AC/D	= Access culvert/ drift																																										
	L/R	= Left/ right																																										
	Length (m)	Ø 450mm																																										
		Ø 600mm																																										
		Ø 900mm																																										
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)																																										
Head-walls	Inlet (Material/Type)																																											
	Outlet (Material/Type)																																											
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																										
	0	Spacing right (m) = =Total No. this sheet																																										
Additional Instruction as per Reference																																												

Quantity Assessment	-	#	-	#	#	-	#	-	#	Page:

Chainage:	4.0					4.2					4.4					4.6					4.8					5.0
Input Measurements:	Aver. (m)	1 to 4 readings*)				**Free Clearance Width for Calculating areas**															Aver. (m)	1 to 4 readings				
Bush Clearing	7	7		7	m	7	7		7	m	7	7		7	m	7	7		7	m	6.5	6		7	m	
Grass Cutting					m					m					m					m					m	
Grubbing	6	6		6	m	6	6		6	m	6	6		6	m	6	6		6	m	6.5	6		7	m	
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).

Measurements for small cut to fill:	Aver. (m)	1 to 4 readings*)				**Height of Cut / Differences in Levels for calculating volumes**															Aver. (m)	1 to 4 readings*)				
Height of cut < 0.25m	0				cm	0				cm	0				cm	0				cm	0				cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																									
Existing Roads	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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:	**Quantities**								**Total this page**
Bush Clearing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,500	7,100
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,300	6,900
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	0

	Quantities								**Total this page**
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	1,190
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

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

For the Employer **Regional Manager KeRRA** **Name:** ..... **Date:** ..... **Signature:** .....

DETAILED IMPROVEMENT PLAN

Page: 6

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	5 + 0				5 + 100				5 + 200				5 + 300				5 + 400				5 + 500				5 + 600				5 + 700				5 + 800				5 + 900				6 + 0
		(metres)																																												
Road form.		Subgrade	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																												
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15			15							
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1						
Longitudinal gradient (in %)							-2								-2	-2	-2	-1	0				2				2				2				2				2						
Mitre drains	Total	Number left =					1								1																															
	6	Number right =					1				1									JCTN -R													1				1							
Catch water	Total	Length of drain left =																																												
	0	Length of drain right =																																												
Culverts	N	Chainage (m) = New line																	5+400	5+401												5+720													
	Ex	= Existing line																	Ex	Ex												N													
	CD	= Cross drainage																	CD	CD												CD													
	AC/D	= Access culvert/ drift																	(TWIN)	AC																									
	L/R	= Left/ right																																												
	Length (m)	Ø 450mm																	Retain	REPLACE																									
		Ø 600mm																																												
		Ø 900mm																	11	8												8													
	Ramp	Earth fill (m3)																																												
		H. Concrete (m3)																	IV	IV												IV													
Head-walls		Inlet (Material/Type)																	I	I												I													
		Outlet (Material/Type)																	I	I												I													
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																												
	0	Spacing right (m) = =Total No. this sheet																																												
Additional Instruction as per Reference																																														

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 6

Chainage:	5.0					5.2					5.4					5.6					5.8					6.0
Input Measurements:	Aver. (m)	1 to 4 readings*)				**Free Clearance Width for Calculating areas**															Aver. (m)	1 to 4 readings				
Bush Clearing	7	7		7	m	7	7		7	m	7	7		7	m	8	8		8	m	7.5	7		8	m	
Grass Cutting					m					m					m					m					m	
Grubbing	6	6		6	m	6	6		6	m	6	6		6	m	5	5		5	m	6	6		6	m	
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).

Measurements for small cut to fill:	Aver. (m)	1 to 4 readings*)				**Height of Cut / Differences in Levels for calculating volumes**															Aver. (m)	1 to 4 readings*)				
Height of cut < 0.25m	0				cm	0				cm	0				cm	0				cm	0				cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																									
Existing Roads	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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:	**Quantities**									**Total this page**
Bush Clearing	1,400	m2	1,400	m2	1,400	m2	1,200	m2	1,300	6,700
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,600	m2	1,400	7,200
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	0

	Quantities									**Total this page**
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	0	0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	1,190
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

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

For the Employer **Regional Manager KeRRA** **Name:** ..... **Date:** ..... **Signature:** .....

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	6 +				6 +				6 +				6 +				6 +				6 +				6 +				6 +				6 +				6 +				7 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																										
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15				15						
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1						
		Longitudinal gradient (in %)	2				2				2				-2				-2				-2					0			2				2				2						
Mitre drains	Total	Number left =					1								1																														
	8	Number right =	1						1										1				1					1							1										
Catch water	Total	Length of drain left =																																										
	0	Length of drain right =																																										
Culverts		Chainage (m) = New line																										6+640																
	N																											N																
	Ex	= Existing line																																										
	CD	= Cross drainage																										CD																
	AC/D	= Access culvert/ drift																																										
	L/R	= Left/ right																																										
	Length (m)	Ø 450mm																																										
		Ø 600mm																																										
		Ø 900mm																										16																
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)																										IV																
Head-walls		Inlet (Material/Type)																										I																
		Outlet (Material/Type)																										I																
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																										
	0	Spacing right (m) = =Total No. this sheet																																										
		Additional Instruction as per Reference																																										

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 6
Chainage:	6.0		6.2		6.4		6.6		6.8	7.0

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

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	7 +				7 +				7 +				7 +				7 +				7 +				7 +				7 +				7 +				7 +				8 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																												
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15			15							
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1						
Longitudinal gradient (in %)			2								2				2								2				2				2				2				2						
Mitre drains	Total	Number left =																																												
	2	Number right =																	1								1																		
Catch water	Total	Length of drain left =																																												
	0	Length of drain right =																																												
Culverts	N	Chainage (m) = New line			7+060																																									
	Ex	= Existing line			N																																									
	CD	= Cross drainage																																												
	AC/D	= Access culvert/ drift			AC																																									
	L/R	= Left/ right			L																																									
	Length (m)	Ø 450mm																																												
		Ø 600mm			8																																									
		Ø 900mm																																												
	Ramp	Earth fill (m3)																																												
		H. Concrete (m3)			IV																																									
Head-walls		Inlet (Material/Type)			IV																																									
		Outlet (Material/Type)			IV																																									
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																												
	0	Spacing right (m) = =Total No. this sheet																																												
Additional Instruction as per Reference																																														

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 6

Chainage:	7.0	7.2	7.4	7.6	7.8	8.0

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

	Aver. (m)	1 to 4 readings*)																												
Bush Clearing	9	9		9		m	9	9		9		m	9	9		9		m	9	9		9		m	9	9		9		m
Grass Cutting						m						m						m						m						m
Grubbing	5	5		5		m	5	5		5		m	5	5		5		m	5	5		5		m	5.75	5.5		6		m
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).

Measurements for small cut to fill: — **Height of Cut / Differences in Levels for calculating volumes**

	Aver. (m)	1 to 4 readings*)																												
Height of cut < 0.25m	0					cm	0					cm	0					cm	0					cm	0					cm

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

Existing Roads	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	cm	0	0			0	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: — **Quantities**

											Total this page
Bush Clearing	1,000	m2	1,000	m2	1,000	m2	1,000	m2	1,000		5,000
Grass Cutting		m2		m2		m2		m2			
Grubbing	1,600	m2	1,600	m2	1,600	m2	1,600	m2	1,450		7,850
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0		0

Quantities

											Total this page
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			
Height of cut > 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	0		0
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			
Drains full re-construction	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238	m3 (insitu)	238		1,190
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			
By Towed Grader/Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			
By Equipment Based Method		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)			

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

For the Employer — **Regional Manager KeRRA** — **Name:** ..... **Date:** ..... **Signature:** .....

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	8				8				8				8				8				8				8				8				8				8				9	
		(metres)	+ 0				+ 100				+ 200				+ 300				+ 400				+ 500				+ 600				+ 700				+ 800				+ 900				+ 0	
Road form.		Subgrade	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																												
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15			15							
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1							
Longitudinal gradient (in %)			2				2				2				2				2										0						2				2							
Mitre drains	Total	Number left =																																												
	9	Number right =	1				1		1			1				1							1						1						1			1							
Catch water	Total	Length of drain left =																																												
	0	Length of drain right =																																												
Culverts	N	Chainage (m) = New line													8+300								8+580					8+640																	
	Ex	= Existing line													N								N					N																	
	CD	= Cross drainage													CD								CD					CD																	
	AC/D	= Access culvert/ drift																																												
	L/R	= Left/ right																																												
	Length (m)	Ø 450mm																																												
		Ø 600mm																																												
		Ø 900mm													8								8					8																	
	Ramp	Earth fill (m3)																																												
		H. Concrete (m3)													IV								IV					IV																	
Head-walls		Inlet (Material/Type)													I								I					I																	
		Outlet (Material/Type)													I								I					I																	
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																												
	0	Spacing right (m) = =Total No. this sheet																																												
Additional Instruction as per Reference																																														

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 6

Chainage:	8.0	8.2	8.4	8.6	8.8	9.0

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

DETAILED IMPROVEMENT PLAN

Road Name: ISIOLO - MLANGO - OLDONYIRO **County:** ISIOLO **From:** 1+000 **To:** 2+000

Chain-age		(kilometres)	9 +				9 +				9 +				9 +				9 +				9 +				9 +				9 +				9 +				9 +				9 +			10 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC
		Cross section	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																										
Gra-vel	Total	Thickness (cm,comp.)	15				15				15				15							15					15				15				15				15						
	825	Source (quarry No.)	1				1				1				1				1				1				1				1				1				1						
Longitudinal gradient (in %)			-2				-2				-2				0				2				2				2				-2				-2						0			
Mitre drains	Total	Number left =										1																					1											
	8	Number right =				1	1		1			1											1										1											
Catch water	Total	Length of drain left =																																										
	0	Length of drain right =																																										
Culverts	N	Chainage (m) = New line															9 +350	N																							9+920	N		
	Ex	= Existing line																																										
	CD	= Cross drainage															D																								D			
	AC/D	= Access culvert/ drift															30M																								18M			
	L/R	= Left/ right																																										
	Length (m)	Ø 450mm															PROVIDE																								PROVIDE			
		Ø 600mm															5 x 2.5 BC																								5 x 2 BC			
		Ø 900mm																																										
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)																																										
Head-walls		Inlet (Material/Type)																																										
		Outlet (Material/Type)																																										
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																										
	0	Spacing right (m) = =Total No. this sheet																																										
Additional Instruction as per Reference																																												

Quantity Assessment	-	#	-	#	#	-	#	-	Page: 6

Chainage:	9.0	9.2	9.4	9.6	9.8	10.0

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