DETAILED IMPROVEMENT PLAN

Page: 1

Road Name: KINNA-RAPSU **County:** ISIOLO **From:** 0+000 **To:** 1+000

Chain-age		(kilometres)	0 + 0				0 + 100				0 + 200				0 + 300				0 + 400				0 + 500				0 + 600				0 + 700				0 + 800				0 + 900			1 + 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
		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	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	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
		Volume of ETL or Fill (m3/m)																																										
Gra-vel	Total	Thickness (cm,comp.)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Longitudinal gradient (in %)			1				1				1				2				2				2				2				2				2				2			4
Mitre drains	Total	Number left =																																										
	5	Number right =					1				1				1				1								1																	
Catch water	Total	Length of drain left =																																										
	0	Length of drain right =																																										
Culverts	N	Chainage (m) = New line	0+010N	0+050n	0+060N		0+160N	0+110N		0+180N			0+260N																															
	CD	= Cross drainage																				CD																	CD				
	AC/D	= Access culvert/ drift	AC	AD	AD		AD	AC		AC			AC							AC			AC												AC								
	L/R	= Left/ right	R	L	L		L	L/R		L			L/R									L			AC												L	L						
	Length (m)	Ø 450mm																																										
		Ø 600mm	4					11		5			11							4			4		4										4								
		Ø 900mm	STD	STD	STD																	8																	8				
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)	IV					IV		IV			IV							IV		IV	IV		IV										IV				IV				
Head-walls		Inlet (Material/Type)	IV					IV		IV			IV							IV		I	IV		IV										IV				I				
		Outlet (Material/Type)	IV					IV		IV			IV							IV		I	IV		IV										IV				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: 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*)																									
Bush Clearing	8	8		8		m	9	9			9	m	9	9			9	m	9	9	9		m	8.75	9			9	m
Grass Cutting						m						m						m					m						m
Grubbing	6.5	7		6		m	7.5	6			9	m	6.5	6			7	m	7	7	7		m	7.5	8			7	m
Tree and stump removal	83	47		36		m	93	69		24		m	46	46				m	34	24		10	m	12		12			m
	6						5						5						5										

*) 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	45	40		50		cm	55	50		60		cm	60	60		60		cm	27.5	30		25	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	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**

Bush Clearing	1,200	m2	1,000	m2	1,000	m2	1,000	m2	1,050	5,250
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,300	m2	1,100	m2	1,300	m2	1,200	m2	1,100	6,000
Tree and stump removal	83	No.	93	No.	46	No.	34	No.	12	268

Quantities

Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	280	m3 (insitu)	330	m3 (insitu)	340	m3 (insitu)	35	m3 (insitu)	0	985
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		10
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: KINNA-RAPSU **County:** ISOLO **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	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	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	RES	RES	RES	RES	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	RES	RES	RES	RES	RES	RES	RES	RES	ETL	ETL	ETL		
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	L				L																																	
		Volume of ETL or Fill (m3/m)																																														
Gra-vel	Total	Thickness (cm,comp.)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Longitudinal gradient (in %)			-2				-2								-2				-2				-2				-2				2				2				2							
Mitre drains	Total	Number left =	1																1				1				1																			
	12	Number right =									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																																														
	Ex	= Existing line																																														
	CD	= Cross drainage																CD																				CD								
	AC/D	= Access culvert/ drift	AC					AC				AC									AC			AC				AC				AC													
	L/R	= Left/ right																																														
	Length (m)	Ø 450mm																																														
		Ø 600mm	4					4				4									4			4				4				4													
		Ø 900mm																8																				8								
	Ramp	Earth fill (m3)																																														
		H. Concrete (m3)	IV					IV				IV						IV			IV			IV				IV				IV							IV							
Head-walls		Inlet (Material/Type)	IV					IV				IV						I	0		IV			IV				IV				IV							I							
		Outlet (Material/Type)	IV					IV				IV						I			IV			IV				IV				IV							I							
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																														
	0	Spacing right (m) = =Total No. this sheet																																														
Additional Instruction as per Reference			Heavy Bush																																													

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

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

	Aver. (m)	1 to 4 readings*)																													
Bush Clearing	9	9			9	m	7	7		7		m	7	7				m	7	8			6	m	7	7		7		m
Grass Cutting						m						m						m						m						m
Grubbing	6	7			5	m	5.5	5		6		m	5	5		5		m	5.5	5			6	m	5.5	5		6		m
Tree and stump removal	7		7			m	5		5			m	12			12		m	10	6		4		m	26	13	5		8	m
							4												6						5					

*) 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	40		40		40	cm	0					cm	50	60		40		cm	55		60		50	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	1,400	m2	1,400	m2	1,400	m2	1,400	6,600
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,500	m2	1,600	m2	1,500	m2	1,500	7,500
Tree and stump removal	7	No.	5	No.	12	No.	10	No.	26	60

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)	20	m3 (insitu)	0	m3 (insitu)	300	m3 (insitu)	250	570
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		20
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: KINNA-RAPSU **County:** ISIOLO **From:** 2+000 **To:** 3+000

Chain-age		(kilometres)	2 +				2 + 100				2 + 200				2 + 300				2 + 400				2 + 500				2 + 600				2 + 700				2 + 800				2 + 900				3 + 0
		(metres)	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																
		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	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	RES	RES	RES	RES	RES	RES	RES	RES	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL
		Choice of reshaping: L, T or E																																												
		Volume of ETL or Fill (m3/m)																																												
Gra-vel	Total	Thickness (cm,comp.)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Longitudinal gradient (in %)			-2				-2				-2				-2				-2				-2				-2				-2				-2				0							
Mitre drains	Total	Number left =																																												
	7	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													CD																									CD						
	AC/D	= Access culvert/ drift		AC				AC						AC									AC												AC										
	L/R	= Left/ right						AC																																						
	Length (m)	Ø 450mm																																												
		Ø 600mm		4				8						4									4												4										
		Ø 900mm													8																									8					
	Ramp	Earth fill (m3)																																												
		H. Concrete (m3)																																												
Head-walls		Inlet (Material/Type)		IV				IV						IV	I								IV												IV					I					
		Outlet (Material/Type)		IV				IV						IV	I								IV												IV					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: 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	7.5	8		7		m	8.5	8		9		m	8	9		7		m	7.5	7		8		m
Grass Cutting						m						m						m						m						m
Grubbing	6	6		6		m	6	6		6		m	7.5	7		8		m	6.5	7		6		m	6.5	6		7		m
Tree and stump removal	0					m	12	4		8		m	9		5		4	m	11	5		6		m	0					m
	5						5						5						5.5						6					

*) 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	50	50		50		cm	0					cm	35		40		30	cm	25		30		20	cm	35	30		40		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	1,100	m2	920	m2	1,020	5,740
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,100	m2	1,020	m2	1,020	5,940
Tree and stump removal	0	No.	12	No.	9	No.	11	No.	0	32

Quantities

										Total this page
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	220	m3 (insitu)	0	m3 (insitu)	130	m3 (insitu)	71	m3 (insitu)	216	637
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: KINNA-RAPSU **County:** ISIOLO **From:** 3+000 **To:** 4+000

Chain-age		(kilometres)	3 +				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	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	BC	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG
		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	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)																																												
Longitudinal gradient (in %)			1				2				2									1	0		1				2				2				2				2							
Mitre drains	Total	Number left =																																												
	7	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													Quarry																															
	CD	= Cross drainage															CD														CD															
	AC/D	= Access culvert/ drift		AC						AC										AC																										
	L/R	= Left/ right																																												
	Length (m)	Ø 450mm																																												
		Ø 600mm		4						4										4																										
		Ø 900mm															8														8															
	Ramp	Earth fill (m3)																																												
		H. Concrete (m3)																																												
Head-walls		Inlet (Material/Type)		IV						IV							I														I															
		Outlet (Material/Type)		IV						IV							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: 4

Chainage:	3+000					3+200					3+400					3+600					3+800					4+000
Input Measurements:	Aver. (m)	1 to 4 readings*)				**Free Clearance Width for Calculating areas**															Aver. (m)	1 to 4 readings				
Bush Clearing	8	8		8	m	7	8		7	m	7.5	8		7	m	7.5	7		8	m	6	6		6	m	
Grass Cutting					m					m					m					m					m	
Grubbing	6	6		6	m	6.5	7		6	m	6	6		6	m	6	6		6	m	6	6		6	m	
Tree and stump removal	0				m	0				m	20		20		m	0				m	5		5		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				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	920	m2	1,120	m2	1,020	m2	1,020	m2	1,600	5,680
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,120	m2	1,020	m2	1,120	m2	1,120	m2	1,400	5,780
Tree and stump removal	0	No.	0	No.	20	No.	0	No.	5	25

	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	0	m3 (insitu)	0	m3 (insitu)		m3 (insitu)		m3 (insitu)		0
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

KINNA-RAPSU | ISIOLO - MLANGO - OLDONYIRO | Count ISIOLO | From 4+000 | To: 5+000

Chain-age		(kilometres)	4 +				4 + 100				4 + 200				4 + 300				4 + 400				4 + 500				4 + 600				4 + 700				4 + 800				4 + 900			5 + 0
		(metres)	0																																									
Road form.		Subgrade	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG				
		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				
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				
		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				
		Volume of ETL or Fill (m3/m)																																								
Gra-vel	Total	Thickness (cm,comp.)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Longitudinal gradient (in %)			-1				2				2				2				2				2				2				2											
Mitre drains	Total	Number left =																																								
	6	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																																								
	Ex	= Existing line																																								
	CD	= Cross drainage				CD																																CD				
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																								
		Ø 600mm																																								
		Ø 900mm				8																																8				
	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	8	8		8		m	8.5	8		9		m	7.5	7		8		m	5.5	6		5		m	4.5	4		5		m
Grass Cutting						m						m						m						m						m
Grubbing	7.5	8		7		m	6	6		6		m	6.5	6		7		m	6	6		6		m	4	4		4		m
Tree and stump removal	4		4			m	0					m	3		3			m	3		3			m	4		4			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	1,200	m2	1,100	m2	1,300	m2	1,700	m2	1,900	7,200
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,100	m2	1,400	m2	1,300	m2	1,400	m2	1,800	7,000
Tree and stump removal	4	No.	0	No.	3	No.	3	No.	4	14

	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: KINNA-RAPSU **County:** ISIOLO **From:** 5+000 **To:** 6+000

Chain-age		(kilometres)	5 +				5 + 100				5 + 200				5 + 300				5 + 400				5 + 500				5 + 600				5 + 700				5 + 800				5 + 900				6 + 0
		(metres)	0																																										
Road form.		Subgrade	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG
		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
		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	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Longitudinal gradient (in %)			2				2				2				2				2				2				2				2				2										
Mitre drains	Total	Number left =																																											
	7	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	CD																													CD													
	AC/D	= Access culvert/ drift																																											
	L/R	= Left/ right																																											
	Length (m)	Ø 450mm																																											
		Ø 600mm																																											
		Ø 900mm	8																													8													
	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:	5.0		5.2		5.4		5.6		5.8	6.0

Input Measurements:	Free Clearance Width for Calculating areas																											
	Aver. (m)	1 to 4 readings*)																				Aver. (m)	1 to 4 readings				
Bush Clearing	5	5		5		m	5	4		6		m	5	5		5		m	5	5		5		m	5	5		5		m
Grass Cutting						m						m						m						m						m
Grubbing	5	5		5		m	4.5	4		5		m	5	5		5		m	5	5		5		m	5	5		5		m
Tree and stump removal	0					m	2		2			m	0					m	2		2			m	3		3			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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	9,000
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,600	m2	1,700	m2	1,600	m2	1,600	m2	1,600	8,100
Tree and stump removal	0	No.	2	No.	0	No.	2	No.	3	7

	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: KINNA-RAPSU **County:** ISIOLO **From:** 6+000 **To:** 7+000

Chain-age		(kilometres)	6 +				6 + 100				6 + 200				6 + 300				6 + 400				6 + 500				6 + 600				6 + 700				6 + 800				6 + 900				7 + 0
		(metres)	0																																													
Road form.		Subgrade	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS	GS
		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	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Longitudinal gradient (in %)			2				2				2				2				2				2				2				2				2				2				
Mitre drains	Total	Number left =																																									
	0	Number right =																																									
Catch water	Total	Length of drain left =																																									
	0	Length of drain right =																																									
Culverts	N	Chainage (m) = New line																																									
	Ex	= Existing line																							EX																		
	CD	= Cross drainage																				CD																		CD			
	AC/D	= Access culvert/ drift																										AC		AC													
	L/R	= Left/ right																																									
	Length (m)	Ø 450mm																																									
		Ø 600mm																										4		4													
		Ø 900mm																				8																		8			
	Ramp	Earth fill (m3)																																									
		H. Concrete (m3)																																									
Head-walls		Inlet (Material/Type)																				I						IV		IV										I			
		Outlet (Material/Type)																				I						IV		IV										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																													
Bush Clearing	7	7		7		m	8	8		8		m	7	7		7		m	6	6		6		m	7	6		8		m
Grass Cutting						m						m						m						m						m
Grubbing	6	6		6		m	7	7		7		m	6	6		6		m	5	5		5		m	6	5		7		m
Tree and stump removal	2		2			m	2		2			m	5		5			m	0					m	6		6			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	1,200	m2	1,400	m2	1,600	m2	1,400	7,000
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,200	m2	1,400	m2	1,600	m2	1,400	7,000
Tree and stump removal	2	No.	2	No.	5	No.	0	No.	6	15

	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: KINNA-RAPSU **County:** ISIOLO **From:** 7+000 **To:** 8+000

Chain-age		(kilometres)	7 +				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	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG	SG
		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	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	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	E	E
		Volume of ETL or Fill (m3/m)																																														
Gra-vel	Total	Thickness (cm,comp.)	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	825	Source (quarry No.)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	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
Mitre drains	Total	Number left =																																														
	0	Number right =																																														
Catch water	Total	Length of drain left =																																														
	0	Length of drain right =																																														
Culverts	N	Chainage (m) = New line																																	RAPSU												END
	Ex	= Existing line																																														
	CD	= Cross drainage	CD														CD																															
	AC/D	= Access culvert/ drift																					AC				AC			AC			AC		AC						AC			AC			AC	
	L/R	= Left/ right																																														
	Length (m)	Ø 450mm																																														
		Ø 600mm																					4				4			4			4		4													
		Ø 900mm	8														8																															
	Ramp	Earth fill (m3)																																														
		H. Concrete (m3)	IV																																													
Head-walls		Inlet (Material/Type)	I														I						IV				IV			IV			IV		IV						IV			IV			IV	
		Outlet (Material/Type)	I														I						IV				IV			IV			I		IV						IV			IV			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:	Aver. (m)	1 to 4 readings*)																												
	Free Clearance Width for Calculating areas																													
Bush Clearing	7	7		7		m	8	8		8		m	8.5	9		8		m	7.5	8		7		m	6	6		6		m
Grass Cutting						m						m						m						m						m
Grubbing	5	5		5		m	7	7		7		m	7.5	8		7		m	6.5	7		6		m	5	5		5		m
Tree and stump removal	3		3			m	2		2			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	1,200	m2	1,100	m2	1,300	m2	1,600	6,600
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,600	m2	1,200	m2	1,100	m2	1,300	m2	1,600	6,800
Tree and stump removal	3	No.	2	No.	0	No.	0	No.	0	5

	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)		60
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:** .....