DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 40+000 **To:** 41+000

Chain-age	(kilometres)		40 + 0				40 + 100				40 + 200				40 + 300				40 + 400				40 + 500				40 + 600				40 + 700				40 + 800				40 + 900				41 + 0
	(metres)																																									
Road form.	Subgrade		QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG
	Cross section		A	A	A	A	A	A	A	A	A	A	A	A	F	F	F	F	E	E	E	E	F	F	F	F	A	A	A	A	A	A	A	A	F	F	F	F	F	F	F	F	F
Earth-works	Method: RES, ETL or FILL		FILL	FILL	FILL	FILL	RES	RES	RES	RES	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	ELT	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
	Volume of ETL or Fill (m3/m)																																								
Gra-vel	Total	Thickness (cm,comp.)																																							
		Source (quarry No.)																																							
Longitudinal gradient (in %)			-1				6				5				-3				-4				-6				-6				-2				-6				-4				
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	N	Chainage (m) = New line																					40+500 N							40+690 N						40+850 N			40+900 N		40+960 N	
	Ex	= Existing line																																							
	CD	= Cross drainage																					CD							CD						CD			CD		CD	
	AC/D	= Access culvert/ drift																																							
	L/R	= Left/ right																																							
	Length (m)	Ø 450mm																																							
		Ø 600mm																																							
		Ø 900mm																					8							8						8			8		8	
	Ramp	Earth fill (m3)																																							
		H. Concrete (m3)																					IV							IV						IV			IV		IV	
Head-walls	Inlet (Material/Type)																						I							I						I			I		I	
	Outlet (Material/Type)																						I							I						I			I		I	
Scour Checks	HC	= Material this sheet/ Spacing left (m) =					15				20												15				15								15							
	16	Spacing right (m) = =Total No. this sheet					15				20												15				15								15							
Additional Instruction as per Reference			QS-Quartzatic Gravel																								100m Proposed Concrete Road Repair																

Quantity Assessment GOTU-MERTI # # **County:** ISIOLO **From:** 40+000 **To:** 41+000 pg 7

Chainage:	40+000	40+200	40+400	40+600	40+800	41+000
Input Measurements:	Aver. (m) / 1 to 4 readings*) — **Free Clearance Width for Calculating areas**				Aver. (m) / 1 to 4 readings	
Bush Clearing	6.5 / 6.5 0 0 0 m	5 / 5 0 0 0 m	4 / 4 0 0 0 m	6 / 6 0 0 0 m	6 / 6 0 0 0 m	
Grass Cutting	/ m	/ m	/ m	/ m	/ m	
Grubbing	6.5 / 6.5 0 0 0 m	5 / 5 0 0 0 m	4 / 4 0 0 0 m	6 / 6 0 0 0 m	6 / 6 0 0 0 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).						
Cross Section Sketch	-	-	-	-	-	
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 / 0 cm	0 / cm	0 / 0 cm	0 / 0 cm	0 / 0 cm	
Height of cut > 0.25m	0 / 0 cm	0 / cm	0 / 0 cm	0 / 0 cm	0 / 0 cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**					
Existing Roads	0 / cm	0 / cm	0 / cm	0 / cm	0 / cm	
Sloping	/ cm	/ cm	/ cm	/ cm	/ 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	1,300	m2	1,600	m2	1,800	m2	1,400	m2	1,400	**7,500**
Grass Cutting		m2		m2		m2		m2		
Grubbing	900	m2	1,200	m2	1,400	m2	1,000	m2	1,000	**5,500**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	300	m3 (insitu)	300	m3 (insitu)		m3 (insitu)	0	**600**
Embankment/Fill	189	m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**189**
Drains full re-construction	242	m3 (insitu)	208	m3 (insitu)	208	m3 (insitu)	242	m3 (insitu)	175	**1,074**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 41+000 **To:** 42+000

Chain-age		(kilometres)	41 +				41 +				41 +				41 +				41 +				41 +				41 +				41 +				41 +				42 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS
		Cross section	A	A	A	A	E	E	E	E	A	A	A	A	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	A	A	A	A	E	E	E	E	E	E	E	E	E
Earth-works		Method: RES, ETL or FILL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	RES	RES	RES	RES	RES	RES	RES	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
		Volume of ETL or Fill (m3/m)																																							
Gra-vel	Total	Thickness (cm,comp.)																																							
		Source (quarry No.)																																							
		Longitudinal gradient (in %)	-5				-4				0				-2				-2				-1				0				-3				-4				-2				
Mitre drains	Total 3	Number left =																													1								1				
		Number right =																																	1								
Catch water	Total 0	Length of drain left =																																								
		Length of drain right =																																								
Culverts	N Ex	Chainage (m) = New line	41+030 N				41+120 N												41+430 N				41+510 N				41+590 N																
	CD	= Cross drainage	CD				CD												CD				CD				CD																
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																								
		Ø 600mm																																								
		Ø 900mm	8				8												8				8				8																
	Ramp	Earth fill (m3)																																								
		H. Concrete (m3)	IV				IV												IV				IV				IV																
Head-walls		Inlet (Material/Type)	I				I												I				I				I																
		Outlet (Material/Type)	I				I												I				I				I																
Scour Checks	HC	= Material this sheet/ Spacing left (m) =	20																																								
	3	Spacing right (m) = =Total No. this sheet	20																																								
Additional Instruction as per Reference			QS-Quartzic Gravel																																								

Chainage:	41+000						41+200						41+400						41+600						41+800						42+000
Input Measurements:	Aver. (m)	1 to 4 readings*)											**Free Clearance Width for Calculating areas**												Aver. (m)	1 to 4 readings				
Bush Clearing	5	5	0	0	0	m	5	5	0	0	0	m	8	8	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	5	5	0	0	0	m	5	5	0	0	0	m	8	8	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	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).																															
Cross Section Sketch	-						-						-						-						-						
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	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																														
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm	
Sloping						cm						cm						cm						cm						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	1,600	m2	1,600	m2	1,000	m2	400	m2	400	**5,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,200	m2	1,200	m2	600	m2	0	m2	0	**3,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities								Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	300	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**300**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,208**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 42+000 **To:** 43+000

Chain-age		(kilometres)	42 +				42 +				42 +				42 +				42 +				42 +				42 +				42 +				42 +				42 +				43 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG	QG
		Cross section	A	A	A	A	D	D	D	D	D	D	D	D	D	D	D	D	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
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.)																																									
		Source (quarry No.)																																									
		Longitudinal gradient (in %)	-4				-2				-2				2				-1				-2				-2				-1				0				-1				
Mitre drains	Total 3	Number left =																																									
		Number right =																					1								1								1				
Catch water	Total 0	Length of drain left =																																									
		Length of drain right =																																									
Culverts	N = New line	Chainage (m)	42+040 N				42+100 N		42+150 N		42+200 N										42+450 N		42+500 N							42+690 N													
	Ex = Existing line																																									
	CD	= Cross drainage	CD				CD		CD		CD										CD		CD							CD													
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																								
		Ø 600mm																																								
		Ø 900mm	10				10		10		10										8		8							8													
	Ramp	Earth fill (m3)																																									
		H. Concrete (m3)	IV				IV		IV		IV										IV		IV							IV													
Head-walls		Inlet (Material/Type)	I				I		I		I										I		I							I													
		Outlet (Material/Type)	I				I		I		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																																										

Chainage:	42+000						42+200						42+400						42+600						42+800						43+000
Input Measurements:	Aver. (m)	1 to 4 readings*)											**Free Clearance Width for Calculating areas**												Aver. (m)	1 to 4 readings					
Bush Clearing	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	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).																															
Cross Section Sketch	-						-						-						-						-						
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	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																														
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm	
Sloping						cm						cm						cm						cm						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	400	m2	400	m2	400	m2	400	m2	400	**2,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	0	m2	0	m2	0	m2	0	m2	0	**0**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities								Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	187	m3 (insitu)	133	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,045**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 43+000 **To:** 44+000

Chain-age	(kilometres)		43 +				43 +				43 +				43 +				43 +				43 +				43 +				43 +				43 +				43 +				44 +
	(metres)		0				100				200				300				400				500				600				700				800				900				0
Road form.	Subgrade		QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS
	Cross section		A	A	A	A	A	A	A	A	D	D	D	D	D	D	D	D	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
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	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
	Volume of ETL or Fill (m3/m)																																									
Gra-vel	Total	Thickness (cm,comp.)																																								
		Source (quarry No.)																																								
Longitudinal gradient (in %)			-1				-1				-2				0				-1				1				2				5				-3				-3			
Mitre drains	Total	Number left =																																								
	4	Number right =					1								1								1								1											
Catch water	Total	Length of drain left =																																								
	0	Length of drain right =																																								
Culverts		Chainage (m) = New line					43+110 EX	43+120 EX	43+150 EX		43+210 EX				43+300 N											43+580 N										43+850 N				43+950 N			
	N																																									
	Ex	= Existing line																																								
	CD	= Cross drainage													CD											CD										CD				CD			
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																								
		Ø 600mm																																								
		Ø 900mm													8											16										16				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) =																												20												
	3	Spacing right (m) = =Total No. this sheet																												20												
Additional Instruction as per Reference								Proposed Realignment to straight																																				

Chainage:	43+000						43+200						43+400						43+600						43+800						44+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	0	0	0	m	0	0	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	8	8	0	0	0	m	0	0	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	
Tree and stump removal	0					m	1	1				m	0	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).																															
Cross Section Sketch	-						-						-						-						-						
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	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																														
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm	
Sloping						cm						cm						cm						cm						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	2,600	m2	400	m2	400	m2	400	**4,800**
Grass Cutting		m2		m2		m2		m2		
Grubbing	600	m2	2,200	m2	0	m2	0	m2	0	**2,800**
Tree and stump removal	0	No.	1	No.	0	No.	0	No.	0	**1**

	Quantities								Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	440	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**440**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	133	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,099**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 44+000 **To:** 45+000

Chain-age	(kilometres)		44 + 0				44 + 100				44 + 200				44 + 300				44 + 400				44 + 500				44 + 600				44 + 700				44 + 800				44 + 900				45 + 0
	(metres)																																							
Road form.	Subgrade		QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS
	Cross section		F	F	F	F	E	E	E	E	A	A	A	A	A	A	A	A	E	E	E	E	E	E	E	E	A	A	A	A	A	A	A	A	A	A	A	A	A
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
	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
	Volume of ETL or Fill (m3/m)																																						
Gra-vel	Total	Thickness (cm,comp.)																																					
		Source (quarry No.)																																					
Longitudinal gradient (in %)			-1				-1				3				0				1				-1				-1				-1				-2				-1				
Mitre drains	Total 4	Number left =	1								1								1								1														
		Number right =																																							
Catch water	Total 0	Length of drain left =																																					
		Length of drain right =																																							
Culverts	N = New line Ex = Existing line	Chainage (m)			44+070 N				44+120 N				44+250 N				44+320 N								44+490 N				44+580 N								44+740 N				44+810 N				
	CD	= Cross drainage			CD				CD				CD				CD								CD				CD								CD				CD				
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																							
		Ø 600mm																																							
		Ø 900mm			8				16				8				8								8				8								16				16				
	Ramp	Earth fill (m3)																																							
		H. Concrete (m3)			IV				IV				IV				IV								IV				IV								IV				IV				
Head-walls	Inlet (Material/Type)				I				I				I				I								I				I								I				I				
	Outlet (Material/Type)				I				I				I				I								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 GOTU-MERTI # # **County:** ISIOLO **From:** 44+000 **To:** 45+000 pg 11

Chainage:	44+000						44+200						44+400						44+600						44+800						45+000
Input Measurements:	Aver. (m)	1 to 4 readings*)											**Free Clearance Width for Calculating areas**												Aver. (m)	1 to 4 readings					
Bush Clearing	10	10	0	0	0	m	10	10	0	0	0	m	10	10	0	0	0	m	10	10	0	0	0	m	10	10	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	10	10	0	0	0	m	10	10	0	0	0	m	10	10	0	0	0	m	10	10	0	0	0	m	10	10	0	0	0	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).																															
Cross Section Sketch	-						-						-						-						-						
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	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																														
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm	
Sloping						cm						cm						cm						cm						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	600	m2	600	m2	600	m2	600	m2	600	**3,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	200	m2	200	m2	200	m2	200	m2	200	**1,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,208**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 45+000 **To:** 46+000

Chain-age		(kilometres)	45 +				45 +				45 +				45 +				45 +				45 +				45 +				45 +				45 +				46 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	E	E	E	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
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
		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
		Volume of ETL or Fill (m3/m)																																							
Gra-vel	Total	Thickness (cm,comp.)																																							
		Source (quarry No.)																																							
		Longitudinal gradient (in %)	0				-1				-1				-1				-2				0				-2				-1				0				-1			
Mitre drains	Total	Number left =																																							
	3	Number right =	1								1								1																							
Catch water	Total	Length of drain left =																																							
	0	Length of drain right =																																							
Culverts		Chainage (m) = New line		45+050 N			45+100 N				45+230 N				45+350 N								45+550 N				45+600 N	45+640N			45+710N						45+850 N				45+920 N			
	N																																								
	Ex	= Existing line																																							
	CD	= Cross drainage		CD			CD				CD				CD								CD				CD	CD			CD						CD				CD			
	AC/D	= Access culvert/ drift																																							
	L/R	= Left/ right																																							
	Length (m)	Ø 450mm																																							
		Ø 600mm																																							
		Ø 900mm		16			8				16				16								8				8	8			8						8				8			
	Ramp	Earth fill (m3)																																							
		H. Concrete (m3)		IV			IV				IV				IV								IV				IV	IV			IV						IV				IV			
Head-walls		Inlet (Material/Type)		I			I				I				I								I				I	I			I						I				I			
		Outlet (Material/Type)		I			I				I				I								I				I	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																																								

Chainage:	45+000	45+200	45+400	45+600	45+800	46+000

Input Measurements: — Free Clearance Width for Calculating areas

	45+000 Aver. (m)	45+000 1 to 4 readings*)	45+200	45+400	45+600	45+800 Aver. (m)	45+800 1 to 4 readings	46+000
Bush Clearing	10	10 0 0 0	10 10 0 0 0	10 10 0 0 0	11 11 0 0 0	11	11 0 0 0	
Grass Cutting								
Grubbing	10	10 0 0 0	10 10 0 0 0	10 10 0 0 0	11 11 0 0 0	11	11 0 0 0	
Tree and stump removal	0		0	0	0	0		

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

Cross Section Sketch - - - - -

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

	45+000 Aver. (m)	45+000 1 to 4 readings*)	45+200	45+400	45+600	45+800 Aver. (m)	45+800 1 to 4 readings*)	46+000
Height of cut < 0.25m	0	0	0	0 0 0	0 0 0	0	0 0	
Height of cut > 0.25m	0	0	0	0 0 0	0 0 0	0	0 0	

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

Existing Roads	0	0			0	0		
Sloping								

*) 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

	45+000	45+200	45+400	45+600	45+800	Total this page
Bush Clearing	600 m2	600 m2	600 m2	400 m2	400 m2	**2,600**
Grass Cutting	m2	m2	m2	m2	m2	
Grubbing	200 m2	200 m2	200 m2	0 m2	0 m2	**600**
Tree and stump removal	0 No.	0 No.	0 No.	0 No.	0 No.	**0**

Quantities

	45+000	45+200	45+400	45+600	45+800	Total this page
Height of cut < 0.25m	0 m3 (insitu)	0 m3 (insitu)	0 m3 (insitu)	0 m3 (insitu)	0 m3 (insitu)	**0**
Height of cut > 0.25m	0 m3 (insitu)	0 m3 (insitu)	0 m3 (insitu)	0 m3 (insitu)	0 m3 (insitu)	**0**
Embankment/Fill	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	**0**
Drains full re-construction	242 m3 (insitu)	242 m3 (insitu)	242 m3 (insitu)	242 m3 (insitu)	242 m3 (insitu)	**1,208**
Reshaping by Labour	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	
By Towed Grader/Labour	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	
By Equipment Based Method	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	m3 (insitu)	

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 46+000 **To:** 47+000

Chain-age	(kilometres)		46 + 0				46 + 100				46 + 200				46 + 300				46 + 400				46 + 500				46 + 600				46 + 700				46 + 800				46 + 900				47 + 0
	(metres)																																							
Road form.	Subgrade		QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS	QS
	Cross section		A	A	A	A	A	A	A	A	A	A	A	A	E	E	E	E	E	E	E	E	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
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
	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
	Volume of ETL or Fill (m3/m)																																						
Gra-vel	Total	Thickness (cm,comp.)																																					
		Source (quarry No.)																																					
Longitudinal gradient (in %)			-1				0				0				-1				1				1				-2				2				2				0				
Mitre drains	Total 5	Number left =	1								1								1								1								1								
		Number right =																																								
Catch water	Total 0	Length of drain left =																																								
		Length of drain right =																																								
Culverts	N = New line Ex = Existing line	Chainage (m)					46+120 N								46+300 N								46+540 N				46+610 N				46+680 N												
	CD	= Cross drainage					CD								CD								CD				CD				CD												
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																							
		Ø 600mm																																							
		Ø 900mm					8								16								8				8				8												
	Ramp	Earth fill (m3)																																							
		H. Concrete (m3)					IV								IV								IV				IV				IV												
Head-walls	Inlet (Material/Type)						I								I								I				I				I												
	Outlet (Material/Type)						I								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																																										

Chainage:	46+000	46+200	46+400	46+600	46+800	47+000
Input Measurements:	**Free Clearance Width for Calculating areas**					
	Aver. (m) / 1 to 4 readings*)				Aver. (m) / 1 to 4 readings	
Bush Clearing	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	
Grass Cutting	/ m	/ m	/ m	/ m	/ m	
Grubbing	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 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).						
Cross Section Sketch	-	-	-	-	-	
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 / 0 cm	0 / cm	0 / 0 0 cm	0 / 0 0 cm	0 / 0 0 cm	
Height of cut > 0.25m	0 / 0 cm	0 / cm	0 / 0 0 cm	0 / 0 0 cm	0 / 0 0 cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**					
Existing Roads	0 / cm	0 / cm	0 / cm	0 / cm	0 / cm	
Sloping	/ cm	/ cm	/ cm	/ cm	/ 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	400	m2	400	m2	400	m2	400	m2	400	**2,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	0	m2	0	m2	0	m2	0	m2	0	**0**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,208**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 47+000 **To:** 48+000

Chain-age (kilometres) (metres)	47 + 0				47 + 100				47 + 200				47 + 300				47 + 400				47 + 500				47 + 600				47 + 700				47 + 800				47 + 900			48 + 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
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	E	E	E	E	E	E	E	E
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
Earth-works — 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
Earth-works — Volume of ETL or Fill (m3/m)																																								
Gra-vel — Total — Thickness (cm,comp.)																																								
Gra-vel — Source (quarry No.)																																								
Longitudinal gradient (in %)	-5				0				-1				-1				3				1				0				0				-2				0			
Mitre drains — Total 5 — Number left =	1								1								1								1								1							
Mitre drains — Number right =																																								
Catch water — Total 0 — Length of drain left =																																								
Catch water — Length of drain right =																																								
Culverts — Chainage (m) N = New line, Ex = Existing line	47+000				47+100 EX	47+150 N				47+230 N			47+300 EX																				47+800 N		47+850 N		47+920 N			
Culverts — CD = Cross drainage	CD					CD				CD																							CD		CD		CD			
Culverts — AC/D = Access culvert/ drift																																								
Culverts — L/R = Left/ right																																								
Culverts — Length (m) — Ø 450mm																																								
Culverts — Length (m) — Ø 600mm																																								
Culverts — Length (m) — Ø 900mm	8					8				8																							8		8		16			
Culverts — Ramp — Earth fill (m3)																																								
Culverts — Ramp — H. Concrete (m3)	IV					IV				IV																							IV		IV		IV			
Head-walls — Inlet (Material/Type)	I					I				I																							I		I		I			
Head-walls — Outlet (Material/Type)	I					I				I																							I		I		I			
Scour Checks — HC = Material this sheet/ Spacing left (m) =	20																																							
Scour Checks — 3 — Spacing right (m) = =Total No. this sheet	20																																							
Additional Instruction as per Reference		CS - Clay Silt																																						

Chainage:	47+000	47+200	47+400	47+600	47+800	48+000
Input Measurements:	**Free Clearance Width for Calculating areas**					
	Aver. (m) / 1 to 4 readings*)				Aver. (m) / 1 to 4 readings	
Bush Clearing	11 (11 0 0 0) m	11 (11 0 0 0) m	11 (11 0 0 0) m	11 (11 0 0 0) m	11 (11 0 0 0) m	
Grass Cutting	m	m	m	m	m	
Grubbing	11 (11 0 0 0) m	11 (11 0 0 0) m	11 (11 0 0 0) m	11 (11 0 0 0) m	11 (11 0 0 0) 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).						
Cross Section Sketch	-	-	-	-	-	
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 (0) cm	0 cm	0 (0 0) cm	0 (0 0) cm	0 (0 0) cm	
Height of cut > 0.25m	0 (0) cm	0 cm	0 (0 0) cm	0 (0 0) cm	0 (0 0) cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**					
Existing Roads	0 cm	0 cm	0 cm	0 cm	0 cm	
Sloping	cm	cm	cm	cm	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	400	m2	400	m2	400	m2	400	m2	400	**2,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	0	m2	0	m2	0	m2	0	m2	0	**0**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,208**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN Page: **14**

Road Name: **GOTU-MERTI** **County** **ISIOLO** **From:** **48+000** **To:** **49+000**

Chain-age	(kilometres) (metres)	48 + 0				48 + 100				48 + 200				48 + 300				48 + 400				48 + 500				48 + 600				48 + 700				48 + 800				48 + 900			49 + 0
Road form.	Subgrade	QS	QS	QS	QS	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	LG	BC	BC	BC	BC	BC	BC	BC	BC
	Cross section	A	A	A	A	A	A	A	A	E	E	E	E	E	E	E	E	E	E	E	E	A	A	A	A	E	E	E	E	E	E	E	E	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
	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
	Volume of ETL or Fill (m3/m)																																								
Gra-vel	Total / Thickness (cm,comp.)																																								
	Source (quarry No.)																																								
	Longitudinal gradient (in %)	1				0				-1				0				-3				-6				-3				-1				1				0			
Mitre drains	Total 3 / Number left =	1								1								1																							
	Number right =																																								
Catch water	Total 0 / Length of drain left =																																								
	Length of drain right =																																								
Culverts	Chainage (m) N = New line, Ex = Existing line													48+300 N											48+580 N	48+610 N				48+740 N											
	CD = Cross drainage													CD											CD	CD				CD											
	AC/D = Access culvert/ drift																																								
	L/R = Left/ right																																								
	Length (m) Ø 450mm																																								
	Ø 600mm																																								
	Ø 900mm													8											8	8				10											
	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) =																					15																			
	3 =Total No. this sheet / Spacing right (m) =																					15																			
Additional Instruction as per Reference							100m Proposed concrete road																								100m Proposed concrete road B.C -Black Cotton										

Chainage:	48+000	48+200	48+400	48+600	48+800	48+000
Input Measurements:	**Free Clearance Width for Calculating areas**					
	Aver. (m) / 1 to 4 readings*)				Aver. (m) / 1 to 4 readings	
Bush Clearing	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	
Grass Cutting	/ m	/ m	/ m	/ m	/ m	
Grubbing	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 m	11 / 11 0 0 0 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).						
Cross Section Sketch	-	-	-	-	-	
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 / 0 cm	0 / cm	0 / 0 0 cm	0 / 0 0 cm	0 / 0 0 cm	
Height of cut > 0.25m	0 / 0 cm	0 / cm	0 / 0 0 cm	0 / 0 0 cm	0 / 0 0 cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**					
Existing Roads	0 / cm	0 / cm	0 / cm	0 / cm	0 / cm	
Sloping	/ cm	/ cm	/ cm	/ cm	/ 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	400	m2	400	m2	400	m2	400	m2	400	**2,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	0	m2	0	m2	0	m2	0	m2	0	**0**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	m3 (insitu)	242	**1,208**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……

DETAILED IMPROVEMENT PLAN

Road Name: GOTU-MERTI **County:** ISIOLO **From:** 49+000 **To:** 50+000

Chain-age	(kilometres)		49 + 0				49 + 100				49 + 200				49 + 300				49 + 400				49 + 500				49 + 600				49 + 700				49 + 800				49 + 900				50 + 0
	(metres)		0				100				200				300				400				500				600				700				800				900				
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
	Cross section		E	E	E	E	E	E	E	E	B	B	B	B	E	E	E	E	E	E	E	E	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
	Volume of ETL or Fill (m3/m)																																										
Gra-vel	Total	Thickness (cm,comp.)																																									
		Source (quarry No.)																																									
Longitudinal gradient (in %)			0				2				1				1				2				2				4				2				-11				0				
Mitre drains	Total	Number left =													1								1								1												
	8	Number right =	1								1								1								1				1												
Catch water	Total	Length of drain left =																																									
	0	Length of drain right =																																									
Culverts		Chainage (m) = New line																																	49+820 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																																	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				100m Proposed concrete road																																								

Chainage:	49+000						49+200						49+400						49+600						49+800						50+000
Input Measurements:	Aver. (m)	1 to 4 readings*)											**Free Clearance Width for Calculating areas**												Aver. (m)	1 to 4 readings				
Bush Clearing	10	10	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m
Grass Cutting						m						m						m						m						m
Grubbing	10	10	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	m	11	11	0	0	0	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).																														
Cross Section Sketch	-						-						-						-						-					
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	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																													
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm
Sloping						cm						cm						cm						cm						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	600	m2	400	m2	400	m2	400	m2	400	**2,200**
Grass Cutting		m2		m2		m2		m2		
Grubbing	200	m2	0	m2	0	m2	0	m2	0	**200**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									Total this page
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**0**
Drains full re-construction	242	m3 (insitu)	278	m3 (insitu)	256	m3 (insitu)	270	m3 (insitu)	315	**1,360**
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)		

Data Collected by: **Name:** …… **Date:** ……**Signature:** ……