DETAILED IMPROVEMENT PLAN

Road Name: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County:** SAMBURU **From:** 38+000 **To:** 39+000

Chain-age		(kilometres)	38 +				38 +				38 +				38 +				38 +				38 +				38 +				38 +				38 +				38 +				39 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
		Cross section	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	E	E	E	E	E	E	E	E	E	E	E	E
Earth-works		Method: RES, ETL or FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		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				1				2				1				2				2				2				1				1				1				
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		38+030 N								38+220 N				38+300 N				38+400 N	38+420 N			38+520 N																		
	Ex	= Existing line																																								
	CD	= Cross drainage		CD								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			8																		
	Ramp	Earth fill (m3)																																								
		H. Concrete (m3)		IV								IV				IV				IV	IV			IV																		
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	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	38+000	To:	39+000	pg	9

Chainage:	38+000	38+200	38+400	38+600	38+800	39+000
Input Measurements:	Aver. (m) / 1 to 4 readings*)		**Free Clearance Width for Calculating areas**		Aver. (m) / 1 to 4 readings	
Bush Clearing	2 / 2 0 0 0 m	2 / 2 0 0 0 m	2 / 2 0 0 0 m	3 / 3 0 0 0 m	4 / 4 0 0 0 m	
Grass Cutting	m	m	m	m	m	
Grubbing	2 / 2 0 0 0 m	2 / 2 0 0 0 m	2 / 2 0 0 0 m	3 / 3 0 0 0 m	4 / 4 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 / 0 cm	0 / 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	2,200	m2	2,200	m2	2,200	m2	2,000	m2	1,800	**10,400**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,800	m2	1,600	m2	1,400	**8,400**
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	918	m3 (insitu)	918	m3 (insitu)	918	m3 (insitu)	918	m3 (insitu)	918	**4,590**
Drains full re-construction	175	m3 (insitu)	175	m3 (insitu)	175	m3 (insitu)	208	m3 (insitu)	242	**974**
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: 10

Road Name: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County:** SAMBURU **From:** 39+000 **To:** 40+000

Chain-age		(kilometres)	39 +				39 +				39 +				39 +				39 +				39 +				39 +				39 +				39 +				39 +				40 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG
		Cross section	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	A	A	A	A
Earth-works		Method: RES, ETL or FILL	FILL	FILL	FILL	FILL	Concrete Road																																Drift		
		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 %)	0				3				-7				1				-2				-1				0				0				2				2			
Mitre drains	Total	Number left =		1								1								1								1								1				1		
	11	Number right =						1								1								1								1								1		
Catch water	Total	Length of drain left =																																								
	0	Length of drain right =																																								
Culverts	N Ex	Chainage (m) = New line = Existing line																	39+410 N								39+61 N															
	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)																	IV								IV															
Head-walls		Inlet (Material/Type)																	–								–															
		Outlet (Material/Type)																	–								–															
Scour Checks	HC	= Material this sheet/ Spacing left (m) =									15																															
	13	Spacing right (m) = =Total No. this sheet									15																															
Additional Instruction as per Reference																																										

Quantity Assessment	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	39+000	To:	40+000	pg	10

Chainage:	39+000						39+200						39+400						39+600						39+800						40+000
Input Measurements:	Aver. (m)	1 to 4 readings*)					**Free Clearance Width for Calculating areas**																		Aver. (m)	1 to 4 readings					
Bush Clearing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	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	0				cm	0	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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	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	918	m3 (insitu)	918	m3 (insitu)	918	m3 (insitu)	918	m3 (insitu)	918	**4,590**
Drains full re-construction	175	m3 (insitu)	175	m3 (insitu)	175	m3 (insitu)	175	m3 (insitu)	208	**907**
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: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County**: SAMBURU **From:** 40+000 **To:** 41+000

Chain-age		(kilometres)	40 +				40 +				40 +				40 +				40 +				40 +				40 +				40 +				40 +				40 +				41 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Earth-works		Method: RES, ETL or FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL
		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.)																																									
		Source (quarry No.)																																									
		Longitudinal gradient (in %)	0				1				1				3				2				2				2				3				3				2				
Mitre drains	Total	Number left =		1								1								1								1								1							
	10	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																																									
	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	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	40+000	To:	41+000	pg	11

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	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	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	0				cm	0	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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	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	918	m3 (insitu)	378	m3 (insitu)	378	m3 (insitu)	378	m3 (insitu)	378	**2,430**
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: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County:** SAMBURU **From:** 41+000 **To:** 42+000

Chain-age		(kilometres)	41 +				41 +				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	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG
		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	E	E
Earth-works		Method: RES, ETL or FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	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.)																																										
		Source (quarry No.)																																										
		Longitudinal gradient (in %)	1				3				1				1				2				-2				1				2				4				4					
Mitre drains	Total	Number left =		1								1								1								1								1								
	10	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																																										
	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	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	41+000	To:	42+000	pg	12

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	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	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	0				cm	0	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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	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	378	m3 (insitu)	378	m3 (insitu)	378	m3 (insitu)		m3 (insitu)		**1,134**
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: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County:** SAMBURU **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	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG
		Cross section	A	A	A	A	G	G	G	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E	E	E	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
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				1				1				1				2				2				1				-1				-4				0			
Mitre drains	Total	Number left =		1				1				1								1								1								1							
	12	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																																								
	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	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	42+000	To:	43+000	pg	13

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	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	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	0				cm	0	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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	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		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	175	m3 (insitu)	108	m3 (insitu)	242	m3 (insitu)	108	m3 (insitu)	108	**740**
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: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County:** SAMBURU **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	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG
		Cross section	A	A	A	A	A	A	A	A	E	E	E	E	E	E	E	E	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		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 %)	-4				-1				-1				1				2				3				5				1				2				1				
Mitre drains	Total	Number left =		1																																						
	1	Number right =																																								
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) =																									20															
	10	Spacing right (m) = =Total No. this sheet																									20															
Additional Instruction as per Reference																																										

Quantity Assessment	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	43+000	To:	44+000	pg	14

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	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	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	0				cm	0	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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	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		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
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: SEREOLIPI-NDONYOWASIN-MILGIS RIVER **County:** SAMBURU **From:** 44+000 **To:** 45+000

Chain-age		(kilometres)	44 +				44 +				44 +				44 +				44 +				44 +				44 +				44 +				44 +				44 +				45 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG	RG
		Cross section	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	G	G	G	G	E	E	E	E	G	G	G	G	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
		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 %)	-3				-2				-3				-4				-3				-4				-2				-3				1				0				
Mitre drains	Total	Number left =		1				1								1								1								1								1		
	11	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																																								
	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	SEREOLIPI-NDONYOWASIN-MILGIS RIVER	County:	SAMBURU	From:	44+000	To:	45+000	pg	15

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	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	4	4	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	0				cm	0	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	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	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		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	242	m3 (insitu)	242	m3 (insitu)	175	m3 (insitu)	175	m3 (insitu)	242	**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:** …….....