

QUANTITIES SUMMARY(WIDE CROSS-SECTION)																						KACHIULU - GOTU ROAD - BATCH 1										Apr-23	
KM	BUSH LIGHT	BUSH HEAVY	GRUB	TREES	ETL	FILL	DRAINS (SOFT)	DRAINS (HARD)	CUL.900 MM	CUL.600 MM.	CD	AC	AD	T1	T2	T4	MITRES	C/W	S/C	CHECK DAMS	GABIONS	GRAVEL											
	M2	M3	M2	No	M3		M3		M	M	No.	No.	No.	M3	M3	M3	M3	M2	No.			M3											
1	2,475	3,995	5,570		2,069	0	1,648			0													1485										
2	0	4,900	5,525	32	419		1,334		0	0													1650										
3	5,335		5,260	34	0		1,015		7.4	0												16	1650										
4	6,260		6,400	50	1,066		1,548			0													1650										
5	4,690		4,850		0	0	1,015			0							30	100					1650										
6	4,543	1,800	3,700	13	465	0	1,131			7						34							1650										
7	3,375		2,850	0	0	0	406			0						24	30	200	30				249.15										
TOTAL	26,678	10,695	34,155	129	4,018	0	8,097	0	7	7	0	0	0	0	0	58	60	300	30	0	16	9,984											

Road Improvement Plan		Road No.:	Kachiulu - Gotu	Region:	MERU	From:	0+000	To:	1+000	Page:	1		
Chain- age	(kilometres)	Subgrade	RS/G	0+000	A	ETL	27.5	1	2	5	RES	27.5	
	(metres)												A
Road form.	Subgrade	Cross section	RS/G	0+100	A	ETL	27.5	4	3	5	RES	27.5	
	RS/G												A
Earthworks / Reshaping	Method: RES, ETL or Fill	Choice of reshaping: L, T or E	RS/G	0+200	A	ETL	27.5	4	4	5	RES	27.5	
	RS/G												A
Grav- vel	Total	Thickness (cm,comp.)	RS/G	0+300	A	ETL	27.5	5	5	5	RES	27.5	
	1												Source (quarry No.)
Mtro drains	Longitudinal gradient (in %)		RS/G	0+400	A	ETL	27.5	5	5	5	RES	27.5	
	Total	Number left =											0
Catch water	Total	Length of drain left =	RS/G	0+500	A	ETL	27.5	5	5	5	RES	27.5	
		Length of drain right =											
Culverts	N/Ex	Chainage (m)	RS/G	0+600	A	ETL	27.5	5	5	5	RES	27.5	
	CD	1											= Cross drainage
	AC/D	AC=3											= Access culvert/drift
	L/R	AD=0											= Left/right
	Length (m)												Ø 450 mm
		-											Ø 600mm
		Ø 900 mm											
Ramp		Earth fill (m3)											
		Haunch Type											
Heak- walls	T4=6	T3=0	RS/G	0+700	A	ETL	27.5	5	5	5	RES	27.5	
	T2=1	T1=1											Inlet (Material/Type)
Scour Checks			RS/G	0+800	A	RES	27.5	5	5	5	RES	27.5	
	SM=38												= Material this sheet/ Spacing left (m) =
	76	SM=38											Spacing right (m) = =Total No. this sheet
Additional instruction as per Reference													

Chainage:	0+000	0+200	0+400	0+600	0+800	1+000
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Measurements for Clearing:	Aver. (m) 1 to 4 readings*					m	Free Clearance Width for Calculating areas										Aver. (m) 1 to 4 readings*					m			
	7.2	6.5	7.9	7.5	7		6.4	6	5.5	6.5	7.6	13.0	13				13.0	13					13.0	13	
Bush Clearing (Light)																									
Bush Clearing (Heavy)																									
Grubbing	6.5	6.5	6.9	6.5	6	6.0	6	5.5	6.0	6.6	5.3	6	5.6	5	4.4	4.8	5.4	4.2	4.4	5	4.7	4.6	5.2	4.6	4.2
Tree and Stump Removal																									

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

Estimated measurements for small cut to fill:	Height of Cut for calculating volumes																								
	1.1	0.9	1.1	1.2	1.2	0.6	0.8		0.4		1.0	0.4	1	1.2	1.5	1.7	1.6	1.7	1.7	1.8	0.0	0	0	0	0
Height of cut < 0.25m (ETL BOTH SIDES)																									
Clear Width (9m)	6	6	6	6	6	6	6	6	6	6	6.0	6	6	6	6	7.7	8.3	7.7	7.2	7.7	0.0	0	0	0	0
Height of cut < 0.25m (ETL ONE SIDE)						0.3			0.3																
Clear Width (9m)						9.0			9																

For Reshaping:	Difference in Level between Exist. Camber and Side Drain for calculating volumes																								
	0.43					0.43																			
Existing Roads																									
Existing Road Width						6			6																

Quantities										Total this page	
Bush Clearing (Light)	1,155	m2	1,320	m2	0	m2	0	m2	0	m2	2,475
Bush Clearing (Heavy)		m2		m2	1,670	m2	1,150	m2	1,175	m2	3,995
Grubbing	905	m2	995	m2	1,150	m2	1,250	m2	1,270	m2	5,570
Tree and Stump Removal		No.		No.		No.		No.		No.	

Quantities										Total this page	
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	
Height of cut > 0.25m	660	m3 (insitu)	360	m3 (insitu)	615	m3 (insitu)	434	m3 (insitu)	0	m3 (insitu)	2,069
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	
Drains full re-construction	390	m3 (insitu)	248	m3 (insitu)	280	m3 (insitu)	450	m3 (insitu)	280	m3 (insitu)	1,648
Drains Partial construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	0
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	0
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)	

Quantities verified and accepted by the Contractor Name: Date: Signature:
 For the Employer Name: Date: Signature:

Road Improvement Plan		Road No.:	Kachiulu - Gotu	Region:	MERU	From:	1+000	To:	2+000	Page:	2			
Chain- age	Road form.	(kilometres)	1+000	1+100	1+200	1+300	1+400	1+500	1+600	1+700	1+800	1+900	2+000	
		(metres)												
Road form.	Earthworks/ Reshaping	Subgrade	G	G	G	G	G	G	G	G	G	G	G	G
		Cross section	A	A	A	A	A	A	A	A	A	A	A	A
Road form.	Earthworks/ Reshaping	Method: RES, ETL or Fill	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL
		Choice of reshaping: L, T or E	UE	UE	UE	UE	UE	UE	UE	UE	UE	UE	UE	UE
Chain- age	Road form.	Volume of ETL or Fill (m ³ /m)	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
		Thickness (cm,comp.)	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Chain- age	Road form.	Source (quarry No.)												
		Longitudinal gradient (in %)	6	6	6	6	6	6	6	6	6	6	6	6
Chain- age	Road form.	Total	6	6	6	6	6	6	6	6	6	6	6	6
		Number left =												
Chain- age	Road form.	Number right =												
		Total												
Chain- age	Road form.	Length of drain left =												
		Length of drain right =												
Chain- age	Road form.	N/Ex	Chainage (m) = New / Existing line											
		CD	CD=4 = Cross drainage											
Chain- age	Road form.	AC/D	AC=0 = Access culvert/drift											
		L/R	AD=0 Left/right											
Chain- age	Road form.	Length (m)	Ø 450 mm											
			Ø 600mm											
Chain- age	Road form.	Ramp	Ø 900 mm											
			Earth fill (m3)											
Chain- age	Road form.	Haunch Type												
Chain- age	Road form.	T4=0	T3=0 Inlet (Material/Type)											
		T2=2	T1 =4 Outlet (Material/Type)											
Chain- age	Road form.	Scour Checks	SM=25 = Material this sheet/ Spacing left (m) =											
			SM=25 Spacing right (m) = =Total No. this sheet											
Additional Instruction as per Reference														

Road Improvement Plan		Road No.:	Kachiulu - Gotu	Region:	MERU	From:	2+000	To:	3+000	Page:	3	
Chain- age	(kilometres)	2+000										
	(metres)											
Road form.	Subgrade	RS/G										
	Cross section	A										
Earthworks / Reshaping	Method: RES, ETL or Fill	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	
	Choice of reshaping: L, T or E	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	
	Volume of ETL or Fill (m3/m)											
Gra-vel	Total	1,650										
	Thickness (cm,comp.)	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	
Longitudinal gradient (in %)	Source (quarry No.)											
		-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	
Mitre drains	Total											
	Number left =											
Catch water	Total											
	Length of drain left =											
Culverts	N/Ex	Chainage (m) New / Existing line	2+040EX									
		CD	CD									
	AC/D	AC=11	= Access culvert/drift									
	L/R	AD=	= Left/right									
	Length (m)		Ø 450 mm									
		7	Ø 600mm	7.4								
	Ramp		Earth fill (m3)									
		Haunch Type	IV									
Head- walls	T4=22	T3=0	Inlet (Material/Type)	1								
	T1=5	T2=1	Outlet (Material/Type)	1								
Scour Checks	SM =37		= Material this sheet/ Spacing left (m) =									
	74	SM =37	Spacing right (m) = Total No. this sheet	20								
Additional instruction as per Reference						20 GABIONS			KAHURUKO			

Chainage:	2+000	2+200	2+400	2+600	2+800	3+000
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Measurements for Clearing:	Aver. (m)					1 to 4 readings*					Free Clearance Width for Calculating areas																			
	Bush Clearing (Light)	7.8	7.5	7.5	8	8	m	8.4	9.5	8	9	7	m	8.1	7.5	9	8	7.7	m	7.8	8.5	7	7.8	8	m	6.3	6.3	6.5	6.5	6
Bush Clearing (Heavy)						m						m						m						m						m
Grubbing	6.0	6	6	6	6	m	6.5	7	6	8	5	m	6.0	5.5	7	6	5.5	m	5.6	6	5	5.5	6	m	4.6	5	5	4.8	3.5	m
Tree and Stump Removal						m						m	6			2	4	m						m	28			6	22	m

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

Estimated measurements for small cut to fill:	Height of Cut for calculating volumes																												
	Height of cut < 0.25m (ETL BOTH SIDES)	0		0			m	0		0			m	0	0	0	0	m	0		0	0	0	m	0	0	0	0	0
Clear Width (13m)	9		9			m	9		9			m	9	9	9	9	m	9		9	9	9	m	9	9	9	9	9	m
Height of cut < 0.25m (ETL ONE SIDE)	0	0				m	0				0	m	0				m						m						m
Clear Width (10.5m)	9	8.5				m	9				8.8	m	9				m						m						m

For Reshaping:	Difference in Level between Exist. Camber and Side Drain for calculating volumes																											
	Existing Roads						m						m					m						m				
Existing Road Width						m						m					m						m					m

Quantities										Total this page
Bush Clearing (Light)	1,050	m2	925	m2	990	m2	1,035	m2	1,335	5,335
Bush Clearing (Heavy)		m2		m2		m2		m2		
Grubbing	1,000	m2	900	m2	1,000	m2	1,075	m2	1,285	5,260
Tree and Stump Removal		No.		No.	6	No.		No.	28	34

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	203	m3 (insitu)	203	m3 (insitu)	203	m3 (insitu)	203	m3 (insitu)	203	1,015
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 Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

Quantities verified and accepted by the Contractor Name: Date: Signature:
 For the Employer Name: Date: Signature:

Chainage:	3+000	3+200	3+400	3+600	3+800	4+000
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Measurements for Clearing:	Aver. (m)					1 to 4 readings*					Free Clearance Width for Calculating areas															Aver. (m)					1 to 4 readings*				
	Bush Clearing (Light)	6.7	6	6.8	7	7	m	7.4	7	8	7.5	7	m	6.6	7	6	7	6.5	m	6.4	6.5	7	6	6	m	6.6	7	6.5	6	7	m				
Bush Clearing (Heavy)						m						m						m						m						m					
Grubbing	4.4	4.5	4.5	4.5	4	m	5.1	5	5.5	5	5	m	4.9	5	4.5	5	5	m	4.4	4.5	5	4	4	m	4.3	5	4	4	4	m					
Tree and Stump Removal	15	6		5	4	no	6			6		no.	0					no.	28	5		12	11	no.	1		1			no.					

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

Estimated measurements for small cut to fill: Height of Cut for calculating volumes

Height of cut < 0.25m (ETL BOTH SIDES)	1	1.1	1	1.15	1.3	m	1	1.4	1.25	1.35	1.25	m	1	0.85		0.8	1.2	m	1	1.15	1.1	1.26	1.14	m	1	0.6	0.46	0.95	1.05	m
Clear Width (13m)	8	8	8	8	8	m	8	8	8	8	8	m	8	8	8	8	8	m	8	8	8	8	8	m	8	8	8	8	8	m
Height of cut < 0.25m (ETL ONE SIDE)						m						m	1		0.65		m						m						m	
Clear Width (10.5m)						m						m	9		9		m						m						m	

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

Existing Roads						m						m						m						m						m
Existing Road Width						m						m						m						m						m

Quantities Total this page

Bush Clearing (Light)	1,260	m2	1,125	m2	1,275	m2	1,325	m2	1,275	6,260
Bush Clearing (Heavy)		m2		m2		m2		m2		
Grubbing	1,325	m2	1,175	m2	1,225	m2	1,325	m2	1,350	6,400
Tree and Stump Removal	15	No.	6	No.		No.	28	No.	1	50
										Total this page

Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	228	m3 (insitu)	263	m3 (insitu)	190	m3 (insitu)	233	m3 (insitu)	153	1,066
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	317	m3 (insitu)	334	m3 (insitu)	298	m3 (insitu)	319	m3 (insitu)	280	1,548
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 Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

Quantities verified and accepted by the Contractor Name: Date: Signature:
 For the Employer Name: Date: Signature:

Chainage:	4+000	4+200	4+400	4+600	4+800	5+000
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Measurements for Clearing:	Aver. (m)					Free Clearance Width for Calculating areas										Aver. (m)					1 to 4 readings*									
	Bush Clearing (Light)	6.9	7	6.5	8	6	m	6.4	6	6.5	7	6	m	7.8	6.7	7	8	9.5	m	9.9	9.5	10	10.5	9.5	m	10.6	9	11	11.5	11
Bush Clearing (Heavy)						m						m						m						m						m
Grubbing	4.9	4.5	4.5	6	4.5	m	4.5	4	4.5	5.5	4	m	5.5	4	5	6	7	m	7.3	6.5	8	8	6.5	m	8.6	7	9.5	9.5	8.5	m
Tree and Stump Removal						m						m						m						m						m

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

Estimated measurements for small cut to fill:		Height of Cut for calculating volumes																												
Height of cut < 0.25m (ETL BOTH SIDES)	0	0	0	0	0	m	0	0	0	0	0	m	0	0	0	0	0	m	0	0				m	0	0				m
Clear Width (13m)	9	9	9	9	9	m	9	9	9	9	9	m	9	9	9	9	9	m	9	9				m	9	9				m
Height of cut < 0.25m (ETL ONE SIDE)						m						m						m						m						m
Clear Width (10.5m)						m						m						m						m						m

For Reshaping:		Difference in Level between Exist. Camber and Side Drain for calculating volumes																												
Existing Roads						m						m						m	0.2			0.2		m	0.2	0.2				m
Existing Road Width						m						m						m	6.5			6.5		m	7	7				m

Quantities										Total this page
Bush Clearing (Light)	1,225	m2	1,325	m2	1,040	m2	625	m2	475	4,690
Bush Clearing (Heavy)		m2		m2		m2		m2		
Grubbing	1,225	m2	1,300	m2	1,100	m2	750	m2	475	4,850
Tree and Stump Removal		No.		No.		No.		No.		

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	203	m3 (insitu)	203	m3 (insitu)	203	m3 (insitu)	203	m3 (insitu)	203	1,015
Drains Partial construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
By Towed Grader / Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

Quantities verified and accepted by the Contractor Name: Date: Signature:
 For the Employer Name: Date: Signature:

Road Improvement Plan		Road No.:	Kachiulu - Gotu	Region:	MERU	From:	5+000	To:	6+000	Page:	6
Chain- age	Road form.	(kilometres)									
		(metres)									
Earthenworks/ Reshaping	G	Subgrade									
		Cross section									
G	A	Method: RES, ETL or Fill									
		Choice of reshaping: L, T or E									
G	A	Volume of ETL or Fill (m3/m)									
		Thickness (cm, comp.)									
G	A	Source (quarry No.)									
		Total									
G	A	Longitudinal gradient (in %)									
		1,650									
G	A	Number left =20									
		20									
G	A	Length of drain left =									
		Length of drain right =3									
G	A	Chainage (m)									
		CD=0									
G	A	AC=17									
		L/R									
G	A	AD=0									
		Length (m)									
G	A	Ø 450 mm									
		Ø 600mm									
G	A	Ø 900 mm									
		Earth fill (m3)									
G	A	Haunch Type									
		T4=34									
G	A	T3=0									
		T2=0									
G	A	SM=25									
		SM=25									
Additional Instruction as per Reference											

Chainage:	5+000	5+200	5+400	5+600	5+800	6+000
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Measurements for Clearing:	Aver. (m)					1 to 4 readings ¹⁾					Free Clearance Width for Calculating areas																			
	Bush Clearing (Light)	10.1	10	10	10.3	10	m	9.5	9.5	9	9.5	10	m	9.3	10	9.5	8.5		m	4.5	0			9	m	8.9	9	9	9	8.5
Bush Clearing (Heavy)						m						m	8.5				8.5	m	8.5	8.5	8	9		m						m
Grubbing	8.3	8	8.5	8.5	8	m	7.5	7.0	7.5	8	7.5	m	7.0	8	7	6	7	m	7.0	7	7	7	7	m	6.8	7	7	7	6	m
Tree and Stump Removal						m	3	3				m						m	10	10				m						m

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

Estimated measurements for small cut to fill:		Height of Cut for calculating volumes																												
Height of cut < 0.25m (ETL BOTH SIDES)	0.5	0.3	0.3	0.6	0.7	m	1	0.6	0.5	1.15	0.5	m	0				0	m	0	0	0	0	0	m	0	0	0	0	0	m
Clear Width (13m)	7	7	7	7	7	m	7	7	7	7	7	m	0				0	m	0	0	0	0	0	m	0	0	0	0	0	m
Height of cut < 0.25m (ETL ONE SIDE)						m						m	1			0.6		m						m						m
Clear Width (10.5m)						m						m	9			9		m						m						m

For Reshaping:		Difference in Level between Exist. Camber and Side Drain for calculating volumes																												
Existing Roads						m						m	0.2		0.2			m						m						m
Existing Road Width						m						m	7		7			m						m						m

Quantities										Total this page
Bush Clearing (Light)	585	m2	700	m2	733	m2	1,700	m2	825	4,543
Bush Clearing (Heavy)		m2		m2	900	m2	900	m2		1,800
Grubbing	550	m2	700	m2	800	m2	800	m2	850	3,700
Tree and Stump Removal		No.	3	No.		No.	10	No.		13

Quantities										Total this page
Height of cut < 0.25m		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Height of cut > 0.25m	190	m3 (insitu)	275	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	465
Embankment		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		
Drains full re-construction	251	m3 (insitu)	272	m3 (insitu)	203	m3 (insitu)	203	m3 (insitu)	203	1,131
Drains Partial construction		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
Reshaping by Labour		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		0
By Equipment Based Meth.		m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		

Quantities verified and accepted by the Contractor Name: Date: Signature:
 For the Employer Name: Date: Signature:

