DETAILED IMPROVEMENT PLAN Page: 11

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 10+000 **To:** 11+000

Chain-age	(kilometres)	10 + 0				10 + 100				10 + 200				10 + 300				10 + 400				10 + 500				10 + 600				10 + 700				10 + 800				10 + 900				11 + 0
	(metres)																																								
Road form.	Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
	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
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
	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				0				0				0				0				0				0				0				0				0			
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	Chainage (m) = New line N	10+000 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																																								

Chainage:	10+000	10+200	10+400	10+600	10+800	11+000

Free Clearance Width for Calculating areas

Input Measurements:	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					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	2	2	0	0	0	m	2	2	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	2	2	0	0	0	m	2	2	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	-	-	-	-	-

Height of Cut / Differences in Levels for calculating volumes

Measurements for small cut to fill:	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings*)					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	2,200	m2	2,200	m2	2,200	m2	2,200	m2	2,200	**11,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
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	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**810**
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: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 11+000 **To:** 12+000

Chain-age	(kilometres)		11 + 0				11 + 100				11 + 200				11 + 300				11 + 400				11 + 500				11 + 600				11 + 700				11 + 800				11 + 900				12 + 0
	(metres)		0				100				200				300				400				500				600				700				800				900				0
Road form.	Subgrade		CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
	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
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
	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				0				0				0				0				0				0				0				0				0				
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		Chainage (m)																																								
	N	= New line																																								
	Ex	= Existing line																																								
	CD	= Cross drainage																																								
	AC/D	= Access culvert/ drift																																								
	L/R	= Left/ right																																								
	Length (m)	Ø 450mm																																								
		Ø 600mm																																								
		Ø 900mm																																								
	Ramp	Earth fill (m3)																																								
		H. Concrete (m3)																																								
Head-walls		Inlet (Material/Type)																																								
		Outlet (Material/Type)																																								
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																								
	0	Spacing right (m) = =Total No. this sheet																																								
Additional Instruction as per Reference																																									

Quantity Assessment	North Horr (B75 JNCN)- Dukana(B76 -	-	County: MARSABIT	From: 11+000	To: 12+000	pg 13

Chainage:	11+000	11+200	11+400	11+600	11+800	12+000

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

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings				
Bush Clearing	2	2	0	0	0	m	2	2	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	2	2	0	0	0	m
Grass Cutting						m						m						m						m						m
Grubbing	2	2	0	0	0	m	2	2	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	2	2	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	2,200	m2	2,200	m2	2,000	m2	2,000	m2	2,200	**10,600**
Grass Cutting		m2		m2		m2		m2		
Grubbing	2,200	m2	2,200	m2	2,000	m2	2,000	m2	2,200	**10,600**
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	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**810**
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: 13

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 12+000 **To:** 13+000

Chain-age		(kilometres) (metres)	12 + 0				12 + 100				12 + 200				12 + 300				12 + 400				12 + 500				12 + 600				12 + 700				12 + 800				12 + 900			13 + 0
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
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	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
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 %)	1				0				1				1				0				0				0				0				0				0			
Mitre drains	Total	Number left =	1								1								1								1								1							
Mitre drains	10	Number right =					1								1								1								1								1			
Catch water	Total	Length of drain left =																																								
Catch water	0	Length of drain right =																																								
Culverts	N Ex	Chainage (m) = New line = Existing line	12+000 N																																							
Culverts	CD	= Cross drainage	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	16																																							
Culverts	Ramp	Earth fill (m3)																																								
Culverts	Ramp	H. Concrete (m3)	IV																																							
Head-walls		Inlet (Material/Type)	I																																							
Head-walls		Outlet (Material/Type)	I																																							
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																								
Scour Checks	0	Spacing right (m) = =Total No. this sheet																																								
		Additional Instruction as per Reference																																								

Chainage:	12+000						12+200						12+400						12+600						12+800						13+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	2	2	0	0	0	m	2	2	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	2	2	0	0	0	m	2	2	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	2,200	m2	2,200	m2	2,200	m2	2,200	m2	2,200	**11,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
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	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**810**
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: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 13+000 **To:** 14+000

Chain-age		(kilometres) (metres)	13 + 0				13 + 100				13 + 200				13 + 300				13 + 400			
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
Road form.		Cross section	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
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
Earth-works		Volume of ETL or Fill (m3/m)																				
Gra-vel	Total	Thickness (cm,comp.)																				
Gra-vel		Source (quarry No.)																				
		Longitudinal gradient (in %)	0				0				0				0				0			
Mitre drains	Total	Number left =	1								1								1			
Mitre drains	10	Number right =					1								1							
Catch water	Total	Length of drain left =																				
Catch water	0	Length of drain right =																				
Culverts	N Ex	Chainage (m) = New line = Existing line													13+280 N							
Culverts	CD	= Cross drainage													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							
Culverts	Ramp	Earth fill (m3)																				
Culverts	Ramp	H. Concrete (m3)													IV							
Head-walls		Inlet (Material/Type)													I							
Head-walls		Outlet (Material/Type)													I							
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																				
Scour Checks	0	Spacing right (m) = =Total No. this sheet																				
Additional Instruction as per Reference																						

Chain-age		(kilometres) (metres)	13 + 500				13 + 600				13 + 700				13 + 800				13 + 900			14 + 0
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
Road form.		Cross section	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
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
Earth-works		Volume of ETL or Fill (m3/m)																				
Gra-vel	Total	Thickness (cm,comp.)																				
Gra-vel		Source (quarry No.)																				
		Longitudinal gradient (in %)	0				1				1				1				1			
Mitre drains	Total	Number left =					1								1							
Mitre drains	10	Number right =	1								1								1			
Catch water	Total	Length of drain left =																				
Catch water	0	Length of drain right =																				
Culverts	N Ex	Chainage (m) = New line = Existing line																				
Culverts	CD	= Cross drainage																				
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																				
Culverts	Ramp	Earth fill (m3)																				
Culverts	Ramp	H. Concrete (m3)																				
Head-walls		Inlet (Material/Type)																				
Head-walls		Outlet (Material/Type)																				
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																				
Scour Checks	0	Spacing right (m) = =Total No. this sheet																				
Additional Instruction as per Reference																						

Quantity Assessment	North Horr (B75 JNCN)- Dukana(B76 -	-	County:	MARSABIT	From:	13+000	To:	14+000	pg	15

Chainage:	13+000	13+200	13+400	13+600	13+800	14+000

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

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					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	2	2	0	0	0	m	2	2	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	2	2	0	0	0	m	2	2	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					Aver. (m)	1 to 4 readings					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	2,200	m2	2,200	m2	2,200	m2	2,200	m2	2,200	**11,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
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	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**810**
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: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 14+000 **To:** 15+000

Chain-age		(kilometres)	14 + 0				14 + 100				14 + 200				14 + 300				14 + 400				14 + 500				14 + 600				14 + 700				14 + 800				14 + 900				15 + 0
		(metres)																																								
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
		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
Earth-works		Method: RES, ETL or FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	ETL	ETL	ETL	ETL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	ETL	ETL	ETL	ETL	ETL
		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				0				0				0				0				0				0				0				0				0				
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		Chainage (m) = New line													14+300 N								14+500 N												14+800 N								
	N																																									
	Ex	= Existing line																																								
	CD	= Cross drainage													CD								CD												CD								
	AC/D	= Access culvert/ drift																																							
	L/R	= Left/ right																																							
	Length (m)	Ø 450mm																																							
		Ø 600mm																																							
		Ø 900mm													8								8												8								
	Ramp	Earth fill (m3)																																							
		H. Concrete (m3)													IV								IV												IV								
Head-walls		Inlet (Material/Type)													I								I												I								
		Outlet (Material/Type)													I								I												I								
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																								
	0	Spacing right (m) = =Total No. this sheet																																							
Additional Instruction as per Reference																																					Road Realigned @ KM 14+900				

Quantity Assessment	North Horr (B75 JNCN)- Dukana(B76 -	-	County: MARSABIT	From: 14+000	To: 15+000	pg 16

Chainage:	14+000	14+200	14+400	14+600	14+800	14+000

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

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings				
Bush Clearing	2	2	0	0	0	m	2	2	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m
Grass Cutting						m						m						m						m						m
Grubbing	2	2	0	0	0	m	2	2	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	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					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	2,200	m2	2,200	m2	2,000	m2	2,000	m2	2,000	**10,400**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,600	m2	1,600	m2	1,600	**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)	162	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	162	**324**
Embankment/Fill	162	m3 (insitu)	81	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	81	**648**
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: **16**

Road Name: **North Horr (B75 JNCN)- Dukana(B76 JNCN)** **County** **MARSABIT** **From:** **15+000** **To:** **16+000**

Chain-age		(kilometres)	15 +				15 +				15 +				15 +				15 +				15 +				15 +				15 +				15 +				15 +			16 +
		(metres)	0				100				200				300				400				500				600				700				800				900			0
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
		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
Earth-works		Method: RES, ETL or FILL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL	ETL
		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				0				0				0				0				0				0				0				0				0			
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																											Road Realigned															

Chainage:	15+000						15+200						15+400						15+600						15+800						15+000
Input Measurements:	**Free Clearance Width for Calculating areas**																														
	Aver. (m)	1 to 4 readings*)																							Aver. (m)	1 to 4 readings					
Bush Clearing	0	0	0	0	0	m	0	0	0	0	0	m	0	0	0	0	0	m	0	0	0	0	0	m	0	0	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	0	0	0	0	0	m	0	0	0	0	0	m	0	0	0	0	0	m	0	0	0	0	0	m	0	0	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	2,600	m2	2,600	m2	2,600	m2	2,600	m2	2,600	**13,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	2,200	m2	2,200	m2	2,200	m2	2,200	m2	2,200	**11,000**
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	324	m3 (insitu)	324	m3 (insitu)	324	m3 (insitu)	324	m3 (insitu)	324	**1,620**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)	378	m3 (insitu)	378	**756**
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: **1**

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 16+000 **To:** 17+000

Chain-age (kilometres) + (metres)	16 + 0				16 + 100				16 + 200				16 + 300				16 + 400				16 + 500				16 + 600				16 + 700				16 + 800				16 + 900			17 + 0
Road form. – Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
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	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
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 %)	0				0				0				1				1				1				0				0				0				0			
Mitre drains – Total 0 – Number left =																																								
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														16+250 N																										
Culverts – CD = Cross drainage														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																										
Culverts – Ramp – Earth fill (m3)																																								
Culverts – Ramp – H. Concrete (m3)														IV																										
Head-walls – Inlet (Material/Type)														I																										
Head-walls – Outlet (Material/Type)														I																										
Scour Checks – HC = Material this sheet/ Spacing left (m) =																																								
Scour Checks – 0 – Spacing right (m) = =Total No. this sheet																																								
Additional Instruction as per Reference					CG-Calcareous Gravel																																			

Quantity Assessment	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	16+000	To:	17+000	pg	2

Chainage:	16+000	16+200	16+400	16+600	16+800	17+000

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

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					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	2	2	0	0	0	m	2	2	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	2	2	0	0	0	m	2	2	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					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	2,200	m2	2,200	m2	2,200	m2	2,200	m2	2,200	**11,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,000**
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	162	m3 (insitu)	81	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**729**
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: 2

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 17+000 **To:** 18+000

Section	Sub	Item	17 + 0				17 + 100				17 + 200				17 + 300				17 + 400			
Chain-age		(kilometres) / (metres)	17 + 0				17 + 100				17 + 200				17 + 300				17 + 400			
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
		Cross section	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
		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
		Volume of ETL or Fill (m3/m)																				
Gra-vel	Total	Thickness (cm,comp.)																				
		Source (quarry No.)																				
Longitudinal gradient (in %)			0				0				0				0				0			
Mitre drains	Total	Number left =	1								1								1			
	10	Number right =					1								1							
Catch water	Total	Length of drain left =																				
	0	Length of drain right =																				
Culverts	N Ex	Chainage (m) = New line = 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																						

Section	Sub	Item	17 + 500				17 + 600				17 + 700				17 + 800				17 + 900			18 + 0
Chain-age		(kilometres) / (metres)	17 + 500				17 + 600				17 + 700				17 + 800				17 + 900			18 + 0
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
		Cross section	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
		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
		Volume of ETL or Fill (m3/m)																				
Gra-vel	Total	Thickness (cm,comp.)																				
		Source (quarry No.)																				
Longitudinal gradient (in %)			0				0				0				0				0			
Mitre drains	Total	Number left =					1								1							
	10	Number right =	1								1								1			
Catch water	Total	Length of drain left =																				
	0	Length of drain right =																				
Culverts	N Ex	Chainage (m) = New line = 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	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	17+000	To:	18+000	pg	3

Chainage:	17+000	17+200	17+400	17+600	17+800	18+000

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

	Aver. (m)	1 to 4 readings*)					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	3	3 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	3	3 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	0	cm	0	cm
Sloping		cm		cm		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	2,000	**10,600**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,800	m2	1,800	m2	1,800	m2	1,600	m2	1,600	**8,600**
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	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	81	m3 (insitu)	81	**648**
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: 3

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 18+000 **To:** 19+000

Chain-age		(kilometres)	18 + 0				18 + 100				18 + 200				18 + 300				18 + 400				18 + 500				18 + 600				18 + 700				18 + 800				18 + 900			19 + 0
		(metres)	0				100				200				300				400				500				600				700				800				900			0
Road form.		Subgrade	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
		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
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
		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
		Volume of ETL or Fill (m3/m)																																						
Gra-vel	Total	Thickness (cm,comp.)																																						
		Source (quarry No.)																																						
		Longitudinal gradient (in %)	0				0				0				0				0				0				0				0				0				0			
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		Chainage (m) = New line	18+000 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																																								

Quantity Assessment	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	18+000	To:	19+000	pg	4

Chainage:	18+000	18+200	18+400	18+600	18+800	19+000

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

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings				
Bush Clearing	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m
Grass Cutting						m						m						m						m						m
Grubbing	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m
Tree and stump removal	0					m	1	1				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*)					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	2,000	m2	2,000	m2	2,000	m2	2,000	m2	2,000	**10,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	**8,000**
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)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill	81	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**729**
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: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 19+000 **To:** 20+000

Chain-age	(kilometres)		19 + 0				19 + 100				19 + 200				19 + 300				19 + 400				19 + 500				19 + 600				19 + 700				19 + 800				19 + 900			20 + 0
	(metres)		0				100				200				300				400				500				600				700				800				900			0
Road form.	Subgrade		CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
	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
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
	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
	Volume of ETL or Fill (m3/m)																																							
Gra-vel	Total	Thickness (cm,comp.)																																						
		Source (quarry No.)																																						
Longitudinal gradient (in %)			0				0				4				1				1				1				1				1				1				0			
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 =	100				100				100				100				100				100				100				100				100				100			
	1,000	Length of drain right =																																						
Culverts		Chainage (m)									19+200																														
	N	= New line																																						
	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																																								

Quantity Assessment	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	19+000	To:	20+000	pg	5

Chainage:	19+000	19+200	19+400	19+600	19+800	20+000

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

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings					Aver. (m)	1 to 4 readings				
Bush Clearing	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m
Grass Cutting						m						m						m						m						m
Grubbing	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	3	3	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 fil: — **Height of Cut / Differences in Levels for calculating volumes**

	Aver. (m)	1 to 4 readings*)					Aver. (m)	1 to 4 readings*)					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	2,000	m2	2,000	m2	2,000	m2	2,000	m2	2,000	**10,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,600	m2	1,600	m2	1,600	m2	1,600	m2	1,600	**8,000**
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	162	m3 (insitu)	81	m3 (insitu)	162	m3 (insitu)	162	m3 (insitu)	162	**729**
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:** .....