DETAILED IMPROVEMENT PLAN

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County** MARSABIT **From:** 00+000 **To:** 01+000

Chain-age		(kilometres)	0 +				0 +				0 +				0 +				0 +				0 +				0 +				0 +				0 +				0 +				1 +
		(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	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	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				0				0				1				1				1				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 =							20	20	20	20	20																													
	100	Length of drain right =																																								
Culverts	N	Chainage (m) = New line																0+390 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	JNCTN				CG-Calcareous Gravel																																			

Quantity Assessment | **North Horr (B75 JNCN)- Duka** | **#** | **#** | **County:** **MARSABIT** | **From:** **00+000** | **To:** **01+000** | **pg** 2

Chainage:	**0+000**						**0+200**						**0+400**						**0+600**						**0+800**						**1+000**
Input Measurements:	Aver. (m)	1 to 4 readings*)					**Free Clearance Width for Calculating areas**																		Aver. (m)	1 to 4 readings					
Bush Clearing	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	9	9	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	800	m2	800	m2	800	m2	800	m2	800	**4,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	400	m2	400	m2	400	m2	400	m2	400	**2,000**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									**Total this page**
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill		m3 (insitu)		m3 (insitu)		m3 (insitu)	162	m3 (insitu)	162	**324**
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:** 1+000 **To:** 2+000

Chain-age		(kilometres)	1 +				1 +				1 +				1 +				1 +				1 +				1 +				1 +				1 +				1 +				2 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	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	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
		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																																										

Quantity Assessment | **North Horr (B75 JNCN)- Duka** | **#** | **#** | **County:** **MARSABIT** | **From:** **1+000** | **To:** **2+000** | **pg** 3

Chainage:	**1+000**						**1+200**						**1+400**						**1+600**						**1+800**						**2+000**
Input Measurements:	Aver. (m)	1 to 4 readings*)					**Free Clearance Width for Calculating areas**																		Aver. (m)	1 to 4 readings					
Bush Clearing	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	5	5	0	0	0	m	5	5	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	9	9	0	0	0	m	9	9	0	0	0	m	9	9	0	0	0	m	5	5	0	0	0	m	5	5	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	800	m2	800	m2	800	m2	1,600	m2	1,600	**5,600**
Grass Cutting		m2		m2		m2		m2		
Grubbing	400	m2	400	m2	400	m2	1,200	m2	1,200	**3,600**
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)		**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

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 2+000 **To:** 3+000

Chain-age		(kilometres)	2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +				2 +			3 +
		(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	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	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	FILL	FILL	FILL	FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																										
Gra-vel	Total	Thickness (cm,comp.)																																										
		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 =	100				100				100				100				100				100				100				100				100				100					
	1,000	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(E #	#	County:	MARSABIT	From: 2+000	To: 3+000	pg 4

Chainage:	2+000	2+200	2+400	2+600	2+800	2+000
Input Measurements:	**Free Clearance Width for Calculating areas**					
	Aver. (m) / 1 to 4 readings*)				Aver. (m) / 1 to 4 readings	
Bush Clearing	7 / 7 0 0 0 m	7 / 7 0 0 0 m	7 / 7 0 0 0 m	7 / 7 0 0 0 m	7 / 7 0 0 0 m	
Grass Cutting	/ m	/ m	/ m	/ m	/ m	
Grubbing	7 / 7 0 0 0 m	7 / 7 0 0 0 m	7 / 7 0 0 0 m	7 / 7 0 0 0 m	7 / 7 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*)	
Height of cut < 0.25m	0 / 0 cm	0 / cm	0 / 0 0 cm	0 / 0 0 cm	0 / 0 0 cm	
Height of cut > 0.25m	0 / 0 cm	0 / cm	0 / 0 0 cm	0 / 0 0 cm	0 / 0 0 cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**					
Existing Roads	0 / cm	0 / cm	0 / cm	0 / cm	0 / cm	
Sloping	/ cm	/ cm	/ cm	/ cm	/ cm	
	*) Note: The user is free to select the number of reading required according to the site conditions. (min. 1 max. 4 for each section).					

Quantities:	Quantities									Total this page
Bush Clearing	1,200	m2	1,200	m2	1,200	m2	1,200	m2	1,200	**6,000**
Grass Cutting		m2		m2		m2		m2		
Grubbing	800	m2	800	m2	800	m2	800	m2	800	**4,000**
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		m3 (insitu)		m3 (insitu)	81	m3 (insitu)		m3 (insitu)		**81**
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:** 3+000 **To:** 4+000

Chain-age		(kilometres)	3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +				3 +			4 +
		(metres)	0				100				200				300				400				500				600				700				800				900				0
Road form.		Subgrade	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	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	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				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 =	100				100				100				100				100				100				100				100				100				100						
	1,000	Length of drain right =																																										
Culverts		Chainage (m) = New line																																										
	N																																											
	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																drift											drift																	

Quantity Assessment	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	3+000	To:	4+000	pg	5

Chainage:	3+000						3+200						3+400						3+600						3+800						4+000
Input Measurements:	Aver. (m)	1 to 4 readings*)					**Free Clearance Width for Calculating areas**																		Aver. (m)	1 to 4 readings					
Bush Clearing	5	5	0	0	0	m	3	3	0	0	0	m	3	3	0	0	0	m	4	4	0	0	0	m	4	4	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	5	5	0	0	0	m	3	3	0	0	0	m	3	3	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					cm	0					cm	0					cm	0					cm	0					cm
Sloping						cm						cm						cm						cm						cm

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

Quantities:	**Quantities**									**Total this page**
Bush Clearing	1,600	m2	2,000	m2	2,000	m2	1,800	m2	1,800	**9,200**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,200	m2	1,600	m2	1,600	m2	1,400	m2	1,400	**7,200**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									**Total this page**
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill	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:** 4+000 **To:** 5+000

Chain-age	(kilometres)		4 + 0				4 + 100				4 + 200				4 + 300				4 + 400				4 + 500				4 + 600				4 + 700				4 + 800				4 + 900				5 + 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	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	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	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
	Choice of reshaping: L, T or E		E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Volume of ETL or Fill (m3/m)																																											
Gra-vel	Total	Thickness (cm,comp.)																																										
		Source (quarry No.)																																										
Longitudinal gradient (in %)			0				0				0				0				0				0				1				0				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																				
	600	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	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	4+000	To:	5+000	pg	6

Chainage:	4+000						4+200						4+400						4+600						4+800						5+000
Input Measurements:	**Free Clearance Width for Calculating areas**																														
	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	6	6	0	0	0	m	6	6	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	6	6	0	0	0	m	6	6	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	
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	1,400	m2	1,400	m2	2,000	**8,800**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,600	m2	1,600	m2	1,000	m2	1,000	m2	1,600	**6,800**
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)	81	m3 (insitu)		m3 (insitu)		**405**
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:** 5+000 **To:** 6+000

Chain-age	(kilometres)		5 + 0				5 + 100				5 + 200				5 + 300				5 + 400				5 + 500				5 + 600				5 + 700				5 + 800				5 + 900				6 + 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	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	A	A
Earth-works	Method: RES, ETL or FILL		FILL	FILL	FILL	FILL	FILL	FILL	FILL	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
	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				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																																												

Quantity Assessment	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	5+000	To:	6+000	pg	7

Chainage:	5+000						5+200						5+400						5+600						5+800						6+000
Input Measurements:	**Free Clearance Width for Calculating areas**																														
	Aver. (m)	1 to 4 readings*)																							Aver. (m)	1 to 4 readings					
Bush Clearing	3	3	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	3	3	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:	**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	2,000	m2	1,800	m2	1,800	m2	1,800	m2	1,800	**9,200**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,600	m2	1,400	m2	1,400	m2	1,400	m2	1,400	**7,200**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									**Total this page**
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill	162	m3 (insitu)		m3 (insitu)		m3 (insitu)		m3 (insitu)		**162**
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:** 6+000 **To:** 7+000

Chain-age		(kilometres)	6 + 0				6 + 100				6 + 200				6 + 300				6 + 400				6 + 500				6 + 600				6 + 700				6 + 800				6 + 900				7 + 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	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	A
Earth-works		Method: RES, ETL or FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES
		Choice of reshaping: L, T or E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
		Volume of ETL or Fill (m3/m)																																									
Gra-vel	Total	Thickness (cm,comp.)																																									
		Source (quarry No.)																																									
		Longitudinal gradient (in %)	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																	N 006+400																				N 006+900				
	Ex	= Existing line																																									
	CD	= Cross drainage																	CD																				CD				
	AC/D	= Access culvert/ drift																																									
	L/R	= Left/ right																																									
	Length (m)	Ø 450mm																																									
		Ø 600mm																																									
		Ø 900mm																	8																				8				
	Ramp	Earth fill (m3)																																									
		H. Concrete (m3)																	IV																				IV				
Head-walls		Inlet (Material/Type)																	I																				I				
		Outlet (Material/Type)																	I																				I				
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																									
	0	Spacing right (m) = =Total No. this sheet																																									
Additional Instruction as per Reference																												Cut in hard														

Quantity Assessment	North Horr (B75 JNCN)- Dukana(E	#	#	County:	MARSABIT	From:	6+000	To:	7+000	pg	8

Chainage:	6+000						6+200						6+400						6+600						6+800						7+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	6	6	0	0	0	m	4	4	0	0	0	m	3	3	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	4	4	0	0	0	m	4	4	0	0	0	m	6	6	0	0	0	m	4	4	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:	Aver. (m)	1 to 4 readings*)					**Height of Cut / Differences in Levels for calculating volumes**																		Aver. (m)	1 to 4 readings*)					
Height of cut < 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm	
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																														
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm	
Sloping						cm						cm						cm						cm						cm	

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

Quantities:	**Quantities**									**Total this page**
Bush Clearing	1,800	m2	1,800	m2	1,400	m2	1,800	m2	2,000	**8,800**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,000	m2	1,400	m2	1,600	**6,800**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

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

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

DETAILED IMPROVEMENT PLAN

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 7+000 **To:** 8+000

Chain-age		(kilometres)	7 + 0				7 + 100				7 + 200				7 + 300				7 + 400				7 + 500				7 + 600				7 + 700				7 + 800				7 + 900			8 + 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	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	RES	RES	RES	RES	RES	RES	RES	RES	FILL	FILL	FILL	FILL	RES	RES	RES	RES	FILL	FILL	FILL	FILL	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	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
		Volume of ETL or Fill (m3/m)																																								
Gra-vel	Total	Thickness (cm,comp.)																																								
		Source (quarry No.)																																								
		Longitudinal gradient (in %)	0				0				0				0				0				1				1				1				1				1			
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			
	200	Length of drain right =																																					100			
Culverts	N	Chainage (m) = New line																									7+620 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: 7+000	To: 8+000	pg 9

Chainage:	7+000	7+200	7+400	7+600	7+800	8+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	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: — **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	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/Fill		m3 (insitu)		m3 (insitu)	81	m3 (insitu)		m3 (insitu)	162	**243**
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:** 8+000 **To:** 9+000

Chain-age		(kilometres)	8 +				8 +				8 +				8 +				8 +				8 +				8 +				8 +				8 +				8 +				8 +				9 +
		(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	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	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	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	RES	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				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 =	100				100				100																																	
	600	Length of drain right =	100				100				100																																	
Culverts	N	Chainage (m) = New line	8+020 N				8+100 N																																					
	Ex	= Existing line																																										
	CD	= Cross drainage	CD				CD																																					
	AC/D	= Access culvert/ drift																																										
	L/R	= Left/ right																																										
	Length (m)	Ø 450mm																																										
		Ø 600mm																																										
		Ø 900mm	8				8																																					
	Ramp	Earth fill (m3)																																										
		H. Concrete (m3)	IV				IV																																					
Head-walls		Inlet (Material/Type)	I				I																																					
		Outlet (Material/Type)	I				I																																					
Scour Checks	HC	= Material this sheet/ Spacing left (m) =																																										
	0	Spacing right (m) = =Total No. this sheet																																										
		Additional Instruction as per Reference																																										

Quantity Assessment	North Horr (B75 JNCN)- Dukana(B7	#	#	County:	MARSABIT	From:	8+000	To:	9+000	pg	10

Chainage:	8+000						8+200						8+400						8+600						8+800						9+000
Input Measurements:	Aver. (m)	1 to 4 readings*)					**Free Clearance Width for Calculating areas**																		Aver. (m)	1 to 4 readings					
Bush Clearing	6	6	0	0	0	m	6	6	0	0	0	m	6	6	0	0	0	m	6	6	0	0	0	m	5	5	0	0	0	m	
Grass Cutting						m						m						m						m						m	
Grubbing	6	6	0	0	0	m	6	6	0	0	0	m	6	6	0	0	0	m	6	6	0	0	0	m	5	5	0	0	0	m	
Tree and stump removal	0					m	0					m	0					m	0					m	0					m	

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

Cross Section Sketch	-	-	-	-	-

Measurements for small cut to fill:	Aver. (m)	1 to 4 readings*)					**Height of Cut / Differences in Levels for calculating volumes**																		Aver. (m)	1 to 4 readings*)				
Height of cut < 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm
Height of cut > 0.25m	0	0				cm	0					cm	0		0		0	cm	0		0		0	cm	0		0		0	cm
For Reshaping :	**Difference in Level between Exist. Camber and Side Drain for calculating volumes**																													
Existing Roads	0					cm	0					cm	0					cm	0					cm	0					cm
Sloping						cm						cm						cm						cm						cm

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

Quantities:	**Quantities**									**Total this page**
Bush Clearing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,600	**7,200**
Grass Cutting		m2		m2		m2		m2		
Grubbing	1,400	m2	1,400	m2	1,400	m2	1,400	m2	1,600	**7,200**
Tree and stump removal	0	No.	0	No.	0	No.	0	No.	0	**0**

	Quantities									**Total this page**
Height of cut < 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Height of cut > 0.25m	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	m3 (insitu)	0	**0**
Embankment/Fill	324	m3 (insitu)	324	m3 (insitu)	162	m3 (insitu)		m3 (insitu)	162	**972**
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: 10

Road Name: North Horr (B75 JNCN)- Dukana(B76 JNCN) **County:** MARSABIT **From:** 9+000 **To:** 10+000

Chain-age		(kilometres)	9 + 0				9 + 100				9 + 200				9 + 300				9 + 400				9 + 500				9 + 600				9 + 700				9 + 800				9 + 900				10 + 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	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	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	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				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																																										
	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(E	#	#	County:	MARSABIT	From:	9+000	To:	10+000	pg	11

Chainage:	9+000						9+200						9+400						9+600						9+800						20+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		m3 (insitu)		m3 (insitu)	81	m3 (insitu)	162	m3 (insitu)	162	**405**
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:** …….....