

## **Appendix B1: Description of the proposed mining operations**

Appendix B1

## Description of the proposed mining operations

A detailed borrow pit investigation has been conducted to source sufficient material for the project, initially three borrow pits were identified and approved. Due to amendments to the rehabilitation requirements for the N1S14 additional material is required. Two additional borrow pit sites have been identified to meet this additional material requirement. One of the sites consists of open veld while the other site consists of an existing borrow pit, resulting in reduced environmental impact. Also, the existing borrow pit has in the past been poorly maintained and is unsightly in the landscape. Identifying, using and rehabilitating the borrow pits to be used for this project according to the EMP will substantially improve the visual impact on the environment.

**Table 1: Description of the proposed site**

ID	BORROW PIT	DESCRIPTION
BP A	Borrow Pit A	Existing un-rehabilitated borrow pit that is to be extended

Table 1 below shows a summation of the mineral, mining method and extent thereof.

**Table 2: Information on borrow pit**

<b>Borrow Pit A</b>	
Mineral to be mined	Weathered dolerite material for Subbase C3/C4, SSG G5/G6 and Fill G5/G6
Mining Method	Opencast
Ultimate depth of the proposed mining operations	3 m below ground level
Total area of mining activities (ha)	Max. 4.68 ha
Approximate volume of material to be mined	190,000 m <sup>3</sup>
Time period of mining operations to be conducted	2 years construction contract & 1 year rehabilitation

## **Appendix B2: Mining works plan**

Appendix B2

## **Mining Works Plan (Main mining actions, activities or processes)**

The boundaries of the mining area will be demarcated using concrete cast beacons on the corners as indicated on the layout plan. The perimeter of the mining area (including stockpiling area) will also be fenced with temporary stock-proof fencing as indicated on the layout plan.

The material types found in the identified borrow pit generally consist of weathered dolerite. The material required for construction will be mined / excavated by a track excavator; however, due to the denseness of the dolerite deposits investigated, below certain depths, light blasting may be required. Temporary batter boards will be erected as required as mining proceeds to indicate the sideways and downward limits of mining.

### **Borrow Pit A**

This existing borrow pit is situated East of the R717, West of the N1 (on the farm Gruisfontein in the Trompsburg district) and it extends from North to South. Refer to Appendix B3 for the full mining plan layout showing the borrow pit layout.

The material in this borrow pit consists of weathered dolerite. The weathered dolerite material is suitable for use in the selected subbase layers (C3/C4), SSG layers (G5/G6) and Fill (G5/G6).

The average depth of the weathered dolerite reached during the borrow pit investigation with a 22 ton track excavator was 2 metres. The estimated quantity available is approximately 93,600 m<sup>3</sup>. The yield of this borrow pit can be increased by light blasting to 190,000 m<sup>3</sup>.

There is no topsoil to rehabilitate this borrow pit. The side walls of the borrow pit are to be sloped at an angle of approximately 18°, after mining, as a safety measure.

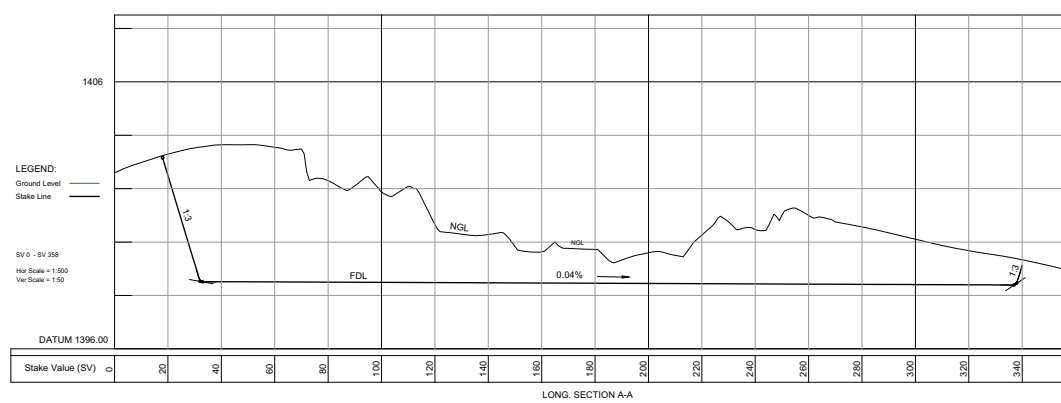
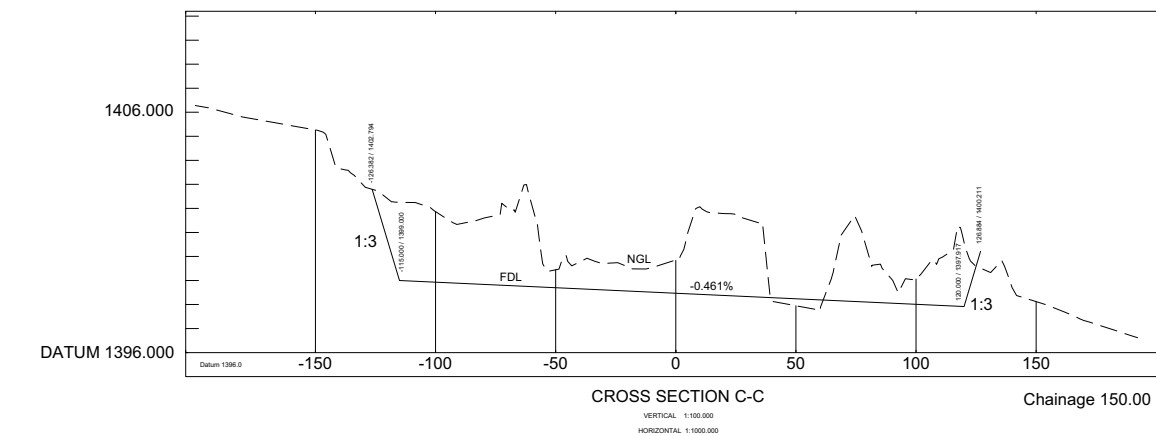
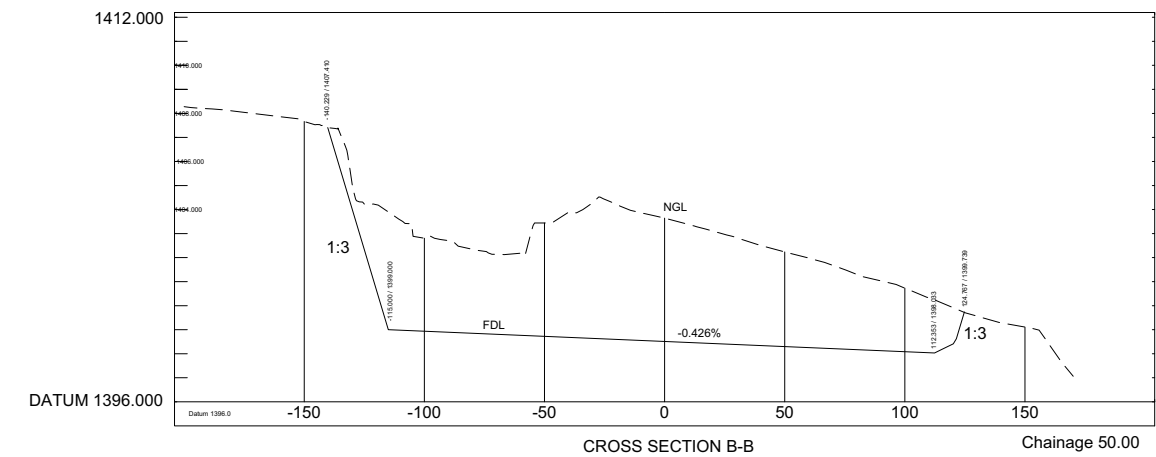
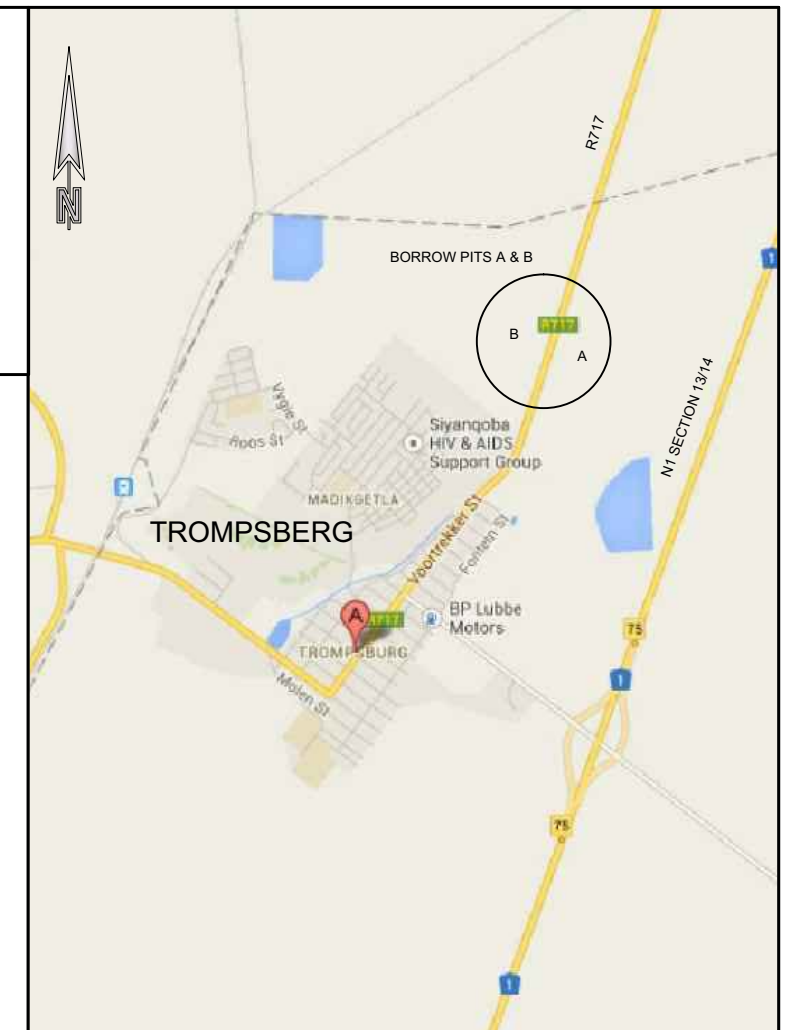
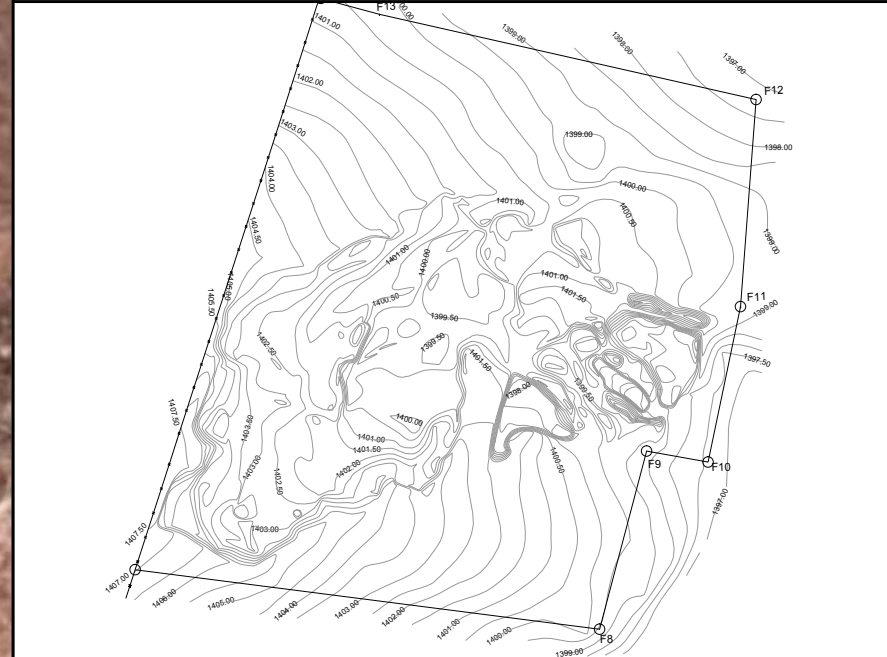
## **Appendix B3: Mining Plan Layout - BP A**



FENCE CO-ORDINATES		
Name	Y-Coordinate	X-Coordinate
F7	-76388.824	332271.174
F8	-76878.856	332208.246
F9	-76765.000	332287.589
F10	-76745.404	332253.556
F11	-76766.801	332208.882
F12	-76776.109	332187.838
F13	-76541.194	332184.475
F14	-76854.177	332184.447

BP CO-ORDINATES		
Name	Y-Coordinate	X-Coordinate
A	-76437.802	3322145.903
B	-76523.132	3321843.388
C	-76154.399	3321887.356
D	-76674.273	332273.517

Layer	Ave Depth	Area(m²)	Material(m³)
Overburden	0.070	71805.003	5000
Soil	2.204	71805.003	159443
Hard Dolomite	0	0.000	0
<b>Total Borrow Material</b>		<b>71805.003</b>	<b>193443.000</b>



No.	DATE	REVISION
V1A		SCANNED SIGNED ORIGINAL VERSION
V1		ORIGINAL VERSION

CONSTRUCTION RECORD	
WORKS CONTRACT ENGINEER	
Name	: XX XXXXXXXXXXXX
Prof. Reg. No.	: XXXXXXXX
Date	: DD / MM / YYYY
SANRAL PROJECT MANAGER	
Name	: XX XXXXXXXXXXXX
Prof. Reg. No.	: XXXXXXXX
Date	: DD / MM / YYYY

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DESIGNED BY	
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Prof. Reg. No.	: _____
CHECKED BY	
NAME	: _____
Prof. Reg. No.	: _____
DRAWN BY	
NAME	: _____

CONSULTANT APPROVAL	
Name	: P HONWARTH
Prof. Reg. No.	: 200570014
Date	: _____

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**ACCEPTANCE**  
 THIS ACCEPTANCE IS FOR PROCEDURAL AND ADMINISTRATIVE REVIEW PURPOSES ONLY AND DOES NOT ATTRACT LEGAL LIABILITY OR LIABILITY OF ANY KIND FROM WHATSOEVER CAUSE OR HOWEVER ARISING  
 for CEO: SA NATIONAL ROADS AGENCY LTD.  
 Date: \_\_\_\_\_

CONTRACT NRA N.001-140-2006/F	
<b>THE REHABILITATION OF NATIONAL ROUTE 1 SECTION 14 BETWEEN TROMPSBURG INTERCHANGE (km 19.0) AND FONTEIJIE (km 39.0)</b>	
<b>BORROW PIT A</b>	
SCALE: AS SHOWN	

PROJECT NUMBER	
N.001-140-2006/1F	
DRAWING LOCATION DATA	
ROUTE	START
SECTION	END
DRAWING km DISTANCE	
DRAWING TYPE	
BRIDGE/STRUCTURE No.	
CONSULTANT DRAWING No.	
FA	VER
SANRAL DOCUMENT #	
	V1