

FIGURE 13: EASTERN TOPOGRAPHY OF SITE

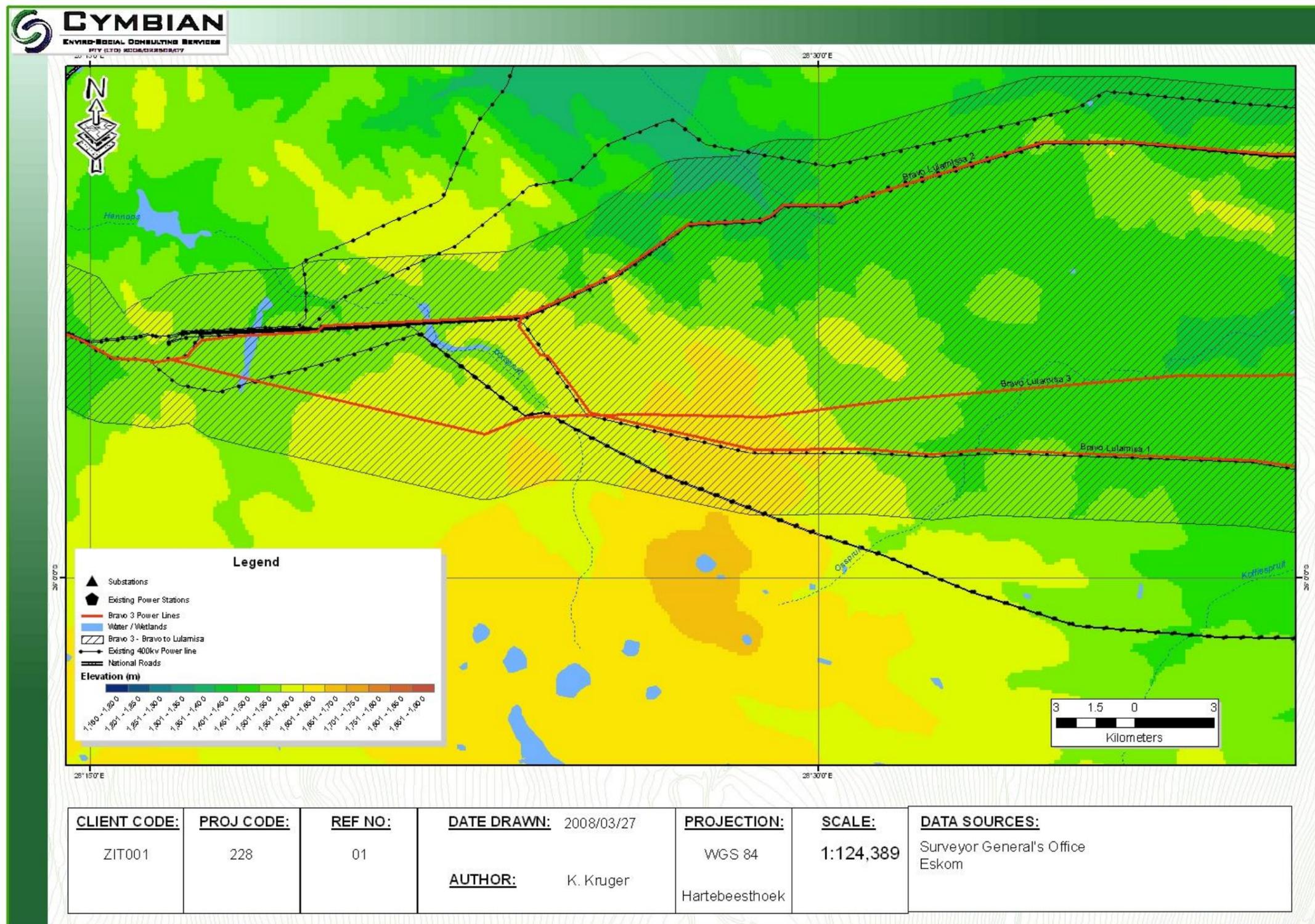


FIGURE 14: CENTRAL TOPOGRAPHY OF SITE

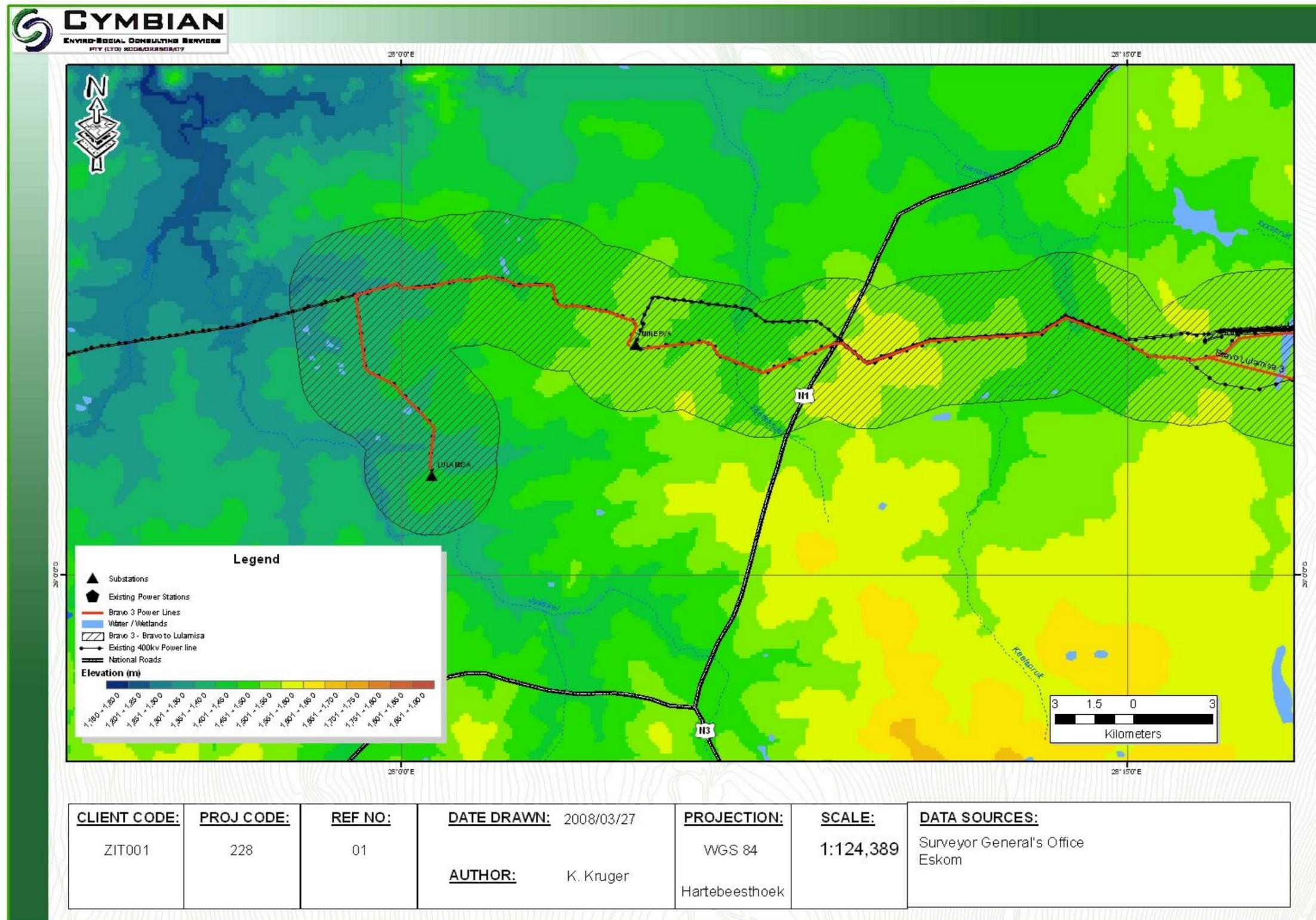


FIGURE 15: WESTERN TOPOGRAPHY OF SITE

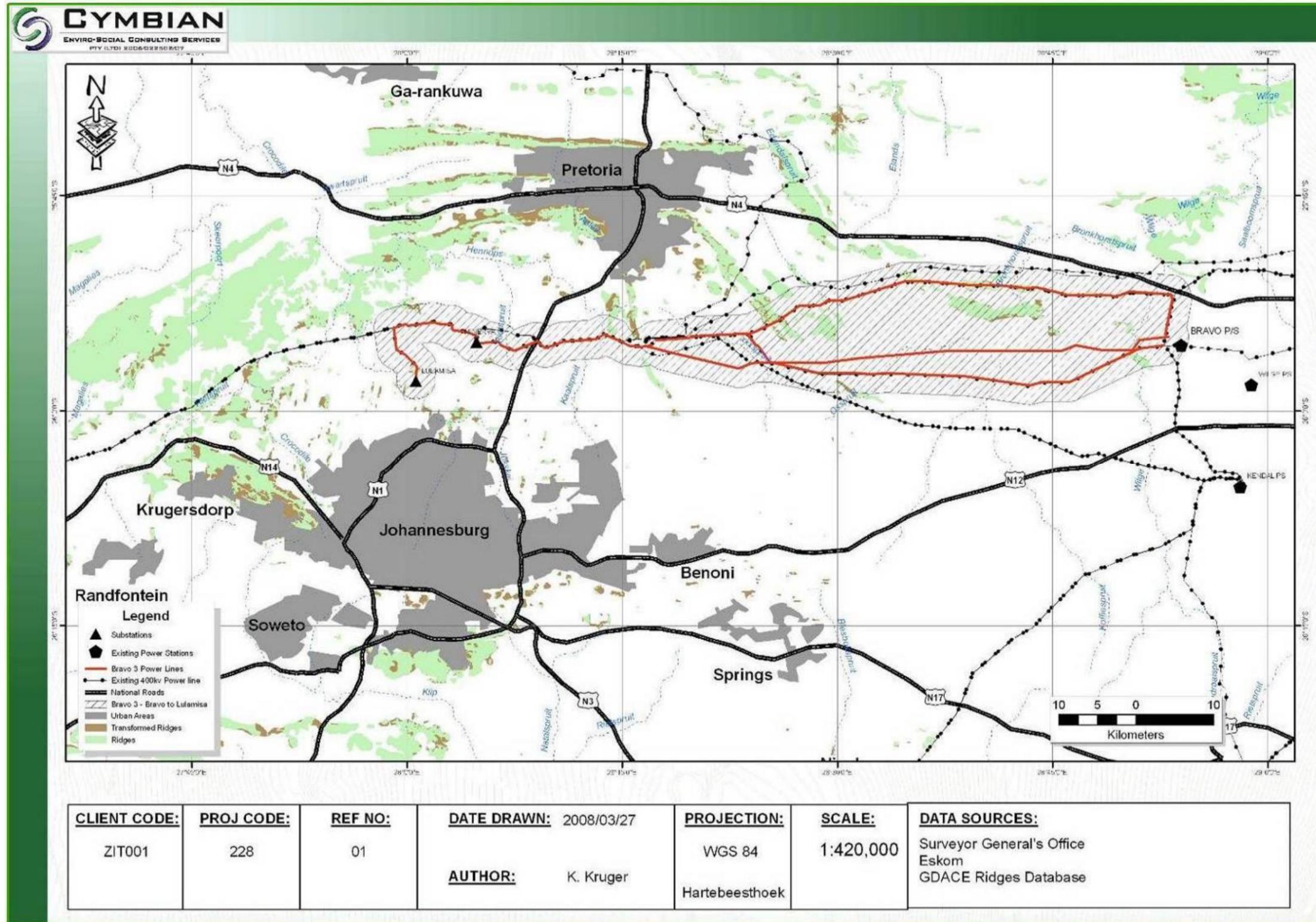


FIGURE 16: RIDGES MAP

7.1.5 Soils

Data Collection

The site visit was conducted on the 10th, 14th and 18th-20th of November 2008. Soils were augered at random intervals along the proposed power line routes. Soils were augered using a 150 mm bucket auger, up to refusal or 1.5 m. Soils were identified according to Soil Classification; a taxonomic system for South Africa (Memoirs on the Natural Resources of South Africa, no. 15, 1991). The following soil characteristics were documented:

- Soil colour;
- Soil depth;
- Soil texture (Field determination);
- Wetness;
- Occurrence of concretions or rocks; and
- Underlying material (if possible).

Information was also obtained from the Land Type Maps 2526 Rustenburg, 2528 Pretoria (Land Type Survey Staff 1987)³, as well as GIS data sources. Data were obtained from the National Department of Agriculture's Land Capability Classification System for South Africa (Schoeman et al 2002)⁴ as well as the Land Type survey map.

Regional Description

The land types occurring in the region included Ab1, Ab2, Ab5, Ba2, Ba3, Ba5, Ba6, Ba9, Bb1, Bb12, Bb2 and Ib7. Table 9 below lists the terrain units of each land type identified and the soil form/s associated with the terrain unit. Please note that the terrain is broken into crest, scarp, midslope, footslope and valley bottom.

TABLE 9: TERRAIN UNITS AND ASSOCIATED SOIL FORMS

Terrain Unit	Soil Forms
1 (=Crest)	Rock, Mispah, Hutton, Avalon, Glencoe, Kroonstad, Westleigh, Wasbank, Glenrosa, Clovelly, Cartref

⁴ Schoeman, J.L., van der Walt, M., Monnik, K.A., Thackrah, A., Malherbe, J., and Le Roux, R.E. 2002. Development and Application of a Land Capability Classification System for South Africa. ARC-Institute for Soil, Climate and Water, Pretoria.

3 (=Midslope)	Rock, Mispah, Hutton, Valsrivier, Avalon, Glencoe, Kroonstad, Westleigh, Wasbank, Longlands, Pans, Swartland, Cartref
4 (=Footslope)	Hutton, Valsrivier, Avalon, Bonheim, Shortlands, Swartland, Glencoe, Kroonstad, Westleigh, Wasbank, Mispah, Longlands, Estcourt, Clovelly, Bainsvlei, Cartref
5 (=Valley bottom)	Hutton, Valsrivier, Oakleaf, Willowbrook, Bonheim, Rensburg, Arcadia, Streambeds, Kroonstad, Katspruit, Westleigh, Rensburg, Longlands, Dundee, Champagne,

From the soil information above the Department of Agriculture's data provides an indication as to the land capability of these soils, as indicated in Figure 17, Figure 18 and Figure 19. The route traverses areas with mostly arable soils (green and light green) that is used for growing of mainly maize.

Site Description

During the site visit, large quantities of soil forms were identified. The soils forms were grouped into management units and are described in detail in the sections below and Figure 17, Figure 18 and Figure 19 illustrates the location of the management units. The land capability (agricultural potential) of the abovementioned soil form is described in more detail in Section 7.1.6.

The management units are broken up into:

- Agricultural Soils;
- Clay Soils;
- Rocky Soils;
- Transitional Soils; and
- Disturbed Soils.

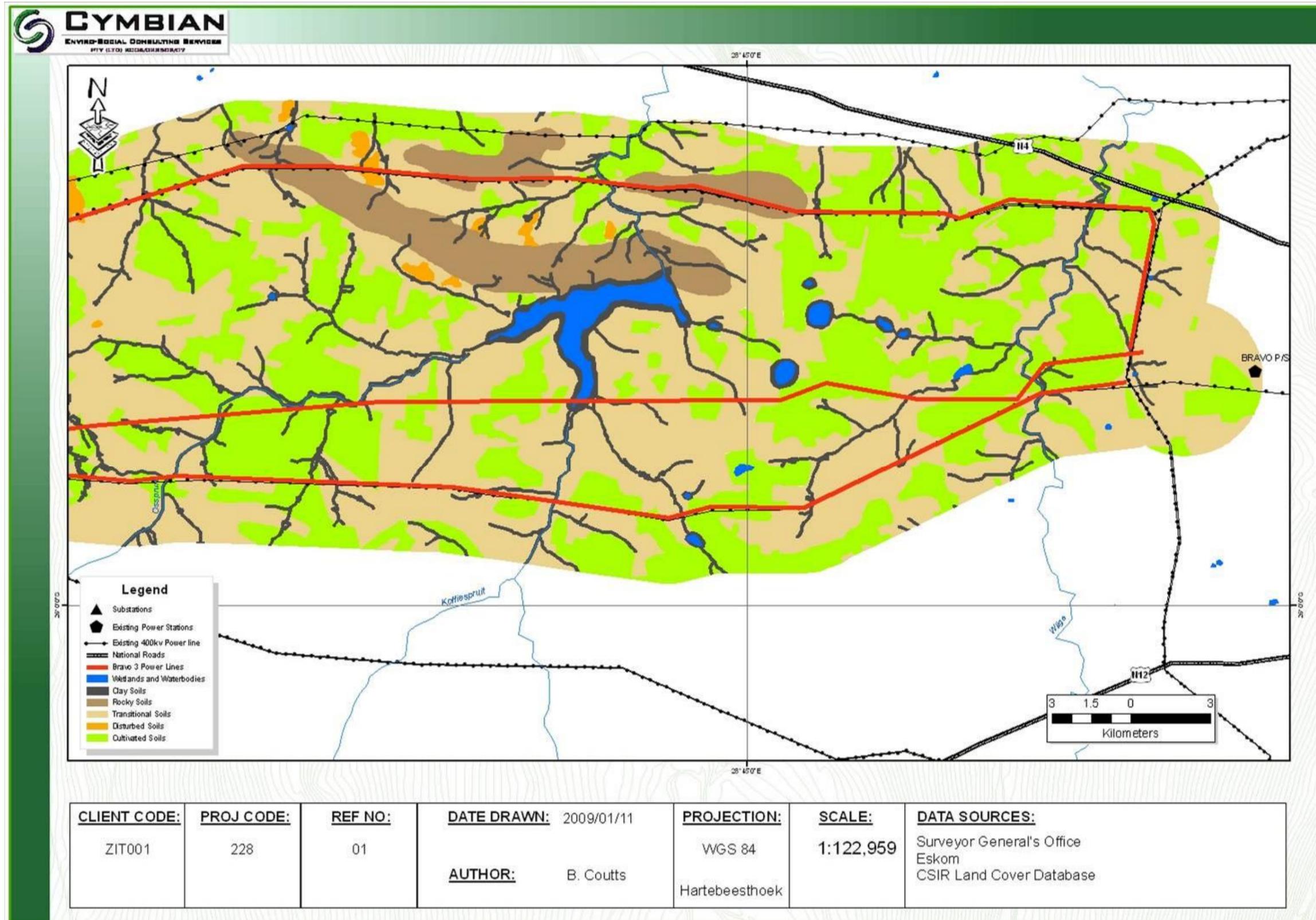


FIGURE 17: SOIL TYPE MAP FOR THE EASTERN PART OF THE SITE

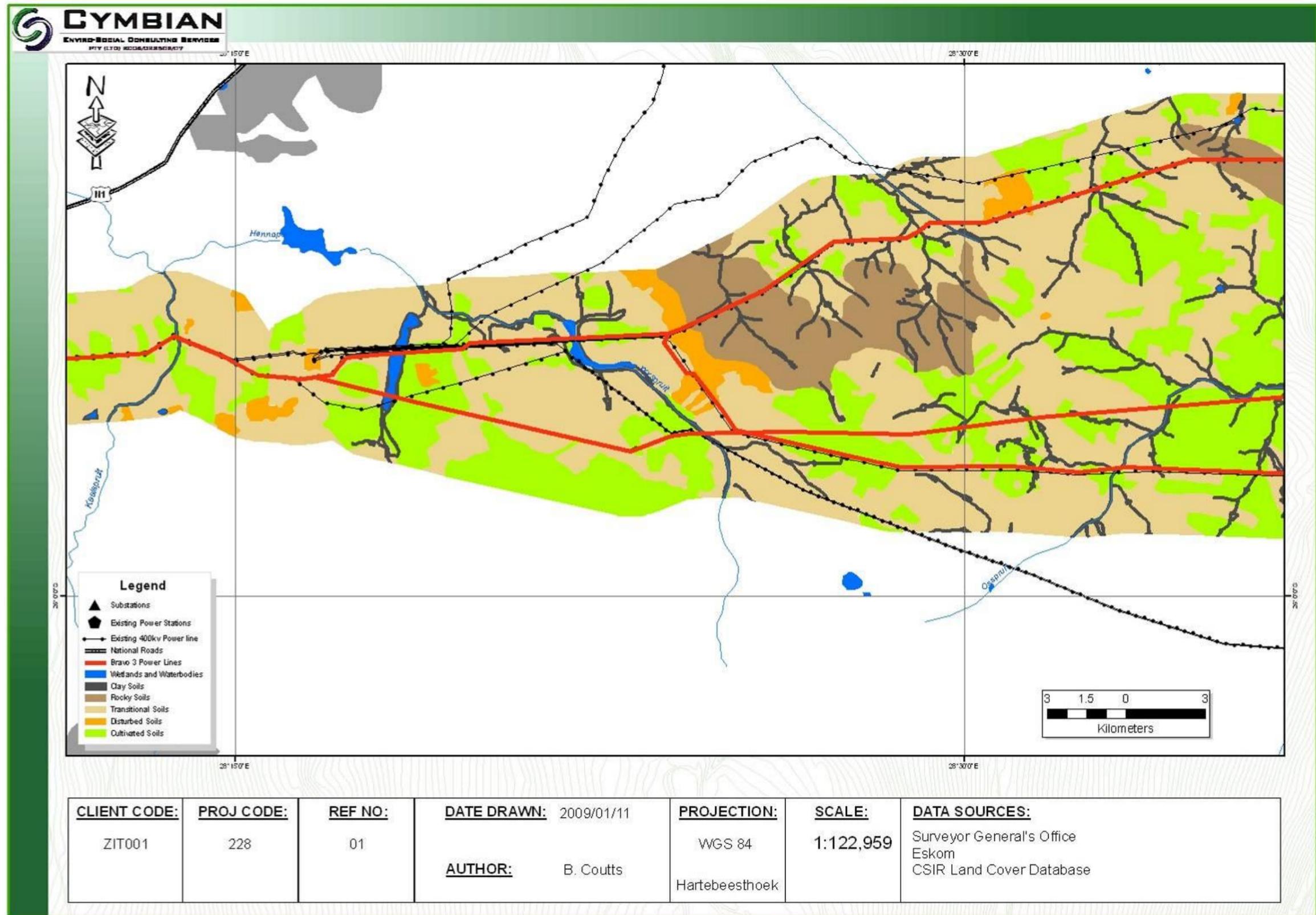


FIGURE 18: SOIL TYPE MAP FOR THE CENTRAL PART OF THE SITE

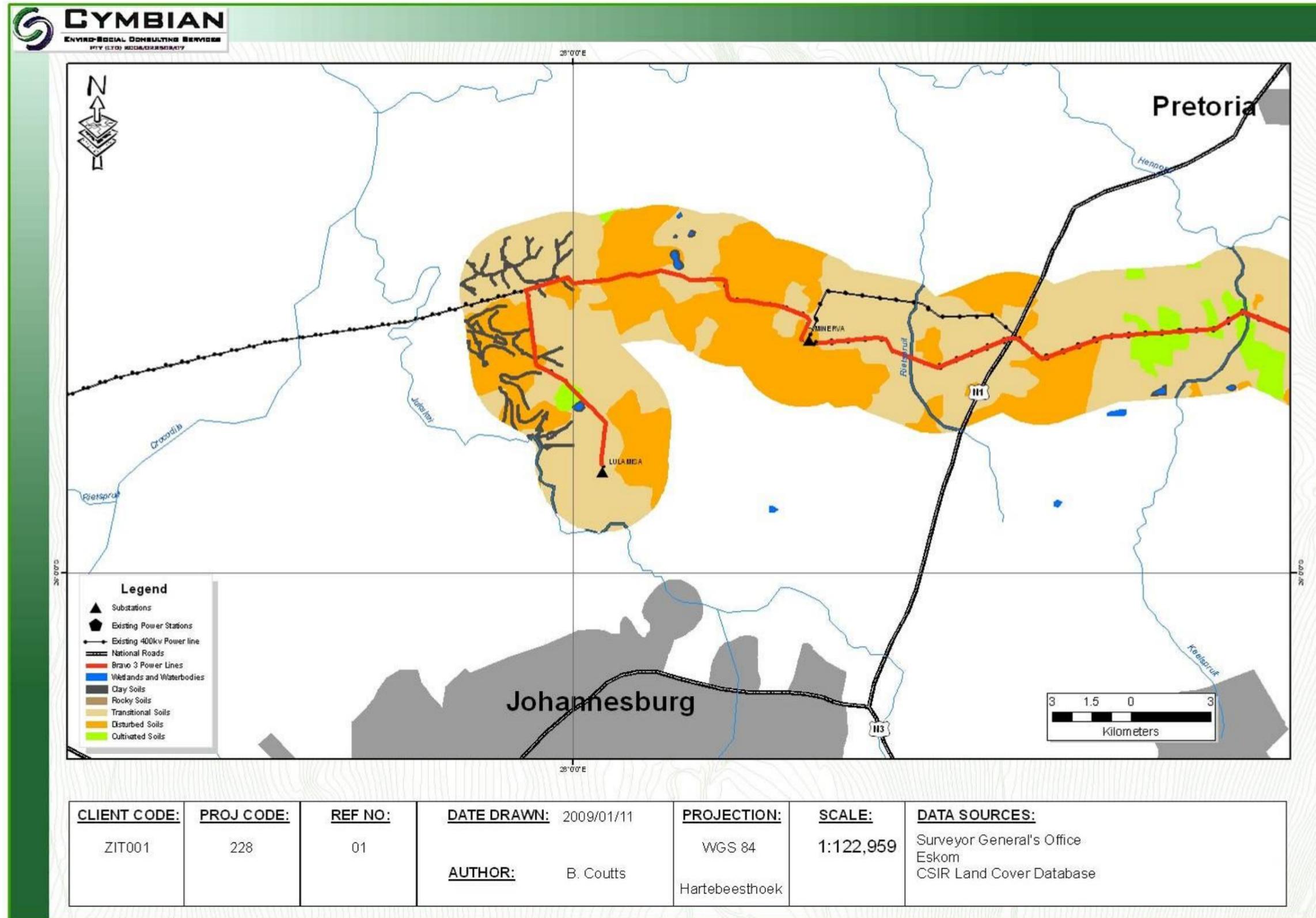


FIGURE 19: SOIL TYPE MAP OF THE WESTERN PART OF THE SITE

Agricultural Soils

The agricultural soils found on site support an industry of commercial maize production. These soils include Hutton, Clovelly, Avalon, Bainsvlei, Glencoe and Shortlands. These soils have deep red or yellow-brown B-horizons with minimal structure, but in the case of Shortlands soils the B-horizon has some degree of structure. These soils drain well and provide excellent to moderate cultivation opportunities. Each of the soils is described in detail below.

Hutton Soil Form

Hutton's are identified on the basis of the presence of an apedal (structureless) "red" B-horizon as indicated in Figure 20 below. These soils are the main agricultural soil found in South Africa, due to the deep, well-drained nature of these soils. The Hutton soils found on the site are restricted to the midslopes of the site.

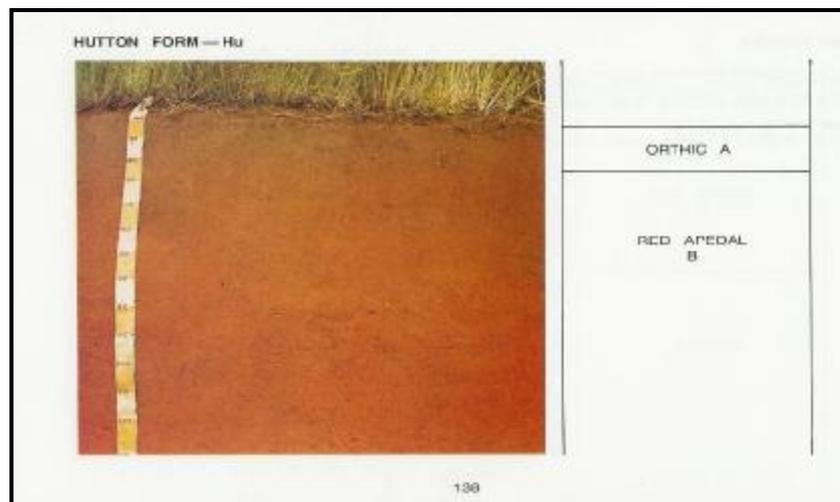


FIGURE 20 : HUTTON SOIL FORM (SOIL CLASSIFICATION, 1991)

Clovelly Soil Form

Clovelly soils can be identified as an apedal "yellow" B-horizon as indicated in Figure 21 below. These soils along with Hutton soils are the main agricultural soil found within South Africa, due to the deep, well-drained nature of these soils.