

Proposed Witberg Wind Energy Facility and associated
infrastructure,
near Matjiesfontein
Western Cape Province

Amendment Report to Visual Impact Assessment

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Prepared for
Savannah Environmental (Pty) Ltd
On behalf of Witberg Wind Power (Pty) Ltd

05 November 2018

1. Introduction

Witberg Wind Power (Pty) Ltd is proposing to amend the environmental authorisation for the proposed Witberg Wind Energy Facility (WEF) and associated infrastructure near Matjiesfontein in the Western Cape. This amendment report addresses the potential changes in visual impact significance relating to the new proposed amendments. The location of the proposed Witberg WEF is indicated in Figure 1.

2. Original VIA

The original Visual Impact Assessment (VIA) for the Witberg wind farm, (Alternative 3, March 2011), consisting of 40 wind turbines, was based on hub heights of 80m and a rotor diameter of 90m. The visual significance rating after mitigation at that time was medium to high, given the large number of turbines, the visual prominence of the wind turbines on the Witberg skyline and visibility from the historic Matjiesfontein settlement and N1 National Road.

3. Subsequent Authorisation

Subsequently, a revised layout, (Layout Revision 7), was submitted, consisting of 27 wind turbines, which received authorisation from the relevant Competent Authority (Department of Environmental Affairs - DEA). The authorisation allowed for hub Heights of up to 92m, and rotor diameters of up to 116m.

The finding at the time was that the slight increase in the hub height and rotor diameter of the proposed wind turbines was considered to be marginal, and would not have a significant effect on the viewshed and potential visual impacts. In addition, the fewer number of turbines would help to decrease the potential visual clutter of turbines on the exposed ridgeline.

4. Proposed Amendments

The currently proposed amendments involve the following:

- Range of Rotor diameter: From 116m, to up to 136m;
 - Range of Hub height: From 92m, to up to 120m; and
 - Range of Wind turbine capacity: From 3MW, to up to 5MW.
 - Wind farm layout to be re-positioned (turbines, substation, power lines, construction camp and associated infrastructure), as indicated in Figures 2 and 3.
 - Change in contact details of the holder of the EA;
 - Extend the validity of the EA by an additional two (2) years;
 - Amendment of Condition 40 as per additional conditions to be added to the EA in the amendment of the EA (Ref: LSA 105-439); and
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- Increase the heights of the wind measuring masts from 80m to 120m.

5. Viewshed Analysis

A viewshed analysis has been prepared to provide a comparison between the previous authorised layout and turbine specifications and the current proposed amendments (Figures 4 and 5).

The analysis indicated that the proposed amendments would result in a negligible change to the viewshed (zone of visual exposure) as indicated in

Figure 6. Photomontages have also been prepared to indicate the visibility of the amended proposals from selected viewpoints, (Figures 7 and 8).

The visual analysis indicates that the current amendments will have a zero or a negligible effect on the significance of impacts identified in the original VIA Report and subsequent authorised amendment.

6. Advantages and Disadvantages

Wind turbines:

The relocation of three turbines further west (further from Matjiesfontein) could be seen as an advantage. Overall, the viewshed analysis and photomontages indicate that the difference in visibility of the turbines would be largely imperceptible.

Substation:

The relocation of the substation on the same ridge as the turbines could also be seen as an advantage. The relatively low height of the substation and 4,5km distance from the N1 means that visibility would not be a major issue. Nevertheless, the substation should be micro-sited to be as far south on the flattish ridge as possible to reduce its visibility from the north.

Powerline connection:

The powerline connection further east means that it will be slightly further away from the N1 National Road, which could be seen as an advantage in visual terms.

Wind measuring mast:

The increase in height of the wind measuring mast from 80 to 120m would have little or no visual effect, given the slender nature of the mast and the distance to any visual receptors.

7. Mitigations

The layout of the wind farm has already been through a number of iterations based on the specialist studies and engineering considerations. The visual mitigations contained in the original VIA of 2011 would still have relevance, and no new visual mitigations are deemed necessary.

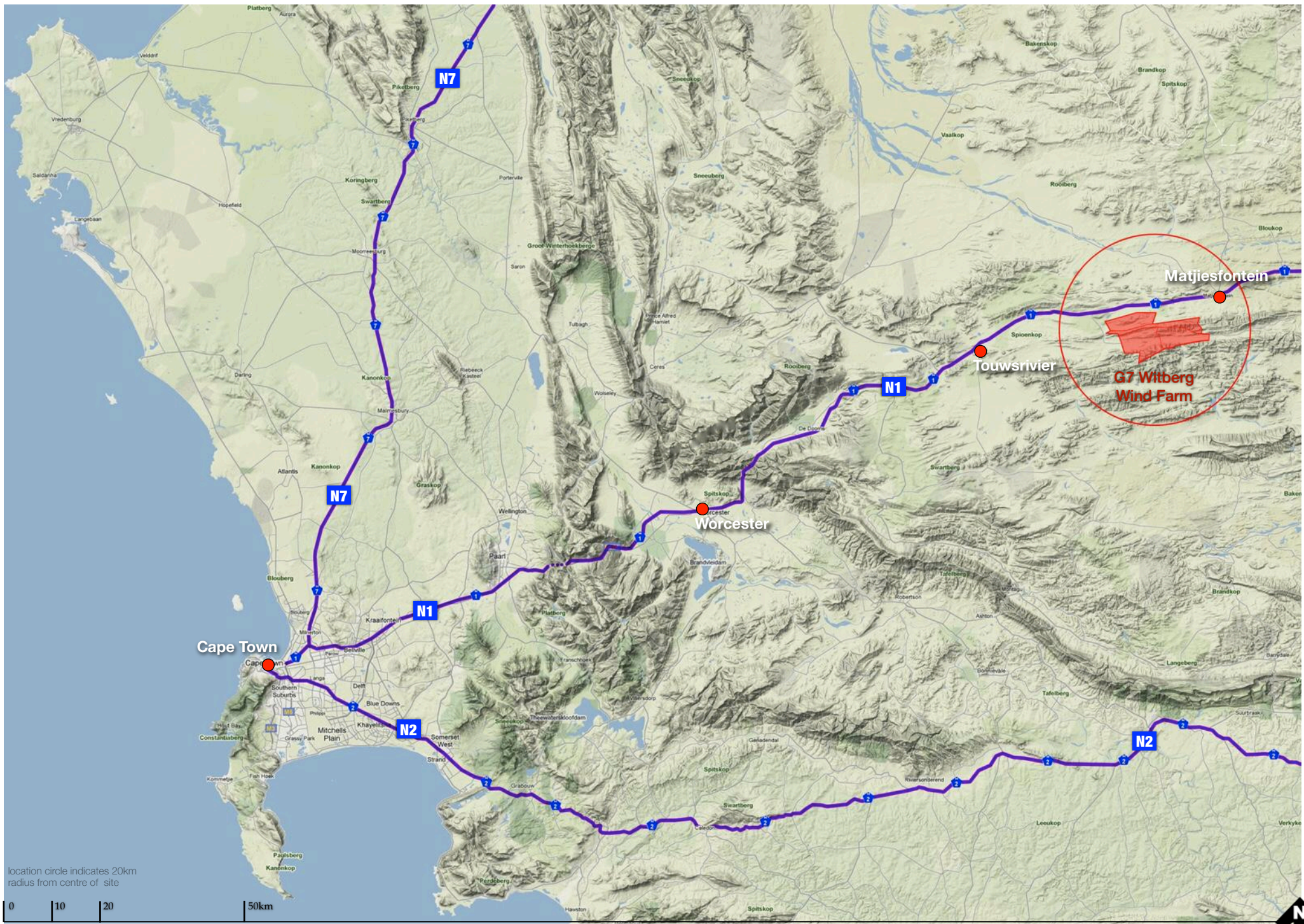
8. Conclusion

The increased hub height, rotor diameter and blade tip height would result in similar overall visual impact significance ratings to that determined in the original VIA and subsequent authorised amendment, as indicated in Paragraph 5 above.

The proposed amendments to the wind turbines and related infrastructure would result in no change in the overall visual impact significance ratings in relation to those of the previous authorised proposals.

As the baseline visual environment has not changed since the previous authorisation, the extension of the validity of the Environmental Assessment by two years will have no bearing on the visual environment.

Provided that the visual mitigations listed in the original visual impact study (including post-construction rehabilitation of the site) are adhered to, the existing Environmental Authorisation for the Witberg WEF should still be valid. Our opinion from a visual perspective is that the proposed amendments should be approved.



location circle indicates 20km
radius from centre of site

Base Map Source : Google Maps 2010

scale 1 : 1 000 000

Figure 1 • Witberg Wind Energy Facility Locality Map

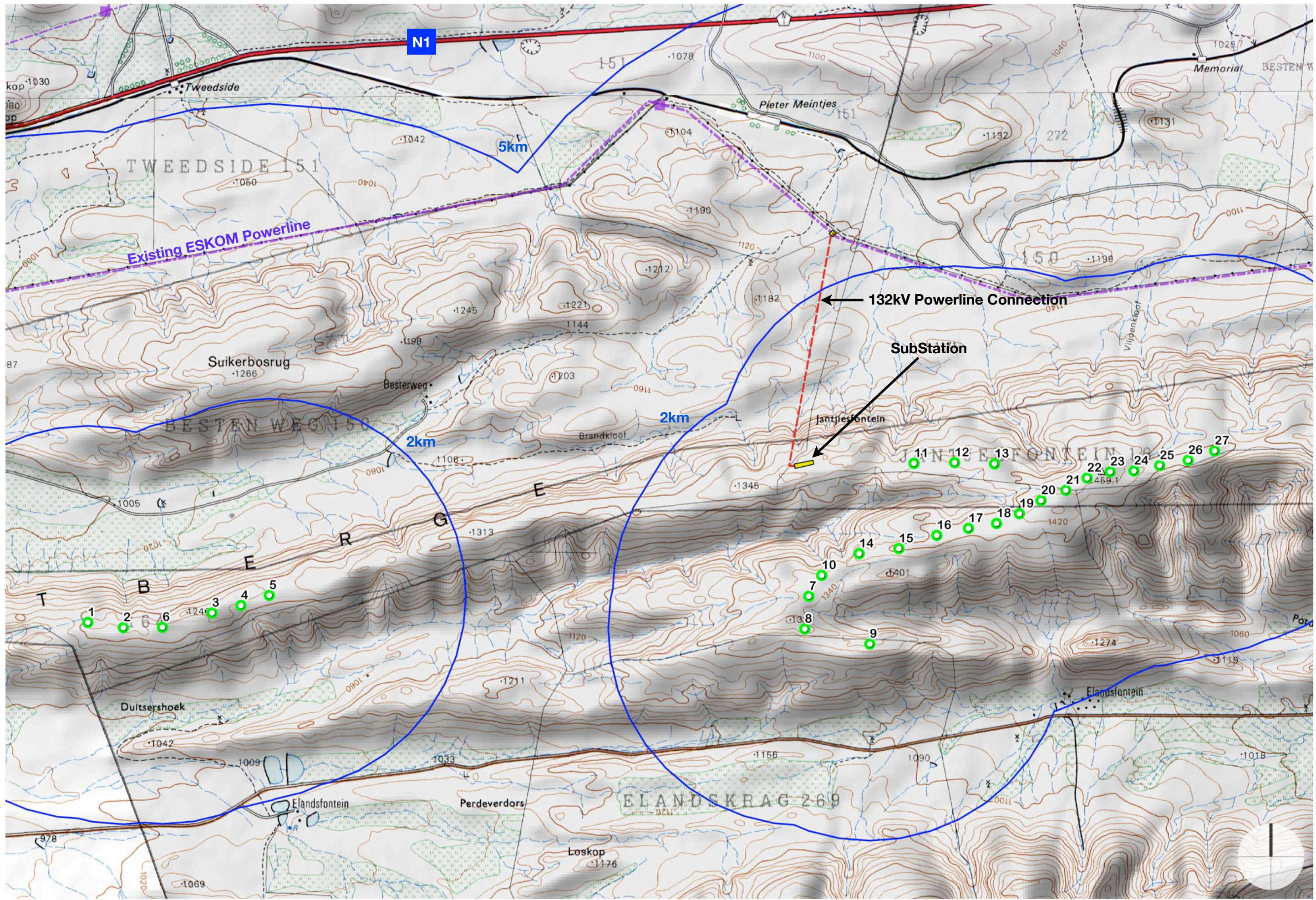


Figure 2 • Witberg Previous Authorized Layout • 27x 92m High Wind Turbines



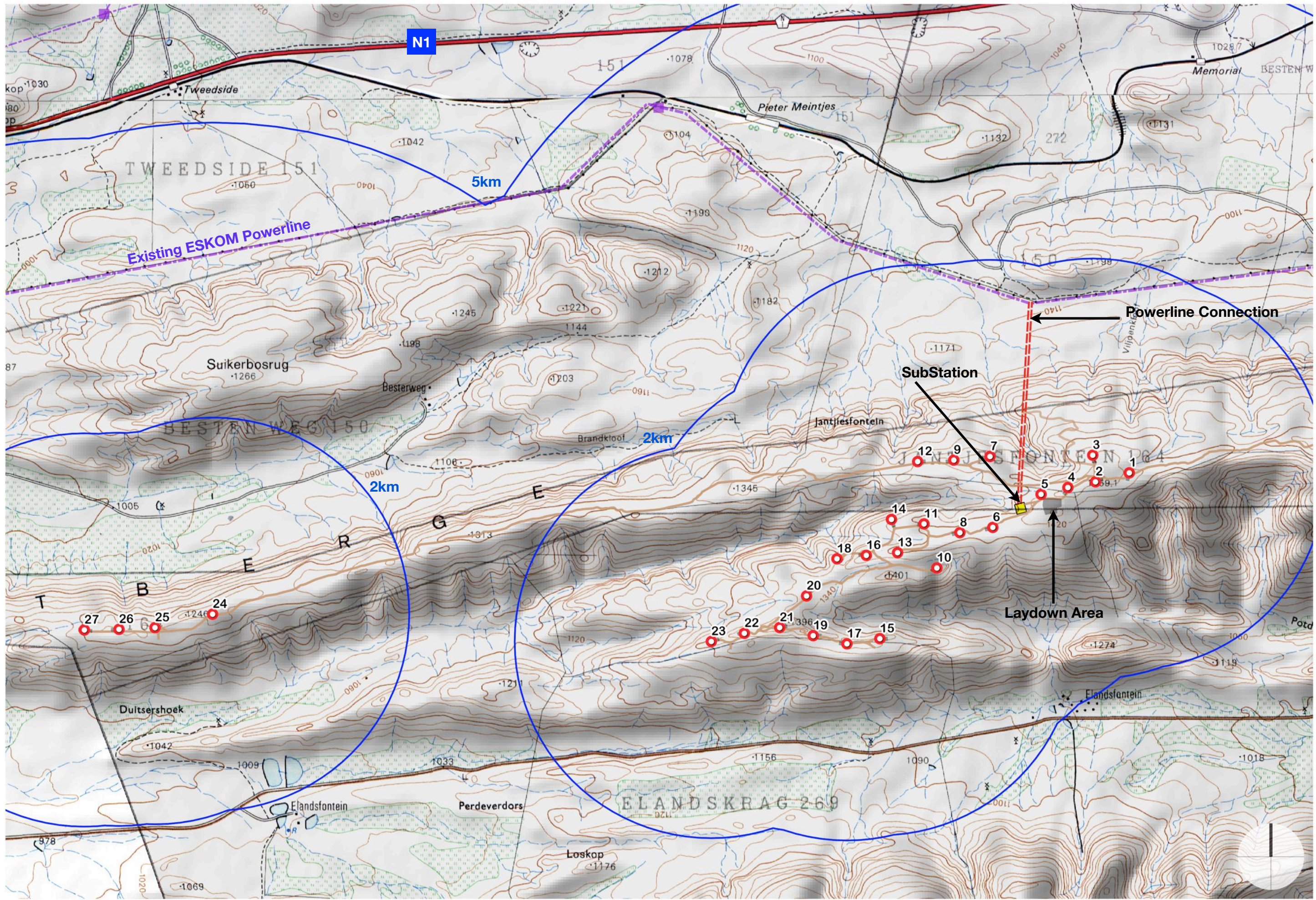


Figure 3 • Witberg Proposed Amended Layout • 27x 120m High Wind Turbines



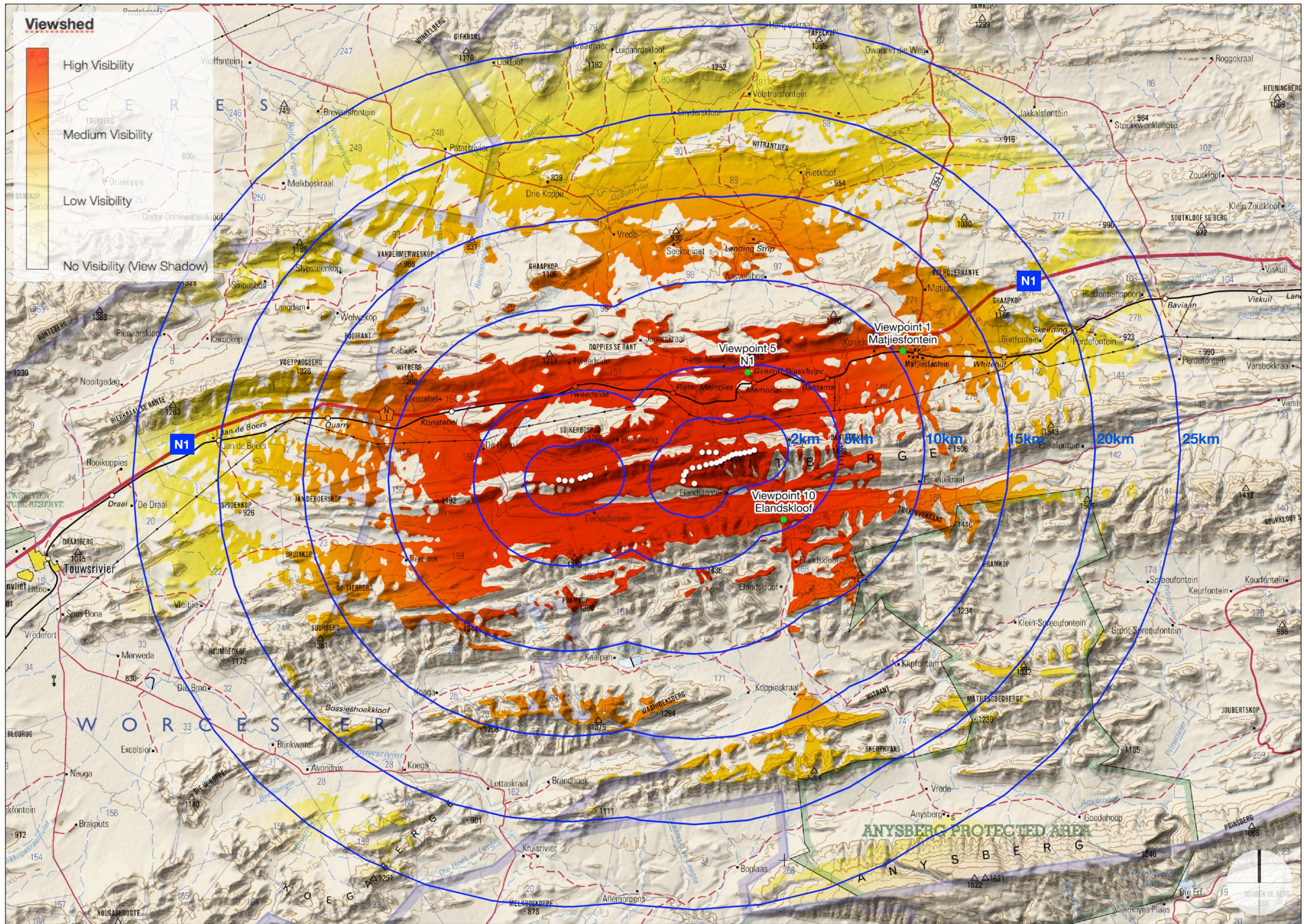
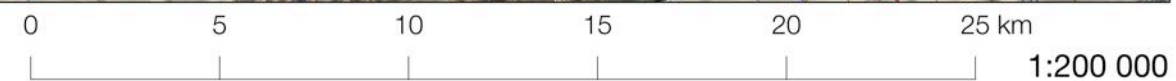


Figure 4 • Witberg Previous Authorized Layout Viewshed • 27x 92m High Wind Turbines



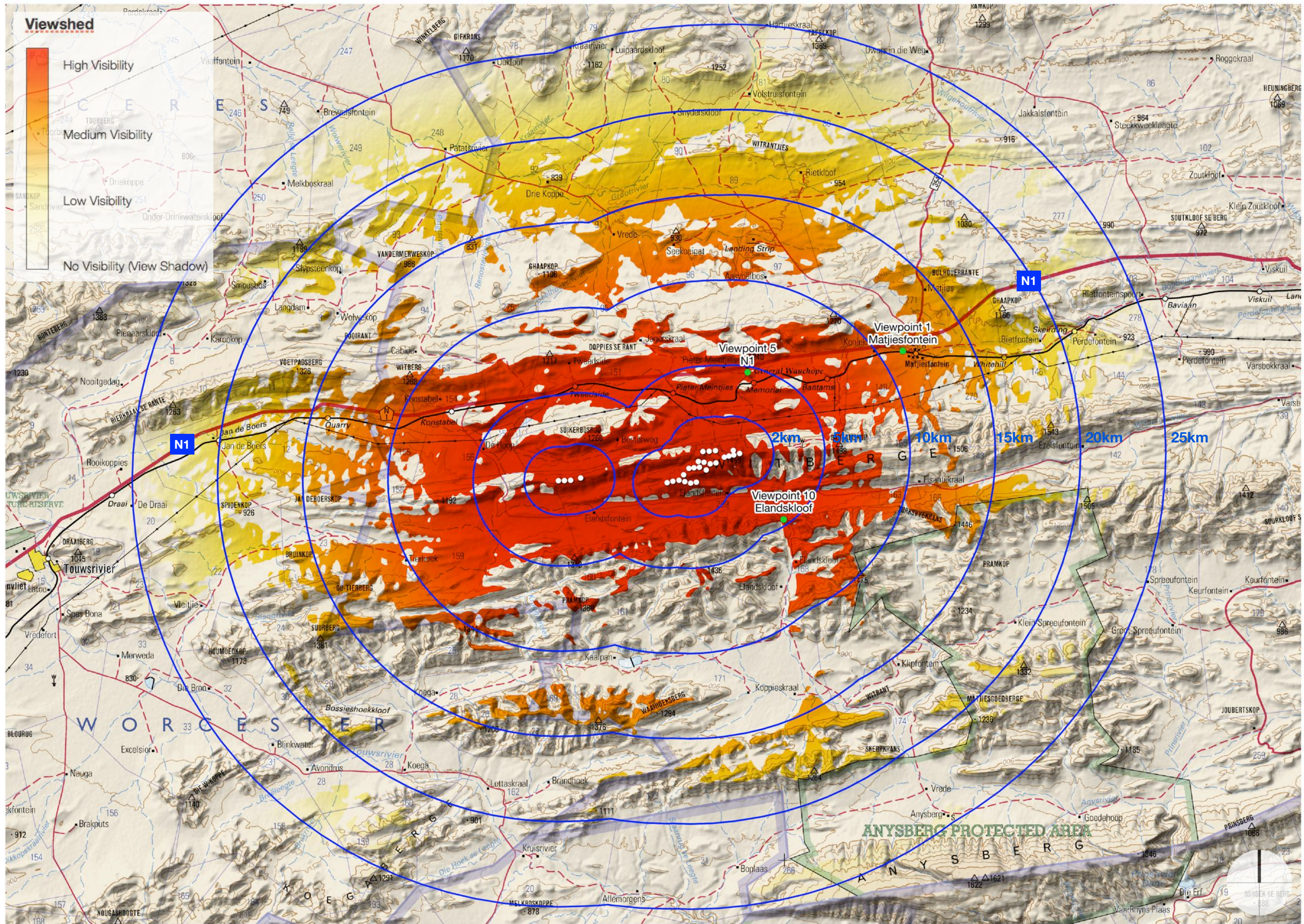


Figure 5 • Witberg Proposed Amended Layout Viewshed • 27x 120m High Wind Turbines



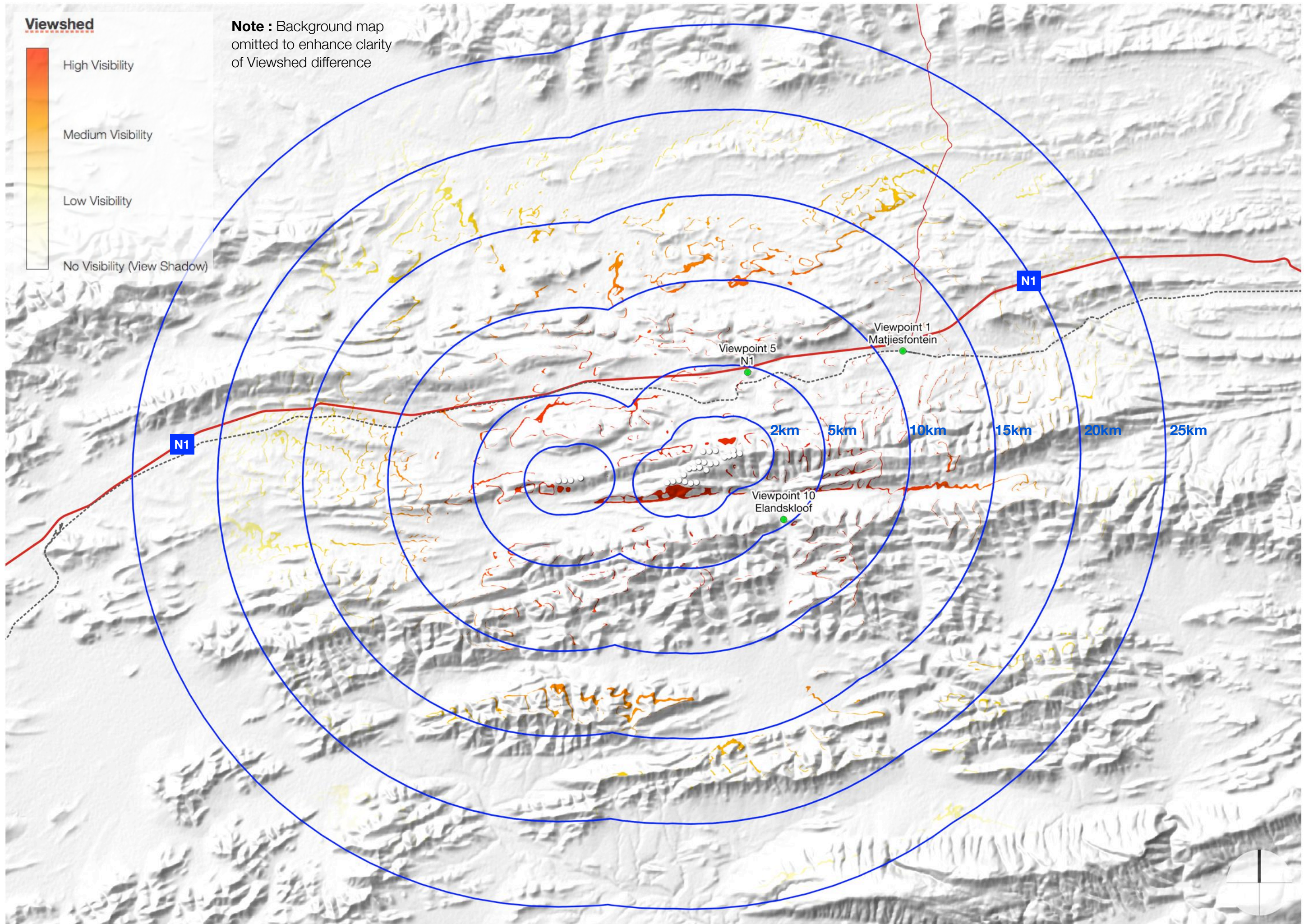


Figure 6 • Witberg DIFFERENCE (Increased) Viewshed • 92 - 120m High Wind Turbines



Viewpoint 1 2018 Amendment • looking south-west from Matjiesfontein Rail Crossing
distance to nearest turbine • 10.5km

33.2308S, 20.5761E • 08/10/2010 • 08h47



Viewpoint 5 2018 Amendment • looking east from N1 Memorial
distance to nearest turbine • 4.5km

33.2417S, 20.4783E • 08/10/2010 • 11h17



wind turbines clearly visible on skyline

sentec radio tower

Viewpoint 10 2018 Amendment • looking north from Elandskloof Gate
distance to nearest turbine • 4.3km

33.3197S, 20.5006E • 08/10/2010 • 12h37

05 November 2018

Shaun Taylor
Savannah Environmental PTY LTD

Per email : shaun@savannahsa.com

Ré : Witberg WEF Part 2 EA Amendment : Revised layout dated 17/08/2018

Dear Shaun,

We have reviewed the changes to the Witberg WEF Layout sent on the 17th August and we can confirm that we do not believe that any changes or updates to the Visual Impact Amendment report are necessary and that the original findings will not be affected.



Quinton Lawson
Bernard Oberholzer