

## ANTICIPATED IMPACT OF THE DEVELOPMENT

### GRAVESITE 1

IMPACT TABLE FORMAT		
Heritage component	<i>Heritage sites of significance</i>	
Issue/Impact/Heritage Impact/Nature	<i>Mining Right Application on Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668.</i>	
<i>Extent</i>	<i>Local (2)</i>	
<i>Probability</i>	<i>Probable (3)</i>	
<i>Reversibility</i>	<i>Irreversible (4)</i>	
<i>Irreplaceable loss of resources</i>	<i>Significant loss of resource (3)</i>	
<i>Duration</i>	<i>Medium term (2)</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect (2)</i>	
<i>Intensity/magnitude</i>	<i>High (3)</i>	
<i>Significance Rating of Potential Impact</i>	<i>48 points. The impact will have a medium negative impact rating.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	1	1
Reversibility	2	2
Irreplaceable loss	1	1
Duration	2	2
Cumulative effect	1	1
Intensity/magnitude	1	1
Significance rating	48 (Medium Negative)	8 (low negative)
Mitigation measure	<i>It is recommended that the graves be relocated before any mining activity commences.</i>	

### GRAVESITE 2

IMPACT TABLE FORMAT	
Heritage component	<i>Heritage sites of significance</i>
Issue/Impact/Heritage Impact/Nature	<i>Mining Right Application on Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668.</i>
<i>Extent</i>	<i>Local (2)</i>
<i>Probability</i>	<i>Probable (3)</i>
<i>Reversibility</i>	<i>Irreversible (4)</i>
<i>Irreplaceable loss of resources</i>	<i>Significant loss of resources (3)</i>
<i>Duration</i>	<i>Medium term (2)</i>
<i>Cumulative effect</i>	<i>Low cumulative effect (2)</i>
<i>Intensity/magnitude</i>	<i>High (3)</i>
<i>Significance Rating of Potential Impact</i>	<i>48 points. The impact will have a medium negative impact rating.</i>

	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	3	1
Reversibility	4	2
Irreplaceable loss	3	1
Duration	2	2
Cumulative effect	2	1
Intensity/magnitude	3	1
Significance rating	48 (medium negative)	8 (low negative)
Mitigation measure	<i>It is recommended that the graves be relocated before any mining activity commences.</i>	

## KRAAL

IMPACT TABLE FORMAT		
Heritage component	<i>Heritage sites of significance</i>	
Issue/Impact/Heritage Impact/Nature	<i>Mining Right Application on Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668.</i>	
<i>Extent</i>	<i>Local (2)</i>	
<i>Probability</i>	<i>Probable (3)</i>	
<i>Reversibility</i>	<i>Irreversible (4)</i>	
<i>Irreplaceable loss of resources</i>	<i>Significant loss of resources (3)</i>	
<i>Duration</i>	<i>Medium term (2)</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect (2)</i>	
<i>Intensity/magnitude</i>	<i>High(3)</i>	
<i>Significance Rating of Potential Impact</i>	<i>48 points. The impact will have a low negative impact rating.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	3	1
Reversibility	4	2
Irreplaceable loss	3	1
Duration	2	2
Cumulative effect	3	1
Intensity/magnitude	3	1
Significance rating	48 (low negative)	8 (low negative)
Mitigation measure	<i>It is recommended that the livestock enclosure be properly documented before a permit for its destruction is issued.</i>	

## OLD BRIDGE

IMPACT TABLE FORMAT	
Heritage component	<i>Heritage sites of significance</i>

Issue/Impact/Heritage Impact/Nature	<i>Mining Right Application on Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668.</i>	
<i>Extent</i>	<i>Local</i>	
<i>Probability</i>	<i>Unlikely</i>	
<i>Reversibility</i>	<i>Totally Reversible</i>	
<i>Irreplaceable loss of resources</i>	<i>Insignificant loss of resources</i>	
<i>Duration</i>	<i>Medium term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>Low</i>	
<i>Significance Rating of Potential Impact</i>	<i>8 points. The impact will have a low negative impact rating.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	1	1
Reversibility	2	2
Irreplaceable loss	1	1
Duration	2	2
Cumulative effect	1	1
Intensity/magnitude	1	1
Significance rating	8 (low negative)	8 (low negative)
Mitigation measure	<i>No further mitigation is necessary. The photographic documentation already handed I will suffice in this regard.</i>	

## OLD MINE

IMPACT TABLE FORMAT		
Heritage component	<i>Heritage sites of significance</i>	
Issue/Impact/Heritage Impact/Nature	<i>Mining Right Application on Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668.</i>	
<i>Extent</i>	<i>Local</i>	
<i>Probability</i>	<i>Unlikely</i>	
<i>Reversibility</i>	<i>Totally Reversible</i>	
<i>Irreplaceable loss of resources</i>	<i>Insignificant loss of resources</i>	
<i>Duration</i>	<i>Medium term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>Low</i>	
<i>Significance Rating of Potential Impact</i>	<i>8 points. The impact will have a low negative impact rating.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	1	1
Reversibility	2	2
Irreplaceable loss	1	1
Duration	2	2



Cumulative effect	1	1
Intensity/magnitude	1	1
Significance rating	8 (low negative)	8 (low negative)
Mitigation measure	<i>No further mitigation is necessary</i>	

## STONE TOOLS

IMPACT TABLE FORMAT		
Heritage component	<i>Heritage sites of significance</i>	
Issue/Impact/Heritage Impact/Nature	<i>Mining Right Application on Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668.</i>	
<i>Extent</i>	<i>Local</i>	
<i>Probability</i>	<i>Unlikely</i>	
<i>Reversibility</i>	<i>Totally Reversible</i>	
<i>Irreplaceable loss of resources</i>	<i>Insignificant loss of resources</i>	
<i>Duration</i>	<i>Medium term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>Low</i>	
<i>Significance Rating of Potential Impact</i>	<i>8 points. The impact will have a low negative impact rating.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	1	1
Reversibility	2	2
Irreplaceable loss	1	1
Duration	2	2
Cumulative effect	1	1
Intensity/magnitude	1	1
Significance rating	8 (low negative)	8 (low negative)
Mitigation measure	<i>No further mitigation is required.</i>	

## ASSESSING VISUAL IMPACT

Visual impacts of developments result when sites that are culturally celebrated are visually affected by a development. The exact parameters for the determination of visual impacts have not yet been rigidly defined and are still mostly open to interpretation. CNdV Architects and The Department of Environmental Affairs and Development Planning (2006) have developed some guidelines for the management of the visual impacts of wind turbines in the Western Cape, although these have not yet been formalised. In these guidelines they recommend a buffer zone of 1km around significant heritage sites to minimise the visual impact.

Due to the fact that the project will mainly involve sub-surface infrastructure it is not anticipated that any visual impacts will be encountered.

## ASSUMPTIONS AND RESTRICTIONS

- It is assumed that the South African Heritage Resources Information System (SAHRIS) database

- locations are correct
- It is assumed that the paleontological information collected for the project is comprehensive.
- It is assumed that the social impact assessment and public participation process of the Basic Assessment will result in the identification of any intangible sites of heritage potential.

## ASSESSMENT OF IMPACTS

### IMPACT STATEMENT

#### BUILT ENVIRONMENT

Some structures associated with rural living were identified;

- Brick outbuildings (modern and historic)
- Barb-wire fences (modern)
- Mud-brick huts (modern)
- Dirt roads (modern)
- Footpaths

#### Mitigation

None of the structures will be affected by the pipeline construction activities.

#### CULTURAL LANDSCAPE

The following landscape types were identified during the study.

Landscape Type	Description	Occurrence still possible?	Likely occurrence?
1 Paleontological	Mostly fossil remains. Remains include microbial fossils such as found in Baberton Greenstones	Yes, sub-surface	Unlikely
2 Archaeological	Evidence of human occupation associated with the following phases – Early-, Middle-, Late Stone Age, Early-, Late Iron Age, Pre-Contact Sites, Post-Contact Sites	Yes	Likely
3 Historic Built Environment	<ul style="list-style-type: none"> <li>- Historical townscapes/streetscapes</li> <li>- Historical structures; i.e. older than 60 years</li> <li>- Formal public spaces</li> <li>- Formally declared urban conservation areas</li> <li>- Places associated with social identity/displacement</li> </ul>	Yes	Likely
4 Historic Farmland	<p>These possess distinctive patterns of settlement and historical features such as:</p> <ul style="list-style-type: none"> <li>- Historical farm yards</li> <li>- Historical farm workers villages/settlements</li> <li>- Irrigation furrows</li> <li>- Tree alignments and groupings</li> <li>- Historical routes and pathways</li> <li>- Distinctive types of planting</li> <li>- Distinctive architecture of cultivation e.g. planting blocks, trellising, terracing, ornamental planting.</li> </ul>	Yes	Likely
5 Historic rural town	<ul style="list-style-type: none"> <li>- Historic mission settlements</li> <li>- Historic townscapes</li> </ul>	No	No
6 Pristine natural landscape	<ul style="list-style-type: none"> <li>- Historical patterns of access to a natural amenity</li> <li>- Formally proclaimed nature reserves</li> <li>- Evidence of pre-colonial occupation</li> </ul>	Yes	Unlikely



	<ul style="list-style-type: none"> <li>- Scenic resources, e.g. view corridors, viewing sites, visual edges, visual linkages</li> <li>- Historical structures/settlements older than 60 years</li> <li>- Pre-colonial or historical burial sites</li> <li>- Geological sites of cultural significance.</li> </ul>		
7 Relic Landscape	<ul style="list-style-type: none"> <li>- Past farming settlements</li> <li>- Past industrial sites</li> <li>- Places of isolation related to attitudes to medical treatment</li> <li>- Battle sites</li> <li>- Sites of displacement,</li> </ul>	No	No
8 Burial grounds and grave sites	<ul style="list-style-type: none"> <li>- Pre-colonial burials (marked or unmarked, known or unknown)</li> <li>- Historical graves (marked or unmarked, known or unknown)</li> <li>- Graves of victims of conflict</li> <li>- Human remains (older than 100 years)</li> <li>- Associated burial goods (older than 100 years)</li> <li>- Burial architecture (older than 60 years)</li> </ul>	Yes,	Yes
9 Associated Landscapes	<ul style="list-style-type: none"> <li>- Sites associated with living heritage e.g. initiation sites, harvesting of natural resources for traditional medicinal purposes</li> <li>- Sites associated with displacement &amp; contestation</li> <li>- Sites of political conflict/struggle</li> <li>- Sites associated with an historic event/person</li> <li>- Sites associated with public memory</li> </ul>	No	No
10 Historical Farmyard	<ul style="list-style-type: none"> <li>- Setting of the yard and its context</li> <li>- Composition of structures</li> <li>- Historical/architectural value of individual structures</li> <li>- Tree alignments</li> <li>- Views to and from</li> <li>- Axial relationships</li> <li>- System of enclosure, e.g. defining walls</li> <li>- Systems of water reticulation and irrigation, e.g. furrows</li> <li>- Sites associated with slavery and farm labour</li> <li>- Colonial period archaeology</li> </ul>	Yes	Yes
11 Historic institutions	<ul style="list-style-type: none"> <li>- Historical prisons</li> <li>- Hospital sites</li> <li>- Historical school/reformatory sites</li> <li>- Military bases</li> </ul>	No	No
12 Scenic visual	<ul style="list-style-type: none"> <li>- Scenic routes</li> </ul>	No	No
13 Amenity landscape	<ul style="list-style-type: none"> <li>- View sheds</li> <li>- View points</li> <li>- Views to and from</li> <li>- Gateway conditions</li> <li>- Distinctive representative landscape conditions</li> <li>- Scenic corridors</li> </ul>	No	No

## Mitigation

It is recommended that the development designs take into account the positive and negative characteristics of the existing cultural landscape type and that they endeavor to promote the positive aspects while at the same time mitigating the negative aspects.

## RESOURCE MANAGEMENT RECOMMENDATIONS

This study analysed the documented data available as well as investigated the surface occurrences of heritage sites for Portion 1 of the Farm Magoloring 668 and Portion 6 (portion of Portion 2) of the Farm Magoloring 668 in the Northern Cape Province, close to the town of Postmasburg.

Although several stone tools were noticed over the survey area none of these are of major significance.

It is recommended that Grave Site 1 and 2 be relocated to a locally administered cemetery.

Although unlikely, sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy plant cover in other areas. The following indicators of unmarked sub-surface sites could be encountered:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments such as pottery shards either historic or pre-contact;
- Stone concentrations of any formal nature.

The following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above:

- All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.
- All construction in the immediate vicinity (50m radius of the site) should cease.
- The heritage practitioner should be informed as soon as possible.
- In the event of obvious human remains the South African Police Services (SAPS) should be notified.
- Mitigation measures (such as refilling etc.) should not be attempted.
- The area in a 50m radius of the find should be cordoned off with hazard tape.
- Public access should be limited.
- The area should be placed under guard.
- No media statements should be released until such time as the heritage practitioner has had sufficient time to analyze the finds.

## REFERENCES CITED

General Information for archaeologists and palaeontologists on the National Heritage Resources Act (No 25 of 1999).

National Heritage Resources Act (No. 25 of 1999).

National Heritage Resources Act (No 25 of 1999). 2002. Regulations.



SAHRA. 2002. General Introduction to surveys, impact assessments and management plans.

Beaumont, P.B. and Boshier A.K. (1974). *Report on Test Excavations in a Prehistoric Pigment Mine near Postmasburg, Northern Cape*. The South African Archaeological Bulletin, Vol.29, No 113/114 (Jun., 1974), pp. 41 – 59.

Bergh, J.S. 1999 *Geskiedenisatlas van die Vier Noordelike Provinsies*. Van Schaik, Pretoria.

Breutz, P.J. 1963. *The Tribes of the Districts of Kuruman and Postmasburg*. Department of Bantu Administration and Development, Ethnological Publication No. 49.

Couzens, R., Sadr, K. *Rippled Ware at Blinklipkop, Northern Cape*. The South African Archaeological Bulletin, Vol. 65, No. 192 (December 2010), pp. 196 – 203.

Forssman, T.R., Kuman, K, Leader, G.M., Gibbon, R.J. *A Later Stone Age Assemblage from Canteen Kopje, Northern Cape*. The South African Archaeological Bulletin, Vol. 65, No. 192 (December 2010), pp. 204-214.

Humphreys, A.J.B. *Note on the Southern Limits of Iron Age Settlement in the Northern Cape*. The South African Archaeological Bulletin, Vol 31, No. 121/122 (jun., 1976), pp. 54-57.

Humphreys, A.J.B., *Cultural Material from Burials on the Farm St. Cair, Douglas Area, Northern Cape*. The South African Archaeological Bulletin, Vol 37, No. 136 (Dec., 1982), pp. 68-70.

Legassick, M. 2010. *The politics of a South African frontier: the Griqua, the Sotho - Tswana and the missionaries, 1780 - 1840*. Basler Afrika Bibliographien, Basel.

Mitchell, P. 2002. *The Archaeology of Southern Africa*. Cambridge University Press, Cambridge.

S.A. Manganese, 1977. *Kalahari Wealth: The Story of Manganese 1926 - 1976*. Purnell, Cape Town.

Snyman, P.H.R. 1983. *Postmasburg: 'n Geskiedkundige Oorsig*. Human Sciences Research Council, Pretoria.

Snyman, P.H.R. 1983. *Die Ontstaan en Groei van Postmasburg in Contree* No. 13, pp. 4 - 26.

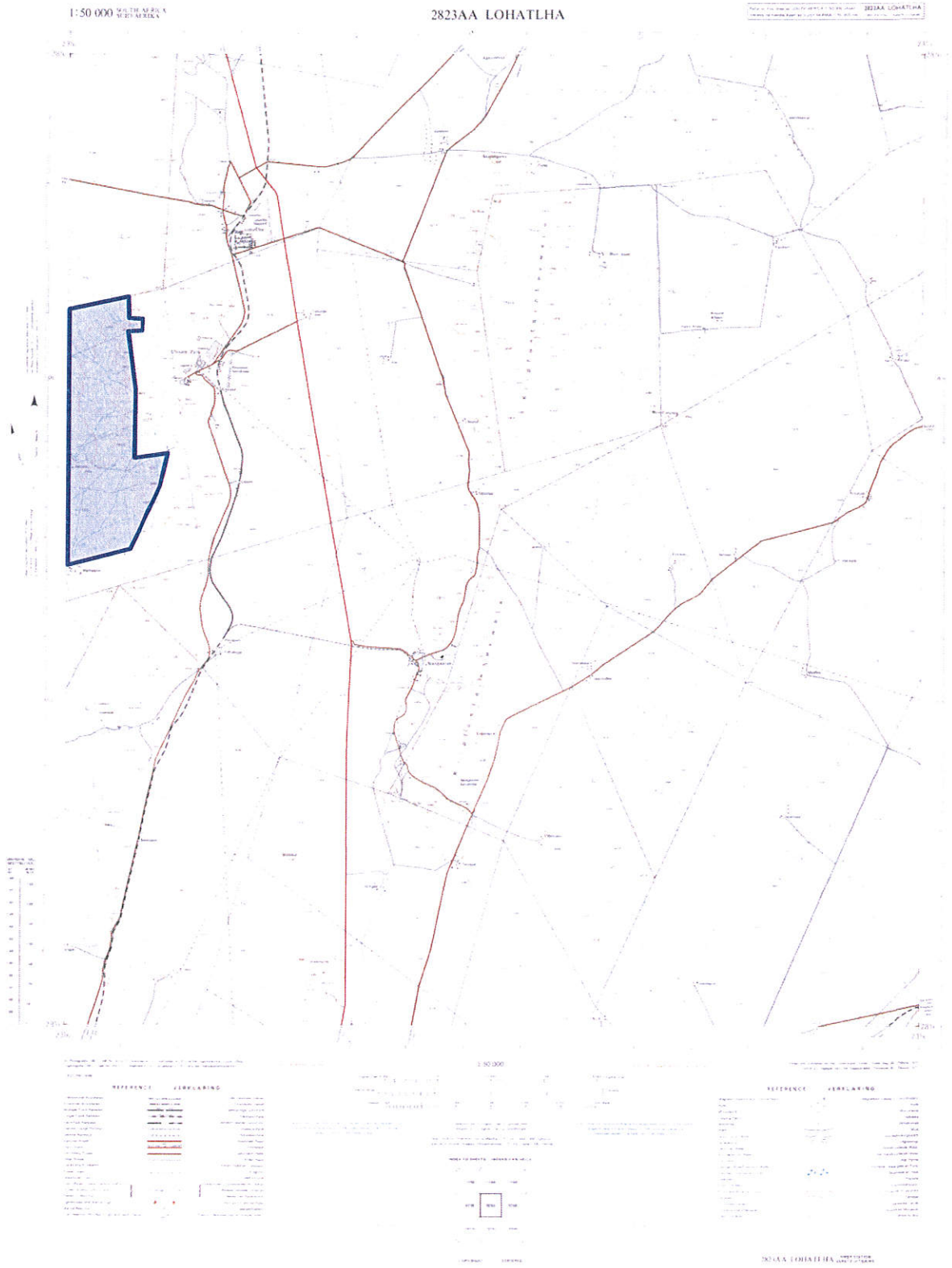
Thackeray, A.I., Thackeray J.F., Beaumont, P.B. *Excavations at the Blinkklikop Specularite Mine near Postmasburg, Northern Cape*. The South African Archaeological Bulletin, Vol. 38, No. 137 (Jun., 1983), pp. 17-25.

Rudner, J., Rudner, I. *Rock-Art in the Thirstland Areas*. The South African Archaeological Bulletin, Vol.23, No. 91 (Dec., 1968), pp. 75-89.

Strydom, C.J.S., *Kaapland en die Tweede Vryheidsoorlog* (Kaapstad, 1937), pp. 107-108 en 113.

## HISTORICAL MAPS



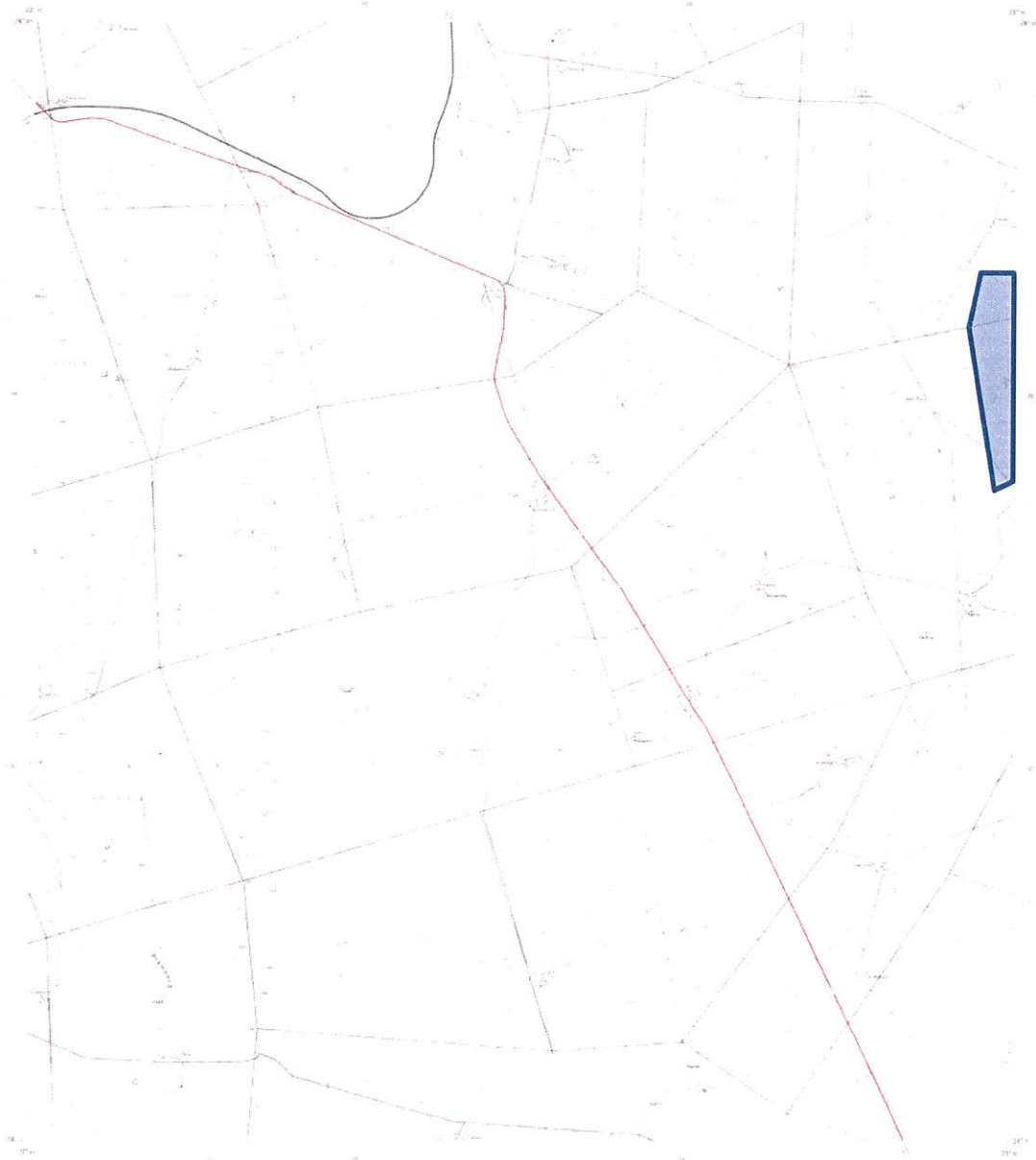






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Legend and metadata section containing two tables of symbols and their corresponding features, a scale bar, and a north arrow.

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