

REVISED DRAFT SCOPING REPORT

PWV 17 FREEWAY



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November 2016

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LIST OF ABBREVIATIONS

| | |
|------------------|--|
| CBD: | Central Business District |
| C-Plan: | Conservation Plan |
| DEA: | Department of Environmental Affairs |
| DFA: | Development Facilitation Act |
| EAP: | Environmental Assessment Practitioner |
| ECA: | Environmental Conservation Act |
| EIA: | Environmental Impact Assessment |
| IEMA: | Institute of Environmental Management and Assessment |
| EIAR: | Environmental Impacts Assessment Report |
| DWA: | Department of Water Affairs |
| EMP: | Environmental Management Plan |
| GAPA: | Gauteng Agricultural Potential Atlas |
| GDARD: | Gauteng Department of Agriculture, Conservation and Environment |
| GDRT: | Gauteng Department of Roads and Transport |
| GSDF: | Gauteng Spatial Development Framework |
| GDS: | Growth and Development Strategy |
| GTIA: | Gauteng Transport Infrastructure Act |
| I&AP: | Interested and affected party |
| IDP: | Integrated Development Plan |
| JMOSS: | Johannesburg Metropolitan Open Space System |
| MOU: | Memorandum of Understanding |
| NSBA: | National Spatial Biodiversity Assessment |
| NEMA : | National Environmental Management Act |
| PoS: | Plan of Study |
| RSDF: | Regional Spatial Development Framework |
| SACLAP: | The South African Council of the Landscape Architects Profession |
| SAHRA: | South African Heritage Resources Agency |
| SR: | Scoping Report |

III

SDF: Spatial Development framework

TIA: Traffic Impact Assessment

UNCED : United Nations Conference on Environment and Development

GLOSSARY OF TERMS

Agricultural Hub: An area identified for agricultural use by GDARD according to the Draft Policy on the Protection of Agricultural Land (2006).

Alien species: A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

Applicant: Any person who applies for an authorisation to undertake an activity or to cause such activity to be undertaken as contemplated in the National Environmental Management Act (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014.

Biodiversity: The variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are apart.

Conservation of Agricultural Resources Act (Act No. 43 of 1983): This Act provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

C-Plan 3.3: The GDARD C-Plan focuses on the mapping and management of biodiversity priority areas within Gauteng and identifies those sites that are critical for maintaining biodiversity.

Critical Biodiversity Areas (CBAs): CBAs include natural or near-natural terrestrial and aquatic features that were selected based on an areas biodiversity characteristics, spatial configuration and requirement for meeting both biodiversity pattern and ecological process targets. CBAs include irreplaceable sites where no other options exist for meeting targets for biodiversity features, as well as best-design sites which represent an efficient configuration of sites to meet targets in an ecologically sustainable way that is least conflicting with other land uses and activities. These areas need be maintained in the appropriate condition for their category. Some CBAs are degraded or irreversibly modified but are still required for achieving specific targets, such as cultivated lands for

threatened species.

Ecology: The study of the inter relationships between organisms and their environments.

Ecological Support Areas (ESAs): Natural, near-natural, degraded or heavily modified areas required to be maintained in an ecologically functional state to support Critical Biodiversity Areas and/or Protected Areas. ESAs maintain the ecological processes on which Critical Biodiversity Areas and Protected Areas depend. Some ESAs are irreversibly modified, but are still required as they still play an important role in supporting ecological processes.

Environment: All physical, chemical and biological factors and conditions that influence an object and/or organism. Also defined as the surroundings within which humans exist and are made up of the land, water, atmosphere, plant and animal life (micro and macro), interrelationship between the factors and the physical or chemical conditions that influence human health and well-being.

Environmental Impact Assessment: Assessment of the effects of a development on the environment.

Environmental Management Plan: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

GDARD Draft Ridges Policy, 2001: According to the GDARD Draft Ridges Policy no development should take place on slopes steeper than 8.8%.

GDARD Draft Red Data Species Policy, 2001: A draft policy to assist with the evaluation of development applications that affected Red Data plant species.

GDARD Requirements for Biodiversity Assessments Version 3 (June 2014): GDARD requirements for biodiversity assessments.

National Environmental Management Act (NEMA), 1998 (Act No 107 of 1998): NEMA provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

National Environmental Management: Air Quality Act (Act No. 39 of 2004): The purpose of the Act is "To reform the law regulating air quality in order to protect the environment by

providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incident thereto".

National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004): The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003): The purpose of this Act is to provide the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

National Heritage Resource Act, 1999 (Act No 25 of 1999): The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

National Veld and Forest Fire Act, 1998 (Act No. 101, 1998): The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. Furthermore, the Act provides for a variety of institutions, methods and practices for achieving the prevention of fires.

National Road Traffic Act, 1996 (Act No. 93 of 1996): This Act provides for all road traffic matters which shall apply uniformly throughout the Republic and for matters connected therewith.

National Water Act, 1998 (Act No 36 of 1998): The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled.

Open Space: Areas free of building that provide ecological, socio-economic and place-

making functions at all scales of the metropolitan area.

Protected Areas: Protected Areas are areas which have legal protection under relevant legislation or which are managed with a primary conservation objective

Study Area: Refers to the entire study area compassing the total area of the land parcels as indicated on the study area map.

Sustainable Development: Development that has integrated social, economic and environmental factors into planning, implementation and decision making, so as to ensure that it serves present and future generations.

Water Services Act, 1997 (Act No 108 of 1997): The purpose of this Act is to ensure the regulation of national standards and measures to conserve water.

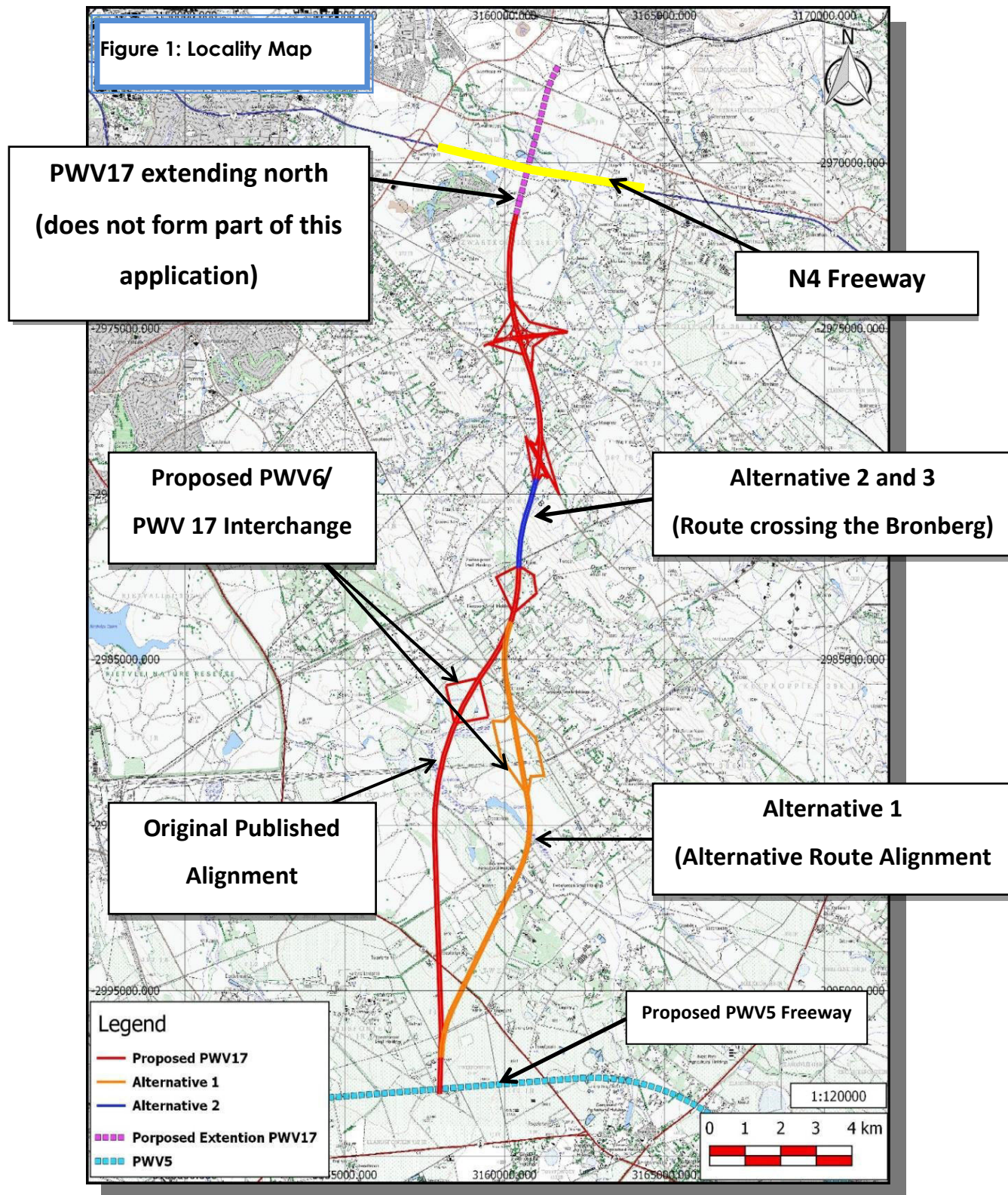
1. INTRODUCTION AND BACKGROUND

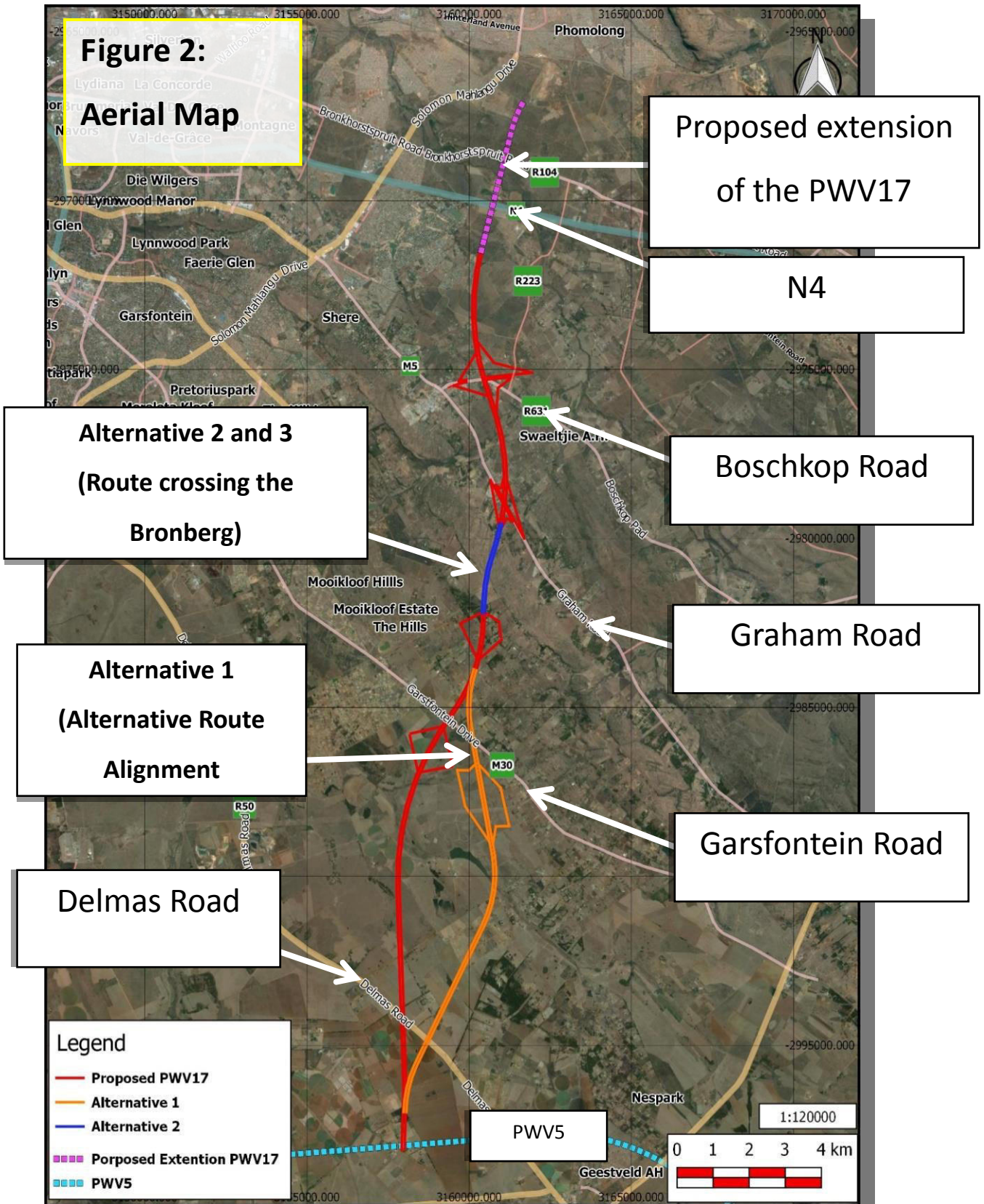
Bokamoso Environmental was appointed by the **Gauteng Department of Roads and Transport** to apply for environmental authorisation of the **Design and Construction of the PWV-17 Freeway** located in the area of jurisdiction of the City of Tshwane and Ekurhuleni Metropolitan Municipality. The proposed road under consideration represents a section of the larger planned PWV17 freeway.

The proposed freeway will join the **future planned PWV 5** road at a point located south of Delmas Road and east of Elandsfontein Road on the Farm Elandsfontien 412 (Ptn 75). It will then extend northwards intersecting the following roads: Garsfontein Road either on the Farm Grootfontein 394 (Ptn 1) **or** the Farm Tiegerpoort 371 (Ptns 2, 28, 245 and 235); Graham Road on the Farm Zwavelpoort 373 (Ptn 299 and RE/250); and Boschkop Road on the Farm Zwavelpoort (Ptn 43 and 34). The section of the PWV17 road which forms part of this application terminates at a point east of Silverlakes Drive and south of the N4 on the Farm Zwartkoppies 364. The section of the proposed PWV17 road which extends northwards, intersecting the N4 does not form part of this application (**refer to Figure 1: Locality Map and Figure 2: Aerial Map**).

The purpose of the proposed PWV 17 is to provide a freeway consisting of three (3) lanes in each direction as part of a planned freight route, which will eventually connect Heidelberg with Limpopo Province.

Note: Enlarged copies of the figures inserted above are included in Annexure A of this report.





The application is made in terms of Regulation No. R982 published in the Government Gazette no. 38282 of 4 December 2014 of the National Environment Management Act, 1998 (Act No. 107 of 1998) governing Environmental Impact Assessment Procedures (Notice 1, 2 & 3 – Government Notices R983, R984 & R985).

According to the aforementioned Regulations and Notices, an Environmental Impact Assessment Process is required for the proposed project, due to the following listed activities:

Table 1: Listed Activities in terms of Notice No. 983, 984 and 985

(The applicable section of activities are indicated in bold and underlined)

| Notice No. R983 (Listing Notice 1) | | |
|---|----------------|--|
| R983 December 2014 | Activity 12 | <p>The development of-</p> <p>(i) canals exceeding 100 square metres in size;</p> <p>(ii) <u>channels exceeding 100 square metres in size;</u></p> <p>(iii) <u>bridges exceeding 100 square metres in size;</u></p> <p>(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;</p> <p>(v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;</p> <p>(vi) bulk storm water outlet structures exceeding 100 square metres in size;</p> <p>(vii) marinas exceeding 100 square metres in size;</p> <p>(viii) jetties exceeding 100 square metres in size;</p> <p>(ix) slipways exceeding 100 square metres in size;</p> <p>(x) buildings exceeding 100 square metres in size;</p> <p>(xi) boardwalks exceeding 100 square metres in size; or</p> <p>(xii) <u>infrastructure or structures with a physical footprint of 100 square metres or more;</u></p> |

| | | |
|------------------------------------|------------------------|--|
| | | <p>where such development occurs-</p> <p>(a) <u>within a watercourse;</u></p> <p>(b) in front of a development setback; or</p> <p>(c) <u>if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;</u> -</p> <p>excluding-</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>(bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>(cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>(dd) where such development occurs within an urban area; or</p> <p>(ee) where such development occurs within existing roads or road reserves.</p> |
| <p>R,983 December 2014</p> | <p>Activity 19</p> | <p><u>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil,</u> sand, shells, shell grit, pebbles or rock <u>of more than 5 cubic metres from-</u></p> <p>(i) <u>a watercourse;</u></p> <p>(ii) the seashore; or</p> <p>(iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or an estuary, whichever distance is the greater but</p> <p>excluding where such infilling, depositing, dredging, excavation, removal or moving-</p> <p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that</p> |

| | | |
|--|----------------|--|
| | | activity applies. |
| R,983 December 2014 | Activity 21 | Any activity including the operation of that activity which requires a mining permit in terms of section 27 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks directly related to the extraction of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002). <u>The need to establish borrow pits to be confirmed during the EIA phase.</u> |
| R,983 December 2014 | Activity 24 | The development of- (i) a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) <u>a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</u> but excluding- (a) <u>roads which are identified and included in activity 27 in Listing Notice 2 of 2014;</u> or (b) roads where the entire road falls within an urban area. <u>(Not Applicable - Activity 27 of R984 applies)</u> |
| Notice No. R984 (Listing Notice 2) | | |
| R,984 December 2014 | Activity 15 | The clearance of an area of 20 hectares or more of indigenous vegetation, <u>excluding</u> where such clearance of indigenous vegetation is required for- (i) <u>the undertaking of a linear activity;</u> or (ii) maintenance purposes undertaken in accordance with a maintenance management plan. <u>(Not applicable – Application is made for a linear activity)</u> |
| R,984 December | Activity 27 | The development of - (i) a national road as defined in section 40 of the South African National |

| | | |
|--|---------------|--|
| 2014 | | <p>Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);</p> <p>(ii) a road administered by a provincial authority;</p> <p>(iii) a road with a reserve wider than 30 metres; or</p> <p>(iv) a road catering for more than one lane of traffic in both directions;</p> <p>but excluding the development and related operation of a road for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010, in which case activity 24 in Listing Notice 1 of 2014 applies.</p> |
| Notice No. R985 (Listing Notice 3) | | |
| R,985 December 2014 | Activity 4 | <p>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>c) In Gauteng:</p> <p>i. A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>ii. National Protected Area Expansion Strategy Focus Areas;</p> <p>iii. Gauteng Protected Area Expansion Priority Areas;</p> <p>iv. <u>Sites identified as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans;</u></p> <p>v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004);</p> <p>vi. <u>Sensitive areas identified in an environmental management framework adopted by relevant environmental authority;</u></p> <p>vii. <u>Sites identified as high potential agricultural land in terms of Gauteng Agricultural Potential Atlas;</u></p> |

| | | | |
|---------------------------|----------------|--|--|
| | | | <p>viii. <u>Important Bird and Biodiversity Area (IBA)</u>;</p> <p>ix. <u>Sites or areas identified in terms of an International Convention</u>;</p> <p>x. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the National Environmental Management: Protected Areas Act (Act No. 57 of 2003);</p> <p>xi. Sites designated as nature reserves within municipal SDFs; or</p> <p>xii. Sites zoned for a conservation or public open space or equivalent zoning.</p> |
| R,985 December 2014 | Activity 12 | The clearance of an areas of 300 square meters or more of Indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. | <p>(d) In Gauteng:</p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii. <u>Within critical biodiversity areas identified in bioregional plans</u>;</p> <p>iii. Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas; or</p> <p>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</p> |
| R,985 | Activity | The development of-(ii) channels | (b) In Gauteng: |

| | | | |
|----------------------|-----------|--|---|
| <p>December 2014</p> | <p>14</p> | <p>exceeding 10 square metres in size; (xii) bridges exceeding 10 square metres in size; (ix) slipways exceeding 10 square metres in size; (xii) infrastructure or structures with a physical footprint of 10 square metres or more</p> | <p>i. A protected area identified in terms of NEMPAA, excluding conservancies; ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. <u>Sites identified as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; -</u> v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); vi. Sensitive areas identified in an environmental management framework adopted by relevant environmental authority; vii. Sites or areas identified in terms of an International Convention viii. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the National Environmental Management: Protected Areas Act (Act No. 57 of 2003); ix. Sites designated as nature reserves within municipal SDFs; or x. Sites zoned for conservation or public open space or equivalent zoning.</p> |
|----------------------|-----------|--|---|

2. DESCRIPTION OF THE PROPOSED ACTIVITY

2.1 Name of Activity

The Design and Construction of the PWV 17 Road.

2.2 Particulars of Applicant

Applicant: Gauteng Department of Road and Transport

Contact Person: Mr. Zandile Mosia

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Pretoria
0001

Tel: 011 355 7247

Cell: +27 063 253 1869

Fax: 086 592 8688

Email: zandi.mosia@gauteng.gov.za

2.3 Background of Route

During the mid-seventies, Gautrans compiled a grid road network covering the traditional PWV area. The grid network concept was based on a road hierarchy system comprising of a range of mobility and access routes for the Gauteng Province. The PWV 17 was identified to play an important role in achieving the objectives of the grid network plan.

The proposed alignment of the PWV17 was included in the Gauteng Strategic Road Network Review- 2010, subsequently reviewed again in 2013, and is protected in terms of the Gauteng Transport Infrastructure Act, 2001 (Act 8 of 2001). This Act in essence protects any roads that have been proclaimed, thus it protects the PWV17 which forms part of the

According to the Gauteng 25-year Integrated Transport Master Plan, the Gauteng road network remains one of the most important infrastructure assets of the province that underpins and support local economic growth and the resultant growth in job opportunities within the identified corridors and nodes. It also identifies the PWV17 route as a Class 1 Priority Road.

The Gauteng 5-year Transport Implementation Plan, 2013 (GTIP5) sets out an implementation plan of key intervention projects based on a detail analysis of the current planning and construction projects in Gauteng as a precursor to achieving the 25 Year - Integrated Transport Master Plan (ITMP25) goals and objectives. The GTIP5 recognises that the PWV 17 project will enable freight flows around core urban areas and central business districts, as well as provide for adequate connectivity to major freight intermodal facilities.

The long terms plan is to establish a freight route, which will eventually connect Heidelberg with Limpopo Province. In the medium term the proposed freeway will connect the East Rand with the Eastern Suburbs of Pretoria and in the short term the section of the freeway between the N4 (in the north) and Garstfontein Road (the K50) can be implemented to assist with the alleviation of traffic problems on the N1 and other congested roads in the eastern suburbs.

The alleviation of traffic on local and provincial roads is however not the long-term purpose of this freeway and it will therefore be necessary for the provincial and local authorities to plan the surrounding local and provincial roads in such a way that the various roads with their various hierarchy's and roles become an integral part of the road masterplan for the larger area.

2.4 Particulars of Activity

2.4.1 Nature of Activity

Freeways (PWV-routes) are spaced at an 8 km to 12 km grid, while major arterials (K-routes) are spaced at approximately 1,8 km to 2,4 km intervals. Minor arterials and collector roads are again linked to the K-routes at 600m or larger intervals to complete the higher order road network.

The proposed activity is the **Design and Construction of a section of the proposed PWV 17 freeway** located between the future PWV5 route to the south and terminating just south of the N4 to the north.

2.4.1 Location of Activity

Refer to Figure 1 for Locality Map.

Refer to Figure 2 for Aerial Map.

Refer to Figure 3 for Position of The PWV17 Within the Larger Gauteng Road Network System and Key Map for Figures 4, 5 And 6 which Represents Enlarged Figures of The PWV17 without the Road Network.

The involved section of the PWV17 lies in the quarter degree grid square 2528CD and stretches in a south-north direction from the proposed PWV5 road north of the R25 and south of Delmas Road on Portion 75 of the Farm Elandsfontien 412.

The route will traverse Garsfontein Road either on the Farm Grootfontein 394 (Ptn 1) **or** the Farm Tiegerpoort 371 (Ptns 2, 28, 245 and 235); Graham Road on the Farm Zwavelpoort 373 (Ptn 299 and RE/250); and Boschkop Road on the Farm Zwavelpoort (Ptn 43 and 34). The section of the PWV17 road which forms part of this application terminates at a point east of Silverlakes Drive and south of the N4 on the Farm Zwartkoppies 364. **Refer to Figures 4, 5 and 6.**

The northern most section of the proposed route falls within the Provincial Urban Edge while the remaining section falls outside, as indicated on **Figure 7: Urban Edge**.

Figure 4

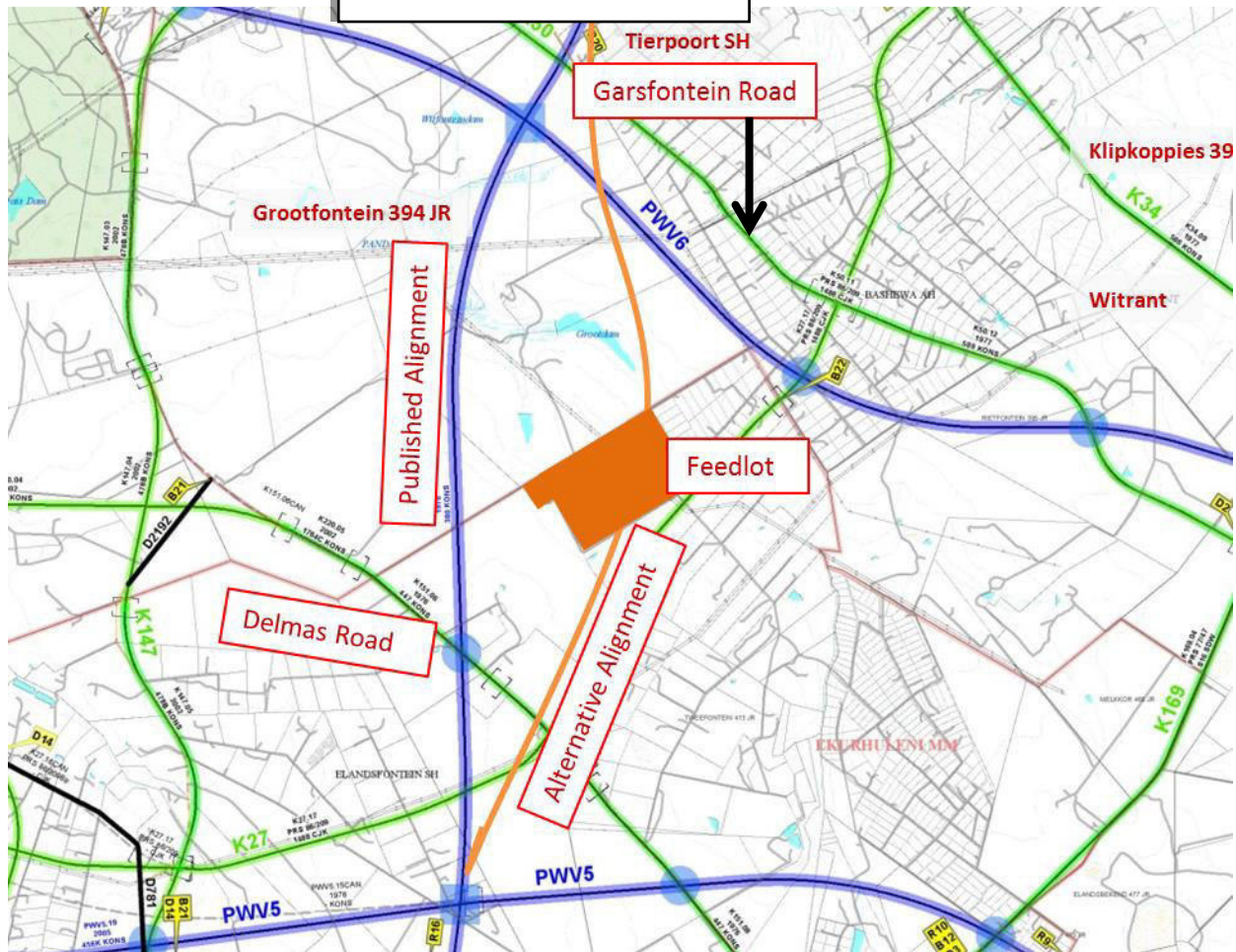


Figure 5

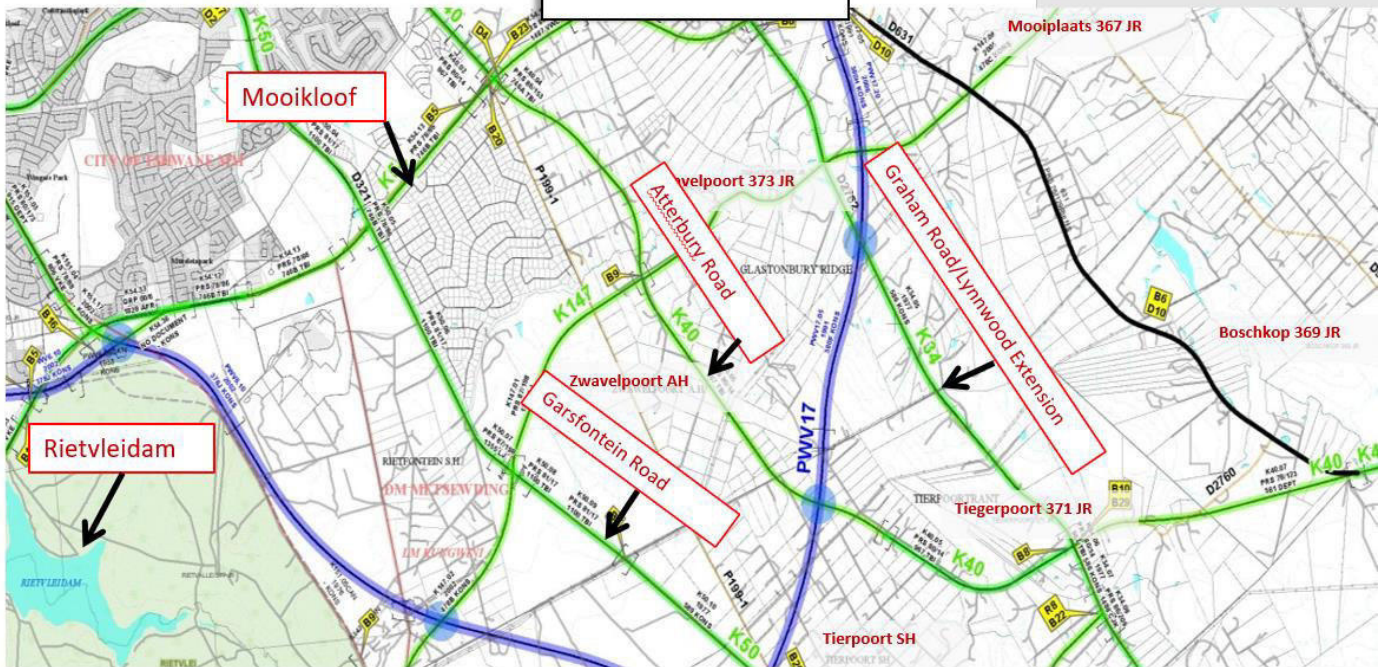
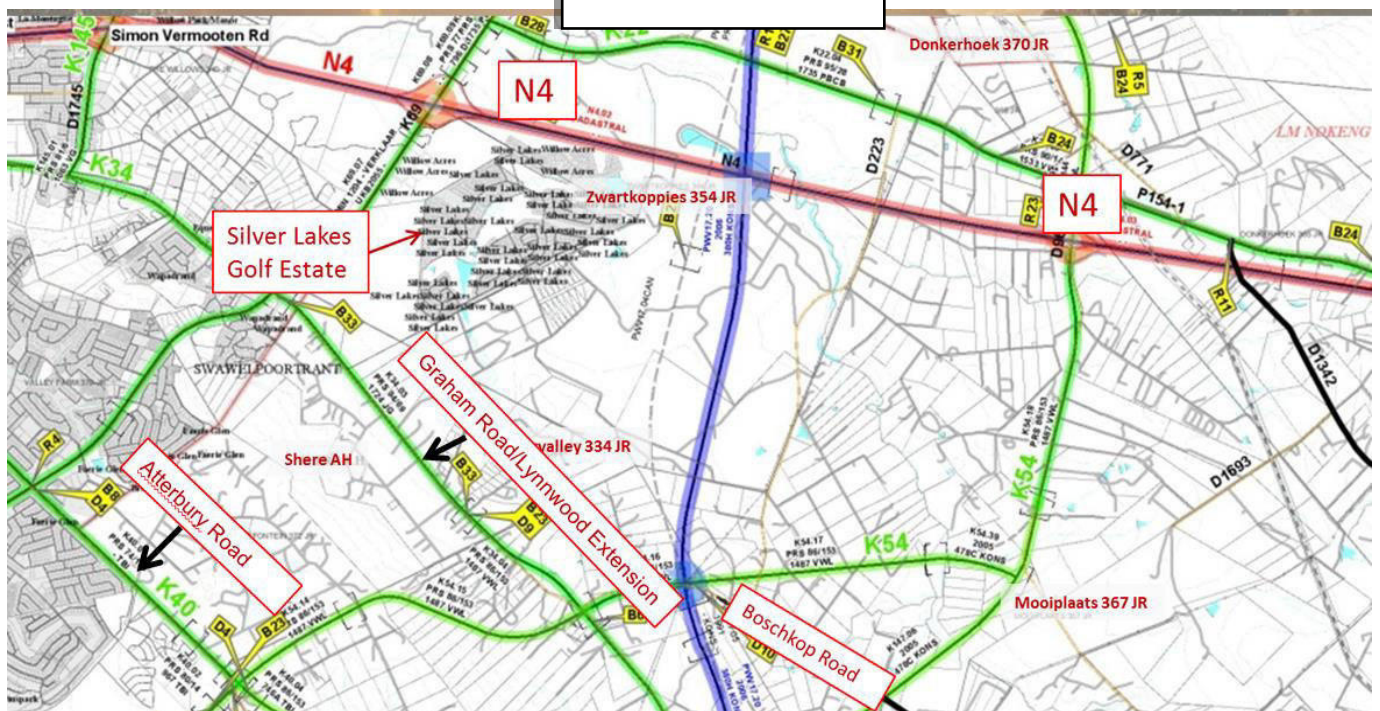
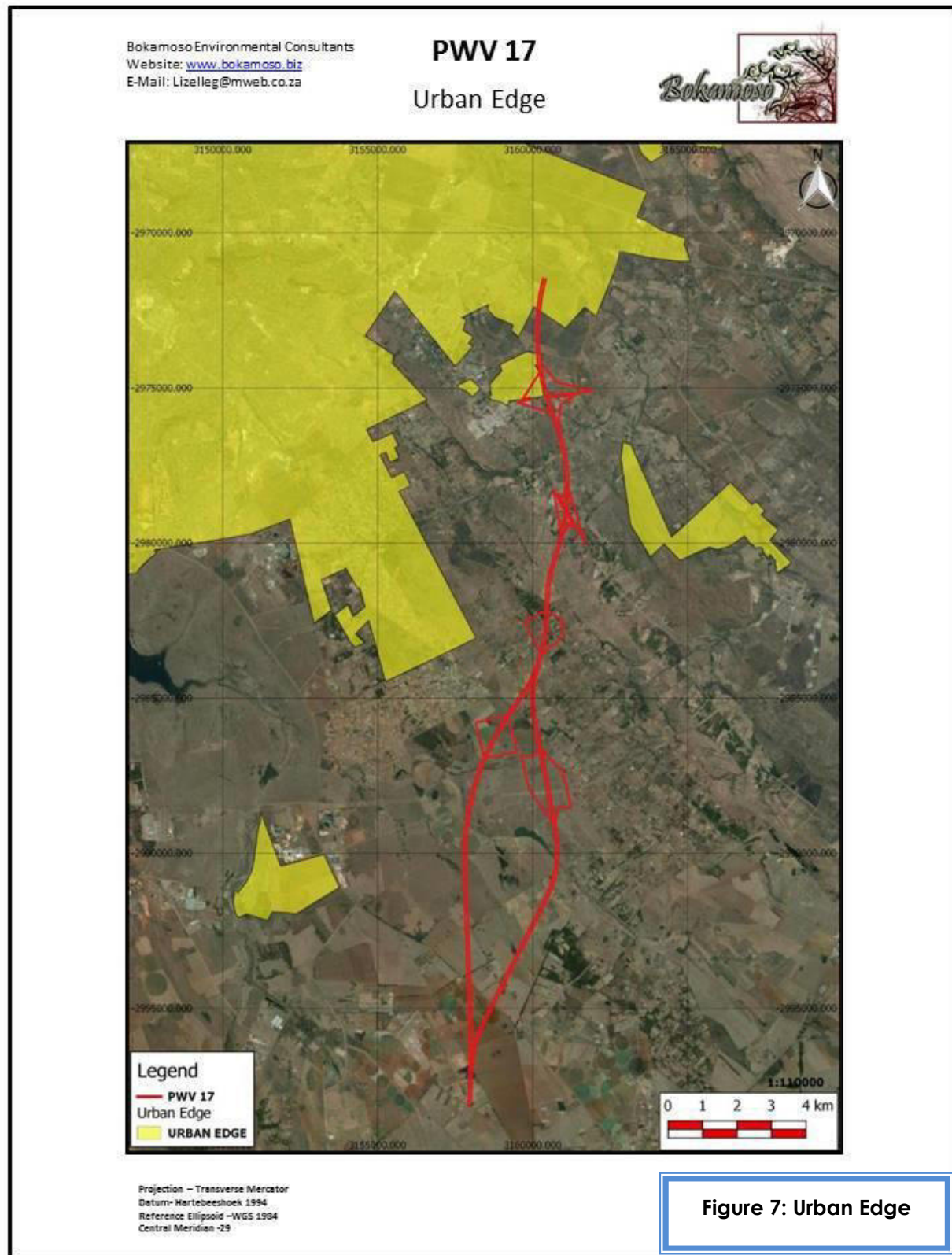


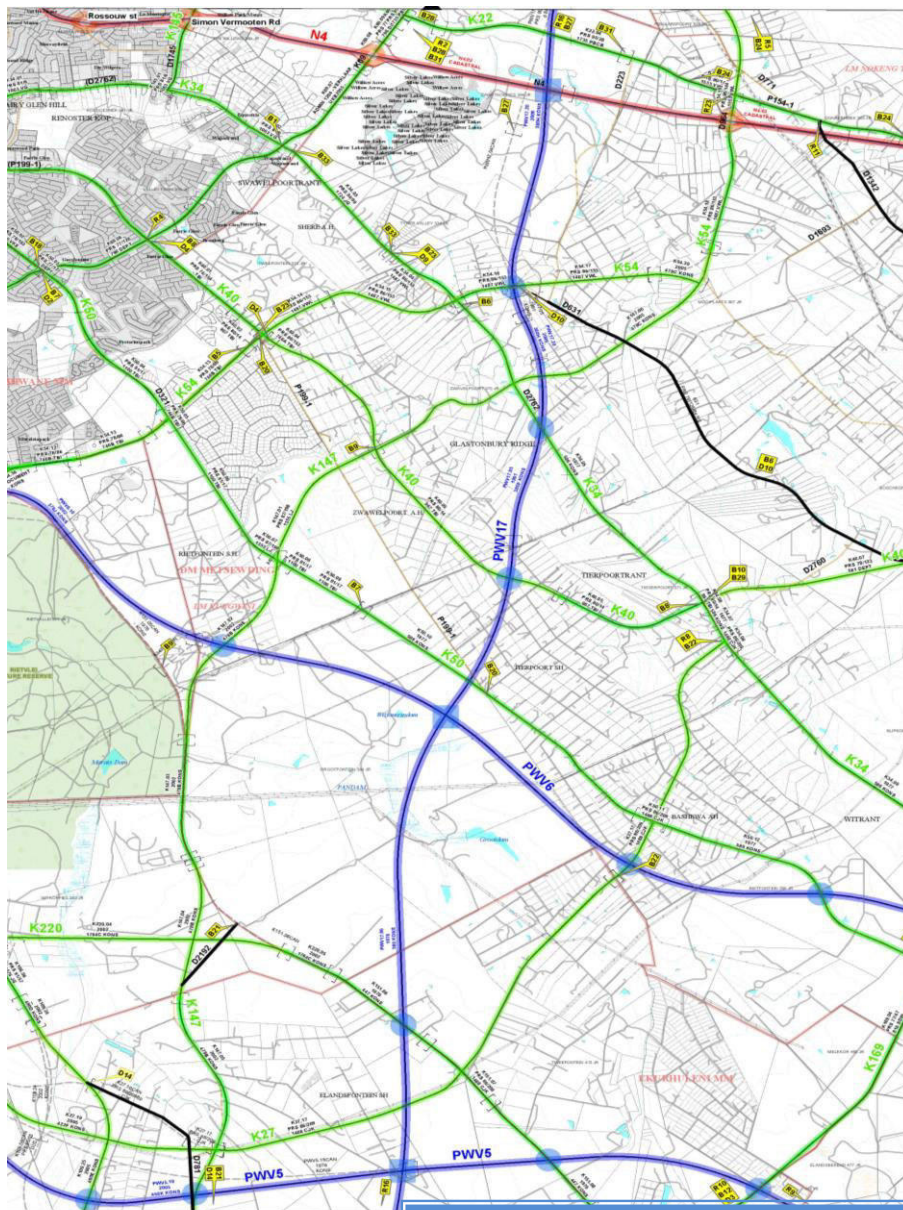
Figure 6





2.4.2 Delineation of the study area

The section of the PWV17 investigated in this Scoping Report (SR) is only a section of a Provincial Route which forms an important link in the Gauteng Road Network system (**refer to Figure 8: Delineation of Study Area**).



2.4.3 The role of route PWV17 in the Gauteng Road Network and the importance of the proposed road for Gauteng Province

The road network in Gauteng is under increasing pressure due to a number of factors, including:

- The economic growth of the province which currently stand at almost double the national growth rate;
- Increased car ownership;
- Increased urbanization towards the major cities; and
- Increased job opportunities resulting in more people entering the business market thereby increasing their personal wealth through property and car ownership.

Amongst others this has resulted in increased demand for road capacity in general in Gauteng. The current system has over the last couple of years become notorious for the lack of capacity, with great congestion, huge delays, and severe safety concerns raised by various sectors, including the public, all spheres of government, and other institutions. Due to the lack of building new infrastructure to create a balanced road network or transport system the system has also resulted in increased pollution due to the congestion on the network.

The overall objectives of the Gautrans road network are to provide mobility and access in the Gauteng province. The PWV17 plays an important role in achieving these objectives.

The Strategic Road Network Review (2010/2013) identified the PWV17 as a high priority (class 1) road.

2.4.4 Intersecting routes

The involved section of route PWV17 intersects with the following roads:

- Future planned PWV5;
- Garsfontein Road either on the Farm Grootfontein 394 (Ptn 1) **or** the Farm Tiegerpoort 371 (Ptns 2, 28, 245 and 235);
- Graham Road on the Farm Zwavelpoort 373 (Ptn 299 and RE/250); and
- Boschkop Road on the Farm Zwavelpoort (Ptn 43 and 34)

2.4.5 End Points and Length

The section of the PWV17 to be constructed is proposed to be located between the **future PWV5** in the south and a point **just south of the N4**.

The proposed section has a total length of approximately **25 km**.

2.5 The Gautrans Network Planning and the Gautrans Road Planning Stages

- **Network Planning at 1:50 000 scale.**

During the mid-seventies, a grid network covering the traditional PWV area compiled by Gautrans was planned on a 1: 50 000 scale and maintained ever since. The grid network concept was based on a road hierarchy system comprising of a range of mobility and access routes.

- **Route Determination at 1: 10 000 scale**

During the Route Determination phase each route is investigated in more detail. Amongst others, the following aspects receive attention:

- The purpose of the route;
- Delineation of study area;
- Collection and interpretation of environmental information;
- Site visit;
- Literature Study;
- The description, analyses and interpretation of physical, biotic, socio-economic and environmental procedures; and
- Consultation with major landowners, local and other affected authorities.

- **Preliminary Design Phase - (Basic Planning)**

During this stage of planning, the issues addressed during the preceding stage are re-evaluated. Normally a long period has passed between the above two stages and therefore revision is required.

The main purpose of Preliminary Design is to establish the road reserve and to conduct a cost framework. This phase includes also detail regarding bridge structures, culverts road fillings and road reserve boundaries. The commencement of this phase is normally dependant on either/ both the traffic demand and land use development pressure within the area.

- **Detail Design and Construction.**

During this phase all-physical, environmental and socio-economic issues are integrated with the road planning. Land will be expropriated and detailed design of the road will depend on the priority of the route and the available funding.

2.6 The Design Phase of the Involved Section of the PWV 17

The most southern portion of the proposed PWV 17 (the section between the Proposed PWV 5 and the K50/Garstfontein Road) is still at preliminary design stage. The section of the road between the K50 and the N4 freeway is higher on the priority list and therefore a section is already at detail design stage and another section is still at preliminary design stage.

The main goal of this EIA is to fix the alignment of the section of the PWV 17 between the proposed PWV5 and the K50 and to allow for the construction (when necessary) for the most important sections of the proposed PWV17 to the north of the K50.

At present, there is significant development pressure in the area between the R40 and the N4 and therefore this section of the proposed PWV 17 is regarded as the priority section. Developers want to finalise their development layouts and parties affected by the proposed alignment alternatives cannot upgrade or sell their properties. This uncertainty regarding the proposed road is currently delaying development and the role of the Gauteng Transport Infrastructure Act on development panning also places pressure on the finalisation of the PWV 17 alignment in the area.

Refer to Annexure B for Preliminary Scoping Phase Engineering Drawings of the Proposed Alignment Alternatives

2.7 ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The new Environmental Regulations require that relevant details of the Environmental Assessment Practitioner be included as part of the Scoping Report. In this regard, attached as **Annexure C**, is a copy of the CV of Lizelle Gregory from Bokamoso Landscape Architects and Environmental Consultants. In summary details of the EAP are indicated below:

- **Name:** Lizelle Gregory
- **Company:** Bokamoso Landscape Architects and Environmental Consultants.
- **Qualifications:** Registered Landscape Architect and Environmental Consultant (degree obtained at the University of Pretoria) with 17 years' experience in the following fields:
 - ❖ Environmental Planning and Management;
 - ❖ Compilation of Environmental Impact Assessments;
 - ❖ Landscape Architecture; and
 - ❖ Landscape Contracting

Ms. L. Gregory is also lectured at the Technicon of South Africa and the University of Pretoria. She is a registered member of the South African Council of the Landscape Architects Profession (SACLAP), the International Association of Impact Assessments (IAIA) and the Institute of Environmental Management and Assessment (IEMA).

3. TERMS OF REFERENCE

The following terms of reference have been set:

- Determine if the proposed site is a suitable site for the proposed alignment from an environmental and socio-economic point of view.
- Prepare such an Environmental Scoping Report, taking into consideration the biophysical and socio-economic environment.
- Assess the outlook of the surrounding landowners on the proposed road construction and alignment.

4. SCOPE OF WORK AND APPROACH TO THE STUDY

4.1 Scope of Work

The EIA Process consists of two phases, namely the Scoping Phase and the EIA Phase. The Scoping Phase includes the following actions and documents:

- Scoping Phase Public Participation;
- The compilation of an application form;
- The compilation of a Draft Scoping Report;
- The compilation a Draft Plan of Study for EIA;
- The compilation of a Final Scoping Report; and
- The compilation of a Final Plan of Study for EIA.

The application form for environmental authorisation of the relevant activity must be submitted to GDARD in order to be furnished with a project reference number. The application form can be submitted prior to the submission of the Draft Scoping Report to the competent authority or it can be submitted together with the Draft Scoping Report. In the case of this application, the application form will be submitted when the Draft Scoping Report is submitted to GDARD for consideration.

Take note that this is the 2nd Scoping Process followed for the proposed road. A former application was submitted at the beginning of 2016 for the same road, but since there are very high levels of social mobilisation against the road, it was decided to rather withdraw the application and to only submit the application forms for the new process once the Draft Scoping Report is ready for submission to the I&APs and the competent authority. This will afford Bokamoso, the I&APs, the stakeholders and the relevant organs of state more time to list issues and to address the issues that were raised.

It was however decided to also add all the I&APs who registered during the former EIA process to the I&AP Register for the new PWV 17 EIA Process. Such I&APs will automatically

be notified of all reports, notices, meetings, information etc. regarding the involved section of the PWV 17 and will be afforded opportunities to comment on the Draft Reports for the Scoping and EIA Phases of the application.

The scoping exercise describes the status quo of the bio-physical, social, economic and institutional environment and identifies the anticipated environmental aspects associated with the proposed development in the form of a basic issues matrix. It furthermore includes preliminary conclusions regarding the proposed alternatives (based on available information regarding the study area), but such conclusions will obviously be tested and confirmed during the EIA process.

The EIA process will consist of the following actions and documents:

- EIA Phase Public Participation (this process will allow for additional I&APs to register);
- The compilation of specialist reports;
- The compilation of a Draft EIA;
- The compilation of a Draft Environmental Management Plan (EMP);
- The compilation of a Final EIA;
- The Compilation of a Final Environmental Management Plan (EMP).

The significance of the anticipated impacts, the assessment of the alternatives identified, the assessment of the possible impacts and the mitigation of the impacts identified will be addressed in detail during the Environmental Impacts Assessment (EIA) Process for the proposed freeway. The Draft EIA Report will only be submitted to GDARD after the completion of the EIA PP Process and after Bokamoso received acknowledgement of receipt and acceptance of the Scoping Report as well as the approval of the Plan of Study for EIA, which is also included as part of this report.

All available material and literature were collected and used for the purpose of this Draft Scoping Report and it was further supplemented with discussions with provincial authorities, local authorities, interested and affected parties, as well as by site surveys and photographic recording.

4.2 Approach to the Study

An investigative approach will be followed and the relevant physical, social and economic environmental aspects will be assessed.

This Scoping Report takes into consideration the environment that may be affected by the proposed activity. Therefore, the physical, biological, social, economic and cultural aspects will be considered. A description of the properties on which the activity is to be undertaken and the location of the activity on the property will be described. A description of the need and desirability of the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have (on the environment and community that may be affected) are also included.

An identification of all legislation and guidelines that we are currently aware of is considered in the preparation of this Draft Scoping Report. Furthermore, the environmental issues and potential impacts, including cumulative impacts, are identified and discussed. Information on the methodology that will be adopted in assessing the potential impacts is furthermore identified, including any specialist studies or specialised processes that must be undertaken.

Details of the Public Participation process are included: (i) the steps that were taken to notify potentially interested and affected parties of the application; (ii) proof that the notice boards, advertisements and notices, notifying potentially interested and affected parties of the application, have been displayed, placed or given; (iii) a list of all persons or organisations that were identified and registered.

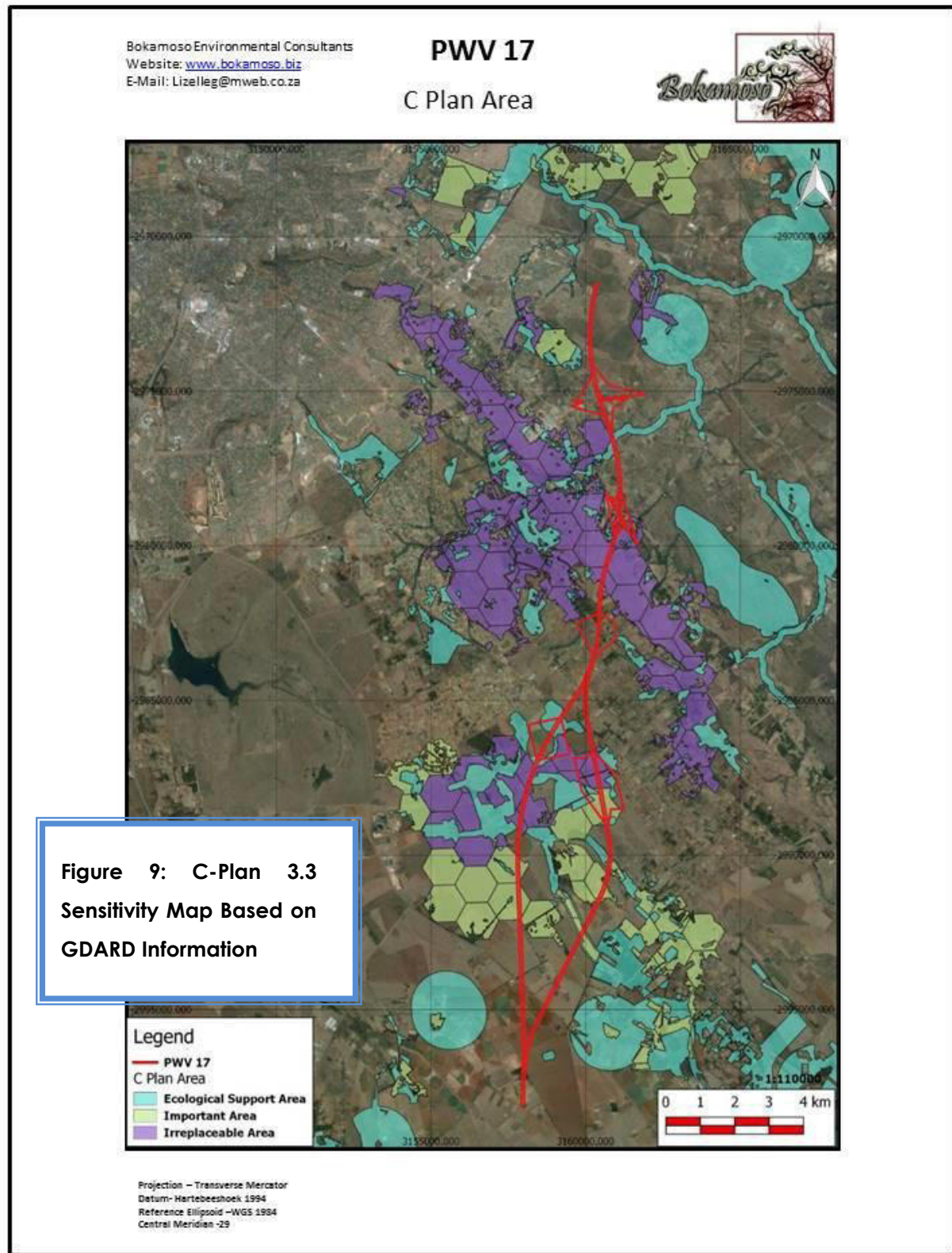
5. ALTERNATIVES IDENTIFIED

5.1 The “No-Go” Alternative

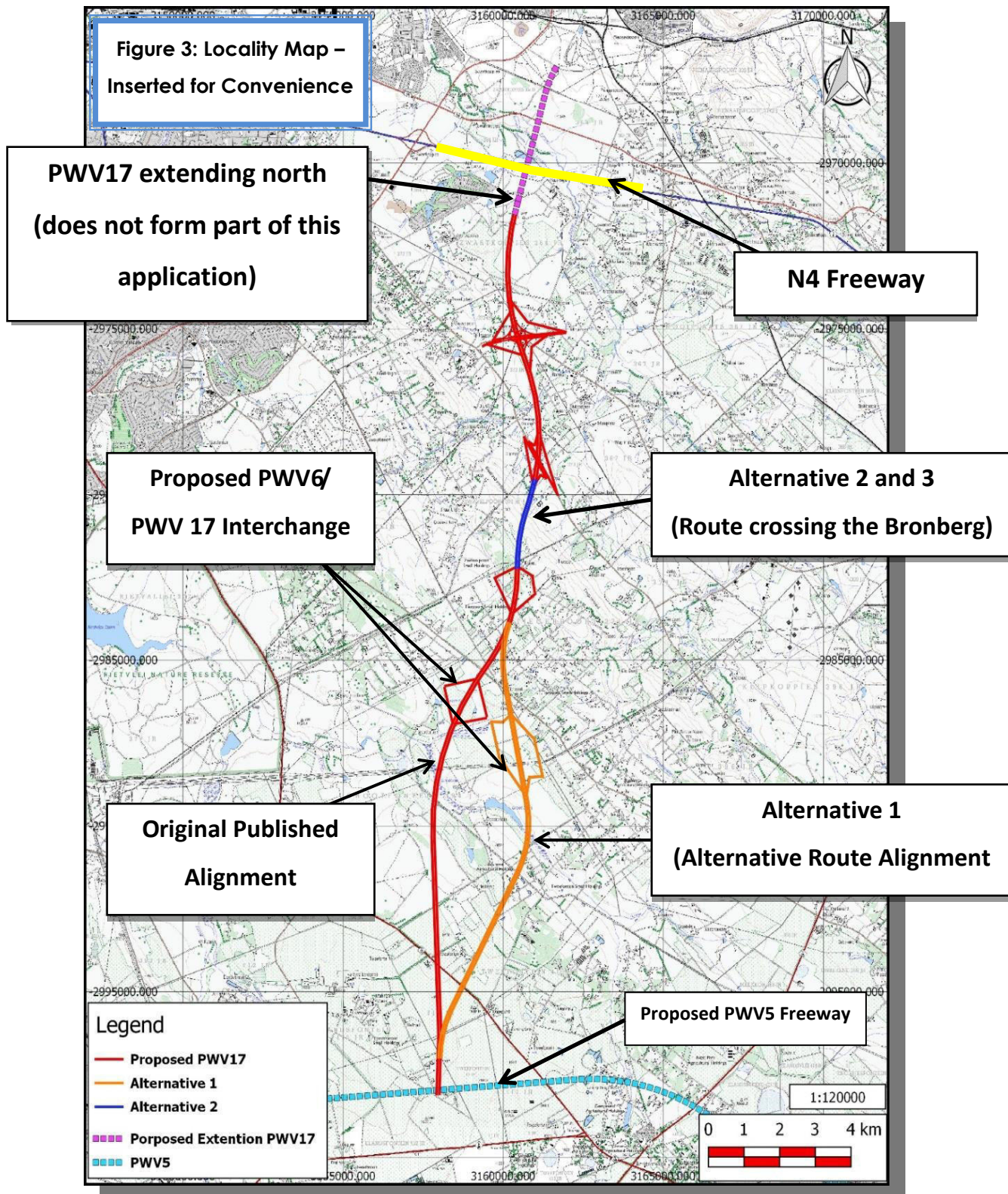
According to the GDARD C-Plan 3.3, 2013, the southern, central and northern sections of the route traverses irreplaceable, important and ecological support areas and large sections of the proposed freeway will affect ecologically sensitive areas. **Refer to Figure 9, Sensitivity Map.**

GDRT already considered it to remove the proposed freeway from their network system during former environmental scans conducted during the route determination phase and during the 2010 Road Review exercise. Based on the results of such studies it is not regarded as possible to remove this freeway from the Gauteng Road Network System. The exclusion of this road will only put pressure on the other roads in the network and the system will not function as originally planned. There is a definite need for a south-north connection, especially since the R21 and the N1 already caters for a significant amount of South-North traffic.

At this stage, the “No-Go” alternative is not regarded as viable from a road planning point of view; nevertheless, it could be supported from a socio-economic point of view. Roads are however mostly regarded as unwanted by parties that are directly affected. Roads and infrastructure are needed by everyone and therefore road planning in a province cannot stop. It is the responsibility of the various roads authorities to protect future roads that form part of the national, provincial and local road planning networks.



5.2 Alignment Alternatives



The following alternatives were supplied by Hatch Goba (the appointed Traffic Engineers):

A copy of Figure 1 was inserted above for convenience - Also Refer to Figure 2 above

✚ The Original Alternative:

The original alternative is represented by the red line on the map above. In the vicinity of the Bronberg (at the blue insert) such blue line also represents the original published alignment for the PWV 17. To the north of the Bronberg/ Graham Road/ Lynnwood Road the alignment is regarded as fixed and no deviations from the original published alignment is proposed.

✚ Alternative 1:

Alternative 1 represents an alignment to the east of the original published alignment for the section of the proposed freeway between the PWV 5 and the proposed new PWV 17/ Atterbury Interchange. This section of the road was aligned to avoid the ecologically sensitive areas associated with a dam and wetlands on the Farm Grootfontein 394 JR.

• Alternatives 2 and 3:

Alternatives 2 and 3 represent the alternatives for section of the freeway that cuts across the Bronberg.

Alternative 2 represents an alignment across the ridge and such alignment will require the removal of vegetation and some extensive cut and fill exercises.

Alternative 3 represents a "tunneling" alternative. The proposed tunnel will require some major blasting and drilling exercises, but it will avoid the removal and disturbance of the ecological systems associated with this sensitive ridge series and it will also prevent the fragmentation of a continuous open space system.

6. THE DESCRIPTION OF THE BIOPHYSICAL ENVIRONMENT

This section briefly describes the biophysical environment of the study area.

6.1 The Physical Environment

6.1.1 Existing land use

The existing land-use of the study area mainly comprises of farms, agricultural holdings and natural areas. Although the agricultural potential of the soils is mainly high to moderate, cultivated lands in the area are limited. Other agricultural and agricultural related activities that take place in the area are livestock farming (i.e. feedlots and cattle and livestock that graze freely) and small scale mixed agricultural activities on some of the affected agricultural holdings. An organic dairy farm is situated to the south of the Bronberg, in between the Bronberg and the Tierpoort Agricultural Holdings.

Due to existing and previous agricultural and quarrying activities in and around the study area, only isolated patches of natural vegetation were identified. Electrical power lines, watercourses and servitudes also affect the study area.

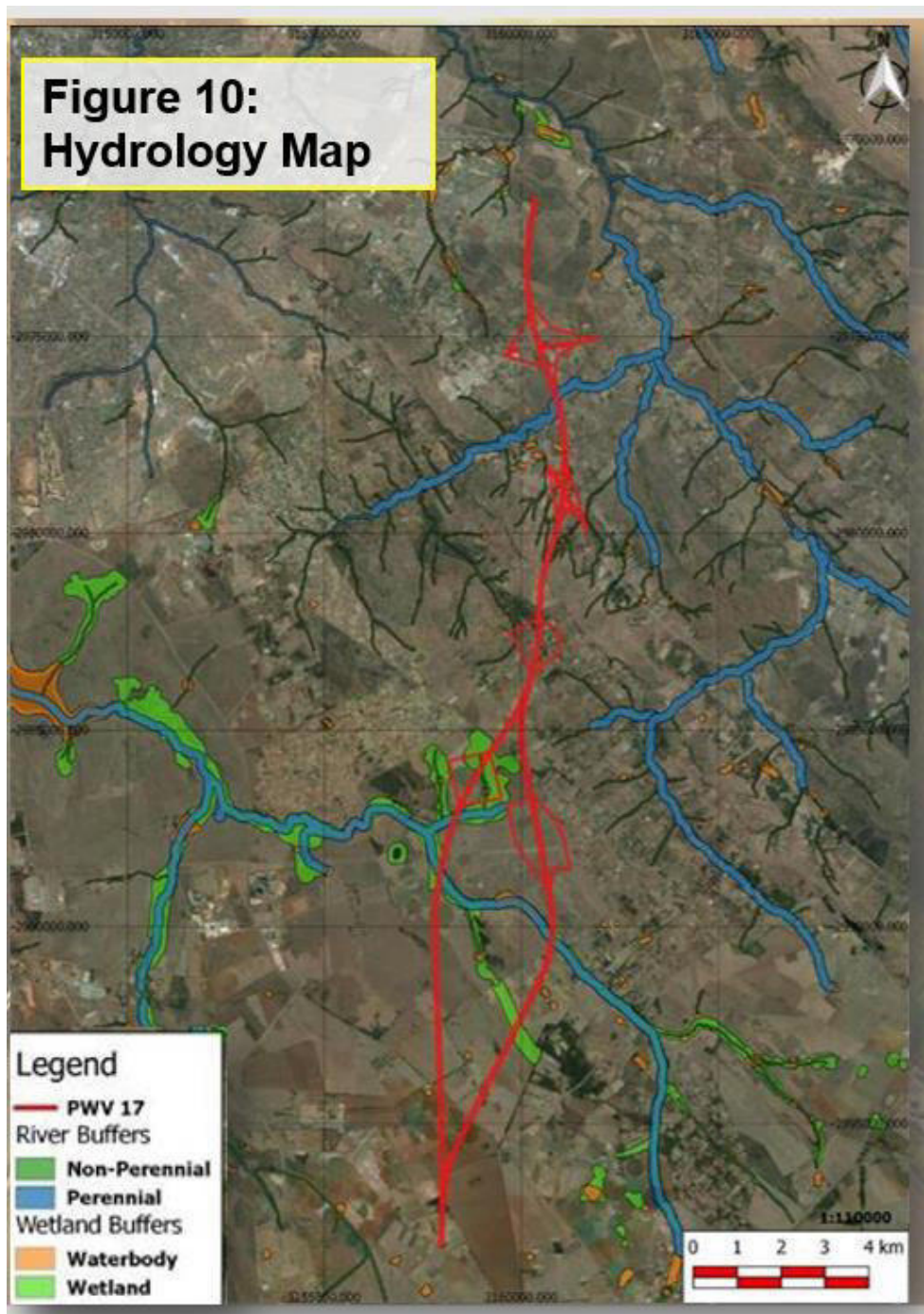
6.1.2 Geology and Soils

Additional Information or Studies Required for the EIA Phase

- More detailed geotechnical investigations should be conducted during the detail design of the road to confirm the presence of expansive and collapsible materials and a perched water table, and to determine foundation requirements.
- More detailed investigations should be conducted for structures such as bridges and culverts.

6.1.3 Surface Hydrology

Refer to Figure 10 for Preliminary Hydrology Map.



The study area falls within the Crocodile West and Marico Water Management Area.

Floodlines

The involved section of the PWV 17 crosses the Swavelpoortspruit and its tributaries as well as the Sesmyspruit and is therefore influenced by several 1:100 year floodlines, wetland and watercourses.

Preliminary Issues Identified

- Pollution, erosion and siltation problems could occur in the Swavelpoortspruit and Sesmyspruit as well as water bodies lower down in the catchment due to a lack of suitable storm water management measures during construction and operational phases;
- More impermeable surfaces will lead to an increase in the speed, quantity and quality of the storm water;
- Erosion caused at discharge points of storm water; and
- Section 21 Water Use Licenses will be required for construction across/within floodline areas, wetlands/ watercourses.

6.1.4 Sub-Surface Hydrology

Additional Information or Studies Required for the EIA Phase

- The impact of boreholes along the route must be investigated during the detail design of the road.
- It is recommended that a detailed storm water management plan be submitted for assessment and inclusion in the EIA Report;
- The storm water management plan must be designed to:
 - Reduce and/or prevent siltation, erosion and water pollution.

- Mitigation measures for speed, quantity and quality of stormwater.

Wetlands

A faunal, floral and wetland study will be conducted for the proposed PWV17 will be conducted during the EIA Phase.

Preliminary Issues Identified

- Impact of proposed road on wetland features and rivers.

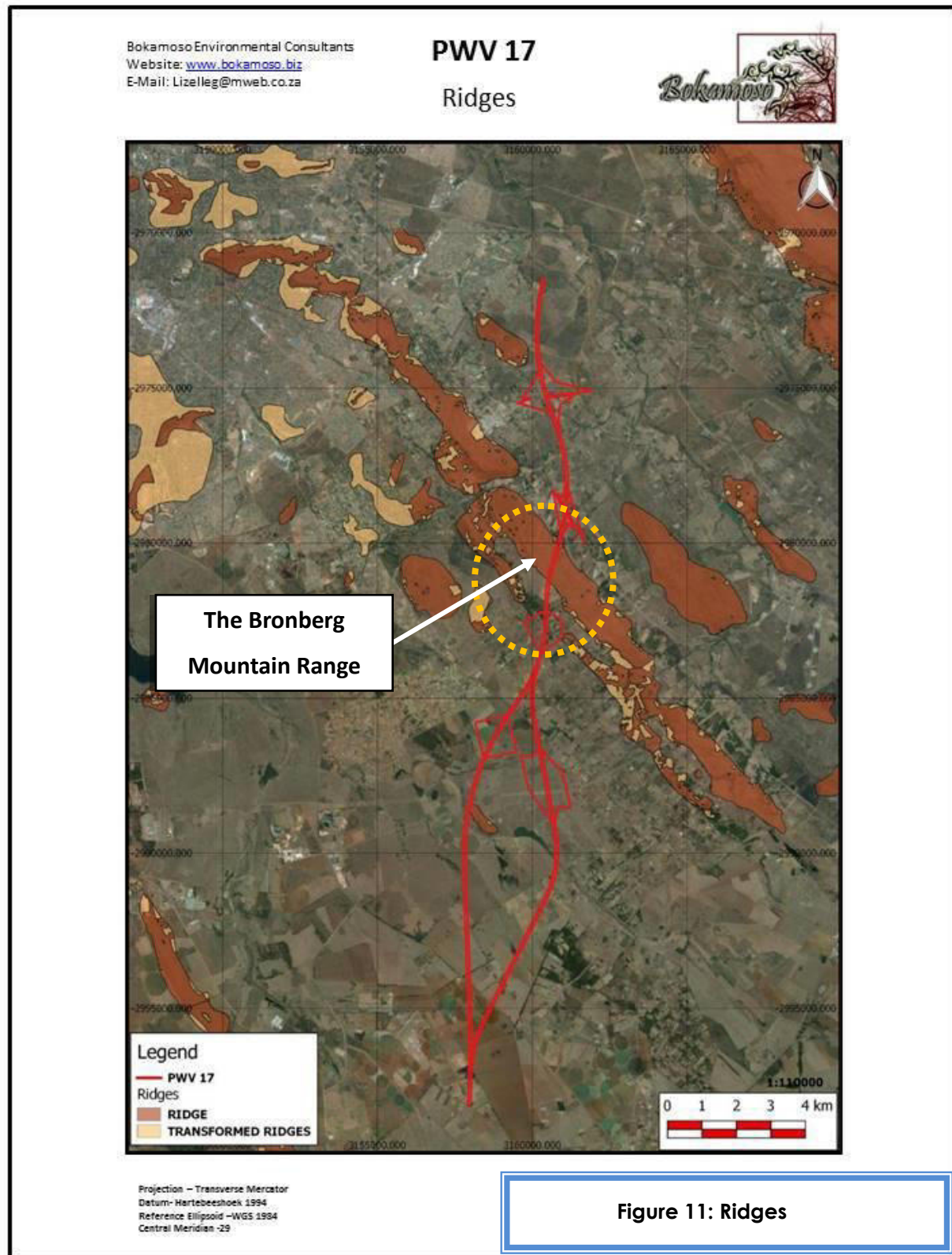
Additional Information or Studies Required for the EIA Phase

- A wetland study will be included as part of the EIA report.

6.1.5 Topography

The topography along the route varies from flat to rolling and mountainous. According to the GDARD C-Plan 3.3, 2013, the involved section of the PWV17 traverses a sensitive ridge, namely the Bronberg (**Refer to Figure 11: Ridges**). The Bronberg is a mountain range that is regarded as a valuable ecological, aesthetical, cultural and historical asset to Gauteng. It is furthermore world renown for the occurrence of the Juliana Golden Mole.

As mentioned the option of tunnelling the road through the Bronberg in order to avoid ecological sensitivities associated with the ridge range, will also be considered.



Preliminary Issues Identified

- From a road design point of view, the slope of the study area is regarded as suitable for the involved section of the PWV17;
- The tunnelling option must be compared with the on-surface implementation of the road; and
- The proposed road will be visible from sensitive view-sheds.

Additional Information or Studies Required for the EIA Phase

- A more detailed visual assessment should be done during the EIA stage to establish the extent of visibility in the surrounding environment;
- Mitigation measures must be supplied for the visual impacts during the EIA Process;
- The tunneling option must be compared with the and cut and fill option across the Bronberg; and
- A storm water management plan must be compiled for the construction and operational phases of the road and must be included in the EIA Report.

6.1.6 Climate

The study area is situated in a transitional zone between the Northern Transvaal Climatic region and the Highveld Climatic region. The summers are mild to hot and the winters mild. It is a summer rainfall region with a mean annual precipitation of approximately 740mm.

Wind

Summer prevailing winds northwest, winter winds southeast.

Temperature °C

Average maximum 26.0 °C, minimum 13.63 °C in summer. Average winter temperature maximum 18.32 C, minimum 5.37°C.

Rain

Average annual rainfall of 740mm.

Preliminary Issues Identified

- Should the construction phase be scheduled for the summer months, frequent rain could cause very wet conditions, which makes road construction and environmental rehabilitation works extremely difficult especially in floodline and wetland areas;
- Such wet conditions often cause delays to building projects and the draining of water away from the construction works (in the case of high water tables) into the water nearby water bodies, could (if not planned and managed correctly) have an impact on the water quality of these water bodies;
- If dry and windy conditions occur during the construction phase, dust pollution could become a problem.

Additional Information or Studies Required for the EIA Phase

No additional studies are required during the EIA Phase.

6.2 The Biological Environment

6.2.1 Vegetation and Fauna

According to the GDARD C-Plan 3, 2013, southern, central and northern sections of the route traverses irreplaceable, important and ecological support areas and is regarded as ecologically sensitive. **(Refer to Figure 9 above).**

6.2.2 GDARD Biodiversity Information:

According to the information received from GDARD specialist biodiversity studies are required to investigate the following aspects:

- Fauna
- Flora
- Wetlands
- Wetland /Aquatic

7. DESCRIPTION OF THE SOCIAL ENVIRONMENT

7.1 Cultural and Historical

It terms of the legislation, it is necessary to identify and list the specific legislation and permit requirements, which potentially could be infringed upon by the proposed project. The necessity and possibilities for the implementation of mitigation measures should also be identified.

It should be noted that in terms of the South African Resources Act (Act 25 of 1999) Section 35(4) no person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or material.

Also important is that Section 34(1) of this act states that no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit, issued by the relevant provincial heritage resources authority.

Preliminary Issues Identified

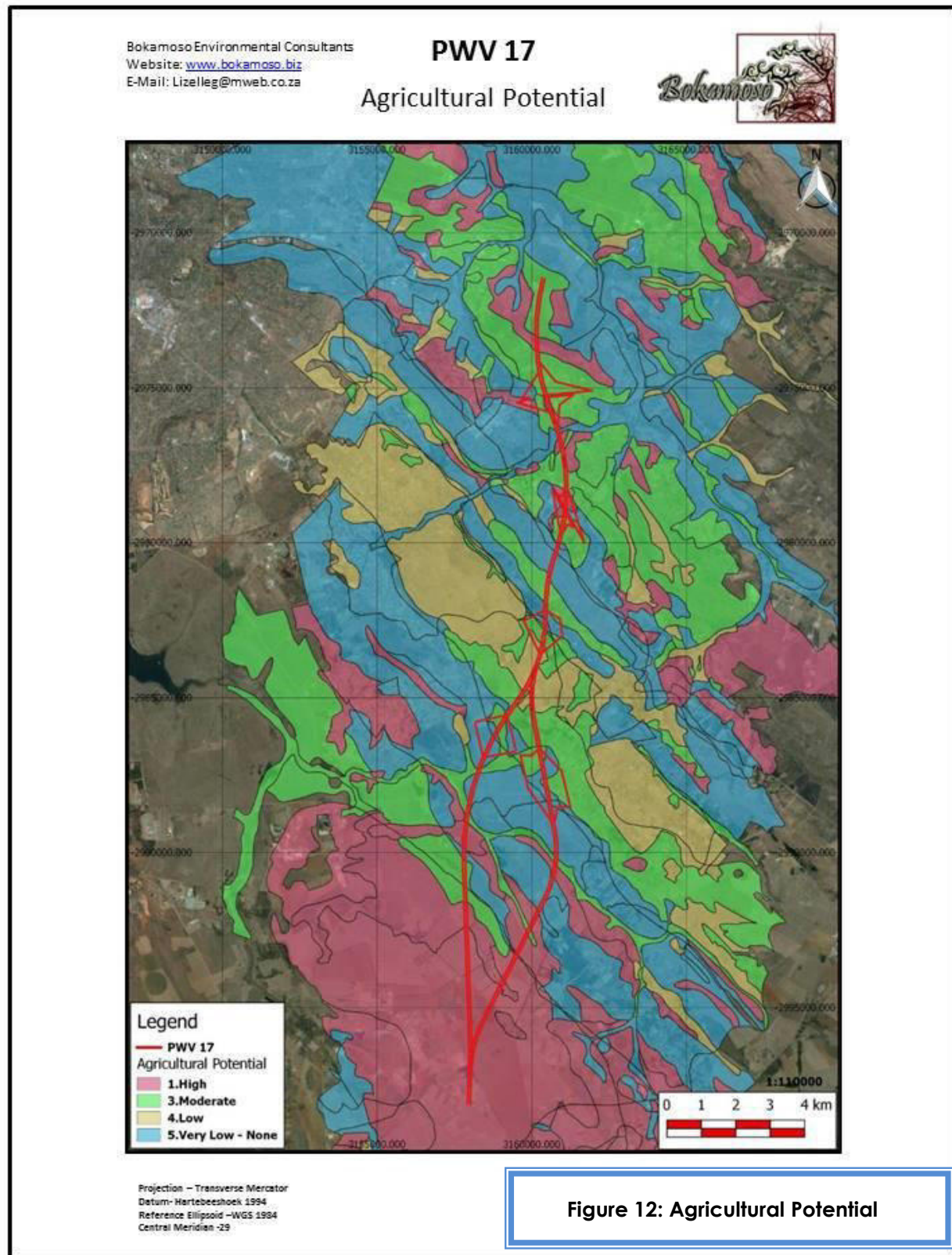
- The proposed alignment could traverse structures with cultural and historical value;
- If archaeological sites are exposed during construction work, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

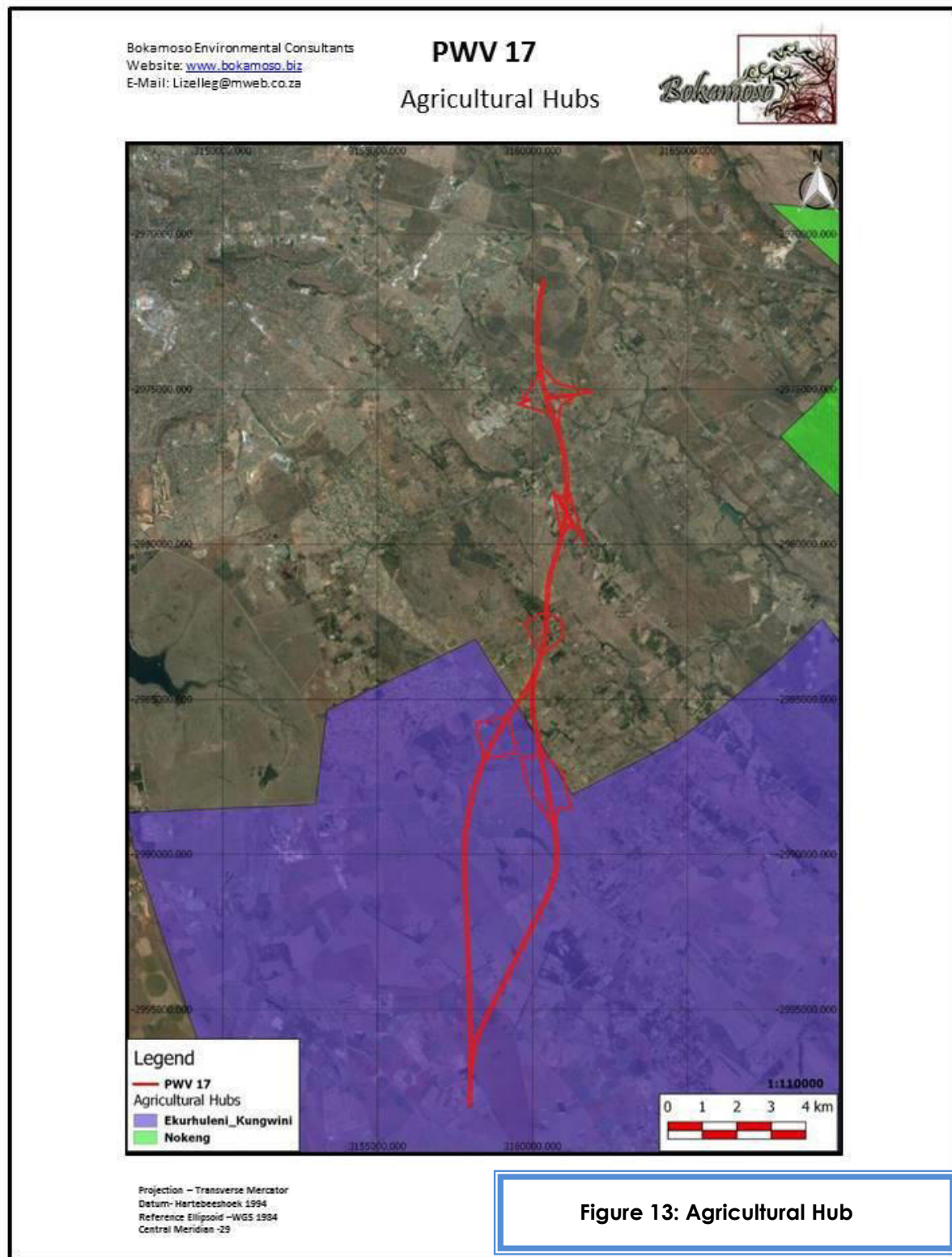
Additional Information or Studies Required for the EIA Phase

- Comments must be obtained from SAHRA and these comments must be addressed during the EIA process; and
- A cultural and historical survey will be conducted for the proposed alignment alternatives.

7.2 Agricultural Potential

According to GAPA 3 the involved section of route PW17 traverses areas ranging from **very low to high agricultural potential soils** and the southern section falls within an Agricultural Hub, an area identified for agricultural use by GDARD according to the **Draft Policy on the Protection of Agricultural Land (2006). Refer to Figures 12 and 13.**





Preliminary Issues Identified

The proposed route traverses farms and agricultural holdings. Agricultural activities are currently taking place on some of the farms and agricultural holdings. At this stage the most significant impacts will be on the farms and agricultural holdings to the south of the Bronberg.

Additional Information or Studies Required for the EIA Phase

An Agricultural Potential Study is required for the EIA Phase.

7.3 Qualitative Environment

7.3.1 Noise Impact

The involved section of the PWV17 traverses rural areas and could have a significant noise impact.

Preliminary Issues Identified

- The involved section of the proposed PWV17 could have a significant noise impact on existing residents. Mitigation measures should be implemented to reduce the noise levels to an acceptable level for rural and urban areas (whatever scenario is applicable).

Additional Information or Studies Required for the EIA Phase

A noise impact assessment/input must form part of the EIA specialist inputs.

7.3.2 Visual Environment

The following visual assessment criteria (**see Table 2**) have been used to determine the impact of the proposed development on the state of the environment – the significance is indicated by the respective colour coding for each of the impacts, being high, medium and low:

Table 2: Visual Impact Criteria

| CRITERIA | IMPACT | | |
|--|--|---|---|
| | HIGH | MEDIUM | LOW |
| Visibility | A prominent place with an almost tangible theme or ambience | A place with a loosely defined theme or ambience | A place having little or no ambience with which it can be associated |
| Visual quality | A very attractive setting with great variation and interest – no clutter | A setting with some visual and aesthetic merit | A setting with no or little aesthetic value |
| Compatibility with the surrounding landscape | Cannot accommodate proposed road without the development appearing totally out of place – not compatible with the existing theme | Can accommodate the proposed road without it looking completely out of place | The surrounding environment will ideally suit or match the proposed road |
| Character | The site or surrounding area has a definite character/ sense of place | The site or surrounding environment has some character | The site or surrounding environment exhibits little or no character/ sense of place |
| Visual Absorption Capacity | The ability of the landscape not to | The ability of the landscape to less | The ability of the landscape to easily |

| | | | |
|----------------|--|---|--|
| | accept a proposed development because of a uniform texture, flat slope and limited vegetation cover | easily accept visually a particular type of development because of less diverse landform, vegetation and texture | accept visually a particular type of development because of its diverse landform, vegetation and texture |
| View distance | If uninterrupted view distances to the site are > 5 km | If uninterrupted view distances to the site are < 5 km but > 1 km | If uninterrupted view distances to the site are > 500 m and < 1000 m |
| Critical Views | Views of the site seen by people from sensitive view sheds i.e. farms, nature areas, hiking trails etc. | Some views of the site from sensitive view sheds | Limited or partial views of the site from sensitive view sheds |
| Scale | A landscape with horizontal and vertical elements in high contrast to human scale | A landscape with some horizontal and vertical elements in some contrast to human scale | Where vertical variation is limited and most elements are related to the human and horizontal scale |

From the preliminary visual assessment, it is evident that the proposed road will be visible from various view sheds that surround the study area.

To the north of the Bronberg the study area is fairly flat the road will be visible from the immediate surrounding properties and from the higher lying ridge to the west of the site (the ridge that accommodates the Farm Inn Hotel) and from the Bronberg Mountain Range to the south of the study area. There are also some ridges to the east of the Boschkop Road and the freeway will most probably also be visible from such ridges. **Refer to Figure 14 below**

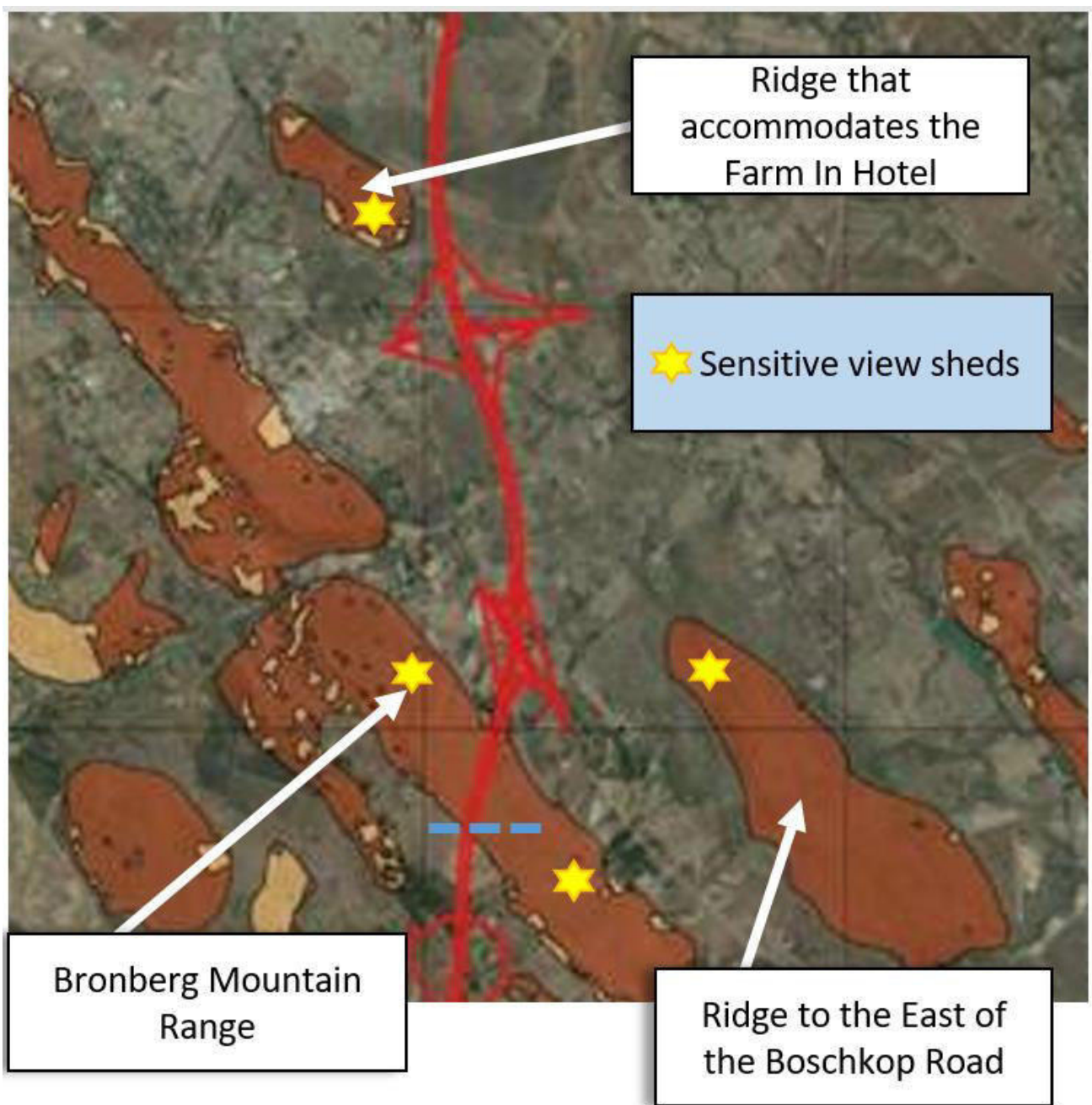


Figure 14: Preliminary Visual Impact Identification – PWV 17 To The North Of The Bronberg

If the proposed Freeway will be alignment to cut across the Bronberg Mountain Range some extensive cutting and filling exercises will be required. At this stage the viewpoint is that the proposed Freeway will be very visible from the areas to the north and south of the Bronberg. The proposed freeway will most probably be very visible for uninterrupted distances between 1 and 5km.

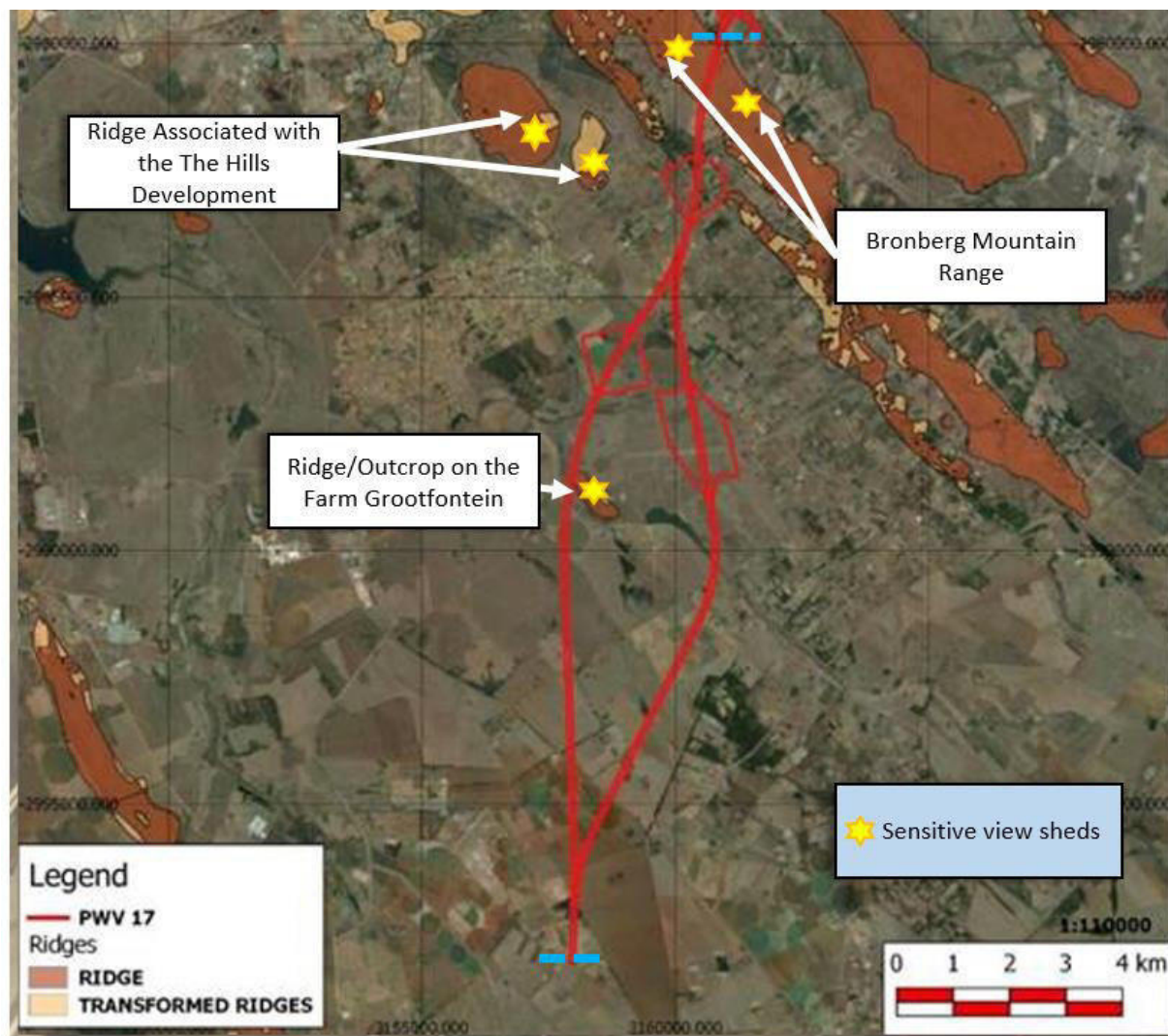


Figure 15: Preliminary Visual Impact Identification – PWV 17 To The South Of The Bronberg

The area to the south of the Bronberg is flatter than the area to the north of the Bronberg, but due to the interchanges that are proposed in this area, the freeway will be elevated in areas and will be visible from surrounding properties, which mainly consist of farms and agricultural holdings. If not planned correctly, the proposed freeway will have an impact on the rural character and tranquil atmosphere experienced in the area.

GDARD (the GDARD Ridges Policy) identified at least 3 prominent ridges/ outcrops in the section of the study area to the south of the Bronberg. Two of the ridges are situated to the west of the original/ published alignment and such ridges are located within and in close proximity of upmarket residential developments (i.e. The Hills Eco Estate) and the other ridge is situated on the farm Grootfontein (just to the west of the Groot Dam) and the published/ original alignment traverses the western part of the small ridge/ outcrop.

Preliminary Issues Identified

The involved section of the PWV17 will be visible from the surrounding properties (mainly farms and agricultural holdings). It could have a visual impact on the surrounding environment and should be planned and designed correctly to minimise any impacts in the area.

Additional Information or Studies Required for the EIA Phase

- A more detailed visual assessment must be done during the EIA stage;
- Where possible vertical and horizontal alignments will be considered; and
- Mitigation measures for the construction and operational phase visual impacts must be supplied during the EIA Process (mainly for areas where the vertical alignments are available).

7.3.3 “Sense of Place”

The concept of “a Sense of Place” does not equate simply to the creation of picturesque landscapes or pretty buildings, but to recognise the importance of a sense of belonging. Embracing uniqueness as opposed to standardisation attains quality of place. In terms of the natural environment it requires the identification, a response to and the emphasis of the distinguishing features and characteristics of landscapes. Different natural landscapes suggest different responses. Accordingly, settlement design should respond to nature. In terms of the human made environment, quality of place recognises that there are points where elements of settlement structure, particularly the movement system, come together to create places of high accessibility and these places are recognised in that they become the focus of public investment, aimed at making them attractive, user-friendly and comfortable to experience.

The landscape is usually experienced in a sensory, psychological and sequential sense, in order to provide a feel and image of place (“genius loci”).

A landscape is an integrated set of expressions, which responds to different influences. Each has its unique spirit of place, or “genius loci”. Each landscape has a distinct character, which makes an impression in the mind, an image that endures long after the eye has moved to other settings.

If planned correctly the proposed road could enhance the genius loci of the broader area by establishing infrastructure for the future development of the area.

Sense of Place is the subjective feeling a person gets about a place, by experiencing the place, visually, physically, socially and emotionally. The “Sense of Place” of a property/ area within the boundaries of a city, is one of the major contributors to the “Image of a City/ City Image”.

City Image consists of two main components, namely **place structure** and **sense of place**. Place structure refers to the arrangement of physical place making elements within a space, whereas sense of place refers to the spirit of a place. It could be defined as follows:

- **Place Structure** refers to the arrangement of physical place making elements within a unique structure that can be easily legible and remembered.
- The **Sense of place** is the subjective meanings attached to a certain area by individuals or groups and is closely linked to its history, culture, activities, ambience and the emotions the place creates.

As mentioned the proposed freeway will mainly cuts through agricultural holdings and farm portions. The proposed freeway is also alignment to traverse a very sensitive ridge with unique aesthetic qualities. The freeway will furthermore traverse several perennial and non-perennial drainage features/watercourses and wetlands.

The ridges, rivers, wetlands and the agricultural activities associated with the study area contributes to the "sense of place" of the study area the proposed freeway will most probably have an impact on the "Sense of Place" of the study area and its surroundings. It is however important to note that roads are needed and all freeways traverse rural areas/ farm land, because freeways are usually developed to link cities and to improve mobility of a Provincial and National scale.

Preliminary Issues Identified

The proposed PWV17 could have a negative impact on the "Sense of Place" on the study area and its surroundings. At this stage, we believe the traversing of the Bronberg Mountain Range will have the most significant impact o the "Sense of Place". It will however be possible, through the implementation of suitable mitigation measures (i.e. the usage of screening vegetation, cutting exercises etc.) to mitigate the impacts on the "Sense of Place" to more acceptable levels.

Additional Information or Studies Required for the EIA Phase

Landscaping/rehabilitation guidelines for the linear strips of land adjacent to the proposed road. Sensitive view sheds must be taken into consideration.

7.4 Institutional Environment

7.4.1 On an International Level

Relevant International Conventions to which South Africa is party:

- **Convention relative to the Preservation of Fauna and Flora** in their natural state, 8 November 1993 (London);
- **Convention on Biological Diversity**, 1995
(provided and added stimulus for a re-examining and harmonization of its activities relating to biodiversity conservation. This convention also allows for the in-situ and ex-situ propagation of gene material); and
- **Agenda 21** adopted at the United Nations Conference on Environment and Development (UNCED) in 1992. (An action plan and blueprint for sustainable development).

7.4.2 On a National Level

National Environmental Management Act (NEMA), 1998 (Act No 107 of 1998)

In terms of Regulations no. R982 published in the Government Notice no. 38282 of 4 December 2014 of the National Environment Management Act, 1998 (Act No. 107 of 1998)

an Environmental Impact Assessment Process is required for the construction of the proposed road.

NEMA provides for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

This Act formulates a set of general principles to serve as guidelines for land development and it is desirable that:

- The law develops a framework for integrating good environmental management into all development activities;
- The law should promote certainty with regards to decision-making by organs of state on matters affecting the environment;
- The law should establish principles guiding the exercise of functions affecting the environment;
- The law should ensure that organs of state maintain the principles guiding the exercise of functions affecting the environment;
- The law should establish procedures and institutions to facilitate and promote co-operative government and intergovernmental relations;
- The law should establish procedures and institutions to facilitate and promote public participation in environmental governance; and
- The law should be enforced by the State and that the law should facilitate the enforcement of environmental laws by civil society.

If the involved authorities do not take the principles of NEMA into consideration when evaluating an environmental report/ document, the involved authority can be held responsible for any damage to the environment (social, ecological and economical).

The proposed development is listed under the activities as regulated under NEMA.

The Development Facilitation Act (DFA) 1995 (Act 67 of 1995)

This Act formulates a set of general principles to serve as guidelines for land development inter alia revolving around:

- The promotion of integration of the social, economic, institutional and physical aspects of land development;
- The promotion of integrated land development in rural and urban areas in support of each other;
- The promotions of the availability of residential land and employment opportunities in close proximity to or integrated with each other;
- The promotion of a combination of diverse land-uses, with each proposed land development area to be judged on its own merit and no specific use, whether residential, commercial, conservation etc., to be regarded as less important;
- Discouraging urban sprawl to promote more compact towns/ cities;
- Encouraging environmentally sound land development practices; and
- Promoting sustained protection of the environment.

Integrated Environmental Management

Integrated Environmental Management (IEM) is a philosophy, which prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development (Department of Environmental Affairs, 1992). The IEM guidelines intend endearing a pro-active approach to sourcing, collating and presenting information at a level that can be interpreted at all levels.

The National Water Act, 1998 (Act No 36 of 1998)

The purpose of this Act is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that take into account, amongst other factors, the following:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Reducing and preventing pollution and degradation of water resources;
- Facilitating social and economic development; and
- Providing for the growing demand for water use.

In terms of the Section 21 of the National Water Act, the developer must obtain water use licenses if the following activities are taking place:

- a) Taking water from a water resource;
- b) Storing water;
- c) Impeding or diverting the flow of water in a watercourse;
- d) Engaging in a stream flow reduction activity contemplated in section 36;
- e) Engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1);
- f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;
- g) Disposing of waste in a manner which may detrimentally impact on a water resource;
- h) Disposing in any manner of water which contains waste from or which has been heated in any industrial or power generation process;
- i) Altering the bed, banks, course or characteristics of a water course;
- j) Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
- k) Using water for recreational purposes.

Section 21 water use licences will be required for any development which may take place within and/or impact any water resource and or floodlines. The National Water Act also required that the 1:50 and 1:100-year flood line be indicated on all the development drawings that are being submitted for approval.

The proposed route traverses the Sesmyspruit, Swavelpoortspruit and tributaries as well as wetlands. Section 21 (c) and (i) water use license applications would therefore be required.

National Environmental Management: Air Quality Act (Act No. 39 of 2004)

This act replaced the Atmospheric Pollution Prevention Act (Act No. 45 of 1965), however Part 2 of the act is still applicable. Part 2 deals with the control of noxious or offensive gases and has relevance to the proposed road.

The purpose of the Act is "To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incident thereto".

Water Services Act, 1997 (Act No 108 of 1997)

The purpose of this Act is to ensure the regulation of national standards and measures to conserve water considering, amongst other factors, the following:

- ❑ Basic sanitation;
- ❑ Basic Water supply;
- ❑ Interruption in provision of water services;

- ❑ Quality of potable water;
- ❑ Control of objectionable substances;
- ❑ Disposal of grey water;
- ❑ Use of effluent; and
- ❑ Quantity and quality of industrial effluent discharged into a sewerage system.

Interruption in provision of water services during the construction phase of the involved section of the proposed PW17 must be according to national standards.

Mitigation measures must be implemented to prevent contamination of groundwater due to the construction and operational phase of the road.

National Heritage Resource Act, 1999 (Act No 25 of 1999)

The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

It is important to note that in terms of the National Heritage Resources Act, (Act No 25 of 1999) all historical sites and materials older than 50 years are protected. It is an offence to destroy, damage, alter or remove such objects from the original site, or excavate any such site(s) or material without a permit from the National Monuments Council. Gravesites are subject to the requirements of Act 28 of 1969.

National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.

According to the GDARD C-Plan 3.3, 2013, the involved section of the proposed PWV17 traverses Irreplaceable, Critical Biodiversity and Ecological Support Areas. Specialist ecological assessment studies must be conducted for the study area.

National Spatial Biodiversity Assessment

The National Spatial Biodiversity Assessment (NSBA) classifies areas worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.

According to the GDARD C-Plan 3.3, 2013, the involved section of the proposed PWV17 traverses Irreplaceable, Ecological Support and Critical Biodiversity areas. Specialist ecological assessment studies will be conducted for the study area.

National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003)

The purpose of this Act is to provide the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

According to the GDARD C-Plan 3.3, 2013, the involved section of the proposed PWV17 traverses Irreplaceable, Ecological Support and Critical Biodiversity areas. Specialist ecological assessment studies will be conducted for the study area.

National Veld and Forest Fire Act, 1998 (Act No. 101, 1998)

The purpose of this Act is to prevent and combat veld, forest and mountain fires throughout the Republic. Furthermore, the Act provides for a variety of institutions, methods and practices for achieving the prevention of fires.

Mitigation measures for the prevention of fires must be implemented.

Conservation of Agricultural Resources Act (Act No. 43 of 1983)

This Act provides for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith. The removal of Category 1 Declared Weeds is **compulsory** in terms of this Act.

Category 1 Declared weeds must be removed on a continuous basis, as will be indicated in the EMP.

According to GAPA 3 the involved section of the proposed PWV17 traverses very low to high agricultural potential soils. In addition, the study area falls within an agricultural hub identified by GDARD.

National Road Traffic Act, 1996 (Act No. 93 of 1996)

This Act provides for all road traffic matters which shall apply uniformly throughout the Republic and for matters connected therewith.

The design and construction of the involved section of the proposed PWV17 must comply with the National Road Traffic Act.

Mine Health and Safety Act, 1996 (Act 29 of 1996)

This Act introduced the concepts of risk assessment and occupational health and safety (OHS) management systems in the mining industry.

The alignment of the involved section of the proposed PWV17 must comply with the regulations of the Mine Health and Safety Act with regard to distance from mining operations.

Mineral and Petroleum Resources Development, 2002 (Act 28 Of 2002) - MPRDA Mineral and Petroleum Resources Development Amendment, 2008 (Act 49 Of 2008)

As mentioned the proposed freeway is aligned across an old quarry to the north of the Bronberg, just before it traverses Graham Road. The status of the old quarry (in terms of mining) must be determined. It will be important to determine whether the quarrying activities that took place were conducted under a mining license/ permit issued in terms of the former mining legislation. It will also be necessary to establish whether there is/was any closure plan in place for the rehabilitation of the quarry. The status of the mining activities/ mine closure will determine the way forward with regards to the applications to be submitted to the competent authorities for consideration for this specific section of the study area.

Borrow pits are also often required for the construction of major roads. If borrow pits are required for road construction materials, such borrow pit localities must be identified and the necessary applications in terms of the MPRDA must then also be submitted to DMR for such borrow pits.

7.4.3 On a Provincial Level

Planning Responsibilities of the Involved Local Authority

The prerogative to plan a development within its jurisdictional area has always constitutionally, in terms of the Local Government Transitional Act, 1993 and recently the Municipal Systems Act, 2000, vested in the local authority involved.

In order to ensure that the proposed developments comply with the standards and requirements of the involved local authorities, the relevant officials were involved in the planning of the project from the start.

Gauteng Spatial Development Framework (GSDF)

This document published by the Gauteng Department of Development Planning and Local Government provides a spatial development framework for the whole of the Gauteng Province, and focuses on growth and development on a broad level. This Document identifies several spatial development components, of which the following is relevant to the proposed development:

The GSDF also lists so-called interventions of which the following is applicable to the involved section of the proposed PWV17:

- **Containing and Compacting the City:** The infill of vacant land contributes towards the optimizing of municipal infrastructure
- **Access and Mobility:** The easy access development areas, as well as the densification of the city, also encourage the optimizing of municipal resources.

Gauteng Transport Infrastructure Act, 2001 (Act No 8, 2001)

The purpose of this Act is to consolidate the laws relating to roads and other types of transport infrastructure in Gauteng. It provides for the planning, design, development, construction, financing, management, control, maintenance, protection and rehabilitation of provincial roads, railway lines and other transport infrastructure in Gauteng.

According to this provincial act, the proposed alignments for all the Gautrans roads on the Gautrans Grid Road Network Map must be honoured by planners.

GDARD C-Plan 3.3, 2013

According to the GDARD C-Plan 3.3, 2013, the involved section of the proposed PWV17 traverses Irreplaceable, Ecological Support and Critical Biodiversity areas.

GDARD Draft Red Data Species Policy, 2001

According to the C-Plan 3.3, 2013, the involved section of the proposed PWV17 traverses Irreplaceable, Ecological Support and Critical Biodiversity areas. The occurrence of red data species must be confirmed during the EIA phase.

GDARD Draft Ridges Policy, 2001

According to the GDARD Draft Ridges Policy no development should take place on slopes steeper than 8.8%.

GDARD Biodiversity Requirements, March 2014

The GDARD Draft Biodiversity Requirements, March 2014 will be taken into consideration during the EIA phase of the development.

Environment Conservation Act, 1989 (Act No. 73 of 1989): Gauteng Noise Control Regulations

The involved section of the proposed PWV17 must comply with the Provincial Noise Control requirements as outlined in the Provincial Notice, 5479 of 1999: Gauteng Noise Control Regulations.

Draft Policy on the Protection of Agricultural Land (2006)

The study area does not lie within an Agricultural Hub that was identified by GDARD in 2006. The Draft Policy on the Protection of Agricultural Land (2006) is therefore not applicable to the proposed road.

7.4.4 On a Local Level

Planning responsibilities of the involved Local Authority

The prerogative to plan development within its jurisdictional area has always constitutionally, in terms of the Development Facilitation Act, 1995, the Local Government Transitional Act, 1993 and recently the Municipal Systems act, 2000 vested in the local authority involved.

In order to ensure that the proposed developments comply with the standards and requirements of the involved local authority, the relevant officials were involved in the planning of the project from the start.

Municipal Systems Act - 2000)

This Act clearly establishes the Integrated Development Plan and Integrated Spatial Development Framework as guidelines to inform development and processes in this regard.

7.5 Services and Infrastructure

The involved section of the PWV17 intersects with existing roads including Garsfontein Road either on the Farm Grootfontein 394 (Ptn 1) **or** the Farm Tiegerpoort 371 (Ptns 2, 28, 245 and 235); Graham Road on the Farm Zwavelpoort 373 (Ptn 299 and RE/250); and Boschkop Road on the Farm Zwavelpoort (Ptn 43 and 34).

The proposed route crosses a number of electrical cables, telephone cables, sewer lines and water pipelines.

Preliminary Issues Identified

- The crossing/intersection with existing and planned roads;
- Servitudes registered across the area to be traversed by the route;
- The crossing of telephone cables, sewer lines and water pipelines; and
- Social impacts associated with the relocation of services or the disruption to services.

Additional Inputs or Studies Required during the EIA process

- Details on bridge structures and intersections must be included as part of the EIA;
- Servitudes must be indicated in Engineering drawings to be included as part of the EIA document.

7.6 Properties Affected

The following properties area affected by the involved section of the PWV17:

- **Tweefontein 19**
Portion 4
- **Zwartkoppies 364**
Portions 19; 22; 50; 225; 239, Remainder of Portions 2 and 45
- **Mooiplaats 367**
Portions 44;169: 170; 171; 176; 229; 232; 233; 235; 236; 378; 395; 469, and the Remainder of Portion 164, and 237
- **Tiegerpoort 371**
Portions 2; 3; 31; 32; 33; 36; 61; 62; 63; 64; 65; 66; 67; 68; 69; 87; 88; 90; 91; 92; 93; 94; 95; 97; 98; 156; 158; 159; 160; 161; 162; 163; 164; 165; 166; 167; 168; 169; 170; 173; 175; 245; 296; 318; 326; 328; 352; 376; 378; and the remainder of portions 28; 65; 161; 162; 164; 172 and 235
- **Zwavelpoort 373**
Portions 11; 27; 28; 29; 34; 35; 36; 37; 39; 42; 43; 188; 189; 200; 201; 219; 220; 221; 222; 226; 227; 228; 242; 243; 251; 254; 257; 283; 297; 299; 317; 349; 382; 383; 384; 398; 399; 400; 404; 418; 419; 424; 439; 518; 550; 551; 552; 928; 929; 930; 931; 941; 942; 943; 944 as well as remainder of portions 41; 207; 219; 257; 258; 250
- **Grooffontein 394**
Portions 1; 3; 5; 8; 24; 25; 26; and 398
- **Elandsfontein 412**
Portions 72; 73; 74; 75; 138

- **Twefontein 413**

Portions 19; 59; 63; 75; 76; 77; 78; 112; 113; 129; 134

- **Twefontein 413**

Bashewa Holdings NO 1 and 2 on Portion 119

Preliminary Issues Identified

The involved section of the PWV17 will require the expropriation of a large number of properties which amongst others include the following land-uses:

- Business and retail;
- Agricultural activities, including equestrian facilities;
- Residential properties;
- Areas earmarked for conservation purposes;
- Educational; and
- Offices.

Some of the affected parties have newly upgraded structures/ or new facilities on their properties and such construction/ upgradings activities were very costly. The proposed new road could have a significant negative impact on the surrounding property values and on the activities that are currently taking place on the affected and surrounding properties.

Accesses to properties will be affected and the accessibility of the properties will be affected one the freeway has been constructed.

Additional Inputs or Studies Required during the EIA process

The expropriation of properties to be finalized during the Detail Design and Construction Phase of the proposed route.

It is essential that the Interested and Affected Parties attend the public participation meeting to be held in March 2016. This main purpose of the meeting will be to identify all the potential issues and impacts associated with the proposed road.

Bokamoso will bring maps of the area to the meeting and it will be requested that the I&APs indicate on the drawings/ in electronic format on aerial photograph the impacts on their properties.

7.7 Public Participation

(Refer to Annexure D for Public Participation)

Public Participation is a cornerstone of any environmental impact assessment. The principles of the National Environment Management Act, 1998 (Act No. 107 of 1998) govern many aspects of environmental impact assessments, including public participation. These include provision of sufficient and transparent information on an ongoing basis to the stakeholders to allow them to comment and ensuring the participation of previously disadvantaged people, women and youth.

Effective public involvement is an essential component of many decision-making structures, and effective community involvement is the only way in which the power given to communities can be used efficiently. The public participation process is designed to provide sufficient and accessible information to interested and affected parties (I&APs) in an objective manner to assist them to:

- Raise issues of concern and suggestions for enhanced benefits.
- Verify that their issues have been captured.
- Verify that their issues have been considered by the technical investigations.
- Comment on the findings of the EIA.

In terms of the Guideline Document for Environmental Impact Assessment (EIA) Regulations promulgated in terms of the National Environmental Management Act (Act No.107 of 1998), stakeholders (I&AP's) were notified of the Environmental Evaluation Process through:

- 1) An advertisement was placed in the **Beeld** newspaper on 13 November 2015 **(Annexure D (i))**.
- 2) Site notices were erected (at prominent points on and around the study area) on 13 November 2015 **(Annexure D (ii))**.
- 3) On 12 and 13 November 2015, public notices/ flyers were distributed to the councillor and neighbouring properties and estates/ developments that may be affected by the proposed section of the PWV17 **(Annexure D (iii))**.
- 4) A second advertisement was placed in the Beeld newspaper on 14 November 2016 **(Refer to Annexure D (iv))**;
- 5) Site notices were erected (at prominent points on and around the study area) on 14 November 2016 **(Annexure D (v))**;
- 6) A Scoping Phase Public Participation meeting was held on 6 March 2016 **(Refer to Annexure D (vi))**;
- 7) I & APs already registered during the first round of public participation was once again notified of the EIA Process for the proposed freeway and was again invited to register as I&APs. The I&APs were furthermore informed of the availability of the Revised Draft Scoping Report for comment. The comment period afforded for the Revised Draft Scoping Report is from 15 November 2016 until 31 January 2017. **(Annexure D (vii))**; and
- 8) This report represents the revised Draft Scoping Report for the PWV 17 Freeway and it is requested that all I&APs, stakeholders, organs of state with an interested in the matter and any other parties involved, supply comments regarding this Revised

Draft Scoping Report by no later than 31 January 2017. Bokamoso will capture and address such comments in a Final Scoping Report to be submitted to GDARD in February 2017.

Take note that the study area affected agricultural holdings and properties that are fenced and secured. In some cases, the affected parties were reluctant to allow access to their properties and this is understandable. The situation was explained to the I&APs during the public meeting and enlarged copies of the alignment superimposed over the affected properties/ farms were presented to the I&APs. It was requested that the I&APs indicate (in writing) on the enlarged maps how their properties will be affected by the proposed freeway. **(Refer to Annexure D (viii))**

Other I&APs affected by the proposed freeway are also invited, as part of the EIA Scoping Phase, to supply detail regarding their affected properties. The map provided in **Annexure D (viii)** will then be updated to also incorporate the additional issues as supplied by affected parties as part of the comments for the Revised Draft Scoping Report.

The table below contains a summary of the comments received to date. A detailed Comments and Responses document will be included in the Final Scoping Report. **Also, refer to Annexure D (ix) for the Draft Comments and Response Report for the Scoping Phase**

Table 3: Summary of comments received

| Comments Received |
|---|
| Requests to be registered as I&AP's |
| Did not receive formal notifications |
| Request for an impact study to be done |
| Birdlife to be affected in the area |
| Development will affect wetland area |
| <ul style="list-style-type: none"> The development will be catastrophic for a wide variety of wild animals still to be |

| |
|--|
| <p>found there; the grassland and endangered species such as the marsh owl and the bull frog</p> <ul style="list-style-type: none">• This development will impact the habitat of the golden mole which is an endangered species• The Bronberg area has also been declared as a natural heritage site. |
| <p>On Portion 439 there is a dam with a surrounding wetland area that could be impacted</p> |
| <p>The proposed road will affect properties in the Bashewa and Grootfontein areas</p> |
| <ul style="list-style-type: none">• What is the size of the servitude next to the completed tar road?• The feed road is the servitude up to the main entrance of plot 83• Portion 413 has already been decreased by about 1ha due to the road servitude |
| <ul style="list-style-type: none">• Are there any alternatives that is being looked at?• Residents directly opposing the construction of the PWV17• The money spend on this road can rather be used to upgrade the current roads• When will the construction of the PWV 17 take place?• There is no knowledge of a planned highway that runs south of and parallel to the N4.• Plot 294 Tigerpoort will be severely affected by the construction of the pww17.• Could details be provided regarding other planned roads in the region as per e-mail?• Plot 83 will be visually affected by the highway |
| <ul style="list-style-type: none">• The PWV17 is going to change this beautiful place Tigerpoort negatively• What is the purpose of the crossing lines? Also, what is the distance between the furthest point of the interchange and the M6 and will the basic plan be compiled by June 2016.• Two interchanges will be on the front porch of portion 413 Boschkop• The distance between the start of the onramp & the end of the off-ramp from the interchange and the 10.2 km on Graham road is of great importance to Portion 413.• The interchange in the immediate area of the proposed N34 interchange as well as the intersections on both sides are of crucial and critical importance to all the landowners |

- The PWV17 N4 East that links with the Delmas Road: it is mentioned that the road could either cross the Tigerpoort 371 JR or the Grootfontein 394 JR.
 - **In principle, the Rietvlei home owners' association support the application for the proposed road, if a slipway is provided from Sinovich Drive onto the Delmas Road.**
 - The proposed PWV17 road will cut through Portion 61 (a portion of Portion 2) of the farm Tigerpoort 371 – the property of **Abrina**
 - Plot 233 & 235 with residential dwellings, commercial goat farming & offices will be directly impacted by the PWV17.
 - The PWV17 is the K54 – verify please
 - Portion 94 of the farm Tigerpoort 371 JR is greatly affected by the proposed road alignment – PWV17
 - The planned township and the impact of the proposed alternative alignment of the PWV17 must be carefully evaluated
 - Owner of a smallholding in Bashewa excited about the development
 - Plot 67 and 68 will be affected by the road running right through their property: the road close by will also impact their agricultural environment negatively.
 - Portion 149 of the farm Tigerpoort 371 JR is directly affected by the PWV17
 - Does the split in the road indicate two alternatives?
 - The proposed road will divide Plot 188 Zwavelpoort – Bronberg Properties (EDMS) BPK , the registered owner
 - The road will be an additional road – 24 hour traffic noise
 - The proposed road cuts through resident's husband's grave and their homestead was built in 1910 which is of historic importance
 - Is the split shown in the proposed plan in red, one or the other path that the highway will take?
 - Two households live on Plot 1 Bashewa and will be severely affected by the PWV17
 - Portion 349 Zwavelpoort JR 373 is not indicated on the map – it is crucial that this mistake be rectified – request an updated map
-
- Request for an updated map of the outlay of the PWV17
 - The owner of 205 Zwavelpoort 373 JR 's map refers **to K54** and he cannot

| |
|--|
| <p>understand why it is referred to as the PWV17</p> |
| <ul style="list-style-type: none"> • Request to be included and to be informed of the public participation process. • Is there a date set for the public participation? inform the residents of such a date • Advertisements for the public participation could be placed with the Bronberg magazine – monthly periodical (Gerhard Kleijn -082 377 5807) • Another interested and affected party received a notice/letter from AECOM • Request for an extension of the commenting period • Advert in Bronberger not clear |
| <p>Provide timeframes for the process to be completed</p> |
| <p>The proposed road will create an easy entrance and exit for criminals to their community</p> |
| <p>It is a convenient and suitable area for horse riding – equestrian area</p> |
| <p>Plot 242 Swaeltjie AH – the owner will have to be reimbursed for the replacement of his property – runs a business from there.</p> |
| <ul style="list-style-type: none"> • To be reminded of when the scoping report as well as the EIA report will be submitted • Ekurhuleni environmental resource management department requested a hard copy and 3 CD's • Provide more information of the proposed development • Sabreal home developments requires an electronic copy of the proposed PWV17 road report |
| <p>According to the provincial database there is currently no land claim lodged on the property/ies mentioned below:</p> <p>Farm Tweefontein 19 JR / Farm Grootfontein 394 JR / Farm Elandsfontein 412 JR, however it is possible that a claim could be lodged under a different name.</p> |
| <p>The Grootfontein / Rietvleiview area / Bashewa area / Tierpoort area / Swavelpoort area are affected</p> |
| <p>The Rietvlei View Home Owners Association can support the application for the proposed road. Providing that a slipway is provided from Sinovich drive onto the Delmas road since the increase in traffic volumes will make it very difficult for users of Sinovich drive to join the Delmas Road (R50).</p> |

| |
|--|
| Community do not see the need for the proposed road. |
|--|

| |
|---|
| Queries made regarding the deviation from the publish road network. |
|---|

8. ENVIRONMENTAL SCOPING

8.1 Preliminary Environmental Issues and Sensitivity Map

From the preliminary information available, the following environmental issues were identified:

- **Hydrology:**

The proposed alignment traverses the Sesmyspruit as well as the Swavelpoortspruit and tributaries as well as possible wetlands.

- Some sensitive wetlands occur on the Farm Grootfontein and during former environmental scans conducted for the proposed road, the area was identified as a suitable habitat for red data fauna and flora species.

- **Fauna and flora:**

Possible red data flora and fauna species: According to GDARD C-Plan 3.3, 2013 the proposed alignment traverses irreplaceable, Critical Biodiversity and Ecological Support areas.

- **Cultural:** Possible cultural/historic artefacts or graves affected by the proposed alignment.

- **Noise Impact:** The proposed alignment of the PWV17 could have noise impacts on surrounding residents.

- **Visual Impact:** The proposed alignments could have visual impacts on the surrounding view sheds during the construction and operational phases and mitigation measures should be implemented.
- **Air pollution:** The increase in traffic through the area will result in an increase in air pollution from vehicles.
- **Sense of Place:** The proposed alignment of the PWV17 will have a significant impact on the Sense of Place and tranquillity of the area.
- **Socio-Economic impact on industry:** The proposed alignment of the PWV 17 could have an impact on the residents and businesses in the area.
- **Safety and crime**
The proposed road could result in an increase in safety and crime in the area both during the construction and operational phases.
- **Property devaluation**
The proposed alignment of the PWV17 could have a negative impact on property values, especially those properties dissected by the route.
- **Expropriation of properties**
A large number of properties need to be expropriated.
- **Increase in traffic**
The involved section of the PWV17 will result in an increase in traffic at both ends of the road.
- **Impact on existing roads and developments**

The proposed alignment of the PWV17 will have an impact on existing roads and developments in the area.

9. METHODOLOGY OF ASSESSING IMPACTS THAT HAVE BEEN IDENTIFIED

9.1 Significance Description Methodology

The significance of Environmental Impacts will be assessed in the EIA process in accordance with the following method:

Significance is the product of probability and severity. Probability describes the likelihood of the impact actually occurring, and is rated as follows:

- Improbable - Low possibility of impact to occur either because of design or historic experience.
Rating = 2

- Probable - Distinct possibility that impact will occur.
Rating = 3

- Highly probable - Most likely that impact will occur.
Rating = 4

- Definite - Impact will occur, in the case of adverse impacts regardless of any prevention measures.
Rating = 5

The severity factor is calculated from the factors given to "intensity" and "duration". Intensity and duration factors are awarded to each impact, as described below.

The Intensity factor is awarded to each impact according to the following method:

Low intensity - natural and man made functions not affected –

Factor 1

- Medium intensity - environment affected but natural and man made functions and processes continue -Factor 2
- High intensity - environment affected to the extent that natural or man made functions are altered to the extent that it will temporarily or permanently cease or become dysfunctional - Factor 4

Duration is assessed and a factor awarded in accordance with the following:

- Short term - <1 to 5 years - Factor 2
- Medium term - 5 to 15 years - Factor 3
- Long term - impact will only cease after the operational life of the activity, either because of natural process or by human intervention - Factor 4.
- Permanent - mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient - Factor 4.

The severity rating is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below. For example:

$$\begin{aligned} \text{The Severity factor} &= \text{Intensity factor X Duration factor} \\ &= 2 \times 3 \end{aligned}$$

= 6

A Severity factor of six (6) equals a Severity Rating of Medium severity (Rating 3) as per table below:

TABLE 4: SEVERITY RATINGS

| RATING | FACTOR |
|---|----------------------------|
| Low Severity (Rating 2) | Calculated values 2 to 4 |
| Medium Severity (Rating 3) | Calculated values 5 to 8 |
| High Severity (Rating 4) | Calculated values 9 to 12 |
| Very High severity (Rating 5) | Calculated values 13 to 16 |
| Severity factors below 3 indicate no impact | |

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating.

The significance rating should influence the development project as described below:

- Low significance (calculated Significance Rating 4 to 6)
Positive impact and negative impacts of low significance should have no influence on the proposed development project.

- Medium significance (calculated Significance Rating >6 to 15)
Positive impact: Should weigh towards a decision to continue
Negative impact: Should be mitigated to a level where the impact would be of medium significance before project can be approved.

- High significance (calculated Significance Rating 16 and more)

Positive impact: Should weigh towards a decision to continue, should be enhanced in final design.

Negative impact: Should weigh towards a decision to terminate proposal, or mitigation should be performed to reduce significance to at least medium significance rating.

In correspondence received from GDARD some officials was of the opinion that the significance methodology used by Bokamoso applies a simple mathematical formula to environmental aspects with significantly different sensitivity values, which might or might not give an inaccurate final significance value.

The significance methodology used by Bokamoso was prescribed to environmental consultants in courses in impact assessments. No methodology can be accurate to a numerical value where the environment is concerned, because it cannot be measured. Numerical values are only an indication of the significance or severance of impacts. If we do not agree with the outcome of the assessment, we will adjust the numerical value to reflect a more realistic significance. The methodology only acts as an aid to the environmental consultant and the consultant need to use his/her experience in the field together with the methods in order to reach a realistic significance of impacts. Bokamoso, in particular Ms. Lizelle Gregory, has extensive experience in the field of impact assessments.

10. PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT

(Refer to Annexure E: Plan of Study for EIA)

The plan of study for Environmental Impact Assessment which sets out the proposed approach to the environment impact assessment of the application include:

- A description of the tasks that will be undertaken as part of the environmental impact assessment process, including any specialized processes, and the manner in which such tasks will be undertaken;
- An indication of the stages at which the competent authority will be consulted;
- A description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity;
- Particulars of the public participation process.

11. CONCLUSION

The purpose of the scoping process is to carry out a status quo analysis of the study area, to investigate the alternatives considered for the project, to identify the most significant environmental issues associated with the proposed project, to determine the impact of the proposed development on the social environment and to identify (already at an early stage) possible “fatal flaws” that could prevent the project from happening.

It is important to note that the scoping process identified other crucial issues that must be addressed in more detail during the EIA process and it is requested that the authorities responsible for evaluation of the scoping report (GDARD and the involved local authority) examine the issues listed under each environment and where possible add issues to/remove issues from the issues lists.

As mentioned above, the issues/impacts listed in this Revised Draft Scoping Report and Issues and Response Report will be assessed in more detail during the EIA phase. If the EIA process confirm that there is a suitable alignment for the PWV 17 freeway from an environmental point of view, the report will also include suitable mitigation measures and guidelines to reduce or prevent the issues/impacts associated with the preferred alignment. Such guidelines and mitigation measures will then be incorporated as part of

an Environmental Management Plan (EMP) for the preconstruction, construction and/or operational phases of the project. Such EMP will be annexed as part of the EIA Report.

12. RECOMMENDATIONS

Based on the above-mentioned information supplied and the conclusions that were made, it is suggested that the Scoping Report be accepted, that the Plan of Study for EIA be approved and that the applicant be allowed to commence with the EIA for the project.

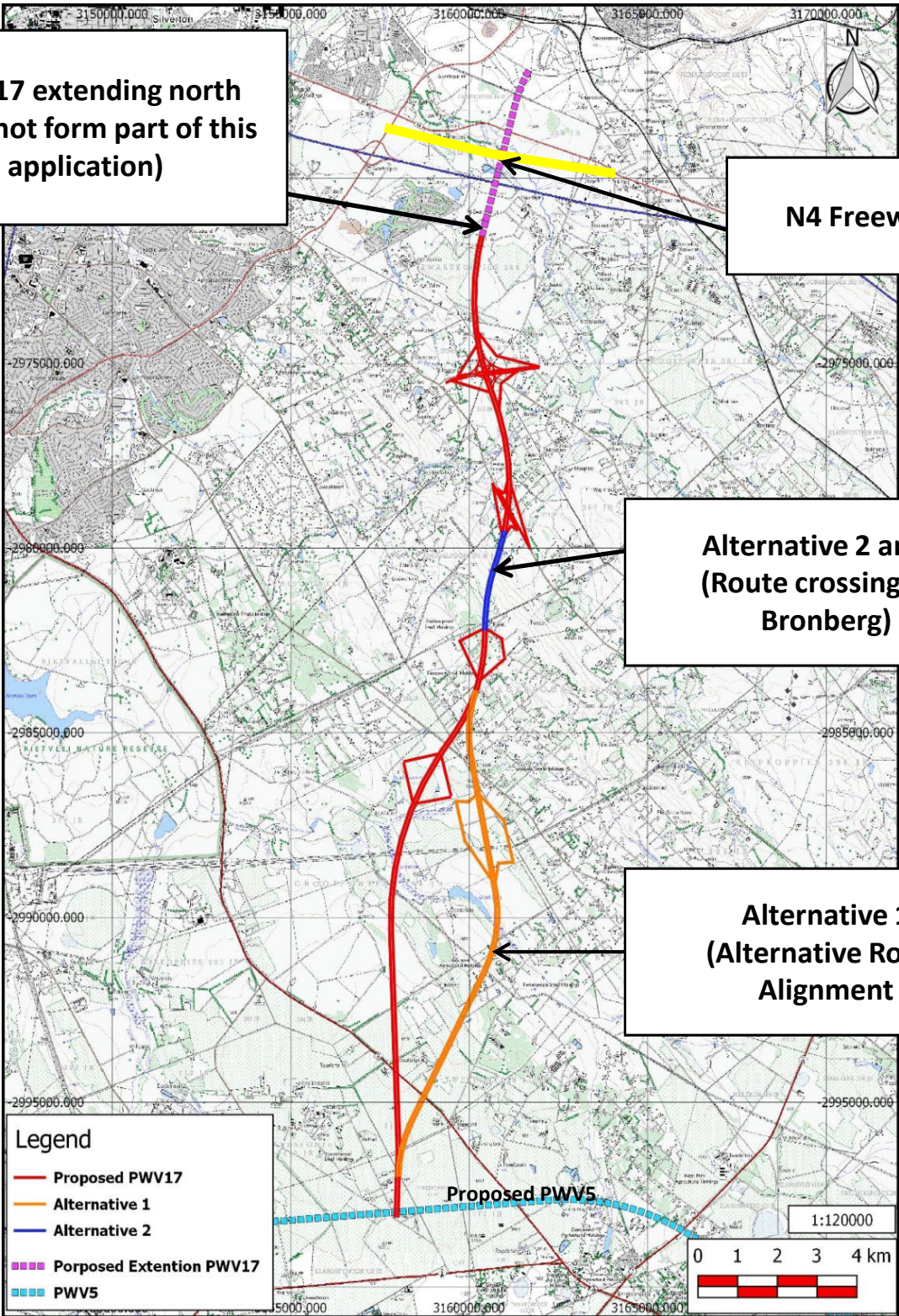
The completed EIA must include the following information/comply with the following documents:

- The approved Plan of Study for EIA;
- The specialist reports listed by Bokamoso in this Scoping Report and in the Plan of Study for EIA, unless the relevant issues for which specialist reports are required are resolved/addressed without such specialist studies;
- Additional specialist inputs and other relevant information listed by the relevant authorities; and
- An Environmental Management Plan.

Annexure A

Enlarged copies of figures

**PWV17 extending north
(does not form part of this
application)**



N4 Freeway

**Alternative 2 and 3
(Route crossing the
Bronberg)**

**Alternative 1
(Alternative Route
Alignment)**

Legend

- Proposed PWV17
- Alternative 1
- Alternative 2
- Proposed Extension PWV17
- PWV5

**Figure 2:
Aerial Map**

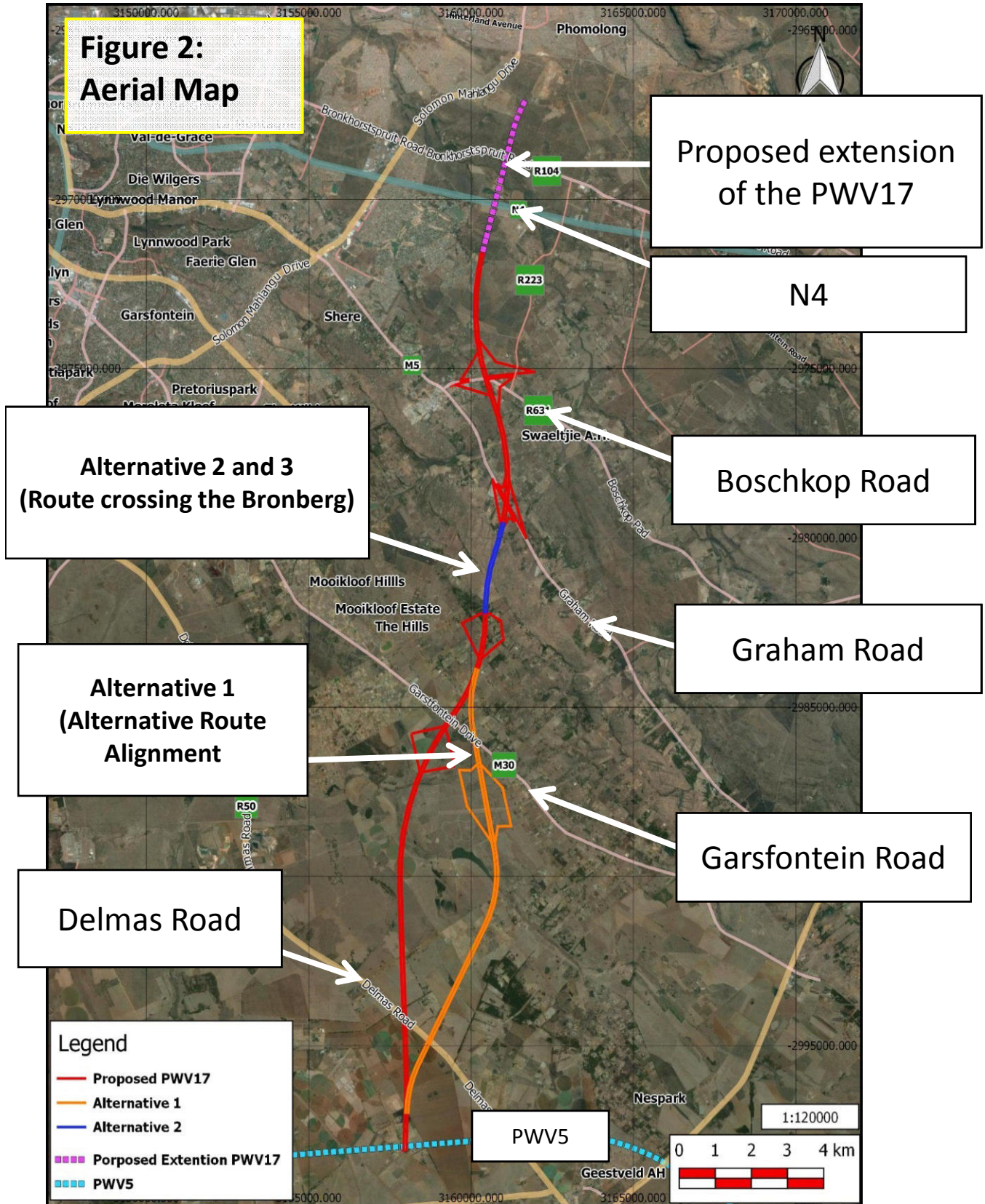
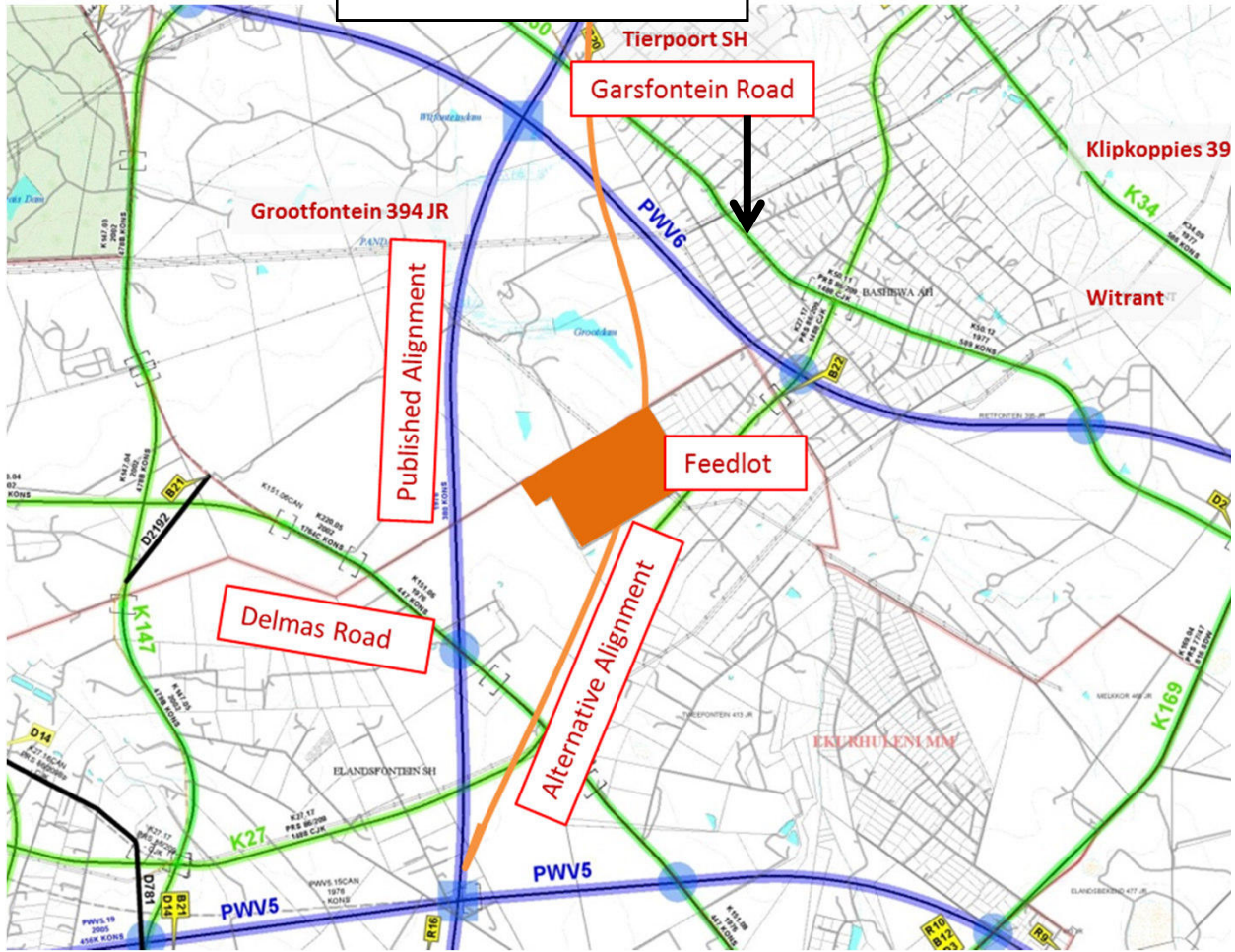


Figure 4



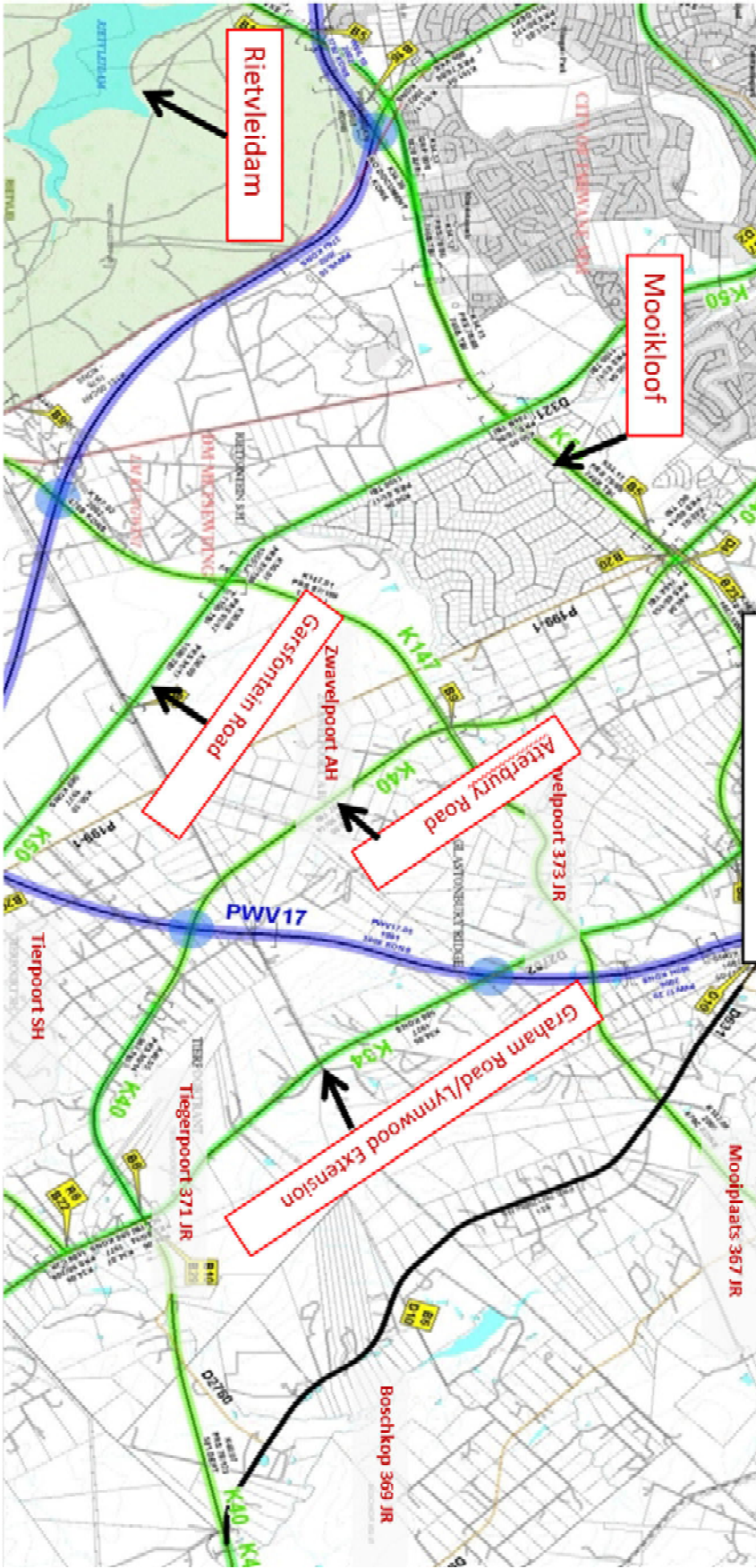
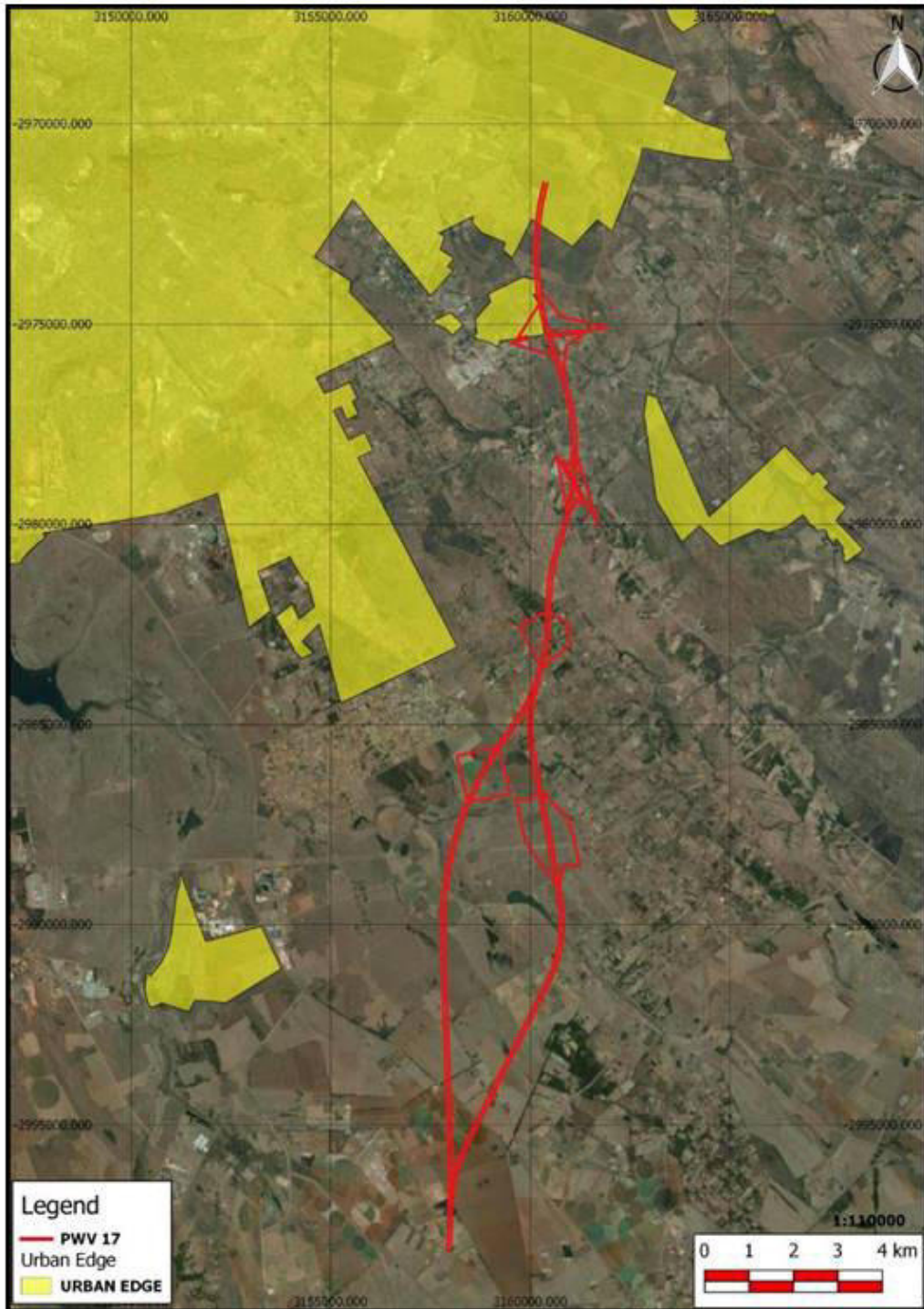


Figure 5

Bokamoso Environmental Consultants
Website: www.bokamoso.biz
E-Mail: Lizelleg@mweb.co.za

PWV 17

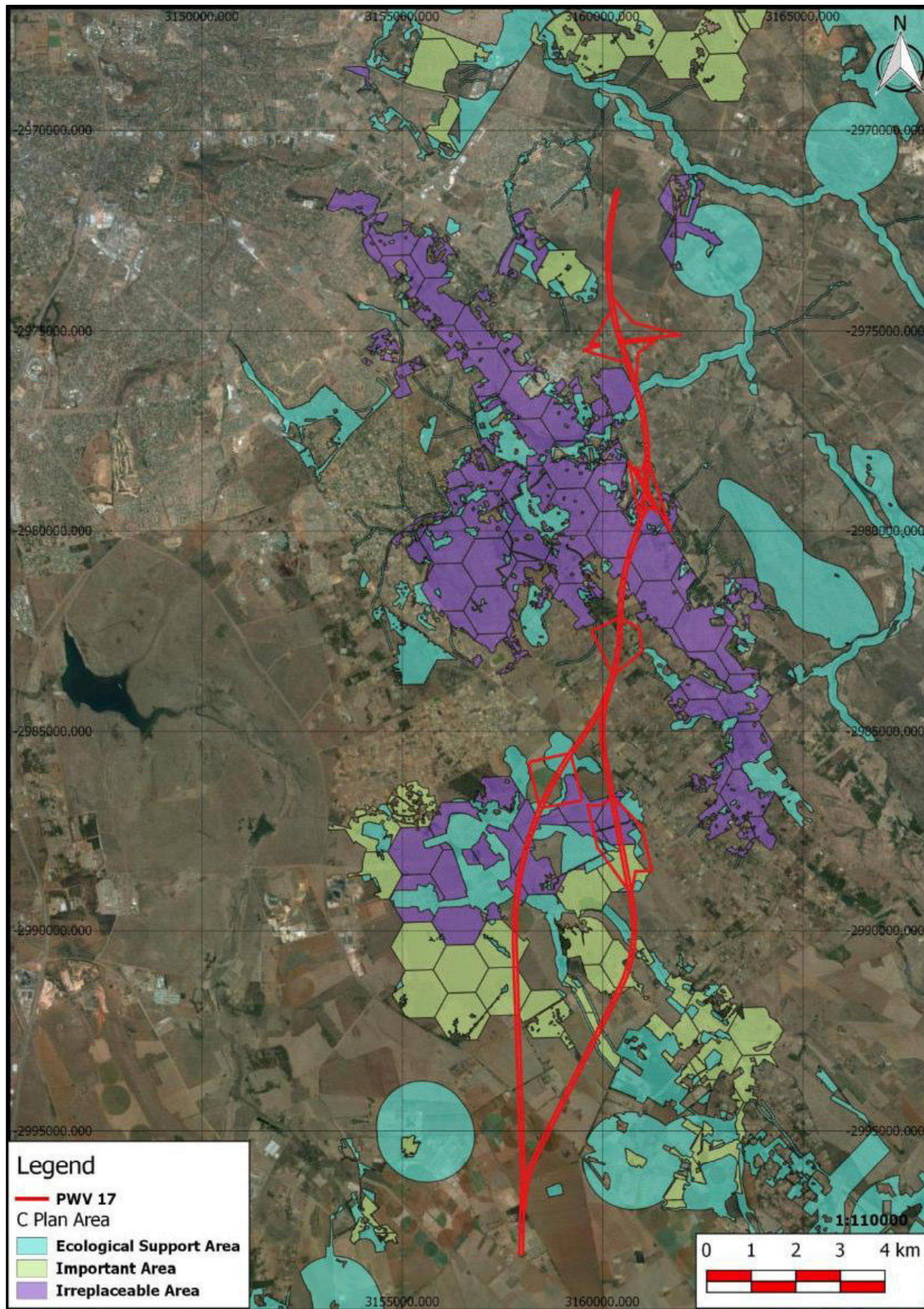
Urban Edge



Projection – Transverse Mercator
Datum- Hartebeeshoek 1994
Reference Ellipsoid –WGS 1984
Central Meridian -29

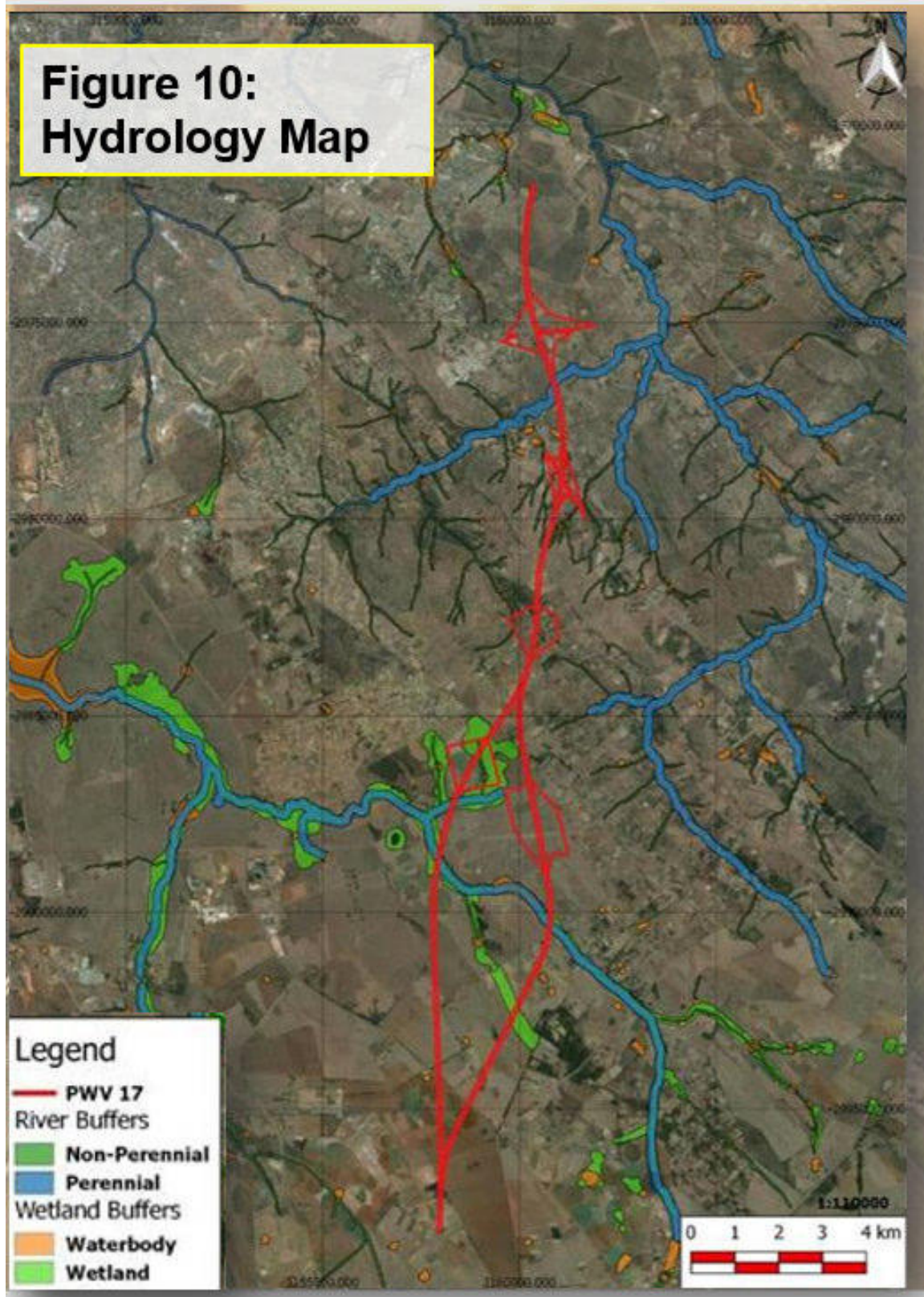
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C Plan Area



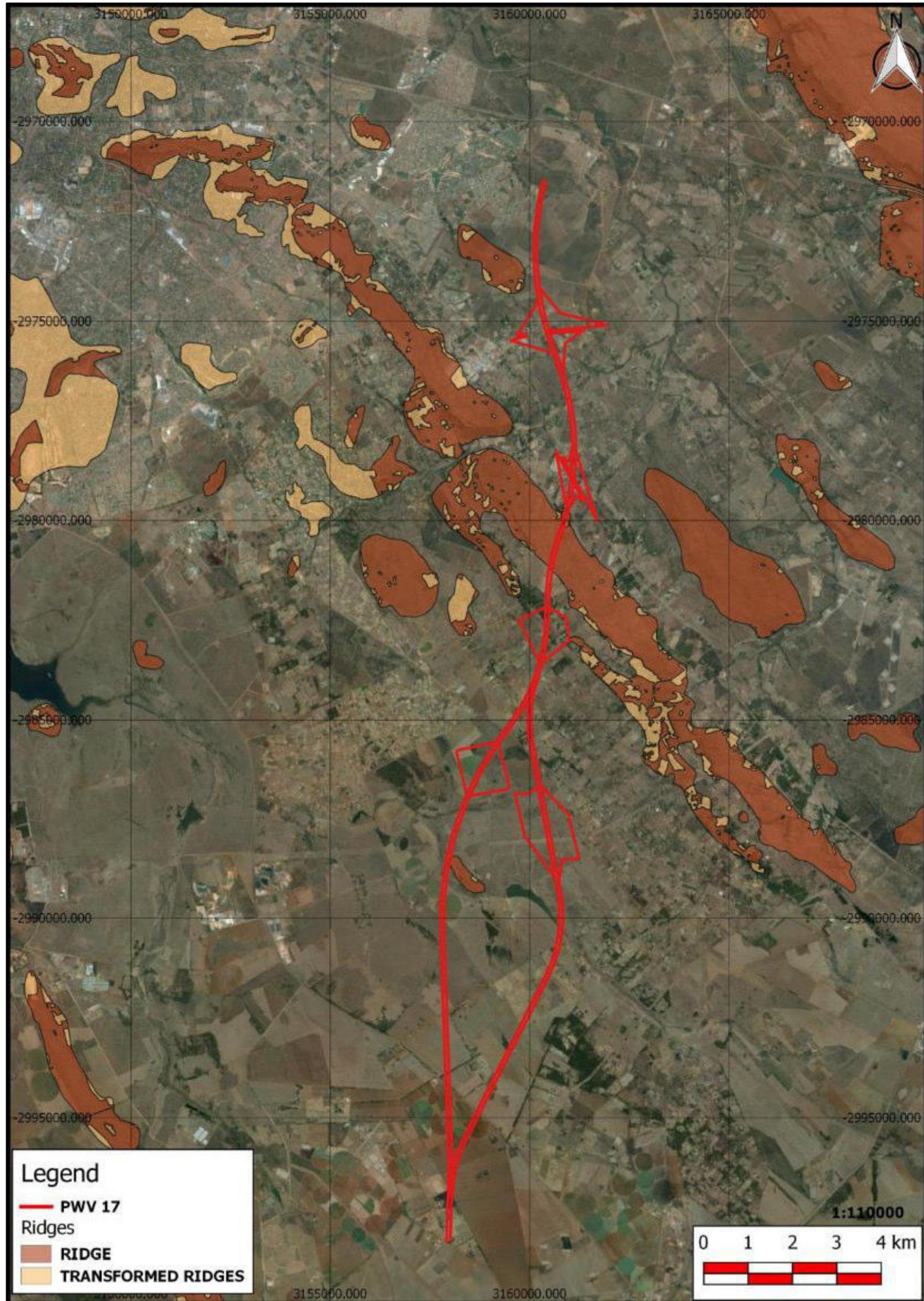
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**Figure 10:
Hydrology Map**



PWV 17

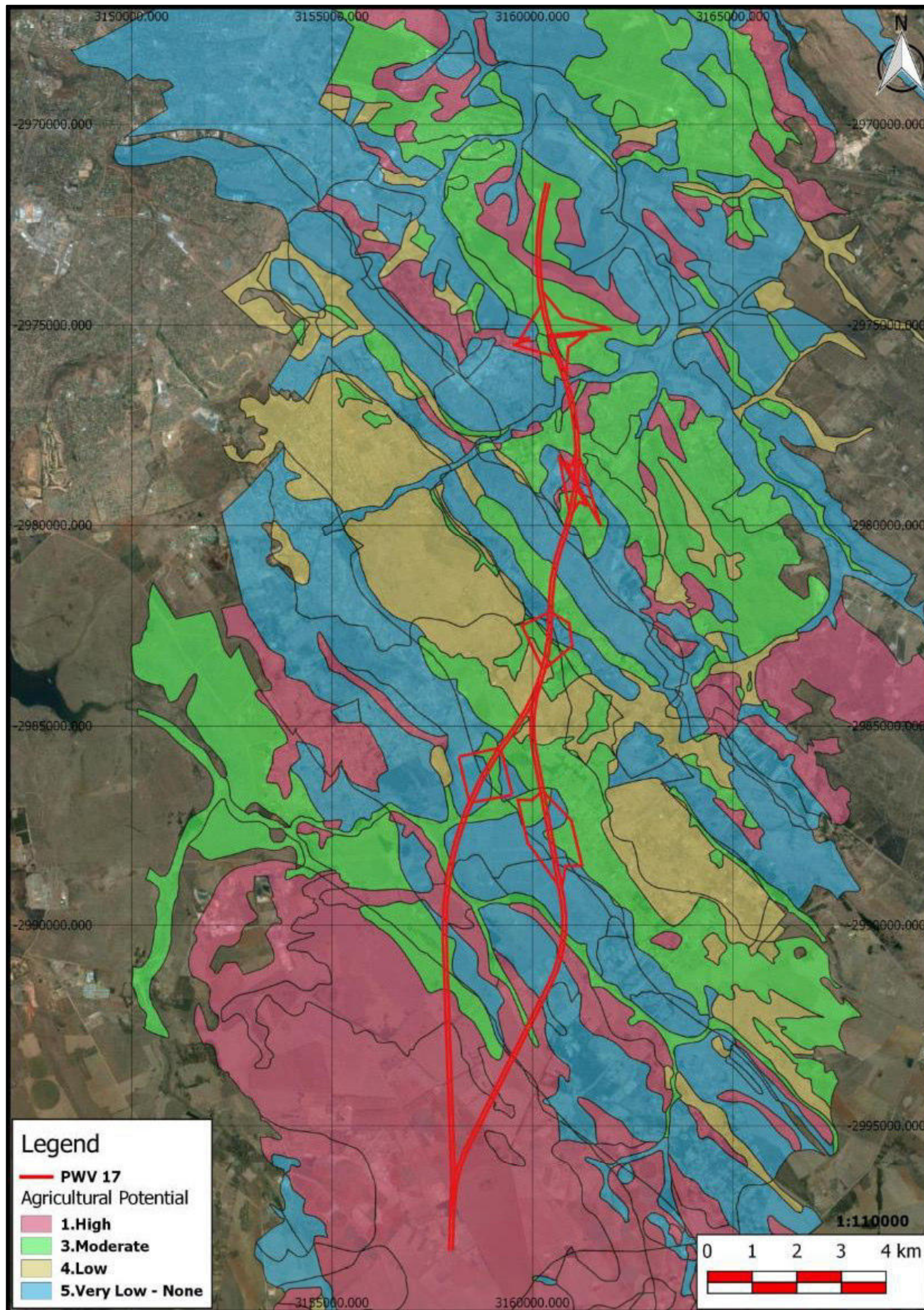
Ridges



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PWV 17

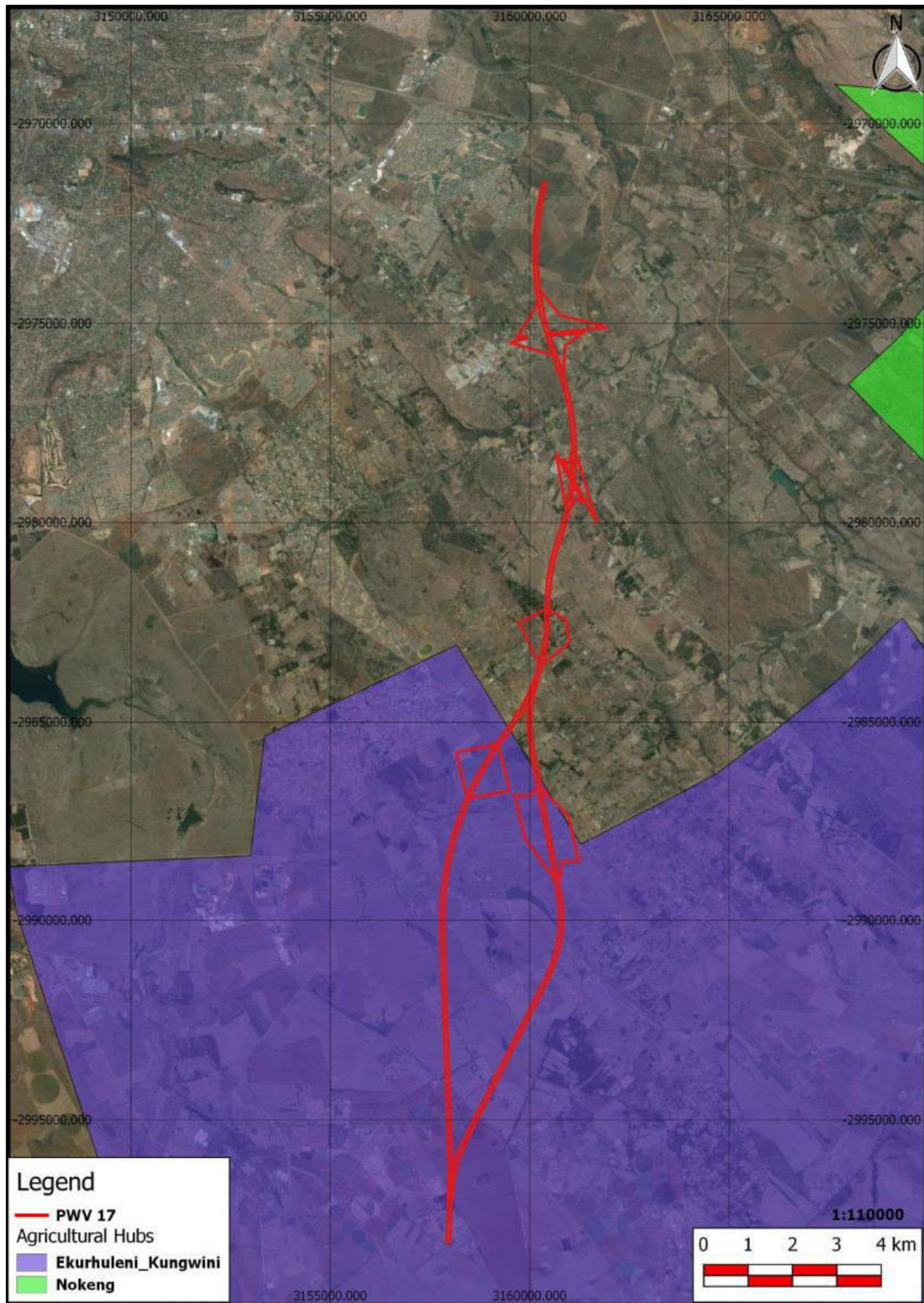
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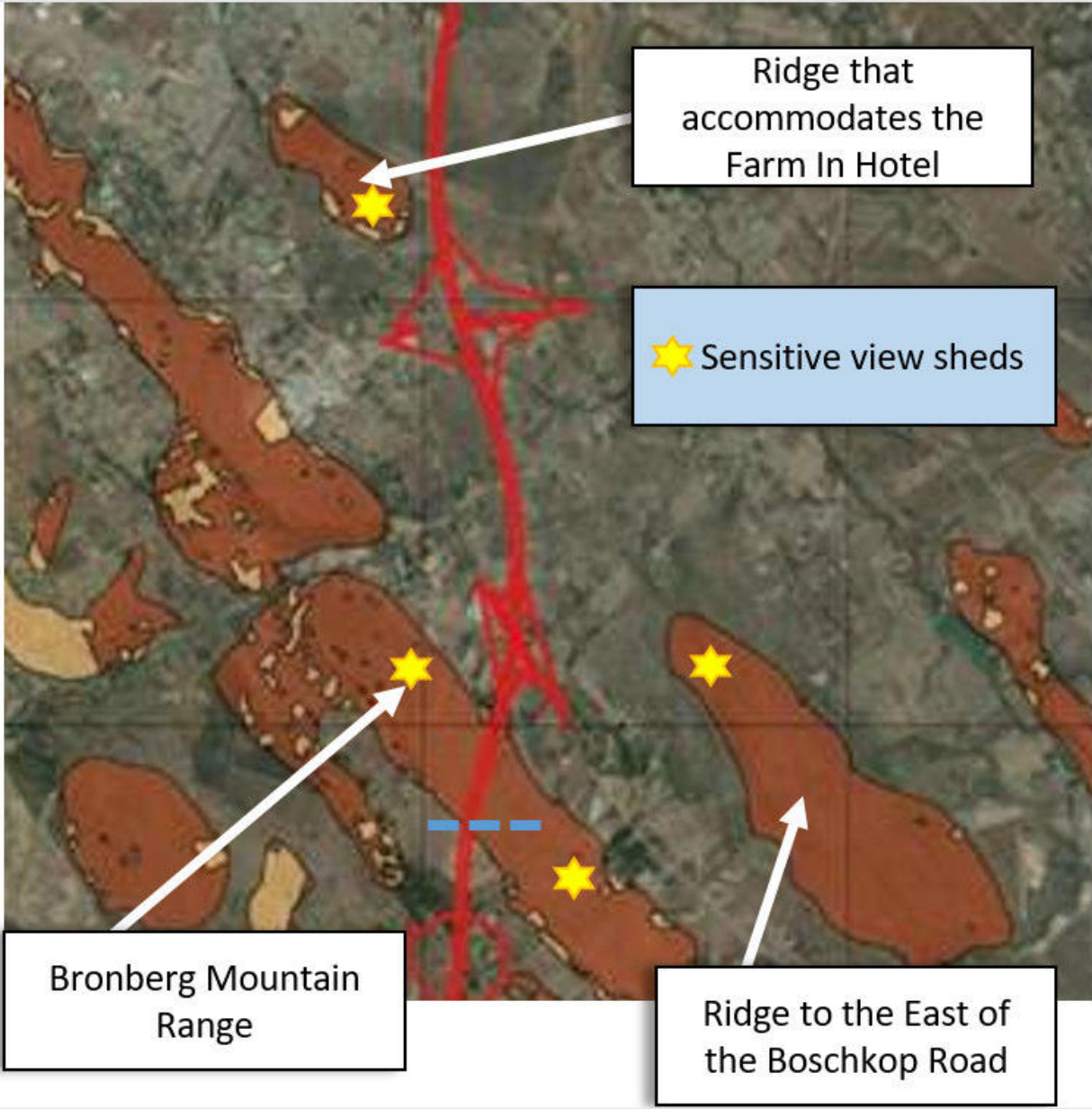
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Central Meridian -29

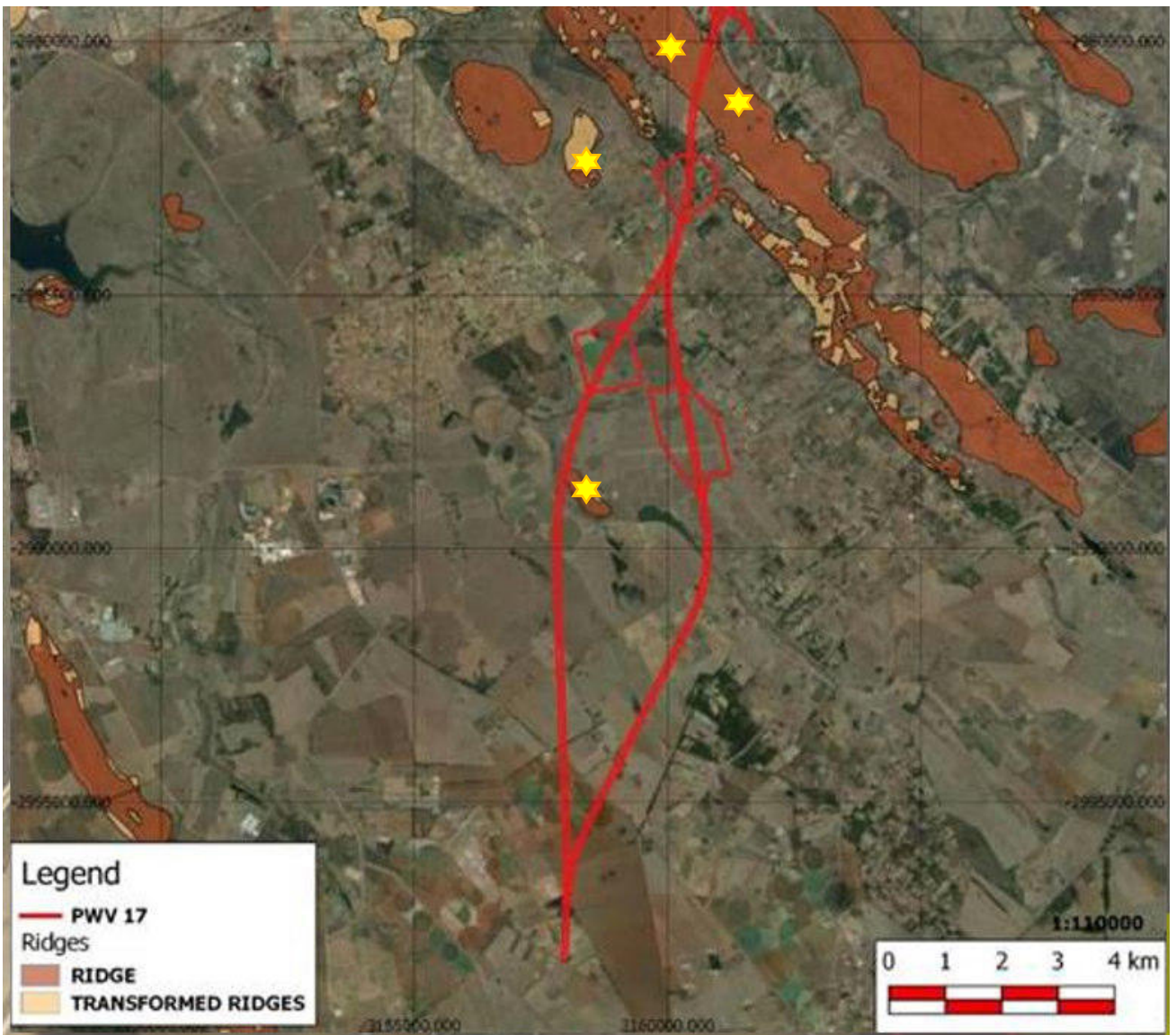
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Agricultural Hubs



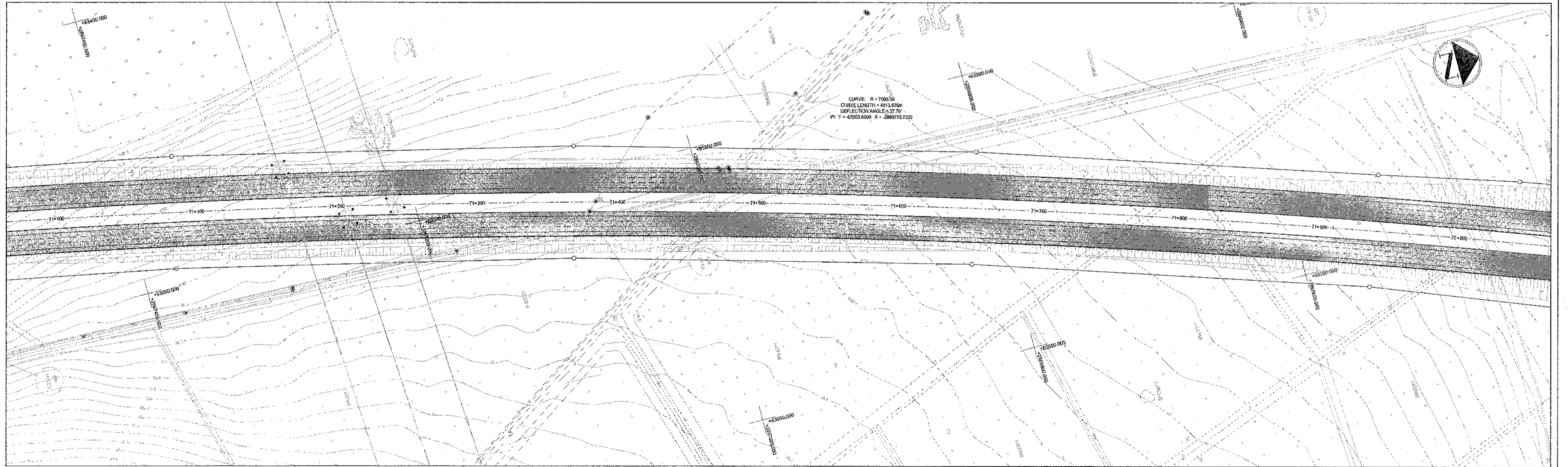
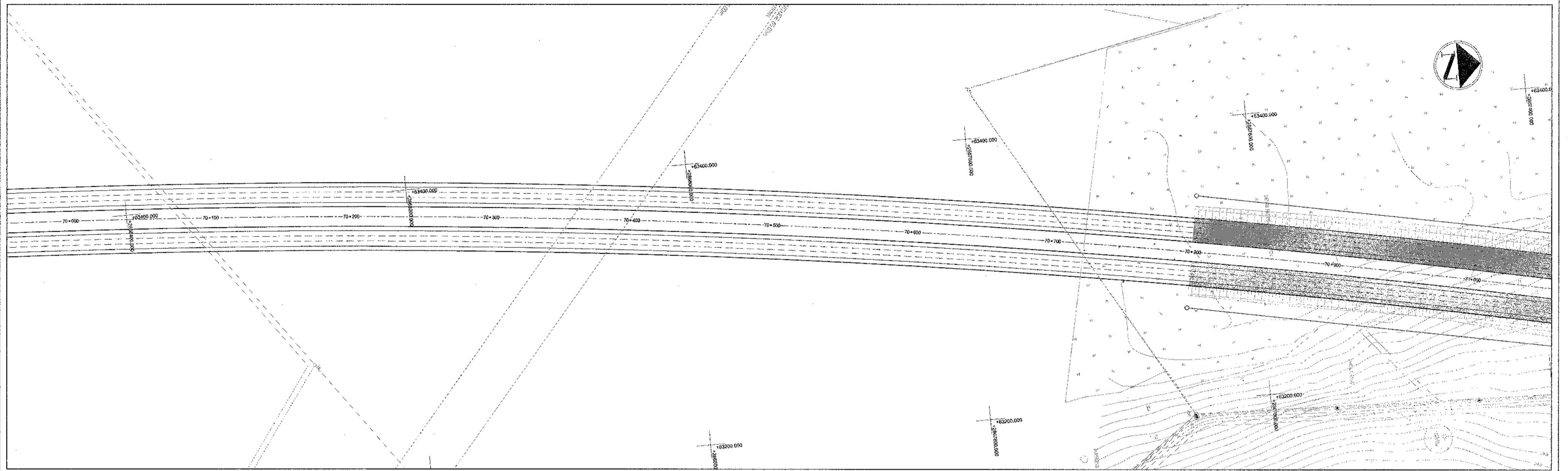
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Central Meridian -29





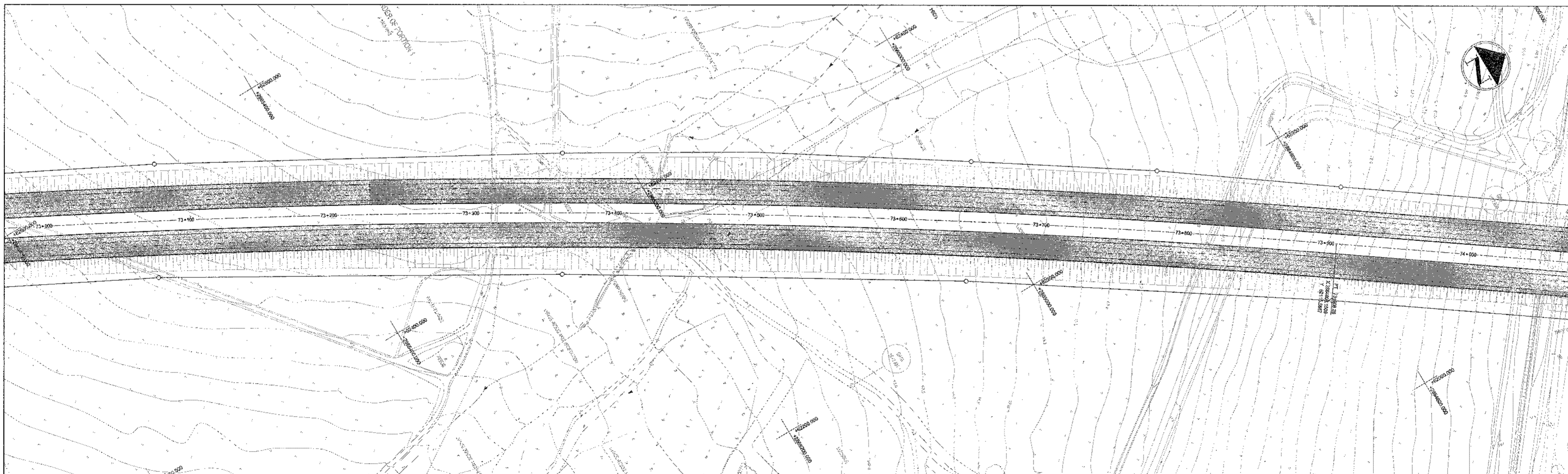
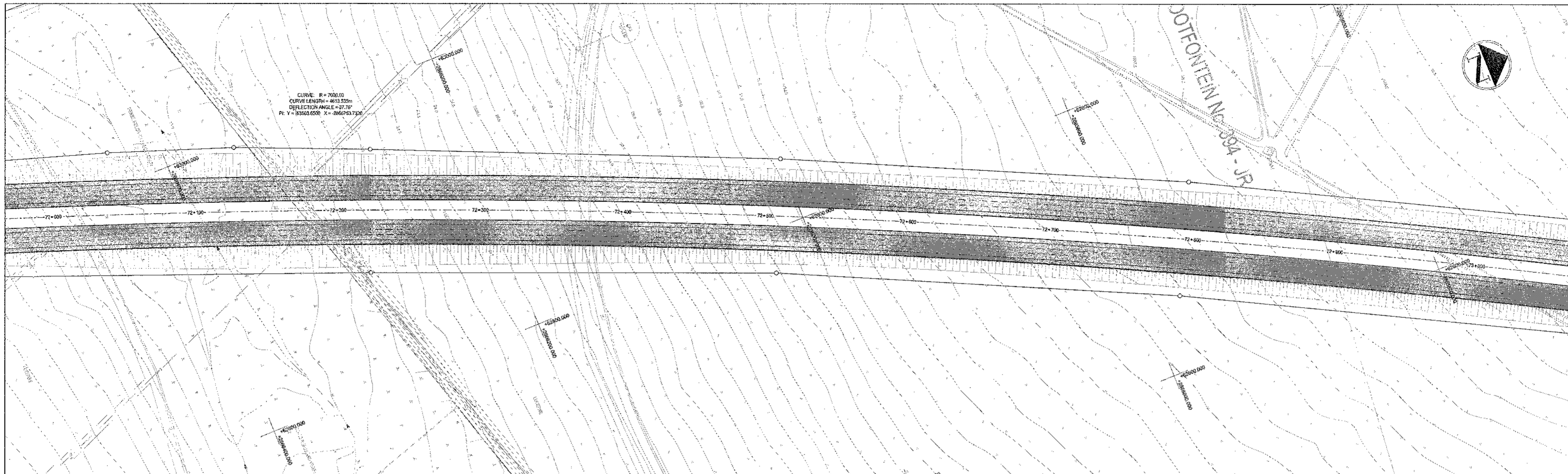
Annexure B

**Preliminary Scoping Phase
Engineering Drawings of the
Proposed Alignment Alternatives**



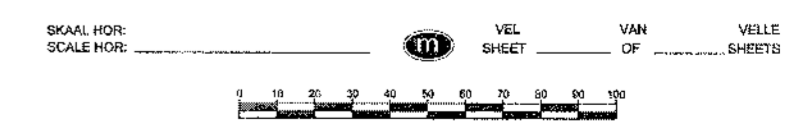
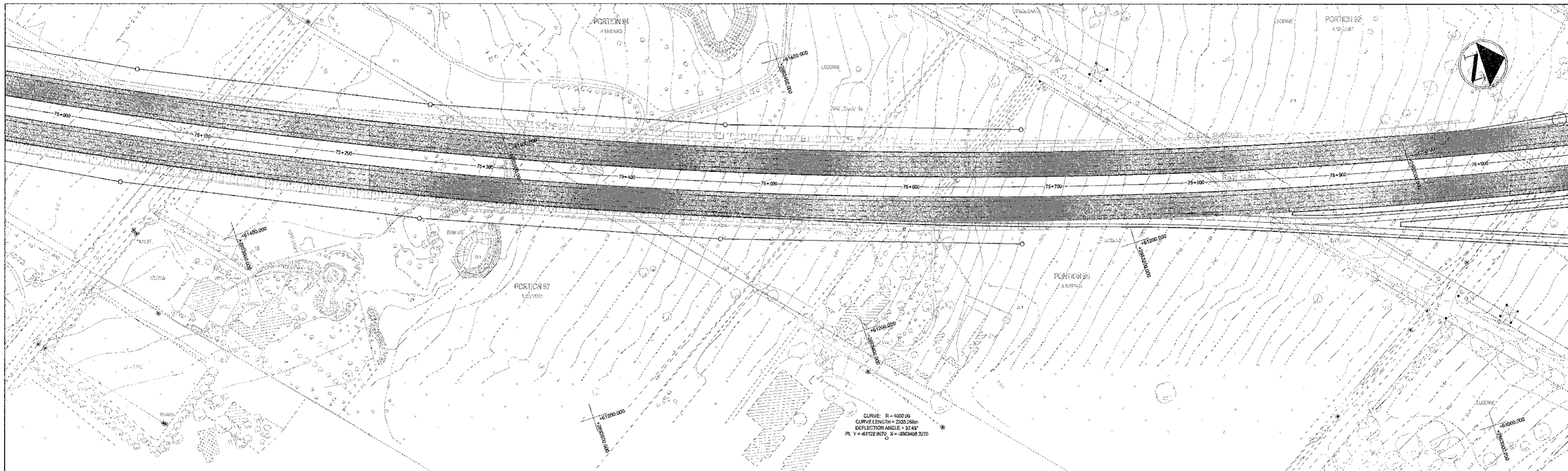
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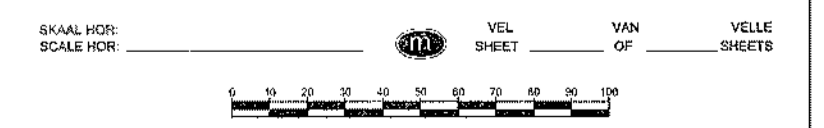
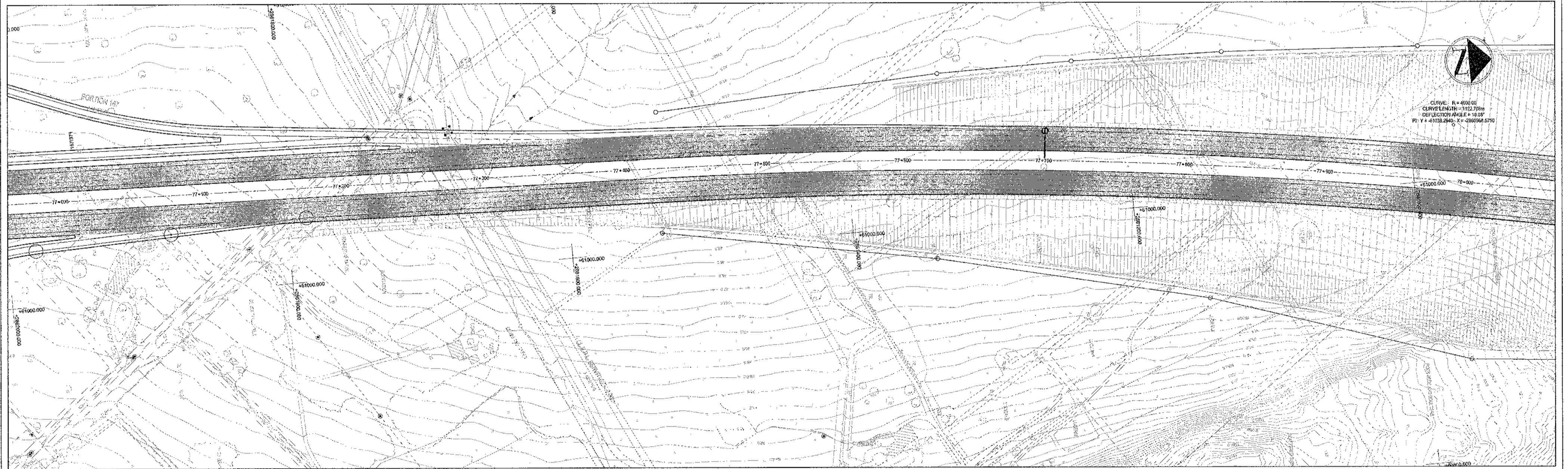
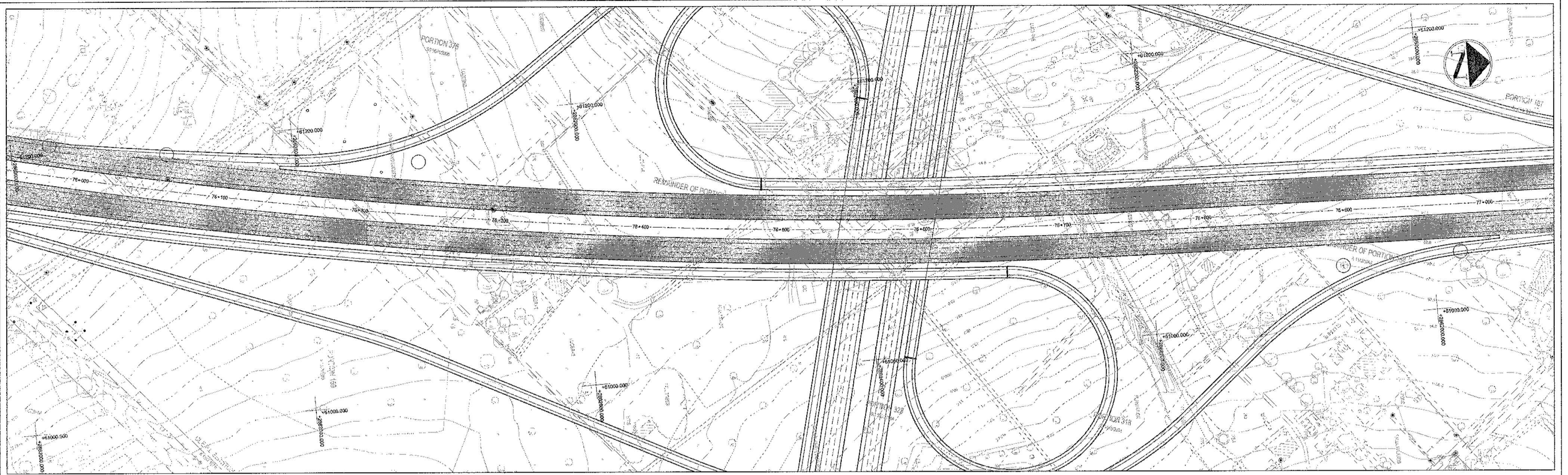
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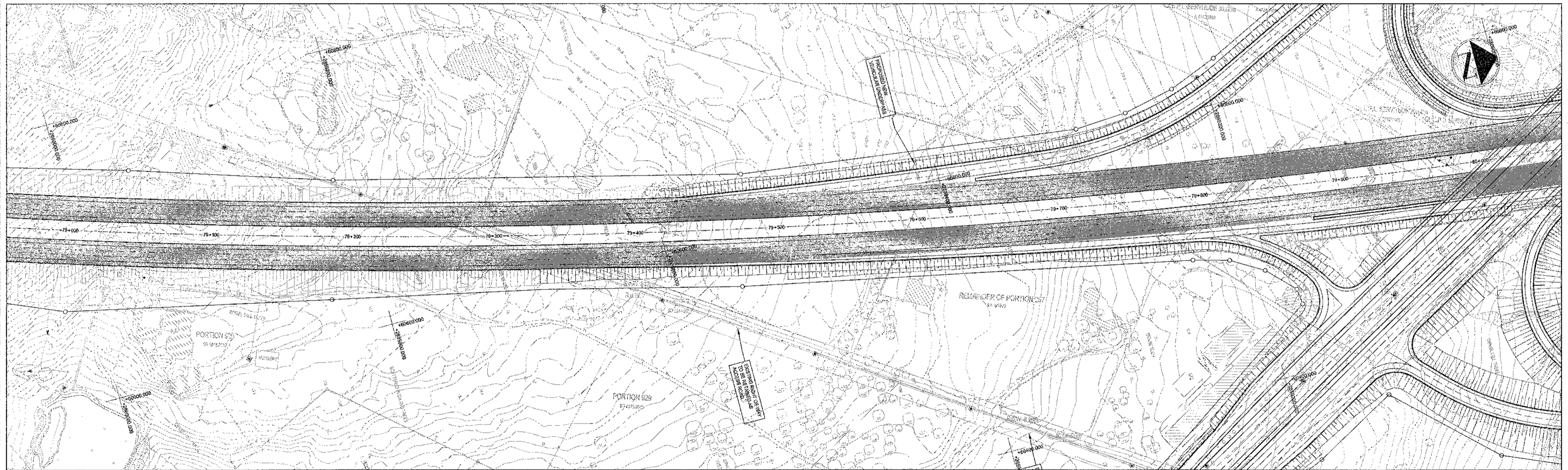
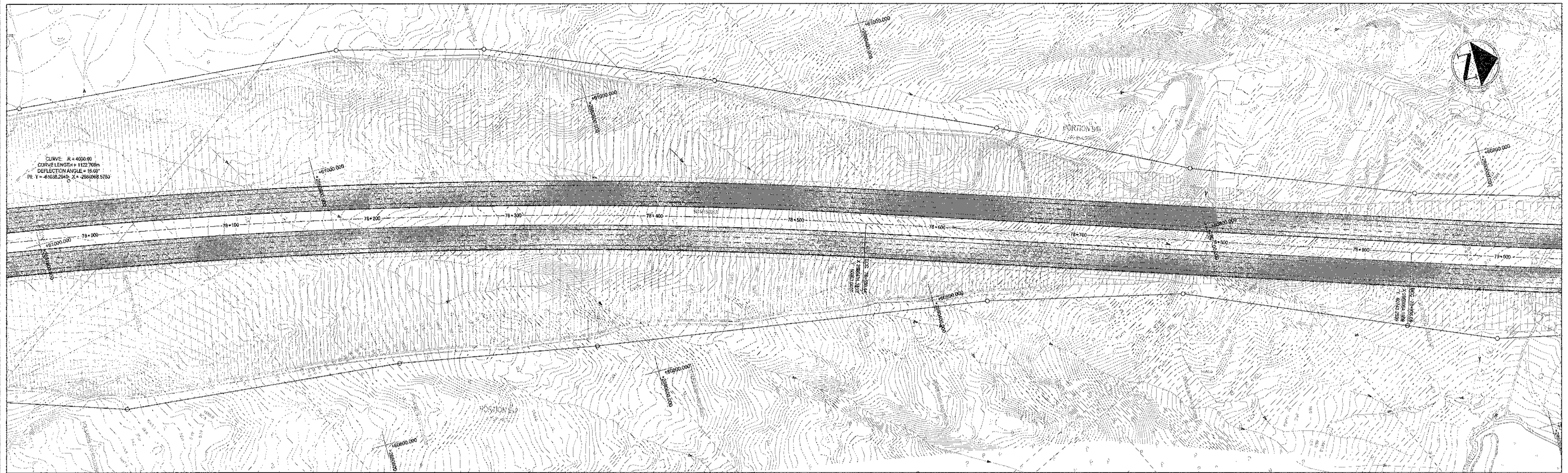
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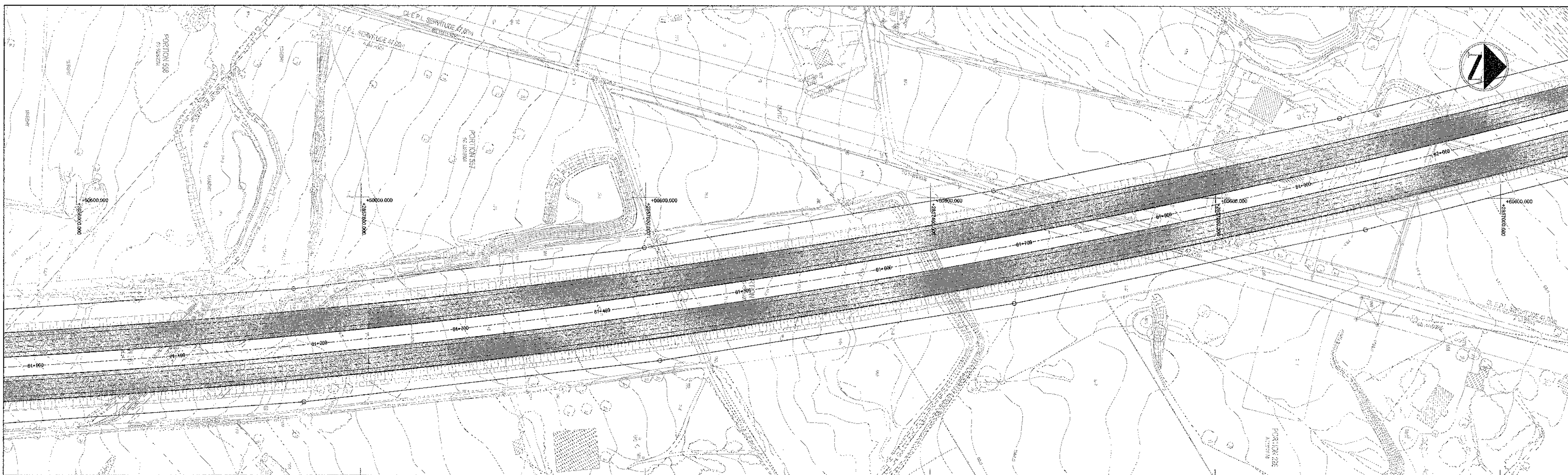
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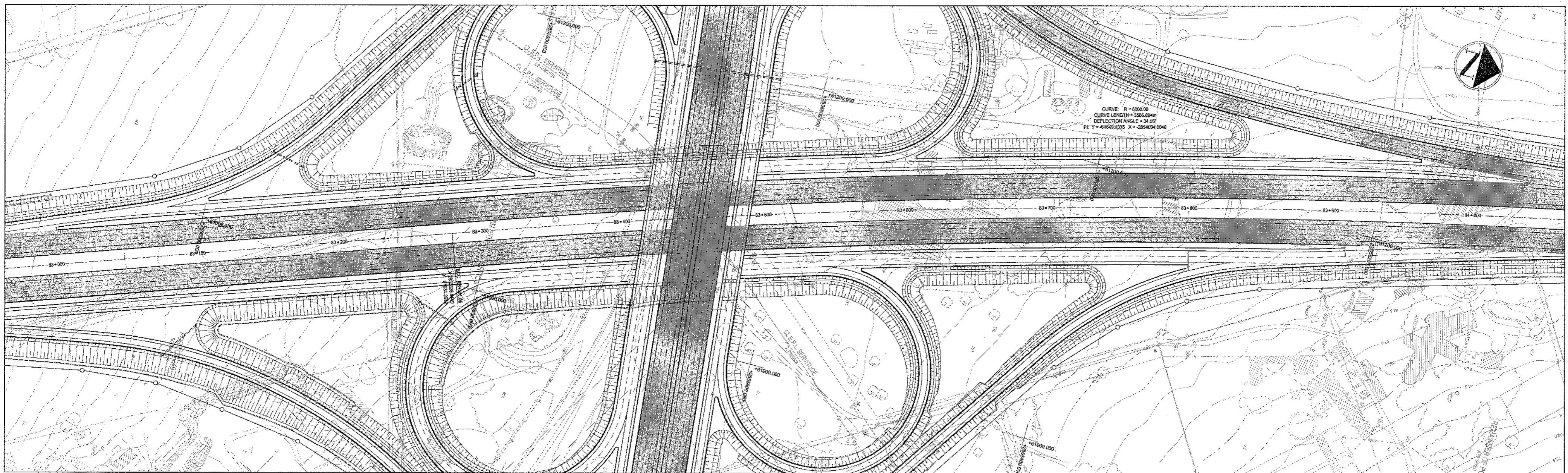
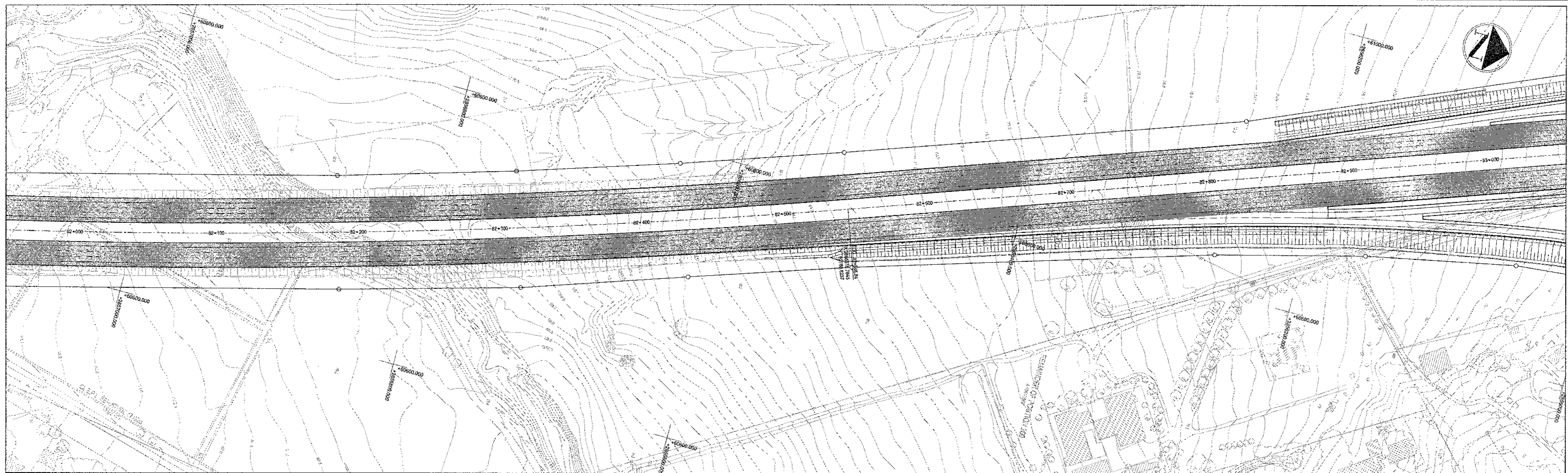
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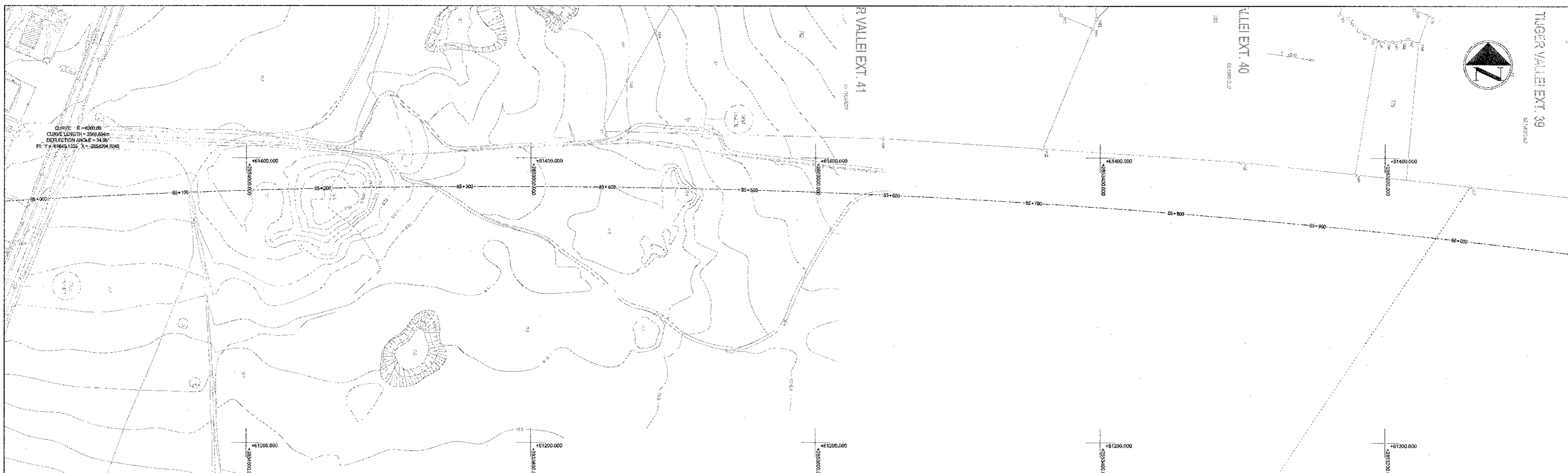
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Annexure C

**Copy of CV of Lizelle Gregory from
Bokamoso Landscape Architects**

Qualifications And Experience In The Field Of Environmental Planning And Management (Lizelle Gregory (Member Bokamoso)):

Qualifications:

- Qualified as **Landscape Architect** at UP 1991;
- Qualified as **Professional Landscape Architect in 1997**;
- A Registered Member at The **South African Council for the Landscape Architect Profession (SACLAP)** with Practise Number: **PrLArch97078**;
- A Registered Member at the **International Association for Impact Assessment Practitioners (IAIA)**;
- Qualified as an **Environmental Auditor in July 2008** and also became a Member of the International Environmental Management Association (IEMAS) in 2008.

Working Experience:

- Worked part time at Eco-Consult – 1988-1990;
- Worked part time at **Plan Associates as Landscape Architect in training** – 1990-1991;
- Worked as Landscape Architect at **Environmental Design Partnership (EDP)** from 1992 - 1994
- Practised under **Lizelle Gregory Landscape Architects** from 1994 until 1999;
- Lectured** at Part-Time at **UP** (1999) – Landscape Architecture and **TUT** (1998- 1999)- Environmental Planning and Plant Material Studies;
- Worked as **part time Landscape Architect and Environmental Consultant at Plan Associates** and **managed their environmental division for more than 10 years** – 1993 – 2008 (assisted the **PWV Consortium** with various road planning matters which amongst others included environmental Scans, EIA's, Scoping reports etc.)
- Renamed business as **Bokamoso in 2000** and is the only member of Bokamoso Landscape Architects and Environmental Consultants CC;
- More than 20 years experience in the compilation of Environmental Reports**, which amongst others included the compilation of various **DFA Regulation 31 Scoping Reports**, EIA's for EIA applications in terms of the applicable environmental legislation, Environmental Management Plans, Inputs for Spatial Development Frameworks, DP's, EMF's etc. Also included EIA Application on and adjacent to mining land and slimes dams (i.e. Brahm Fisherville, Doornkop)

Qualifications And Experience In The Field Of Landscape Architecture (Lizelle Gregory (Member Bokamoso)):

Landscape Architecture:

-Compiled landscape and rehabilitation plans for more than 22 years.

The most significant landscaping projects are as follows:

-Designed the Gardens of the Witbank Technicon (a branch of TUT). Also supervised the implementation of the campus gardens (2004);

-Lizelle Gregory was the Landscape Architect responsible for the paving and landscape design at the UNISA Sunnyside Campus and received a Corobrick Golden Award for the paving design at the campus (1998-2004);

-Bokamoso assisted with the design and implementation of a park for the City of Johannesburg in Tembisa (2010);

-The design and implementation of the landscape gardens (indigenous garden) at the new Coca-Cola Valpre Plant (2012-2013);

-Responsible for the rehabilitation and landscaping of Juksei River area at the Norwood Shopping Mall (Johannesburg) (2012-2013);

-Designed and implemented a garden of more than 3,5ha in Randburg (Mc Arthurpark). Bokamoso also seeded the lawn for the project (more than 2,5 ha of lawn successfully seeded) (1999);

-Bokamoso designed and implemented more than 800 townhouse complex gardens and submitted more than 500 Landscape Development Plans to CTMM for approval (1995 – 2013);

-Assisted with Landscape Designs and the Masterplan at Eco-Park (M&T Developments) (2005-2011);

-Bokamoso designed and implemented an indigenous garden at an office park adjacent to the Bronberg. In this garden it was also necessary to establish a special garden for the Juliana Golden Mole. During a recent site visit it was established that the moles are thriving in this garden. Special sandy soils had to be imported and special indigenous plants had to be established in the natural section of the garden.

-Lizelle Gregory also owns her own landscape contracting business. **For the past 20 years she trained more than 40 PDI jobless people (sourced from a church in Mamelodi)** to become landscape contracting workers. All the workers are (on a continuous basis) placed out to work at nurseries and other associated industries;

-Over the past 20 years the Bokamoso team compiled more than 800 landscape development plans and also implemented most of the gardens. Bokamoso also designed and implemented the irrigation for the gardens (in cases where irrigation was required). Lizelle regarded it as important to also obtain practical experience in the field of landscape implementation.



Bokamoso

**Landscape Architects &
Environmental consultants**

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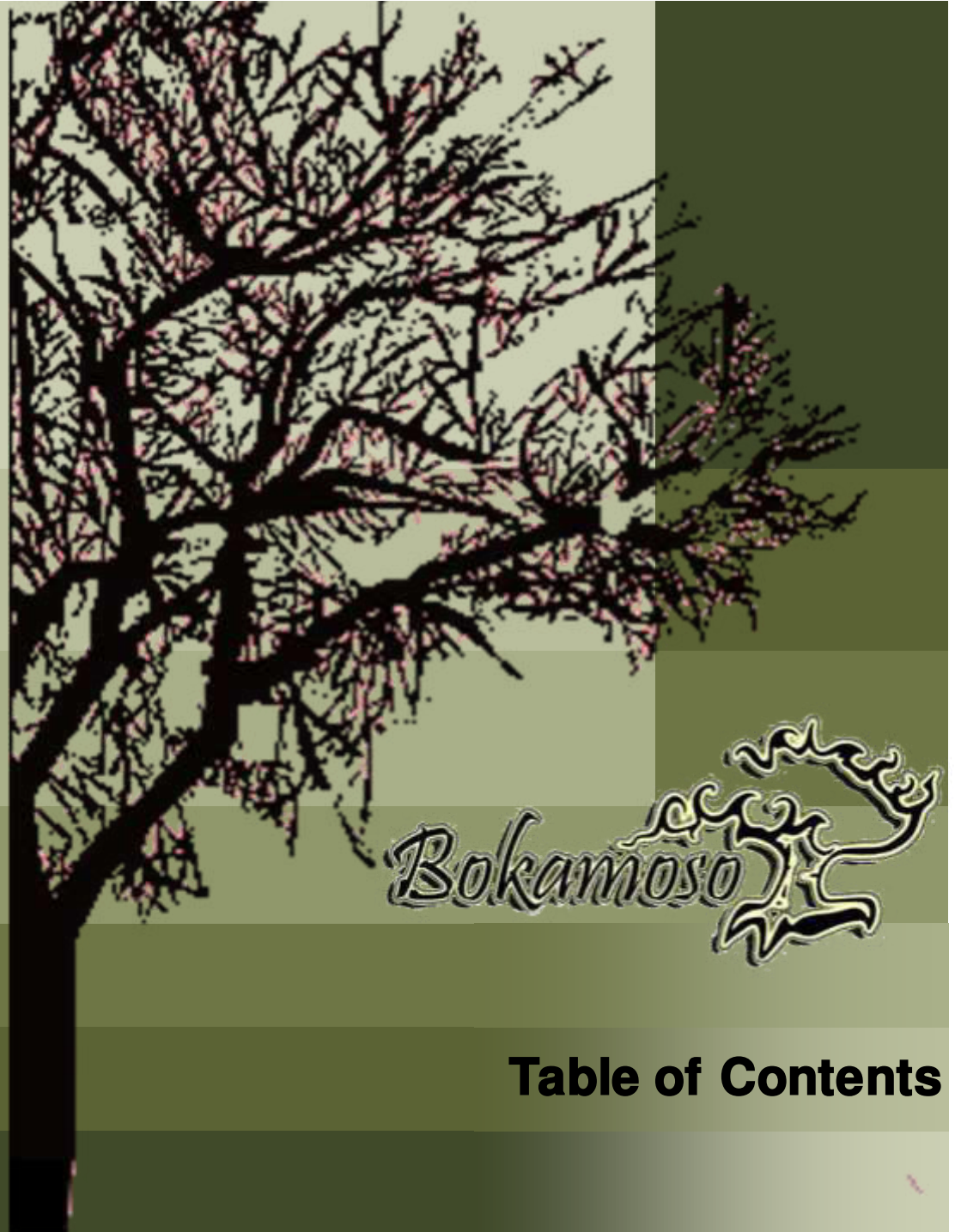


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Bokamoso specialises in the fields of Landscape Architecture and all aspects of Environmental Management and Planning. Bokamoso was founded in 1992 and has shown growth by continually meeting the needs of our clients. Our area of expertise stretches throughout the whole of South Africa. Our projects reflect the competence of our well compiled team. The diversity of our members enables us to tend to a variety of needs. Our integrated approach establishes a basis for outstanding quality. We are well known to clients in the private, commercial as well as governmental sector.

At Bokamoso we stand on a firm basis of environmental investigation in order to find unique solutions to the requirements of our clients and add value to their operations.



01 Executive Summary

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