

Phase 1 Archaeological Impact Assessment of the
proposed new National Route 5 / R712 interchange and
Wilge River bridge alterations and additions, Harrismith,
FS Province.



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Executive Summary

At the request of Terraworks Environmental Consultants, a Phase 1 Archaeological Impact Assessment was carried out in five designated areas along the N5 national road outside Harrismith where anticipated development calls for several road alterations.

New intersection at the N5 / R712 interchange: An unmarked graveyard is located within the demarcated area. The site covers approximately 70 m² and contains a number of unmarked grave mounds. The graveyard is considered of high to medium heritage significance and assigned the rating of Generally Protected A (GP.A). Destruction and removal of burial grounds and graves permit applications should be directed to the SAHRA Burial Grounds and Graves (BGG) Unit. Alternatively it is recommended that the graveyard area is to be avoided, and that a graveyard management plan is included as part of the overall management plan for the duration of the project. Preservation of the site will require that the area is properly demarcated and fenced off with at least a 20m buffer / no development zone placed around the graveyard.

Construction of an additional passing lane at the Nuwejaarspruit Bridge: The site is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

Construction of a new access lane between the N5 and the Hamilton Bridge: The site is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

Construction of an additional bridge over the Wilge River adjacent to the Hamilton Bridge: the substructure of the Hamilton Bridge more than a hundred years old and is historically highly significant. The bridge is assigned a rating of Local Significance (LS) Grade 3B. In accordance the legislative requirements outlined in Section 34(1) of the National Heritage Resources Act (No 25 of 1999) 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. There are no major archaeological grounds to suspend the proposed development, provided that the historically significant substructure of the Hamilton Bridge is entirely avoided and properly protected during the duration of the project.

Widening of the Wilge River Bridge (B1628): The site is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

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Introduction

At the request of Terraworks Environmental Consultants, a Phase 1 Heritage Impact Assessment was carried out in five designated areas along the N5 national road near Harrismith (**Fig. 1**) where anticipated road alterations will involve:

- New intersection construction at the N5 / R712 interchange;
- Construction of an additional passing lane at the Nuwejaarspruit River bridge;
- Construction of a new access lane to the Hamilton Bridge;
- Construction of an additional bridge over the Wilge River adjacent to the Hamilton Bridge;
- Widening of the Wilge River bridge (B1628).

The survey is required as a prerequisite for new development in terms of Section 38 (1) of the National Heritage Resources Act 25 of 1999. A site visit and subsequent assessment took place in May 2012. The task involved identification of possible archaeological sites or occurrences in the proposed zone, an assessment of their significance, possible impact by the proposed development and recommendations for mitigation where relevant.

Terms of Reference

- Identify and map possible archaeological sites and occurrences using available resources.
- Determine and assess the potential impacts of the proposed development on potential archaeological resources;
- Recommend mitigation measures to minimize potential impacts associated with the proposed development.

Description of the Affected Area

Locality data

1:50 000 topographic map 2928AC Harrismith

The study area is situated in the Maluti A Phofung Local Municipality near the western outskirts of Harrismith in the Free State Province. The surrounding land use along the section is predominantly agricultural and industrial in nature (**Fig. 2**). Road alterations will remain mainly within the existing road reserve except for the proposed

new intersection construction at the N5 / R712 interchange and the construction of a new access lane between the N5 and the Hamilton Bridge.

Geology

The geology of the area around Harrismith has been described by Johnson and Verster (1994). The survey area is situated within the Beaufort Group (Karoo Supergroup), which is primarily represented by late Permian and Early Triassic sandstones and mudstone layers. Sedimentary rocks underlying the survey area belong to fossil – bearing sandstones, shales and mudstones of the Adelaide Subgroup (Beaufort Group, Karoo Supergroup). Jurassic-age dolerite intrusions, in the form of sills and dykes, occur extensively in the area.

The sedimentary rocks form the base on which younger, superficial deposits of Quaternary age have been deposited (Partridge & Maud 2000). The Quaternary deposits are made up of unconsolidated soils, alluvial sediments and colluvial deposits.

Methodology

The heritage significance of the affected area was evaluated through a desktop study and carried out on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Relevant archaeological information, aerial photographs and site records were consulted and integrated with data acquired during the on-site inspection. The study area is rated according to field rating categories as prescribed by SAHRA (**Table 1**).

Background

Surface scatters of Later Stone Age and Middle Stone Age artefacts are frequent archaeological components along erosional gullies of rivers and streams of the southern Highveld. The incidence of surface scatters usually decreases away from localized areas such as riverine sites and dolerite-shale contact zones. Stone Age artefacts generally occur as contextually derived individual finds in the open veld. There are currently no records of Quaternary-age fossils from alluvial sediments in the vicinity of the study area.

Stone enclosures found on and around dolerite koppies along the Wilge and Elands River valleys exhibit telltale signs of basic structural units including huts, large enclosures, walling remains and stone circles related to Late Iron Age settlements in the area. These sites were occupied from as early as the sixteenth and seventeenth centuries and represent a system that can be broadly attributed to groups ancestral to the Sotho-speaking people of today (Maggs 1976). Extensive Iron Age settlements have been recorded previously in the region at Beginsel, Weltevreden, Israel, Bakers Kop and Elandsrivierkop

Harrismith is situated in the area that was affected by the Basotho wars between 1958 and 1868. These wars were caused by continued conflict between the Basotho people and the White settlers regarding territorial boundaries. This conflict was finally solved in 1869 when the boundaries of Basutoland (now Lesotho) were drawn up according to the Convention of Aliwal-North.

Harrismith was established in 1849 and named after Sir Harry Smith. Born in 1787 in England, he served as a soldier and commander in the British army and later became governor of the Cape Colony. Harrismith was first established on a location close to the Elands River, but due to water problems, the location of the town was moved to Platberg on the farm of Jan Snyman. Early in January 1850 a total of 39 stands were sold on auction. Development initially took place at a very slow pace. In 1851 the town consisted of only six houses, but in 1852 there were 40 houses (Steytler, 1932:32-33). After the discovery of diamonds at Kimberley and later in the Transvaal, business in Harrismith started to bloom. Harrismith was situated on the main route between Natal and Kimberley, as well as between Natal and Johannesburg. Potential prospectors and transport riders were travelling through Harrismith on a daily basis. Stagecoach services were introduced and passengers transported on a daily basis between towns on the main routes. The railway at Harrismith was officially opened on 14 July 1892.

The history of the Hamilton Bridge can be conveyed back to the Anglo Boer War (1899-1902). On 4 August 1900 Harrismith surrendered to the British forces who then officially took command of the town and railway station. The British soldiers made camp near Basuto Hill and in order to reach the town, a suspension bridge was erected across the Wilge River by the Royal Engineers (**Fig. 3**). Late in 1901 the British introduced blockhouse lines to prevent the Boer commando's from moving freely and thereby making it easier to catch them. A line of blockhouses were also

constructed at Harrismith linking it to Olivierhoek Pass in the east and Kroonstad in the west (**Fig. 4**). After signing of the Treaty of Peace on 31 May 1902, it was decided that the British troops should remain in Harrismith. In 1903 they occupied a barracks situated in a military settlement on King's hill (**Fig. 5**). This settlement contained an Anglican and Roman Catholic church, a school, a hall for gymnastics and other facilities including a tennis court and a polo ground. The South African Garrison Institute, a very large and prominent building on the site, contained a mineral water factory, a billiard room, reading rooms, a gymnasium and a general dealer.

In 1904 the suspension bridge across the Wilge River was washed away by floods where after a new stone bridge was erected at the same location. The new bridge (Hamilton Bridge) was officially opened in 1907 by Sir Hamilton Goold-Adams, Governor of the Orange River Colony (**Fig. 6**).

Results of Survey

Results are summarized in **Table 2**.

New intersection at the N5 / R712 interchange

Investigation of exposed topsoils revealed no above-ground evidence of intact Stone Age archaeological assemblages or sites. There is also no indication for the accumulation and preservation of intact fossil material within the Quaternary sediments covering the underlying sedimentary rocks. An unmarked graveyard is located within the demarcated area (**Fig. 7**). The site covers approximately 70 m² and contains a number of unmarked grave mounds.

Construction of an additional passing lane at the Nuwejaarspruit Bridge

Investigation of exposed topsoils revealed no above-ground evidence of intact Stone Age archaeological assemblages or sites (**Fig. 8**). There is also no indication for the accumulation and preservation of intact fossil material within exposed alluvial overbank sediments flanking the bridge. The pedestrian survey also revealed no evidence of ancient structures, graves or historical buildings older than 60 years flanking to the bridge.

Construction of a new access lane between the N5 and the Hamilton Bridge

Investigation of exposed topsoils revealed no above-ground evidence of intact Stone Age archaeological assemblages or sites (**Fig. 9**). There is also no indication for the accumulation and preservation of intact fossil material within the Quaternary sediments covering the underlying sedimentary rocks. The pedestrian survey also revealed no evidence of ancient structures, graves or historical buildings older than 60 years along the footprint.

Construction of an additional bridge over the Wilge River adjacent to the Hamilton Bridge

Investigation of exposed topsoils adjacent to the Hamilton Bridge show little evidence of Stone Age archaeological material, capped or distributed as surface scatters on the landscape. There is also no indication for the accumulation and preservation of intact fossil material within exposed alluvial overbank sediments flanking the bridge. The pedestrian survey also revealed no evidence of ancient structures, graves or historical buildings older than 60 years flanking to the bridge. However, the substructure of the Hamilton Bridge more than a hundred years old and is historically highly significant (**Fig. 10 & 11**).

Widening of the Wilge River Bridge (B1628).

Investigation of exposed topsoils revealed no above-ground evidence of intact Stone Age archaeological assemblages or sites. There is also no indication for the accumulation and preservation of intact fossil material within exposed alluvial overbank sediments flanking the bridge. The pedestrian survey also revealed no evidence of ancient structures, graves or historical buildings older than 60 years flanking to the bridge. The bridge is not historically significant.

Statement of Significance and Recommendations

The areas demarcated for development has been suitably recorded, mapped and documented in accordance with the types and ranges of heritage resources as outlined in Sections 34, 35 and 36 of the National Heritage Resources Act (No 25 of 1999). Potential impacts are summarized in **Table 3**.

New intersection at the N5 / R712 interchange

The graveyard is not marked on the 1:50 000 topographic map 2928AC Harrismith. The graveyard is considered of high to medium heritage significance and assigned the rating of Generally Protected A (GP.A).

Graves older than 60 years would fall under subsection 1 of Section 36 of the National Heritage Resources Act and the Human Tissues Act. Exhumation of graves less than 60 years old would fall under the Exhumations Ordinance, Ordinance No.12 of 1980.

In accordance the legislative requirements outlined in Section 36 of the National Heritage Resources Act (No 25 of 1999),

No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

(a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;

(b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or

(c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

Destruction and removal of burial grounds and graves permit applications should be directed to the SAHRA Burial Grounds and Graves (BGG) Unit. Alternatively it is recommended that the graveyard area is to be avoided, and that a graveyard management plan is included as part of the overall management plan for the duration of the project. Preservation of the site will require that the area is properly demarcated and fenced off with at least a **20m buffer / no development zone placed around the graveyard.**

Construction of an additional passing lane at the Nuwejaarspruit Bridge

It is unlikely that the proposed development will result in any significant archaeological impact at the site. The site is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

Construction of a new access lane between the N5 and the Hamilton Bridge

It is unlikely that the proposed development will result in any significant archaeological impact at the site. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

Construction of an additional bridge over the Wilge River adjacent to the Hamilton Bridge

The Hamilton Bridge is regarded as of high historical significance and is assigned a rating of Local Significance (LS) Grade 3B. In accordance the legislative requirements outlined in Section 34(1) of the National Heritage Resources Act (No 25 of 1999) 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.

There are no major archaeological grounds to suspend the proposed development, provided that the historically significant substructure of the Hamilton Bridge is entirely avoided and properly protected during the duration of the project.

Widening of the Wilge River bridge (B1628).

It is unlikely that the proposed development will result in any significant archaeological impact at the site. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

References

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Tables and Figures

Table 1. Field rating categories as prescribed by SAHRA (2005).

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

Table 2. Proposed new development footprint investigated as well as features recorded during the foot survey.

Feature	Coordinates
Proposed new R712 intersection	28°17'22.93"S 29° 5'5.44"E
Nuwejaarspruit Bridge	28°17'19.33"S 29° 5'27.93"E
Wilge River Crossing adjacent to Hamilton Bridge	28°16'47.99"S 29° 7'4.31"E
Proposed new access lane between N5 and Hamilton Bridge (Point A)	28°16'51.69"S 29° 7'0.21"E
Proposed new access lane between N5 and Hamilton Bridge (Point B)	28°17'6.73"S 29° 6'14.58"E
Wilge River Bridge (B1628)	28°16'55.40"S 29° 7'12.97"E
Kraal / Rectangular Stone Structures	28°17'28.00"S 29° 5'13.28"E
Graves	28°17'26.90"S 29° 5'10.00"E

Table 3. Summary of Impact in terms of Extent (the size of the area that will be affected by the impact), Intensity (the anticipated severity of the impact), Duration (the timeframe during which the impact will be experienced), Reversibility of impacts, Probability, Confidence, Mitigation and Site Rating.

Nature of Impact	Extent	Intensity	Duration	Reversibility	Probability of impact	Confidence	Mitigation	Rating
New intersection at the N5 / R712 interchange	Local	High	Permanent	Non-reversible	Probable; Unmarked graves	High	Site avoidance or permit application for removal of graves	Generally Protected A (GP.A)
Additional passing lane at the Nuwejaarspruit River bridge	Local	High	Permanent	Non-reversible	Improbable	High	None	Generally Protected C (GP.C)
New access lane to the Hamilton Bridge	Local	High	Permanen	Non-reversible	Improbable	High	None	Generally Protected C (GP.C)
Additional bridge over the Wilge River adjacent to the Hamilton Bridge	Local	High	Permanent	Non-reversible	Probable; Hamilton Bridge substructure	High	Avoidance and protection of Hamilton Bridge substructure	Local Significance (LS) Grade 3B
Widening of the Wilge River bridge (B1628)	Local	High	Permanent	Non-reversible	Improbable	High	None	Generally Protected C (GP.C)

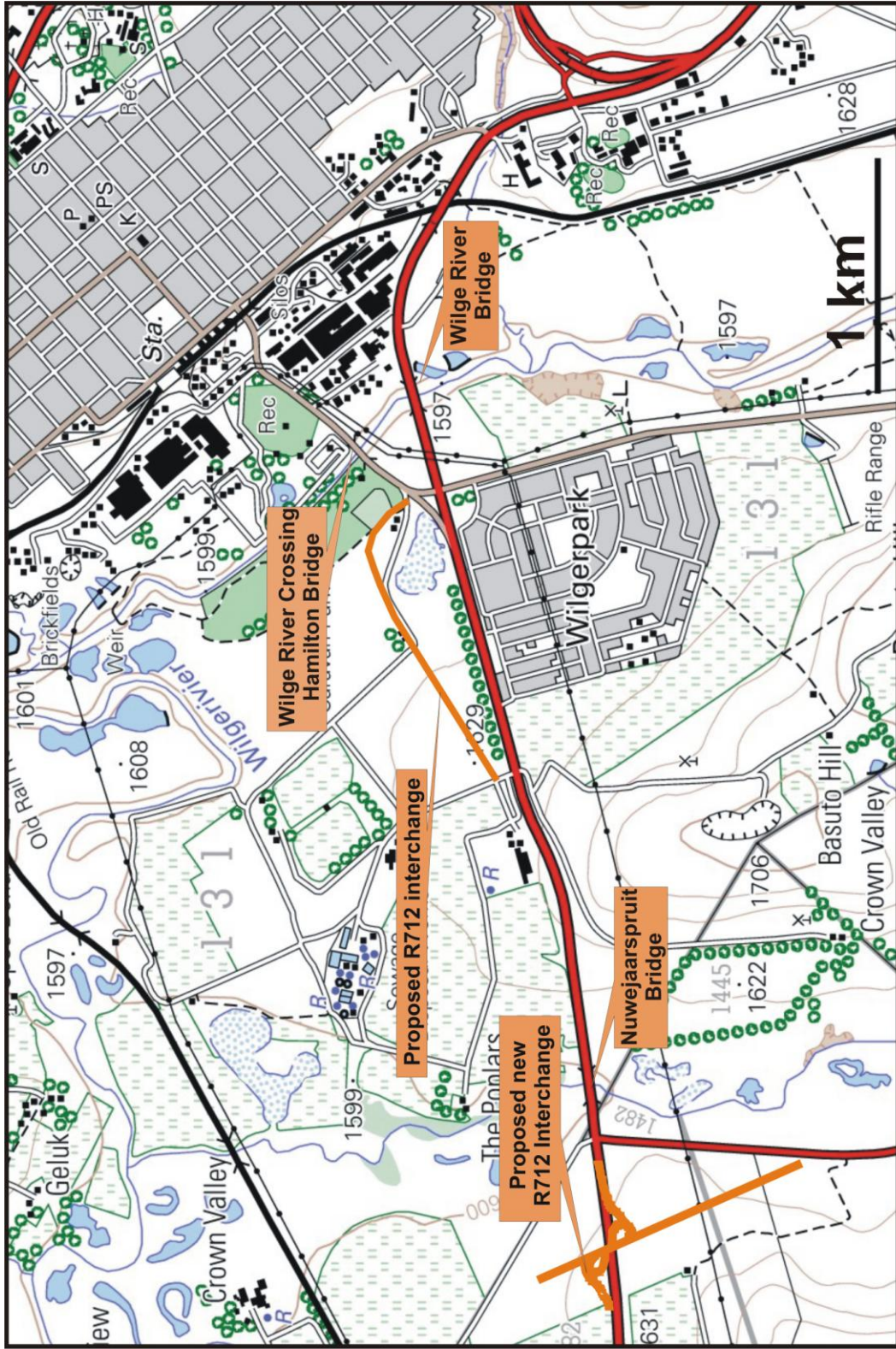


Figure 1. Locality map of the study area (portion of 1 : 50 000 scale topographical map 2829AC Harrismith).



Figure 2. Aerial view of the study area.



Figure 3. A suspension bridge constructed across the Wilge River by the British Royal Engineers during the Anglo Boer War (current Hamilton Bridge locality).

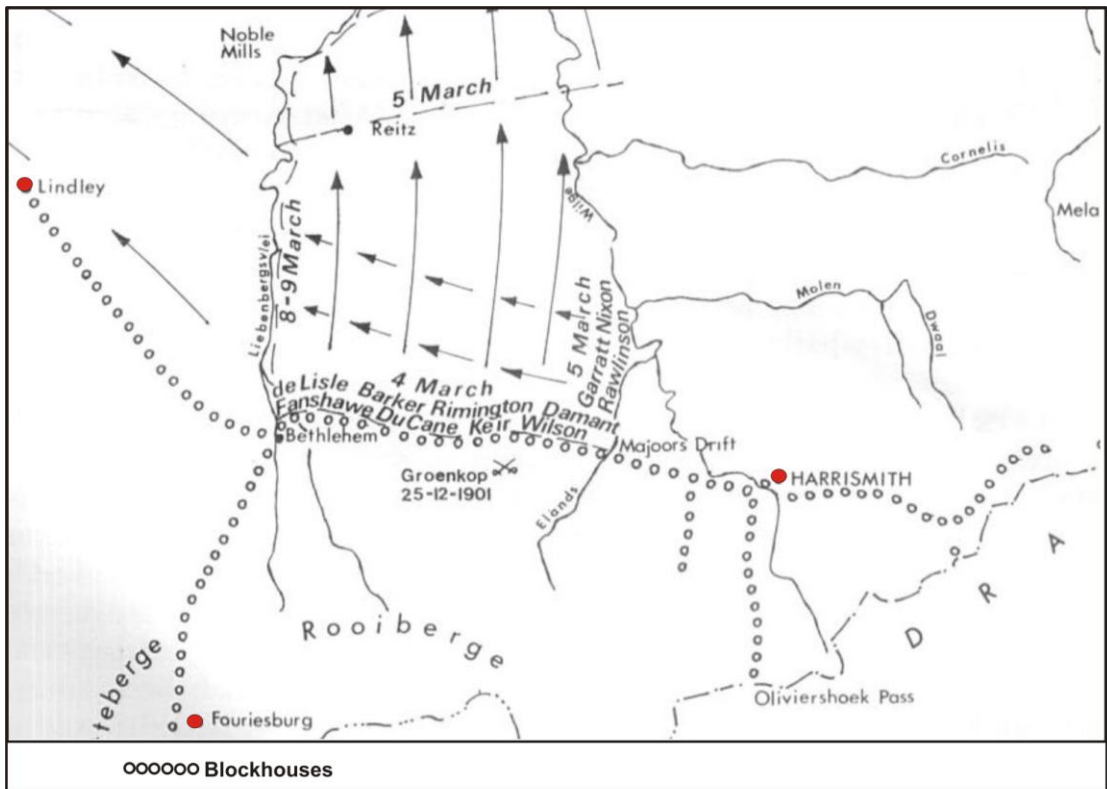


Figure 4. Line of blockhouses constructed by the British army during the Anglo-Boer War. The blockhouses linked Harrismith to Olivierhoek Pass in the east, Fouriesburg in the south and Kroonstad in the west.



Figure 5. Looking towards Kings Hill ca. 1903.



Figure 6. The historical Hamilton Bridge with modern concrete and tar road surface.



Figure 7. An unmarked graveyard located within the area demarcated for the construction of the new N5 / R712 interchange.



Figure 8. The N5 / Nuwejaarspruit Bridge, looking west. Construction of an additional passing lane will affect sedimentary bedrock, intact alluvial sediments (Quaternary) and recent topsoils.



Figure 9. The proposed new access lane between the N5 and the Hamilton Bridge looking northeast (point A below) and southwest (point B bottom).





Figure 10. The historical Hamilton Bridge, looking east.

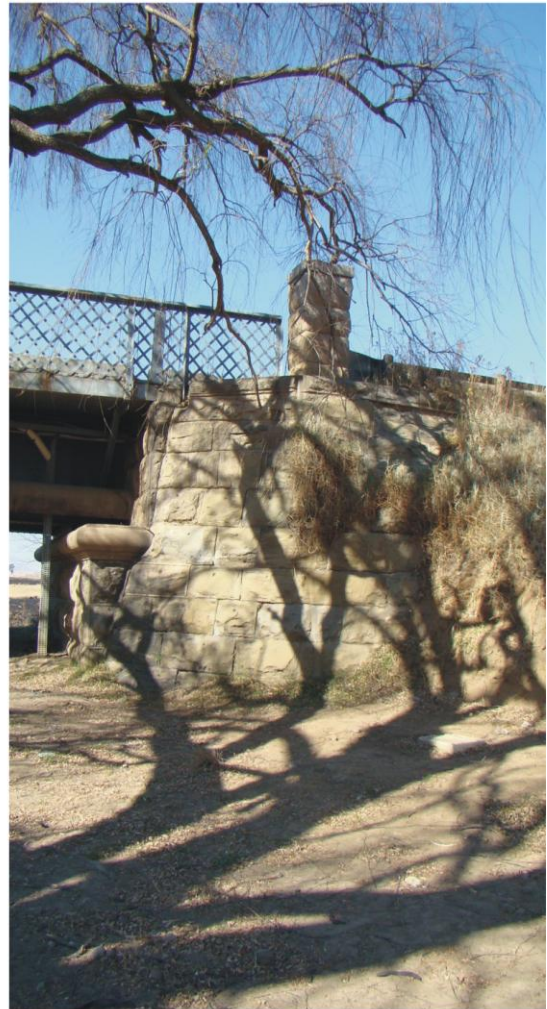
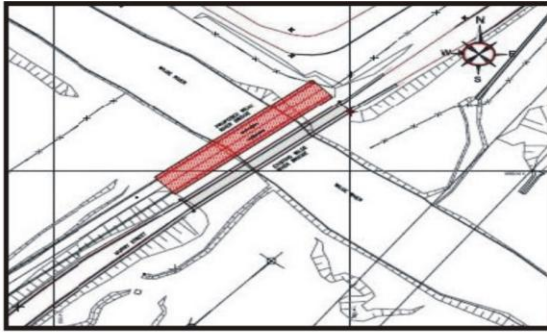


Figure 11. The Hamilton Bridge. Position of the proposed new additional bridge (left) and masonry substructure of Hamilton Bridge (right).



Figure 12. The modern Wilge River Bridge (B1628) and adjacent riverbanks, looking west and southwest.