AFRICAN HERITAGE CONSULTANTS CC

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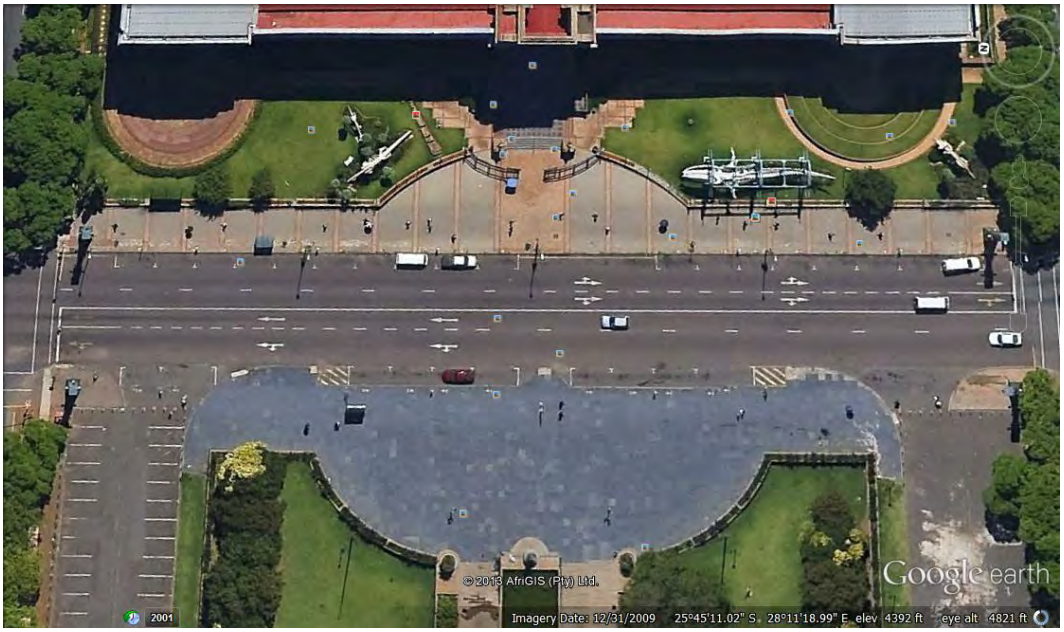
EXTENSION OF PHASE 1 (SAHRA ID 4150) HIA FOR PROPOSED BRT SERVICE, PAUL KRUGER STREET, PRETORIA, TSHWANE FROM BLOED STREET TO SCHEIDING STREET, EXCLUDING CHURCH SQUARE WITH SPECIFIC REFERENCE TO SIDEWALKS AND VERANDAS



November 2013

Report compiled by Sidney Miller.

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BSc (Eng.) Civ. M. (Architecture) Conservation. ASAPA Member No. 087

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1 CONTACT DETAILS.

1.1 DEVELOPMENT TEAM

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1.3 TYPE OF DEVELOPMENT

Transport

1.4 ZONING OF SITE

City; Government, Commerce and Housing

1.5 PROVINCE

Gauteng.

2 EXECUTIVE SUMMARY

African Heritage Consultants were tasked to undertake an extension of a Phase 1 Heritage Impact Assessment (SAHRA ID 4150) for the proposed rapid transit bus system linking Boom and Scheiding streets along Paul Kruger Street. The brief and design parameters from the client's engineers and architects are attached as addendums.

This study addresses the documentation of the remaining slate flagstones and the granite kerb stones that will be impacted upon on the section from Boom to Scheiding Street, excluding Church Square.

2.1 Paving blocks

Typical layout patterns of slate paving were produced by measuring and drawing sections that appear to be intact. The square paving blocks have been originally dressed to 24 inches square (~ 615 mm), and the rectangular blocks to 24 x 18 inches (~ 615 mm x 460 mm). The dimensions may vary in individual blocks. In the case of the large area in front of the Old Town Hall the flagstones were cut to 36 inches square (~ 910 mm).

Some sections had already been lifted and re-laid at different times in the past. In some cases the paving blocks were re-sized. Sometimes the patterns of arrangement of the flagstones were altered. All sections were photographed, and it was attempted to identify alternative patterns.[1]

It is suggested that slate paving may be consolidated in important areas as per architectural details which are attached if so approved by PHRA-G.

Even though it was possible to indicate to certain degree of accuracy the position and square meters of the existing paving blocks, many are in fact damaged, and will not be reusable. Moreover, reclaiming, storing and re-laying will result in a marked percentage of breakage. This unfortunately applies to one of the most impressive sections in front of the old Town Hall where it is estimated that 70 percent of the flagstones are already broken, cracked, damaged or replaced.

2.2 Granite kerb stones.

Most of the original paving is still intact while some sections of the original granite kerb stones have been replaced with kerbs of modern materials. The original kerb stones were not dressed to a standard profile and vary in dimensions. The width is between six and eight inches (~ 150 mm and 200 mm)[2], the depth between 12 and 15 inches (~ 300 mm and 375 mm) and the length anything between 15 inches and 56 inches (~ 375 mm to 1400 mm).

Granite kerb stones must be salvaged and reutilised as per architectural details if so approved by PHRA-G.

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[1] Please note that most of the areas can be seen on Google Earth Street View.
[2] ~ is a symbol indicating "approximately"

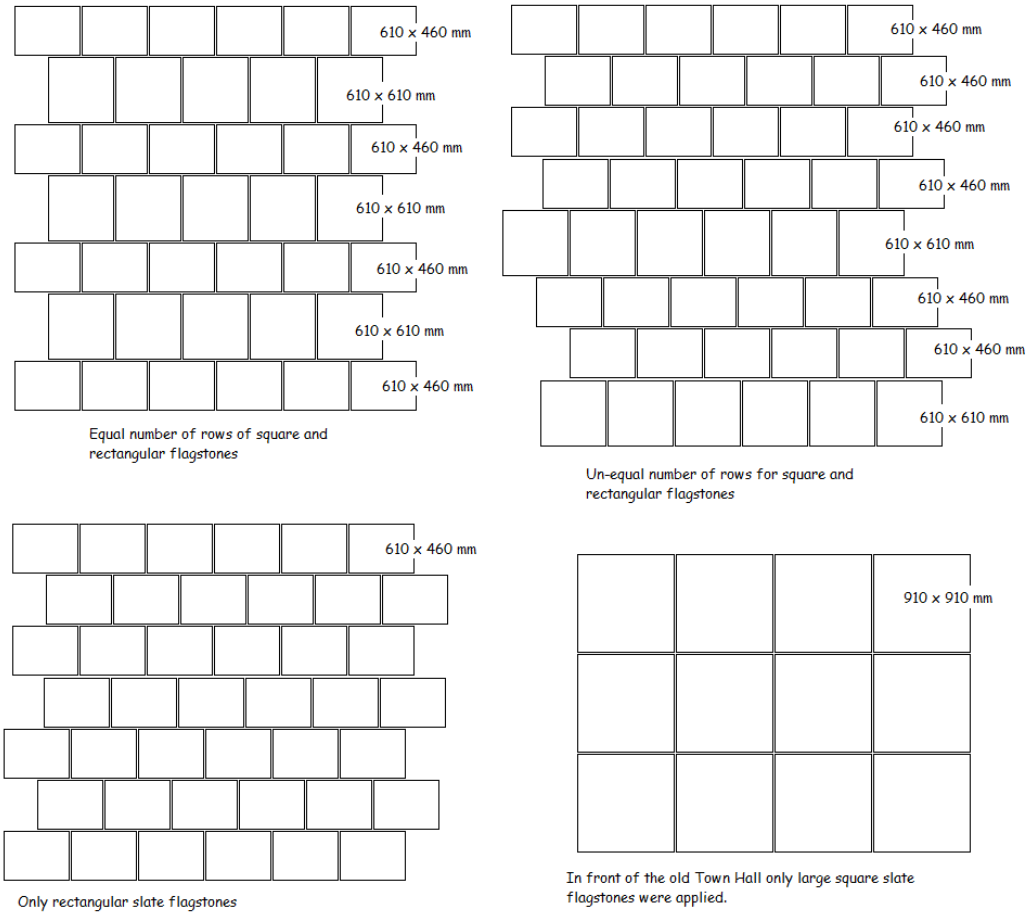


Fig. 1 *The dimensions of the slate flagstones as measured and the typical paving patterns. The fourth format, laid only in front of the old Town Hall, has been exceptionally damaged and will require special attention to design.*

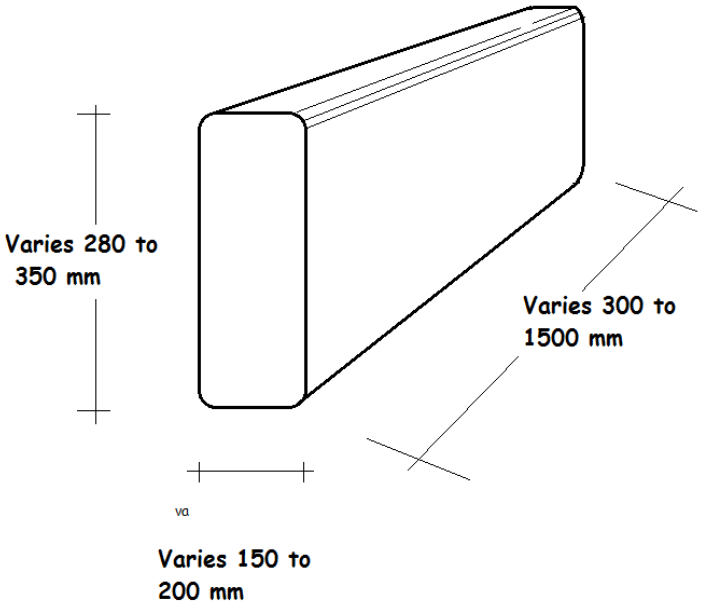


Fig. 1 *Typical measurements of the granite kerb stones.*

3. DEFINITION

The broad generic term *Cultural Heritage Resources* refers to any physical and intangible property associated with past and present human use or occupation of the environment, cultural activities and history. The term includes sites, structures, places, natural features and material of palaeontological, archaeological, historical, aesthetic, scientific, architectural, religious, symbolic or traditional importance to specific individuals or groups, traditional systems of cultural practice, beliefs or social interaction.

3.1 Protected sites in terms of the National Heritage Act, Act No. 25 of 1999

The following are the most important sites and objects protected by the National Heritage Act **(see sections 4.1 and 4.2):**

a. Structures or parts of structures older than 60 years
b. Archaeological sites and objects
c. **Palaeontological sites**
d. Meteorites
e. Ship wrecks
f. Burial grounds
g. Graves of victims of conflict
h. Public monuments and memorials
i. Structures, places and objects protected through the publication of notices in the Gazette and Provincial Gazette
j. Any other places or object which are considered to be of interest or of historical or cultural significance
k. Geological sites of scientific or cultural importance
l. Sites of significance relating to the history of slavery in South Africa
m. Objects to which oral traditions are attached
n. Sites of cultural significance or other value to a community or pattern of South African history

We furthermore specifically also refer to:

Section 4.1.3 Heritage Impact Assessment

Section 4.1.3.a The construction of a linear development (road, wall, power line, canal etc.) exceeding 300 meter in length.
Section 4.1.3.e Any other category provided for in the regulations of SAHRA or by a provincial heritage authority.

Section 4.1.5 Archaeology, Palaeontology and Meteorites

This section states clearly that archaeological material of any form may only be disturbed after SAHRA has issued an excavation permit. It also points out that a second and separate demolition permit is required to permanently destroy such a disturbed site.

3.2 Protected sites in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

The Environmental Act requires that …..*'the disturbance of landscapes and sites that constitute a nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied'…….*

4 METHODOLOGY

All relevant maps and documents on the site were studied. The site was visited and documented during the months of October and November 2013. Several meetings were conducted with Dr Küsel and technical meetings with the design team's engineers during 2013.

Documentation was undertaken by photography with a digital camera and a hand held tape measure while walking and observing on foot.

Four typical layouts of the placement of the original slate flag stone paving were recorded by measuring several sections of paving at both the northern end and the southern end of the area under investigation. These were then used as a blueprint for the documentation of the entire Church Square.

Although these original layouts may appear to be the preferred ones, later repairs to sections of the paving produced new patterns and different dimensions that are not original designs.

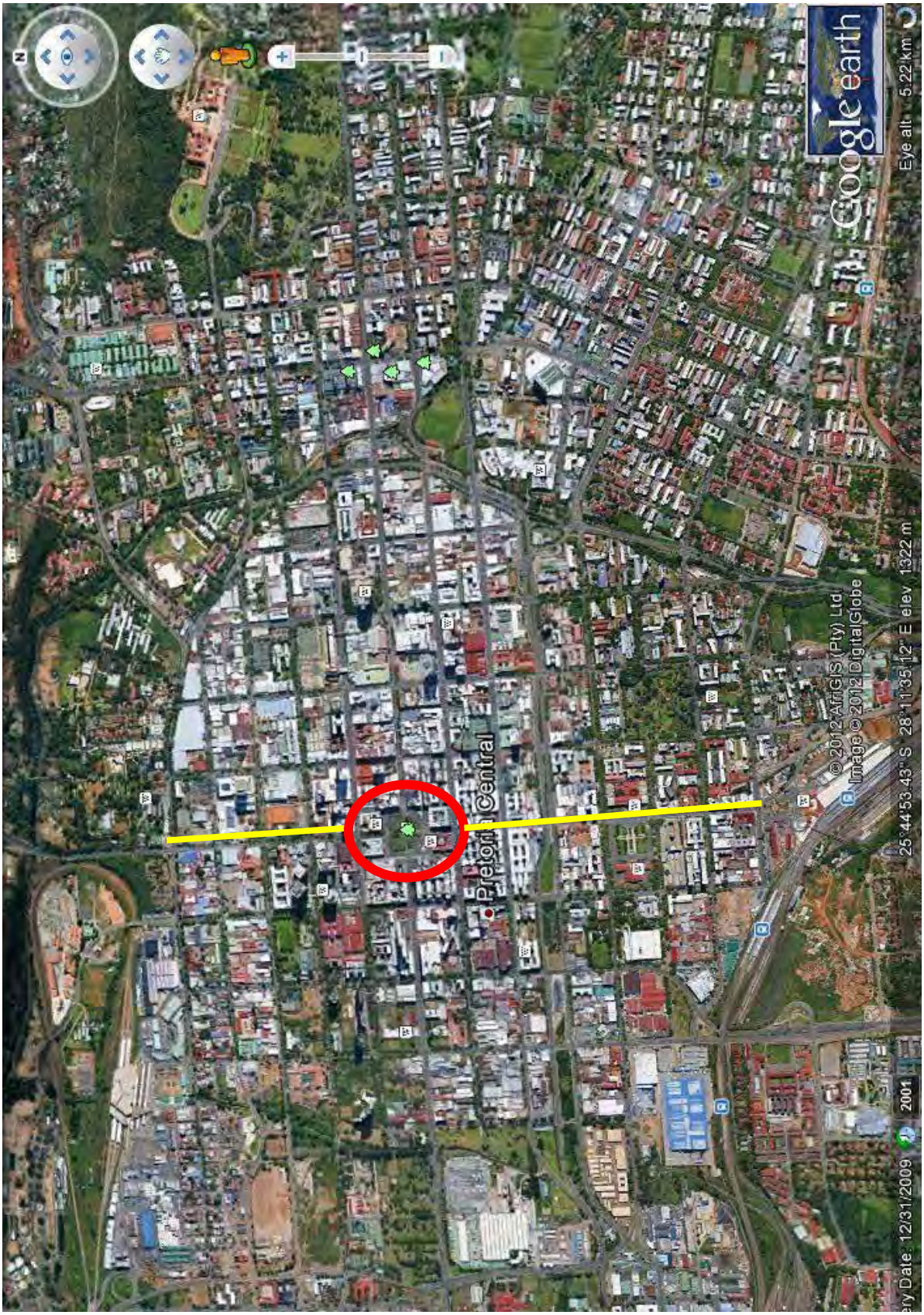


Fig. 3 *Area of study is indicated by yellow lines. Note that Church Square is excluded from this study.* ***(Google Earth Image 2009)***

5 INTRODUCTION

African Heritage Consultants were tasked in 2012 to investigate the impact of a rapid bus transport system in Paul Kruger Street between Boom Street and the Pretoria Railway Station in Scheiding Street. This bus system forms part of a larger network that will also link Hatfield to the east and a number of suburbs to the north. The impact on the cultural heritage resources associated with Paul Kruger Street was to be investigated. The original brief on the nature of the transport system was not clear. A meeting between African Heritage Consultants and the client's engineers were held on site on 7 June 2012.

During the meeting it was pointed out that the north terminus will possibly be situated on the open ground on the north-western corner of Boom and Paul Kruger streets, while the southern terminus will be at the Station at the southern end of Paul Kruger Street. A central terminus was to be placed in the eastern island of Skinner Street. Between Boom Street and Vermeulen Street all parking of routine vehicular traffic will be prohibited, while around Church Square traffic will be diverted to Palace and Bank streets. Paul Kruger Street is to be turned into a boulevard from Church Square to the Station, allowing access only to pedestrians and busses.

Between Church Square and the Station the roadway will be narrowed, and the sidewalks extended to new positions. It is also proposed that all sidewalks are to be paved or re-paved to modern standards.

From a heritage point of view there are both positive and negative points that have to be considered. On the positive side the diversion of traffic from the southern section of Paul Kruger Street and the Square will benefit the profiles and characters of protected and provisionally protected buildings. With new paving, street furniture and greening, the pedestrian's experience of the built environment will be enhanced while the two opposite sides of the street will unite as one streetscape.

On the negative side the history of paving and paving materials can easily be lost if a homogenous approach in paving materials is to be adapted. In several places along the street the original soil surface is still visible. The initial granite kerb stones and blue slate paving moreover reflect the early experience of pedestrians 'to be out of the dust and mud'. The built environment in newly-founded towns was in the past exposed to extremely dusty conditions during the generally dry winters whereas summer rains resulted in muddy environs. This was in particular inconvenient around public buildings and businesses that experienced larger volumes of pedestrian traffic. Similarly Pretoria had to adapt and the most important streets and some sidewalks were paved over time.

Recurrent infrastructural activities such as the provision of water and storm water pipes, sewer drainage, electric and telephone cables, etcetera, required the lifting and repaving of sidewalk surfaces. The mosaic of materials and workmanship accordingly reflects some aspects of our collective history.

A previous Phase 1 Heritage Impact Assessment was accordingly submitted to PGRA-G in December 2012. Note that since the first report the engineering design had been extensively changed. A permit (SAHRA ref. 9/2/258/0184 Permit ID: 1161) was subsequently obtained in order to carry on with the proposed developments. The current archaeological investigations are accordingly based on new information and design parameters specifically focussed on Church Square. The archaeological investigations will comply with the conditions set out in the SAHRA permit issued for the Paul Kruger Street, Pretoria: Rapid Transit Bus Service Development.

6 ECOLOGY

This is not repeated here as it has been extensively dealt with in the previous Phase 1 report (African Heritage Consultants 2012).

7 ARCHAEOLOGY

This is not repeated here as it has been extensively dealt with in the previous Phase 1 report. (African Heritage Consultants 2012).

8 EUROPEAN SETTLEMENT

This is not repeated here as it has been extensively dealt with in the previous Phase 1 report. (African Heritage Consultants 2012).

9 ENGINEERING AND ARCHITECTURAL DETAILS

10 RECORDINGS FOR THE EXTENSION OF THE PHASE 1

10.1 Block 1. Boom Street to Bloed Street

Fig. 3 *Google Earth* ***(2009)*** *Image of Block 1 with position of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 1

1.1 Contains approximately 90 square meters of slate flagstone paving at north-eastern corner.

1.2 Approximately60 square meters are cracked and damaged in this area.

1.3 Approximately 30 square meters may be recovered from this area for reutilisation elsewhere.

2. 1 Block 1 total length ~ 132 meters.

2.2 Approximately 100 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 5)

2.3 No granite kerbing remains on western side of Paul Kruger Street. (See Fig. 5)

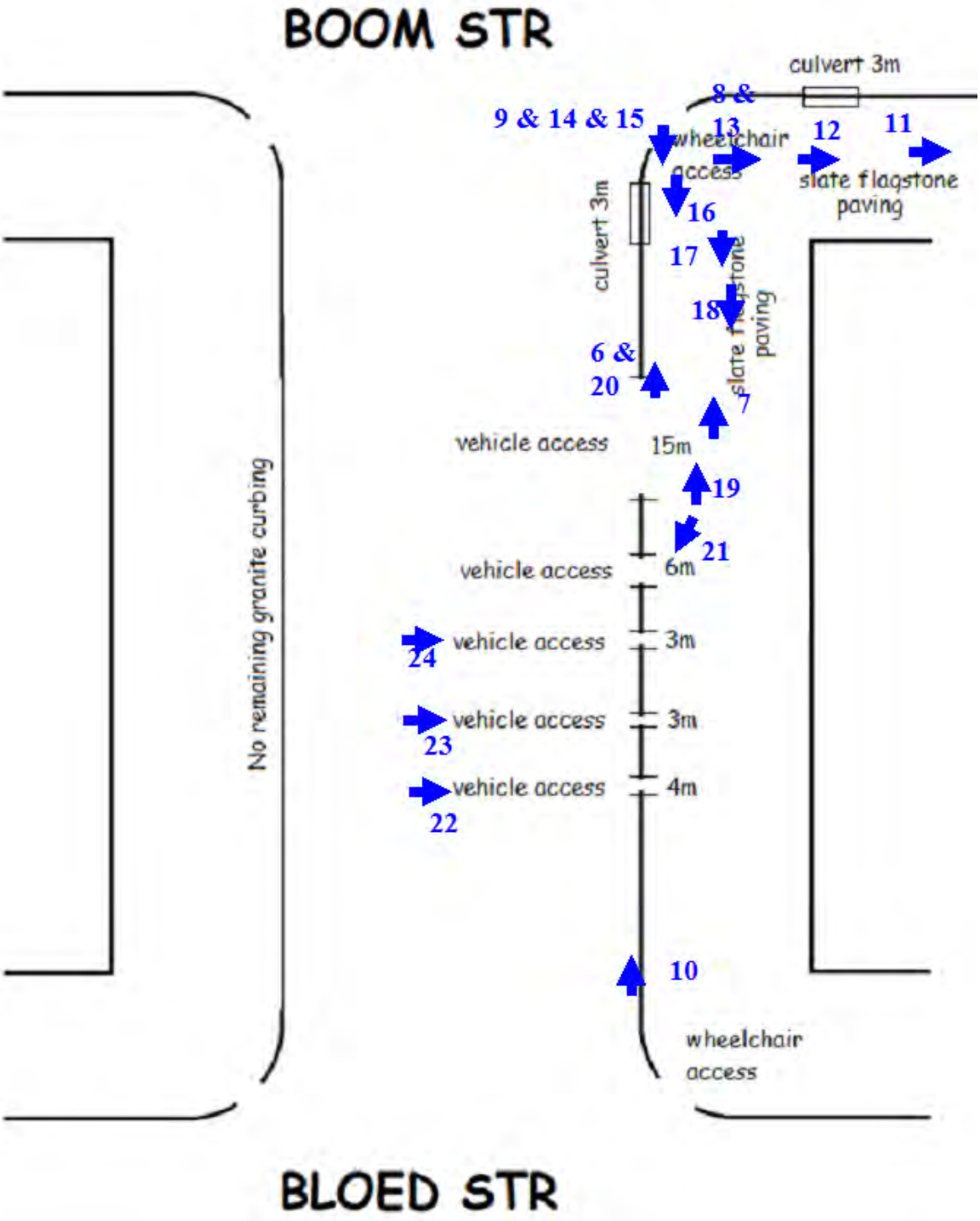
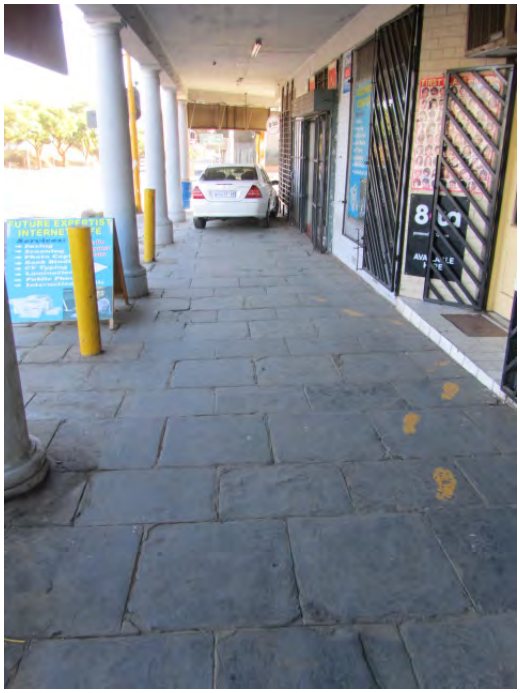


Fig. 5 *Block 1, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts. These are all factors that reduce the extent of remaining granite kerbing.*



Figs 6 and 7 *Historical slate flagstones, granite kerbing and pillars of sidewalk in front of protected building.* ***(Photographs SM Miller 2012)***

Fig. 8 *Historical slate flagstones, granite kerbing and pillars of sidewalk in front of protected building.* ***(Photograph SM Miller 2012)***

Figs 9 and 10 *Historical slate flagstones on the sidewalk in front of protected building and granite kerbing on eastern side of Paul Kruger Street in Block 1.* ***(Photographs SM Miller 2012)***

Figs 11 to 14 *Historical slate flagstones on sidewalk in front of protected buildings along Bloed Street. These photographs illustrate the generally poor condition of the paving.* ***(Photographs SM Miller 2013)***



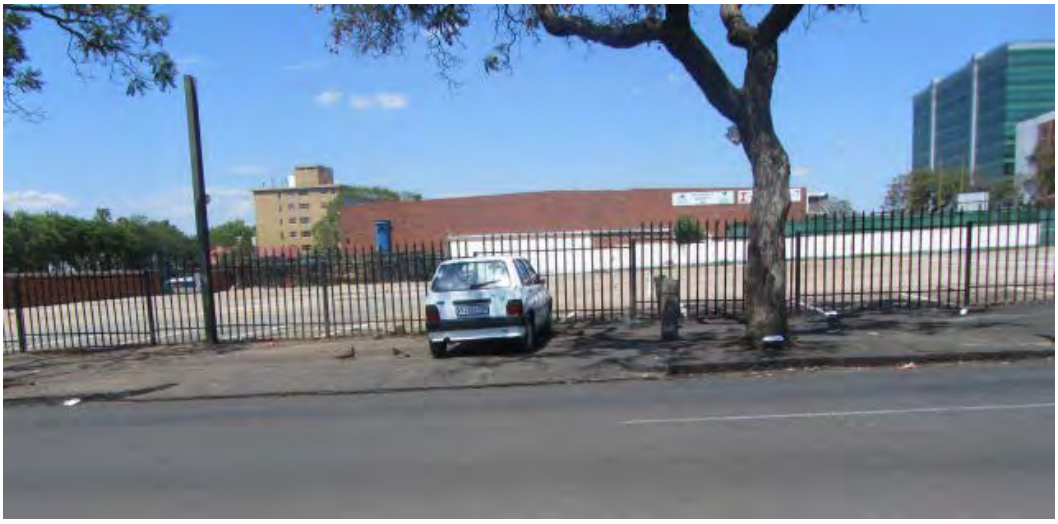


Figs 15 to 19 *Above can be seen historical slate flagstones on the sidewalk in front of a protected building in Block 1 on the eastern side of Paul Kruger Street.*

Although long sections of granite kerbing remain, there are five vehicular access points like the one depicted in the last image above. ***(Photographs SM Miller 2013)***

Fig. 20 *Above is the historical slate flagstone sidewalk in front of protected building after an exploration for services. Compare to Figure 4.* ***(Photograph SM Miller 2013)***

Fig. 21 *Intervention for vehicular access to previous dwellings and existing businesses such as depicted above occurs along the eastern side of Paul Kruger Street. These vary from three to nearly 5 meters* ***(Photograph SM Miller 2013)***



Figs 22 to 24 *Although long sections of granite kerbing remain, there are 5 vehicular access breaks as depicted above.* ***(Photographs SM Miller 2013)***

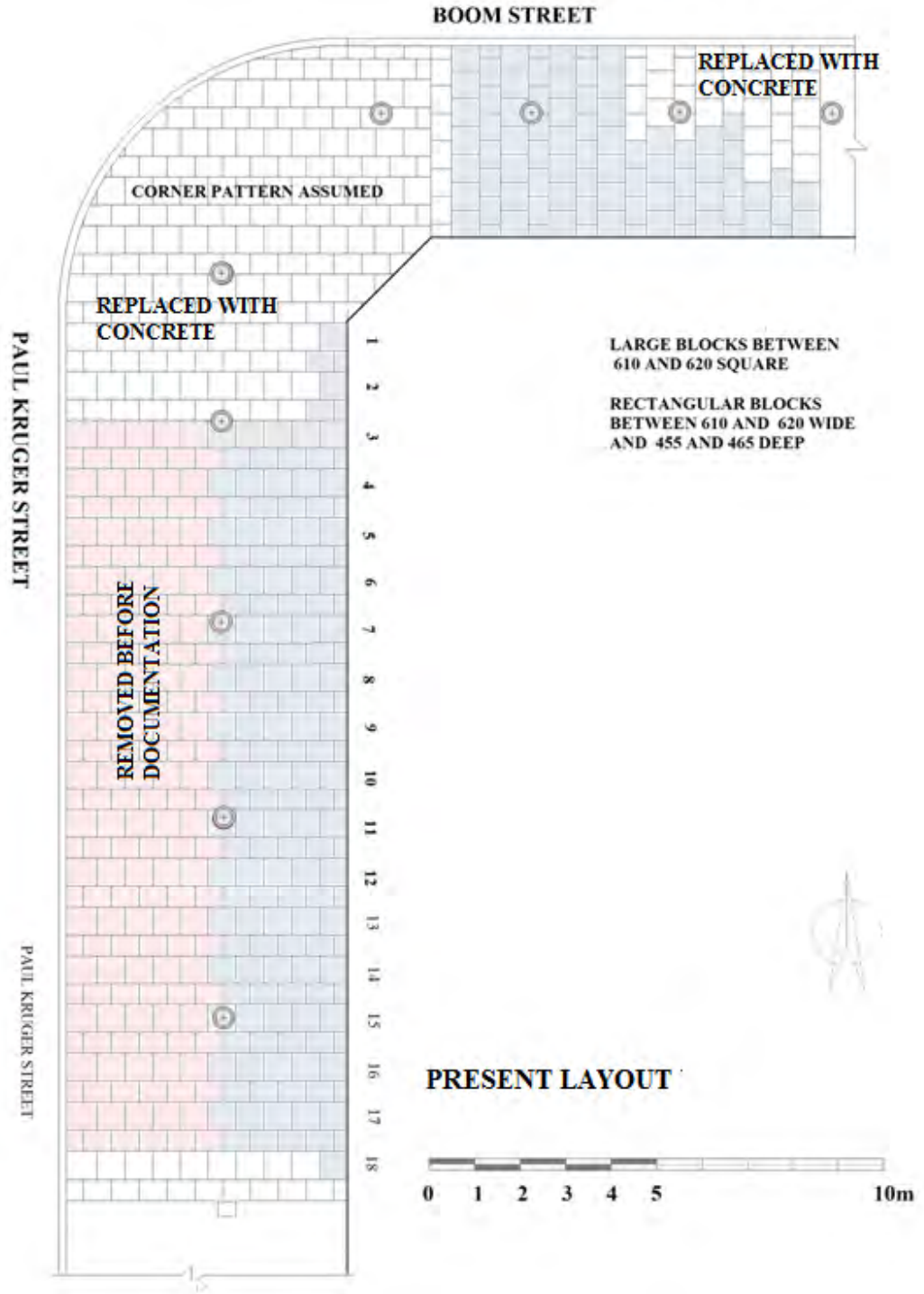


Fig. 25 *Reconstruction of present slate flagstone paving on the north-eastern corner of Paul Kruger and Boom streets, disregarding cracked units. It also forms a benchmark for the possible original layout of the flagstone paving in general.*

10.2 Block 2. Bloed Street to Struben Street

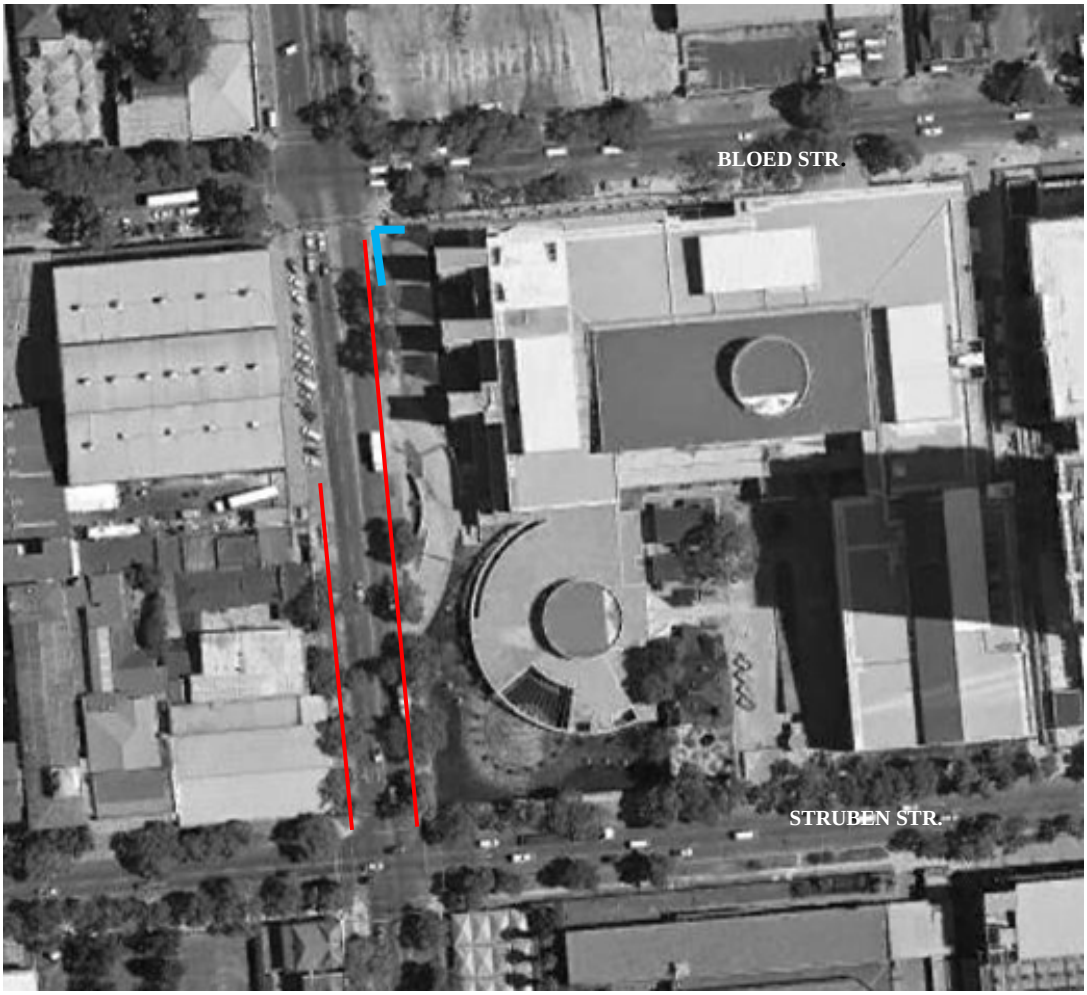


Fig. 26 *Google Earth* ***(2009)*** *image of Block 2 with positions of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 2

1.1 Contains approximately 50 square meters of slate flagstone paving at north-eastern corner.

1.2 Approximately 25 square meters are cracked and damaged in this area.

1.3 Approximately 25 square meters may be recovered from this area and reutilised elsewhere.

2. 1 Block 2 total length ~ 144 meters.

2.2 Approximately 120 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 27)

2.3 Approximately 62 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 27)

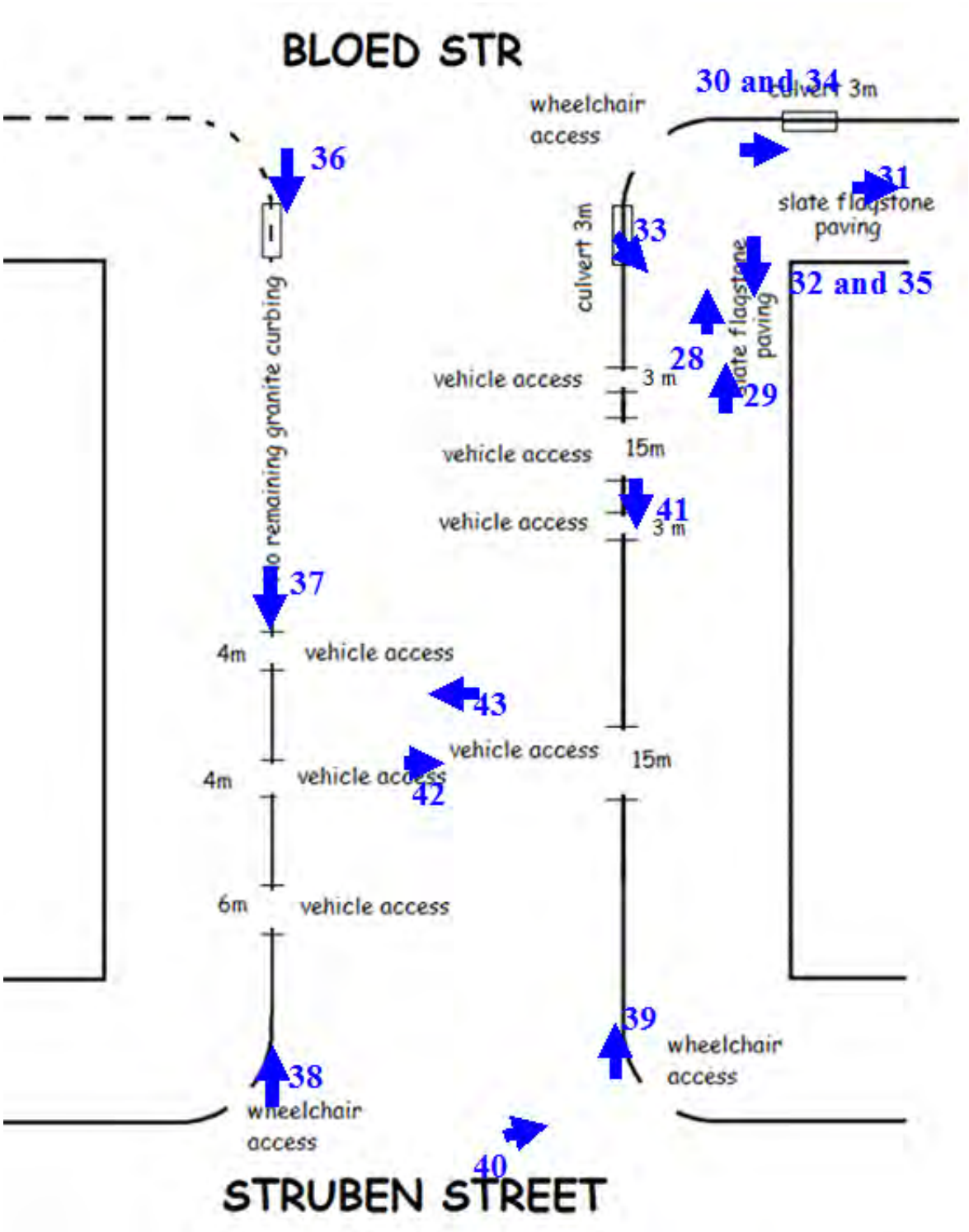


Fig. 27 *Block 2, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduced the length of remaining granite kerbing.*


Figs 28 and 29 *Historical slate flagstones on the sidewalk along Paul Kruger Street on the north-eastern corner of Paul Kruger and Bloed streets.* ***(Photographs SM Miller 2012)***


Figs 30 and 31 *Historical slate flagstones on the sidewalk along Bloed Street on the north-eastern corner of Paul Kruger and Bloed streets.* ***(Left, Photograph SM Miller 2012. Right, Photograph SM Miller 2013)***

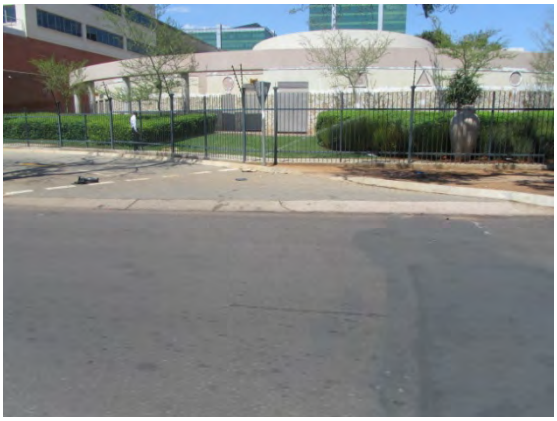

Figs 32 and 33 *Historical slate flagstones on the sidewalk along Paul Kruger Street on the north-eastern corner of Paul Kruger and Bloed streets.* ***(Photographs SM Miller 2013)***

Figs 34 and 35 *Historical slate flagstones on the sidewalk along Paul Kruger Street on the north-eastern corner of Paul Kruger and Bloed Street.* ***(Photographs SM Miller 2013)***

Figs 36 and 37 *Kerbing along the northern and southern ends of the western sidewalk in Block 2. A section of the sidewalk has been forfeited for parking and a 50 meter section of granite kerbing was removed. Three vehicular access points exist in the northern section.* ***(Photographs SM Miller 2012)***

Figs 38 and 39 *Granite kerb stones at the southern end of Block 2.* ***(Photographs SM Miller 2012)***

Fig. 40 *Granite kerbing was adapted throughout the study area at street corners to accommodate physically-disadvantaged people. In some cases granite kerb stones were retained, while at other places modern materials were used.* ***(Photograph SM Miller 2012)***



Figs 41 and 42 *Granite kerbing on the east side of Block 2 Note the large vehicular exit area from the building in the background.* ***(Photographs SM Miller 2013)***

Figs 43 *Granite kerbing on the west side of Block 2 and vehicular access areas for the building in the background.* ***(Photograph SM Miller 2013)***

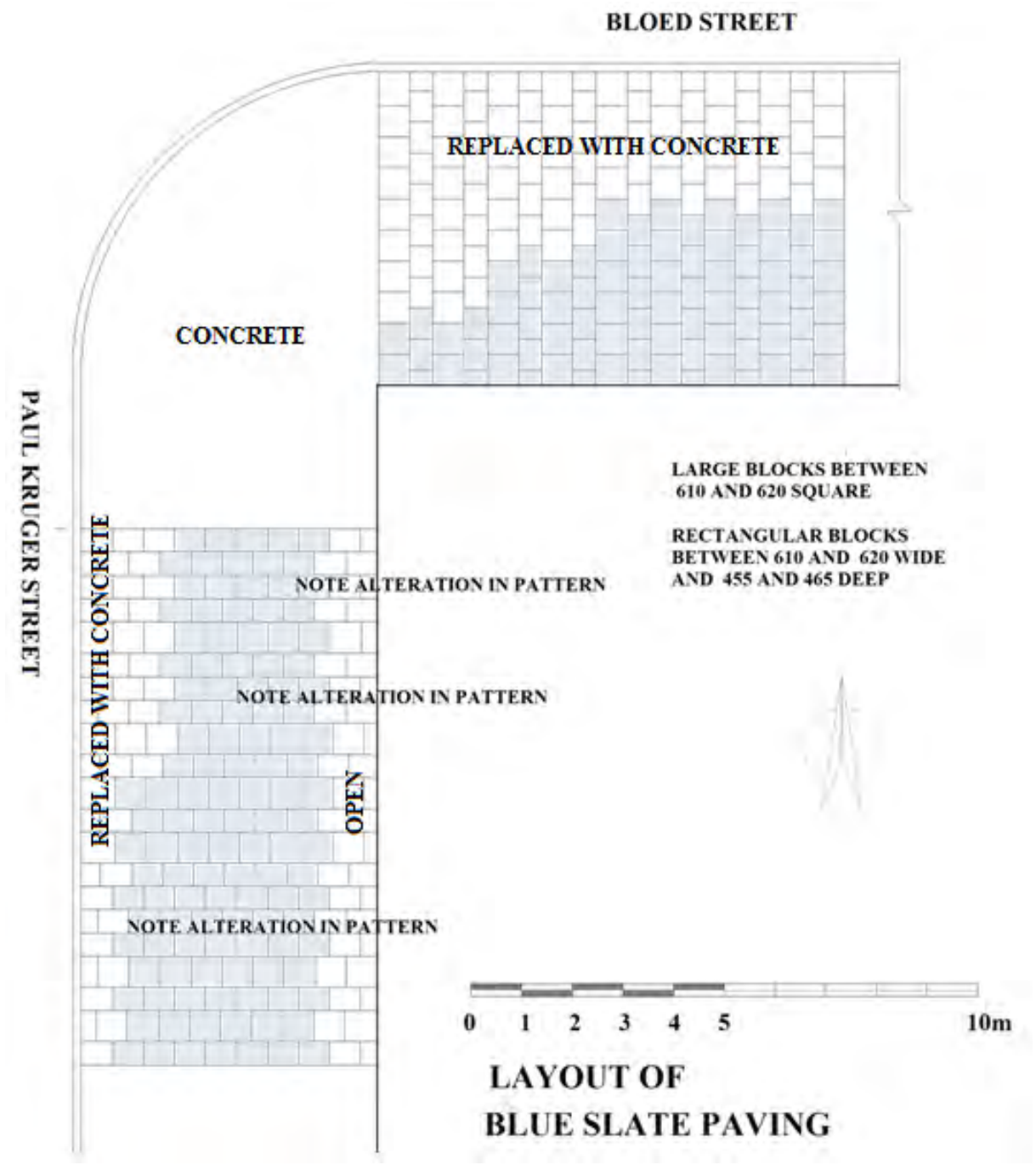


Fig. 44 *Reconstruction of present slate flagstone paving on the north-eastern corner of Paul Kruger and Bloed streets, disregarding cracked units.*

10.3 Block 3. Struben Street to Johannes Ramokhoase Street

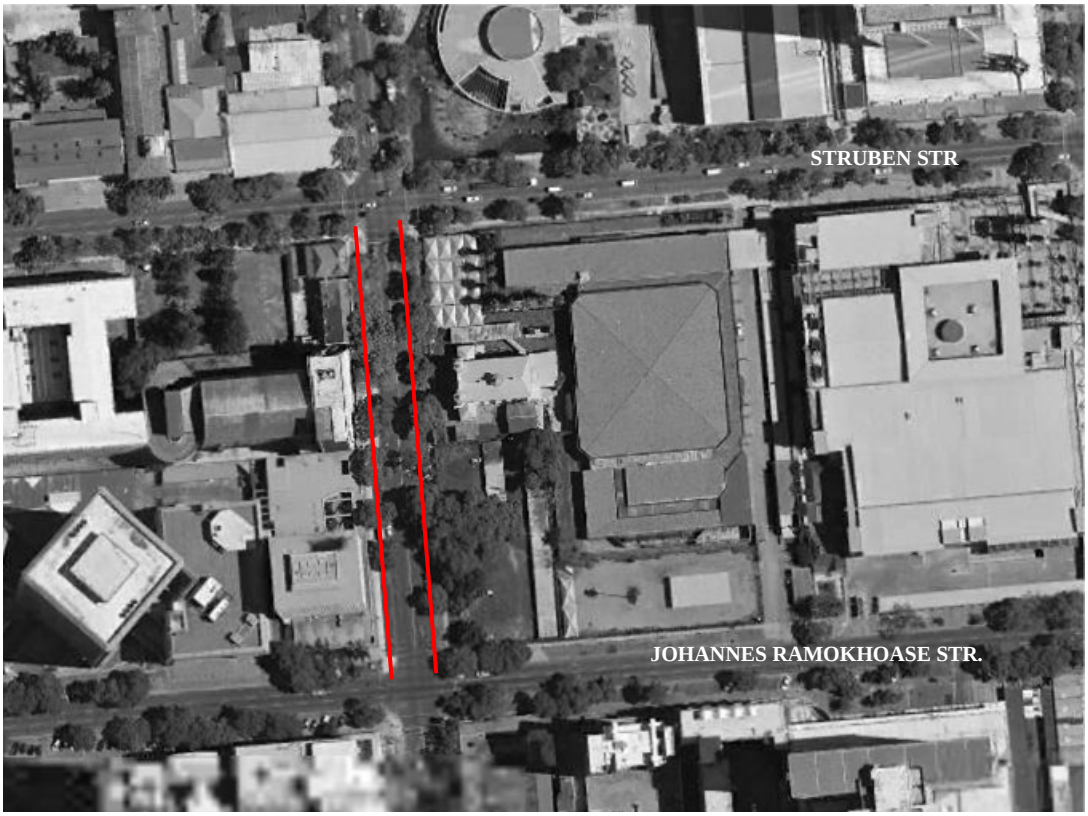


Fig. 45 *Google Earth* ***(2009)*** *image of Block 3 with positions of granite kerbing (red) highlighted.*

SUMMARY BLOCK 3

1 No residual slate flagstone paving in this block.

2.1 Block 3 total length ~ 150 meters.

2.2 Approximately 135 meters of granite kerbing remain on eastern side of Paul Kruger Street. ***(See Fig. 46)***

2.3 Approximately 138 meters of granite kerbing remain on western side of Paul Kruger Street. ***(See Fig. 46)***

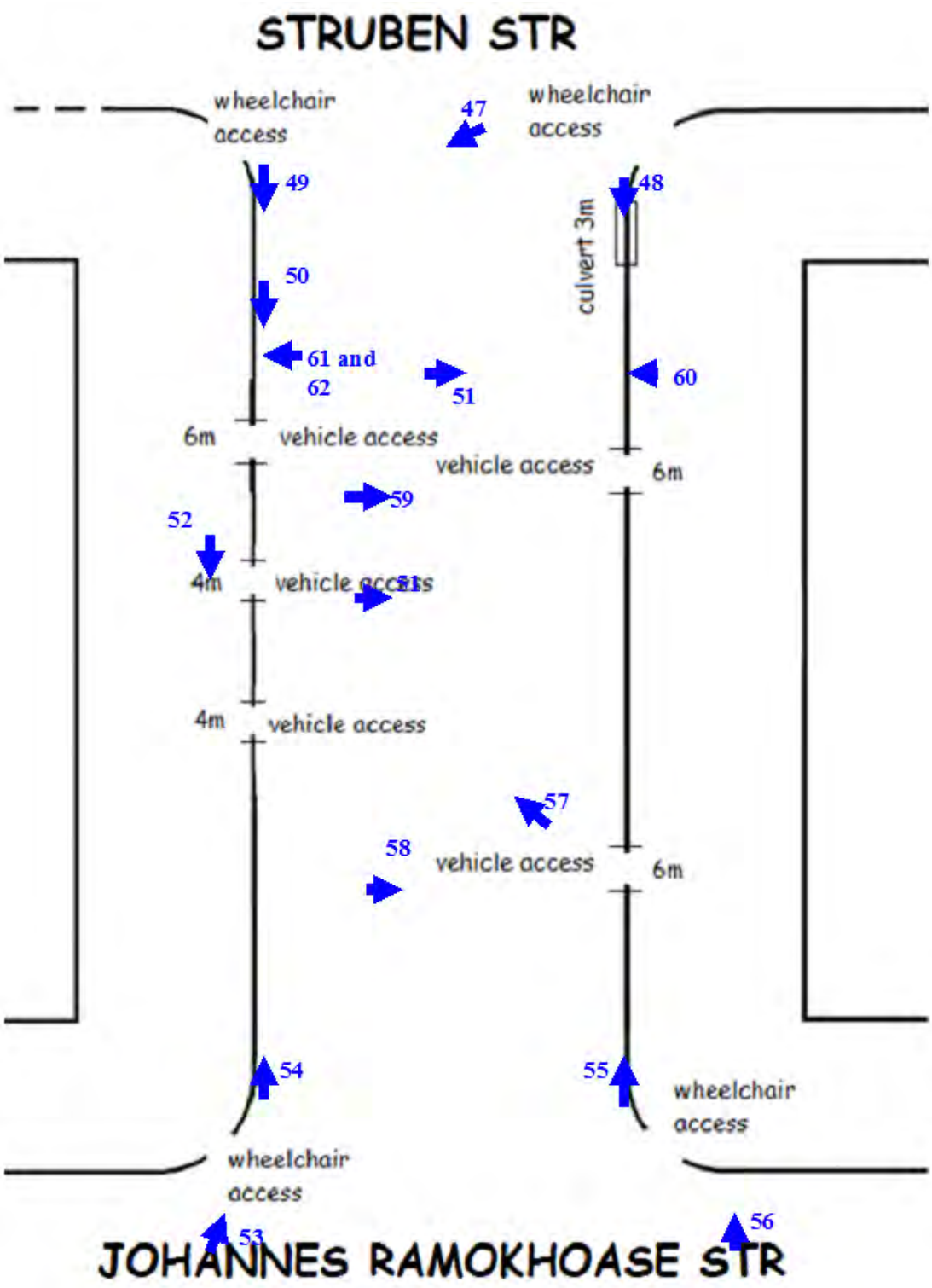


Fig. 46 *Block 3, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduces the length of remaining granite kerbing.*

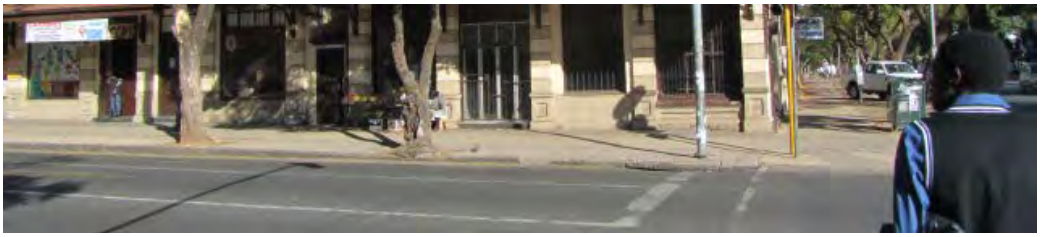


Fig. 47 *Granite kerbing defining old roadway dimensions on north western side of block 3. Culverts and handicapped access provision impact on the historical kerb stones.* ***(Photograph SM Miller 2012)***

Figs 48 and 49 *Location of historical granite kerbing on both the north-eastern and north-western ends of Block 3. Concrete strips are the main paving products on both sidewalks.* ***(Photographs SM Miller 2012)***

Fig. 50 *Granite kerbing and jacaranda trees on this section.* ***(Photograph SM Miller 2012)***

Fig. 51 *Historical granite kerbing in front of the synagogue where the Nelson Mandela trial was held.* ***(Photographs SM Miller 2012)***

Fig. 52 *No slate flagstones remained on either side of the road.* ***(Photograph SM Miller 2012)***

Figs 53 and 54 *Granite kerbing along south-western corner of Block 3.* ***(Photographs SM Miller 2012)***

Figs 55 and 56 *Granite kerbing defining old roadway.* ***(Photographs SM Miller 2012)***

Fig. 57 *Granite kerbing defining old roadway and vehicular access on both sides of red- and yellow-painted building.* ***(Photographs SM Miller 2012)***

Fig. 58 *Granite kerbing on the east side of Block 3, also showing vehicular access areas for the parking in the background.* ***(Photograph SM Miller 2013)***

Fig. 59 *Granite kerbing on the east side of Block 3, also showing vehicular access for the parking area in the background.* ***(Photograph SM Miller 2013)***

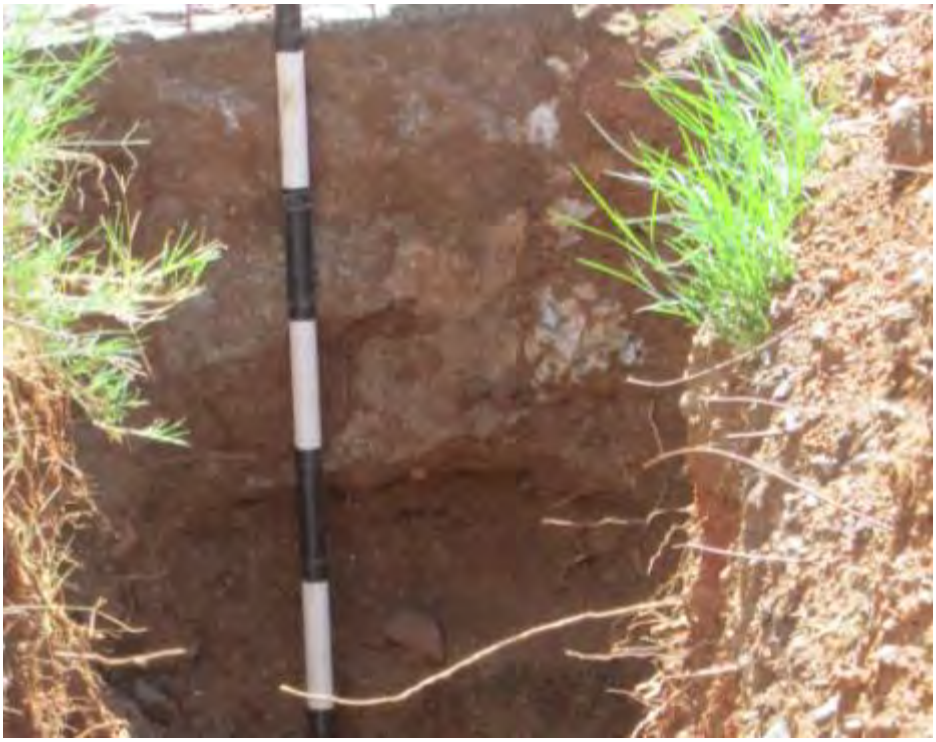


Fig. 60 *The above photograph records the depth of the granite kerbing on the east side of Block 3, being around 350 mm (7 inches). This may vary as the kerb stones were handmade.* ***(Photograph SM Miller 2013)***

Fig. 61 *Width of granite kerbing on the west side of Block 3 of between 150 to 200 mm (6 and 8 inches.) This may vary as the kerb stones were handmade.* ***(Photograph SM Miller 2013)***

Fig. 62 *Length of the granite kerbing on the west side of Block 3, being from 300 to 500 mm (12 and 20 inches). This may vary as the kerb stones were handmade.* ***(Photograph SM Miller 2013)***

Fig. 63 *In some areas the granite kerbing is even more variable up to a length of 1300 mm (four foot six inches.* ***(Photograph SM Miller 2013)***

10.4 Block 4. Johannes Ramokhoase Street to Vermeulen Street

Fig. 64 *Google Earth* ***(2009)*** *image of Block 4 with positions of granite kerbing (red) highlighted.*

SUMMARY BLOCK 4

1 Contains 0 square meters of residual slate flagstone paving.

2.1 Block 4 total length ~ 148 meters.

2.2 Approximately 138 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 65)

2.3 Approximately 132 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 65)

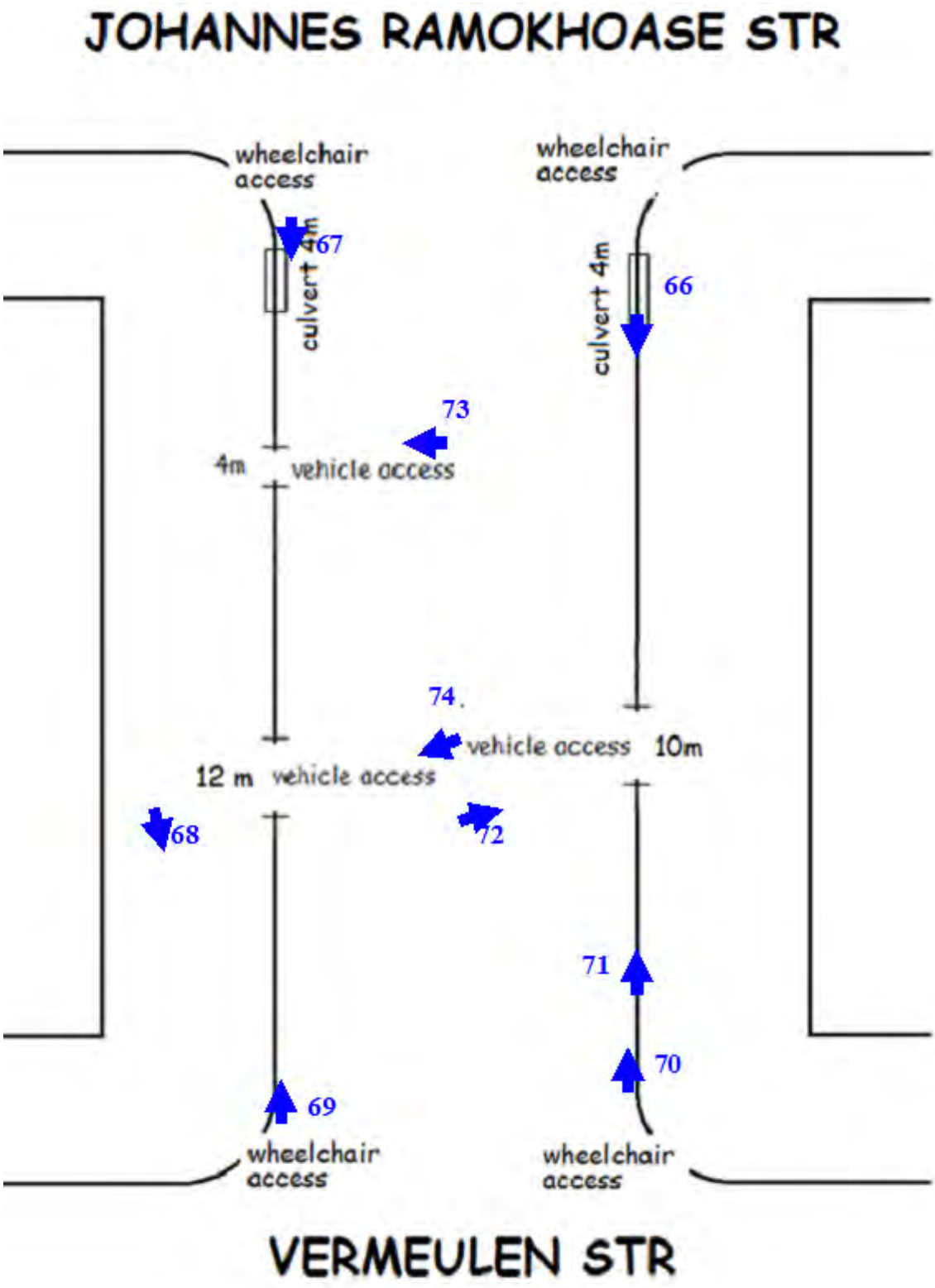


Fig. 65 *Block 4, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.*

Figs 66 and 67 *Historical granite kerbing on the northern end of Block 4.* ***(Photographs SM Miller 2012)***

Figs 68 and 69 ***Left:*** *Entirely no historical slate flagstone paving remain on Block 4.* ***Right:*** *Historical granite kerbing on the southern end of Block 4* ***(Photographs SM Miller 2012)***

Figs 70 and 71 *Historical granite kerbing on the south-eastern end of Block 4.* ***(Photographs SM Miller 2012)***

Fig. 72 *Granite kerbing on the east side of Block 4, also showing vehicular access areas for the parking in the background.* ***(Photograph SM Miller 2013)***

Fig. 7 *Granite kerbing on the east side of Block 4, also showing vehicular access areas for the parking in the background.* ***(Photograph SM Miller 2013)***

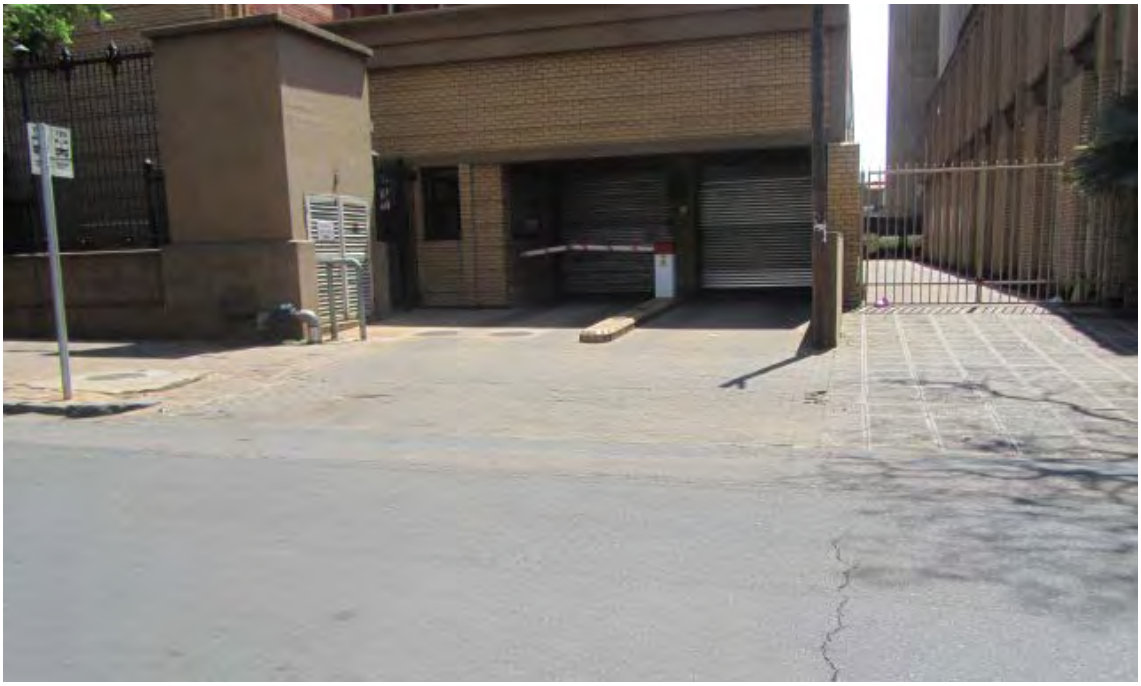


Fig. 74 *Granite kerbing on the east side of Block 4, also showing vehicular access areas for the parking in the background.* ***(Photograph SM Miller 2013)***

10.5 Block 5. Pretorius Street to Francis Baard Street

Fig. 75 *Google Earth* ***(2009)*** *image of block 5 with positions of granite kerbing (red) highlighted.*

SUMMARY BLOCK 5

1. 1 Contains approximately 170 square meters of slate flagstone paving at south-western corner and 4 square meters in the central part of the eastern side of the block.

1.2 Approximately 80 square meters are cracked and damaged.

1.3 Approximately 94 square meters may be recovered and reused elsewhere.

2.1 Block 5 total length ~ 138 meters.

2.2 Approximately 130 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 76)

2.3 Approximately 130 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 76)

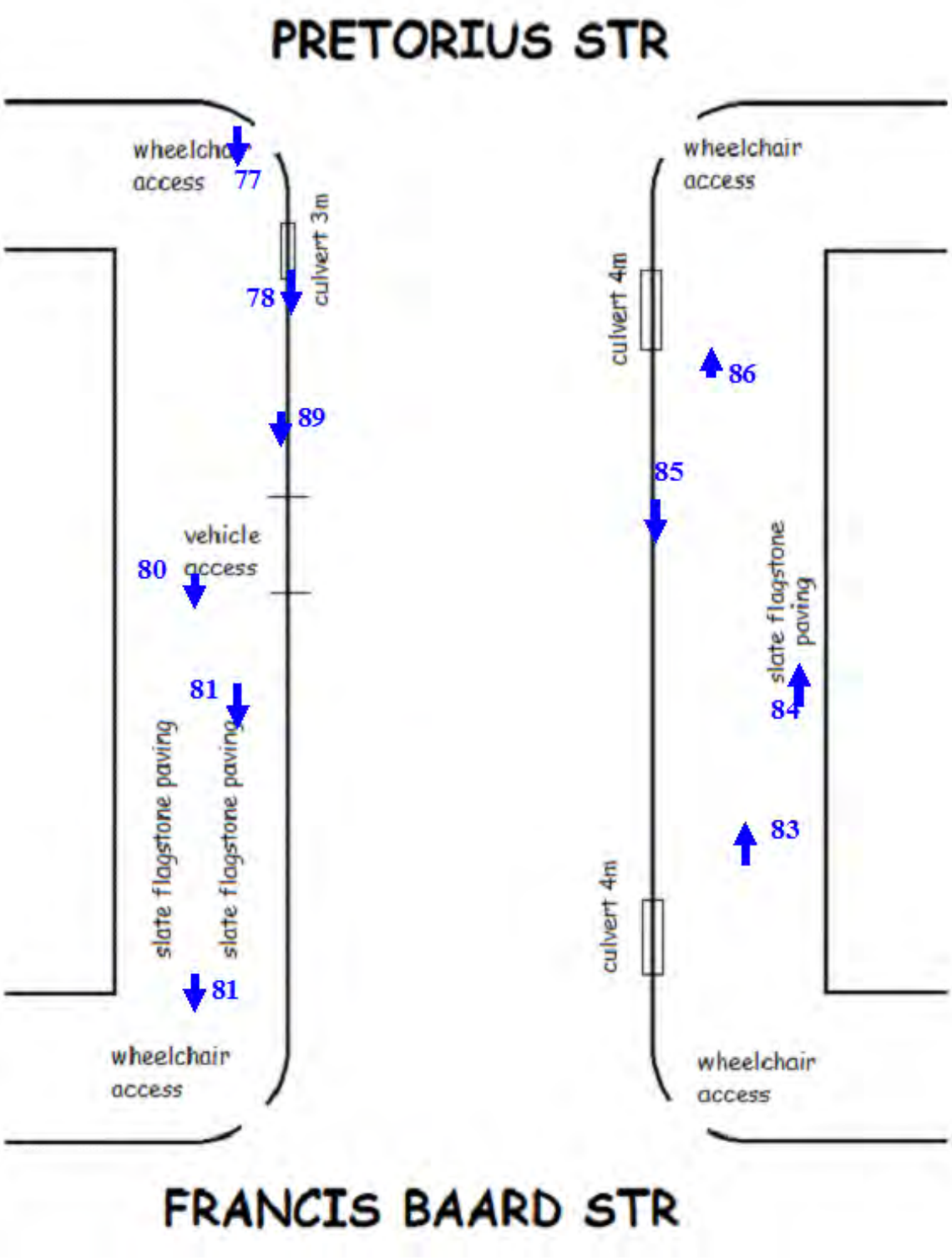


Fig. 76 *Block 5, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.*

Fig. 77 *North-western corner of Block 5. Culverts of various lengths and variable locations intrude on historical granite kerb stones, often close to street corners.* ***(Photograph SM Miller 2012)***

Figs 78 and 79 *Above left is the granite kerbing on the north-western side of Block 5. Above right are the vehicular access areas for PGC-HOUSE where the granite kerbing was not removed but lowered for access.* ***(Photographs SM Miller 2012)***

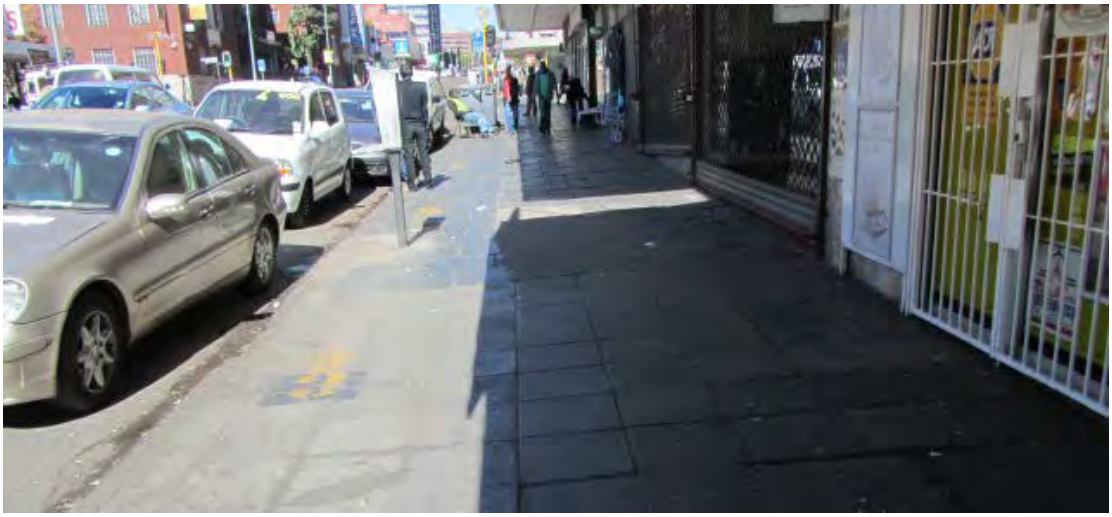


Fig. 80 *Granite kerbing on the north-western side of Block 5.In the centre of the image are random remaining slate flagstones.* ***(Photograph SM Miller 2012)***

Fig. 81 *Remaining historical slate flagstone paving.* ***(Photograph SM Miller 2012)***

Fig. 82 *Southwest corner of Block 5 where historical granite kerbing was retained but adjusted to a lower level to enable wheelchair access. This is apparent at most corner localities.* ***(Photograph SM Miller 2012)***

Fig. 83 *Granite kerbing on the central eastern side of Block 5. Fracturing of the granite kerbing at column bases probably explains the discontinuation of granite kerbing elsewhere along the street.* ***(Photograph SM Miller 2012)***

Figure 8 *Remains of historical slate flagstone on the eastern side of Block 5.* ***(Photograph SM Miller 2012)***

Figure 8 *Only a few of these Edwardian shop veranda cast iron column bases remain on Paul Kruger Street. It is important that they are retained.* ***(Photograph SM Miller 2012)***

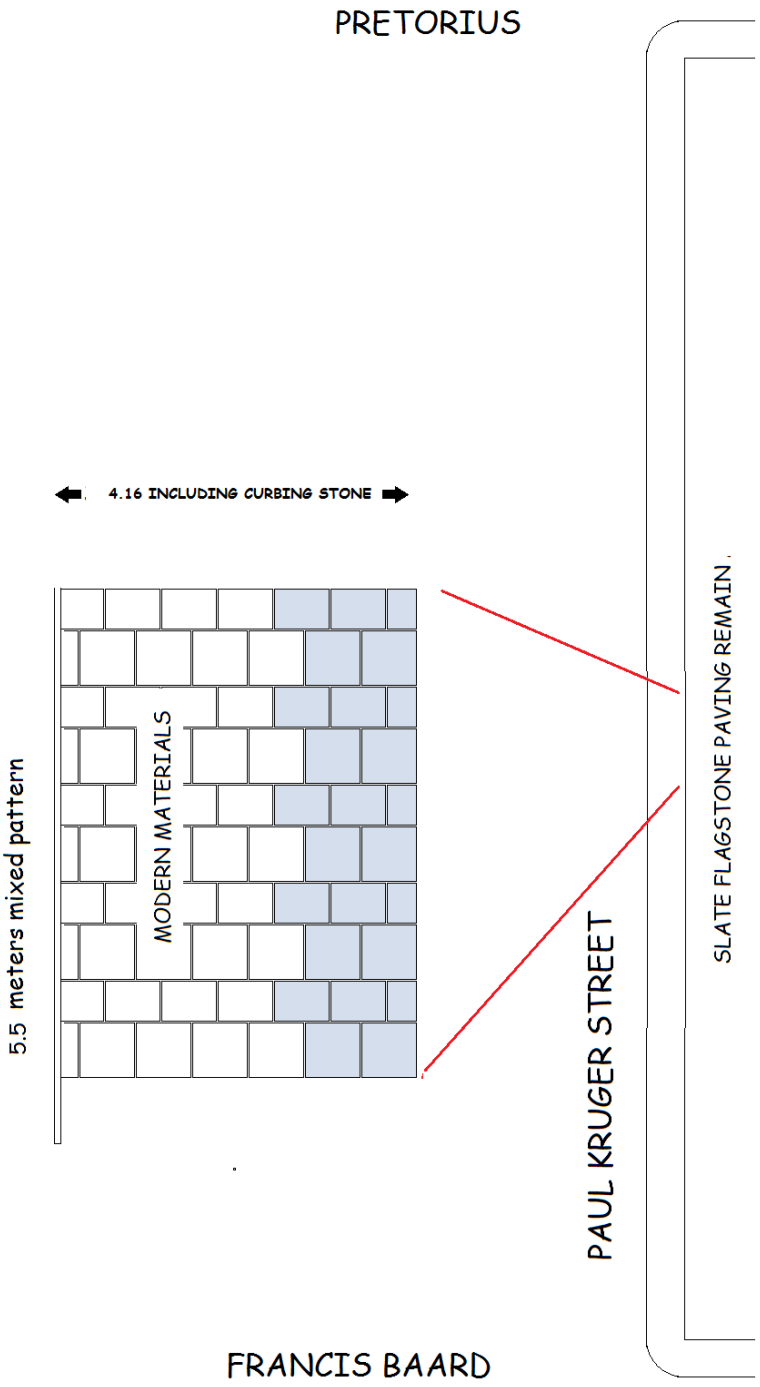


Fig. 86 *Reconstruction of present condition of the slate flagstone paving on the eastern side of Paul Kruger in block 5. The few remaining flagstones are in a relative good condition. The paving pattern conforms to documentation of paving elsewhere.*

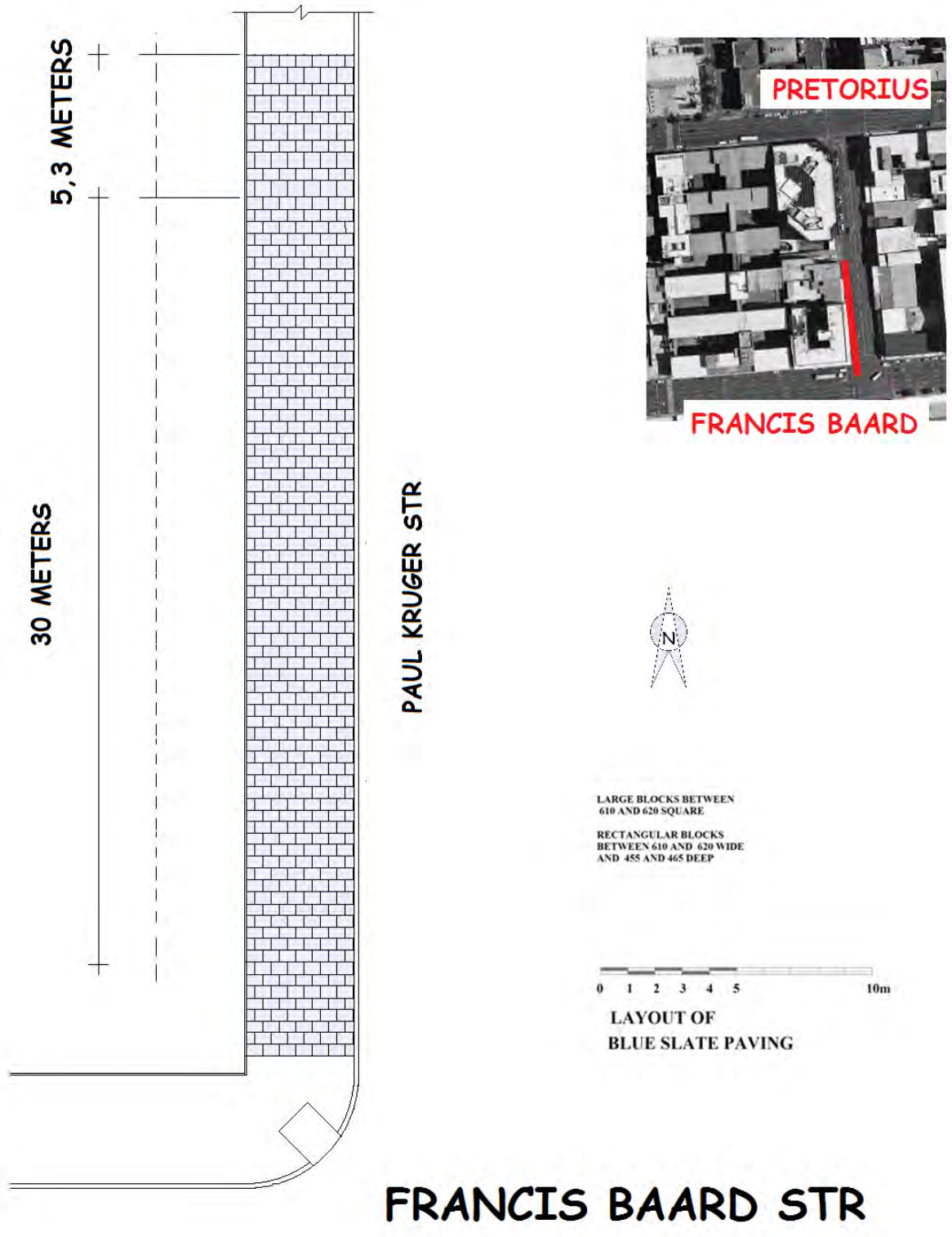


Fig. 87 *Reconstruction of present condition of slate flagstone paving on the south-western side of Paul Kruger Street in Block 5. Although there appears to be around 120 square meters of slate flagstones intact their general condition is poor. Many have been lost through the installation of services.*

10.6 Block 6. Francis Baard Street to Nana Sita Street

Fig. 88. *Google Earth* ***(2009)*** *image of Block 6 with position of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 6

1. 1 This block contains approximately 3.5 square meter of slate flagstone paving at the south-western corner. These comprise a small number of flagstones without historical contexts. (See Fig. 94)

2.1 Block 6 total length ~ 114 meters.

2.2 Approximately 100 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 89)

2.3 Approximately 80 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 89)

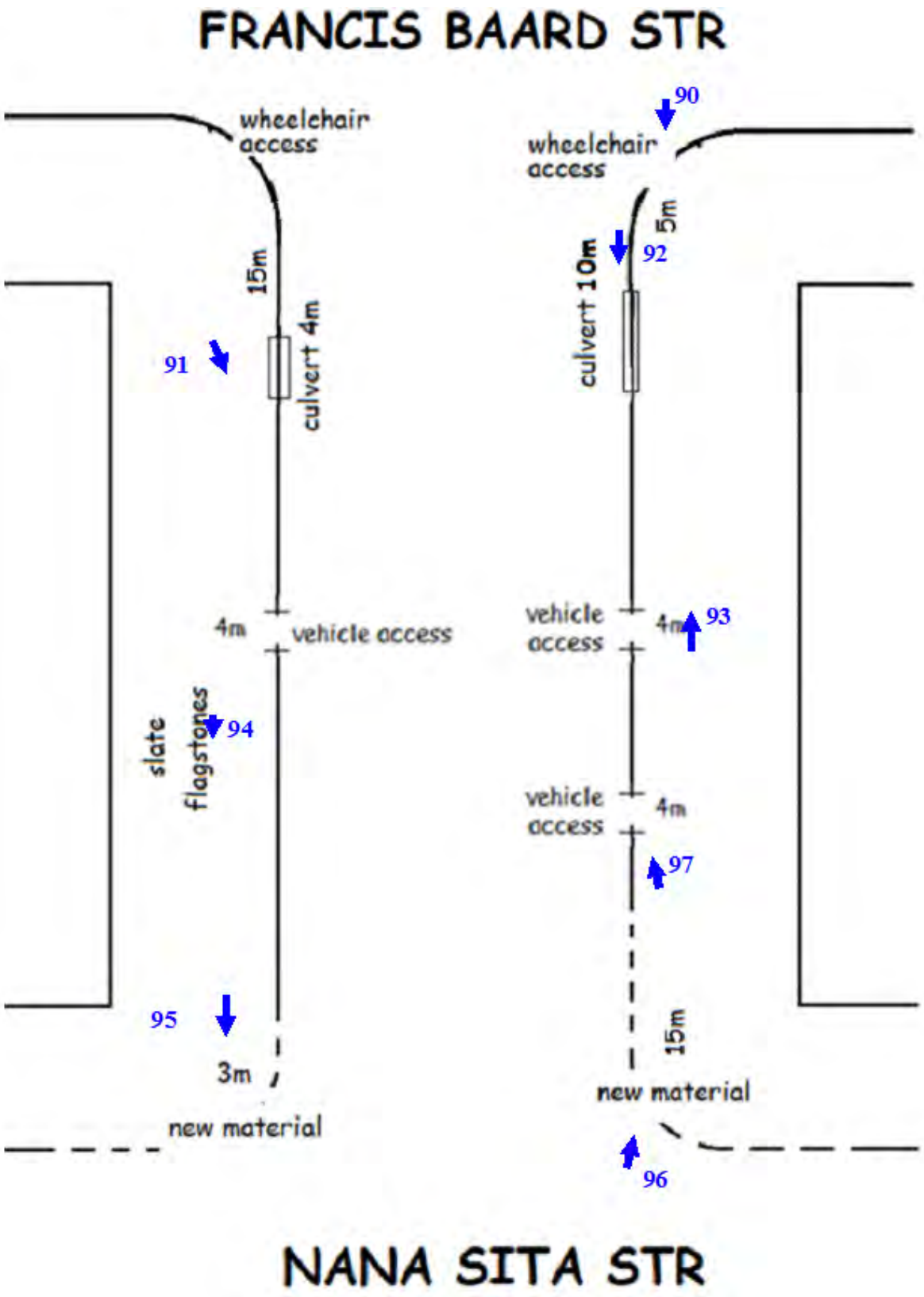
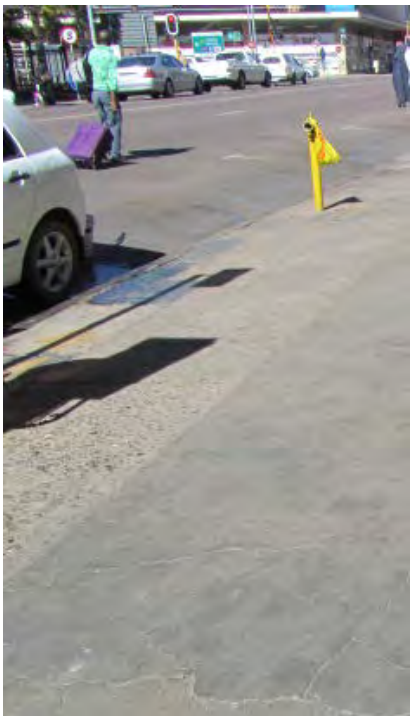


Fig. 89 *Block 6, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.*

Fig. 90 *A range of paving material and the granite kerbing. Note the use of short sections to create a corner radius.* ***(Photograph SM Miller 2012)***



Figs 91 and 92 *Two views along granite kerbing. Note complete absence of slate flagstones.* ***(Photographs SM Miller 2012)***

Fig. 93 *View of granite kerbing. Note complete absence of slate flagstones.* ***(Photograph SM Miller 2012)***

Fig. 94 *A variety of paving material on the western side of Paul Kruger Street in Block 6. Remnants of slate flagstone paving are also visible.* ***(Photograph SM Miller 2012)***

Fig. 95 *Modern brick paving possibly associated with the original broadening of Nana Sita Street.* ***(Photograph SM Miller 2012)***

Fig. 96 *Modern paving and kerbing possibly associated with the original broadening of Nana Sita Street.* ***(Photograph SM Miller 2012)***

Fig. 97 *A variety of paving material suggesting a perceived lack of standards for the construction of Tshwane sidewalks. Also note the vehicular access area.* ***(Photograph SM Miller 2012)***

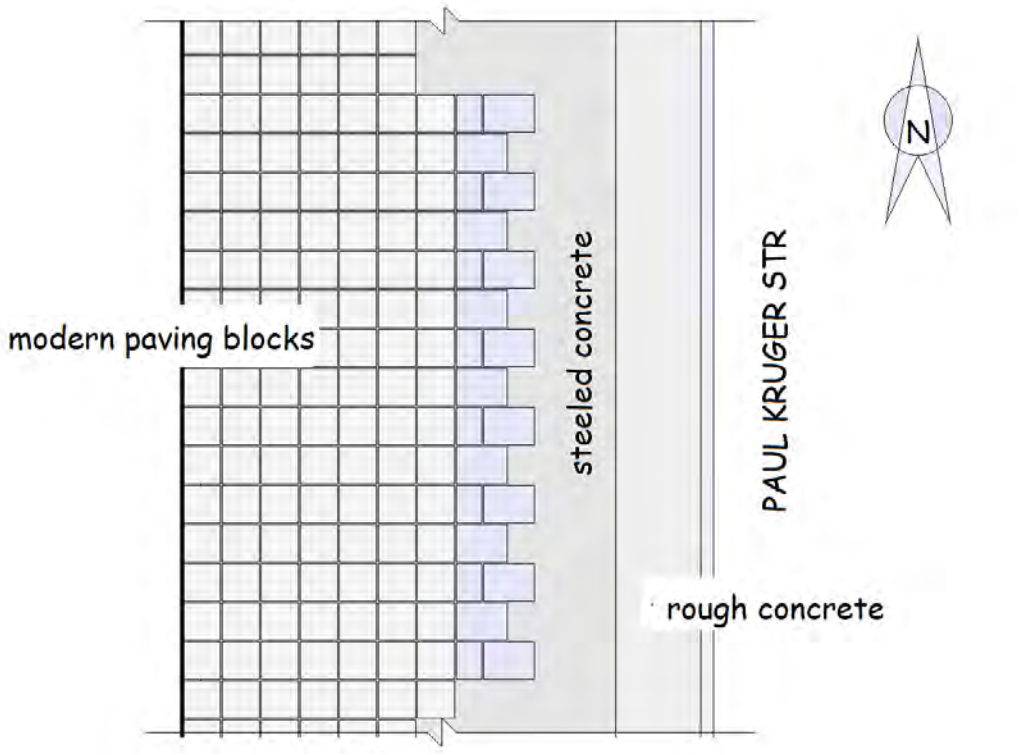


Fig. 98 *A record of the small number of remaining slate flagstones on the western side of Block 6 just north of Nana Sita Street.*

10.7 Block 7. Nana Sita Street to Visagie Street

Fig. 99 *Google Earth* ***(2009)*** *image of block 7 with position of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 7

1. 1 Contains approximately 400 square meters of slate flagstone paving at south-western side of Block 7.

1.2 Approximately 200 square meters are cracked and damaged in this area.

1.3 Approximately 200 square meters may be recovered from and reused.

2.1 Block 7 total length ~ 144 meters.

2.2 Approximately 110 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 76)

2.3 Approximately 120 meters of granite kerbing remains on western side of Paul Kruger Street. (See Fig. 76)

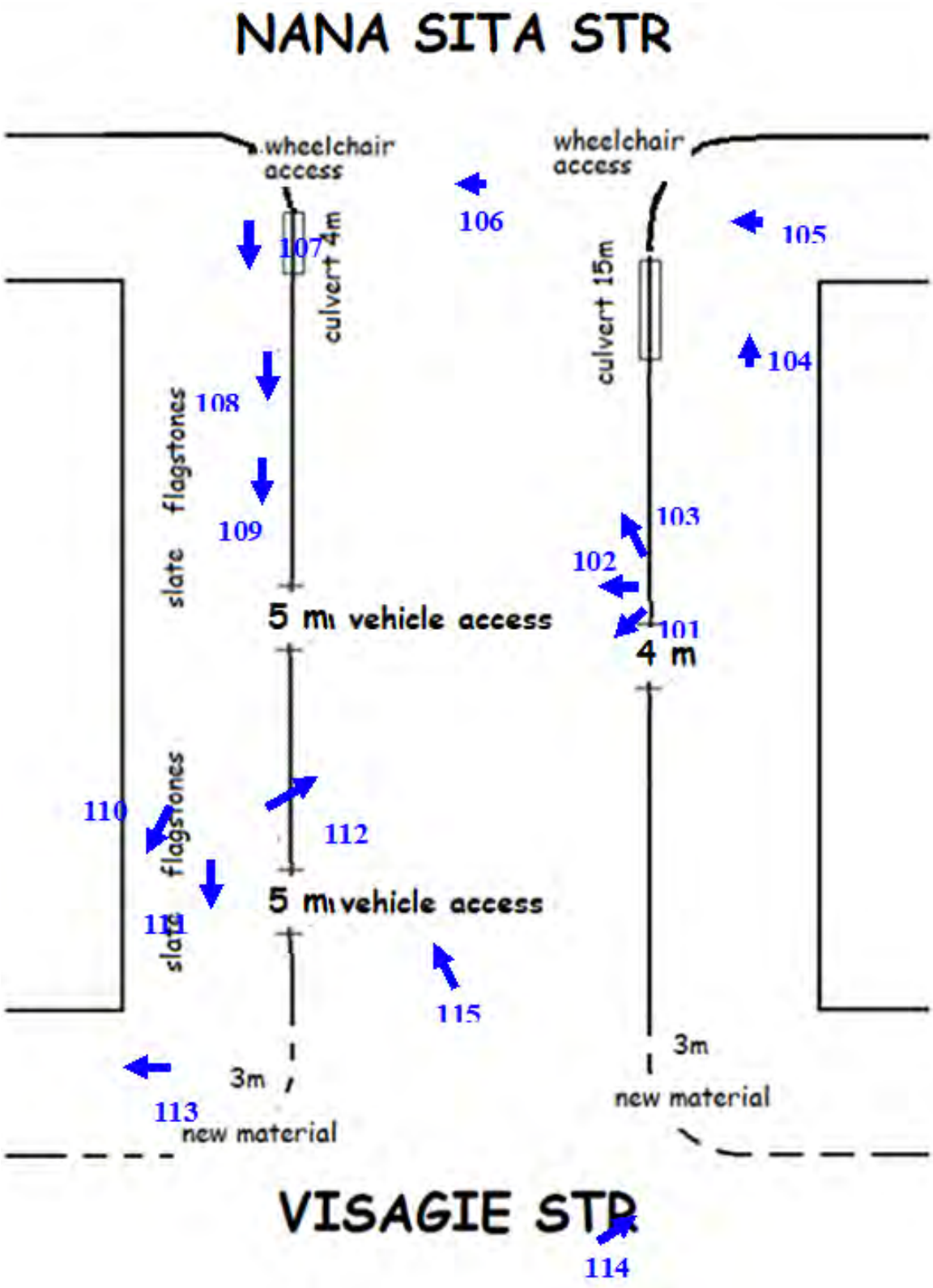


Fig. 100 *Block 7, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.*

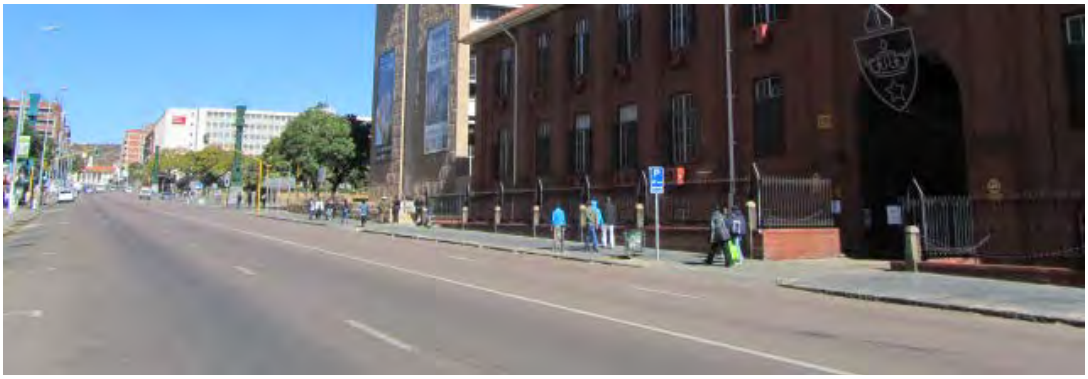


Fig. 101 *Historical granite kerb stones and slate flagstones. Note effect of the blue-grey colour of the slate flagstones.* ***(Photograph SM Miller 2012)***

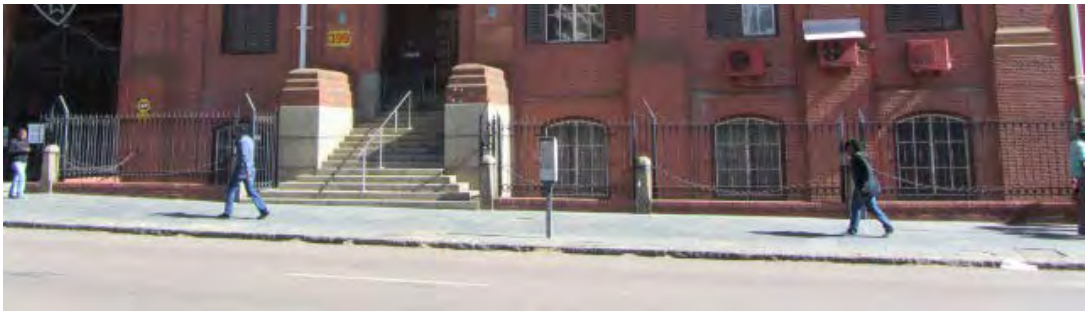


Fig. 102 *A record of historical granite kerb stones as well as slate flagstones.* ***(Photograph SM Miller 2012)***

Fig. 103 *A record of historical granite kerb stones as well as slate flagstones.* ***(Photograph SM Miller 2012)***

Fig. 104 *Termination of the eastern sidewalk on Nana Sita Street.* ***(Photograph SM Miller 2012)***

Fig. 105 *In most cases wheelchair access were facilitated without the removal of historical granite kerb stones.* ***(Photograph SM Miller 2012)***

Fig. 106 *At several locations new kerbing was installed during provision of wheelchair accessibility.* ***(Photograph SM Miller 2012)***

Fig. 107 *On the western side of Block 7 a particularly large section of slate flagstone paving survives. It may be on account of the smaller rectangular format of the flagstones that have been used.* ***(Photograph SM Miller 2012)***

Fig. 108 *Another section of slate flagstone paving on the western side of Block 7. Here only rectangular units were used.* ***(Photograph SM Miller 2012)***

Fig. 109 *A record of yet another section of slate flagstone paving on the western side of Block 7. Note style of alternating square blocks with rectangular ones.* ***(Photograph SM Miller 2012)***

Fig. 110 *Smaller sections of flagstone are used around fixtures.* ***(Photograph SM Miller 2012)***

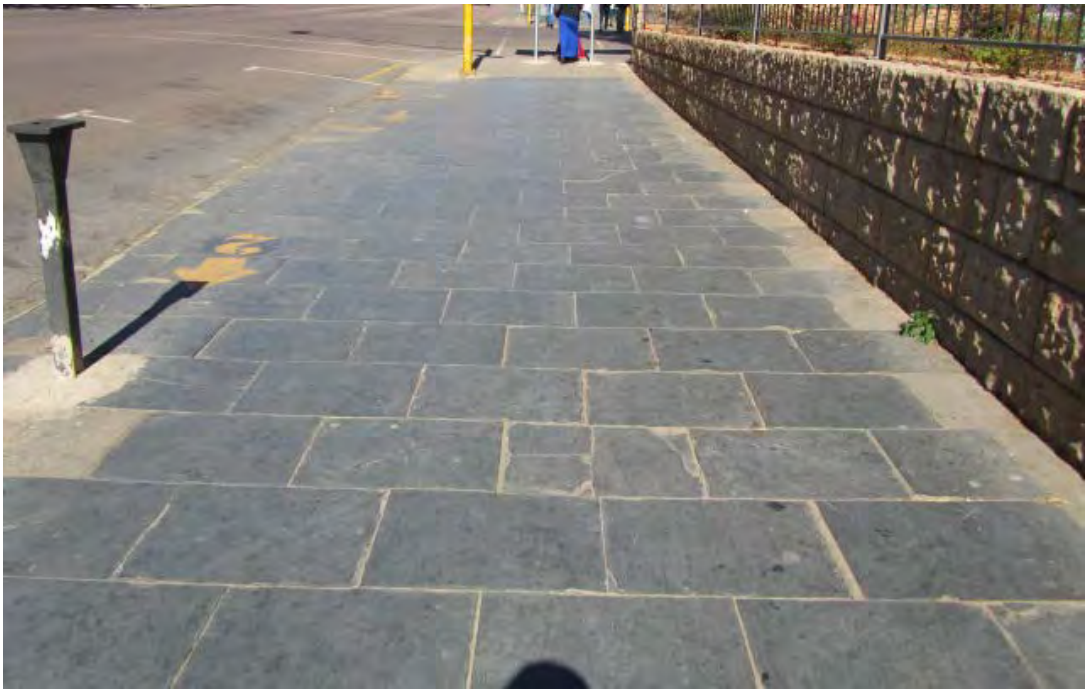


Fig. 111 *Another section of the slate flagstone paving on the south-western side of Block 7. Here again only rectangular flagstones were used* ***(Photograph SM Miller 2012)***

Fig. 112 *Record of slate flagstone paving on the south-western corner of Paul Kruger and Visagie streets.* ***(Photograph SM Miller 2012)***

Fig. 113 *Note condition of the paving along Visagie Street from Paul Kruger Street.* ***(Photograph SM Miller 2012)***

Fig. 114 *Note wheelchair access on the south-eastern corner of Block 7.* ***(Photograph SM Miller 2012)***

Fig. 115 *Google Earth Street View image showing slate flagstone paving in this section of Block 7 in 2009.*

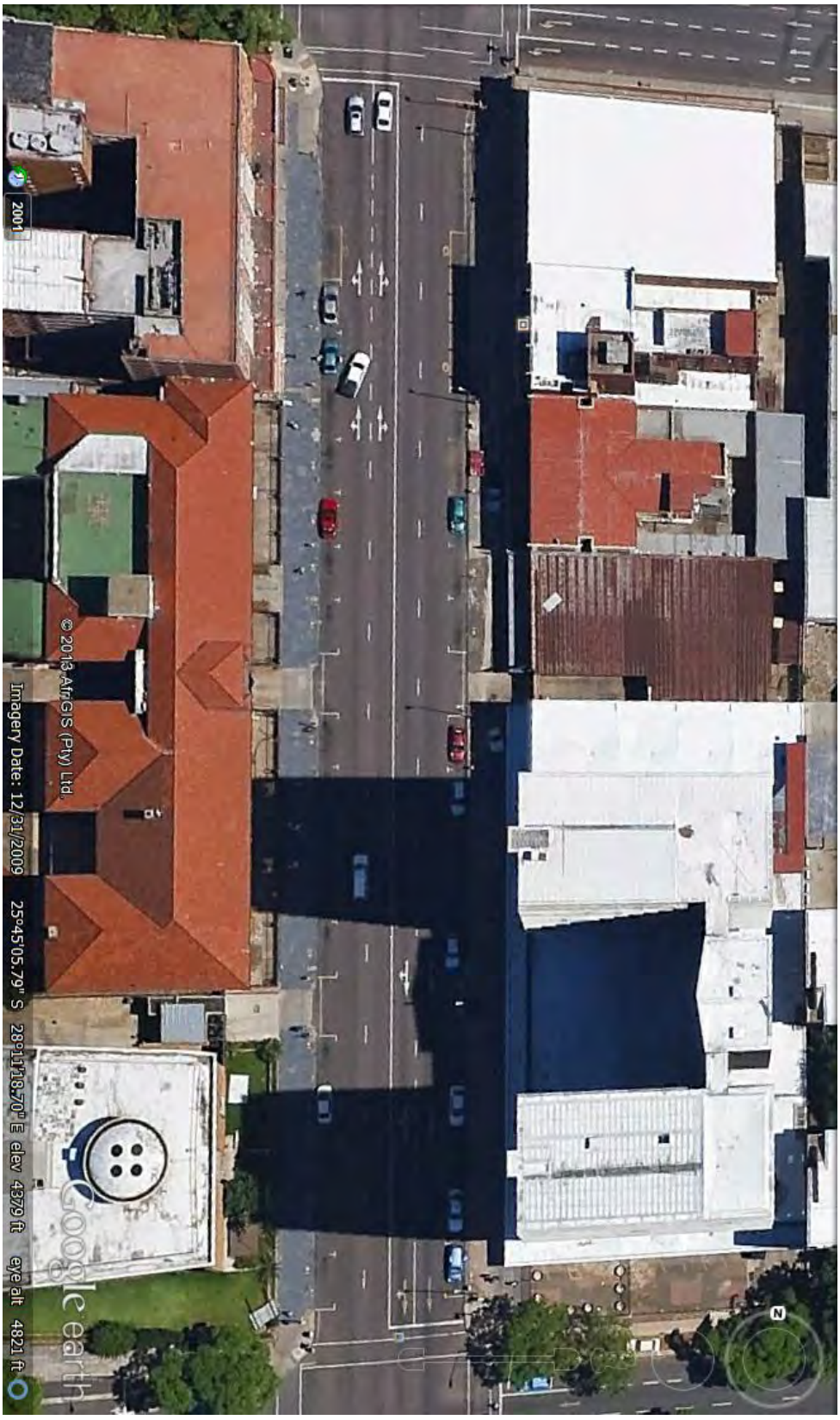


Fig. 116 *Google Earth* ***(2009)*** *image. Although it appears as if most flagstones are intact, on-site inspection reveals that many are cracked, damaged or have been replaced. Removal and replacement will negatively impact on the preservation of flag stones.*

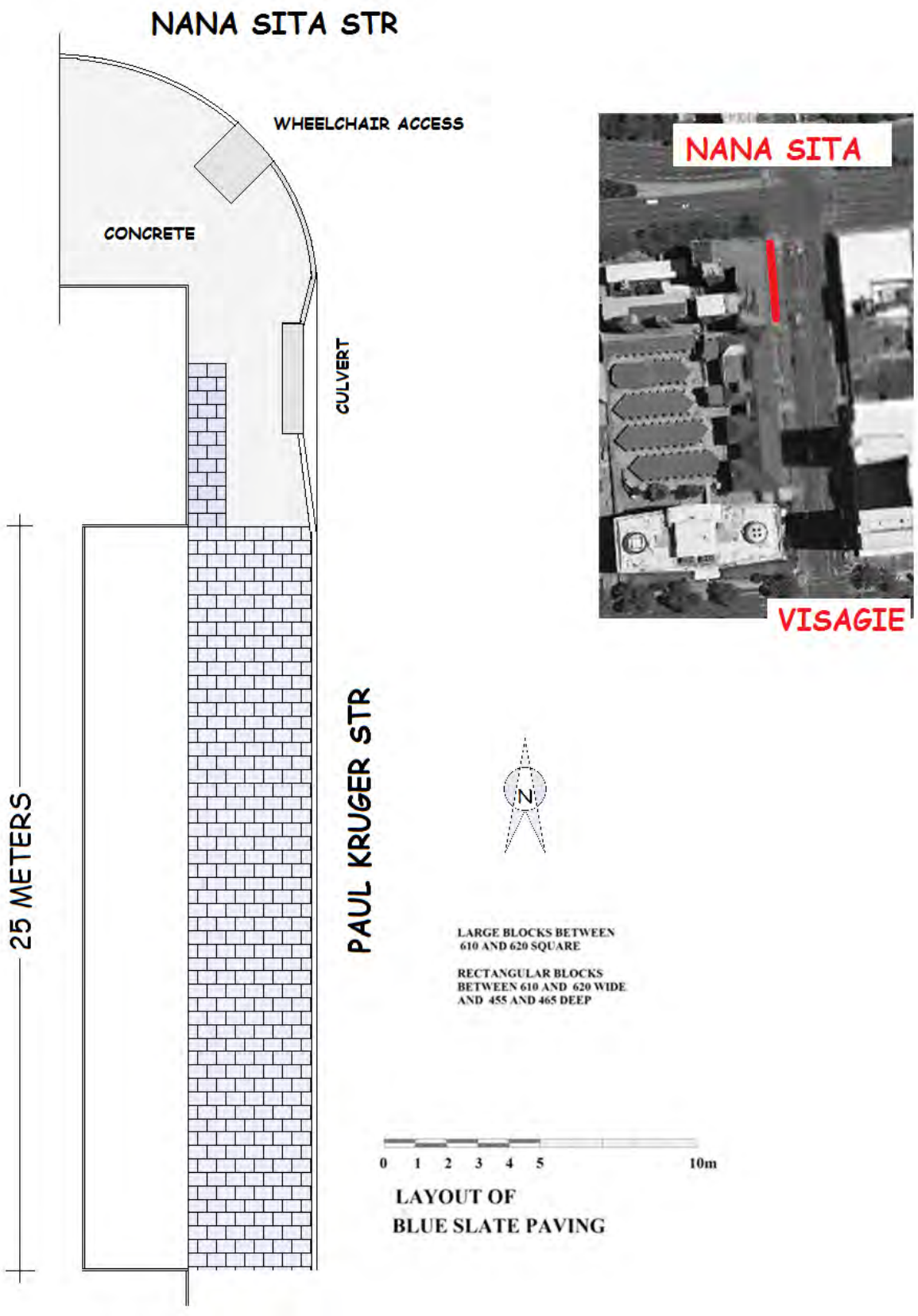


Fig. 117 *Reconstruction of present condition of slate flagstone paving on the northwest corner of Paul Kruger and Nana Sita streets, disregarding cracked and lost units. Its position is indicated with a red line on the inset.*

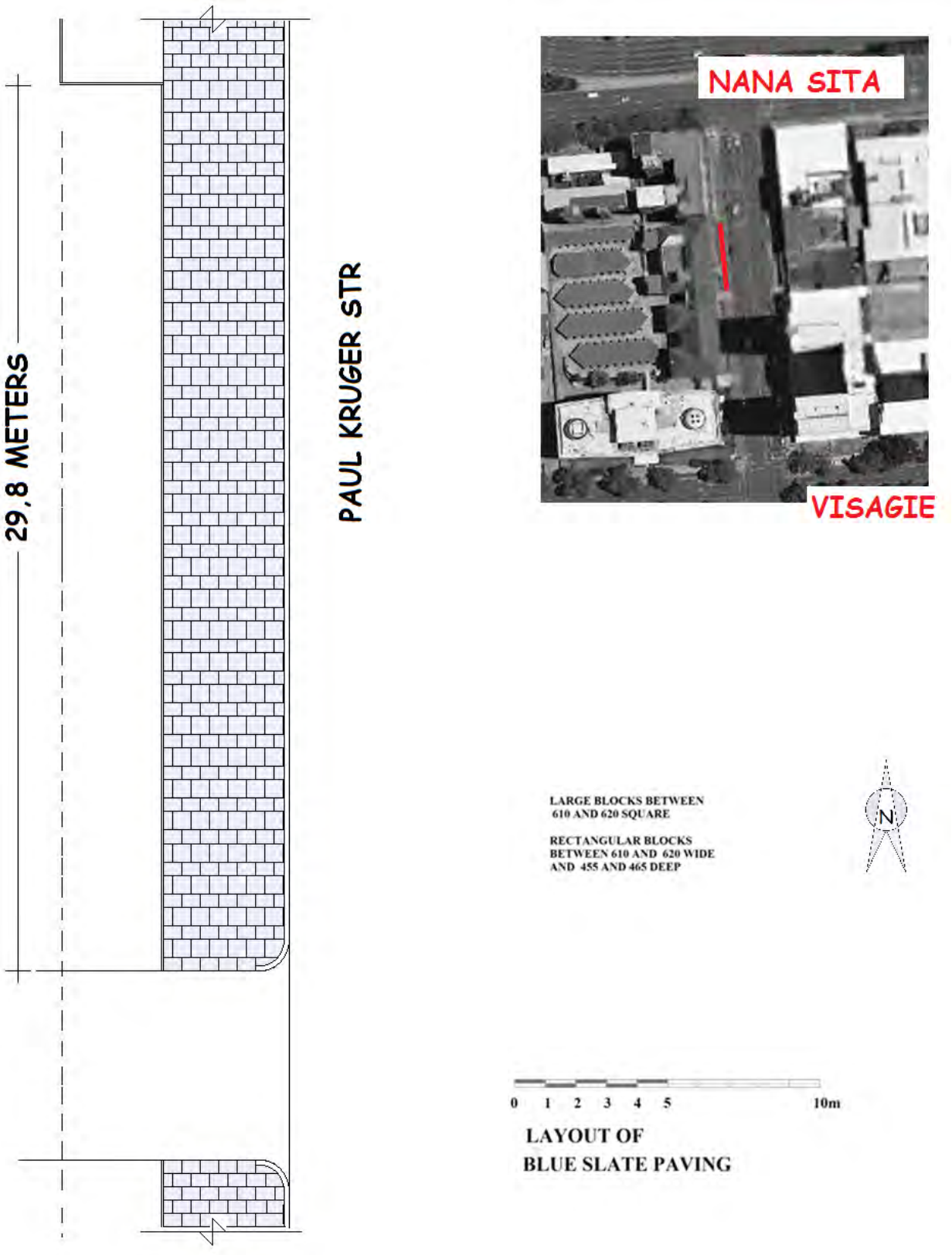


Fig. 118 *Reconstruction of present condition of slate flagstone paving in the central portion of Block 7 between Visagie Street and Nana Sita Street, disregarding cracked and lost units. Its position is indicated with a red line on the inset.*

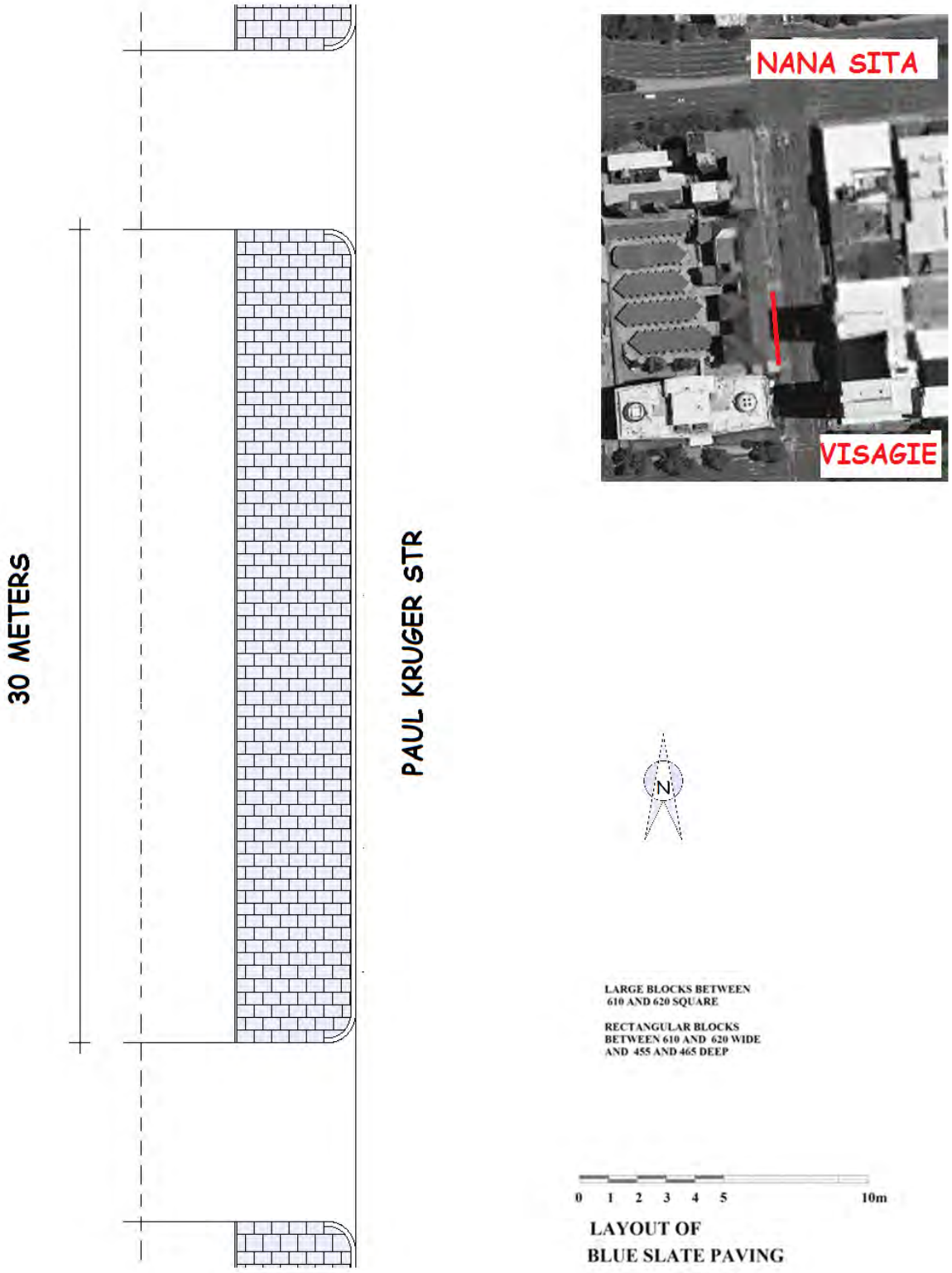


Fig. 119 *According to the site survey this is a probable facsimile of the present condition of the slate flagstone paving in the central portion of Block 7 between Visagie Street and Nana Sita Street, disregarding the cracked and lost units. Its position is indicated with a red line on the inset.*

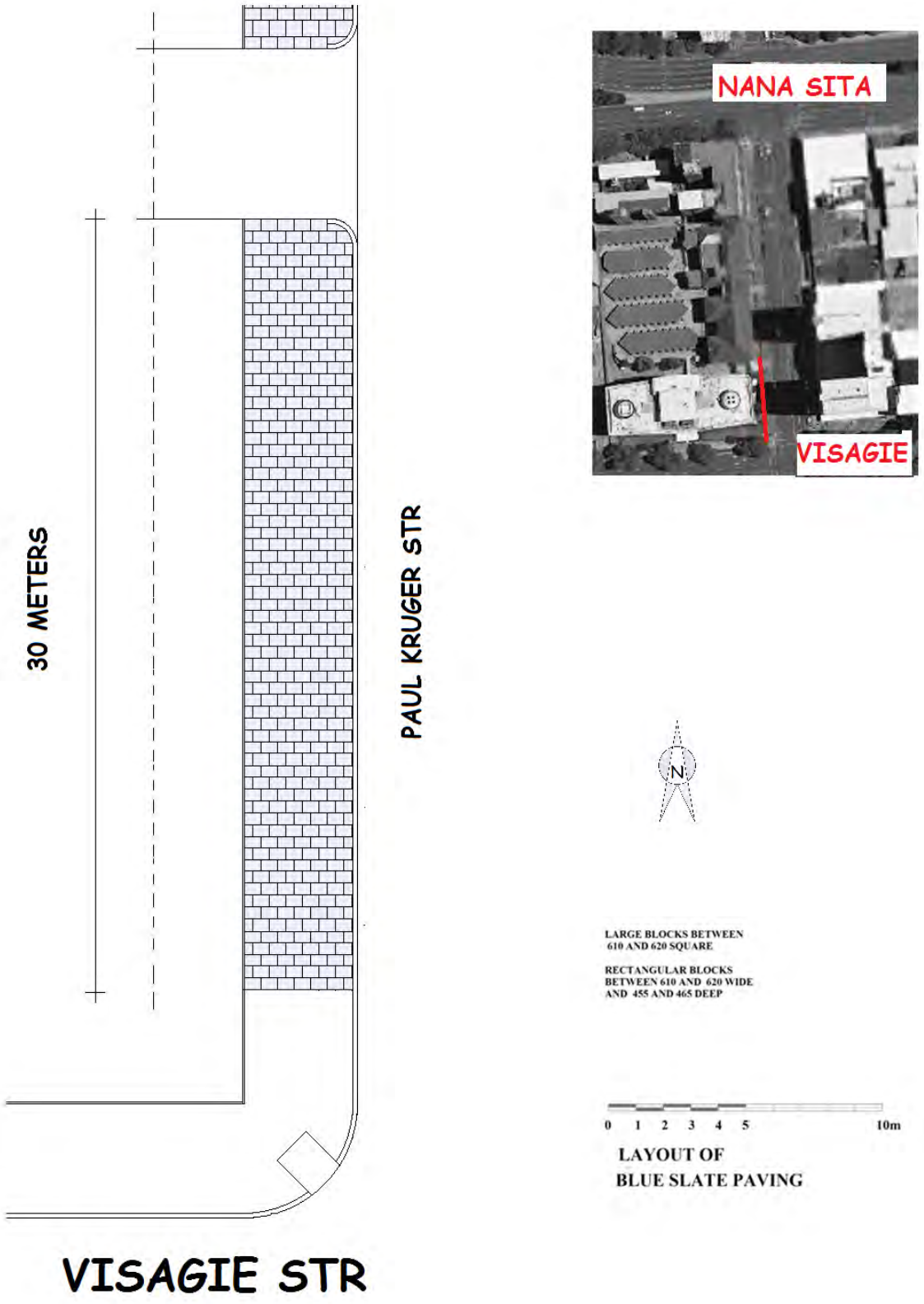


Fig. 120 *Reconstruction of present condition of slate flagstone paving on the south-western corner of Paul Kruger and Visagie streets, disregarding cracked and lost units. Its position is indicated with a red line on the inset.*

10.8 Block 8. Visagie Street to Minnaar Street

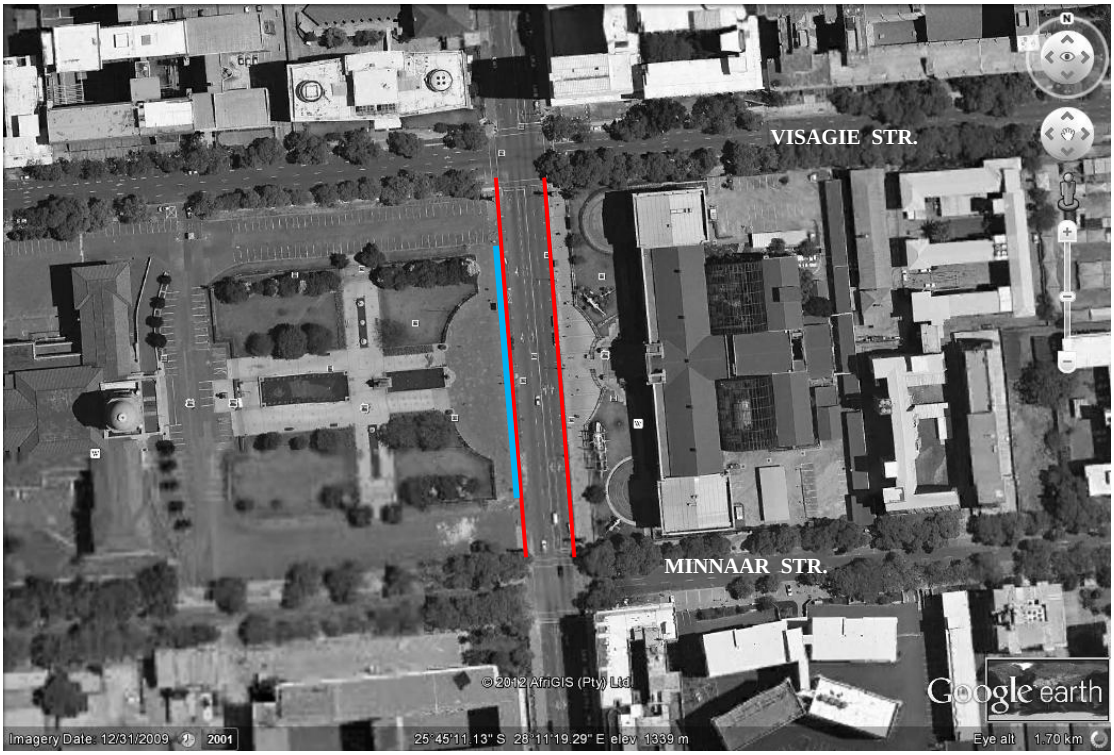


Fig. 121 *Google Earth* ***(2009)*** *image of Block 8 with positions of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 8

1. 1 Contains approximately 1400 square meters of slate flagstone paving on the western side of Block 8.

1.2. Approximately 1000 square meters are cracked and damaged in this area.

1.3 Approximately 400 square meters may be recovered and reutilised.

2.1 Block 8 total length ~ 138 meters.

2.2 Approximately 130 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 76)

2.3 Approximately 120 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 76)

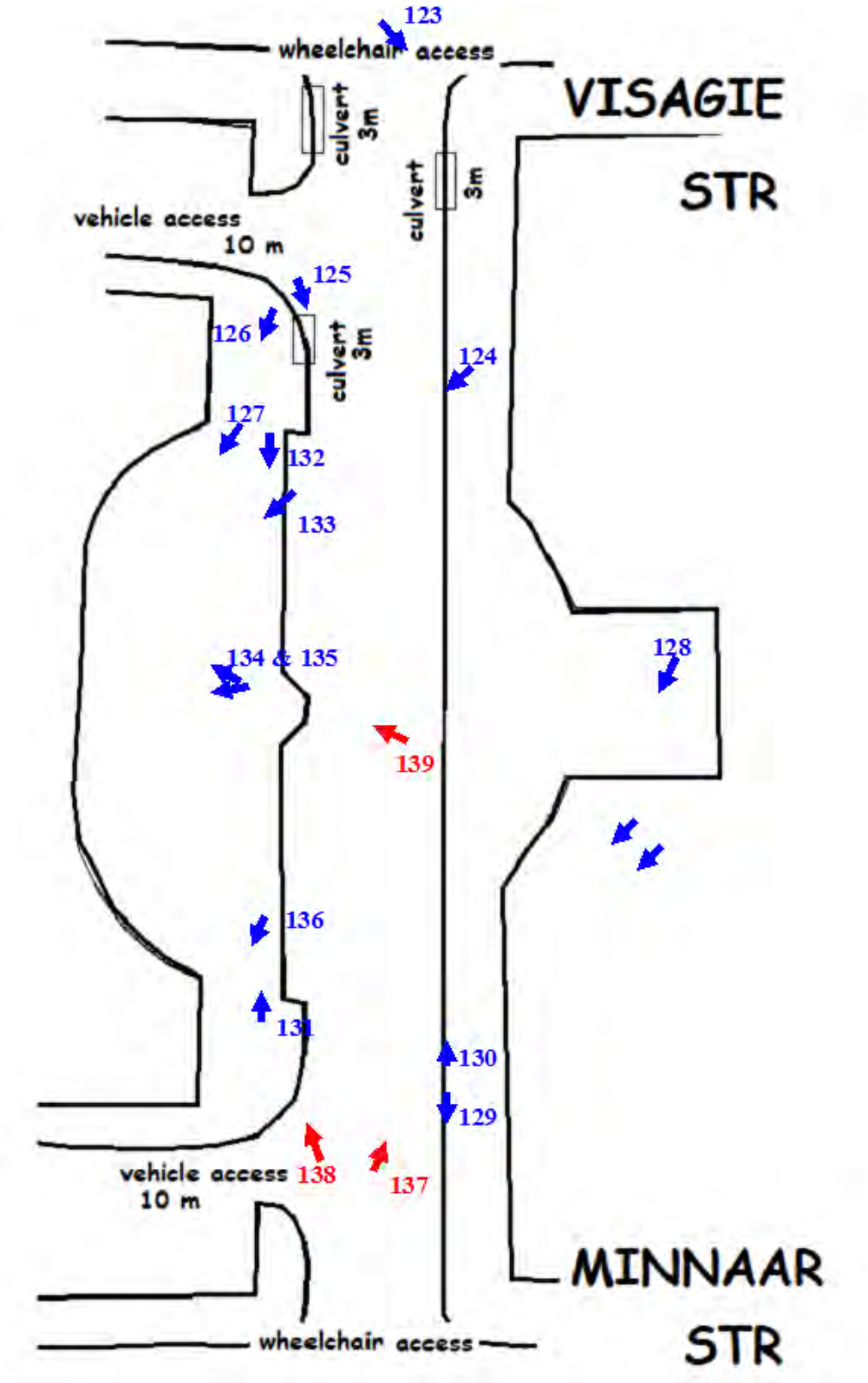


Fig. 122 *Block 8, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.(Photographs 137 to 139 were obtained from Google Earth Street View.)*

Fig. 123 *Block 8, which includes the Old Town Hall, contains the largest section of in situ slate flagstones. This area will have to feature in proposal on preservation and also the design of new elements.* ***(Photograph SM Miller 2012)***

Fig. 124 *The harmony between historical building, paving and monuments is captured in this image. Note the inappropriate street furniture. Also compare to Figs 126 and 13.1* ***(Photograph SM Miller 2012)***

Figs 125 and 126 *Left is an example where inappropriate material that is not compatible with the historical features has been used. The installation of storm water drainage that necessitated culverts resulted in this unfortunate solution. Above right we see the impact of the installation of a security fence on the historical flagstone paving.* ***(Photograph SM Miller 2013)***

Fig. 127 *The central section of the rea in front of the Old Town Hall before the installation of the security fence. Although the flagstones are cracked and uneven, a sense of place is brought about by the presence of people relaxing and birds feeding peacefully in a public place.* ***(Photograph SM Miller 2012)***

Fig. 128 *With the extension of the Museum Building some years ago the original paving was removed and replaced. This is an example where some form of the historical slate flagstone paving has been retained. The poor preservation of the flagstones, which can be seen in front of the Old Town Hall, probably required a combination of original and new paving. Although attractive and well designed, it should be the last option where original paving exists.* ***(Photograph SM Miller 2012)***

Figs 129 and 130 *More views of paving that resulted from the extension of the Museum some years ago. Also note the original granite kerbing along both sides of the street.* ***(Photograph SM Miller 2012)***

Fig. 131 *Since 2012, when the original Phase 1 study was undertaken, this security fence was erected through one of the most pleasant public spaces in Tshwane, which contains two of the most important historical buildings in the city. Besides, thousands of children move through this locale on visits to the Museum. This feature detracts from their educational experience* ***(Photograph SM Miller 2013)***

Figs 132 and 133 *Both the above images illustrate how the placement of services and damage to flagstones over the past century have left the surface in a poor state of repair.* ***(Photograph SM Miller 2013)***

Fig. 134 *This is the only decorative pattern in areas that retain slate flagstone paving. Unfortunately a security gate does not allow access into the paved area in front of the Town Hall.* ***(Photograph SM Miller 2013)***

Fig. 135 *Unfortunately the only access to the Old Town Hall it is through a security gate that does not allow access into the plaza. Only people with official business in the Old Town Hall are allowed onto the premises.* ***(Photograph SM Miller 2013)***

Fig. 136 *The above image captures the current state of preservation of the slate flagstones in front of the Old Town Hall. It is estimated that no more than 10 to 20 percent of the large format (three feet square) flagstones are still intact.* ***(Photograph SM Miller 2013)***

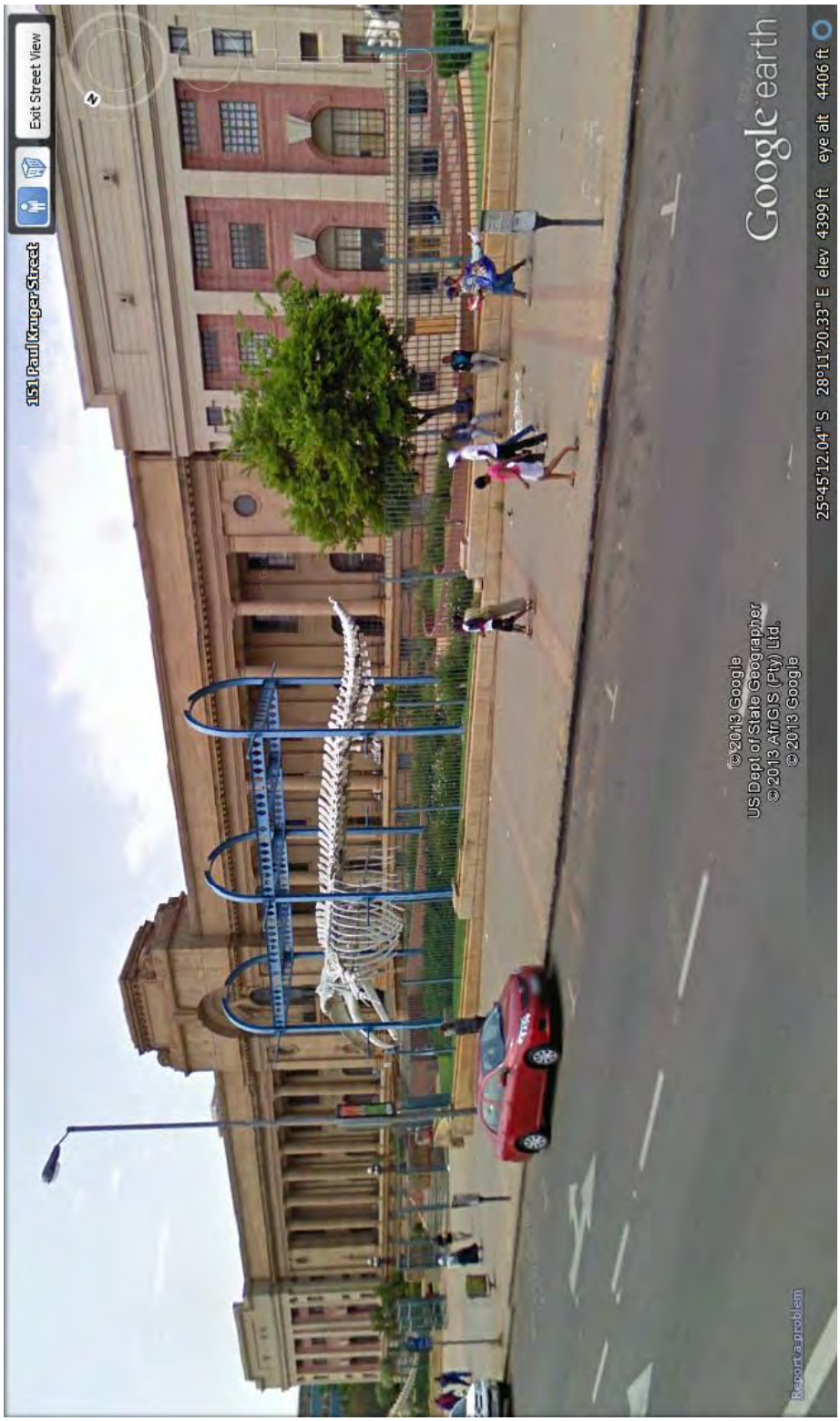


Fig. 137 *Google Earth Street View image showing paving and granite kerbing in front of the Museum in this section of Block 8 in 2009.*

Fig. 138 *Google Earth Street View that shows the paving and granite kerbing in front of the Old Town Hall in the south-western section of Block 8 in 2009, before the placement of the new security fence.*

Fig. 139 *Google Earth Street View. Note the appearance of the paving and granite kerbing in front of the Old Town Hall in the central section of Block 8 in 2009 before the placement of the new security fence.*

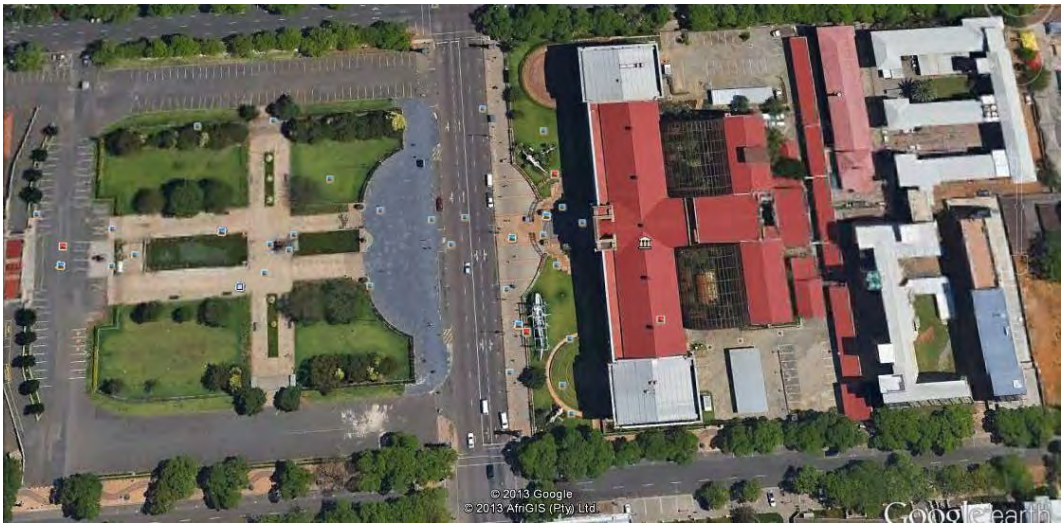


Fig. 140 *Google Earth View image of the public space between the Old Town Hall and the Museum in 2009 before the placement of the new security fence. The historical context of this public space has been compromised by the placement of the security fence.*

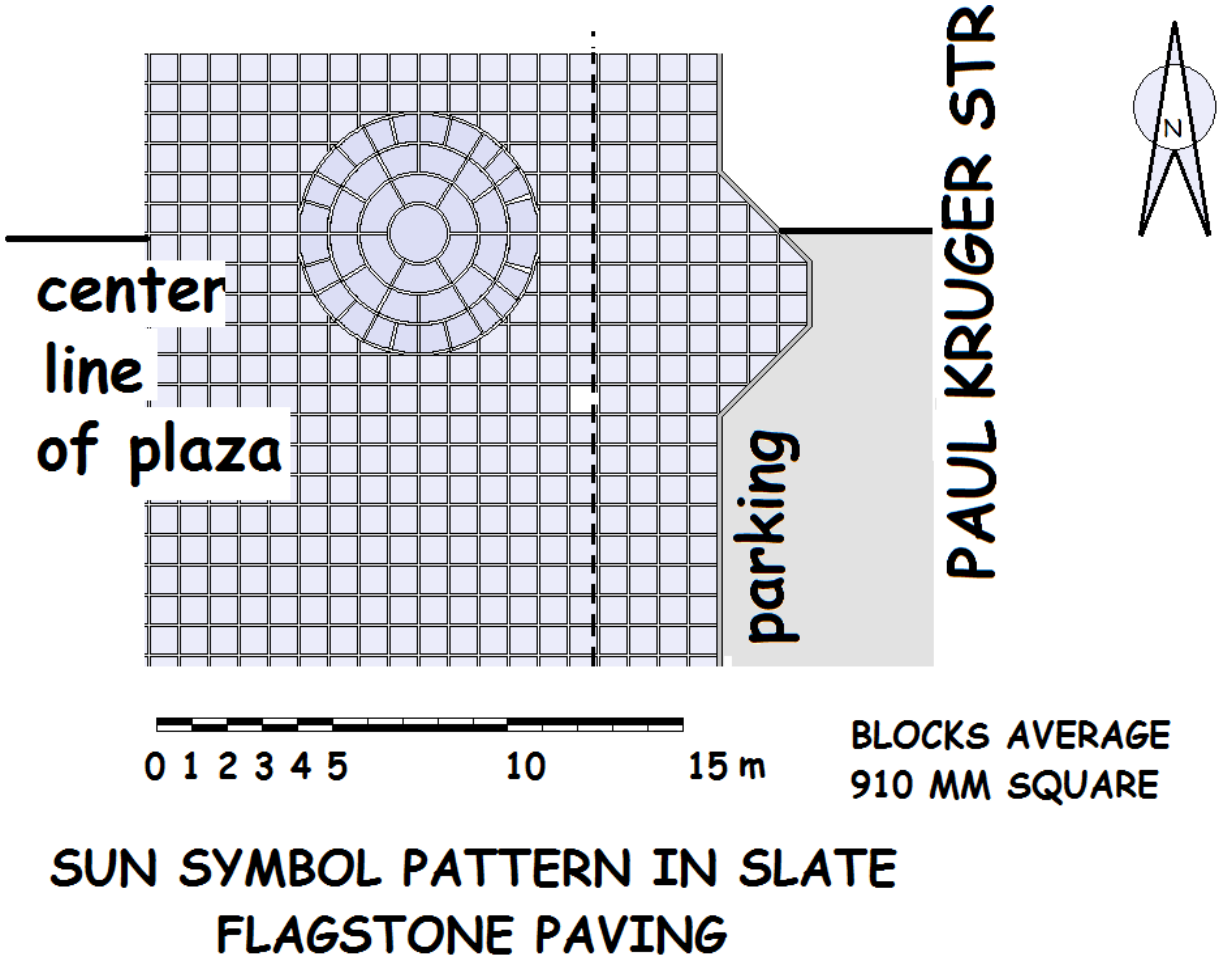


Fig. 141 *Focal decorative pattern in the slate flagstone paving in front of the Old Town Hall. A single centre piece radiates into three additional circles, each three feet wide with six, 12 and 24 elements used for the pattern.*

Fig. 142 *Google Earth image of the layout of the plaza and sidewalk in front of the Old Town Hall in 2009 before the placement of the security fence.*
Note that detail of steps and monument plinths have not been recorded as these elements will not be impacted upon (see architectural details).

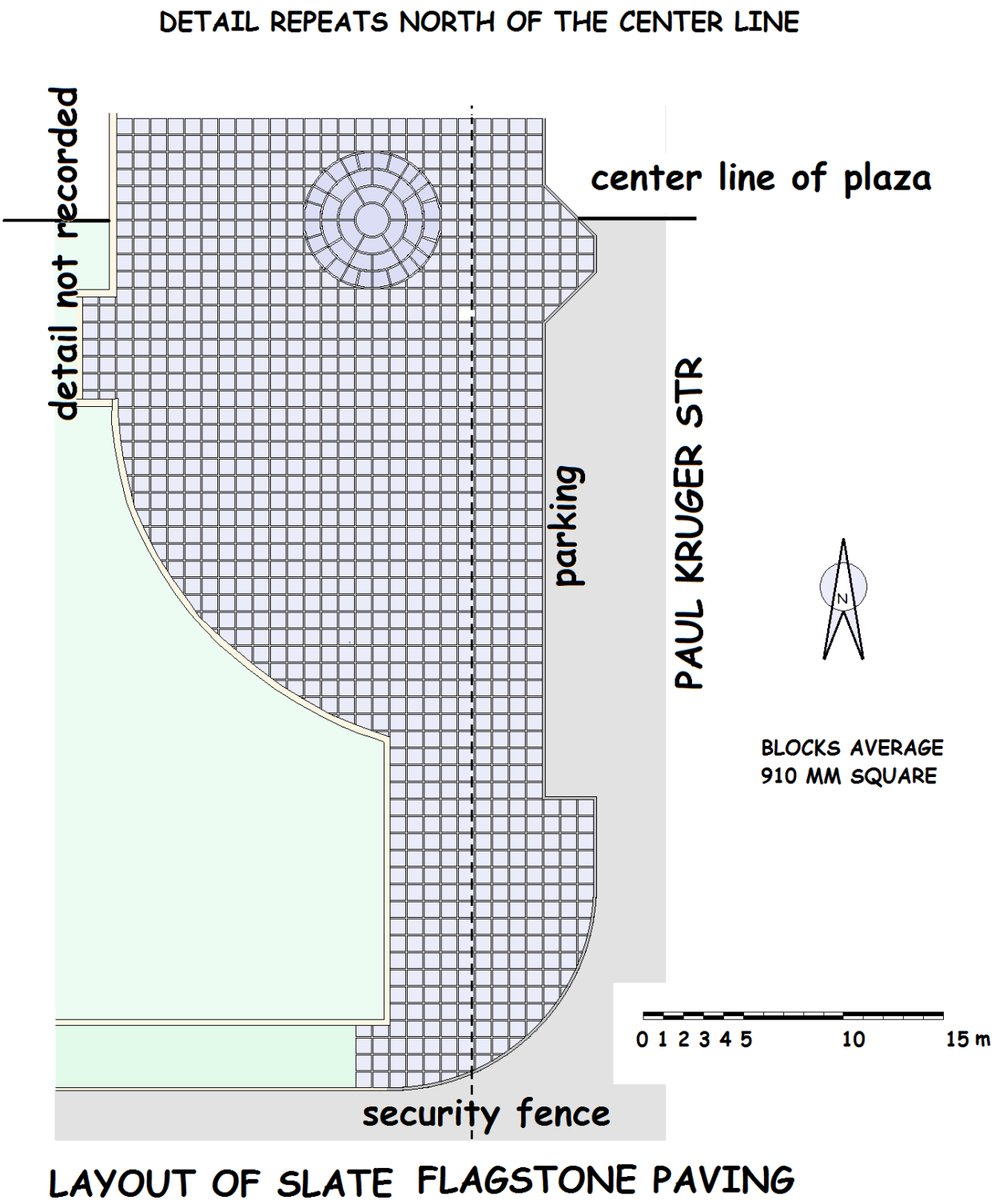


Fig. 143 *Reconstruction of the present condition of slate flagstone paving on the south-western corner of Paul Kruger and Visagie streets, disregarding cracked and lost units. To identify the drawing's position refer to Fig. 142 above.*

10.9 Block 9. Minnaar Street to Jeff Masemola Street

Fig. 144 *Google Earth* ***(2009)*** *image of Block 9 with position of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 9

1. 1 Contains approximately 225 square meters of slate flagstone paving at south-western corner of block 9.

1.2 Approximately 125 square meters are cracked and damaged in this area.

1.3 Approximately 100 square meters may be recovered and reused.

2.1 Block 9 total length ~ 152 meters.

2.2 Approximately 140 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 145)

2.3 Approximately 140 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 145)

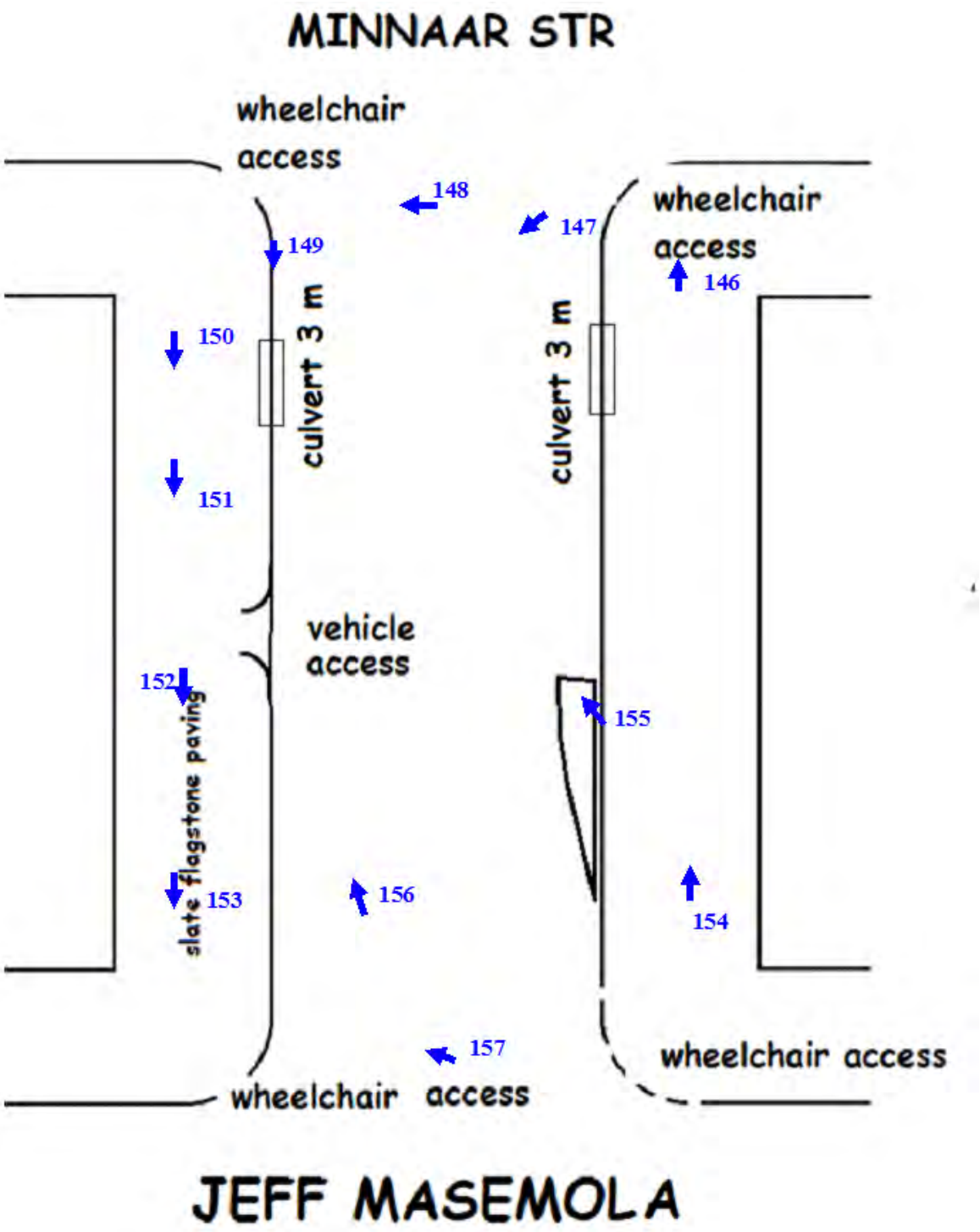


Fig. 145 *Block 9, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.*

Fig. 146 *New road paving as part of the Museum walk renovation several years ago. Sidewalk paving is neither aesthetically pleasing, nor is it safe for pedestrians..* ***(Photograph SM Miller 2012)***

Fig. 147 *All the historical granite kerbing remains on the western side of Block 9.* ***(Photograph SM Miller 2012)***

Fig. 148 *Wheelchair access where the historical granite kerbing typically has been removed to adjust levels.* ***(Photograph SM Miller 2012)***

Fig. 149 *The image above captures a typical situation in the city where the level of granite kerbing is impacted upon by continuous road re-surfacing.* ***(Photograph SM Miller 2012)***

Figs 150 and 151 *In this location the slate flagstones were replaced with modern paving blocks. It appears as if some attempt was made to imitate the colour of the flagstones as these blocks have a blue tinge.* ***(Photograph SM Miller 2012)***

Fig. 152 *In the south-western half of Block 9 most of the original slate flagstone paving remains. As elsewhere in the study area the paving is in a poor state of repair. Note variation in pattern of different types of flagstones.* ***(Photograph SM Miller 2012)***

Fig. 153 *Another view of the south-western part of Block 9 where most of the original slate flagstone paving blocks remain. As elsewhere in the study area the paving is in a poor state of repair. Note variation in the placement of different types of flagstones.* ***(Photograph SM Miller 2012)***

Fig. 154 *On the eastern side of Block 9 only the granite kerb stones remain. All slate flagstones have been removed and replaced with modern materials.* ***(Photograph SM Miller 2012)***

Fig. 155 *View of the 6 meter vehicular access on the central and western side of Block 9.* ***(Photograph SM Miller 2012)***

Fig. 156 *Google Earth Street View image* ***(2009)*** *showing appearance of paving and granite kerbing on the central and western side of Block 9.*

Fig. 157 *Google Earth Street View image* ***(2009).*** *Note paving and granite kerbing on the north-western corner of Block 9.*

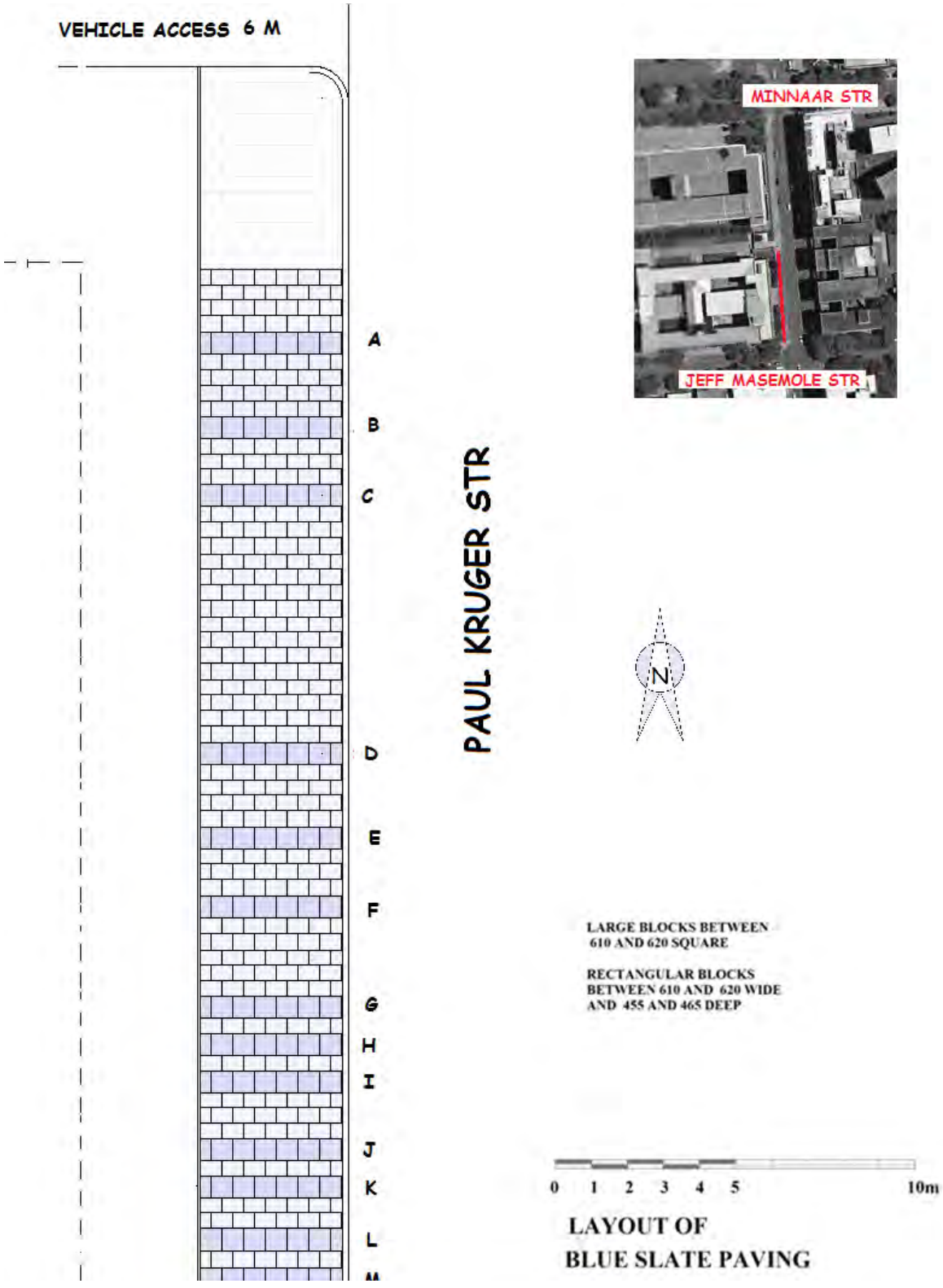


Fig. 158 *Reconstruction of present condition of slate flagstone paving on the central western section of Block 9, disregarding cracked and lost units. Its position is indicated with a red line on the inset.*

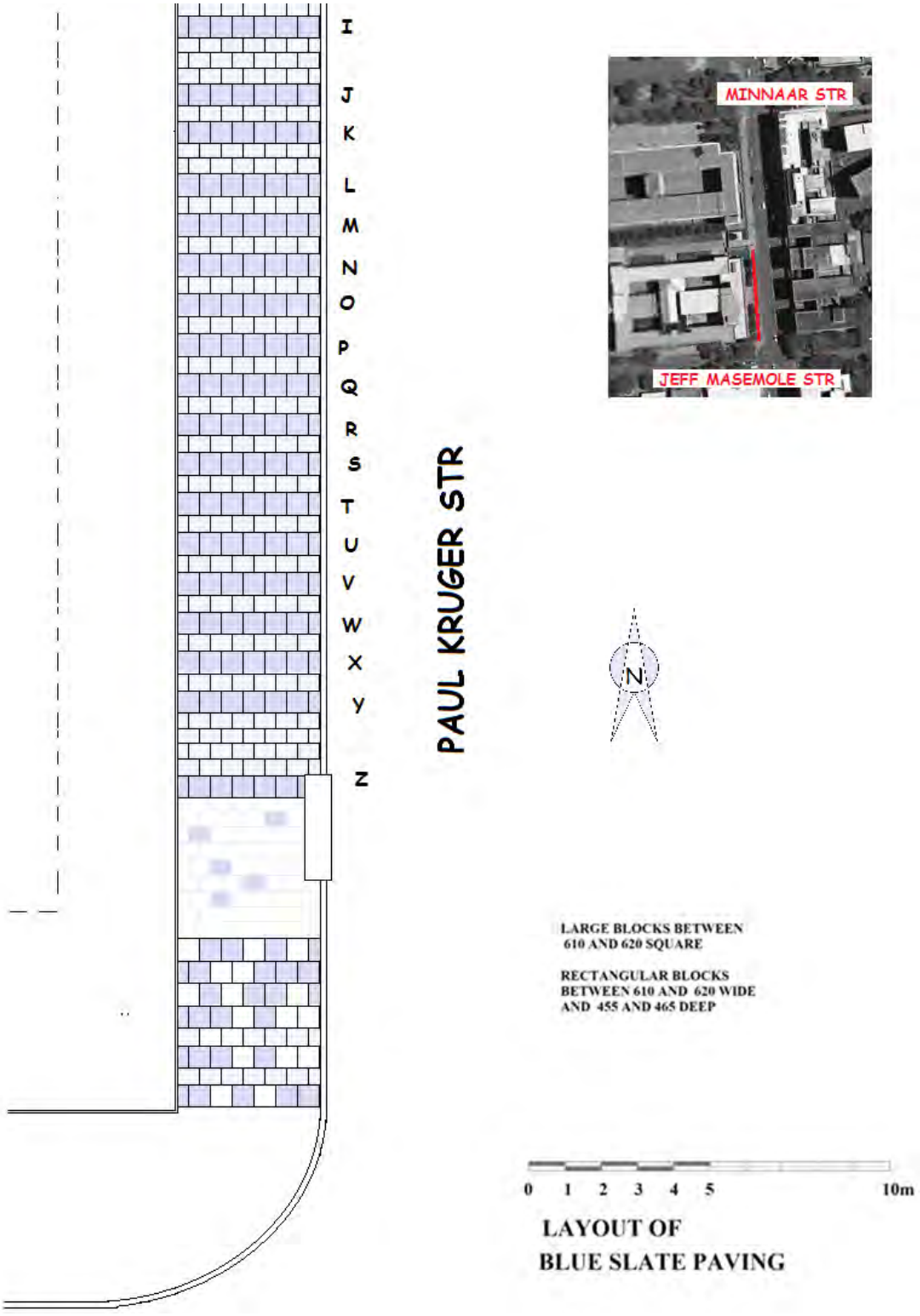


Fig. 159 *Reconstruction of the present condition of the slate flagstone paving on the south western corner of Block 9, disregarding cracked and lost units. Its position is indicated with a red line on the inset.*

Fig. 160 *Google Earth* ***(2009)*** *view of the slate flagstone paving on the south-western corner of Block 9.*

10.10 Block 10. Jeff Masemola Street to Scheiding Street

Fig. 161 *Google Earth* ***(2009)*** *image of Block 10 with position of slate paving (blue) and granite kerbing (red) highlighted.*

SUMMARY BLOCK 10

1.1 Contains approximately 138 square meters of slate flagstone paving at central portion of block 10.

1.2 Approximately 60 square meters are cracked and damaged in this area.

1.3 Approximately 78 square meters may be recovered from this area and reused.

2.1 Block 10 total length ~ 141 meters.

2.2 Approximately 110 meters of granite kerbing remain on eastern side of Paul Kruger Street. (See Fig. 162)

2.3 Approximately 110 meters of granite kerbing remain on western side of Paul Kruger Street. (See Fig. 162)

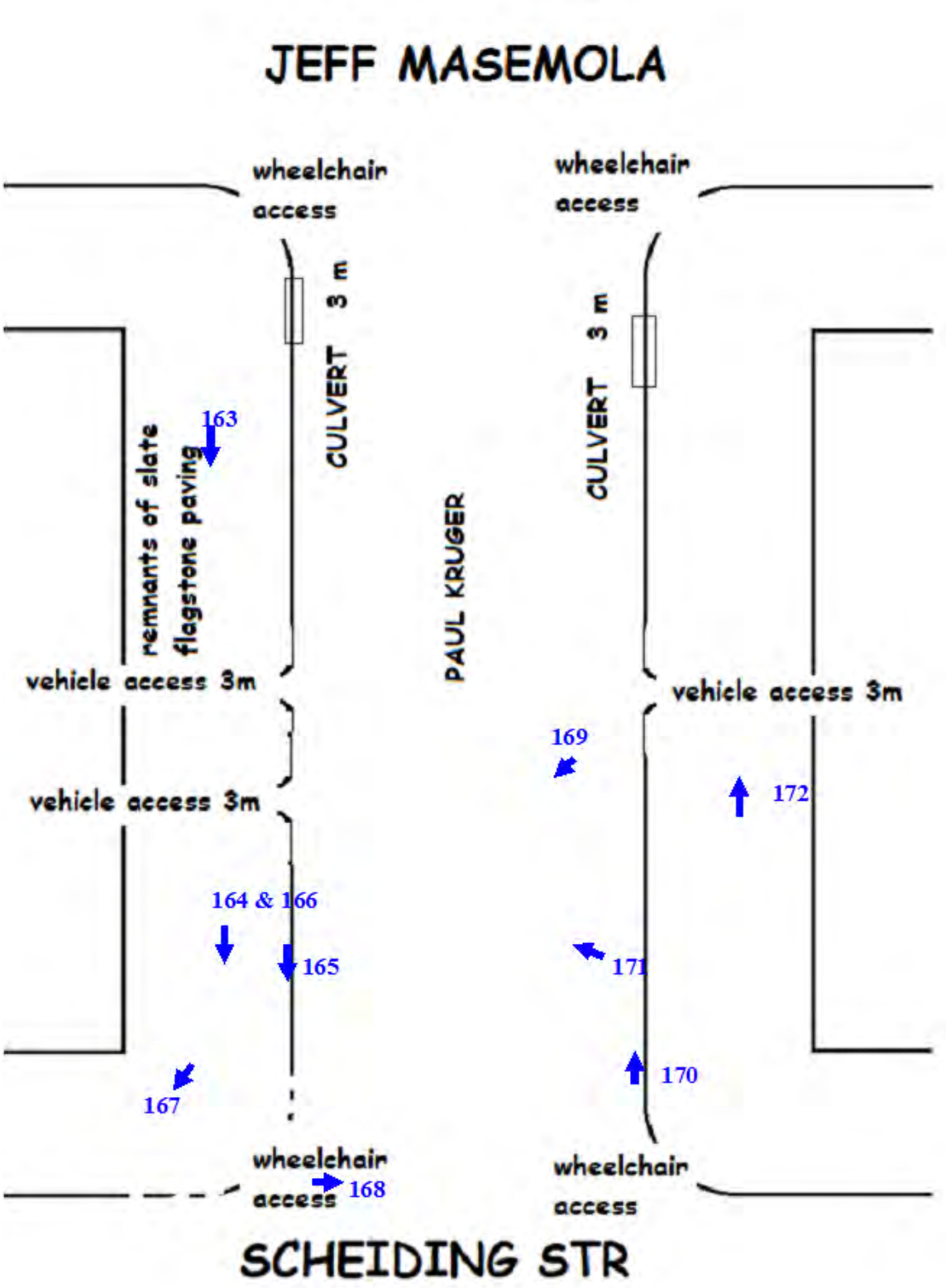


Fig. 162 *Block 10, schematic representation for photo documentation. The drawing also indicates remaining portions of granite kerbing, wheelchair access, vehicular access and culverts, all factors that reduce the length of remaining granite kerbing.*

Fig. 163 *Slate flagstone paving in the central western side of Block 10. Note the impact of placement of services.* ***(Photograph SM Miller 2012)***

Fig. 164 *Termination of the slate flagstone paving in the central western side of Block 10. Note the general condition of the modern paving.* ***(Photograph SM Miller 2012)***

Fig. 165 *Record of the canopy support columns of the old Victoria Hotel and the granite kerb stones that indicate definition of street and paving limits.* ***(Photograph SM Miller 2012)***

Fig. 166 *Another view of the canopy support columns of the old Victoria Hotel. Note replacement of the slate flagstones with ferro-granolite concrete panels.* ***(Photograph SM Miller 2012)***

Fig. 167 *Transition in pavements on the south-western corner of Block 10.* ***(Photograph SM Miller 2012)***

Fig. 168 *Granite kerbing on the south-eastern corner of Block 10.* ***(Photograph SM Miller 2012)***

Fig. 169 *Another view of the granite kerbing on the south-western corner of Block 10.* ***(Photograph SM Miller 2012)***

Fig. 170 *Granite kerbing on the south-eastern corner of Block 10.* ***(Photograph SM Miller 2012)***

Fig. 171 *Granite kerbing on the central western section of Block 10.* ***(Photograph SM Miller 2012)***

Fig. 172 *Modern paving and the granite kerbing on the central western section of Block 10.* ***(Photograph SM Miller 2012)***

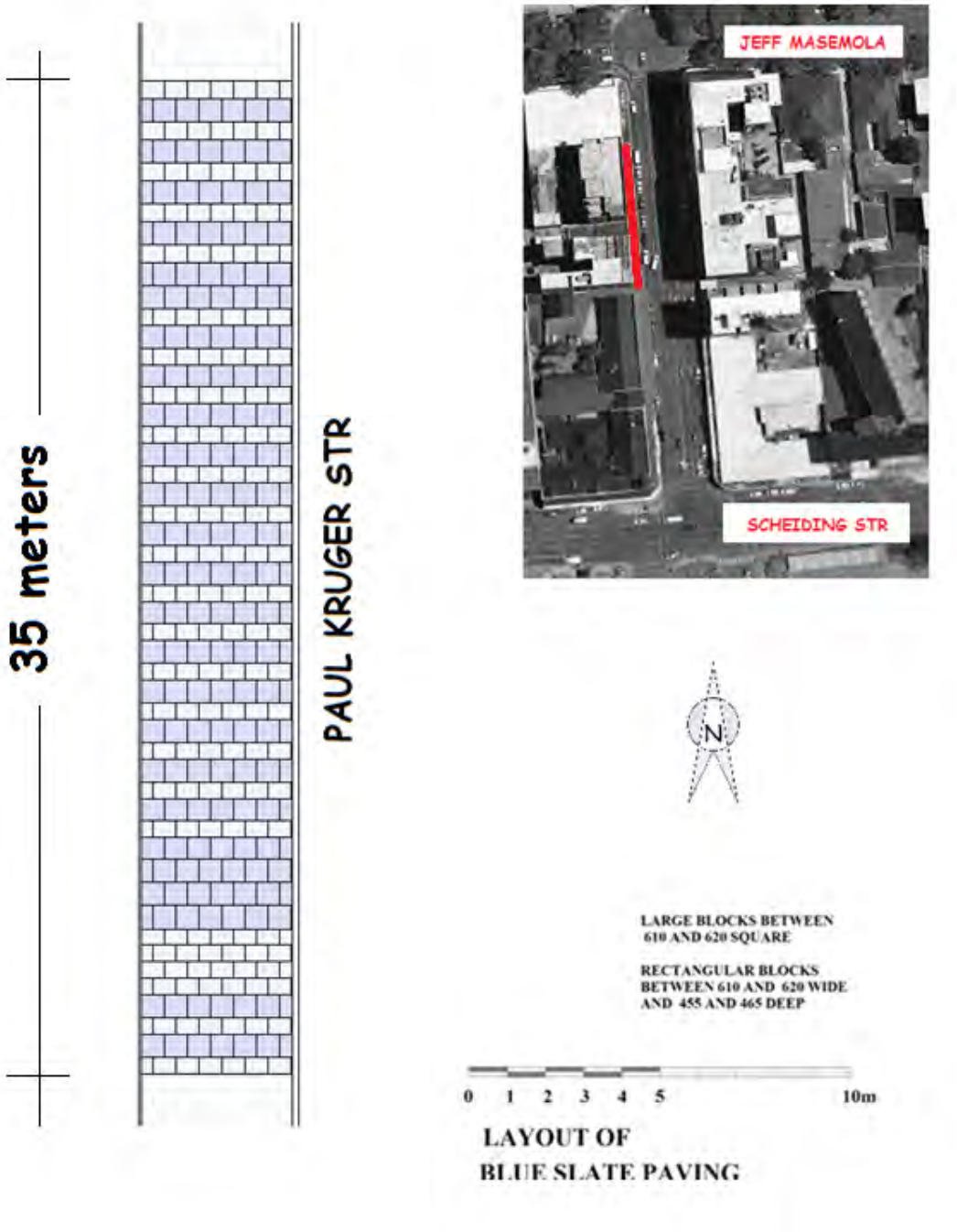


Fig. 173 *Reconstruction of the present condition of slate flagstone paving on the western central section of Block 10 disregarding cracked and lost units. Its position is indicated with a red line on the inset.*

11 RECOMMENDATIONS

The intact historical flagstone pavements, kerbing, remains of skylights, verandas and pillars represent important aspects and valued aesthetic characteristics of the historical streetscape. The proposed information plaques will promote public awareness of the city's history.

Street elements such as the historical granite kerbs and slate flagstone pavements represent an expression of the earlier use of locally quarried stone extracted from the sources around the City. These elements reflect an important part of South Africa's cultural heritage. Within the context of the CBD these are a rare example of remaining flagstone pavements and associated granite kerbing.

It is highly likely that sub-surface surface investigations and developments will uncover historical water furrows and tramlines and probably other infrastructural remains of the earlier period of the City building environment. Historical material remains may in particular be recovered from water furrows. These will clearly contribute to the existing data base on a particular phase of the history of the City. The streetscape design elements moreover give expression to the capital status of Pretoria and the historical settings of what are now built-up areas in the inner city.

In the Phase 1 the inner city streetscape with structural elements that include associated buildings has been assigned a high value. The area has been identified as a Red Node/Red Network Typology of metropolitan importance in the Tshwane Open Space Framework and the Inner-city Open Space Plan (City of Tshwane 2005, 2011, 2013). Specific elements, such as the historical kerbing, form part of the creative achievement of 19th century artisans as the kerbing stones were mostly quarried by imported artisans that include Italian stone masons.

In the final instance the streetscape elements give expression to the capital status of Pretoria and the historical setting.

11.1 The upgrading and beatification of Paul Kruger Street is supported in principle. The proposed iniative will have a positive impact on the city.

11.2 The final design of the streetscape and pavements must be approved by SAHRA before implementation can proceed.

11.3 All of the historical kerbing and paving must be retained or replaced *in situ*.

11.4 All structural excavations and their effective depths must be declared by the designers, and such excavations must be sanctioned by SAHRA.

11.5 Construction activities are likely to uncover heritage remains. If heritage features are uncovered all work in that section of the project must be discontinued until the remains have been evaluated and, if necessary, documented and mitigated by a heritage specialist.

11.6 The construction and excavation of sidewalks and street surfaces must be undertaken under supervision of a heritage specialist. A watching brief is accordingly recommended.

11.7 Should paved water furrows and tram lines be found during future construction they must be retained if possible, or fully documented before destruction, or if possible they must be incorporated into the landscape design.

11.8 The new design must acknowledge aspects such as historical significance and incorporate elements of the historic fabric into the design.

12 SUMMARY AND CONCLUSIONS

12.1 African Heritage Consultants were tasked to undertake a Phase 2 Heritage Impact Assessment for the beautification of Paul Kruger Street in conjunction with the Bus Rapid Transit System that is at present being rolled out.

12.2 The beautification process implies a total revamping of all the sidewalks along Paul Kruger Street from Boom Street to Scheiding Street. These actions will obviously impact on the historical granite kerbing and the blue slate flagstone paving. The areas and lengths that are involved are summarised in a table on the next page.

12.3 In the first place it was found that originally only three sizes of slate flagstones were used. These were on the average 910 mm square, 610 mm square and 610 x 455 mm rectangular (Fig. 174). These stones were originally laid in three basic patterns, but in time these patterns evolved owing to need.

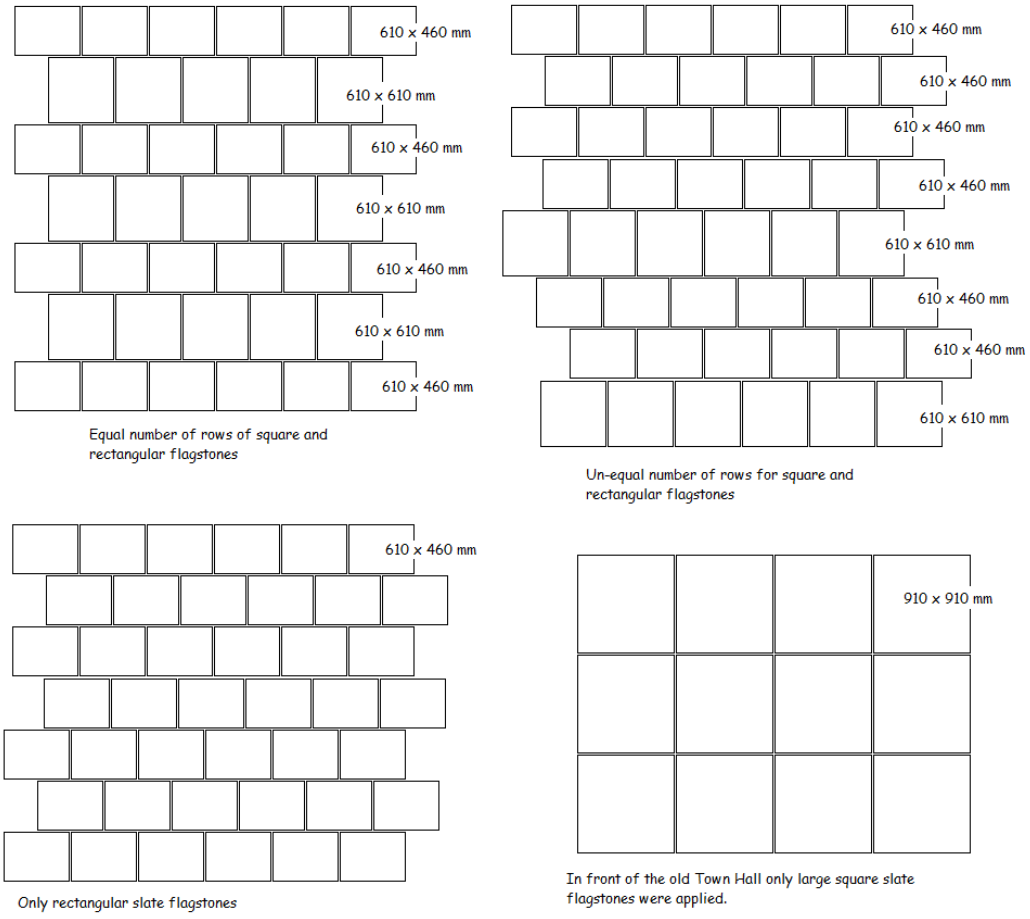


Fig. 174 *Recorded dimensions of slate flagstones and the typical patterns in which these have been laid. The fourth format, documented only in front of the Old Town*

Hall, is badly damaged and will require special attention in the architectural designs.

12.4 Secondly, it was recorded that the granite kerb stones, although rather uniform in height (280 to 350 mm) and depth (150 to 200 mm) were variable in length from 300 mm to 1500 mm.

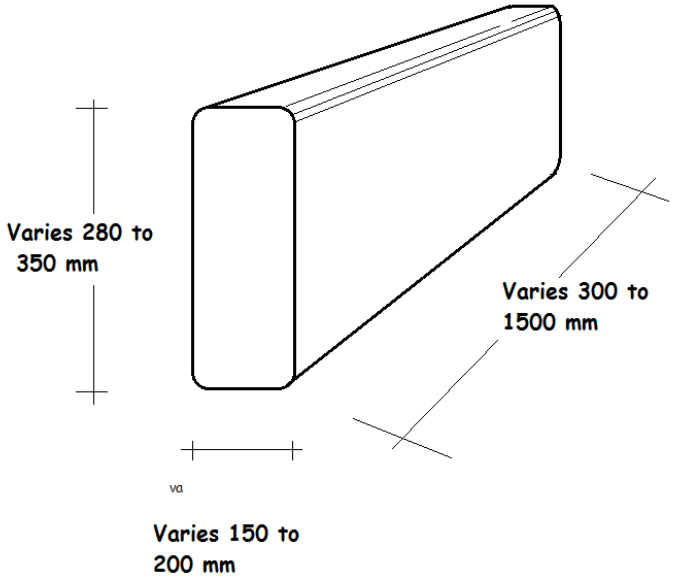


Fig. 175 *Typical measurements of the granite kerb stones.*

12.5 Finally, the study found that a large percentage (70%) of the original granite kerb stones remain intact.

On the other hand less than 20% of the original flagstone paving areas survives, and of these only 40% is not damaged or cracked. This applies in particular to the most imposing remaining section in front of the Old Town Hall. The large blocks appear to have been especially prone to damage, possibly on account of heavy vehicular traffic.

Block number											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Total**
Flagstone											
Total m²	90	50	0	0	170	0	400	1400	220	140	**2470**
Damaged m²	60	25	0	0	80	0	200	1000	120	60	**1545**
Remaining m²	30	25	0	0	90	0	200	400	100	80	**925**
Kerbing											
Block total m	260	280	300	300	270	230	300	280	300	280	**2800**
Remaining m	100	180	270	270	260	180	230	250	280	220	**1940**

12.6 It is imperative that as much as possible of the original materials are retained and recycled. It is therefore suggested that the landscape architects are to consolidate the granite kerb stones and the slate flagstones in their design proposals that will serve for the perusal of the heritage authorities.

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APPENDIX A: DECLARATION OF INDEPENDENCE

I, Sidney Mears Miller (ID 5412135029082) declare that:

- I act as an independent environmental practitioner in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the National Heritage Resources Act (No 25 of 1999) and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
- All the particulars furnished by me in this form are true and correct;
- Will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.
- **Disclosure of Vested Interest**
  I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity AND OR proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations,

SIDNEY MEARS MILLER