

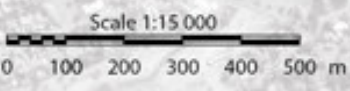


Watercourse and Riparian Zone

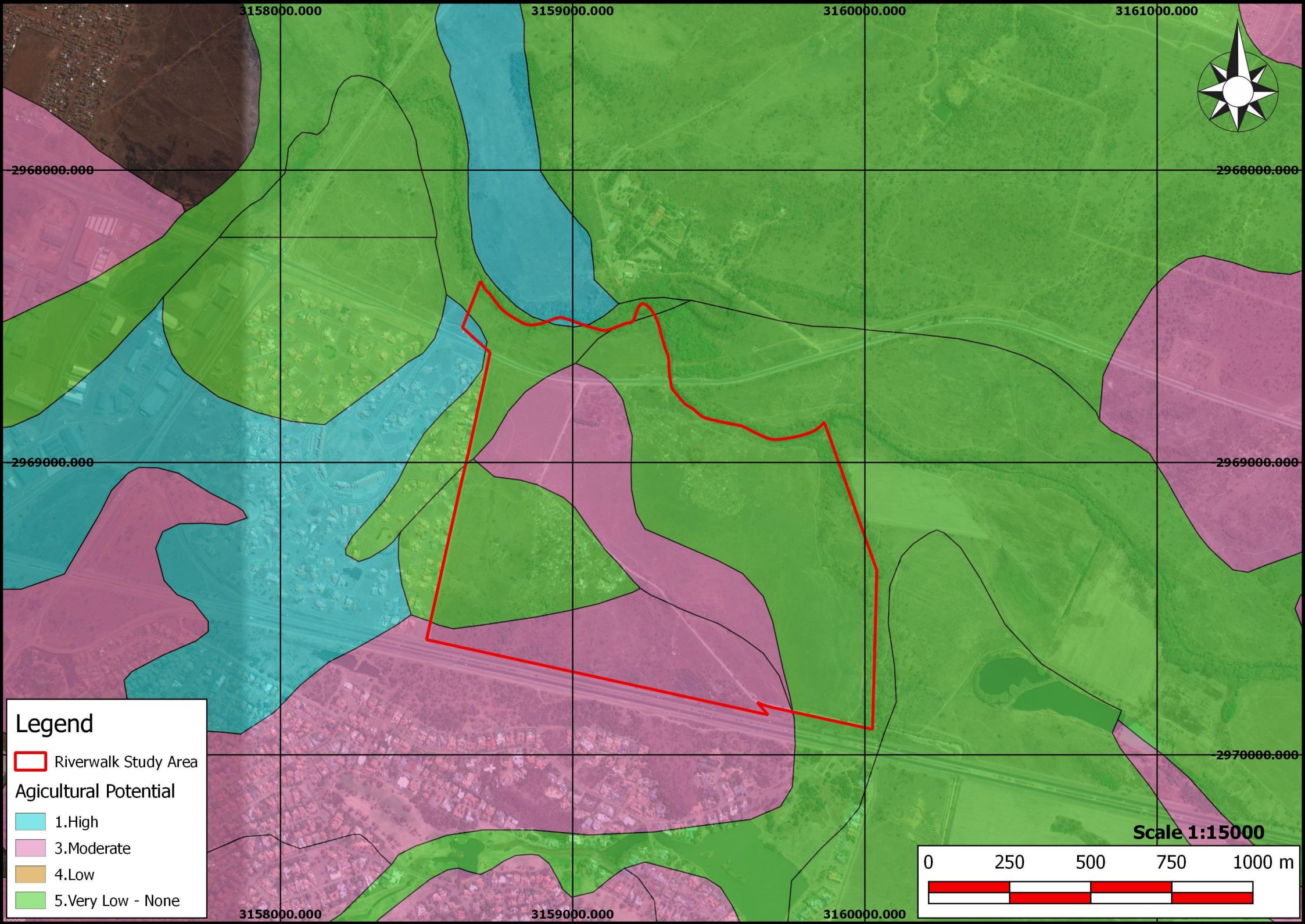
30m Buffer

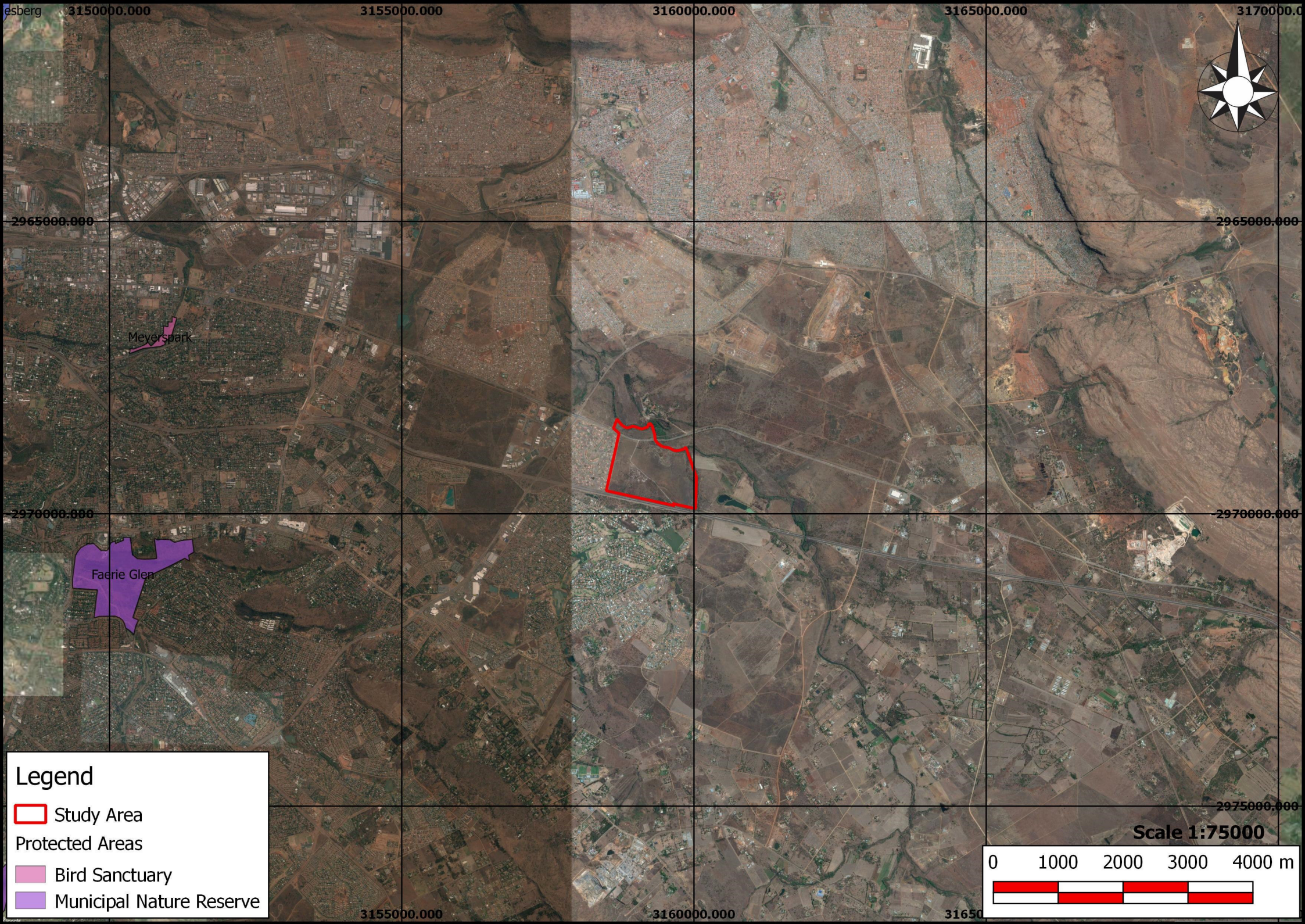
Storm Water Channel Signature

30m Buffer



Cartography & Spatial Analysis
TERRAGIS





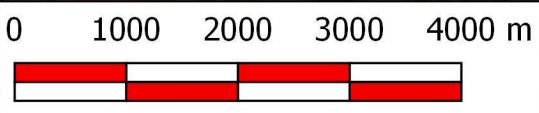
Meverspark

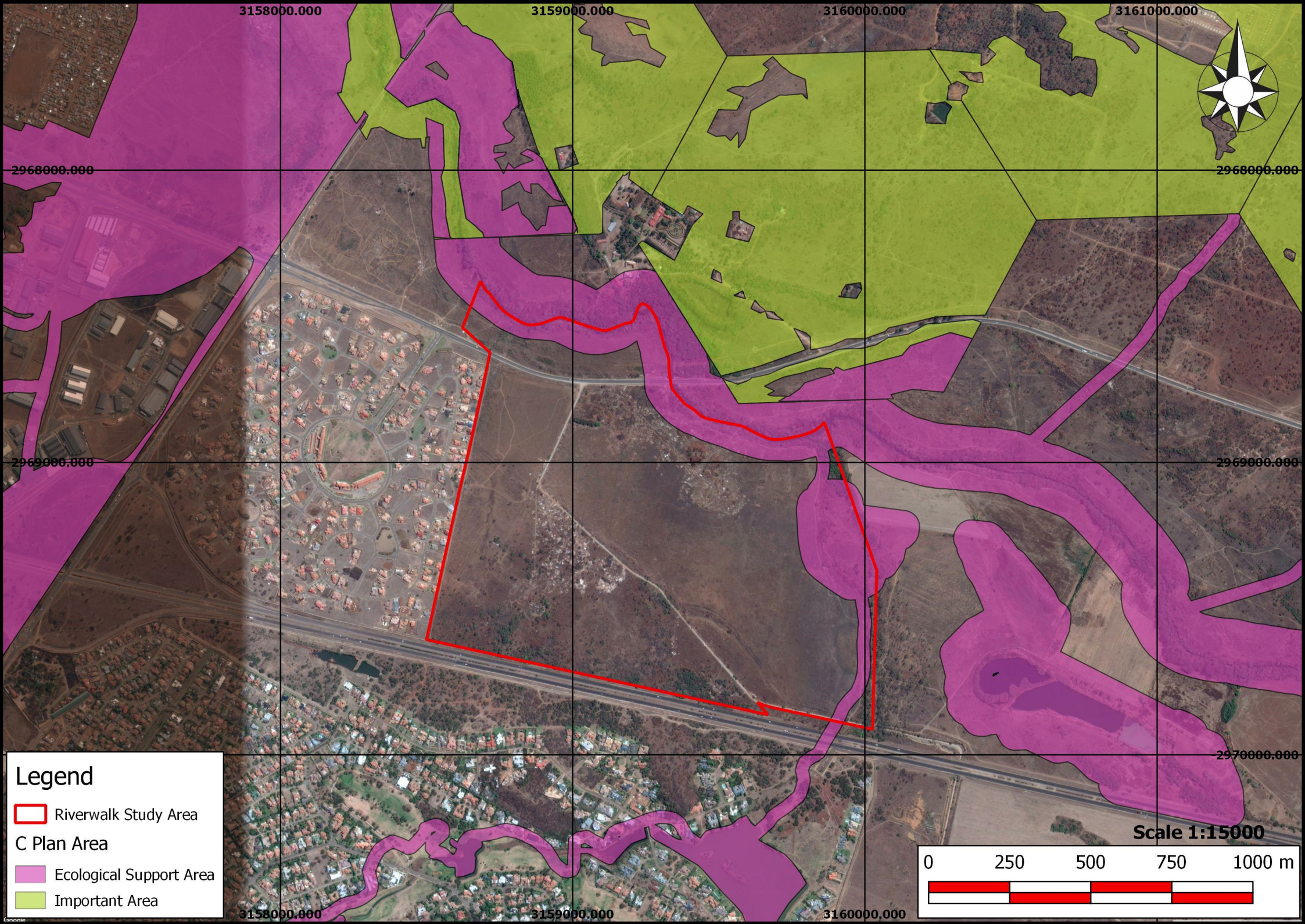
Faerie Glen

Legend

-  Study Area
- Protected Areas**
-  Bird Sanctuary
-  Municipal Nature Reserve

Scale 1:75000

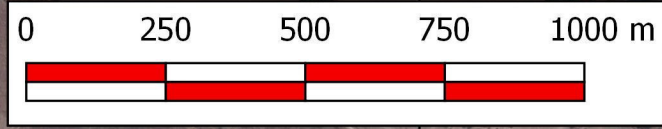


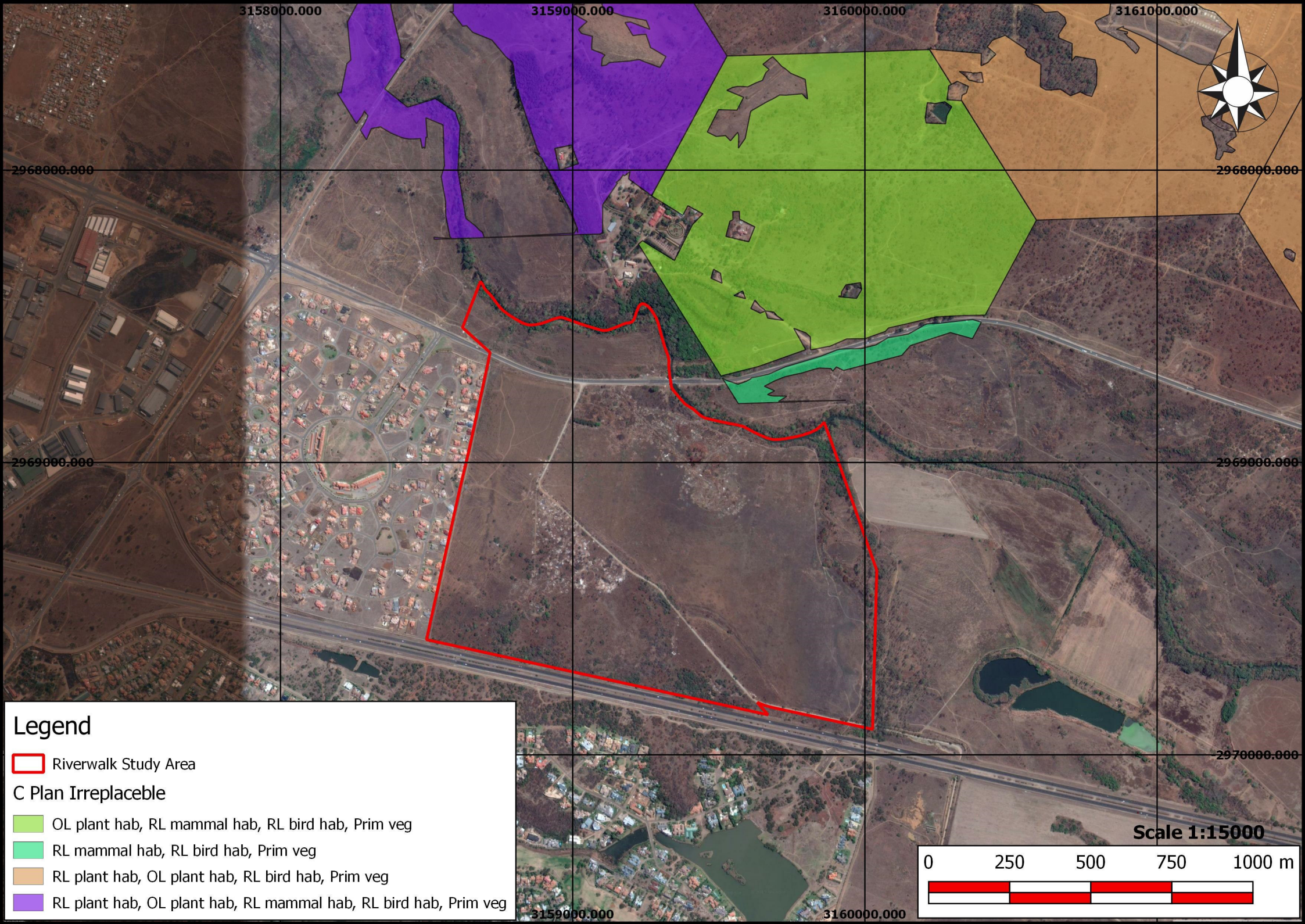


Legend






-  Riverwalk Study Area
-  Ecological Support Area
-  Important Area

Scale 1:15000

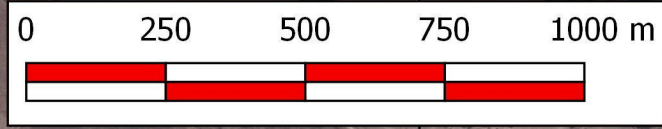


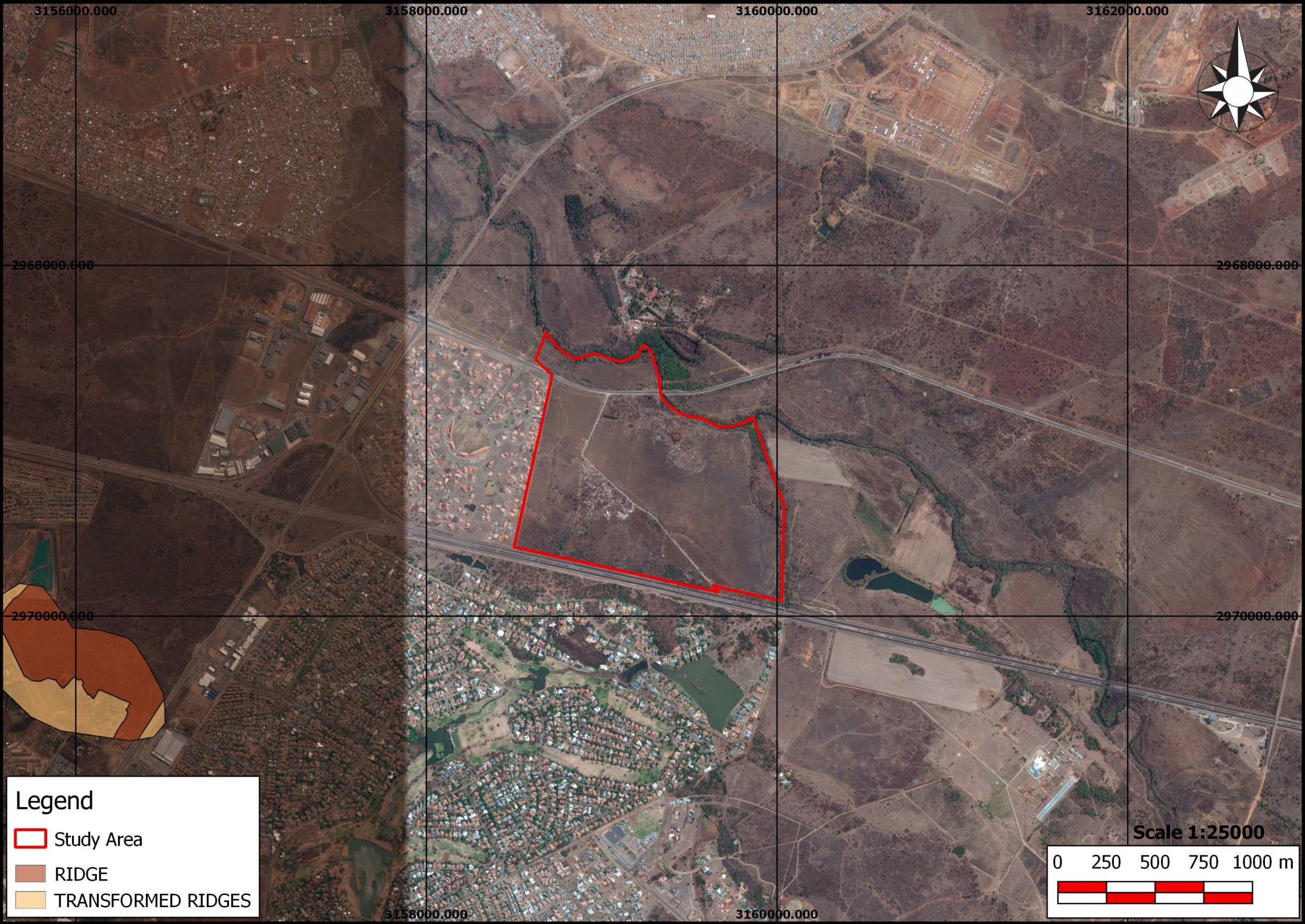


Legend




-  Riverwalk Study Area
- C Plan Irreplaceble**
-  OL plant hab, RL mammal hab, RL bird hab, Prim veg
-  RL mammal hab, RL bird hab, Prim veg
-  RL plant hab, OL plant hab, RL bird hab, Prim veg
-  RL plant hab, OL plant hab, RL mammal hab, RL bird hab, Prim veg

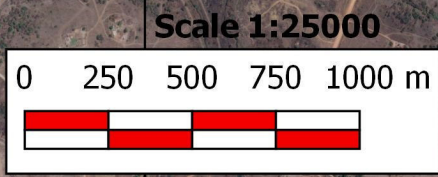
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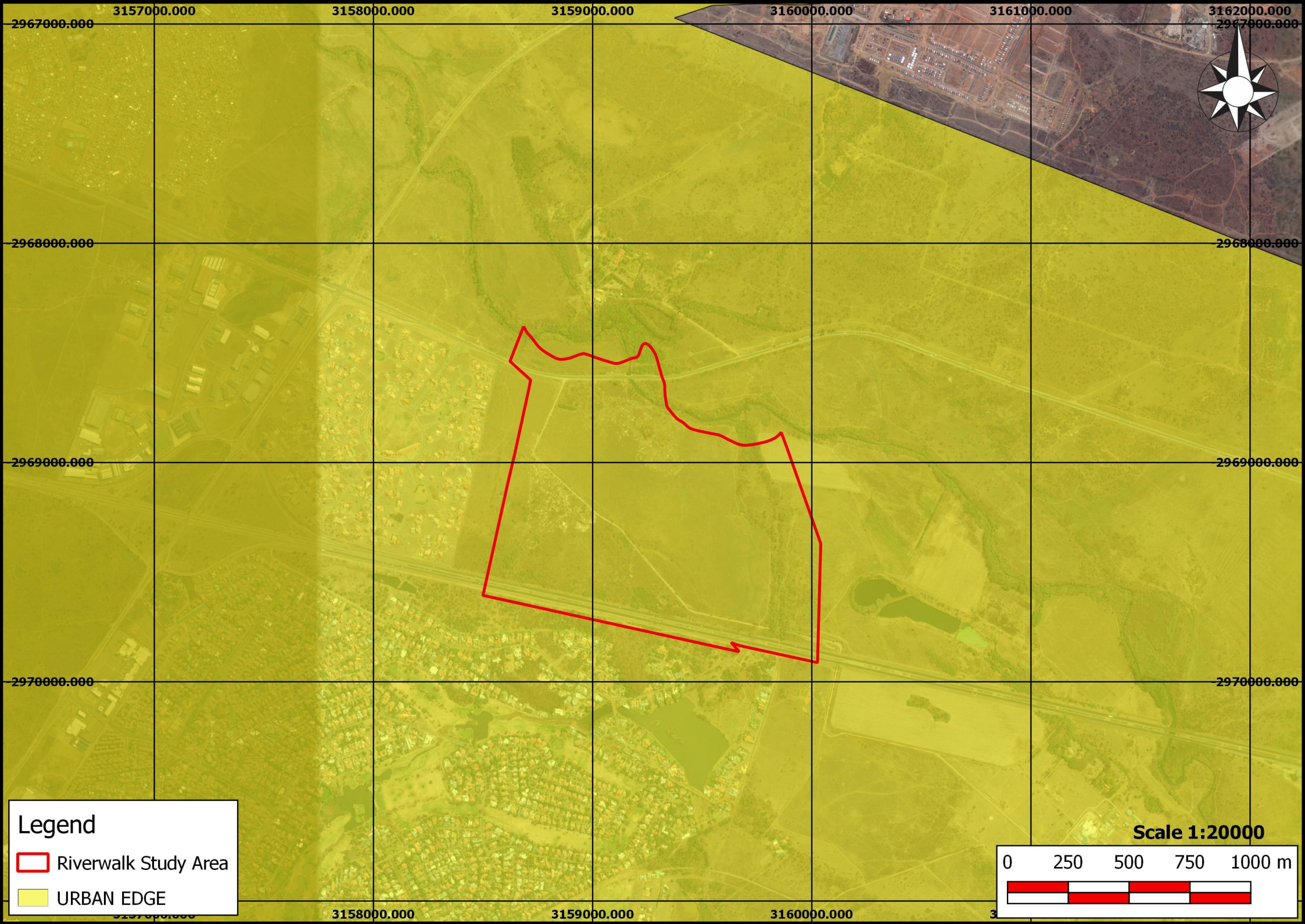




Legend

-  Study Area
-  RIDGE
-  TRANSFORMED RIDGES






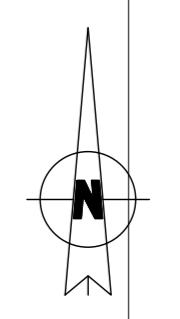
Legend

-  Riverwalk Study Area
-  URBAN EDGE

Scale 1:20000

0 250 500 750 1000 m



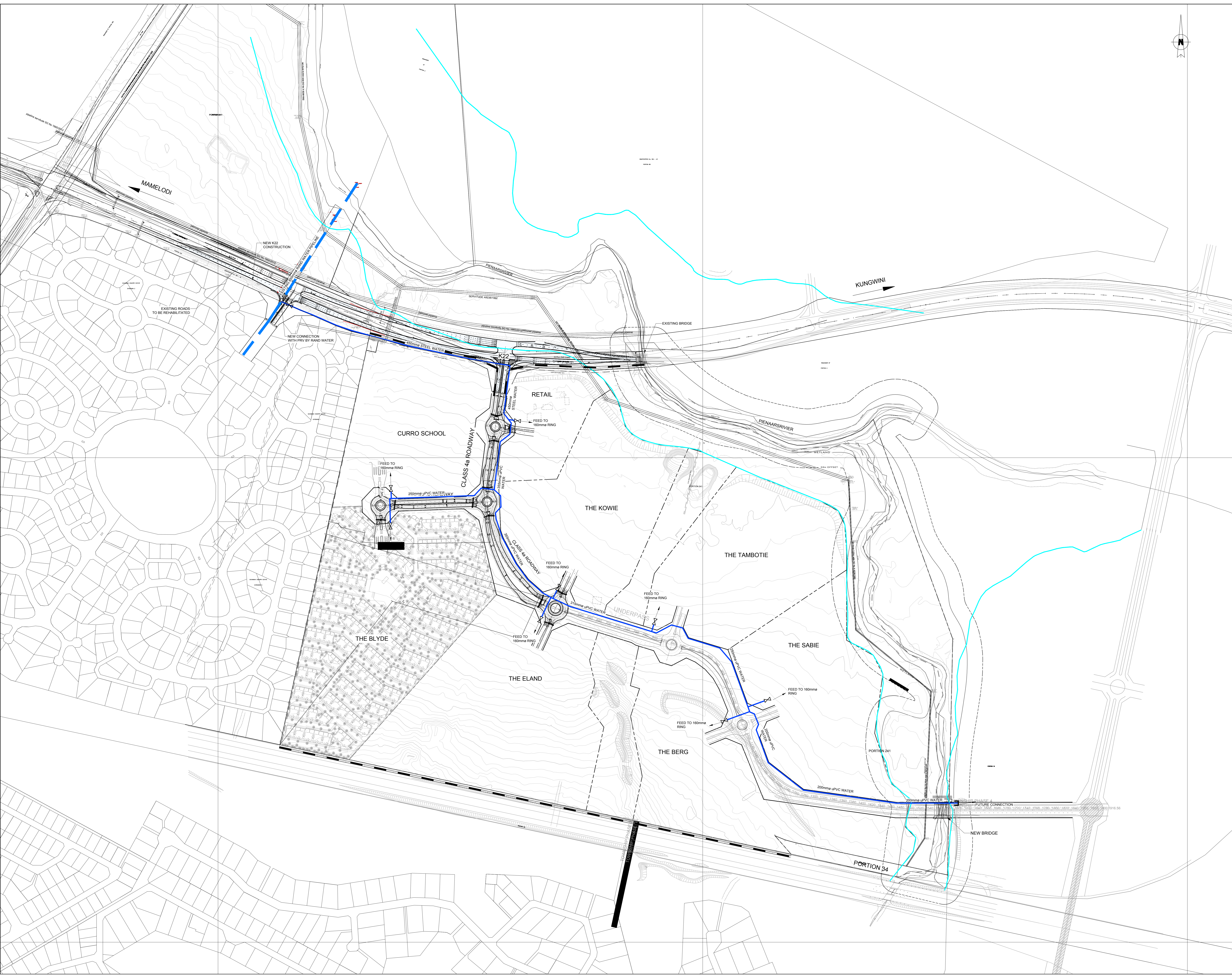


NOTES AND SPECIFICATIONS

1. ALL BELLMOUTH RADI TO BE 10m UNLESS OTHERWISE SHOWN.
2. ALL ROADS TO BE PROVIDED WITH KERBS/EDGING ACCORDING TO TYPICAL DETAILS AND LEGEND BELOW.
3. P.I. CO-ORDINATES AND RADI INDICATED ARE ON THE CENTERLINE OF THE ROAD
4. ROAD CLASSIFICATION:
 - 7.4m ROAD: ROAD CLASS 4, CATEGORY UC, CLASSIFICATION E1
 - 5.8m ROAD: ROAD CLASS 5B, CATEGORY UC, CLASSIFICATION E2
 - 4.5m ROAD: ROAD CLASS 5B, CATEGORY UC, CLASSIFICATION E2
5. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS SPECIFICATION.
6. ALL DIMENSIONS ARE IN METERS, (UNLESS OTHERWISE SPECIFIED)
7. DO NOT SCALE FROM THESE DRAWINGS.
8. ALL DIMENSIONS MUST BE CHECKED AND APPROVED ON SITE.
9. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, THIRD EDITION 2005 AND THE STANDARD CIVIL DETAIL DRAWINGS.
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11. THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE STANDARD SPECIFICATIONS FOR MUNICIPAL CIVIL ENGINEERING WORKS, SERIES 4.
12. THE SIGNATURE OR INITIALS ON THIS DRAWING, OF ANY MANAGER OF THE TRANSPORT AND ROADS DEPARTMENT, BY WHOM PROVIDED ANY RESPONSIBILITY SHALL SOLELY BE THE CONSULTANT.
13. THE CONSULTANT REMAINS RESPONSIBLE TO ENSURE THAT ALL THE GUIDELINES, STANDARD DRAWINGS, STANDARDS AND SPECIFICATIONS OF THE TRANSPORT AND ROADS DEPARTMENT HAVE BEEN MET AND ARE COMPLIED WITH.
14. ALL LEVELS OF EXISTING SERVICES ARE TO BE CHECKED AND VERIFIED ON SITE AND SUBMITTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE CONSTRUCTION.

LEGEND:

	PROPOSED ROAD UPGRADES
	FLOODLINE 1:100 WITH ROAD AND BERM
	EXISTING WATER LINE
	NEW 200mm uPVC WATER LINE
	NEW 250mm uPVC WATER LINE
	NEW 315mm uPVC WATER LINE
	NEW 355mm uPVC WATER LINE
	NEW 450mm STEEL WATER LINE
	NEW PRV WATER VALVE
	NEW END CAP



DEVELOPER DETAIL 	ARCHITECTS DETAIL
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AMENDMENTS				
NO.	DATE	APPROVED	DESCRIPTION	PREP.

DESIGNED BY W. STANDER	DATE MAY 2016	DRAWN BY R. WILLERS
DESIGN CHECKED BY W. STANDER	DATE MAY 2016	INFRASTRUCTURE TECHNICAL INFORMATION MANAGER D.J. CHALMERS

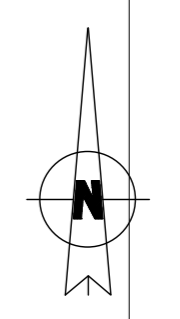
PROJECT STATUS				
DESIGNED	APPROVED	CONSTRUCTED	COMPLETED	AS BUILT
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PROJECT ENGINEER / CONSULTANT W. STANDER	PROJECT NO. 20060017	DATE MAY 2016		
DRAWING NO. / NAME	SIGNATURE AND P. NO.	DATE		
DRAWING NO. / NAME	SIGNATURE AND P. NO.	DATE		

	CONSULTING CIVIL AND STRUCTURAL ENGINEERS P.O. BOX 36148 Menlo Park 0102 Tel: (012) 460-0008 Fax: (012) 460-0005 E-Mail: mail@civilconcepts.co.za
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CITY OF TSHWANE TRANSPORT DEPARTMENT	
M. P. Lebovane STRATEGIC EXECUTIVE DIRECTOR P.O. BOX 1409 PRETORIA 0001	M. L. V. Kgobela-Phe EXECUTIVE DIRECTOR P.O. BOX 1409 PRETORIA 0001
DRAWING APPROVED BY EXECUTIVE DIRECTOR M. L. V. Kgobela-Phe	

LOCATION OF PROJECT RIVERWALK PORTION 241 OF THE FARM ZWARTKOPPIES No. 364-JR	
DESCRIPTION OF PROJECT MASTER LAYOUT - WATER	

CONTRACT NO. 	PROJECT NO. C2142
DATE MAY 2016	SCALE 1:10000
DRAWING NO. C2142-000-007	ORIGINAL PAPER SIZE A0
SHEET NO. 	REVISION



NOTES AND SPECIFICATIONS

1. ALL BELLMOUTH RADI TO BE 10m UNLESS OTHERWISE SHOWN.
2. ALL ROADS TO BE PROVIDED WITH KERBING/EDGING ACCORDING TO TYPICAL DETAILS AND LEGEND BELOW.
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4. ROAD CLASSIFICATION:
 7.4m ROAD: ROAD CLASS 4, CATEGORY UC, CLASSIFICATION E1
 5.8m ROAD: ROAD CLASS 5B, CATEGORY UC, CLASSIFICATION E3
 4.5m ROAD: ROAD CLASS 5B, CATEGORY UC, CLASSIFICATION E3
5. ALL MATERIAL AND WORKMANSHIP MUST COMPLY WITH THE REQUIREMENTS OF THE LATEST RELEVANT SABS SPECIFICATION.
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14. ALL LEVELS OF EXISTING SERVICES ARE TO BE CHECKED AND VERIFIED ON SITE AND SUBMITTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF THE CONSTRUCTION.

LEGEND:

- PROPOSED ROAD UPGRADES
- FLOODLINE 1:100 WITH ROAD AND BERM
- NEW STORMWATER LINE
- NEW STORMWATER OUTLET WITH SEDIMENT AND LITTER TRAP
- NEW STORMWATER GRID INLET
- NEW STORMWATER KERB INLET



DEVELOPER DETAIL Balvin PROPERTIES	ARCHITECTS DETAIL VTC Architecture www.vtcgroup.biz
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AMENDMENTS			
NO.	DATE	APPROVED	DESCRIPTION

DESIGNED BY W. STANDER	DATE MAY 2016	DRAWN BY R. MILLERS
DESIGN CHECKED BY W. STANDER	DATE MAY 2016	INFRASTRUCTURE TECHNICAL INFORMATION MANAGER D.J. CHALMERS

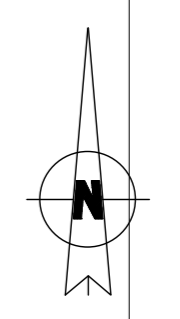
PROJECT STATUS			
PROJECT ENGINEER (CONSULTANT)	PROJECT MANAGER	PROJECT SUPERVISOR	PROJECT ASSISTANT
W. STANDER	20060017		
DATE	MAY 2016	DATE	

CONSULTANT DETAIL CIVIL CONCEPTS	CONSULTING CIVIL AND STRUCTURAL ENGINEERS P.O. BOX 36148 Menlo Park 0102 Tel: (012) 460-0008 Fax: (012) 460-0005 E-Mail: mail@civilconcepts.co.za
--	---

CITY OF TSHWANE TRANSPORT DEPARTMENT	
Mr. P. Lebese STRATEGIC EXECUTIVE DIRECTOR P.O. BOX 405 PRETORIA 0001	Ms. L. V. Kogelmeier-Phe EXECUTIVE DIRECTOR P.O. BOX 1409 PRETORIA 0001
DRAWING APPROVED BY EXECUTIVE DIRECTOR Ms. L. V. Kogelmeier-Phe	

LOCATION OF PROJECT RIVERWALK PORTION 241 OF THE FARM ZWARTKOPPIES No. 364-JR	
DESCRIPTION OF PROJECT MASTER LAYOUT - STORMWATER	

CONTRACT NO. C2142	PROJECT NO. C2142
DATE MAY 2016	SCALE 1:10000
DRAWING NO. C2142-000-005	ORIGINAL PAPER SIZE A0
SHEET NO. 1	REVISION

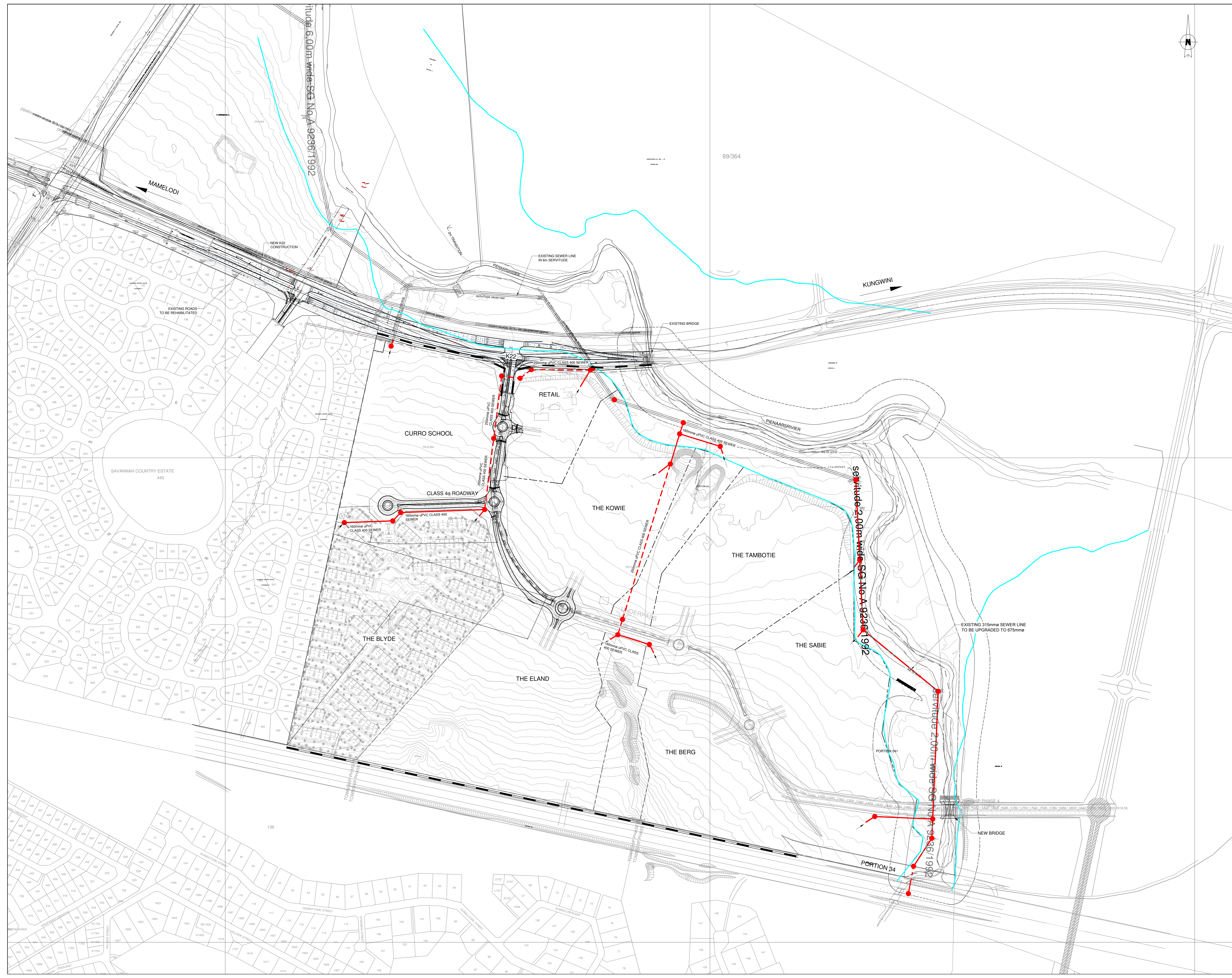


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5.0m ROAD	ROAD CLASS 5B	CATEGORY UC	CLASSIFICATION E3
4.5m ROAD	ROAD CLASS 5B	CATEGORY UC	CLASSIFICATION E4
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- LEGEND:**
- PROPOSED ROAD UPGRADES
 - FLOODLINE 1:100 WITH ROAD AND BERM
 - EXISTING SEWER LINE
 - NEW 160mm uPVC CLASS 400 SEWER LINE
 - NEW 250mm uPVC CLASS 400 SEWER LINE
 - EXISTING 315mm TO BE UPGRADED TO 675mm
 - NEW SEWER MANHOLE



DEVELOPER DETAIL
Balvin PROPERTIES

ARCHITECTS DETAIL
VTC Architecture
www.vtcgroup.biz

AMENDMENTS			
NO.	DATE	APPROVED	DESCRIPTION

DESIGNED BY W. STANDER	DATE MAY 2016	DRAWN BY R. MILLERS
DESIGN CHECKED BY W. STANDER	DATE MAY 2016	INFRASTRUCTURE TECHNICAL INFORMATION MANAGER D.J. CHALMERS

PROJECT STATUS

PROJECT ENGINEER / CONSULTANT: W. STANDER 20060017 MAY 2016

RELEVANT DRAWING: 1:10000

APPROVED BY: [Signature] DATE: [Date]

CONSULTANT DETAIL

CIVIL CONCEPTS

CONSULTING CIVIL AND STRUCTURAL ENGINEERS
P.O. BOX 36148 Menlo Park 0102
Tel: (012) 460-0008
Fax: (012) 460-0005
E-Mail: mail@civiconcepts.co.za

CITY OF TSHWANE
TRANSPORT DEPARTMENT

M. P. LEBOWA STRATEGIC EXECUTIVE DIRECTOR
P.O. BOX 1405 PRETORIA 0001

M. L. V. KOGELME PHO EXECUTIVE DIRECTOR
P.O. BOX 1409 PRETORIA 0001

DRAWING APPROVED BY EXECUTIVE DIRECTOR
M. L. V. Kogelme Pho

LOCATION OF PROJECT
RIVERWALK
PORTION 241 OF THE FARM
ZWARTKOPPIES No. 364-JR

DESCRIPTION OF PROJECT
MASTER LAYOUT - SEWER

CONTRACT NO.: C2142	PROJECT NO.: C2142
DATE: MAY 2016	SCALE: 1:10000
DRAWING NO.: C2142-000-006	ORIGINAL PAPER SIZE: A0
SHEET NO.: 1	REVISION: