



GEOTECHNICAL REPORT

Compiled by : GEOSSET cc
Consulting Environmental and Engineering Geologists
David S van der Merwe : Cel: (082) 925 4075
Date : September 2020

Engineering Geological Zonation

Modified Normal to Special Development:

Site Class HC1R/2A2C1D:
This area is characterized by dark reddish to orange brown silty clayey sand that represents a loose to stiff slightly to moderately compressible and collapsible soil with low expansive properties, and an expected range of up to 10 mm of total soil movement measured at surface, with limited excavation depths of less than 1,5m with refusal on ferricrete gravel or hard pan ferricrete or lava adding the additional R class designation. Foundations will require special foundation techniques such as the use of stiffened or cellular rafts with articulation joints at all external and internal doors and openings with reinforced masonry, split construction with suspended floors, soil replacement with a soil raft comprising G5 material or better or even piled foundations with suspended floor slabs. Site drainage and plumbing and service precautions are recommended. It is classified as HC1 in terms of the SAIEG & NHBRC guidelines (1995) or the SAICE Code of practice (1995), and 2A2C1D according to the classification for urban development (Partridge, Wood & Brink).

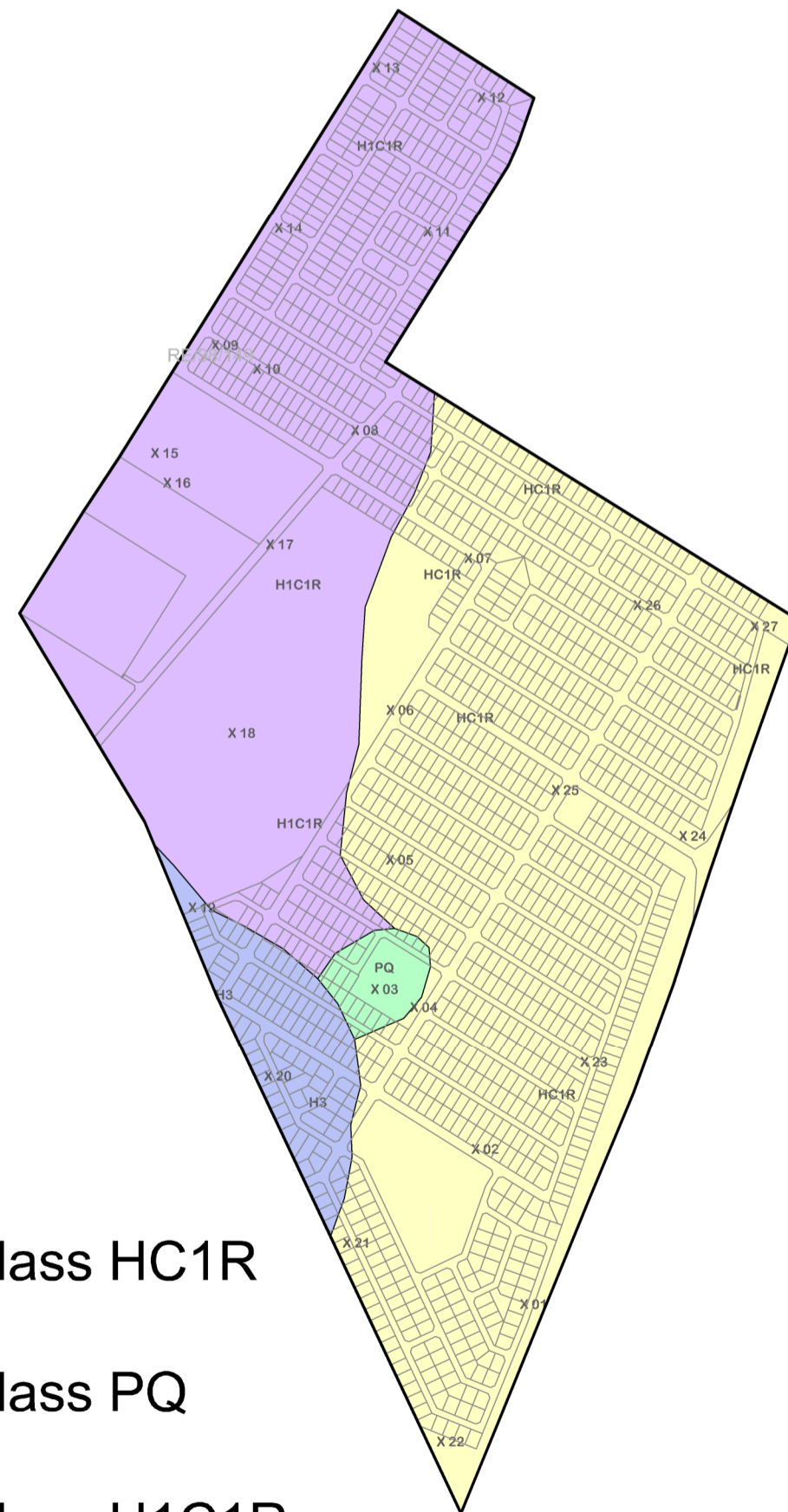
Site Class H1C1R/2A2C2D:
The area is characterized by dark reddish to orange brown silty clayey sand that represents a loose to stiff slightly to moderately compressible and collapsible soil with medium expansive properties, and an expected range of up to 15 mm of total soil movement measured at surface, with limited excavation depths of less than 1,5m with refusal on ferricrete gravel or hard pan ferricrete or lava adding the additional R class designation. Foundations will require special foundation techniques such as the use of stiffened or cellular rafts with articulation joints at all external and internal doors and openings with reinforced masonry, split construction with suspended floors, soil replacement with a soil raft comprising G5 material or better or even piled foundations with suspended floor slabs. Site drainage and plumbing and service precautions are recommended. It is classified as H1C1R in terms of the SAIEG & NHBRC guidelines (1995) or the SAICE Code of practice (1995), and 2A2C2D according to the classification for urban development (Partridge, Wood & Brink).

Site Class H3:
Highly expansive clay was identified in an area where flooding from constant leakage of the sewage works for a long period possibly chemically weathered the soil possibly forming clay minerals such as montmorillonite with highly active properties. Development within this area will need special construction methods and building procedures as heave in excess of 30mm measured at surface are classified as H3 in terms of the SAIEG & NHBRC guidelines (1995) or the SAICE Code of practice (1995), and 3C according to the classification for urban development (Partridge, Wood & Brink). Foundations will require special foundation techniques such as the use of stiffened or cellular rafts with articulation joints at all external and internal doors and openings with reinforced masonry, split construction with suspended floors, soil replacement with a soil raft comprising G5 material or better or even piled foundations with suspended floor slabs.

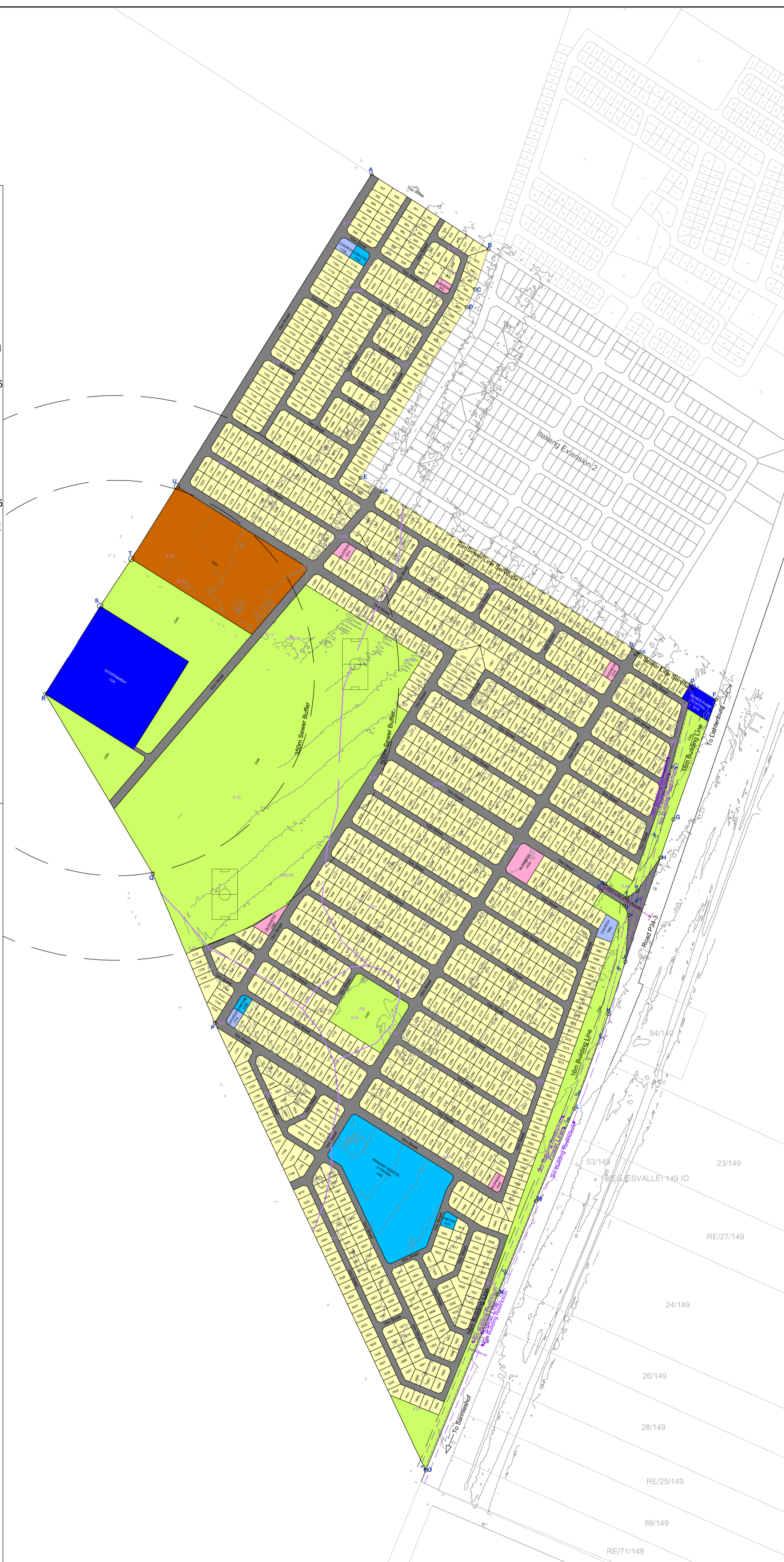
Site Class PQ:
A small area used for surface mining of construction material will need to be rehabilitated and properly backfilled by material exceeding G5 quality or better and compacted to engineer's specification before any development can be allowed. Some areas are indicative of a collection of large lava rock or core stones that need to be removed.

- Inferred Zone Boundary
- HC1R / 2A2C1D Site Class Designation
- X 01 Test Position and Number

GEOTECHNICAL ZONATION
Scale 1 : 10 000



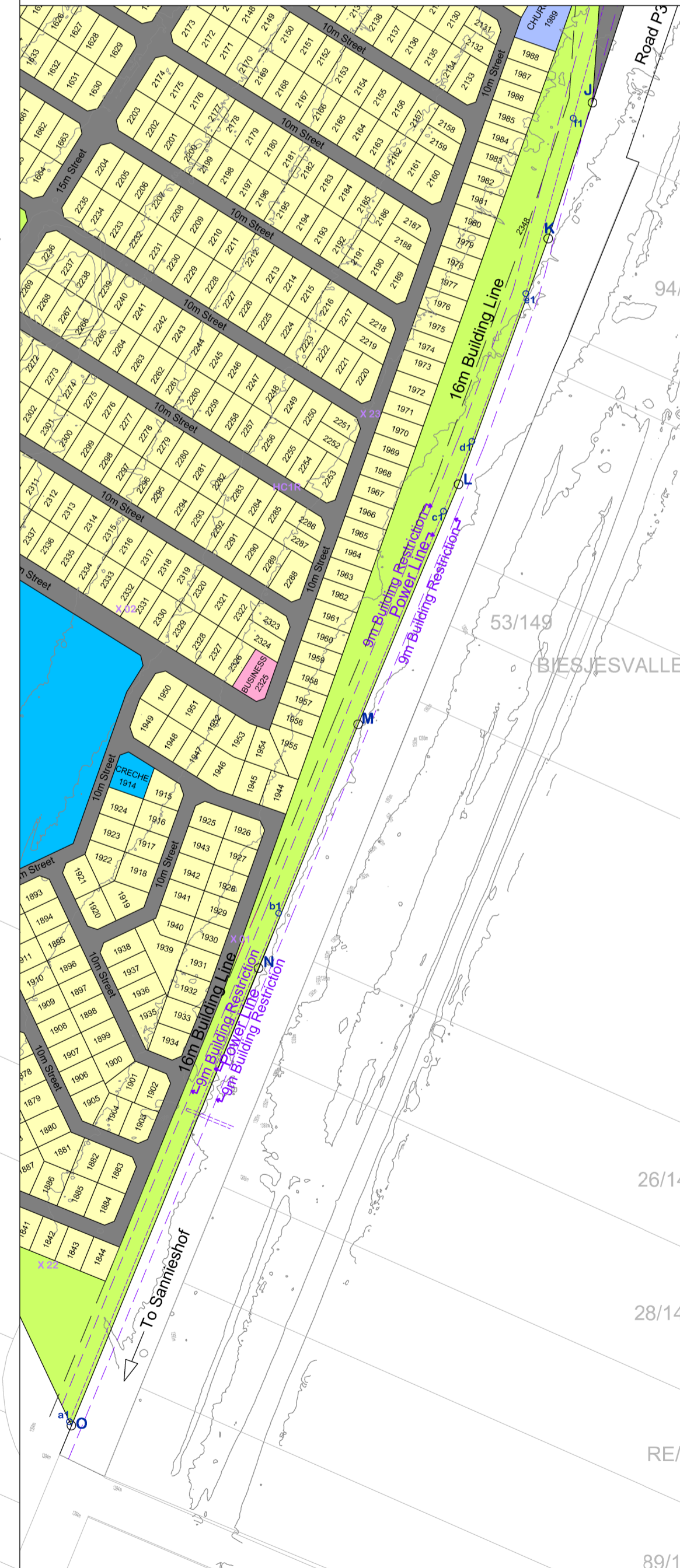
- Site Class HC1R
- Site Class PQ
- Site Class H1C1R
- Site Class H3



Insert 1



Insert 2



LEGEND

Proposed Zoning	Number of Erven	Erf Number	Area in Ha	% of Area
Residential 1A	1391	937-969; 971-1107; 1110-1224; 1227-1273; 1275-1400; 1415-1692; 1682-1745; 1747-1778; 1780-1891; 1893-1913; 1915-1988; 1990-1992; 2001-2015; 2017-2324; 2326-2343	64.7459ha	51.89%
Business 3 (including a taxi facility as well as other uses as approved by the Local Authority)	1	2000	0.2753ha	0.23%
Business 3	5	970; 1274; 1410; 1661; 2325	0.3723ha	0.29%
Educational	4	1109; 1746; 1892; 1914	3.2984ha	2.65%
Institutional	3	1108; 1779; 1989	0.2482ha	0.19%
Municipal	1	1225	4.0203ha	3.23%
Government	2	1226; 2016	3.6052ha	2.89%
Public Open Space	6	2344 - 2349	28.0813ha	22.50%
Public Road			20.1324ha	16.13%
TOTAL	1413		124.7796ha	100%

STREETS

Reserve Width	Length in Metre	%
6 metre	34m	0.19%
10 metre	12 829m	72.06%
15 metre	4 941m	27.75%
TOTAL	17 805m	100%

NOTES:
*The figure A-B-C-D-E-F-G-H-J-K-L-M-N-O-P-Q-R-S-T-U-A represents the Proposed Township Itekeng Extension 3.
*16m Building Restriction along the line(s) lettered F-G-H-e & k-J-K-L-M-N-O as indicated on the layout plan.
*No ingress or egress along the line(s) lettered F-G-H-e-f-g and h-j-k-J-K-L-M-N-O as indicated on the layout plan.
*9m Building Restriction on both sides of the line(s) lettered a1-b1-c1-d1-e1-f1-g1-h1-i1-j1-k1 as indicated on layout plan.

SERVITUDE NOTES:
2m Municipal Servitude for sewer purposes along the line(s) lettered a-b and c-d as indicated on the layout plan

Average Residential Erven Size : 470m²
Erf sizes and dimensions subject to final survey.

DESIGN OF TOWN LAYOUT
It is hereby certified in terms of the provisions of Section 144 of the National Water Act, 1998 (Act No.36 of 1998) that the township is not affected by a public stream.

CONTOURS
The contour survey is in accordance with the standards laid down by the Regulations relating to Township Establishment and Land Use.

PR ENGINEER
It is hereby certified that the town layout complies with the conditions and recommendations as stated in the Geological Report.

PR ENGINEER
Date of Photography: 28 August 2020
System: WG25 Central Meridian: Lc27

PROPOSED TOWN ITEKENG EXTENSION 3
300m 200m 100m 50m 0m 200m
1cm = 100m
SCALE 1 : 10 000
THE PROPOSED TOWN IS SITUATED ON A PORTION OF THE REMAINING EXTENT OF PORTION 98 OF THE FARM BIESJESVALLEI 149 - IO.
DITSOBOTLA LOCAL MUNICIPALITY NORTH WEST PROVINCE

Drawing Compiled by : C.Cloete
Drawings Nr. : 8/10/6
Date : 2021-05-03
Revision :
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