ROADS AND WET SERVICES REPORT: PROPOSED GENERAL RESIDENTIAL 2 DEVELOPMENT ON ERF 325, THEESCOMBE, PORT ELIZABETH

SYNOPSIS

This report deals with a preliminary engineering investigation regarding the bulk services and the preliminary investigation and design of the internal roads, storm water, sewer and water reticulation systems that will serve the mentioned residential development.

PREPARED BY:

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DOCUMENT NO. AS/2024 REP

REV A – 28 MARCH 2025

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CGS PROPERTY TRUST

ROADS AND WET SERVICES REPORT: PROPOSED GENERAL RESIDENTIAL 2 DEVELOPMENT ON ERF 325, THEESCOMBE, PORT ELIZABETH

1. TERMS OF REFERENCE

In terms of our appointment by **CGS PROPERTY TRUST**, dated 19 March 2024, we have prepared a civil engineering services report. The report addresses the preliminary investigation of bulk services provision to the site as well as the preliminary investigation and design of the internal roads, storm water, sewer and water reticulation systems intended to serve the proposed General Residential 2 development.

2. SCOPE

This report outlines the collection and analysis of data pertaining to Erf 325, Theescombe, and its surrounding areas. The analysis aims to provide an engineering assessment of bulk service availability, identify potential constraints, highlight necessary approvals and additional studies, and present the preliminary investigation and design of the main roads, stormwater, sewer, and water reticulation systems required to service the proposed sectional title residential development.

The above information is required for the rezoning and sub-division application as well as the water supply, foul sewer drainage and storm water management plan that must be included in the Basic Assessment Report.

3. LEVEL OF SERVICES

The level of services will be in accordance with the Guidelines for Human Settlement Planning and Design compiled under the patronage of the Department of Housing by CSIR Building and Construction Technology: (2000: Revision August 2003), The Neighbourhood Planning and Design Guide “Red Book” developed by Department of Human Settlements (2019) and other acceptable design specifications.

4. DATA COLLECTION

4.1. DRAWINGS

Relevant “as built” drawings of the existing Merle, Blumberg, Michelangelo, Brahms and Chopin roads and storm water, sewer and water mains, electrical services, were obtained from the Nelson Mandela Bay Municipality (NMBM) Port Elizabeth (Gqeberha).

4.2. SITE DEVELOPMENT PLAN

The proposed Site Development Plan (SDP) for ERF 325, Theescombe, was obtained from Reynier Koen of RK Architects. The SDP outlines the internal layout, access road and site boundaries, and indicates that the proposed development will consist of seven villages under General Residential 2 Zoning.

4.3. LAND SURVEYOR DETAILS

The latest coordinated contour survey of the site, which includes cadastral boundaries, adjacent roads and existing services, was received from professional land surveyors, Hemsley & Myrdal.

4.4. TOWN PLANNING DETAILS

In accordance with previous Town Planning Layouts, Erf 325 Theescombe currently have multiple zonings: Residential 1, Residential 2, Public Open Space and Transportation 1. The developer intends to rezone this property to General Residential 2 zoning.

4.5. FIELD RECORDS AND OBSERVATIONS

The residential township, Providentia, is abutting the site near the northern boundary, Pari Park on the eastern side and Lovemore Park to the south and west.

The levels on the site vary approximately between 134m and 137m above Mean Sea Level (**MSL**) near the western and eastern boundaries and 126m MSL near the south-eastern corner of the site.

The area mainly consists of younger and older sand dunes or fills. The surface area is mainly covered with thin, silty, sand topsoil with isolated pockets of dune fynbos, grass and predominantly Port Jackson and Rooikrans trees.

The site has a natural resultant undulating topography. However, a sand quarrying operation, backfilling and rehabilitation have resulted in a slightly flatter topography to approximately 65% of the site.

4.6. ENGINEERING GEOLOGICAL REPORT

An engineering geological investigation has been done in consultation with Blue Horizon Consulting, Environmental and Engineering Geologists during February 1996 and April 1996. The site is underlain by paelo-sand dune deposits of the Nanaga Formation. This formation consists of partially dune sand, becoming calcarenite (dune rock) in places, with calcrete in low lying areas.

The typical soil types encountered at the site can be described as fill, topsoil, Aeolium (older deposit) and aeolium (younger deposit). Aeolium is another word for wind transported sand.

Based on trial-hole data (trial pit depth on average 2,5m) as indicated in the engineering report done by JJS Civil Engineers in April 2014, the typical soil types encountered at the site can be described as follows:

The fill described at the site under investigation is essentially waste material from previous sand quarrying operation. The fill depths at the middle of the site vary from 0,28m to 1,55m, with an average thickness of 0.90m.

The above mentioned fill consists mainly of the following components, which all occur in random layers of various thicknesses in the subsoil.

- Layers of calcarenite and calcrete gravel, fragments and boulders, which range in consistency from very loose to dense.
- Layers of fine calcareous sandy silt with calcarenite fragments. These horizons are generally moderately dense, but patches of loose material occur as well.
- Layers of loose aeolium material (young and old deposits) also occur within the fill material.
- Towards the western side of the site, the fill mainly consists of a loosely packed layer of calcarenite and calcrete boulders with fine calcareous rich sand, with a layer thickness ranging from a few centimeters up to more than 3 meters in places.

The older dune sand (with a layer thickness of more than 2,5m), consisting mainly of very loose to loose sandy material (low silt content) with calcarenite clasts or chunks and in some places calcrete concretions.

The younger dune sand similar to the older deposits with the major differences being that the material is even looser, has less calcarenite clasts and almost no calcrete.

No water table, whether perched or permanent, was encountered on the site or in any of the trial holes. No refusal was recorded in any of the trial pits (average depth 2,5m).

5. EXTENT OF THE DEVELOPMENT

In accordance with the Architectural Site Development Plan, the proposed residential development can be described as follows:

The total area of the site is approximately 17.43ha.

The total Protected Open Space area is 7.27ha.

The residential development consists of the following:

Village A:	20 x 3 Bedroom	150m^2	Double storey	Hybrid	Townhouse
Village B:	65 x 3 Bedroom	90m^2	Single storey	Sectional Title	Townhouse
Village C:	56 x 2 Bedroom	55m^2	3 – Storey blocks	Sectional Title	Apartment
Village D:	69 x 2 Bedroom	50m^2	Single storey	Sectional Title	Retirement
Village E:	61 x 2 Bedroom	85m^2	Single storey	Hybrid	Townhouse
Village F:	48 x 3 Bedroom	125m^2	Single storey	Hybrid	Townhouse
Village G:	12 x 3 Bedroom	150m^2	Double storey	Hybrid	Townhouse

In total, the development will consist of 331 units and Private Open Space areas of 0.856ha have been provided.

6. ANALYSIS

6.1. METHODOLOGY

The methodology adopted in analysing an effective design for the wet services system and main roads for the residential development under discussion, consists of the following:

- Establishing acceptable objectives for the proposed road and wet services systems.
- Determine appropriate design standards for the purpose of analysis and report.
- Applying these criteria to the expected post-development conditions to confirm findings and details regarding the proposed design and constructed works.

6.2. ACCEPTABLE OBJECTIVES

- To provide flood control measures that prevent loss of life and significant damage to property from the run-off from major storms and keep excess run-off away from buildings and/or habitable units as far as practical possible.
- To provide reasonable access to buildings and/or habitable units, effective water supply, effective foul sewer and storm water drainage systems for the health, safety and convenience of the community and to protect property from damage by frequent storms.
- To provide economical facilities and find solutions to accommodate water demand, foul sewer effluent and storm water run-off problems compatible with the physical and ecological environment and protect the natural environment against pollution.
- To implement procedures and practices which are consistent with the operating and maintenance standards of the accountable governing body corporate and/or local authority.

6.3. APPROPRIATE DESIGN STANDARDS

A balance must be achieved between the objectives, optimal land use and economic viability of the development.

A compromise between the Guidelines for the provision of Engineering Services as published by the Department of Community Development 1983 (Blue Book), Guidelines for the Provision of Engineering Services and Amenities In Residential Townships Development issued by The South African Housing Advisory Council 1994 (“old” Red Book) and Guidelines for Human Settlement Planning and Design compiled under the patronage of the Department of Housing by CSIR Building and Construction Technology: (2000: Revision August 2003) (Red Book) and The Neighbourhood Planning and Design Guide (“new” Red Book) developed by Department of Human Settlements (2019).

The Guidelines for the Geometric design of Urban arterial roads (UTG1, 1986), TRH4 Specifications: Structural Design of Inter-urban and Rural Road pavements, and other accepted specifications as indicated will be adopted as a basis for the design of the roads, water supply, sewer and storm water control systems.

In accordance with the recommendations from the Hydrological Research Unit (HRU) of the University of the Witwatersrand: HRU report No. 1/72 -Design Flood Determination in S.A. and HRU report No. 2/78 – Additional information and improvements to Depth - Duration - Frequency diagram the so-called Rational Method has been used to determine the run-off for the relatively small catchment areas on and adjacent to Erf 325, Theescombe.

Intensity/Duration/Frequency Curves for 100; 50 down to the 5- and 2-year recurrence intervals for the Port Elizabeth area have been used in calculations.

7. INVESTIGATION AND PRELIMINARY DESIGN

7.1. ROADS – ACCESS

Access to the proposed Residential development will be off the existing public roads, Merle Road to the north and Chopin Road to the southeastern corner of the proposed development.

(See our Drawing No. AS/2024-10/RS/01)

The applicable Development Transportation Levy payable to the NMBM will be based on the trip generation calculations of the proposed development.

7.2. ROADS - STRUCTURAL

The structural design of the roads will be done in accordance with the TRH4 Specifications: Structural design of inter-urban and rural road pavements subject to the conditions as indicated in the geo-technical report.

The structural layer works of the roads have been preliminary designed to accommodate the repetitive axle loads associated with post-development light vehicles and occasional heavier commercial vehicles.

- 150mm in-situ sandy, silty material compacted to 90% to 98% Modified American Association of State Highway Traffic Officials (**MOD AASHTO**) density.
- In areas where the California Bearing Ratio (**CBR**) of the in-situ material would be lower than 5% at 90% MOD AASHTO density (especially wet conditions), an additional layer of 200mm to 300mm crushed overburden material compacted to 92% MOD AASHTO density could be specified.
- 150mm G7 material compacted to 93% MOD AASHTO density
- 150mm G5 material compacted to 95% MOD AASHTO density
- 60mm deep interlocking 30MPa concrete paving block (class 30/2.0) complete with cement infill on 30mm Sand with an 80mm high mountable kerb on each side of the road.
- 125mm high precast Barrier kerbs at bellmouths, entrance road and/or parking areas as dictated by applicable safety and mobility guidelines.

In certain instances, speed humps can also be designed to act as traffic calming measures as well as the mechanisms to retard and/or divert stormwater overland flow.

7.3. ROADS – GEOMETRIC DESIGN

If required, the coordinated horizontal alignment of the existing intersections directly related to the proposed development will have to be amended and designed in accordance with the guidelines as indicated in the approved TIA report.

Based on our experience there should be at least two lanes in and two lanes out for a development of this magnitude to effectively regulate access/exit of visitors as well as residents conveniently subject to security requirements.

The preferred surfaced width of the main internal entrance road near the Merle/Blumberg intersection should preferably be with a minimum width of 6.0m. Subject to the applicable trip generation figures, the width of the other internal roads should vary between 5.5m and 4.5m.

As far as practically possible, the vertical alignment of the roads will have to be done in accordance with the mentioned Guidelines as indicated earlier in this report.

The roads will also act as shallow overland storm water channels.

Considering the undulating topography of the site, the roads will have to be designed mainly to fall within the allowed minimum and maximum gradients (self-cleansing flow and maximum storm water flow velocities) to the catchpit inlets, but also with an overall fall towards the proposed storm water ponds on Private Open Space.

Based on our experience and in accordance with the available topographical data for the site, maximum and minimum longitudinal vertical gradients on the roads should vary in general between 12% and 0,5% (absolute minimum 0,4%) respectively with a cross-fall gradient of 2,0% to 2,5%.

7.4. STORM WATER SYSTEM

The minor flood discharge into the existing municipal system as intercepted by the existing and proposed shallow dry retention ponds shall be limited to a maximum of 1: 5-year pre-development flow.

However, in an attempt to address the existing land-lock conditions at the Michelangelo Avenue and near Chopin Road, Pari Park in a responsible way, the following preliminary design proposals are recommended. (Also see our Drawing No. AS/2024-10/RS/01)

- Upgrade the existing retention Pond adjacent to Blumberg Road (surface run–off mainly from Providentia area) near the northern boundary of Erf 325, Theescombe to retain post-development major design storm inflows up to 1 in 100-year recurrence interval instead of the normal 1 in 50-year recurrence interval for major storms.
- Design and construct the piped storm water system including the roads and parking on Erf 325 Theescombe to intercept an also act as stormwater channels and overland flow routes, sloping south and south-west to the storm water attenuation/soak-away Ponds E and H. The outflow from the respective ponds will be directed south to existing natural depressions.
- Subject to the detailed design of the earthworks, roads and storm water system, the surface run-off intercepted from Catchment Area A and Catchment Area B shall drain to the interconnected Ponds A and Pond B respectively. The runoff from Catchment Area C will drain to Pond C and the surface run-off intercepted from Catchment Area D shall drain to Pond D.
- The interconnected soak-away/retention Ponds A, B and D shall be designed to retain post-development major design storm inflows up to 1 in 100-year recurrence interval while limiting the outflow to Pond C to equal or less than the 1 in 5-year predevelopment flow parameters. Soak-away/retention Pond E will receive the 1 in 5-year pre-development outflow from Pond C and surface runoff inflows up to the 1:100-year recurrence interval from Catchment Area E. Soak-away Pond E will be designed to retain post development major design storm inflows up to 1 in 100-year recurrence interval while limiting the piped outflow to the 1 in 5-year pre development flow

volumes with a maximum 450mm diameter outlet linking the proposed piped outflow from Pond E with the piped outflow from Pond H towards the existing natural depression area south of the development.

- Based on our preliminary calculations, Ponds A, B, C, D and E shall have an effective storage capacity of 588m^3, 371m^3, 180m^3, 28 m^3 and 371m^3 respectively.
- Subject to the detailed design of the earthworks, roads and storm water system, the surface run-off intercepted from Catchment Area F shall drain to soakaway/detention Pond F. Pond G will receive the controlled 1 in 5-year or less outflow from Pond F and surface runoff intercepted from Catchment Area G. Soak away/retention Pond H will receive the controlled 1 in 5-year or less outflow from Pond G and surface runoff intercepted from Catchment Area G. The discharge from Pond H will be limited to the predevelopment 1 in 5-year recurrence interval flow volumes or less with a maximum 450mm diameter outlet.
- A formal agreement with the property owner of Erf 422 Theescombe must be obtained stating that they will accept the designed Pre-development runoff from Erf 325 Theescombe and a servitude will have to be registered from Erf 325 Theescombe over Erf 422 Theescombe towards the road reserve Olive Lane.
- Based on our preliminary calculations, Ponds F, G and H shall have an effective storage capacity of 612m^3, 1636m^3 and 1117m^3 respectively.
- The existing outlet and piped stormwater from the existing pond in Blumberg Road traversing Erf 325 Theescombe to the east will have to be rerouted towards the existing 600mm diameter pipe in Michael Angelo Avenue.
- To limit mosquito problems in future, concrete lined low flow channels shall be designed to convey minor design flows in the grassed pond areas.

7.5. WATER SUPPLY SYSTEM

The supply reservoir to the proposed development will be the Lovemore Heights Reservoir with a top water level (TWL) of 234m above mean sea level (**MSL**). Based on the recommended average annual daily demands from Table J.2 from the Neighbourhood Planning and Design Guide, the Annual Average Daily Demand (**AADD**) of the residential development under discussion has been calculated to be **157 kilolitres per** day under post-development conditions and **should be well within the supply capacity of the existing 10.97 megalitre Lovemore Heights reservoir** as **confirmed** by email with **Mr. N. Barnard of the Water Division of the NMBM Port Elizabeth on 21 February 2025.**

(See our enclosed Drawing No. AS/2024-10/W/01)

The additional head loss to be created by the proposed development on Erf 325, Theescombe can be minimised by constructing a new 160mm diameter water main from the existing 225mm diameter in Genadendal Road south to the existing 150mm diameter water main near the intersection of Glendore and Michael Angelo Road. This will improve both the reliability and pressure of the water supply to Erf 325 Theescombe and surrounding area.

The provision of water to the proposed development on Erf 325, Theescombe, Port Elizabeth will be off the existing 150mm diameter in Merle Road.

According to the Municipal By Law Clause 30, General Conditions of Supply: "The granting of a supply of water by the Municipality will not constitute an undertaking by it to maintain at any time or at any point in its water supply system: -

a) An uninterrupted supply
b) A specific pressure or rate of flow in such supply; or
c) A specific standard or quality of water."

SANS 10252-1:2012, Water Supply and Drainage for Buildings, clearly states that the above must be considered where the local authority's water supply is not capable of providing sufficient pressure and rate of flow for fire installations, storage tanks are required.

In order to accommodate the required minimum residual head pressure of 150kPa under total instantaneous peak demand of 17.01 l/s design flow and a maximum fire flow of 25 litres per second (moderate fire risk regarding denser group housing developments) as well as maximum residual head pressures under low flow conditions, the main internal reticulation should consist of a main feeder pipe of 160mm diameter and a minimum of 110mm looped PVC-U pipe Class 12 water reticulation systems for the General Residential 2 developments in accordance with SANS 966: 1998 Part 1 specifications and laid in accordance with SANS 1200 LB. The completed water reticulation will be tested under a minimum pressure of 1350kPa in accordance with SANS 1200 L.

To **limit the risk of the current low-flow and/or no-flow water supply conditions of the NMBM infrastructure** due to the drought inter alia, the following **precautionary measures must be implemented.**

- A **fire hydrant, non-return valve, and booster connection** shall be installed directly after the consumer valve on the 160mm diameter connection to Erf 325 Theescombe. This safety measure can assist the NMBM Fire Department **to boost the water flow with the NMBM fire brigade** in the proposed looped reticulation and fire hydrants on Erf 325 Theescombe **in case of sub-standard municipal water supply under fire conditions.**

Subject to the approval of all the relevant authorities, it is also recommended that the Developer should make provision for rainwater harvesting on Erf 325 Theescombe as far as practically possible. The said water shall be treated as advised by aspecialist for drinking purposes. The **Homeowner/Tennant shall take full**

accountability for the effective design, implementation and maintenance of the individual rainwater harvesting systems on Erf 325 Theescombe. That will inter alia include the effective and safe storage, treatment, distribution, booster pump system and use concerning the mentioned rainwater.

Unless otherwise dictated by NMBM, the fire hydrants will be the pillar type and the maximum spacing of the fire hydrants will be 180m in moderate risk fire areas or as otherwise required by the local fire department.

7.6. FOUL SEWER SYSTEM

The effluent of the proposed residential development on consolidated Erf 325, Theescombe, Port Elizabeth will be treated by the NMBM Driftsands Waste Water Treatment Works (**DWWTW**).

The preliminary total design Average Dry Weather Flow (**ADWF**) of the proposed Residential development under discussion has been calculated to be **144.4kl per day**.

The capacity of the last-mentioned treatment works is 22Ml per day. As confirmed with Mr. C. Bruintjies of the NMBM Sewerage Division, the **DWWTW** is currently treating up to 14Ml per day.

Based on the experience of the NMBM Sewerage Division, we prefer to use the more conservative Harmon's formula to determine the Peak Dry Weather Flow (**PDWF**) with an infiltration factor of 100% of the PDWF to calculate the Peak Wet Weather Flow (**PWWF**). In accordance with our calculations, the preliminary design PWWF (100% infiltration rate) of the proposed development on Erf 325, Theescombe will be equal to 12.43l/s.

The developer paid a sewer levy of R180 000.00 to NMBM on 25 July 2006 towards the upgrading of the NMBM sewerage infra-structure, this amount was based on the proposed original residential development with an ADWF of 125.25kl per day. The revised ADWF based on the latest architectural layout is calculated to be 144.4kl. A recalculated sewer levy will be payable to the NMBM taking previous payment into account.

Considering the topography of Erf 325, Theescombe and subject to bulk earthworks on the site, the main waterborne gravity sewers have been preliminary designed to accommodate the peak weather design flows and will mainly consist of 160mm diameter Class 400 kPa PVC-U pipe: SANS 1601 Type 1 specification.

(Also see our Drawing No. AS/2024-10/FS/01)

Due to the topography of the site, the General Residential 2 erven near the north-eastern corner of the site will drain to the existing 225mm diameter NMBM sewer in Michael Angelo Avenue.

The remaining General Residential 2 erven will gravitate to the existing 150mm diameter NMBM sewer in Chopin Road, Pari Park near Erf 1211, Theescombe.

The longitudinal gradients of the gravity sewers will have to be designed to accommodate the peak wet weather flows as well as maintaining minimum self-cleansing velocities higher than 0,7 m/s.

All main internal sewers and NMBM sewer pipes and manholes must be constructed in accordance with SANS 1200 LD, SANS 1200 LB and Municipal Standards and Specifications.

8. SOLID WASTE

8.1. CONSTRUCTION PHASE:

Construction waste generally consists of inert materials such as rubble and bulky construction debris. The volume of waste generated during the construction phase depends on the construction activity and the stage of construction. Therefore, the volume of waste generated during the construction phase varies.

Based on experience with similar developments, the waste generated by labour and construction activities is minimal and estimated to be approximately 12 to 19 cubic meters per site during the construction period.

8.2. OPERATIONAL PHASE:

Domestic and household waste consists mainly of foodstuffs, garden waste, old clothing, packaging materials such as glass, paper, cardboard and plastics.

On average, subject to recycling facilities the solid waste generated by the Residential development can be estimated to be 0.023 cubic meters per day per residential unit. The total volume for the full General Residential 2 development has been calculated to be 232 cubic meters per month.

It is assumed that refuse will be collected by the NMBM and disposed of at a registered waste disposal site.

9. RECOMMENDATIONS

It is recommended that:

- The design criteria, material and methods of construction in this report be accepted.

- The demand calculations for water, sewage and solid waste be accepted.

- That a servitude be registered as proposed in favour of ERF 325 for stormwater management on ERF 422.

- That the recommendations of the TIA be implemented.

- That an environmental consultant reviews the scope in this document and confirms statutory requirements and compliance.

- All services in this report be subject to a detail design proses.

- That an Engineering Services Agreement is concluded between the NMBM and the Developer. - That bulk augmentation fees are agreed with the NMBM in the Engineering Services Agreement and payment be made by the Developer to the Municipality.

10. CONCLUSION

A cautious approach in the conceptual design of the roads and storm water, sewer and water reticulation systems has been adopted.

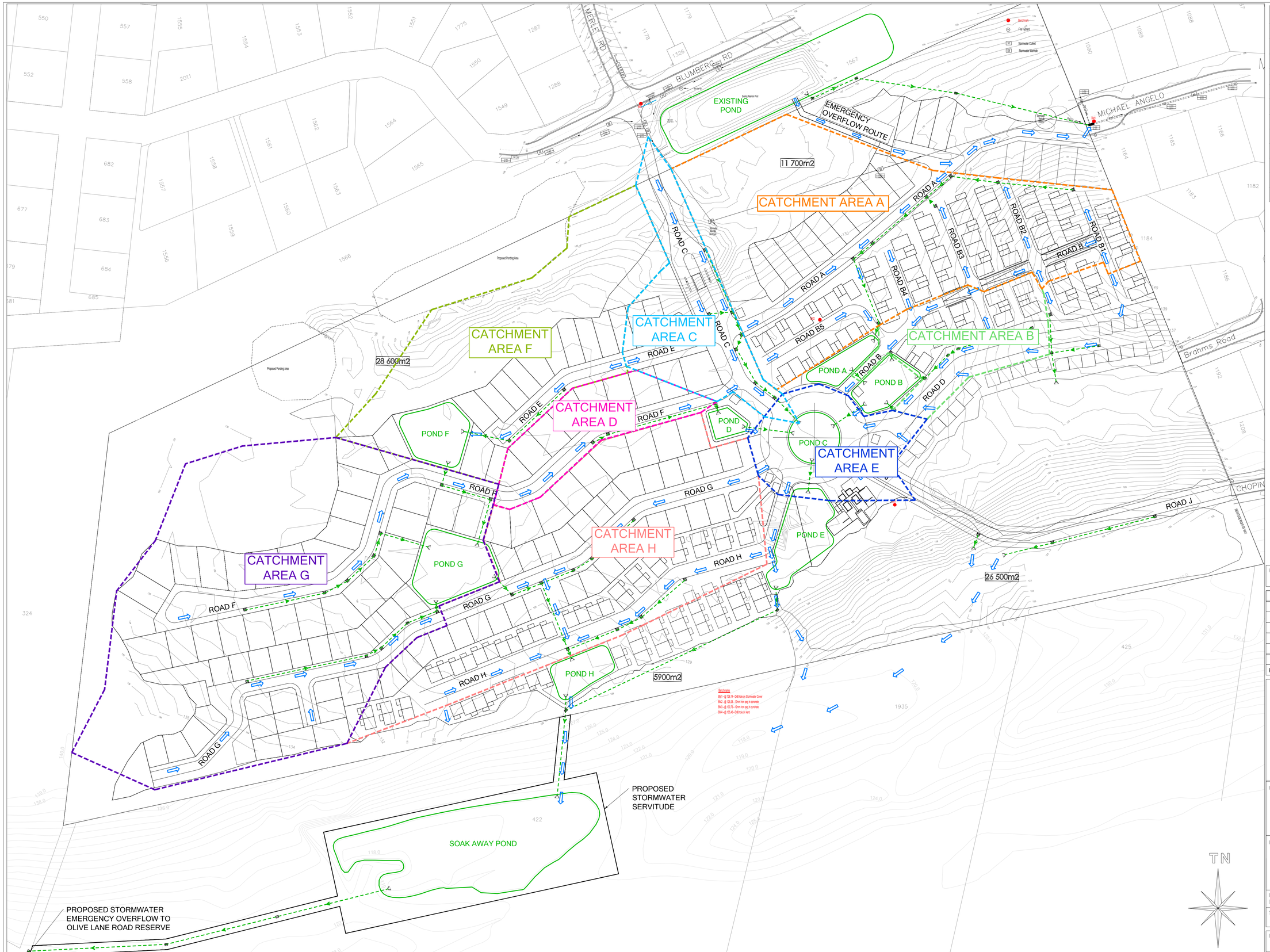
In strict adherence to the detailed design and execution of earthworks, roads and wet services systems as indicated in this report, we are convinced that the proposed residential development on Erf 325, Theescombe, Port Elizabeth can be serviced effectively from a civil engineering perspective.

11. APPENDIX

LAYOUT DRAWINGS

- Preliminary Roads and Stormwater Layout - AS/2024-10/RS/01
- Preliminary Water Reticulation Layout - AS/2024-10/W/01
- Preliminary Foulsewer Reticulation Layout - AS/2024-10/FS/01
- Site Development Plan by RK Architects - 1251/003

PRELIMINARY ROADS AND STORMWATER LAYOUT - AS/2024-10/RS/01



LEGEND

	PROPOSED STORMWATER
	EXISTING STORMWATER
	"V" CHANNEL
	160mm SUBSOIL
1:40	CROSS-FALL
	250x300 OPENING
	OVERLAND FLOW
R 7.50	7,5m RADIUS
202,32	FINAL FORMATION LEVEL
	BARRIER KERB
	ROLL OVER KERB
	160mm SLEEVE uPVC class6

ISSUED FOR:
FOR INFORMATION ONLY

R	DATE	REVISION

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PROJECT:
C G S PROPERTY TRUST
PROPOSED NEW RESIDENTIAL DEVELOPMENT ON ERF 325
THEESCOMBE, PORT ELIZABETH

DRAWING:
PRELIMINARY
ROADS AND STORMWATER LAYOUT

DESIGNED:	DRAWN:	CHECKED:
RvS	RvS	
SCALE:	DATE:	SIGNED:
1:1000 on A1	MAY 2024	

DRAWING No.: AS/2024-10/RS/01
REVISION: .

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PRELIMINARY WATER RETICULATION LAYOUT - AS/2024-10/W/01

EXISTINI 225Ø NMBM WATER MAIN

FEED FROM LOVEMORE HEIGHTS RESERVOIR
CAPACITY 10.97ML
TWL = 234mMSL

CONNECT NEW
160 X 110 T

CONNECT NEW 160Ø
TO EXISTING 150Ø
NMBM WATER MAIN

CONNECT TO
EXISTING 150Ø
NMBM WATER MAIN

St.Dominics
Priory School

Mount Pleasant
Primary
School

GENADENDAL ROAD
RISA ROAD
GLADYS ROAD
MARCIA WAY
HARRY ROAD
MERLE ROAD
CYRIL ROAD
OLGA AVENUE
BLUMBERG RD
JAN WOUW RD
MICHAEL ANGELO
GLENDORE ROAD
ROSSINI ROAD
CHOPIN ROAD
Brahms Road
PUBLIC PLACE

EXIST. 150ø
EXIST. 100ø
100ø
150ø
160Ø

26 600m2
9700m2
2X 500m2

LEGEND

- POSSIBLE BULK WATER UPGRADES
- EXISTING NMBM WATER MAIN
- PROPOSED WATER
- DOUBLE CONNECTION 34Ø HDPE
- SINGLE CONNECTION 25Ø HDPE
- FH — FIRE HYDRANT: PILLAR TYPE

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PROJECT:
C G S PROPERTY TRUST
PROPOSED NEW RESIDENTIAL
DEVELOPMENT ON ERF 325
THEESCOMBE, PORT ELIZABETH

DRAWING:
PRELIMINARY
WATER
RETICULATION LAYOUT

DESIGNED:	DRAWN:	CHECKED:
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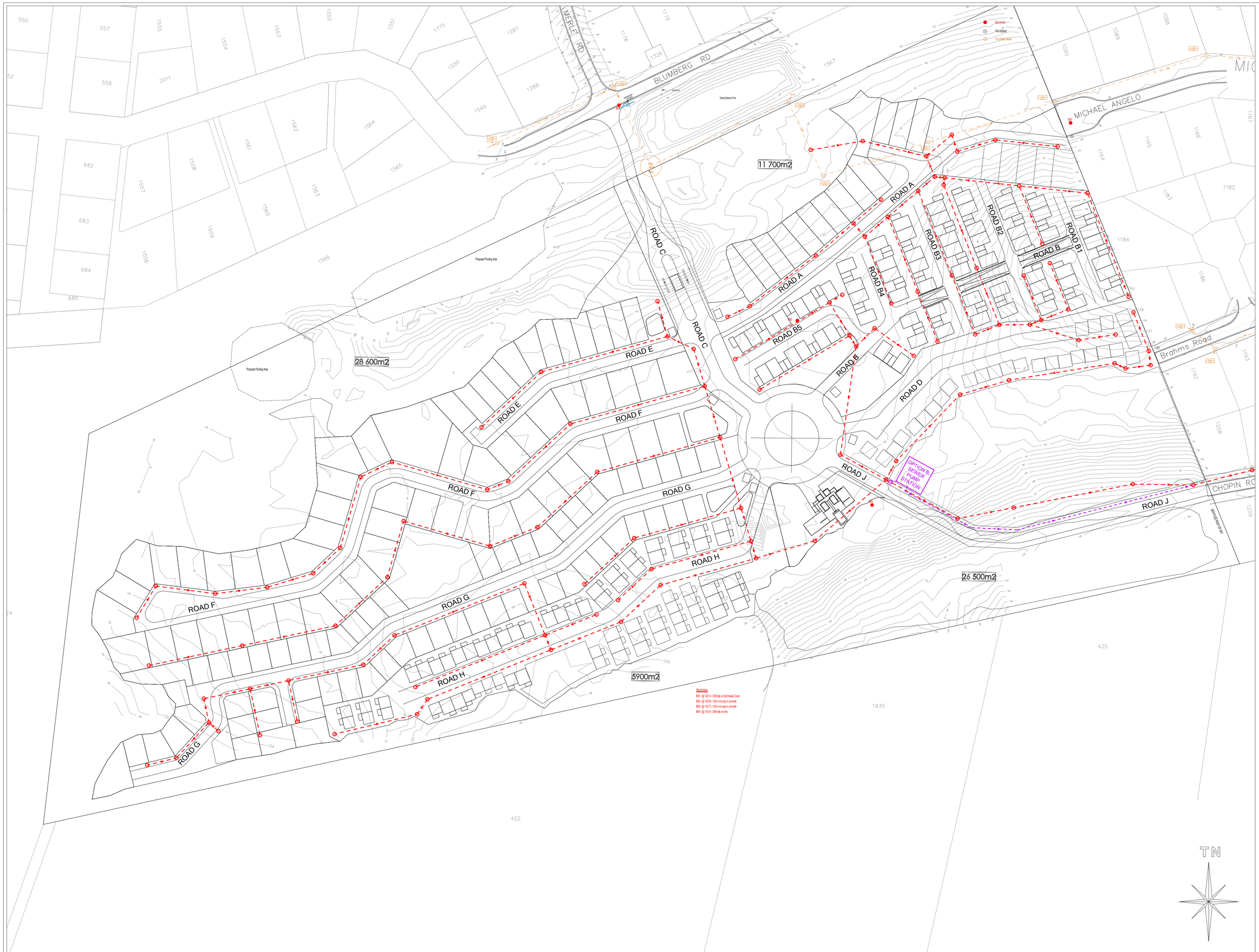
SCALE:	DATE:	SIGNED:
1:2000 on A1	MAY 2024	

DRAWING No.: AS/2024-10/W/01
REVISION: .

PRELIMINARY FOULSEWER RETICULATION LAYOUT - AS/2024-10/FS/01



LEGEND	
	EXISTING SEWER
	PROPOSED SEWER
	SEWER MANHOLE
	SEWER OPTION B RISING MAIN

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PROJECT:
C G S PROPERTY TRUST
PROPOSED NEW RESIDENTIAL DEVELOPMENT ON ERF 325
THEESCOMBE, PORT ELIZABETH

DRAWING:
PRELIMINARY
FOULSEWER RETICULATION LAYOUT

DESIGNED:	DRAWN:	CHECKED:
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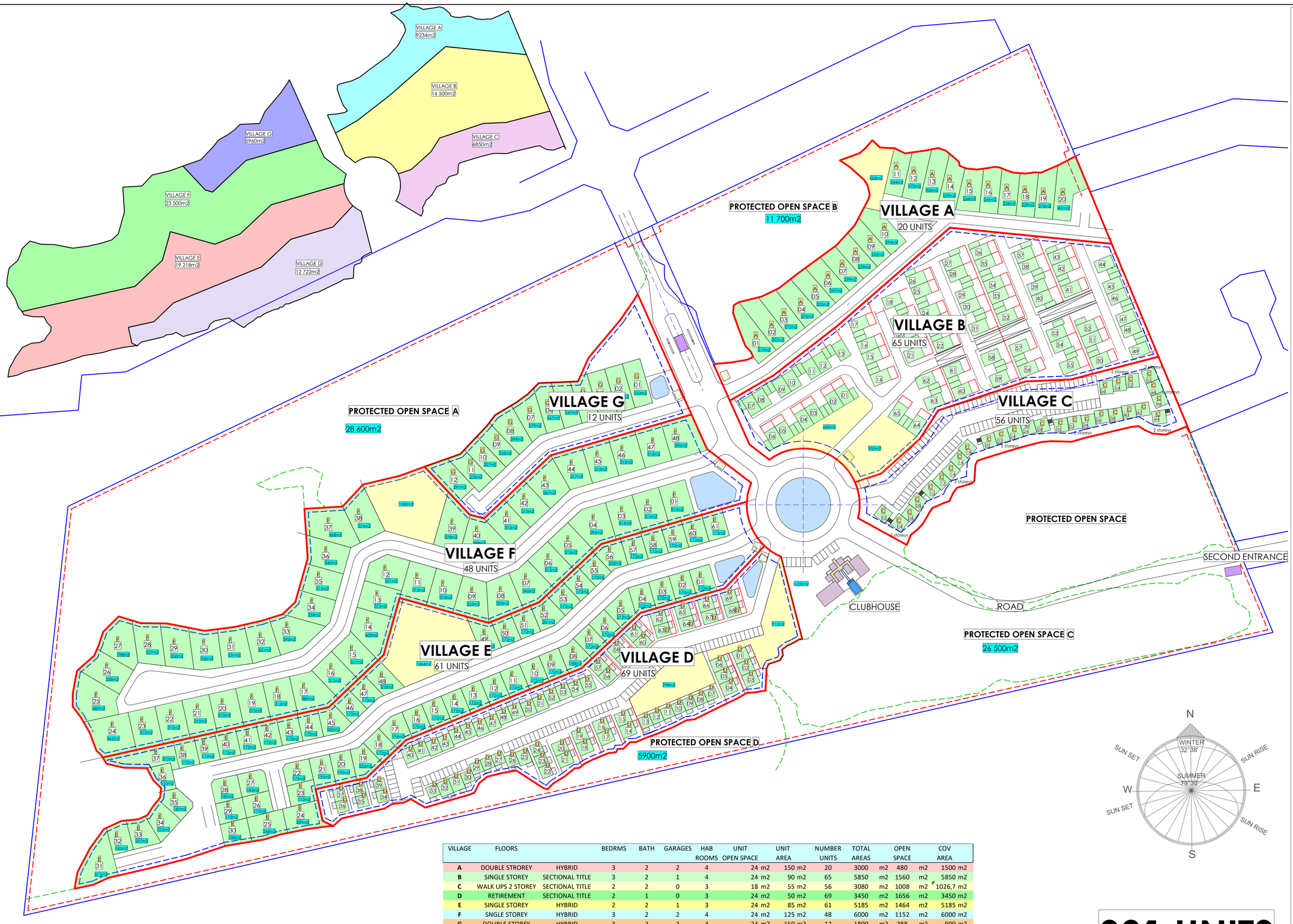
AS/2024-10/FS/01	.

SITE DEVELOPMENT PLAN BY RK ARCHITECTS - 1251/003



notes

ALL WORK TO COMPLY WITH THE NATIONAL BUILDING REGULATIONS ACT 103 OF 1977 & AMENDMENTS THERETO AS WELL AS THE BY-LAWS OF THE RELEVANT LOCAL AUTHORITY AND THE LAWS SET BY THE N.H.B.R.C.

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH STRUCTURAL, CIVIL & MECHANICAL ENGINEERS OR PLUMBING CONSULTANTS DRAWINGS WHERE SPECIFIED.

ALL DIMENSIONS SHOWN ARE STRUCTURAL SIZES. ALLOW FOR PLASTER AND WALL FINISH TO OBTAIN FINAL ROOM SIZE.

CONTRACTOR TO KEEP A FULL SET OF DRAWINGS ON SITE AND IS RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE BUILDING ON THE SITE WITH REFERENCE TO BOUNDARY BUILDING LINES, ALL CONTOURS AND BOUNDARY PEGS, AS WELL AS BUILDING SETTING OUT TO BE CONFIRMED BY A REGISTERED LAND SURVEYOR.

ALL NEW HEALTH AND SAFETY REGULATIONS TO BE STRICTLY COMPLIED WITH.

THIS DRAWING COULD BE OUT OF SCALE. PLEASE CONFIRM ALL DIMENSION WITH ARCHITECT BEFORE COMMENCING.

revisions

NO.	DATE	DISCRIPTION

SITE AREA	31076 m2
NUMBER OF UNITS	331
UNIT AREA	28365 m2
GATEHOUSE	60 m2
COMMUNITY CENTRE	250 m2
TOTAL	28675 m2
COVERAGE AREA	23911,67 m2
COVERAGE	77% m2
PARKING NEEDED	496,5 bays
PARKING PROVIDED	243 bays
OPEN SPACE REQUIRED	3888 m2
OPEN SPACE NEEDED	4800 m2

VILLAGE	FLOORS		BEDRMS	BATH	GARAGES	HAB ROOMS	UNIT OPEN SPACE	UNIT AREA	NUMBER UNITS	TOTAL AREAS	OPEN SPACE	COV AREA
A	DOUBLE STROREY	HYBRID	3	2	2	4	24 m2	150 m2	20	3000 m2	480 m2	1500 m2
B	SINGLE STOREY	SECTIONAL TITLE	3	2	1	4	24 m2	90 m2	65	5850 m2	1560 m2	5850 m2
C	WALK UPS 2 STOREY	SECTIONAL TITLE	2	2	0	3	18 m2	55 m2	56	3080 m2	1008 m2	1026,7 m2
D	RETIREMENT	SECTIONAL TITLE	2	1	0	3	24 m2	50 m2	69	3450 m2	1656 m2	3450 m2
E	SINGLE STOREY	HYBRID	2	2	1	3	24 m2	85 m2	61	5185 m2	1464 m2	5185 m2
F	SNGLE STOREY	HYBRID	3	2	2	4	24 m2	125 m2	48	6000 m2	1152 m2	6000 m2
G	DOUBLE STOREY	HYBRID	3	2	2	4	24 m2	150 m2	12	1800 m2	288 m2	900 m2
								TOTAL m2	331	28365 m2	7608 m2	23912 m2

331 UNITS

SITE DEVELOPMENT PLAN

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CGS PROPERTY TRUST

PROPOSED SECTIONAL TITLE SCHEME ON ERF 325 THEESCOMBE

SCALE	DATE	DRWN
1:1000	AUG 24	R

PROJECT NO.	DRAWING NO.	REV.
1023/1251	1251/003	00

inspected and approved by:

senior architect r.s. koen (4853)
this drawing is not valid without an official signature

inspected and approved by:

client or principal agent