Application Number: LU/4731
Our File Reference Number: Farm 1075/9, Paarl Division
Your Reference Number:
Enquiries: Lenacia Kamineth / Bongiwe Zondo
Contact No: 021 – 808 8697
Email address: Landuse.Appeals@stellenbosch.gov.za/
Bongiwe.zondo@stellenbosch.gov.za

PER E-MAIL: pj@pjleroux.co.za

Dear Sir

APPLICATION FOR SUBDIVISION: FARM 1075/9 & FARM 1070, PAARL DIVISION

1. This Municipality's decision letter dated 1 December 2020, refers. This letter is the final letter after the appeal process.

2. The Appeal Authority resolved on 7 February 2022 that the appeal submitted against the approval of the subject application by the Municipal Planning Tribunal on 27 November 2020, BE UPHELD and that the subject decision BE VARIED in terms of section 81(7)(b) of the Stellenbosch Municipal Land Use Planning By-law, 2015.

3. The application for:

   3.1 **Consolidation** of Portion 9 of Farm 1075 and Farm 1070 in terms of Section 15(2)(e) of the said bylaw, to create one large unit of 10.92 ha in extent.

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3.2 **Rezoning** of consolidated land unit from Agricultural Zone 1 to Subdivisional Area in terms of Section 15(2)(a) of the said bylaw in order to facilitate the proposed following land uses:

a) 115 Residential Zone II (Group housing) (5.47 ha)
b) 1 Residential Zone I (Dwelling House) (0.98 ha)
c) 1 Open Space Zone II (Private Open Space) (4.24 ha)
d) 1 Authority Zone (Electrical Substation) (0.02 ha)
e) 1 Transport Zone II (Public Road) (0.21 ha)

3.3 **Consent Use** in terms of Section 15(2)(o) of the said bylaw, to use the group housing development as a retirement village.

3.4 **Subdivision** of the sub-divisional zoned consolidated properties of Portion 9 of Farm 1075 and Farm 1070 in terms of Section 15(2)(d) of the said bylaw, into 119 units in order to accommodate a group housing development as shown on Plan Number PA1075-9/04/12, drawn by EB (Albert Geiger Professional Land Surveyor), dated 27 October 2020

BE APPROVED

4. The approval above **BE SUBJECT** to the following conditions in terms of Section 66 of the said Bylaw:

a) The approval applies only to the proposed development under consideration as indicated on Plan Number PA1075-9/04/12, drawn by EB (Albert Geiger Professional Land Surveyor), dated 27 October 2020 and shall not be construed as authority to depart from any other legal prescriptions or requirements from Council.

b) The approval granted shall not exempt the applicant from complying with any other legal prescriptions or requirements that might have a bearing on the proposed use.

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c) A Home Owners Association be established and approved in terms of Section 29(1) of the said bylaw and that the constitution of the owners association be drafted and submitted for approval to the Directorate Planning and Economic Services for approval in terms of Section 29(3) of the said Bylaw.

d) The common property/s to be formally transferred in favour of the Home Owners' Association.

e) A service agreement be entered into with the municipality prior to the construction of any services or infrastructure in terms of Section 66(3) and Section 82(4) of the said bylaw.

f) Development contributions are payable before the transfer of the first property and which amount will be calculated in accordance with the council tariffs in force at the time of payment.

g) The extent of the proposed land uses be limited to the following:

- 115 Residential Zone II (Group housing) (5.47 ha)
- 1 Residential Zone I (Dwelling House) (0.98 ha)
- 1 Open Space Zone II (Private Open Space) (4.24 ha)
- 1 Authority Zone (Electrical Substation) (0.02 ha)
- 1 Transport Zone II (Public Road) (0.21 ha)

h) A formal application be submitted for the erection of advertising signs and that all signage be in line with the signage policy of the municipality and be approved by the Municipality prior to any signage being erected.

i) Building plans be submitted for approval by the Municipality for the entrance gates and boundary walls and that these structures are to be completed prior to the first property being transferred, or alternatively that the developer put in place the necessary financial securities for the completion of such structures to the satisfaction of the Municipality prior to the first property being transferred.

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j) A detailed site development plan which includes a landscaping plan and architectural guidelines be submitted with the building plans for approval and that the Open Space areas within the development be landscaped in accordance with the landscaping plan prior to the first residential property being transferred.

k) The external sidewalk be landscaped and maintained by the developer during the development phase of the development and that non-motorised forms of transport be accommodated on the sidewalk in terms of the landscaping plan for this area.

l) The approval on the name of the development and the naming and number of streets as per proposed subdivision plan, with reference to Annexure F, be obtained from the Executive Mayor of Stellenbosch as the duly authorised decision maker on such matters.

m) Phasing plan be submitted before building plan approval.

n) The conditions imposed by the Director: Engineering Services as contained in their memo dated 30 September 2019, attached as Annexure P, be complied with.

o) The conditions imposed by the Manager: Electrical Services as contained in their memo dated 30 September 2019, attached as Annexure O, be complied with.

p) Building plans be approved when all conditions of subdivision have been complied with.

q) The approval to lapse if not acted upon within a period of as prescribed in terms of the said By-Law.

r) Engineering drawings which indicates the structural road design be submitted to the satisfaction of the Engineering Services Department.

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s) A design and management plan for the watercourse that traverses the property be developed and submitted to the satisfaction of the Engineering Services Directorate.

t) Provision be made in the Constitution of the Owners Association to take on the responsibility for the on-going implementation and maintenance of the Management Plan for the water course that traverses the property.

u) The rezoned land may only be used for the purposes of a Housing Development Scheme for Retired Persons as contemplated in Act 65 of 1988, as amended.

5. The above decision was made for the following reason(s) in terms of section 81(7)(c) of the said By-law:

5.1 The proposed development will comply with the vision of the Stellenbosch Municipal Spatial Development Framework.

5.2 The scale and nature of the proposed development will not compromise the existing character of the surrounding landscape considering that it will in fact offer residential opportunities in the area.

5.3 The Middelplaas Retirement Village and Development will be developed in accordance with Urban Design Principles Framework (See Annexure T) which will ensure that the development responds positively to the spatial system within the site.

5.4 Due to these principles, the proposed development will not have any negative impact on the built form of the surrounding local area as well as the heritage resources on the site.

5.5 The development proposal will have limited impact on the agricultural potential of the subject land unit as only 6ha of viable agricultural land will be lost.

5.6 There will be no negative impact on heritage or the bio-physical environment.

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5.7 There will be limited negative impact on existing infrastructure and additional traffic can be accommodated on the local road network.

5.8 Safe and easy pedestrian movement is addressed in the updated TIA.

6. Accordingly, the decision detailed in this letter may be implemented, subject to compliance with the conditions of approval.

Yours faithfully

FOR DIRECTOR PLANNING AND ECONOMIC DEVELOPMENT

DATE: 14/02/2022

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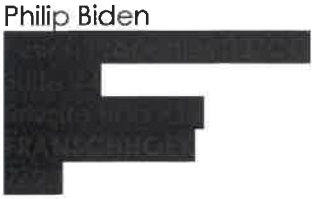
COPIES:

PJ Le Roux Town Planners

Philip Biden



R Gretschel

Johan Janse Van Vuuren

Principal: Wes-Eind Primary

Paula Disberry

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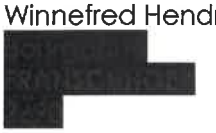
Nicole & Jonathan Muller

Winnefred Hendricks

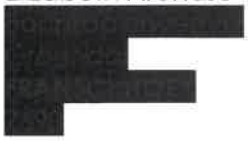


A Tyhali

Geraldine Jefthas

Linda Jacobs

Elizabeth Arendse



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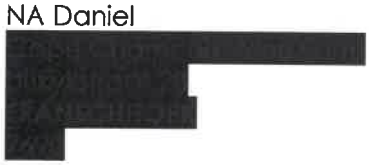
M Swartz

N Dlova

C Bailey

J Booysen

NA Daniel



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Victoria Ramangaane

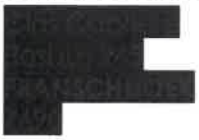
N Namba

C Ndlubeni

AA De Bruyn

I Leibrandt

Jaftha Johannes



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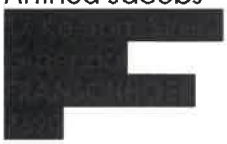
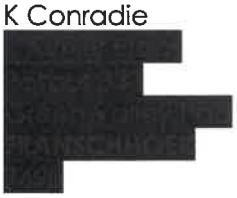
Anthea Jacobs



Mr & Mrs Boonzaaier

Sylvain

K Conradie



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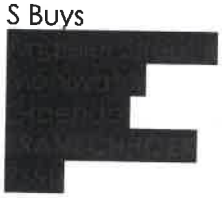
MW Mpupha

R Wolstenholme

S Buys



Grace

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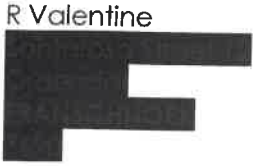
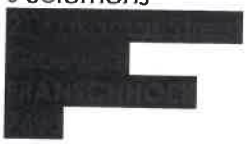
R Valentine



Lee Anne Adonis

Y Daniels

J Solomons



L Jacobs

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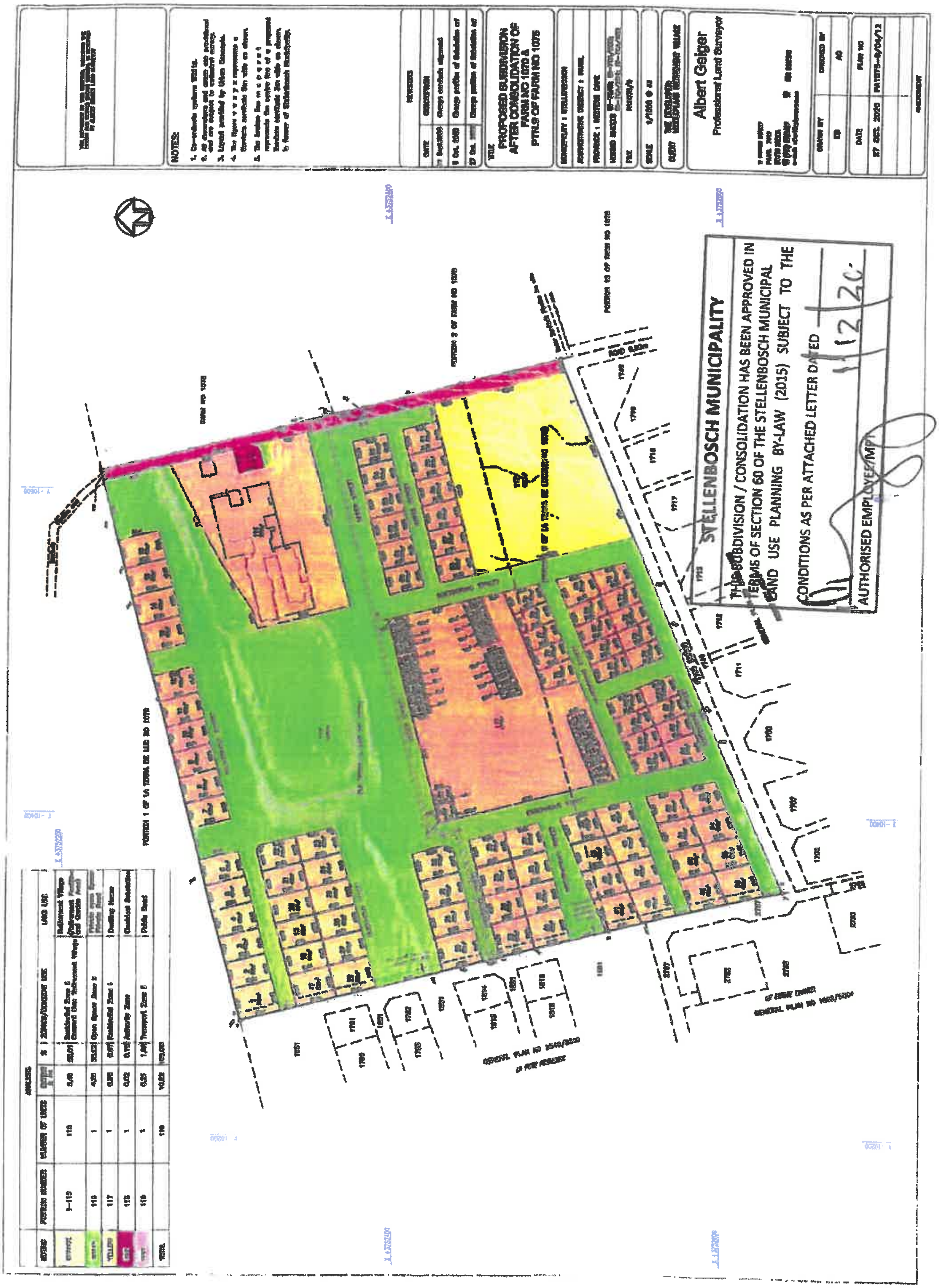
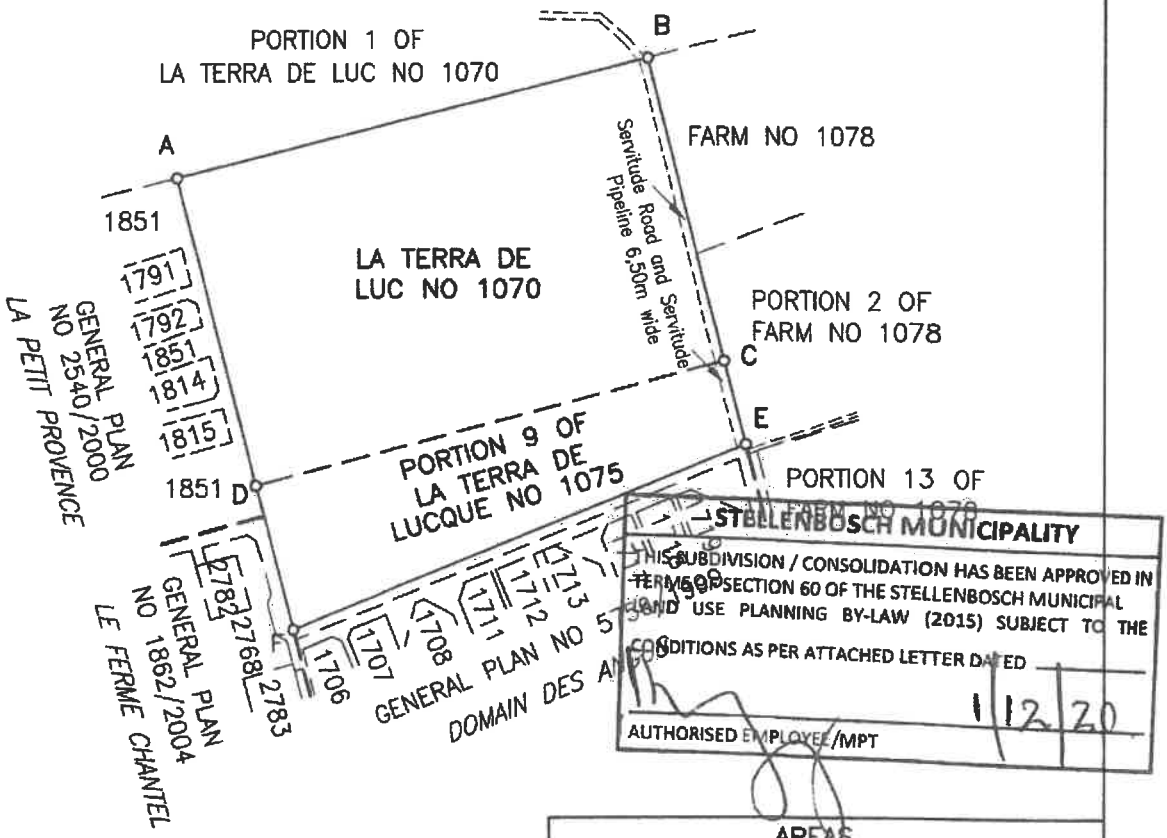

PROPOSED SUBDIVISION AFTER CONSOLIDATION OF FARM NO 1070 & PTN'S OF FARM NO 1075
Albert Geiger
Professional Land Surveyor
STELLENBOSCH MUNICIPALITY
THIS SUBDIVISION / CONSOLIDATION HAS BEEN APPROVED IN TERMS OF SECTION 60 OF THE STELLENBOSCH MUNICIPAL LAND USE PLANNING BY-LAW (2015) SUBJECT TO THE CONDITIONS AS PER ATTACHED LETTER DATED
AUTHORISED EMPLOYEE/MPT

ANNEXURE F

23 MONTE ROSA BUILDING
276 MAIN ROAD
HOOFSTRAAT 276
PAARL 7646
☎ (021) 8721427 ☎ 086 6846041
e-mail : info@geigergeo.co.za

Albert Geiger

Professional Land Surveyor



STELLENBOSCH MUNICIPALITY

THIS SUBDIVISION / CONSOLIDATION HAS BEEN APPROVED IN TERMS OF SECTION 60 OF THE STELLENBOSCH MUNICIPAL LAND USE PLANNING BY-LAW (2015) SUBJECT TO THE CONDITIONS AS PER ATTACHED LETTER DATED

1/12/20

AUTHORISED EMPLOYEE/MPT

Notes:

1. The figure A B C D represents the Remainder of the farm La Terra De Luc No 1070
2. The figure D C E F represents Portion 9 of the farm La Terra De Lucque No 1075
3. Consolidation to be done by survey.

AREAS

FARM NAME	Title Deed area	Area derived from adjoining cadastral data
1070/Rem.	9,1306ha	7,9548ha
1075/9	3,1549ha	2,9676ha

REVISIONS WYSIGINGS	DATE/DATUM	DESCRIPTION/BESKRYWING

NORTH NOORD

SUBJECT ONDERWERP

PROPOSED CONSOLIDATION OF FARM NO 1070 AND PORTION 9 OF FARM NO 1075

DATE DATUM: 20 MAY 2016

SCALE SKAAL: 1/5000

DRAWN GETEKEN: EB

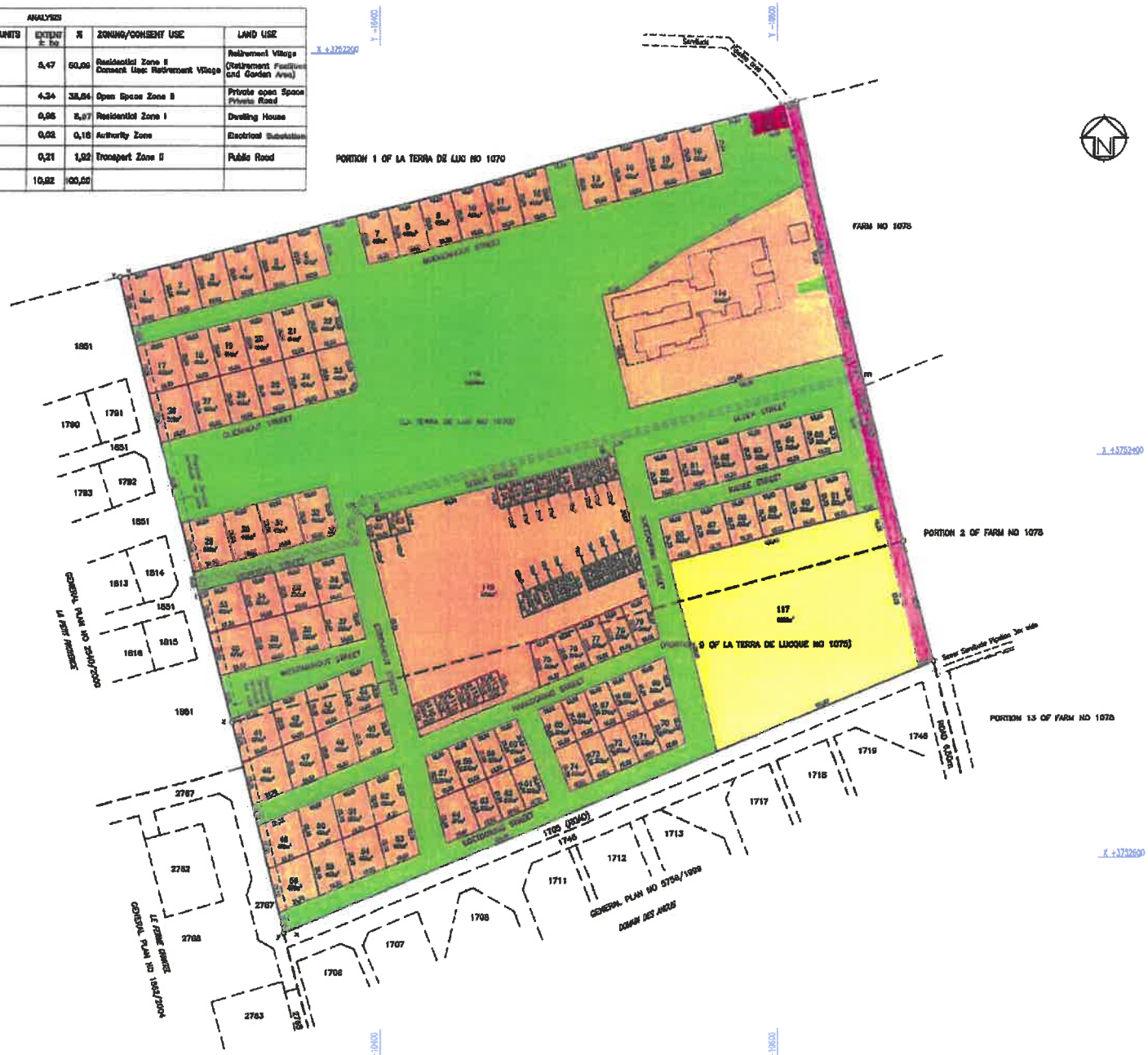
FILE NO LÊER NR: PA1075/9

AREA GEBIED: PAARL FARMS

DESCRIPTION BESKRYWING: 1070/1075-9

DRAWING NO TEKENING NR: PA1075-9/04/03-A

	ANALYSIS					
NOTING	PORTION NUMBER	NUMBER OF UNITS	EXTENT in ha	%	ZONING/CONSENT USE	LAND USE
ORANGE	1—115	115	5,47	50,09	Residential Zone II Consent Use: Retirement Village	Retirement Village (Retirement Facilities and Garden Area)
GREEN	116	1	4,34	39,84	Open Space Zone II	Private open Space Private Road
YELLOW	117	1	0,95	8,67	Residential Zone I	Dwelling House
RED	118	1	0,02	0,16	Authority Zone	Electrical Substation
PINK	119	1	0,21	1,92	Transport Zone II	Public Road
TOTAL		119	10,92	100,00		



THE COPYRIGHT IN THIS DRAWING REMAINS THE PROPERTY OF ALBERT GEIGER LAND SURVEYOR

NOTES:

1. Co-ordinate system: WGS19.
2. All dimensions and areas are provisional and are subject to cadastral survey.
3. Layout provided by Urban Concepts.
4. The figure v w x y x represents a Services servitude 4m wide as shown.
5. The broken line m n p q r s t represents the centre line of a proposed Services servitude 3m wide as shown, in favour of Stellenbosch Municipality.

REVISIONS	
DATE	DESCRIPTION
22 July 2020	Add street names
3 Sept. 2020	Add servitude and 2 erven and change erven table
22 Sept.2020	Change servitude alignment

TITLE

PROPOSED SUBDIVISION AFTER CONSOLIDATION OF FARM NO 1070 & PTN.9 OF FARM NO 1075

MUNICIPALITY :	STELLENBOSCH
ADMINISTRATIVE DISTRICT :	PAARL
PROVINCE :	WESTERN CAPE
NOTING SHEETS	SI-7CAS; SI-7CA/W53; SI-7CA/X51; SI-7CA/X52
FILE	PA1075/9
SCALE	1/1000 @ A1
CLIENT	THE DEVELOPER: MIDDLEPLAAS RETIREMENT VILLAGE

Albert Geiger
Professional Land Surveyor
2 HARPER STREET
PAARL 7646
SOUTH AFRICA

DRAWN BY	CHECKED BY
EB	AG
DATE	PLAN NO
22 SEPT. 2020	PA1075-9/04/09

AMENDMENT

ANNEXURE P: COMMENT FROM THE DIRECTOR: ENGINEERING SERVICES

13

MEMO

DIRECTORATE: INFRASTRUCTURE SERVICES
DIREKTORAAT: INFRASTRUKTUURDIENSTE

TO	:	**The Director: Planning and Development**
FOR ATTENTION	:	**Hedre Dednam**
FROM	:	**Manager: Development (Infrastructure Services)**
AUTHOR	:	**Tyrone King**
DATE	:	**6 December 2018**
RE.	:	**Farm 1075/9 and RE Farm 1070: Consolidation, rezoning from Agricultural Zone 1 to sub-divisional area, subdivision into 117 units in order to accommodate a group housing development (retirement village)**
YOUR REF	:	**LU/4731**
OUR REF	:	**1311**

PLANNING AND ENVIRONMENT
30 SEP 2019
MUNICIPALITY/MUNISIPALITEIT
STELLENBOSCH
BEPLANNING EN OMGEWING

FILE NR:
SCAN NR: F 1075/9 P
refer: 663271

Details, specifications and information reflected in the following documents refer:

- The abovementioned application dated 23 June 2016 and motivation report by PJ le Roux Town and Regional Planners dated June 2016;
- Proposed Subdivision Plan No PA1075-9/04/04 dated 20 June 2016 by Albert Geiger Professional Land Surveyor;
- Transport Impact Assessment (TIA) by ITS, dated August 2018;
- Statement regarding the updated cross section and road reserve for Dirkie Uys Street by Civil Design Equilibrium dated August 2018;
- GLS water and sewer capacity analysis report, dated 22 November 2018.
  - Annexure A: Water
  - Annexure B: Sewer
- Report on Civil Engineering Services, by NWE Consulting Engineers, dated 15 November 2018;

PROPOSED REZONING AND SUBDIVISION OF FARM 1075/9 and RE FARM 1070 (MIDDELPLAAS)

Comments from the Directorate: Infrastructure Services i.e. Roads & Stormwater, Water Services, Traffic Engineering and Development Services will be reflected in this memo and is to be regarded as development conditions to be reflected in the land-use approval.

The above-mentioned land-use application is supported, subject to the following conditions:

This recommendation for approval is based on the following parameters as per the Subdivision Plan:

- Group Residential units > 250m² erven: : 115 No
- Single Residential units > 1000 m² erven : 1 No

Any development beyond these parameters would require a further approval from this Directorate.

General

1. that the following words and expressions referred to in the development conditions, shall have the meanings hereby assigned to except where the context otherwise requires:

   (a) *"Municipality"* means the STELLENBOSCH MUNICIPALITY, a Local Authority, duly established in terms of section 9 of the Local Government Municipal Structures act, Act 117 of 1998 and Provincial Notice (489/200), establishment of the Stellenbosch Municipality (WC024) promulgated in Provincial Gazette no. 5590 of 22 September 2000, as amended by Provincial Notice 675/2000 promulgated in Provincial Gazette;

   (b) *"Developer"* means the developer and or applicant who applies for certain development rights by means of the above-mentioned land-use application and or his successor-in-title who wish to obtain development rights at any stage of the proposed development;

   (c) *"Engineer"* means an engineer employed by the *"Municipality"* or any person appointed by the *"Municipality"* from time to time, representing the Directorate: Infrastructure Services, to perform the duties envisaged in terms of this land-use approval;

2. that all previous relevant conditions of approval to this development application remain valid and be complied with in full unless specifically replaced or removed by the *"Engineer"*;

3. **that no taking up of proposed rights including engineering drawing approval / Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law / building plan approval / occupation certificates (whichever comes first) will be allowed**

until sufficient capacity within the following infrastructure is confirmed by the "Engineer":

a. **Water Network:** (See Annexure A): The items as indicated in the GLS capacity analysis of the bulk water and sewer services dated 22 November 2018:

i. The development will connect to the existing municipal 355mm dia water line to the north of the development

The following network upgrades are required:

ii.Item 1: New PRV	R 247 000*
iii.SFW 1.9: 219 m x 200 mm dia new supply pipe	R 379 000*
iv.SFW 1.11: 300 m x 200 mm dia new supply pipe	R 510 000*
Total	R 1 136 000

(* GLS report estimate including P & G, Contingencies and Fees, but excluding VAT - Year 2018/19 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

These items are not currently on the Municipality's approved budget. The "Developer" may however enter into an engineering services agreement with the "Municipality" to install or upgrade these services at an agreed cost, to be off-set against Development Charges payable in respect of bulk civil engineering services.

b. **Wemmershoek WWTW (Waste Water Treatment Works):** The proposed development falls within the catchment area of the existing Wemmershoek WWTW (Waste Water Treatment Works). This facility was recently upgraded and has sufficient spare capacity to accommodate the proposed development.

c. **Sewer Network:** The items as indicated in the GLS capacity analysis of the bulk water and sewer services dated 22 Nov 2018 (Annexure B):

i. There is sufficient capacity in the bulk sewer reticulation system to accommodate the proposed development.

ii. The development will connect to the existing 150mm diameter private sewer of the La Petite Provence development to the west. This status of the private sewer must be changed to a municipal line and the municipality must take over the operation and maintenance of this line. A servitude in favour of the Municipality must also be registered. The Municipality must engage with the owner of this line regarding the change of ownership of the line and registration of the servitude. Representatives from La Petite Provence have already indicated at a meeting held on 13 November 2018, that they have no objection to such an arrangement. Should such formal arrangement not yet be in place at the time when Middelplaas requires the connection, they must at least obtain written permission from La Petite Provence for the connection.

iii. Future flows from potential development on Farms 1078/0, 1078/1 and 1078/2 east of Middelplaas must connect to the internal network of Middelplaas. The main line to which the connection is to be made, must therefore be a public sewer line and a pipeline servitude should be registered in favour of the Municipality. The cost of this line may therefore be offset against development charges.

d. **Road Network:**

Dirkie Uys Street upgrade

Dirkie Uys Street will be the access road to the development and must be upgraded as per the recommendation of the TIA and "Statement regarding the updated cross section and road reserve for Dirkie Uys Street". The upgrade is the Developer's responsibility, but the costs of the upgrade can be offset from development charges. The development of Dirkie Uys Street will occur in 2 phases namely the:

i. Interim phase, where an interim cross-section will be implemented on the current available road reserve. This cross-section will be implemented as part of the Development's project and will be from the entrance at Domain Des Agnes to approximately 60m north of the entrance to the Development:

1. Dirkie Uys Street road surface width to vary between 5.7m and 6.0m
2. Sidewalk only to the west of Dirkie Uys Street, near Middelplaas
3. Sidewalk/Cycle lanes on both sides of the road, south of Middelplaas
4. The Middelplaas property must be subdivided along Dirkie Uys Street frontage to enable an eight (8) meter wide road reserve and access.

ii. The ultimate cross-section up to 13m road reserve standard will be implemented by the Municipality from the Domain Des Agnes access to Groendal, when the municipality will require this link to be constructed:
   1. Widen Dirkie Uys Street to from 6m to 6.8m in some sections.
   2. Widen Dirkie Uys road reserve from 8 to 13 meters opposite Middelplaas development, by expropriating Erf 1078 and Erf 1078/2.

iii. The above is based on conceptual designs, which was discussed and agreed with the Municipality. However, during detail design stage, the final layout and route of Dirkie Uys Street must be determined in consultation with the Municipality, based on the information available at that stage. The detail design drawings must be approved by the Municipality before implementation.

Access gate

Access control is not indicated on the attached SDP. However, if the access is going to be gated, then the following principles should apply. These details must be indicated on all engineering drawing and building plan submission. Any amendments to cadastral erven to accommodate access control gates will be for the cost of the "Developer" as these configurations were not available at rezoning and subdivision stage:

iv. Pedestrian access and vehicular movements should be separated. Hence a separate pedestrian access gate should be provided.

v. The *minimum* recommended queue / storage length for residents should be three cars (or 18-meters). This is based on the peak hour / peak direction traffic volumes expected to move through this access.

vi. A separate entrance lane should be provided for visitors. This entrance could have a relatively short (approx. 12-meters) queue / stacking length.

vii. At least one entrance / exit lane should have a min. horizontal and vertical clearance of 4.2 meters for emergency vehicles.

Public transport

viii. As part of the Middelplaas development, a facility must be provided at the development entrance for public transport vehicles to turn around. In the longer term, when the Groendal Link Road is constructed by the Municipality, A public transport embayment must be considered near the development entrance.

Refuse collection

ix. In the interim, before the construction of the Groendal Link Road, a U turn facility should be constructed for refuse trucks, approximately 50 meters north of the development access. In the long term, after the construction of the Groendal Link Road, a permanent embayment must be provided for refuse trucks. This will be for the Developer's cost.

e. **Devon Valley landfill site:**

i. Due to the limited airspace capacity available, waste arriving at the site needs to be dramatically reduced in order to extend the lifespan of the landfill site. All new developments must have a mandatory separation-at-source programme to encourage recycling, possible organic waste separation to tie in with the municipality's future diversion programme, and adequate storage facilities to enable waste removal.

For large spoil volumes from excavations, ie basements, to be generated during the construction of this development, the Developer will have to indicate and provide evidence of safe re-use or proper disposal at an alternative, licensed facility. This evidence must be presented to the Manager: Solid Waste (Mr Saliem Haider; 021 808 8241; saliem.haider@stellenbosch.gov.za), before building plan approval and before implementation of the development. Clean rubble can be utilized by the Municipality and will be accepted free of charge, providing it meets the required specification.

f. **Bulk infrastructure projects not on municipal budget:**

i. Bulk projects not on municipal budget: Any of the projects listed above, that are not currently on the Municipality's approved budget will be the Developer's responsibility to implement. Should the project qualify to be offset against Development Charges, and these are sufficient, the

"Developer" may enter into an Engineering Services Agreement with the "Municipality" to do these upgrades in-lieu of Development Charges. Should the Development Charges not be sufficient, the Developer will have to fund the shortfall at their own cost. If this is also not possible, then the implementation of the development must be re-planned around the availability of the bulk services in question. Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law / building plan approval / occupation certificates will not be supported by the Directorate: Infrastructure Services for this development if all bulk services are not available.

Should the "Developer" wish to discuss the possibility of proceeding with construction work parallel with the provision of the bulk services listed above, he must present a motivation and an implementation plan to the "Engineer" for his consideration and approval. The implementation plan should include items like programmes for the construction of the internal services and the building construction.

4. that the "*Developer*" will enter into an Engineering Services Agreement with the "*Municipality*" in respect of the implementation of the infrastructure to be implemented in lieu of DCs as sated in Condition 3 above;

5. **That should the approval for proceeding with construction work parallel with the provision of the bulk services be agreed to, the onus is on the "Developer" to keep up to date with the status in respect of capacity at infrastructure listed above in order for the "Developer" to programme the construction of his/her development and make necessary adjustments if and when required;**

6. that should the "*Developer*" not take up his rights for whatever reason within two years from the date of this memo, a revised Engineering report addressing services capacities and reflecting infrastructure amendments during the two year period, must be submitted to the Directorate: Infrastructure Services by the "*Developer*" for further comment and conditions. Should this revised Engineering report confirm that available services capacities is not sufficient to accommodate this development, then the implementation of the development must be re-planned around the availability of bulk services as Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law will not be supported by the Directorate: Infrastructure Services for this development if bulk services are not available upon occupation or taking up of proposed rights;

7. that the *"Developer"* indemnifies and keep the *"Municipality"* indemnified against all actions, proceedings, costs, damages, expenses, claims and demands (including claims pertaining to consequential damages by third parties and whether as a result of the damage to or interruption of or interference with the municipalities' services or apparatus or otherwise) arising out of the establishment of the development, the provision of services to the development or the use of servitude areas or municipal property, for a period that shall commence on the date that the installation of services to the development are commenced with and shall expire after completion of the maintenance period.

8. that the *"Developer"* must ensure that he / she has an acceptable public liability insurance policy in place;

9. that, if applicable, the *"Developer"* approach the Provincial Administration: Western Cape (District Roads Engineer) for their input and that the conditions as set by the Provincial Administration: Western Cape be adhered to before Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law will be issued;

10. that the *"Developer"* informs the project team for the proposed development (i.e. engineers, architects, etc.) of all the relevant conditions contained in this approval;

11. that the General Conditions of Contract for Construction Works (GCC) applicable to all civil engineering services construction work related to this development, will be the SAICE 3rd Edition (2015);

12. that the *"Developer"* takes cognizance and accepts the following:

    a.) that no construction of any civil engineering services may commence before approval of internal – and external civil engineering services drawings;
    b.) that no approval of internal – and external civil engineering services drawings will be given before land-use and or SDP approval is obtained;
    c.) that no approval of internal – and external civil engineering services drawings will be given before the *"Developer"* obtains the written approval of all affected owners where the route of a proposed service crosses the property of a third party;
    d.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before land-use and or SDP approval is obtained;

e.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before the approval of internal – and external civil engineering services drawings;

f.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before a Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law is issued unless the *"Developer"* obtains the approval mentioned in condition 3 (for construction work of his development parallel with the provision of the bulk services).

Site Development Plan

13. that it is recognized that the normal Site Development Plan, submitted as part of the land-use application, is compiled during a very early stage of the development and will lack engineering detail that may result in a later change of the Site Development Plan. Any later changes will be to the cost of the "Developer";

14. that even if a Site Development Plan is approved by this letter of approval, a further fully detailed site plan be submitted for approval prior to the approval of engineering services plans and or building- and/or services plans to allow for the setting of requirements, specifications and conditions related to civil engineering services. Such Plan is to be substantially in accordance with the approved application and or subdivision plan and or precinct plan and or site plan, etc. and is to include a layout plan showing the position of all roads, road reserve widths, sidewalks, parking areas with dimensions, loading areas, access points, stacking distances at gates, refuse removal arrangements, allocation of uses, position and orientation of all buildings, the allocation of public and private open spaces, building development parameters, the required number of parking bays, stormwater detention facilities, connection points to municipal water- and sewer services, updated land-use diagram and possible servitudes;

15. that if the fully detailed Site Development Plan, as mentioned in the above item, contradicts the approved Site Development Plan, the "Developer" will be responsible for the amendment thereof and any costs associated therewith;

16. that an amended Site Development Plan be submitted for approval prior to the approval of building plans for new buildings not indicated on the Site Development Plan applicable to this application and or changes to existing buildings or re-development thereof;

Internal- and Link Services

17. that it be noted that as per Sub divisional Plan No PA1075-9/04/04 dated 20 June 2016 by Albert Geiger Professional Land Surveyor, the roads are reflected as private roads. Therefor all internal services on the said erf will be regarded as private services and will be maintained by the "*Developer*" and or Owner's Association. The exception is the sewer line that will provide a connection to the future developments to the east, which will be a municipal sewer and operated and maintained by the municipality. Also see condition 3(c)(iii) above;

18. that the "*Developer*", at his/her cost, construct the internal (on-site) municipal civil services for the development, as well as any link (service between internal and available bulk municipal service) municipal services that need to be provided;

19. that the Directorate: Infrastructure Services may require the "*Developer*" to construct internal municipal services and/or link services to a higher capacity than warranted by the project, for purposes of allowing other existing or future developments to also utilise such services. The costs of providing services to a higher capacity could be offset against the Development Charges payable in respect of bulk civil engineering services if approved by the Directorate: Infrastructure Services;

20. that the detailed design and location of access points, circulation, parking, loading - and pedestrian facilities, etc., shall be generally in accordance with the approved Site Development Plan and / or Subdivision Plan applicable to this application;

21. that plans of all the internal civil services and such municipal link services as required by the Directorate: Infrastructure Services be prepared and signed by a Registered Engineering Professional before being submitted to the aforementioned Directorate for approval;

22. that the construction of all civil engineering infrastructure shall be done by a registered civil engineering services construction company approved by the "*Engineer*";

23. that the "*Developer*" ensures that his/her design engineer is aware of the Stellenbosch Municipality Design Guidelines & Minimum Standards for Civil Engineering Services (as amended) and that the design and construction/alteration of all civil engineering infrastructure shall be generally in accordance with this document, unless otherwise agreed with the Engineer. The said document is available in electronic format on request;

24. that a suitably qualified professional resident engineer be appointed to supervise the construction of all internal – and external services;

25. that engineering design drawings will only be approved once approval in terms of the Stellenbosch Municipal Land Use Planning By-law is issued;

26. that all the internal civil services (water, sewer and stormwater), be indicated on the necessary building plans for approval by the Directorate: Infrastructure Services;

27. that prior to the issuing of the Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1, all internal - and link services be inspected for approval by the "*Engineer*" on request by the "*Developer's*" Consulting Engineer;

28. that a Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1 be issued before Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law will be issued (prior to transfer of individual units or utilization of buildings);

29. that a complete set of test results of all internal – and external services (i.e. pressure tests on water - and sewer pipelines as well as densities on road structure and all relevant tests on asphalt), approved and verified by a professional registered engineer be submitted to the "Engineer" on request;

30. that the "*Developer*" shall adhere to the specifications of Telkom (SA) and or any other telecommunications service provider;

31. that the "*Developer*" shall be responsible for the cost for any surveying and registration of servitudes regarding services on the property;

32. that the "*Developer*" be liable for all damages caused to existing civil and electrical services of the "*Municipality*" relevant to this development. It is the responsibility of the contractor and/or sub-contractor of the "*Developer*" to determine the location of existing civil and electrical services;

33. that all connections to the existing services be made by the "*Developer*" under direct supervision of the "*Engineer*" or as otherwise agreed and all cost will be for the account of the "*Developer*".

34. that the "*Developer*" shall install a bulk water meter conforming to the specifications of the Directorate: Infrastructure Services at his cost at the entrance gate of all private developments before the practical completion inspection is carried out;

35. that Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law will only be issued if the bulk watermeter is installed, a municipal account for the said meter is activated and the consumer deposit has been paid;

36. that the developer takes cognizance of applicable tariffs by Council in respect of availability of services and minimum tariffs payable;

37. that the "*Developer*", at his/her cost, will be responsible for the maintenance of all the internal (on-site) municipal – and private civil engineering services constructed for this development until at least 80% of the development units (i.e. houses, flats or GLA) is constructed and aoccupied whereafter the services will be formally handed over to the Owner's Association, in respect of private services, and to the Municipality in respect of public services;

Servitudes

38. that according to the preliminary design layouts in the "Report on Civil Engineering Services, by NWE Consulting Engineers, dated 15 November 2018, there are various services crossing private properties. All of these services are to be protected by registered servitudes. All servitudes must be clearly indicated on the detail engineering drawings;

39. that the "*Developer*" ensures that all main services including roads to be taken over by the Directorate: Infrastructure Services, all existing municipal – and or private services including roads, crossing private - and or other institutional property and any other services/roads crossing future private land/erven are protected by a registered servitude before Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law will be given;

40. The width of the registered servitude must be a minimum of 3 m or twice the depth of the pipe (measured to invert of pipe), whichever is the highest value. The "*Developer*" will be responsible for the registration of the required servitude(s), as well as the cost thereof;

41. that the "*Developer*" obtains the written approval of all affected owners where the route of a proposed service crosses the property of a third party before final approval of engineering drawings be obtained.

Stormwater Management

42. that the geometric design of the roads and/or parking areas ensure that no trapped low-points are created with regard to stormwater management. All stormwater to be routed to the nearest formalized municipal system;

43. that overland stormwater escape routes be provided in the cadastral layout at all low points in the road layout, or that the vertical alignment of the road design be adjusted in order for the roads to function as overland stormwater escape routes. If this necessitates an amendment of the cadastral layout, it must be done by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services;

44. that the design engineer needs to apply his/her mind to ensure a design that will promote a sustainable urban drainage system which will reduce the impacts of stormwater on receiving aquatic environments;

45. that no disturbance to the river channel or banks be made without the prior approval in accordance with the requirements of the National Water Act;

46. that the consulting engineer, appointed by the "*Developer*", analyses the existing stormwater systems and determine the expected stormwater run-off for the proposed development, for both the minor and the major storm event. Should the existing municipal stormwater system not be able to accommodate the expected stormwater run-off, the difference between the pre- and post-development stormwater run-off must be accommodated on site, or the existing system must be upgraded to the required capacity at the cost of the "*Developer*" and to the standards and satisfaction of the Directorate: Infrastructure Services. The aforementioned stormwater analysis is to be submitted concurrent with the detail services plans;

47. that for larger developments, industrial developments or developments near water courses a stormwater management plan for the proposed development area, for both the minor and major storm events, be compiled and submitted for approval to the Directorate: Infrastructure Services.

48. that the approved management plan be implemented by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services. The management plan, which is to include an attenuation facility, is to be submitted concurrent with the detail services plans;

49. that in the case of a sectional title development, the internal stormwater layout be indicated on the necessary building plans to be submitted for approval.

50. that no overland discharge of stormwater will be allowed into a public road for erven with catchment areas of more than 1500m² and for which it is agreed that no detention facilities are required. The *"Developer"* needs to connect to the nearest piped municipal stormwater system with a stormwater erf connection which may not exceed a diameter of 300mm.

Floodplain Management

51. that the 1:50 and 1:100 year flood lines of the stream on the property be shown on all plans submitted. The flood lines are to be verified by a suitably qualified registered engineering professional. Where flood lines have not previously been determined, the "*Developer*" must procure the services of a suitably qualified registered engineering professional to undertake such determinations at his/her own cost. No new development will be allowed under the 1:100 year flood line;
52. that the floor level of all buildings be at least 100 mm above the 1:100 year flood level. These levels must be indicated on all building plans submitted and must be certified by a Registered Professional Engineer;

53. that all perimeter fencing below the 1:50 year flood line be visually permeable from ground level and not adversely affect the free flow of water (e.g. palisade fencing). No fences will be allowed across the watercourse;

Roads

54. that the "*Developer*", at his/her cost, implement the recommendations of the approved Transport Impact Assessment (TIA) by ITS, dated August, and where required, a sound Traffic Management Plan to ensure traffic safety shall be submitted for approval by the Directorate: Infrastructure Services and the approved management plan shall be implemented by the "*Developer*", at his/her cost;

55. than any amendments to cadastral erven to accommodate access control gates will be for the cost of the "*Developer*" as these configurations were not available at rezoning and subdivision stage;

56. that the layout must make provision for all deliveries to take place on-site. Movement of delivery vehicles may not have a negative impact on vehicular – and pedestrian movement on public roads and or public sidewalks;

57. The design and lay-out of the development must be such that emergency vehicles can easily drive through and turn around where necessary;

58. that, prior to commencement of any demolition / construction work, a traffic accommodation plan for the surrounding roads must be submitted to the Directorate: Infrastructure Services for approval, and that the approved plan be implemented by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services;

59. that the upgrades identified in Condition 3 above be met by the "*Developer*" before a Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law will be given or on discretion of the Directorate: Infrastructure Services, the "*Developer*" furnish the Council with a bank guarantee equal to the value of the required construction work as certified by an independent engineering professional, prior to a Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law being given;

60. that during the construction stage, access to the site be strictly via Dirkie Uys Street. The Developer will be responsible for any temporary upgrades to the road to allow safe and convenient access for construction vehicles, as well as the general public using the road;

61. that the "*Developer*" will be held liable for any damage to municipal and/or private infrastructure within the road reserves of the roads mentioned in Condition 60 above, caused as a direct result of the development of the subject property. The "*Developer*" will therefore be required to carry out the necessary rehabilitation work, at his/her cost, to the standards of the Directorate: Infrastructure Services;

62. that visibility splays shall be provided and maintained on each side of the new access in accordance with the standard specifications as specified in the Red Book with regard to sight triangles at intersections;

63. that on-site parking be provided by the owner of the property as per the relevant Zoning Scheme; i

64. that each erf has its own access (drive-way), *(the new access(es) (dropped kerb(s)) to the proposed parking bays be)* constructed to standards as set out by the the Directorate: Infrastructure Services and in line with the Road Access Guideline;

65. that the access road to the existing facility be kept in an acceptable condition, i.e. maintained to a standard which will result in a comfortable ride for a standard passenger vehicle and to a standard which will not endanger the lives or property of road users;

66. that the area of land required for the Dirkie Uys Street road reserve, be surrendered by the *"Developer"* to Stellenbosch Municipality, at his/her cost, prior to clearance;

67. that compensation from Stellenbosch Municipality for the aforementioned land required for the upgrade and widening of Dirkie Uys Street, if any, be based on the value of the land in terms of its current zoning, i.e., Agricultural Zone 1;

68. that no parking be allowed in the road reserves;

69. that the layout be amended to accommodate continuous forward movement by service trucks and all cul-de-sacs have a minimum of 11 m radius turning circle, to ensure continuous forward movement;

Wayleaves

70. that way-leaves / work permits be obtained from the Directorate: Infrastructure Services prior to any excavation / construction work on municipal land or within 3,0m from municipal services located on private property;

71. that wayleaves will only be issued after approval of relevant engineering design drawings;

72. that it is the Developer's responsibility to obtain wayleaves from any other authorities/service provider's who's services may be affected.

Development Charges

73. that the *"Developer"* hereby acknowledges that Development Charges are payable towards the following bulk civil services: water, sewerage, roads, stormwater, solid waste and community facilities as per Council's Policy;

74. that the "*Developer*" hereby acknowledges that the development charges levy as determined by the "Municipality" and or the applicable scheme tariffs will be paid by the "*Developer*" towards the provision of bulk municipal civil services in accordance with the relevant legislation and as determined by Council's Policy, should this land-use application be approved;

75. that the "*Developer*" immediately familiarise himself with the latest Development Charges applicable to his/her development;

76. that the "*Developer*" accepts that the Development Charges will be subject to annual adjustment up to date of payment. The amount payable will therefore be the amount as calculated according to the applicable tariff structure at the time that payment is made;

77. that the "*Developer*" may enter into an engineering services agreement with the "*Municipality*" to install or upgrade bulk municipal services at an agreed cost, to be off-set against Development Charges payable in respect of bulk civil engineering services;

78. that the Development Charges levy to the amount of **R 7 376 873. 90** (Excluding VAT) as reflected on the DC calculation sheet, dated 6 December 2018, and attached herewith as **Annexure DC**, be paid by the "*Developer*" towards the provision of bulk municipal civil services in accordance with the relevant legislation and as determined by Council's Policy.

79. that the Development Charges levy be paid by the "*Developer*" per phase –
    - prior to the approval of any building- and/or services plans in the case of a Sectional title erf in that phase or where a clearance certificate is not applicable and/or;
    - prior to the approval of Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law in all cases and or;
    - prior to the erf or portion thereof being put to the approved use;

80. that the development shall be substantially in conformance with the Site Development Plan submitted in terms of this application. Any amendments and/or additions to the Site Development Plan, once approved, which might lead to an increase in the number of units i.e. more than 116 units, will result in the recalculation of the Development Charges;

81. Bulk infrastructure Development Charges and repayments are subject to VAT and are further subject to the provisions and rates contained in the Act on Value Added Tax of 1991 (Act 89 of 1991) as amended;

Owner's Association (Home Owner's Association or Body Corporate)

82. that an Owner's Association be established in accordance with the provisions of section 29 of the Stellenbosch Municipal Land Use Planning By-law and shall come into being upon the separate registration or transfer of the first deducted land unit arising from this subdivision;

83. that the Owner's Association take transfer of the private roads simultaneously with the transfer or separate registration of the first deducted land portion in such phase;

84. that in addition to the responsibilities set out in section 29 of the Stellenbosch Municipal Land Use Planning By-law, the Owner's Association also be responsible for the maintenance of the private roads, street lighting, open spaces, retention facilities and all internal civil services;

85. that the Constitution of the Owner's Association specifically empower the Association to deal with the maintenance of the roads, street lighting, open spaces, retention facilities and all internal civil services;

86. that the Constitution of the Owner's Association specifically describes the responsibility of the Owner's Association to deal with refuse removal as described in the "Solid Waste" section of this document;

Green Technologies

87. It is encouraged that peak water demand should be accommodated with supplementary storage and recycling (e.g. rainwater tanks, grey water recycling) of water so that municipal water only be used to satisfy the base demand;

88. Technologies that facilitate the efficient use of irrigation water is encouraged;

89. Planting of waterwise flora is encouraged;

Solid Waste

90. The reduction, reuse and recycle approach should be considered to waste management:

- Households to reduce waste produced
- Re-use resources wherever possible
- Recycle appropriately

To give effect to the above, the following are some typical waste minimization measures that should be implemented by the Developer, to the satisfaction of the Stellenbosch Municipality:

- Procedures should be stipulated for the collection and sorting of recyclable materials;
- Provision should be made for centralized containers for recyclable materials including cardboard, glass, metal, and plastic and green waste;
- A service provider should be appointed to collect recyclable waste. Such service provider must be legally compliant in terms of all Environmental Legislation and/or approved by the Municipality's Solid Waste Management Department;
- Procedures for removal of waste (materials that cannot be reused or recycled) from the site should be stipulated;
- General visual monitoring should be undertaken to identify if these measures are being adhered to;
- Record shall be kept of any steps taken to address reports of dumping or poor waste management within the Development;

Where an Owner's Association is to be established in accordance with the provisions of section 29 of the Stellenbosch Municipal Land Use Planning By-law, the Constitution of the Owner's Association shall incorporate the above in the Constitution and:

- Each party's (Developer/Owner's Association/Home Owner) responsibilities w.r.t. waste management and waste minimization should be clearly defined in such constitution
- A set of penalties for non-compliance should be stipulated in the Constitution

91. that it be noted that the Solid Waste Branch will not enter private property, private roads or any access controlled properties for the removal of solid waste;

92. that the *"Developer"* will enter into a service agreement with the "Municipality" for the removal of refuse;

93. that should it not be an option for the *"Municipality"* to enter into an agreement with the *"Developer"* due to capacity constraints, the *"Developer"* will have to enter into a service agreement with a service provider approved by the *"Municipality"*;

94. that if the "Developer" wishes to remove the waste by private contractor, provision must still be made for a refuse room should this function in future revert back to the "Municipality";

95. Access to all properties via public roads shall be provided in such a way that collection vehicles can complete the beats with a continuous forward movement;

96. Access shall be provided with a minimum travelable surface of 5 meters width and a minimum corner radii of 5 meters;

97. Maximum depth of cul-de-sac shall be 20 meters or 3 erven, whichever is the lesser. Where this requirement is exceeded, it will be necessary to construct a turning circle with a minimum turning circle radius of 11m or, alternatively – a turning shunt as per the Directorate: Infrastructure Services' specifications. With respect to the latter, on street parking are to be prohibited by way of "red lines" painted on the road surface as well as "no parking" signboards as a single parked vehicle can render these latter circles and shunts useless;

98. Minimum turning circle radius shall be 11 meters to the center line of the vehicle;

99. Road foundation shall be designed to carry a single axle load of 8.2 tons;

100. Refuse storage areas are to be provided for all premises other than single residential erven;

101. Refuse storage areas shall be designed in accordance with the requirements as specified by the Solid Waste Branch. Minimum size and building specifications is available from the Solid Waste Branch;

102. A single, centralized, refuse storage area which is accessible for collection is required for each complete development. The only exception is the case of a single residential dwelling, where a refuse storage area is not required;

103. The refuse storage area shall be large enough to store all receptacles needed for refuse disposal on the premises, including all material intended to recycling. No household waste is allowed to be disposed / stored without a proper 240 ℓ Municipal wheelie bin;

104. The size of the refuse storage area depends on the rate of refuse generation and the frequency of the collection service. For design purposes, sufficient space should be available to store two weeks' refuse;

105. Where the premises might be utilized by tenants for purposes other than those originally foreseen by the building owner, the area shall be sufficiently large to store all refuse generated, no matter what the tenant's business may be;

106. All black 85 ℓ refuse bins or black refuse bags is in the process of being replaced with 240 ℓ black municipal wheeled containers engraved with WC024 in front, and consequently refuse storage areas should be designed to cater for these containers. The dimensions of these containers are:

Commercial and Domestic : 585 mm wide x 730 mm deep x 1100 mm high

107. With regard to flats and townhouses, a minimum of 50 litres of storage capacity per person, working or living on the premises, is to be provided at a "once a week" collection frequency;

108. Should designers be in any doubt regarding a suitable size for the refuse storage area, advice should be sought from the Solid Waste Department : Tel 021 808-8224

109. Building specifications for refuse storage area:

Floor

The floor shall be concrete, screened to a smooth surface and rounded to a height of 75mm around the perimeter. The floor shall be graded and drained to a floor trap (See: Water Supply and Drainage).

Walls and Roof

The Refuse Storage Area shall be roofed to prevent any rainwater from entering. The walls shall be constructed of brick, concrete or similar and painted with light color high gloss enamel. The height of the room to the ceiling shall be not less than 2.21 meters.

Ventilation and Lighting

The refuse storage area shall be adequately lit and ventilated. The room shall be provided with a lockable door which shall be fitted with an efficient self-closing devise. The door and ventilated area shall be at least 3 metres from any door or window of a habitable room. Adequate artificial lighting is required in the storage area.

Water Supply and Drainage

A tap shall be provided in the refuse storage area for washing containers and cleaning spillage. The floor should be drained towards a 100 mm floor trap linked to a drainage pipe

122. that the "*Municipality*" reserves the right to withhold any clearance certificate until such time as the "*Developer*" has complied with conditions set out in this contract with which he/she is in default. Any failure to pay monies payable in terms of this contract within 30 (thirty) days after an account has been rendered shall be regarded as a breach of this agreement and the "*Municipality*" reserves the right to withhold any clearance certificate until such time as the amount owing has been paid;

123. that clearance will only be given per phase and the onus is on the "*Developer*" to phase his development accordingly;

124. **The onus will be on the "Developer" and or his professional team to ensure that all land-use conditions have been complied with before submitting an application for a Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law. Verifying documentation (proof of payment in respect of Development Charges, services installation, etc.) must be submitted as part of the application before an application will be accepted by this Directorate;**

125. that any application for Certificate of Clearance will only be supported by the "*Engineer*" once all relevant as-built detail, as reflected in the item "AS-BUILT's" of this document, is submitted to the "*Engineer*" and approved by the "*Engineer*".

Avoidance of waste, nuisance and risk

126. Where in the opinion of the "*Municipality*" a nuisance, health or other risk to the public is caused due to construction activities and/or a lack of maintenance of any service, the "*Municipality*" may give the "*Developer*" and or OWNER'S ASSOCIATION written notice to remedy the defect failing which the "*Municipality*" may carry out the work itself or have it carried out, at the cost of the "*Developer*" and or OWNER'S ASSOCIATION.

Streetlighting

127. The "*Developer*" will be responsible for the design and construction at his own expense of all internal street lighting services and street lighting on link roads leading to his development (excluding Class 1, 2 and 3 Roads) according to specifications determined by the municipality's Manager: Electrical Services and under the supervision of the consulting engineer, appointed by the "*Developer*";

128. Prior to commencing with the design of street lighting services, the consulting electrical engineer, as appointed by the "*Developer*" must acquaint himself with, and clarify with the

municipality's Manager: Electrical Engineering, the standards of materials and design requirements to be complied with and possible cost of connections to existing services;

129. The final design of the complete internal street lighting network of the development must be submitted by the consulting electrical engineer, as appointed by the "*Developer*", to the municipality's Manager: Electrical Engineering for approval before any construction work commences;

130. Any defect with the street lighting services constructed by the "*Developer*" which may occur during the defects liability period of 12 (TWELVE) months and which occurs as a result of defective workmanship and/or materials must be rectified immediately / on the same day the defect was brought to the attention of the consulting electrical engineer, appointed by the "*Developer*". Should the necessary repair work not be done within the said time the "*Municipality*" reserves the right to carry out the repair work at the cost of the "*Developer*";

131. The maintenance and servicing of all private internal street lighting shall be the responsibility and to the cost of the "Developer" and or Home Owner's Association.

DEON LOUW
DIRECTOR: INFRASTRUCTURE SERVICES

ATTACHMENT X

Geographic Information System (GIS) data capturing standards

In drawing up the As-build Plans relating to this development, the consultant must create the following separate layers in ESRI .shp, electronic file format in order for the data to reflect spatially correct.

Layer name	Content
TITLE	Title information, including any endorsements and references
NOTES	All noted information, both from the owner / surveyor and SG
PARENT_PROPLINES	Parent property lines
PARENT_PROPNUM	Parent erf number (or portion number)
PROPLINES	New portion boundaries
PROPANNO	New erf numbers
SERVLINES	Servitude polygons
SERVANNO	Servitude type
STREET_NAMES	Road centre lines with street names
STREET_NUMBERS	Points with street numbers
COMPLEX BOUNDARIES	Where applicable, polygon with complex name (mention whether gated or not and if so, where gates are)
SUBURB	Polygon with suburb name, where new suburb / township extension created
ESTATE	Where applicable, polygon with estate name (mention whether gated or not and if so, where gates are)

When data is provided in a .shp format it is mandatory that the .shx, .dbf, files should accompany the shapefile. The prj file containing the projection information must also accompany the shapefile.

It is important that different geographical elements for the GIS capture process remains separate. That means that political boundaries like wards or suburbs be kept separate from something like rivers. The same applies for engineering data types like water lines, sewer lines, electricity etc. that it is kept separate from one another. When new properties are added as part of a development, a list of erf numbers with its associated SG numbers must be provided in an electronic format like .txt, .xls or .csv format.

For road layer shapefiles; the road name, the from_street and to_street where applicable as well as the start en end street numbers needs to be included as part of the attributes. A rotation field needs to be added to give the street name the correct angle on the map.

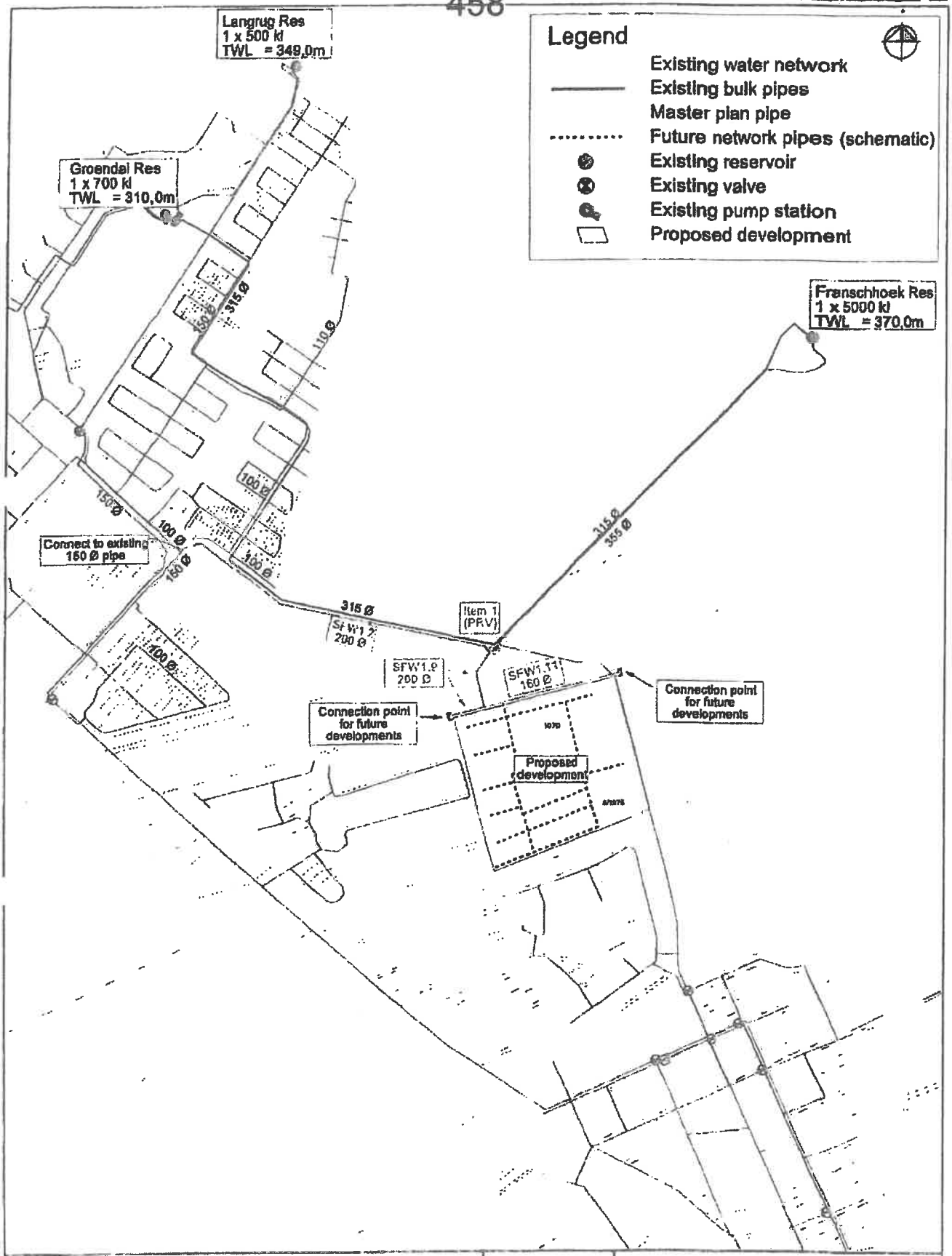
In addition to being geo-referenced and in WGS 1984 Geographic Coordinate System, the drawing must be completed using real world coordinates based on the Stellenbosch

PROPOSED REZONING AND SUBDIVISION OF FARM 1075/9 and RE FARM 1070 (MIDDELPLAAS)

Municipality standard as follows:

- Datum : Hartebeeshoek WGS 84
- Projection : Transverse Mercator
- Central Longitude/Meridian 19
- False easting : 0.00000000
- False northing : 0.00000000
- Central meridian : 19.00000000
- Scale factor : 1.00000000
- Origin latitude : 0.00000000
- Linear unit : Meter

ANNEXURE A



November 2018

Franschhoek - Farm 1070 & portion 9 of Farm 1075

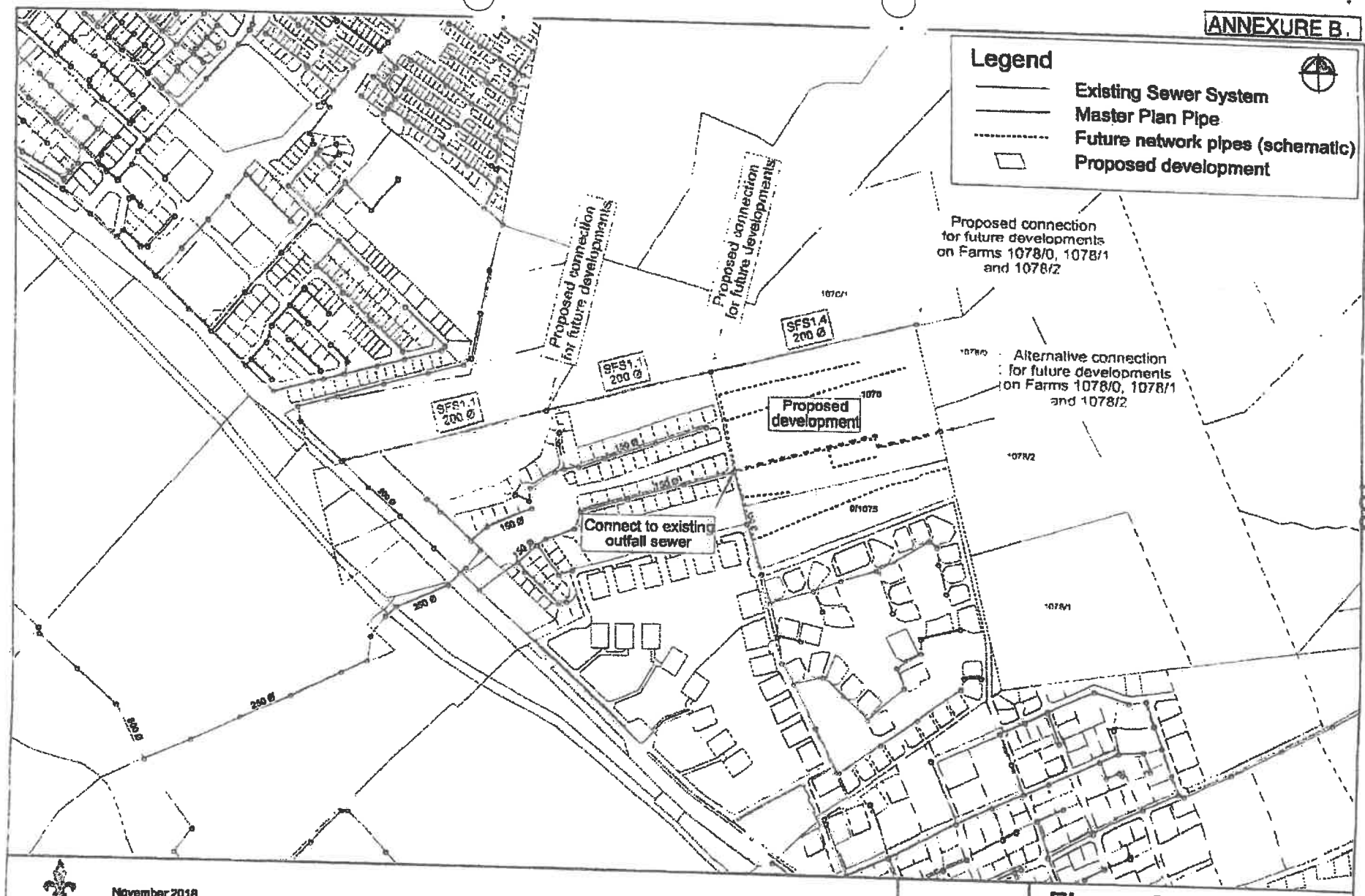
gls

EQH

Figure 1 (Rev 2)

Proposed Development
Farm 1070 & portion 9 of Farm 1075
Water Master Plan

ANNEXURE B



November 2018

Franschhoek - Farm 1070 & portion 9 of Farm 1075

gls consulting

Figure 3

Proposed Development
Farm 1070 & portion 9 of Farm 1075
Sewer Master Plan

459

Stellenbosch Municipality - Development Charge Calculation

APPLICATION INFORMATION	
Application Number	1311
Date	Thursday, 06/Dec/2018
Financial Year	2018/19
Erf Location	[redacted]
Erf No	Farm 1075-9 and RE Farm 1075
Erf Size (m^2)	109 200
Suburb	PH
Applicant	
Approved Building Plan No.	In land use application application: Subdivision Plan No PA1075-9/04/04 dated 20 June 2016 by Albert Geiger Professional Land Surveyor

SUMMARY OF DC CALCULATION							
	Water	Sewer	Storm-water	Solid-Waste	Roads	Community Facilities	Totals
Units:	kl/day	kl/day	ha^C	t/week	trips/day	person	
Total Increased Services Usage	81.700	69.700	3.631	4.840	435.25	435.3	
Total Development Charges before Deductions	R 1 813 309.78	R 1 023 960.40	R 382 363.10	R 234 274.91	R 2 656 947.06	R 1 366 018.87	R 7 376 873.90
Total Deductions							
Total Payable (excluding VAT)	R 1 813 309.78	R 1 023 960.40	R 382 363.10	R 234 274.91	R 2 656 947.06	R 1 366 018.87	R 7 376 873.90
VAT	R 271 996.47	R 153 594.06	R 57 354.46	R 35 141.24	R 383 542.06	R 204 902.80	R 1 106 531.09
Total Payable (Including VAT)	R 2 085 306.24	R 1 177 554.46	R 439 717.56	R 269 416.14	R 3 040 489.11	R 1 570 921.67	R 8 483 404.98

APPLICANT INFORMATION	
Application Processed by:	Tyrone King
Notes	
Date	6 Dec 2018
Amount Paid:	
Date Payment Received	
Receipt Number	

Franschhoek

Use Category	Unit Type	Existing Units			Proposed New Units			Increased Density	Charges (excl VAT)						
Infrastructure Type applicable? (yes/no)									Water	Sewer	Stormwater	Solid Waste	Roads	Community Facilities	Total
									yes	yes	yes	yes	yes	yes	
	du		du	du/ha		du	du/ha	du							
	m2 GLA	area (m2)	m2 GLA	% GLA	area (m2)	m2 GLA	% GLA	m2 GLA							
	m2		m2					m2							
Residential: Single Residential >1000m2	du			0%		1	0	1	R 26 635.68	R 10 283.68	R 5 054.65	R 2 019.61	R 23 498.65	R 11 776.02	R 79 266.29
Residential: Single Residential >600m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Single Residential >250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Single Residential <250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Less Formal Residential >250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Less Formal Residential <250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Group Residential >250m2	du			0%		135	1	1.15	R 1 786 676.09	R 1 013 676.73	R 278 532.19	R 282 255.80	R 2 539 448.40	R 1 354 242.65	R 7 198 831.36
Residential: Group Residential <250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Medium Density Residential >250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: Medium Density Residential <250m2	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: High Density Residential - flats	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Residential: High Density Residential - student rooms	du			0%			0	0	R -	R -	R -	R -	R -	R -	R -
Commercial: Local Business - office	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Commercial: Local Business - retail	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Commercial: General Business - office	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Commercial: General Business - retail	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Commercial: Community	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Commercial: Education	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Industrial: Light Industrial	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Industrial: General Industrial - light	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Industrial: General Industrial - heavy	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Industrial: Noxious Industrial - heavy	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Other: Resort	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Other: Public Open Space	m2						0%	0	R -	R -	R -	R -	R -	R -	R -
Other: Private Open Space	m2						0%	0	R -	R -	R -	R -	R -	R -	R -
Other: Natural Environment	m2		109 200				0%	-109 200	R -	R -	R -229 986.51	R -	R -	R -	R -229 986.51
Other: Utility Services	m2 GLA			0%			0%	0	R -	R -	R -	R -	R -	R -	R -
Other: Public Roads and Parking	m2					44 600	0%	44 600	R -	R -	R 328 762.76	R -	R -	R -	R 328 762.76
Other: Transport Facility	m2						0%	0	R -	R -	R -	R -	R -	R -	R -
Other: Linked Use							0%	0	R -	R -	R -	R -	R -	R -	R -
Special: To be calculated															
Special: based on equivalent demands															
		0			0										

* Complete yellow/green cells.

** du = dwelling unit, GLA=Gross lettable area.

*** displays red if not equal to existing area

Total Development Charges before Deductions	R1 813 309.78	R1 023 960.40	R382 353.10	R234 274.91	R2 556 947.06	1 366 018.67	R7 376 873.90
% Deductions per service (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
R Deductions per service (amount)	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00	R 0.00
Additional Deduction per service - from Service Agreement (sum)							R 0.00
Sub Total after Deductions (excluding VAT)	R1 813 309.78	R1 023 960.40	R382 353.10	R234 274.91	R2 556 947.06	1 366 018.67	R7 376 873.90
VAT	R271 996.47	R153 594.06	R57 352.96	R35 141.24	R383 542.06	204 902.80	R1 106 531.09
Total	R2 085 306.26	R1 177 554.46	R439 706.06	R269 416.14	R2 940 489.11	1 570 921.47	R8 483 404.99

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Fax +27 21 880 0389
Email info@gls.co.za

13 Elektron Street, Techno Park
PO Box 814, Stellenbosch 7599
South Africa

3 July 2012

La Luc (Pty) Ltd
P. O. Box 2073
GEORGE
6530

Attention: Ms A van der Burgh

Dear Madam

DEVELOPMENT OF FARM 1070 & PORTION 9 OF FARM 1075 (MIDDELPLAAS), FRANSCHHOEK : BULK WATER & SEWER SERVICES

Your request regarding comments on the bulk water and sewer supply to the proposed development (residential development on Farms 1070 & 1075/9, Fransohhoek), refers.

This document should inter alia be read in conjunction with the Water Master Plan (performed for the Stellenbosch Municipality) dated December 2011 and the Sewer Master Plan dated December 2011.

Future development area FH5, which includes the proposed development area, was conceptually taken into consideration for the recently completed master plans for the water and sewer networks.

1. WATER DISTRIBUTION SYSTEM

1.1 *Distribution zone*

The master planning indicated that the development area should be accommodated in the existing Groendal reservoir zone. The connection to the existing system should be done on the 150 mm diameter pipe on the corner of School and La Provence Streets as shown on Figure 1 attached.

The proposed development is situated inside the water priority area.

1.2 *Water demand*

The original water analysis for the master plan was done with a total annual average daily demand (AADD) for the proposed development area of 162,2 kℓ/d.

For this re-analysis, the AADD and fire flows for the proposed development was calculated as follows:

• 6 Residential units @ 1 600 ℓ/d/unit	=	9,6 kℓ/d
• 101 Residential units @ 1 000 ℓ/d/unit	=	101,0 kℓ/d
• 1 800 m² clinic & administrative area @ 500 ℓ/d/100 m²	=	9,0 kℓ/d
• 28 Flats @ 450 ℓ/d/unit	=	12,6 kℓ/d
Total	=	132,2 kℓ/d
• Fire flow criteria (Low risk)	=	15 ℓ/s @ 7 m

1.3. *Present situation*

1.3.1 *Network capacity*

There is sufficient capacity in the water network of the existing Groendal reservoir zone to accommodate the proposed development.

Master plan items SFW1.2, SFW1.9b and SFW1.10a will, however, be required to connect the proposed development to the existing 150 mm diameter pipe on the corner of School and La Provence Streets as shown on Figure 1.

Connection pipes

• SFW1.2	: 715 m x 160 mm Ø new supply pipe	R	430 000 *
• SFW1.9b	: 170 m x 315 mm Ø new supply pipe pipe	R	254 000 *
• SFW1.10a	: 365 m x 200 mm Ø new supply pipe	R	282 000 *
	Total	R	966 000 *

An alternative connection point for the proposed development is to connect to the future 315 mm diameter pipe to the east of the development (connection to master plan item SFW8.1 as shown on Figure 2 attached) via a 110 mm diameter link service pipe and a pressure reducing valve (PRV).

Link services (required for alternative connection point)

• Item 2	: 265 m x 110 mm Ø new supply pipe	R	126 000 *
• Item 3	: New 50 mm Ø PRV	R	75 000 *
	Total	R	201 000 *

Note: It is proposed that master plan item SFW1.10a is constructed along the entire south western boundary of the proposed development area when development of the property commences.

(* Including P & G, Contingencies and Fees, but excluding VAT – Year 2012/13 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figures 1 & 2, but have to be finalised subsequent to detail pipeline route investigations.

1.3.2 *Reservoir capacity*

The existing Franschhoek water system has insufficient reservoir storage capacity to accommodate any additional developments within Franschhoek.

The existing water demand of the consumers in the eastern part of Franschhoek, which is supplied with water from the Perdekloof water source in the adjacent mountains, is currently more than the permitted allocation from the source. It is proposed in the master planning that water should be transferred from the Wemmershoek source, which supplies the western part of Franschhoek with water, towards the eastern part of Franschhoek in order to alleviate the pressure on the Perdekloof source during summer months.

A new bulk transfer scheme for Franschhoek is proposed where water is transferred from the Groendal reservoir (water from the Wemmershoek source) via a new Central Upper reservoir and accompanying bulk infrastructure (pipelines, sump and pump station) towards the Franschhoek Bo-Dorp network (which is currently supplied with water from the Perdekloof source).

The new Central Upper reservoir should then be utilised in the short term to augment the existing reservoir storage capacity which exists within the existing Groendal and Langrug reservoir zones.

Note: In the longer term a new Central Lower reservoir is required to accommodate the proposed development together with future development areas FH4, FH16, FH17 & FH18 as shown on Figure 2.

Bulk supply upgrades

•	Item 1	: New sump for pump station	R	500 000 *
•	SFW.B3	: New flow control valve at Groendal reservoir inlet	R	140 000 *
•	SFW.B4	: 1 310 m x 315 mm Ø new bulk supply pipe	R	1 808 000 *
•	SFW.B9	: New bulk pump station	R	1 140 000 *
•	SFW.B10	: 820 m x 200 mm Ø new bulk supply pipe	R	616 000 *
•	SFW.B11	: New 2,5 Mℓ Central Upper reservoir	R	5 675 000 *
•	SFW8.1	: 1 260 m x 315 mm Ø new supply pipe	R	1 740 000 *
•	SFW8.2	: 665 m x 315 mm Ø new supply pipe	R	929 000 *
		Total	R	12 548 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT – Year 2012/13 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 2, but have to be finalised subsequent to detail pipeline route investigations.

1.4 *Master plan*

Accommodation of the development in the future system (together with other future development areas), will require upgrading of the existing system to comply with the pressure and fire flow criteria as set out in the master plan.

Network upgrade

•	SFW1.3	: 335 m x 160 mm Ø new supply pipe	R	208 000 *
•	SFW1.6	: Insert new valve and close	R	70 000 *
•	SFW1.7	: 105 m x 160 mm Ø new supply pipe	R	130 000 *
•	SFW1.9a	: 745 m x 315 mm Ø new supply pipe	R	1 039 000 *
•	SFW1.10b	: 540 m x 200 mm Ø new supply pipe	R	411 000 *
•	SFW1.15	: Insert new non-return valve	R	93 000 *
		Total	R	1 821 000 *

Bulk supply

•	SFW.B5	: New 3,5 Mℓ Central Lower reservoir	R	8 551 000 *

(* Including P & G, Contingencies and Fees, but excluding VAT – Year 2012/13 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 2, but have to be finalised subsequent to detail pipeline route investigations.

2. SEWER NETWORK

2.1 *Drainage area*

The development falls within the existing Franschhoek Gravity drainage area. The recommended position for the sewer connection for the proposed development is at the existing 150 mm diameter outfall sewer on the western boundary of the development as shown on Figure 3 attached.

The development is inside the sewer priority area.

2.2 *Sewer flow*

For the original sewer master plan, the peak day dry weather flow (PDDWF) for the proposed development area was calculated at 82,3 kℓ/d.

2.3 *Present situation*

There is sufficient capacity in the sewer network reticulation system to accommodate the proposed development.

3. INCREMENTAL COST TO THE DEVELOPER

3.1 *Water*

The incremental cost of the proposed development on the relevant master plan items were calculated as follows:

•	SFW1.2	: 132,2 kℓ/d ÷ 674,5 kℓ/d x R 430 000	= R	84 300
•	SFW1.3	: 132,2 kℓ/d ÷ 674,5 kℓ/d x R 208 000	= R	40 800
•	SFW1.6	: 132,2 kℓ/d ÷ (674,5 + 578,0) kℓ/d x R 70 000	= R	7 400
•	SFW1.7	: 132,2 kℓ/d ÷ (674,5 + 578,0) kℓ/d x R 130 000	= R	13 800
•	SFW1.9	: 132,2 kℓ/d ÷ (674,5 + 578,0) kℓ/d x R 1 293 000	= R	136 500
•	SFW1.10	: 132,2 kℓ/d ÷ (674,5 + 578,0) kℓ/d x R 693 000	= R	73 200
•	SFW1.15	: 132,2 kℓ/d ÷ 674,5 kℓ/d x R 93 000	= R	18 300
•	SFW8.1	: None	= R	0
•	SFW8.2	: None	= R	0
•	SFW.B3	: 132,2 kℓ/d ÷ 2 578,0 kℓ/d x R 140 000	= R	7 200
•	SFW.B4	: 132,2 kℓ/d ÷ 2 578,0 kℓ/d x R 1 808 000	= R	92 800
•	SFW.B5	: (132,2 x 2,0) kℓ/d ÷ 3 500 kℓ/d x R 8 551 000	= R	646 000
•	SFW.B9	: None	= R	0
•	SFW.B10	: None	= R	0
		Total	= R	1 120 300

4. CONCLUSION

The developer of Farms 1070 & 1075/9 in Franschhoek will be liable for the larger amount of R 1 120 300 (excluding VAT) or the Bulk Services Levy (as calculated by the Stellenbosch Municipality) as a contribution towards water infrastructure and the Bulk Services Levy (as calculated by the Stellenbosch Municipality) as a contribution towards sewer infrastructure.

Over and above this contribution, the developer will also be liable for the construction of link services items 2 & 3 if the connection to the existing water system is made to master plan item SFW8.1 as shown on Figure 2 as an alternative to the proposed connection point on the corner of School and La Provence Streets.

The minimum requirements to accommodate the proposed development in the existing water system are bulk supply upgrade items 1, SFW.B3, SFW.B4, SFW.B9, SFW.B10, SFW.B11, SFW8.1 & SFW8.2 and connection pipes SFW1.2, SFW1.9b & SFW1.10a (if the proposed connection is made to the existing water system on the corner of La Provence and School Streets) or link services items 2 & 3 (if the proposed connection is made to master plan item SFW8.1).

There is sufficient capacity in the existing sewer reticulation system to accommodate the proposed development.

We trust you find this of value.

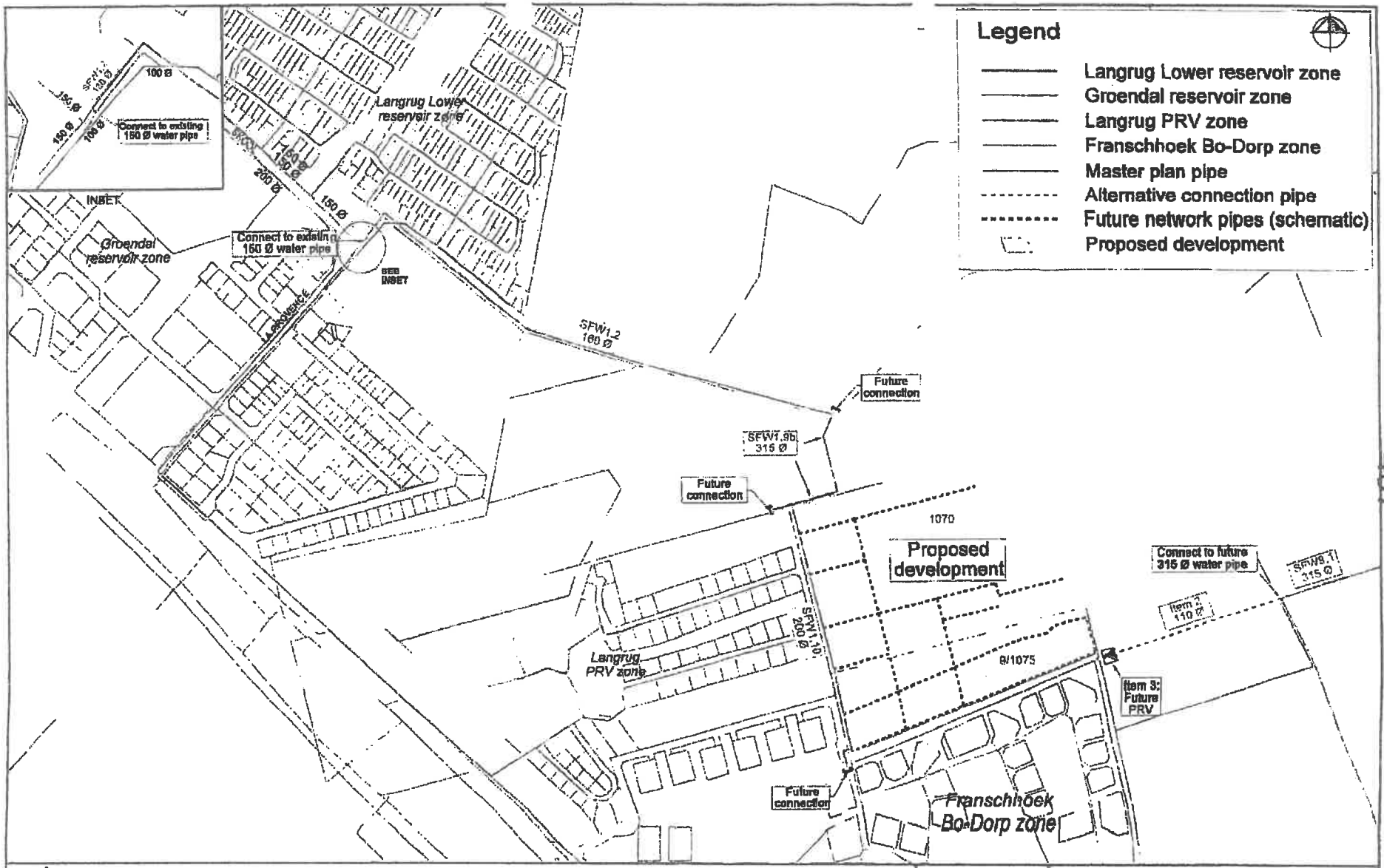
Yours sincerely

GLS CONSULTING (PTY) LTD
REG. NO.: 2007/003039/07

Per: JJ STREICHER (Director)

cc. The Director,
Directorate: Public Works
Stellenbosch Municipality
P. O. Box 17
STELLENBOSCH
7599

Attention: Mr Dries van Taak



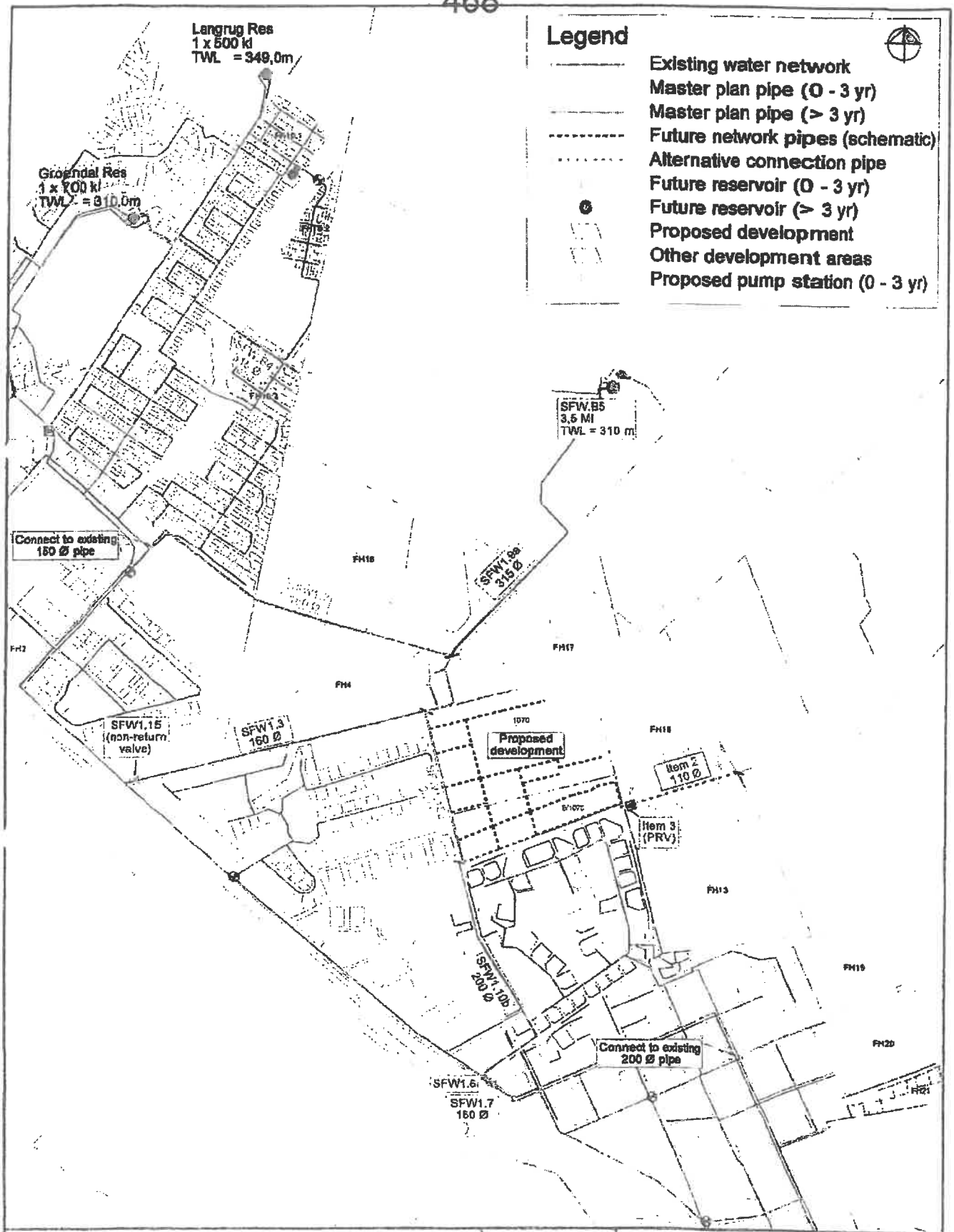
July 2012

Franschhoek - Farm 1070 & portion 9 of Farm 1075

gls

Figure 1

Proposed Development
Farm 1070 & portion 9 of Farm 1075
Existing Water System



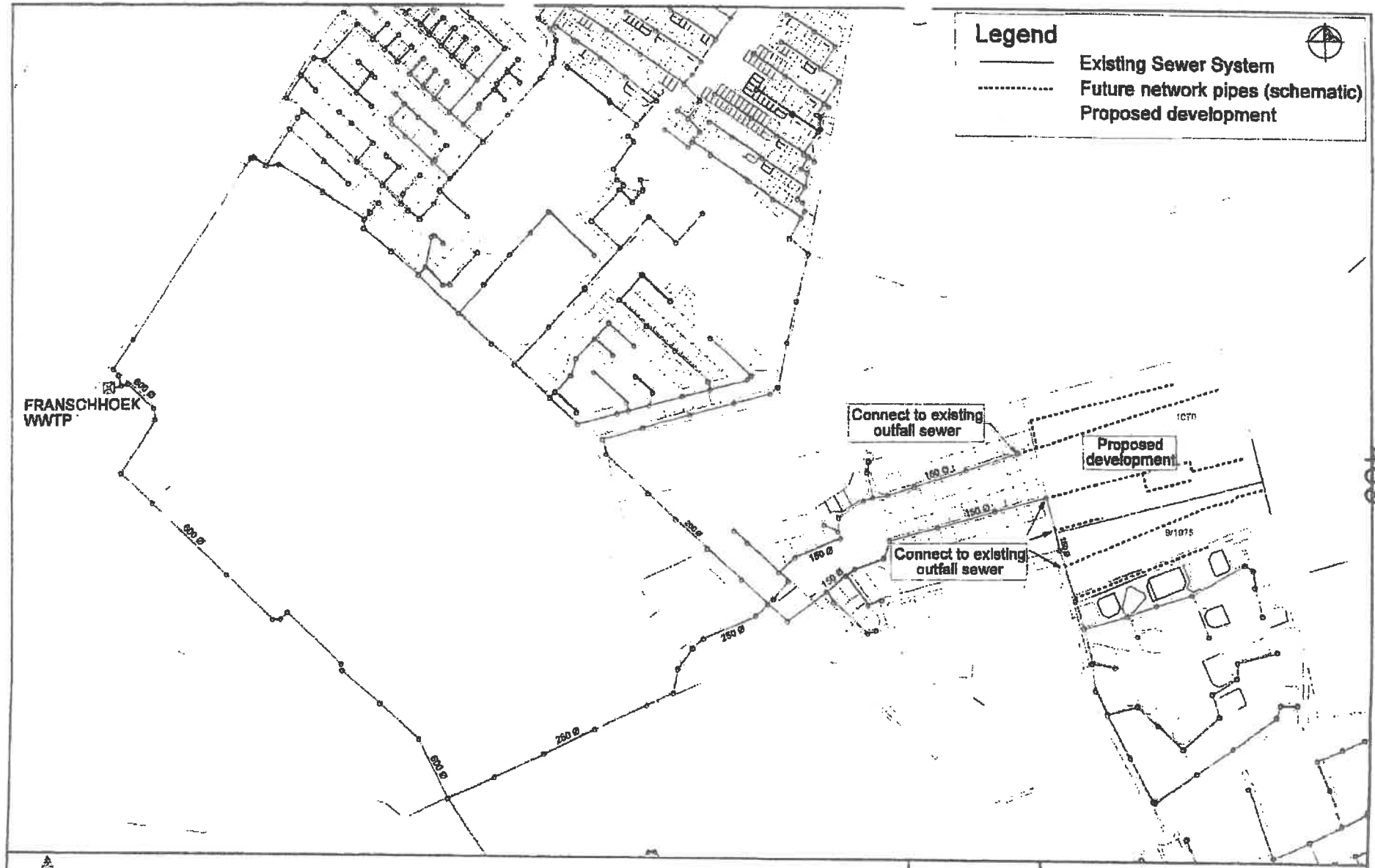
July 2012

Franschhoek - Farm 1070 & portion 9 of Farm 1075

gls

Figure 2

Proposed Development
Farm 1070 & portion 9 of Farm 1075
Water Master Plan



July 2012

Franschhoek - Farm 1070 & portion 9 of Farm 1075

gls

Figure 3

Proposed Development
Farm 1070 & portion 9 of Farm 1075
Existing Sewer System

STELLENBOSCH
MUNICIPALITY

PROPOSED SUB-DIVISION OF PORTION 9 OF LA TERRA DE LUC NR 1075 AND LA TERRA DE LUC NR 1070

INTERNAL ENGINEERING SERVICES DESIGN REPORT FOR PROPOSED NEW RETIREMENT ESTATE DEVELOPMENT

Report compiled for:

La Luc (Pty) Ltd
P O Box 218
7620 PAARL

Report compiled by:

NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

Report No NWE 10/028(1) – October 2010

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1. Introduction

This Engineering Services Design Report has the aim of briefly setting out a philosophy for the design of the internal civil engineering services for the proposed Middelplaas Development in Franschhoek.

2. References for Design Criteria

Various recognised design standard documents and guidelines have been used as the basis for the design criteria and standards for the provision of the internal civil engineering services.

3. General Background

The site of the proposed Retirement Estate Development is situated in the Franschhoek Valley and consists of two erven, namely Portion 9 of La Terra De Luc Nr 1075 and La Terra De Luc Nr 1070. These erven, currently zoned for agricultural use is set to be rezoned for residential use and the combined total size is 10,89 hectares.

The topographical survey conducted by Messrs Albert Geiger Geomatics shows a site with more or less even grades from the southeast to the northwest at an average grade of approximately 4,5%.

Based on a visual inspection of the site, the soil appears to be dark coloured silty sand. A full geotechnical investigation is required.

Various existing building structures and general farming infrastructure has been identified and surveyed on site.

4. Potable Water

The water supply system will be designed as a conventional medium pressure, gravity reticulation network and will be connected into the existing municipal infrastructure. General service standards will be as explained in detail in the report and as agreed previously with the Local Authority.

Written confirmation from the Local Authority that the existing municipal infrastructure has sufficient capacity to allow the proposed development to go ahead, together with stipulations on link services is awaited.

5. Foul Sewer

The sewer system will be designed as a conventional waterborne, gravity reticulation network and will be connected into the existing municipal infrastructure. General service standards will be as explained in detail in the report and as agreed previously with the Local Authority.

Written confirmation from the Local Authority that the existing municipal infrastructure has sufficient capacity to allow the proposed development to go ahead, together with stipulations on link services is awaited.

It has been made clear that the proposed development will not be allowed to discharge sewerage until such time as the planned Wemmershoek regional wastewater treatment works has been completed in 2013.

6. Stormwater

The calculation of design storms will be based on recognised deterministic hydrological methods.

Provision will be made for a minor and a major system, as well as an emergency system as part of the design of the internal stormwater management system.

The analysis of the 1:50-year and 1:100-year flood lines for the development is discussed in Nkuthalo Wouter Engelbrecht Report No NWE 04/026(2) dated December 2004. The report makes suggestions as to the measures required to contain flood lines within acceptable limits.

7. Roads

Access to the site is the subject of a specialist traffic engineering report by others.

The internal road pavements will be structurally designed for the appropriate traffic loads and both asphalt premix and segmented paving is being considered as surfacing options.

8. Electricity

All the single residential erven will be supplied with single phase power while three phase supplies to the old "Opstal", the existing farm house and services buildings will be installed.

Street lighting will be supplied and a pre-paid metering system will be used on all single residential erven.

General service standards and power saving measures will be as explained in detail in the report and as agreed previously with the Local Authority.

Written confirmation from the Local Authority that the existing municipal infrastructure has sufficient capacity to allow the proposed development to go ahead is awaited.

9. Telecommunication

All necessary ducting will be designed.

10. Solid Waste

A central refuse collection area / informal transfer station at the entrance to the development will be provided from where the Local Authority will collect the refuse.

1. Introduction

This Engineering Services Design Report has the aim of briefly setting out a philosophy for the design of the internal civil engineering services for the proposed Middelplaas Retirement Estate Development in Franschhoek.

Each one of the internal civil engineering services will be dealt with individually.

Liaison with the relevant engineering departments of the Local Authority was undertaken to agree services standards, materials to be used etc, prior to compiling this report and the agreed standards will be carried through to the final services design.

2. References for Design Criteria

The following documents have been used as the base for the design criteria and standards for the provision of the internal civil engineering services:

- *"Guidelines for the Provision of Engineering Services in Residential Townships"* (Blue Book).
- *"Toward Guidelines for Services and Amenities in Developing Communities"* (Red Book).
- *"Design Guidelines and Minimum Standards for Civil Engineering Services"* (Report No BS 1028) published by the Stellenbosch Municipality.
- *"Guidelines for Urban Stormwater Management"*, UTG4.
- *"Structural design of Urban Roads"*, UTG3.
- *"Guidelines for road construction materials"*, TRH14.
- *"The Wiring of Premises. Part 1: Low Voltage Installations"* as published by the SABS.
- *"Electrical Distribution – Guidelines for the Provision of Electrical Distribution Networks in Residential Areas. Part 1: Planning and Design of Distribution Systems"*
- Preliminary discussions held with officials from the Stellenbosch Municipality.
- All materials and construction techniques to comply with the latest edition of the relevant SABS specifications.

3. General Background

Location of Premises

The site of the proposed Retirement Estate Development is situated in the Franschhoek Valley and consists of two erven, namely Portion 9 of La Terra De Luc Nr 1075 and La Terra De Luc Nr 1070. These erven, currently zoned for agricultural use is set to be rezoned for residential use and the combined total size is 10,89 hectares.

The Development is northeast of the Franschhoek South urban edge and is bordered by the Domain Des Anges development to the south, the La Petit Provence development to the west, a gravel servitude road (Dirkie Uys Road extension) to the east and agricultural land to the north.

Topography

The topographical survey conducted by Messrs Albert Geiger Geomatics shows a site with more or less even grades from the southeast to the northwest at an average grade of approximately 4,5%.

Soil Conditions

The Franschhoek and Drakenstein Mountains surrounding Franschhoek consists mainly of the Table Mountain sandstone formation of the Cape Super group. Unconsolidated conglomerate and colluvium occur at the foot of the surrounding mountains. The topsoil in the town mainly consists of sandy alluvium with organic rests overlying residual soils of the Klipheuwel formation.

Based on a visual inspection of the site, the soil appears to be dark coloured silty sand. From past experience in the area we are aware that the region contains areas of collapsing soils with high and/or perched water tables during the rainy season.

A geotechnical investigation will be required to determine the true nature of the soils and what, if any, precautions need to be taken during the design phase of especially the structural design of the internal roads.

Existing Structures on Premises

The topographical survey indicates two domestic dwellings with a number of outbuildings. It also indicates a small concrete reservoir as well as an earth dam on the stormwater channel that crosses the property.

At this point it is envisaged that the two main buildings will be retained, while the remainder of the outbuildings will be demolished. Heritage Consultants have been appointed by the Developer to advise on the historical significance of the property in general and the structures in particular.

Existing Services on Premises

The topographical survey indicates a borehole towards the south eastern corner of the site, at least two water pump sets, an overhead power line on the eastern border of the property and another overhead line from the south eastern corner towards the dam almost on the central northern cadastral boundary.

The full extent of the services existing on the property is currently under investigation. The location and type of sub-surface agricultural drains are being investigated, together with the positions and types of all existing irrigation network components.

4. Potable Water

The water supply system will be designed as a conventional medium pressure, gravity reticulation network and will be connected into the existing municipal infrastructure.

The potable water reticulation network will be designed based on the following criteria:

Municipal Bulk Supply System

We are awaiting confirmation from the Local Authority on the requirements for the link services and upgrades to the existing bulk infrastructure, but preliminary indications suggest that a 110mm diameter uPVC link pipe will have to be installed from Dirkie Uys Road to the south eastern corner of the Development, where the pipe will change direction to follow the southern cadastral boundary all the way to the Main Road where it will be connected into the Municipal main to create a ring main.

Consumption & Flow

- The following average daily consumption figures are assumed:
  - 800 lit / erf / day for single residential erven, assuming 101 habitable erven with 2 persons per erf.
  - 450 lit / apartment / day for apartments, assuming 28 apartments with 1 person per apartment.
  - 500 lit / 100m² gross floor area / day for clinic and administration building.
- Erf connections shall be able to deliver 45 ℓ/minute minimum.
- A Peak Factor of 9 will be used for the calculation of the instantaneous peak demand in main line pipes.
- Maximum head of 90 m under zero flow conditions.
- Minimum head of 24 m under instantaneous peak demand conditions.
- Maximum velocity allowed of 1,5 m/s under peak flow conditions.
- Consumption metering will be done at the erf boundary with individual 20 mm dia domestic meters.
- For the Development as a whole, bulk metering will be done at the connection to the mains with a suitably sized combination meter.

Fire Flow

- Fire risk is set at Low Risk, Group I with fire flows of 15 ℓ/s/hydrant.
- Minimum residual head of 7 m at peak demand with a superimposed fire flow demand from one hydrant.
- Maximum velocity allowed of 3,0 m/s under fire flow conditions.

Materials

- Minimum pipe diameter of 110 mm.
- Pipes are to be SABS approved, standard length, Class 12 uPVC pipes on a bed suitable for flexible pipes.
- All uPVC pipes to utilise standard uPVC Z-lock couplings.
- Bends to be uPVC Class 12, but tees and crosses shall be cast iron.
- Minimum cover on water pipes to be 0,8 m.

4. Potable Water (Continued)

Materials (Continued)

- Specifications for valves as follows:
  - "Downright" Class 16, left-hand closing isolation valves with non-rising spindles in brick built chambers with blue polymer concrete covers and frames.
  - Underground type fire hydrants with London round screw thread in brick built chambers with yellow polymer concrete Type 5 FH box.
- Bulk metering will be done with a Kent or similar approved combination meter.
- Erf connections to be 28 mm inside diameter Class 16 polycop or similar. All consumption meters to be Kent or similar approved.
- Pipes under roadways shall be bedded and backfilled with clean, imported sand compacted to 100% Mod AASHTO and pipes in other areas with approved backfill material compacted to 90% Mod AASHTO.
- Thrust blocks shall be cast using Class 20/19 concrete throughout.

Layout

- Pipes shall not have a longitudinal grade of less than 0,5%.
- Pipes shall generally be located inside road reserves and 1,2 m off the cadastral erf boundaries with erf connections marked on the road kerbs.
- Isolation valves shall be located such that not more than 4 valves are to be closed to isolate a section of pipeline for maintenance and repair functions and shall be located opposite cadastral erf boundaries or cadastral splays as applicable.
- Fire hydrants shall be located not more than 200m apart and shall also be located opposite cadastral erf boundaries or splays. Fire hydrants shall also be located to double as air release points or scour valves as required.
- The positions of all valves and hydrants shall be marked on the road kerbs opposite the valves.
- Only single erf connections to be constructed.
- Erf connections shall be situated 0,5m off the lateral cadastral erf boundary of the erf and shall terminate 0,5m inside the erf.
- The minimum depth to invert on reticulation mains shall not be less than 900mm and the minimum cover over house connections shall not be less than 800mm.

General

- Written confirmation from the Local Authority that the existing municipal infrastructure has sufficient capacity to allow the proposed development to go ahead, together with stipulations on link services is awaited.
- On completion, hydraulic testing of the system will be carried out in the presence of the Engineer and representatives of the Local Authority.
- Borehole water may be utilised for irrigation of the private open spaces in the development, thereby reducing the demand on the Franschhoek potable water infrastructure.
- This report is to be read in conjunction with the standard details contained in Appendix 2.

5. Foul Sewer

The sewer system will be designed as a conventional waterborne, gravity reticulation network and will be connected into the existing municipal infrastructure.

The design of the sewer system is based on the following:

Municipal Bulk Sewer System

- The sewer outfall will be connected to the internal reticulation of the La Petit Provence development to the west of the site. A public sewer main under the control of the Local Authority was installed through the La Petit Provence development in the late 1990's and a connection point for the property under discussion was supplied at that time.
- The connection point is situated such that a small sewer pump station may be required to service the northern section of the Middelplaas development.

Discharge & Flow

- The following average discharge figures are assumed:
  - 600 lit / erf / day for single residential erven, assuming 101 habitable erven with 2 persons per erf.
  - 400 lit / apartment / day for apartments, assuming 28 apartments with 1 person per apartment.
  - 400 lit / 100m² gross floor area / day for clinic and administration building.
- An un-attenuated Peak Factor of 2,5 will be used.
- An allowance for extraneous flows of 15%.
- A minimum flow velocity of 0,7 m/s achieved at least once per day.

Should a sewer pump station be required, the following will apply:

- An effluent pump velocity not exceeding 2,5m/s.

Materials

- Pipes are standard length, Class 34 heavy duty, solid wall uPVC pipes for both the main lines and the individual house connections, both on a bed suitable for flexible pipes.
- Minimum pipe diameter is 160 mm for main lines and 110 mm for house connections.
- A minimum cover of 0,6 m over all pipes outside trafficked areas and 0,8 m in road reserves.
- Pipes under roadways shall be bedded and backfilled with clean, imported sand compacted to 100% Mod AASHTO and pipes in other areas with approved backfill material compacted to 90% Mod AASHTO.
- Pre-cast concrete ring manholes (suitably waterproofed) with flexible pipe connections will be used. Covers and frames shall be Type 2A ductile iron throughout.

Should a sewer pump station be required, the following will apply:

- A 110mm diameter Class 12 uPVC rising main.

5. Foul Sewer (Continued)

Layout

- Main lines are generally located 1,5m off the cadastral road reserve boundary, or 1,2 m inside the cadastral erf boundary of the row of erven it services in the case of mid-blocks, depending on the topography of the site.
- Minimum grade on main lines of 1:150 and minimum grade on erf connections of 1:60 with at least 70% of the erf able to drain to the erf connection.
- A maximum distance between manholes of 90 m will be allowed.
- There shall be no change in flow direction where the internal angle of change is less than 90°.
- Erf connections will be fitted with a rodding eye 1,0 m inside the cadastral erf boundary. Where applicable, erf connections will be marked on the road kerbs.
- Only single erf connections will be constructed. Erf connections shall be situated 1;5m off the lateral cadastral erf boundary of the erf and shall terminate 1,0m inside the erf..

Should a sewer pump station be required, the following will apply:

- A suitable discharge and stilling chamber at the head of the rising main.
- A pump sump size sufficient to allow for a 4 hour emergency storage capacity over and above the normal top water level.
- Two duty alternating pump sets with telemetry.
- Due to the vulnerability of power supply in Franschhoek, a standby generator will be required.

General

- Written confirmation from the Local Authority that the existing municipal infrastructure has sufficient capacity to allow the proposed development to go ahead is awaited.
- It has been made clear that the proposed development will not be allowed to discharge sewerage until such time as the planned Wemmershoek regional wastewater treatment works has been completed in 2013.
- On completion, air pressure testing and mirror testing of the system will be carried out in the presence of the Engineer and representatives of the Local Authority.
- This report is to be read in conjunction with the standard details contained in Appendix 2.

6. Stormwater

Provision will be made for a minor and a major system, as well as an emergency system as part of the design of the internal stormwater management system.

The minor stormwater system will be designed as an underground pipe system and associated structures to accommodate the runoff of a 1 in 2-year storm event. The piped stormwater system will be discharged into the stormwater channel that crosses the premises.

The major stormwater system will predominantly consist of suitably graded roads to temporarily accommodate surface runoff of storm events in excess of the 2-year storm.

The emergency system recognises failure or malfunction of the minor and / or major systems by providing continuous overland flow routes in order to minimise flooding of residential areas. Discharge will also be into the stormwater channel that crosses the premises.

The design criteria are as follows (read in conjunction with Section 7: Roads):

Runoff & Flow

- The MAP for the region is taken as 812 mm per annum (Rainfall gauging station No 22113, La Motte) and runoff will be calculated using the Rational Method with appropriate catchment and site specific factors.
- The minor system is designed to cater for a 2-year return period with a maximum overland flow distance of approximately 75 m.
- Stormwater flow velocities in roadways and side channels will be kept as low as possible and related to the surface finish utilised to prevent scour and erosion.
- Roads will be graded to ensure a free and continuous flow of stormwater towards the main drainage routes as well as to prevent the ponding of water in intersections.

Flood Lines & Dam Safety

- The analysis of the 1:50-year and 1:100-year flood lines for the development is discussed in Nkuthalo Wouter Engelbrecht Report No NWE 04/026(2) dated December 2004.
- It was found that the capacity of the existing open channel was insufficient to cater for the 1:50 year storm event runoff and suggestions have been made as to the modifications required in order to rectify the situation.
- The existing dam will not be retained in its current form and this issue is dealt with in the above mentioned report as well.

Materials

- Stormwater pipes will generally be Class 100D pre-cast concrete pipes with ogee joints, laid on a Class C bed.
- Minimum pipe diameter on main lines is 375 mm.
- Pipe diameter of catchpit links to be 300 mm.
- All pipe joints to be wrapped with a 300mm wide geofabric blanket of 150g/m² mass (U14 or similar).
- As alternative, precast spigot and socket pipes with suitable rubber O-rings may be used without geofabric joint wrapping.

6. Stormwater (Continued)

Materials (Continued)

- The minimum cover on stormwater pipes is generally 0,8 m under sidewalks and 1,0m at road crossings.
- Pipes under roadways shall be bedded and backfilled with clean, imported sand compacted to 100% Mod AASHTO and pipes in other areas with approved backfill material compacted to 90% Mod AASHTO.
- Brick built (Type "B") catchpits with pre-cast concrete kerb inlets and pre-cast concrete top slabs with integral hinged ductile iron access covers and frames.

Layout

- Stormwater pipes will generally be under the kerb line, linking the catchpits.
- Catchpits will also serve as maintenance access points, thereby eliminating the need for stormwater manholes.
- Approximate distance between catchpits of 50 m.

General

- On completion, mirror testing of the system will be carried out in the presence of the Engineer and representatives of the Local Authority.
- This report is to be read in conjunction with the standard details contained in Appendix 2.

7. Roads

The design criteria for roads within the development are as follows:

Access to the Site

Access to the site is the subject of a specialist traffic engineering report by others.

Materials

- Subgrade CBR - 7 to 15 minimum (in-situ sand / soil of G7 to G10 quality). There is a possibility that this may not be achieved with the insitu soils. Geotechnical testing will be carried out.
- Subbase CBR - 45 minimum at 95% Mod AASHTO (G5 quality).
- Basecourse CBR - 80 minimum at 98% Mod AASHTO (G4 quality).
- Continuously graded hot asphalt premix with 80/100 penetration grade bitumen binder, compacted to 95% Marshall density.
- Alternatively, 60mm pre-cast interlocking concrete pavers on suitably designed layerworks may be used.
- All road construction materials to be specified with due consideration for intended application, climatic conditions, level of stormwater system incorporated etc.

Structural Design & Finishes

The road pavement will be structurally designed for the appropriate traffic loads (Category UD structural design for 20 year design life and B1 traffic class loading for Class 5d.& e Roads):

Road Class	Reserve Width	Blacktop Width	Structural Layers	Surfacing
Access Way (Class 5d)	8m	5.5m	300SG:125SB:125BC	30mm Asphalt
Access Court (Class 5e)	6m	4.0m	300SG:125SB:125BC	30mm Asphalt
Segmented Paving Alternative				
Access Way (Class 5d)	8m	5.5m	300SG:150BC	80mm Interlock
Access Court (Class 5e)	6m	4.0m	300SG:150BC	80mm Interlock

Layout

- The minimum road reserve width inside the development is 8 m.
- None of the roads will have formal sidewalks and property owners will be encouraged to cultivate gardens up to the kerb edge.
- Pre-cast concrete mountable kerb and channel combination units will be used (CK5 & MK10) on all internal roads where asphalt premix is used.
- Where segmented paving is used, edge restraint will be by means of a pre-cast concrete edging or brick-on-edge, while surface drainage will be by means of V-shaped brick channels formed in the paving.
- Minimum longitudinal grade on roads is 0,5%.
- Minimum cross grade on roads is 2% for asphalt surfaced roads and 3% for segmented paving.
- Minimum bellmouth radii of 5,0m.

7. Roads (Continued)

Layout (Continued)

Road Res Width	Road Width	Min Hor Curve Radius	Min Vert Curve Length	Min K Value	Bellmouth Radii
8,0m	5.5m X-Fall	10m on CL	20m	1.0	5m
6,0m	4.0m X-Fall	10m on CL	20m	1.0	5m

General

- Material quality control test and workmanship will be tested throughout the construction period in terms of the standard SABS test procedures for compliance with the specifications.
- This report is to be read in conjunction with the standard details contained in Appendix 2.

8. Electricity

Maximum Demand

The maximum demand is calculated according to the following criteria:

- A design ADMD (After Diversity Maximum Demand) of 4,00 kVA per erf will used in the design after consultation with the local authority. An ADMD of 4,04kVA per erf is recommended by SANS 034, Table 1.
- All 101 erven and 28 apartments will each be provided with a 60A single phase supply in the dwellings, resulting in a BDMD (Before Diversity Maximum Demand) of 13,8 kVA per erf.
- Street kiosks will be supplied with 63A slow tripping circuit breakers to provide the necessary protection discrimination during overload and fault conditions.
- The supply to the services building (clinic, dining, kitchen, etc.) will be based on an ADMD of 80VA/m².

Reticulation System

- The total provisional maximum demand is calculated at 575 kVA. A single 800 kVA mini substation will provide in the demand. The local authority does not use 630kVA mini substations. A 70mm²CU 11 kV cable is evident on the southern boundary with enough capacity to supply the site. This cable will be cut and two "legs" will be provided to a position approximately in the middle of the development. The proposed mini substation will be located at that position. This will provide alternative supply routes and a secure supply.
- The low voltage system shall consist of feeder cables between the mini substation and the distribution kiosks. The distribution kiosks will be the source of supply to the individual erven.
- The 11kV and low voltage networks will be taken over and maintained by the Local Authority after completion on condition that 24 hour access is guaranteed by the Body Corporate.

Street Lighting

- Street lighting will be designed according to SANS 10098-1: 1998 for class B2 roads using 70W high pressure sodium post top luminaires mounted on galvanized steel poles.
- The street lighting network will be taken over and maintained by the Local Authority after completion.

Metering

- Metering of individual dwellings shall be of the single phase prepayment type according to the Local Authority's specifications. Meters will be installed in road side kiosks and will communicate with a keypad in the respective dwelling. This communication will be via a radio link.
- The services buildings will be provided with three phase conventional meters on an account basis.

Power saving

- The local authority has requested that solar hot water cylinders be installed. An electrical back up supply will provide hot water during bad weather days.

8. Electricity (Continued)

Future site for indoor substation

- The Local Authority has requested a 15 x 10m site in close proximity to the south eastern corner of the site. The exact location to be determined at a later stage. This site will be used to strengthen the electrical network in the area.

9. Telecommunication

Provision will be made during construction for the following infrastructure related to telecommunications:

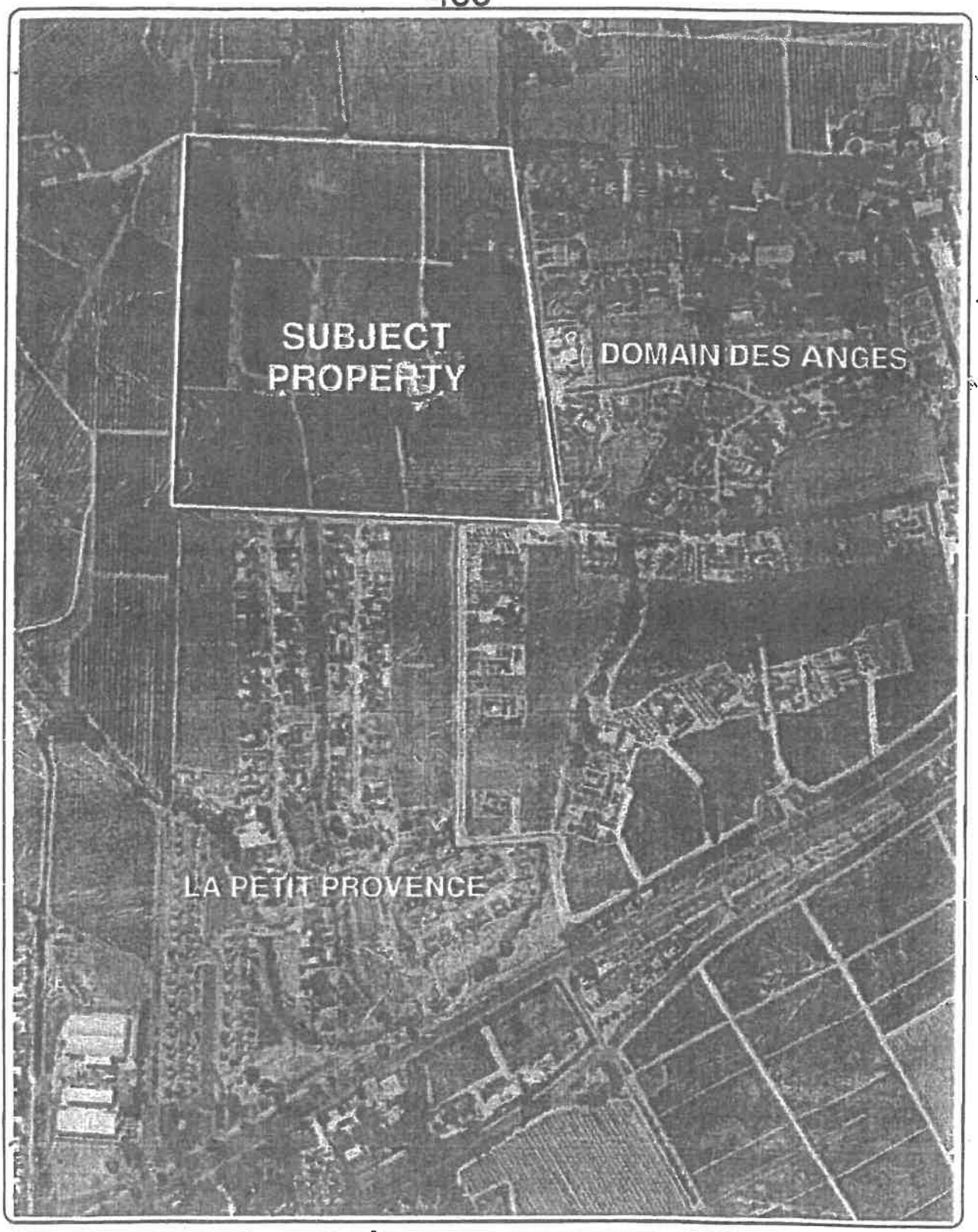
- All underground ducting that will be required by the Service Provider.
- All the required inspection chambers and draw boxes that will be required for cabling.

10. Solid Waste

As this will be a private development, the layout will make allowance for a central refuse collection area / informal transfer station at the entrance to the development from where the Local Authority will collect the refuse.

APPENDIX 1

Locality Plan



NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

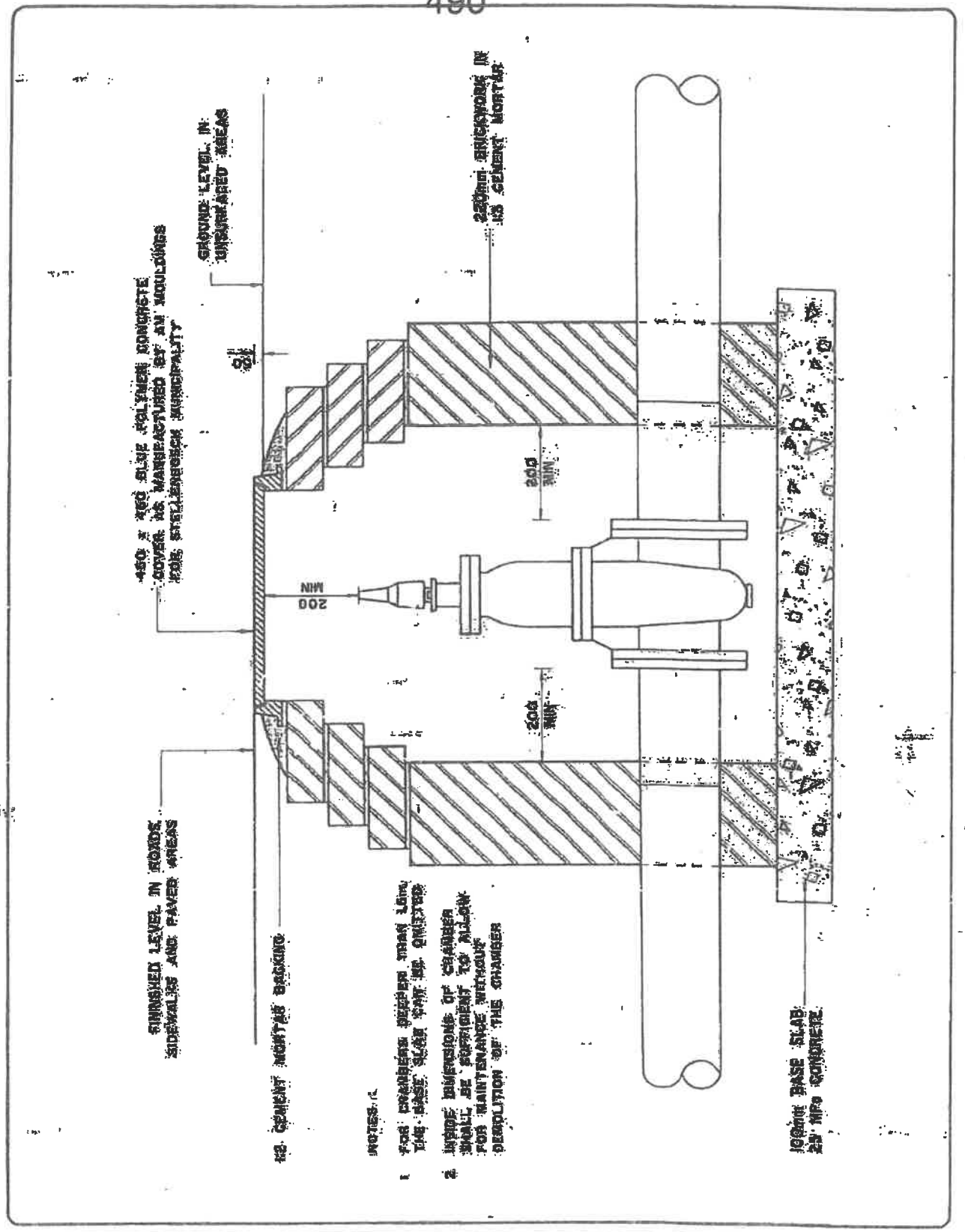
STANDARD DETAIL

LOCALITY PLAN

Scale:	Not to Scale
Drawn:	
Approved:	M Bruns Pr Eng
Date:	Oct 2010
Appendix No.	1

APPENDIX 2

Standard Details



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STANDARD DETAIL

VALVE CHAMBER

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	02/05/[illegible]

Appendix No.	2.1

NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

FIRE HYDRANT CHAMBER

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010

Appendix No. 2.2

PIPE DIAMETER	X	DEPTH OF BLOCK	Z
300	1500	1200	375
250	1250	1000	350
200	1000	800	325
150	750	600	275
100	500	400	175
75	375	300	125
50	250	200	75

BEARING PRESSURE OF SOIL BEHIND THRUST BLOCK MUST BE AT LEAST 40 kPA AND THE TEST PRESSURE HEAD IN PIPELINE NOT BIGGER THAN 135m

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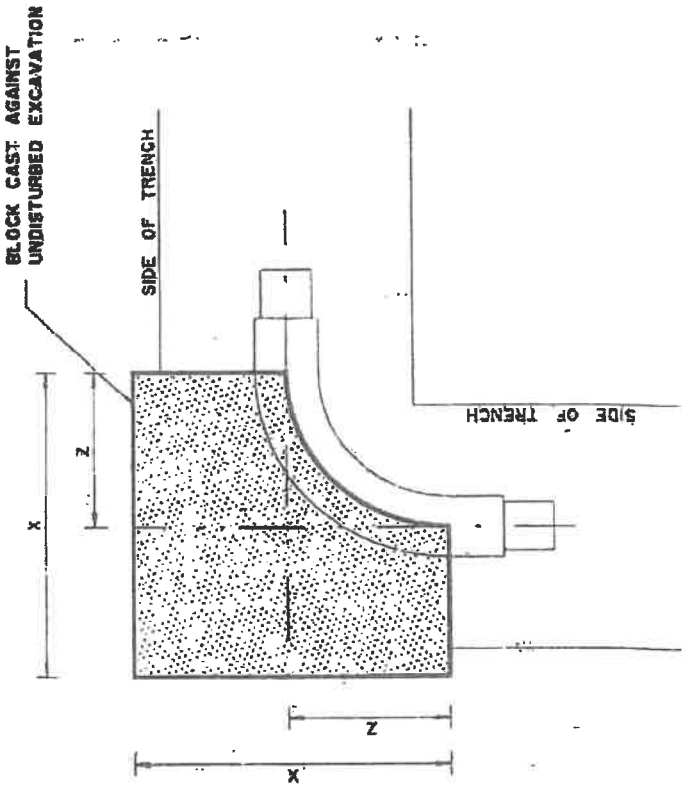
STANDARD DETAIL

THRUST BLOCKS - SHEET 1

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010

Appendix No. 2.9



PIPE DIAMETER	X	DEPTH OF BLOCK	Z
300	1950	1200	575
250	1625	1000	550
200	1300	800	475
150	1000	600	400
100	650	400	250
75	500	300	175
50	325	200	125

BEARING PRESSURE OF SOIL BEHIND THRUST BLOCK MUST BE AT LEAST 40 kPA AND THE TEST PRESSURE HEAD IN PIPELINE NOT BIGGER THAN 135m

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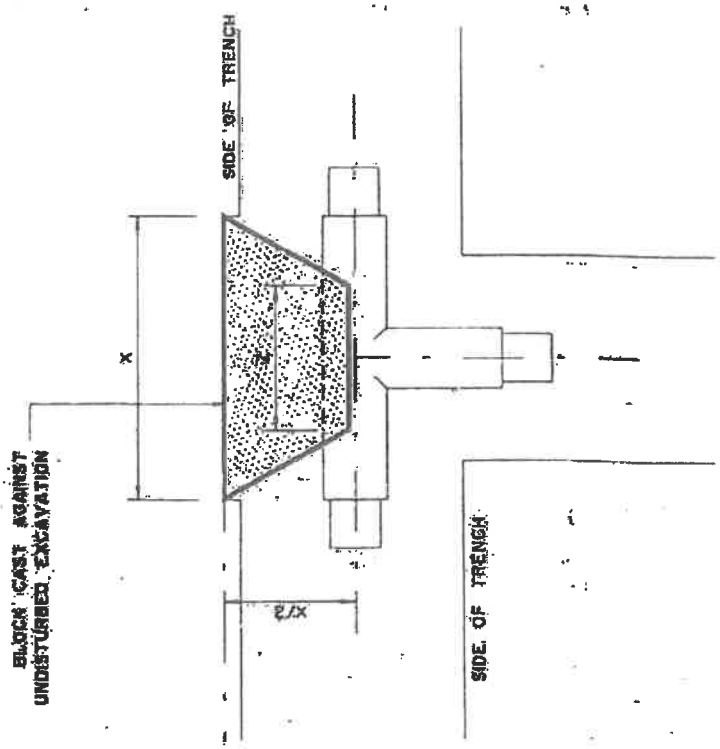
STANDARD DETAIL

THRUST BLOCKS - SHEET 2

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010

Appendix No. 2.4



PIPE DIAMETER	X	DEPTH OF BLOCK	Z
300	1950	1200	550
250	1625	1000	450
200	1300	800	350
150	1080	600	275
100	650	400	200
75	500	300	150
50	325	200	100

BEARING PRESSURE OF SOIL BEHIND THRUST BLOCK MUST BE AT LEAST 40 kPa AND THE TEST PRESSURE HEAD IN PIPELINE NOT BIGGER THAN 135m

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MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

THRUST BLOCKS SHEET 3

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.5

NOTES

FERRULES TO BE OPEN AT ALL TIMES.

ERF CONNECTIONS MAY ONLY BE COVERED AFTER INSPECTION BY MUNICIPAL REPRESENTATIVES

SINGLE CONNECTION

CLASS 16 POLYPROPYLENE SADDLE
28mmØ BRASS FERRULE
28mmØ POLYCOP PIPE
WATERMAIN
ROAD RESERVE
500mm
28mmØ BRASS ENDCAP
ERF BOUNDARY

DOUBLE CONNECTION

CLASS 16 POLYPROPYLENE SADDLE
35mmØ BRASS FERRULE
35mmØ POLYCOP PIPE
35 x 28 x 28 T-PIECE FOR DOUBLE CONNECTION
28mmØ BRASS ENDCAP
500mm
500mm
JOINT ERF BOUNDARY
ERF BOUNDARY
±500mm
28mmØ POLYCOP PIPE
WATERMAIN
ROAD RESERVE

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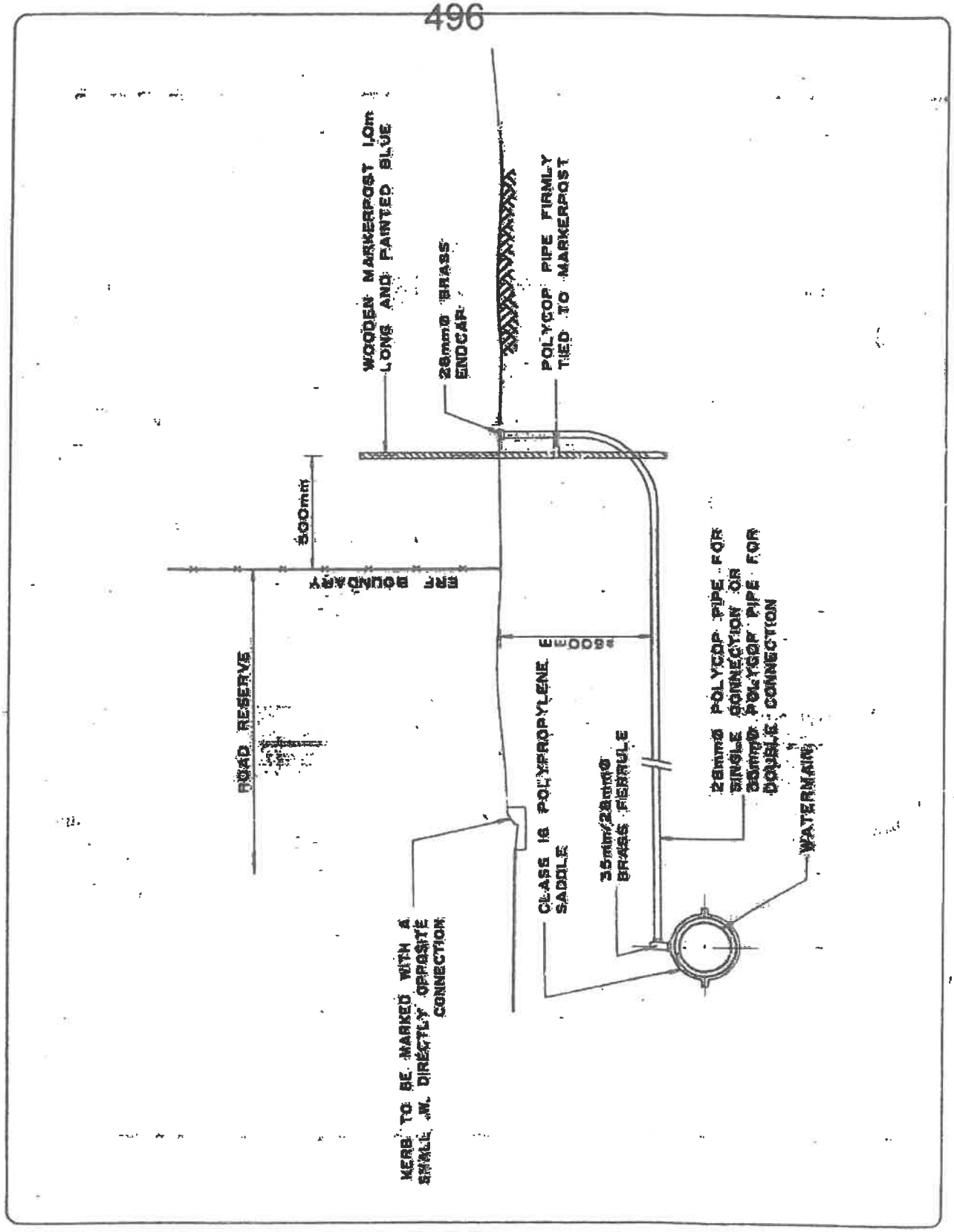
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

WATER ERF CONNECTION - PLAN

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.6

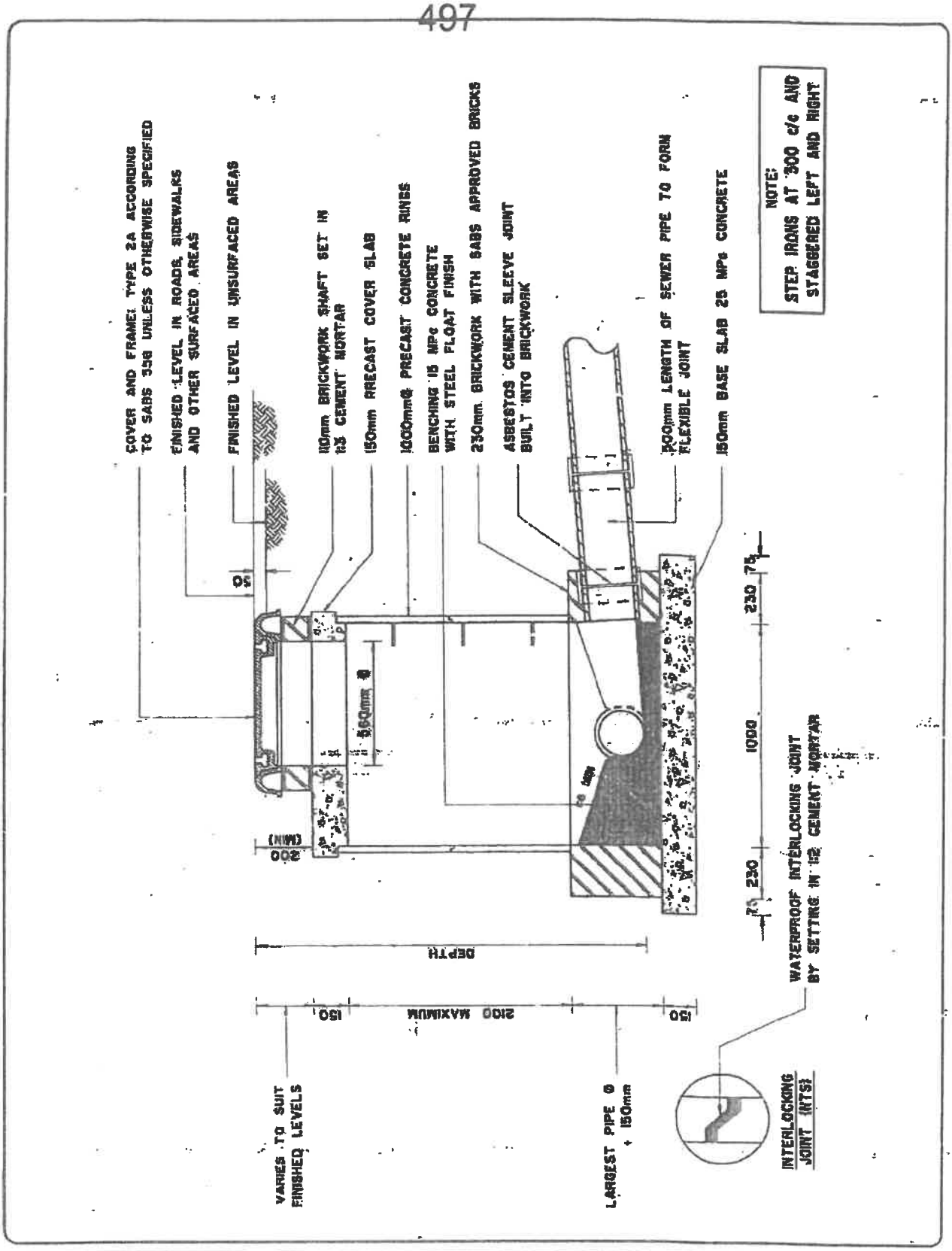


NWE
MULTIDISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

WATER ERF CONNECTION - SECTION

Scale:	Not to Scale
Drawn:	
Approved:	M Smits Pr Eng
Date:	Oct 2015
Appendix No.	2.7



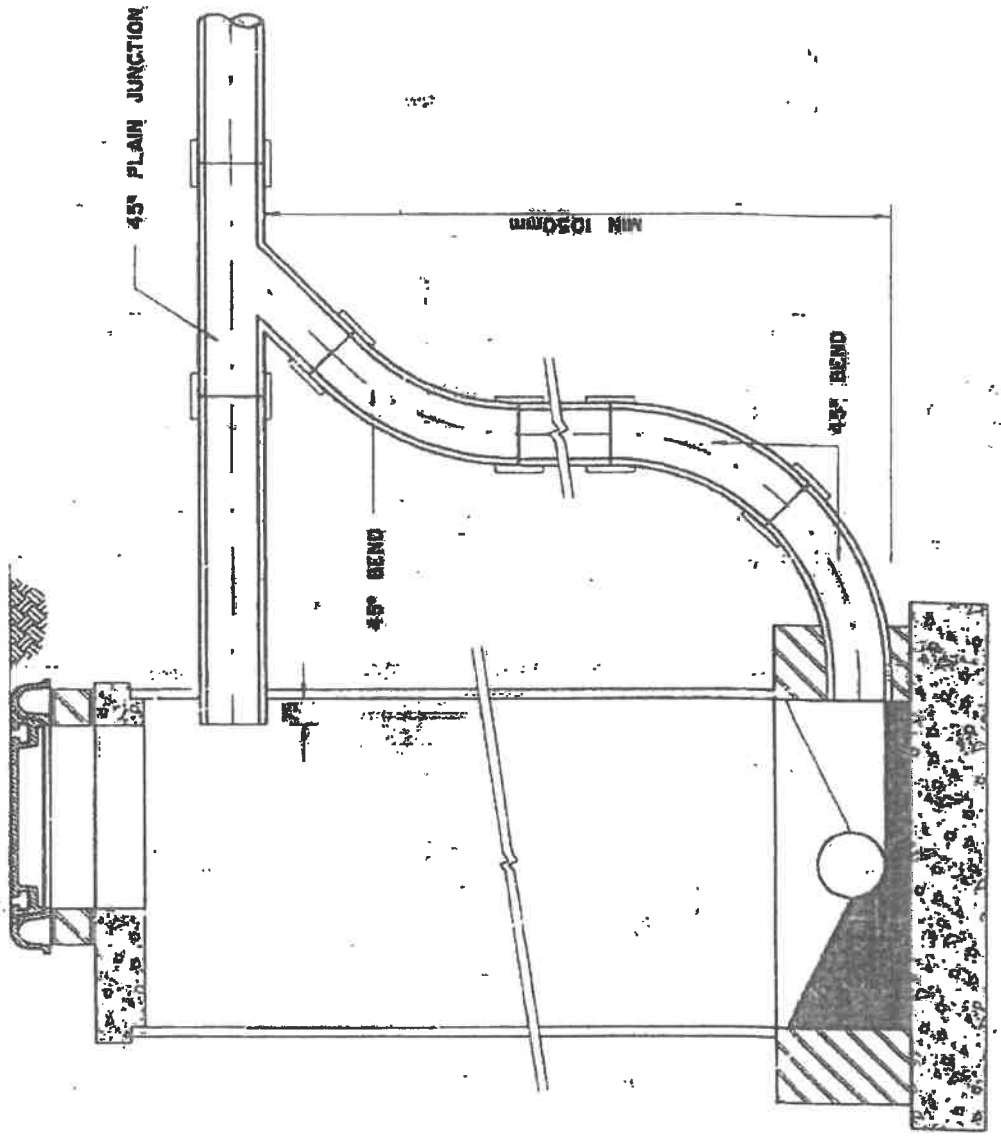
NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

FOUL SEWER MANHOLE

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010

Appendix No. 2.9

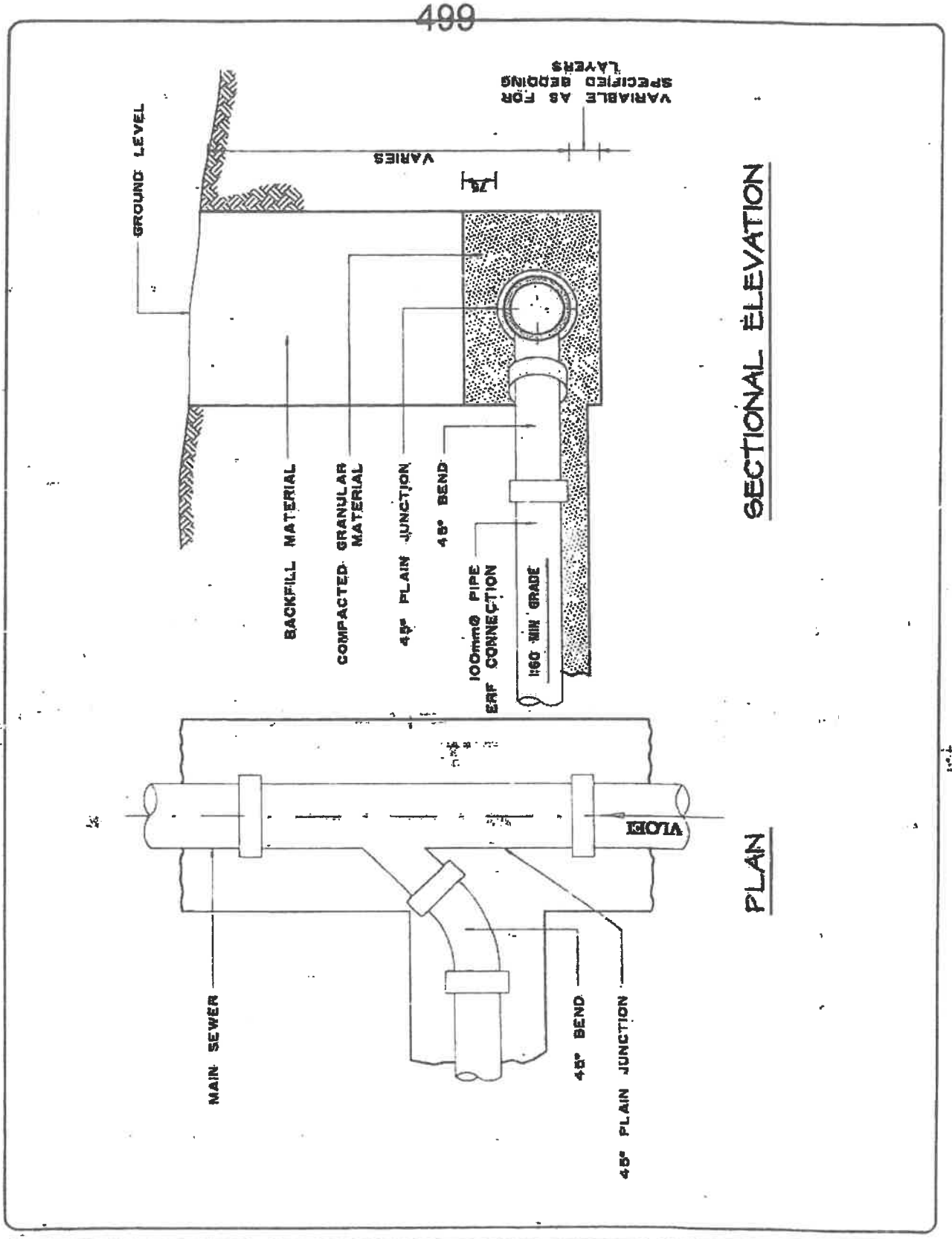


NWE
MULTIDISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

FOUL SEWER BACKDROP

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.9



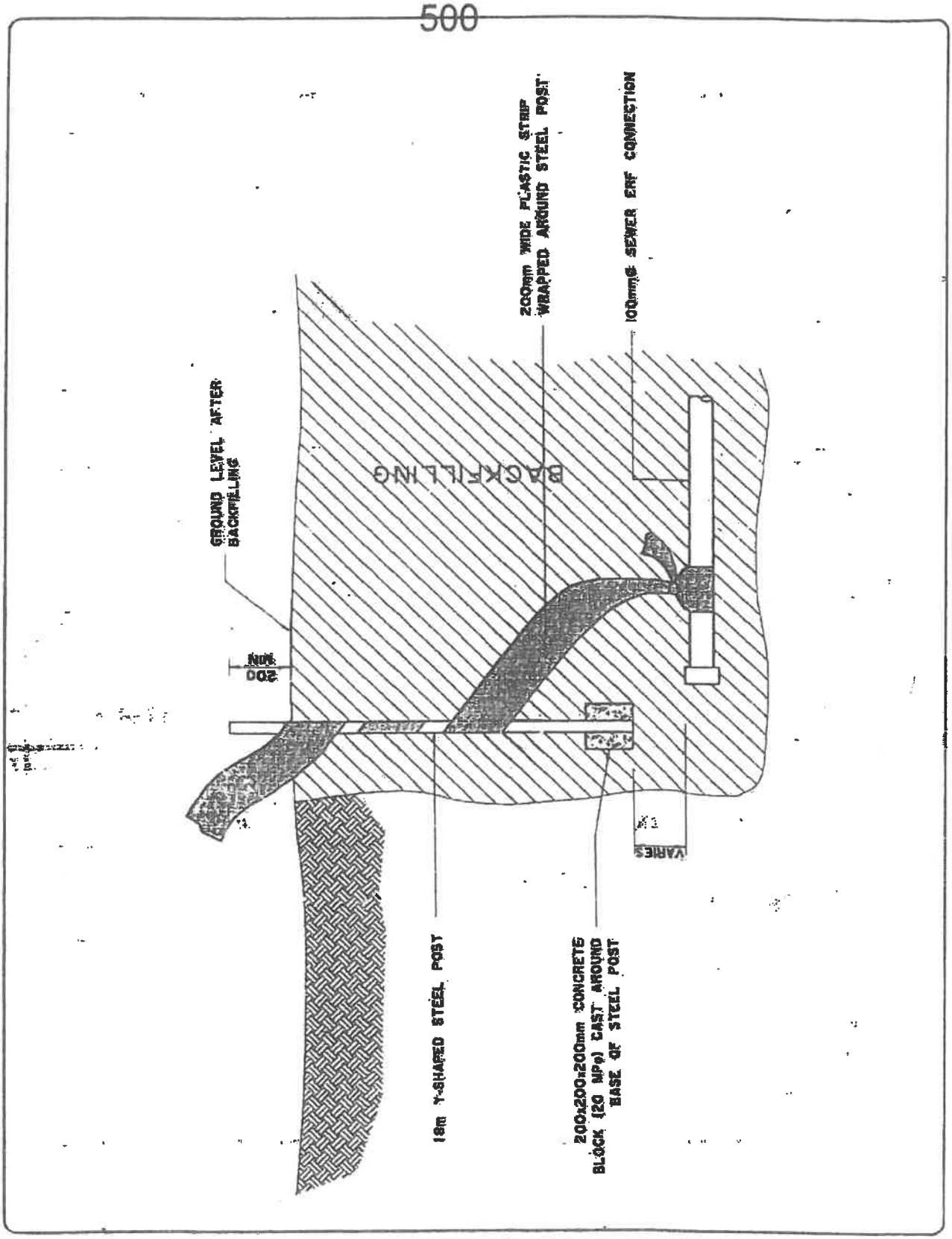
NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

FOUL SEWER ERF CONNECTION

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010

Appendix No. 2.10

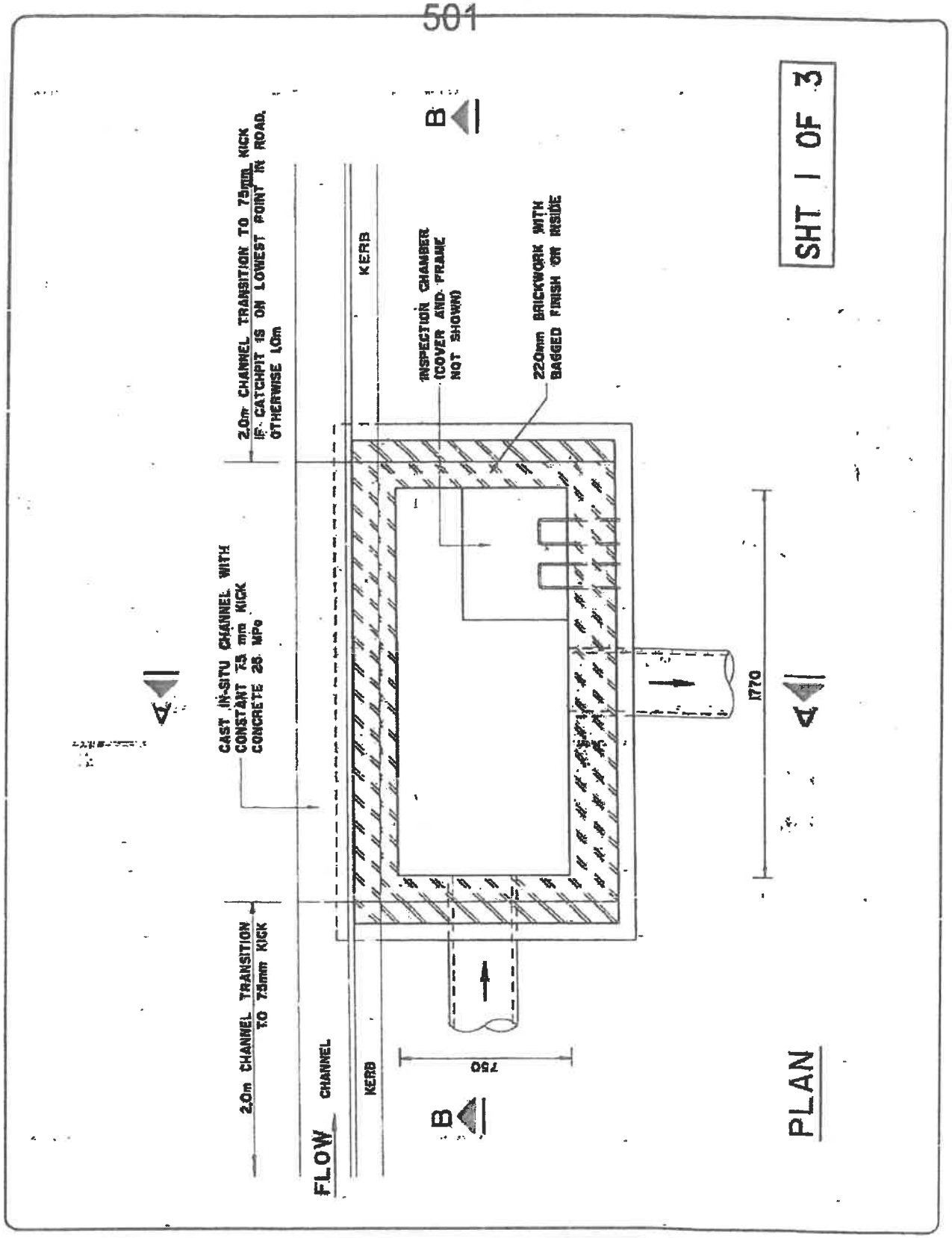


NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

FOUL SEWER CONNECTION MARKER

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.11



NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

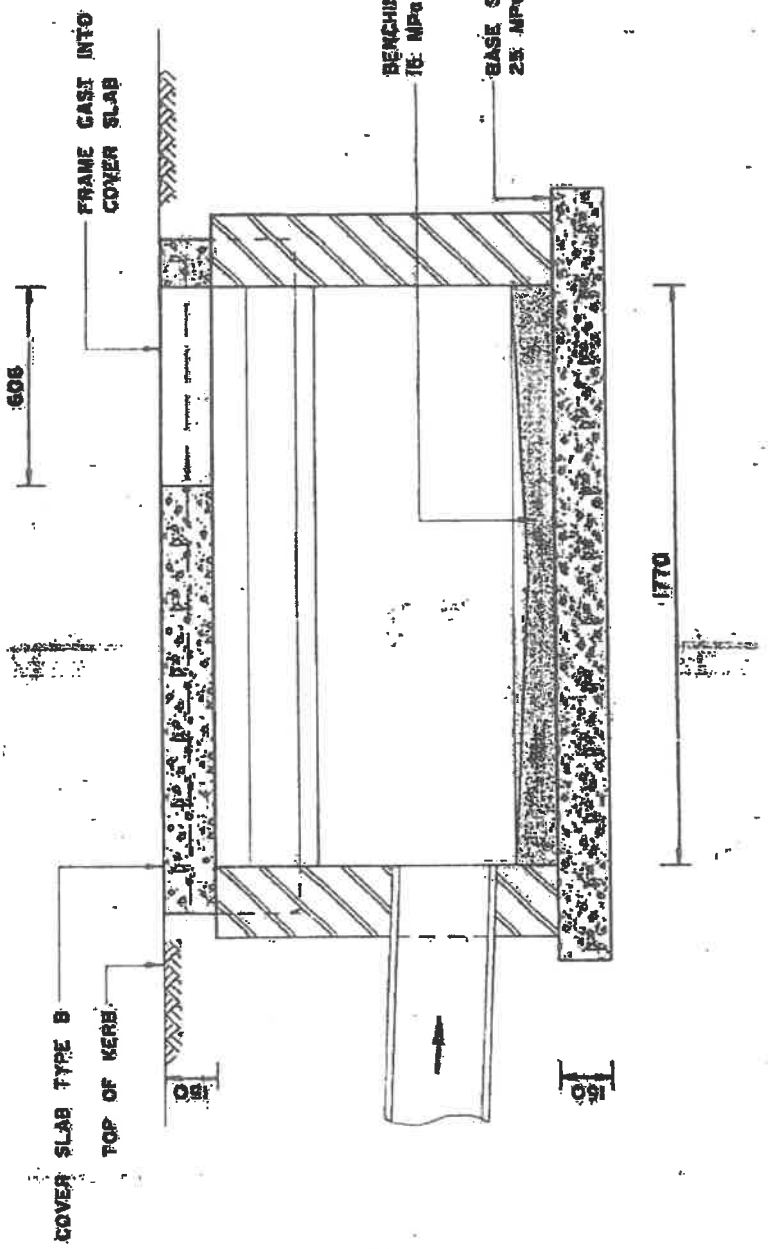
STORMWATER CATCHPIT - SHEET 1

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	06/2010

Appendix No. 2.12

SHT 2 OF 3

SECTION B - B



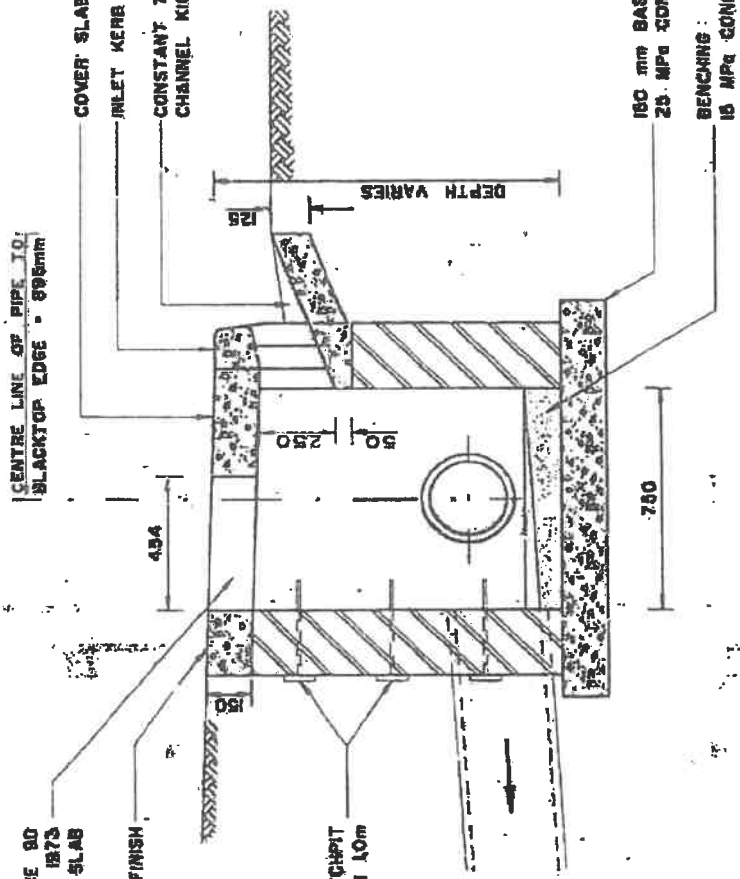
NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

STORMWATER CATCHPIT SHEET 2

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.13

SHT 3 OF 3



SECTION A - A

NOTES:

1. STEP IRONS TO BE STAGGERED & PLACED AT 300mm SPACING FOR CATCHPITS DEEPER THAN 1,0
2. PIPE AND BENCHING VARIES TO SUIT LAYOUT

NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

STORMWATER CATCHPIT - SHEET 3

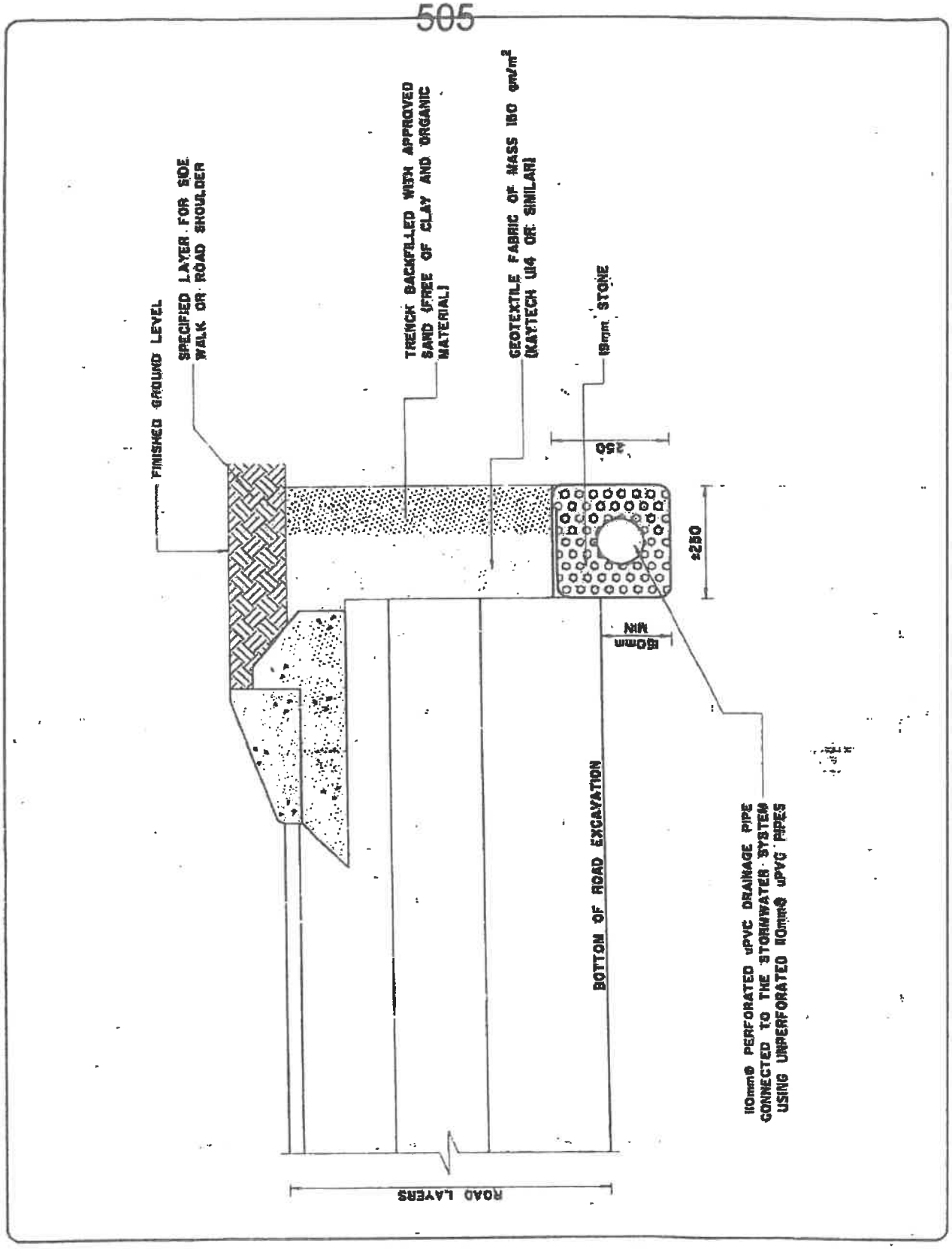
Scale:	Not to Scale
Drawn:	
Approved:	M Bmute Pr Eng
Date:	Oct 2010
Appendix No.	2.14

NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

STORMWATER HEADWALL

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.15

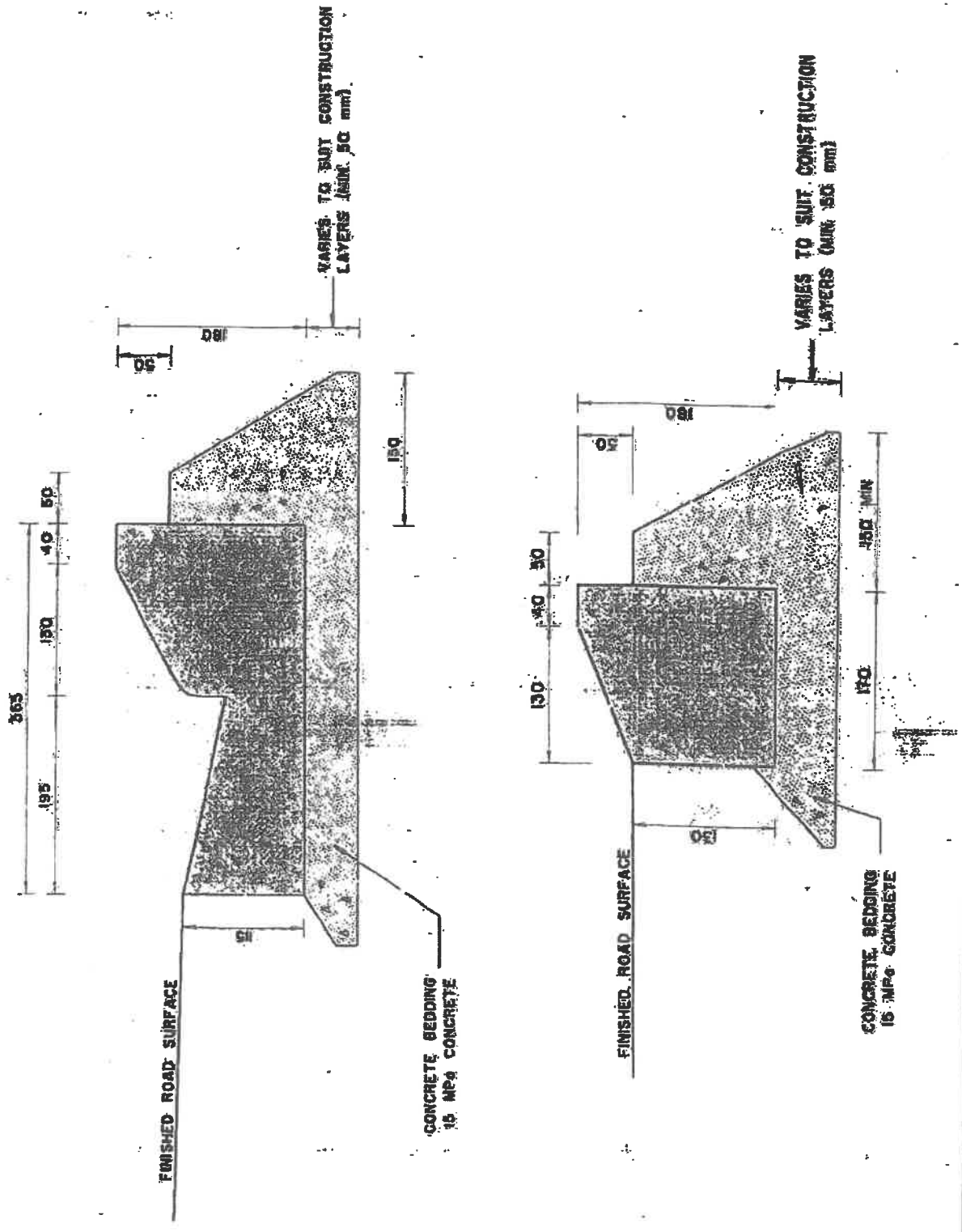


NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

STORMWATER SUBSOIL DRAIN

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010
Appendix No.	2.16



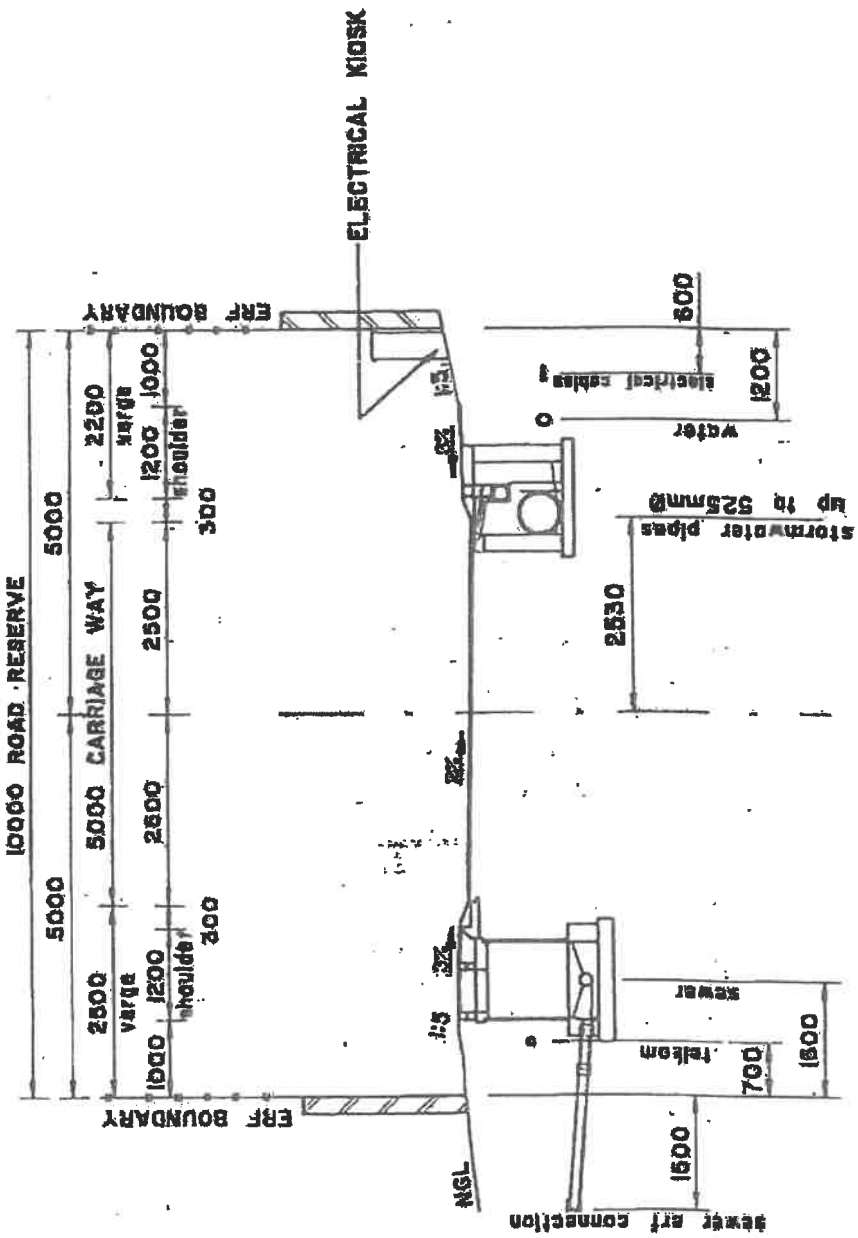
NWE
MULTI-DISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

ROAD KERBS & CHANNELS

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	Oct 2010

Appendix No. 2.17



NWE
MULTIDISCIPLINARY CONSULTING ENGINEERS

STANDARD DETAIL

TYPICAL SERVICES LAYOUT

Scale:	Not to Scale
Drawn:	
Approved:	M Smuts Pr Eng
Date:	7 Oct 2010
Appendix No.	2.18

ANNEXURE O: COMMENT FROM THE MANAGER: ELECTRICAL DEPARTMENT

INTERDEPARTMENTAL CIRCULATION FORM

LêER VERW/ FILE REF	Farm 1075/9, Paarl	DATUM DATE	17 January 2019
AANSOEKNOMMER/APPLICATION NUMBER	1311		

MEMO AAN/ TO :

	Director : Engineering Services	Elect
X	Manager : Electrical Department	All files with Elsie for comments 23/01/2019
	Manager : Building Development Management	
	Manager : Fire Services	
	Director : Corporate Services	
	Manager: Spatial Planning / Heritage / Environment / Signage	
	Manager: Health Department (Winelands Health)	
	Manager: Greening department	
	Manager : Property Management	

Application	Application is made in terms of Section 15(2)(e) of the Stellenbosch Municipality Land Planning By-Law for the consolidation of Portion 9 of farm 1075 and Farm 1070 to create one large unit of 10.92ha in extent. Application is made in terms of Section 15(2)(a) of the Stellenbosch Municipality Land Planning By-Law for the rezoning of the consolidated land unit from Agricultural Zone I to Sub-divisional Area in order to facilitate the proposed development. Application is made in terms of Section 15(2)(d) of the Stellenbosch Municipality Land Planning By-Law for the subdivision of the rezoned land unit into 117 units in order to accommodate a group housing development. Application is made in terms of Section 15(2)(o) of the Stellenbosch Municipality Land Planning By-Law for consent use in order to use the group housing development as a retirement village.
Adres / Address	North of Franschhoek CBD
Aansoek Datum Application Date	23 June 2016
Aansoeker Applicant	PJ Le Roux Town Planners

Aangeheg vind u tersaaklike dokumentasie in verband met bogenoemde aansoek. Ten einde my in staat te stel om die aansoek aan die besluitnemingsowerheid vir oorweging voor te lê, word u versoek om my skriftelik van u kommentaar, indien enige, te voorsien. Onderskei asseblief tussen algemene kommentaar op die meriete van die aansoek en enige voorwaardes wat u departement wil oplê indien die aansoek goedgekeur word.

Attached please find the relevant documentation regarding the abovementioned application. Kindly furnish me with your written comment, if any, in order to enable me to submit the application to the decision making authority for consideration. Please differentiate between general comment on the merits of the application and any conditions that your department wishes to impose should the application be approved.

Geliewe die memorandum per hand aan my terug te besorg voor of op:
Please hand deliver the memorandum to me on or before :

U von Molendorff
For DIRECTOR: PLANNING AND ECONOMIC DEVELOPMENT

ALGEMENE KOMMENTAAR / GENERAL COMMENT:

None.

VOORWAARDES/CONDITIONS :

Only existing elect. connection is available.

HANDTEKENING / SIGNATURE

28/1/2019
DATUM / DATE

ELETRICITY SERVICES: CONDITIONS OF APPROVAL
Franschhoek 1075/9

GENERAL COMMENT

1. Development Bulk Levy Contributions are payable.
2. Please note that the Stellenbosch Municipality Electrical Department is the supply authority for the new development.

CONDITIONS

1. **The electrical consulting engineer responsible for the development shall schedule an appointment with Manager Electricity Services (Engineering Services) before commencing with the construction of the development. As well as to discuss new power requirements if required.(Victor Dyusha 021 808334)**
2. The development's specifications must be submitted to Stellenbosch Municipality (Engineering Services) for approval. i.e.
   a) The design of the electrical distribution system
   b) The location of substations(s) and related equipment.
3. A separate distribution board/s shall be provided for municipal switchgear and metering. (Shall be accessible & lockable). Pre-paid metering systems shall be installed in domestic dwellings.
4. 24-hour access to the location of the substation, metering panel and main distribution board is required by Technical Services. (On street boundary)
5. Appropriate caution shall be taken during construction, to prevent damage to existing service cables and electrical equipment in the vicinity, should damage occur, the applicant will be liable for the cost involved for repairing damages.
6. On completion of the development, Stellenbosch Municipality (Technical Services) together with the electrical consulting engineer and electrical contractor will conduct a take-over inspection.
7. No electricity supply will be switched on (energised) if the Development contributions, take-over Inspection and Certificate(s) of Compliance are outstanding.
8. All new developments and upgrades of supplies to existing projects are subject to **SANS 10400-XA** energy savings and efficiency implementations such as:
   - Solar water Heating or Heat Pumps in Dwellings
   - Energy efficient lighting systems
   - Roof insulation with right R-value calculations.
     - In large building developments;
     -Control Air condition equipment tied to alternative efficiency systems
     -Preheat at least 50% of hot water with alternative energy saving sources
     -All hot water pipes to be clad with insulation with R-value of 1
     -Provide a professional engineer's certificate to proof that energy saving measures is not feasible.
9. All electrical wiring should be accordance with SANS 10142 and Municipal by-laws.

Signature

11/02/2019
Date

Form Ulrich 1075/9. 15

ELETRICITY SERVICES: CONDITIONS OF APPROVAL
Franschhoek 1075/9

PLANNING AND ENVIRONMENT
STELLENBOSCH
PLANNING & ENVIRONMENT

GENERAL COMMENT:

1. Development Bulk Levy Contributions are payable.
2. Please note that the Stellenbosch Municipality Electrical Department is the supply authority for the new development.

CONDITIONS:

1.The developer of the new project should schedule a meeting with the Manager Electrical Services to make land available or new substation on farm 1075/9

2. The electrical consulting engineer responsible for the development shall schedule an appointment with Manager Electricity Services (Engineering Services) before commencing with the construction of the development. As well as to discuss new power requirements if required.(Victor Dyusha 021 808334)

3. The development's specifications must be submitted to Stellenbosch Municipality (Engineering Services) for approval. i.e.
   a) The design of the electrical distribution system
   b) The location of substations(s) and related equipment.

4. A separate distribution board/s shall be provided for municipal switchgear and metering. (Shall be accessible & lockable). Pre-paid metering systems shall be installed in domestic dwellings.

5. 24-hour access to the location of the substation, metering panel and main distribution board is required by Technical Services. (On street boundary)

6. Appropriate caution shall be taken during construction, to prevent damage to existing service cables and electrical equipment in the vicinity, should damage occur, the applicant will be liable for the cost involved for repairing damages.

7. On completion of the development, Stellenbosch Municipality (Technical Services) together with the electrical consulting engineer and electrical contractor will conduct a take-over inspection.

8. No electricity supply will be switched on (energised) if the Development contributions, take-over Inspection and Certificate(s) of Compliance are outstanding.

9. All new developments and upgrades of supplies to existing projects are subject to **SANS 10400-XA** energy savings and efficiency implementations such as:
   - Solar water Heating or Heat Pumps in Dwellings;
   - Energy efficient lighting systems
   - Roof insulation with right R-value calculations
   - In large building developments;
   -Control Air condition equipment tied to alternative efficiency systems
   -Preheat at least 50% of hot water with alternative energy saving sources
   -All hot water pipes to be clad with insulation with R-value of 1
   -Provide a professional engineer's certificate to proof that energy saving measures is not feasible.

10. All electrical wiring should be accordance with SANS 10142 and Municipal by-laws.

SCAN NR:
SCAN NR: F1075/9
COLLABORATOR NR: 1048814

_____
Date

ANNEXURE T: URBAN DESIGN FRAMEWORK PRINCIPLES

C GUIDELINES FOR HEALTH FACILITY

As noted in the section 4.4D Architectural Intent, the design of the buildings must take cognizance of the built form of the local area (Franschhoek and surrounds), and consider a contemporary interpretation of the proportions and character of the historical buildings of the area. Later architecture of the area should also be considered, where appropriate.

A set of design guidelines has been developed to inform the architectural design of the building:

FRAGMENTATION

- The building needs to be fragmented to create a maximum building form width of 10m, and a building length of 25 to 40m.
- Linking elements between building forms to be smaller elements with lower roofs. Max width of 8m.

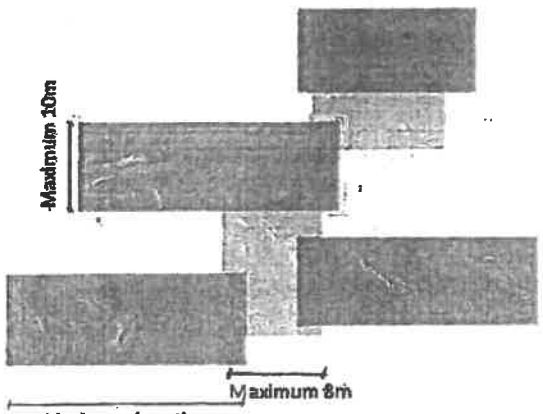


Figure 54 Example of the use of building forms [Urban Concepts]

BUILDING ORIENTATION & INTERFACE

The building to have an active interface with the stream on the Northern side. This would suggest that communal areas be positioned on the ground floor (North side of the building).

- Roofed stoeps or stoeps with pergolas required on the Northern side, and encouraged on the South side of the building forms.
- At least 30 % of the northern side of building forms to have either a lean-to roof or a pergola.
- Lean-to roofs or pergolas encourages within courtyard spaces created by building elements.

LEGIBILITY

The main entrance of the building will be on the South Side. Entrances should be clearly defined by creating a legible pedestrian route, but no significant architectural features to indicate entrances.

HEIGHT

- The building is restricted to a double storey structure to a max height of 8.5m above FFL.
- FFL to be a max of 1,5m above NGL.

ROOFS

- The building forms to be roofed with double pitch roofs (30 or 35 degrees). All building forms to have the same pitch.
- Linking elements to be roofed with flat roofs hidden behind a parapet wall, or a double pitch roof (same pitch as the building forms).
- Lean-to roofs (max pitch 15 degrees) or flat concrete roofs permitted to create walkways

ARCHITECTURE

MATERIALS

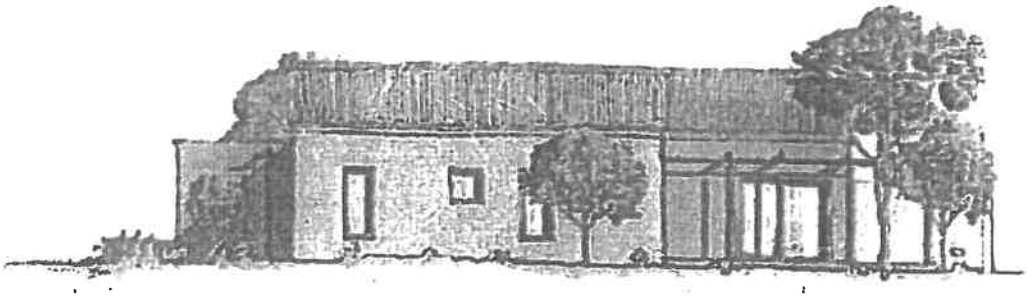
- All buildings to be plastered and painted.
- Paint colours to be natural tones
- Roofs to be charcoal colour

WINDOWS AND DOORS

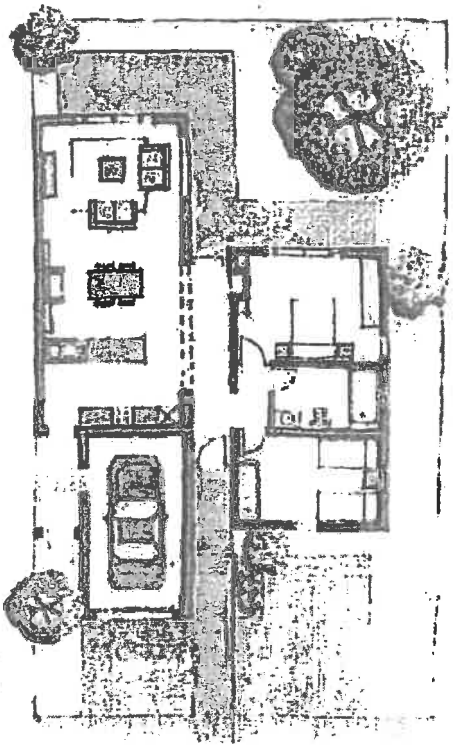
- All windows and doors to be of a rectangular form
- No cottage pain windows will be permitted
- Window and door frames to be aluminium or timber.
- No ornate detailing permitted.

SMALL BARN HOUSE

TYPICAL SIDE ELEVATION



TYPICAL BACK ELEVATION

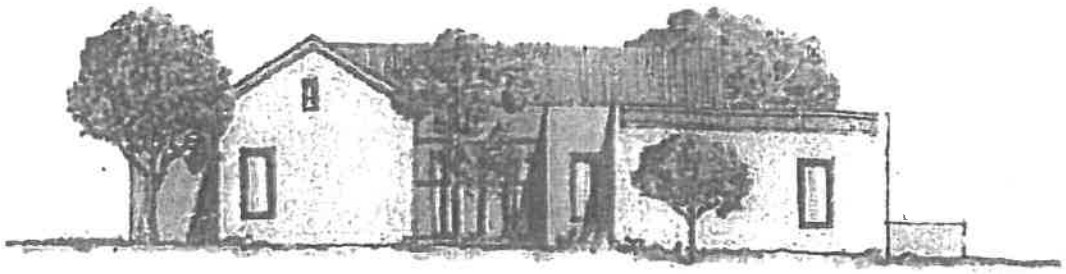


TYPICAL PLAN

Figure 53 Small barn house type [Urban Concepts]

COURTYARD HOUSE

TYPICAL SIDE ELEVATION



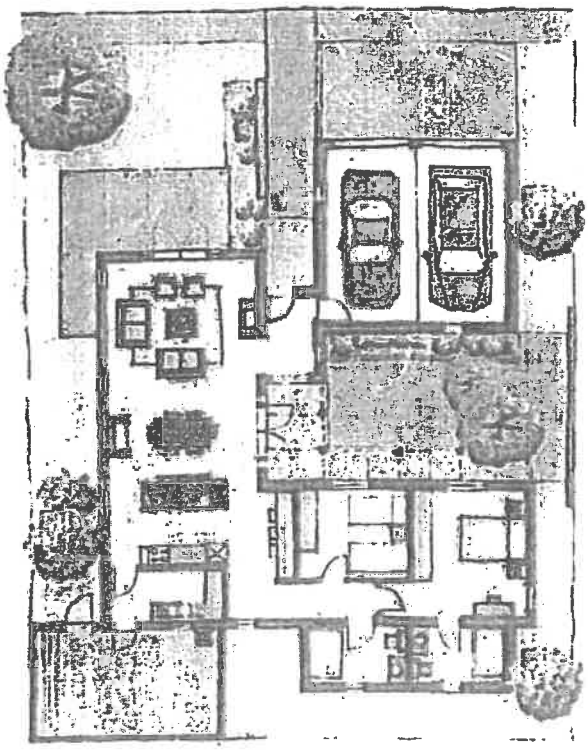
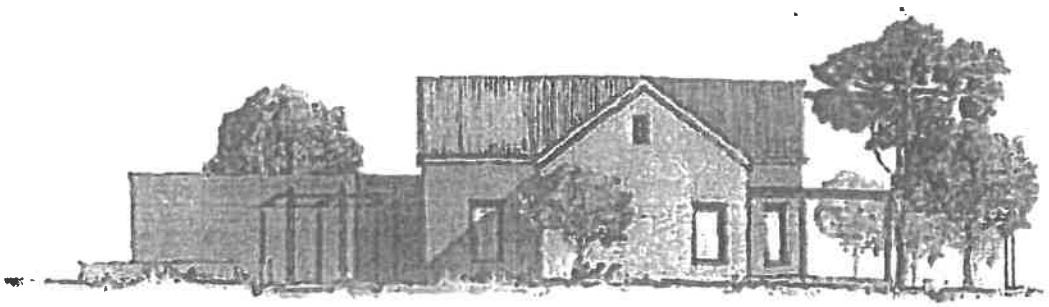
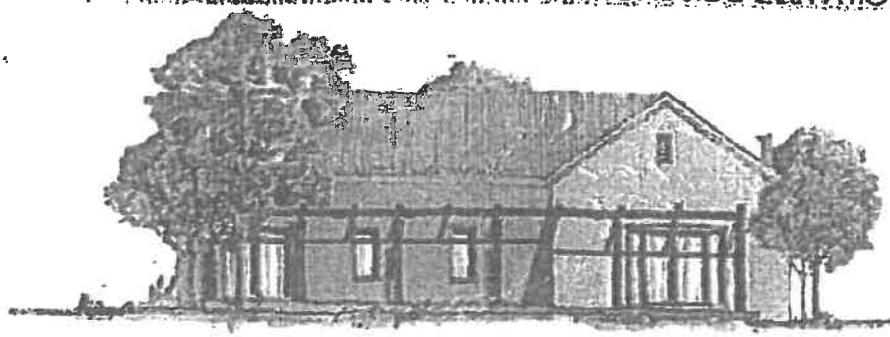


Figure 52 Courtyard house type [Urban Concepts]

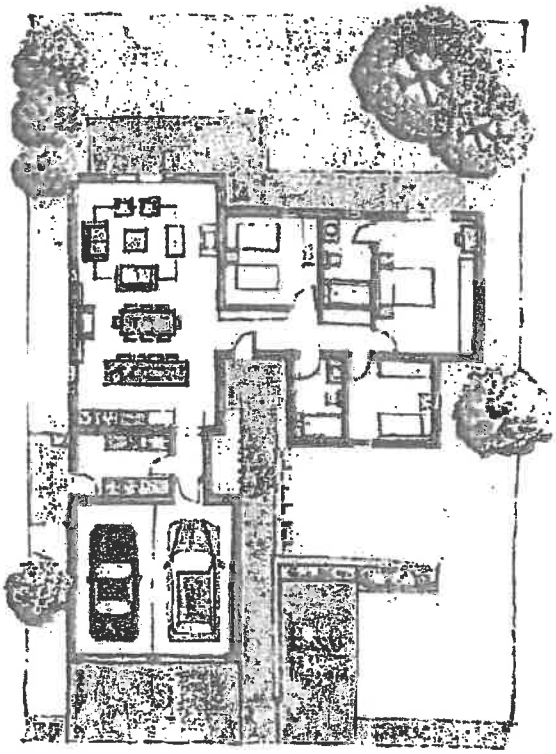
L-SHAPE HOUSE



TYPICAL SIDE ELEVATION



TYPICAL BACK ELEVATION



TYPICAL PLAN

Figure 51 L-shaped house type [Urban Concepts]

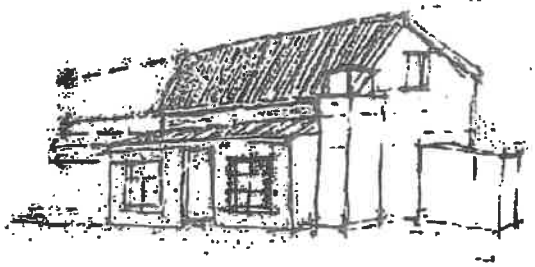
B. HOUSE TYPES

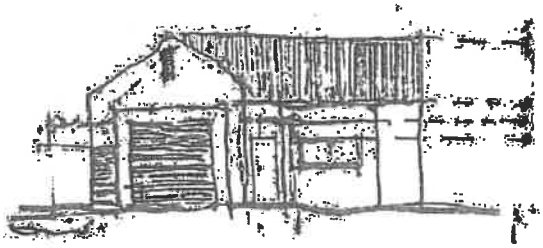
The conceptual design of a few house types have been included in this document to guide the project architect's design process for the development.

From an urban design perspective it is felt that the nature and scale of this site requires a minimum of six house types. As stated in section 4.5 B, it is important to create a variety of different residential units, as to much repetition will detract from the visual nature of this unique landscape.

Each of the six house types should have sufficient variety in building & roof form, therefore small variations and internal layout changes will not be viewed as a new house type.

Three conceptual house types have been drawn to illustrate the intent of the proposed scale of the buildings, as well as the architectural style as described under the architectural vision
These are named the L-shape house; Small barn house & Courtyard house. Plan and elevational views of these are shown on the following pages.





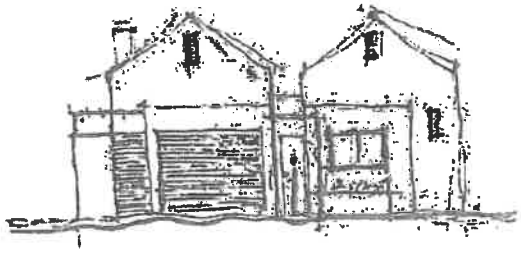


Figure 50 Interpretation of existing architecture in Franschhoek [Urban Concepts]

4.5 ARCHITECTURE

A. ARCHITECTURAL VISION

The architectural design should take cognizance of the character of the built form of the local area (Franschhoek and surrounds), as well as the heritage resources on the site. (refer to Section 2: Heritage Statement, pages 30 to 42 of this document). Below an extract of some two of the images indicating the nature and style of the architecture during the late 1800's and early 1900's.

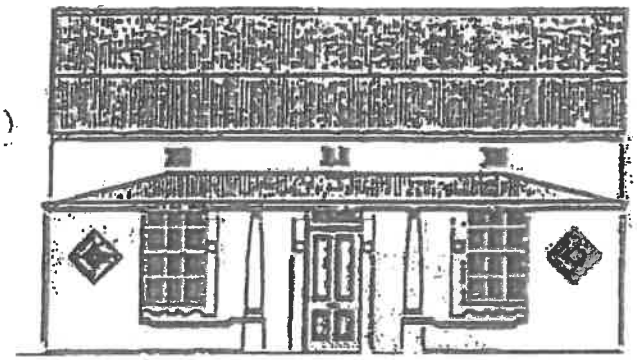


Figure 47 28 Dirkie Uys Street [Todeschini & Japha 1988]

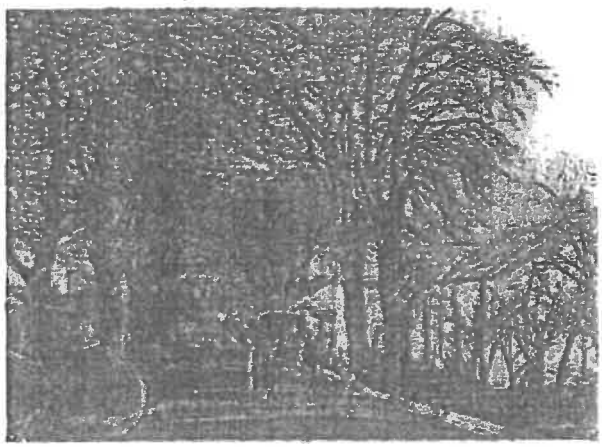


Figure 48 Winter street scene (c.1920) Dirkie Uys Street [Fransen 2006]

B. INTERPRETATION OF DESIGN PRINCIPLES

Some design principles have been derived from historical buildings of the area. Below a few sketches to illustrate the re-interpretation of the old form and style. The differentiation in height of lean-to roof and main roof, as well as proportions of buildings are noted.

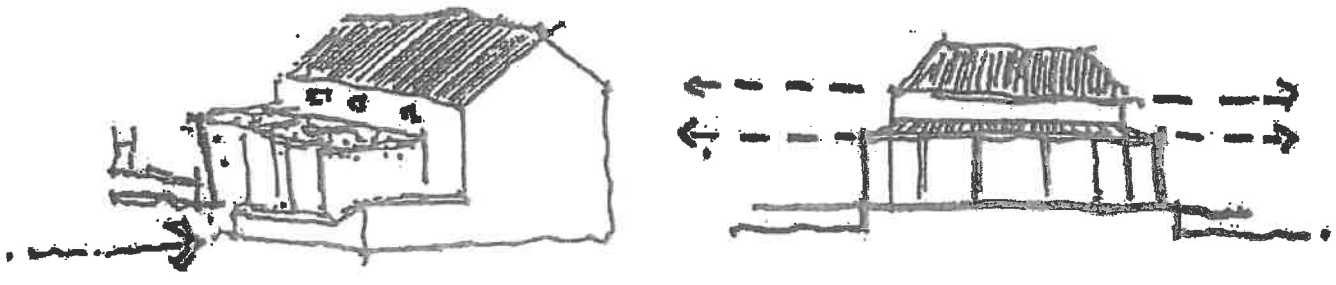


Figure 49 Interpretation of existing architecture in Franschhoek [Urban Concepts]

4.4 DESIGN PRINCIPLES & GUIDELINES

The aim of the design principles & guidelines noted below, is to ensure that the development responds positively to the spatial system within the site; the guidelines will also form the basis for the further design development (Site development plans & architecture) of the place.

A. PRIORITISE THE MAIN AVENUES AND GREEN AREAS (REFER TO FIGURE 46 BELOW)

Residential units to have a positive interface onto open areas to ensure that these spaces become the backbone to the development, creating a place for social interaction and recreation.

- Double garages to be limited when fronting onto the public green system (a maximum of 60% of the homes in a specific street may have a double garage).
- Homes that front onto main open spaces to have an active edge onto the green space, this means that the living area or a bedroom needs to face onto the green area.

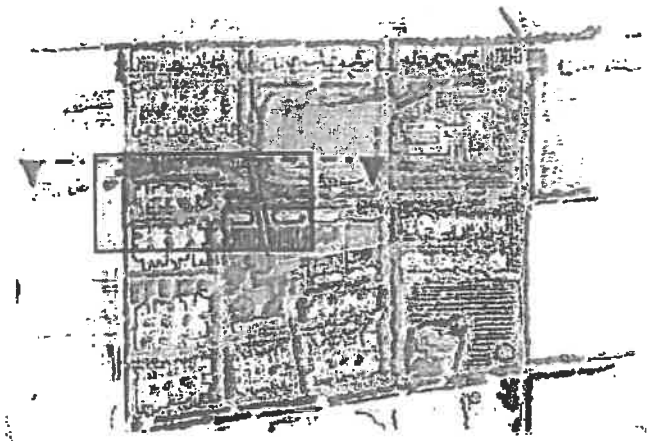


Figure 45 Plan indicating location of section [Urban Concepts]

B. VARIETY AND CHOICE

With this development primarily being a residential development, it is important to create a variety of different residential units. The reason for this is two-fold: To give a variety of options to potential buyers; but most importantly to ensure that the overall impact on the cultural landscape is of a fragmented, well-defined nature. Too much repetition will detract from the visual nature of this unique landscape.

C. DEFINITION OF GREEN SYSTEMS AND SPACES

The public green spaces should be defined by means of "werf" walls, grassed areas and walkways. The buildings that front onto these spaces should not turn its back on it (i.e. not dominated by double garages and inactive rooms)

D. ARCHITECTURAL INTENT

The design principles for the buildings must take cognizance of the built form of the local area (Franschhoek and surrounds), as well as the heritage resources on the site; and the style of the houses should be a contemporary interpretation of the proportions and character of the historical homes within the area. The following section (4.5) is aimed at explaining the architectural vision and underlying principles for this site.

MATERIALS

- All buildings to be plastered and painted.
- Paint colours to be natural tones
- Roofs to be charcoal colour

WINDOWS AND DOORS

- All windows and doors to be of a rectangular form
- No cottage pain windows will be permitted
- Window and door frames to be aluminium or timber.
- No ornate detailing permitted.

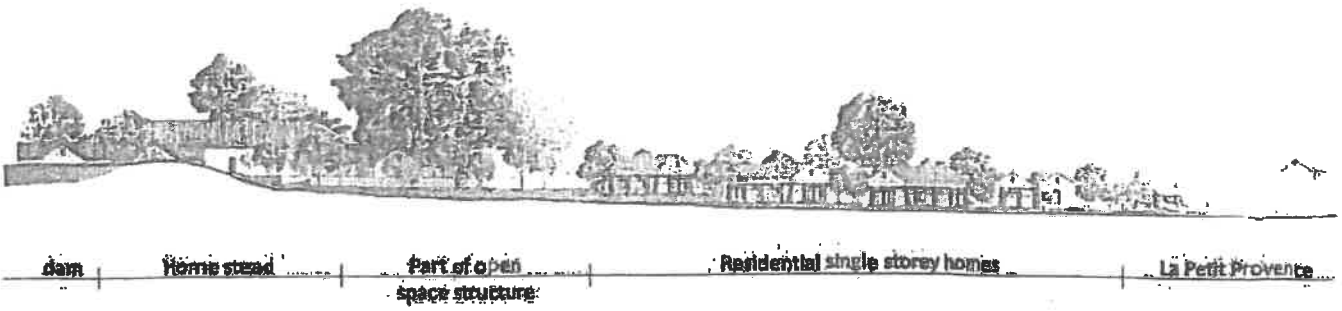


Figure 46 Indicative sectional elevation of new development alongside the new "werf" and homestead [Urban Concepts]

C. HISTORICAL BUILDINGS

B. AXIS OF DIRKIE UYS STREET		
INDICATORS		RESPONSE
C.1	Historical homestead and cellar to be retained and rehabilitated for an appropriate new use (residents functions, library, meeting place, social area, etc)	Noted
C.2	Labourer's cottage to be retained and rehabilitated for an appropriate new use.	Noted
C.3	Labourer's Cottage should maintain a positive interface with the Dirkie Uys axis, and can therefore not be fenced into the development.	The permeable fence to the development is set back to express the labourer's cottage as part of the important axis
C.4	Development around the historical buildings to be designed so as to not compromise the spatial experience and setting.	A larger 'werf' space of approximately 7500 sqm is created to define a space around the old building and trees.
C.5	Visual and physical links to the surroundings to be defined within proposed layout	See image below
C.6	The outbuilding can be retained with appropriate use.	Noted

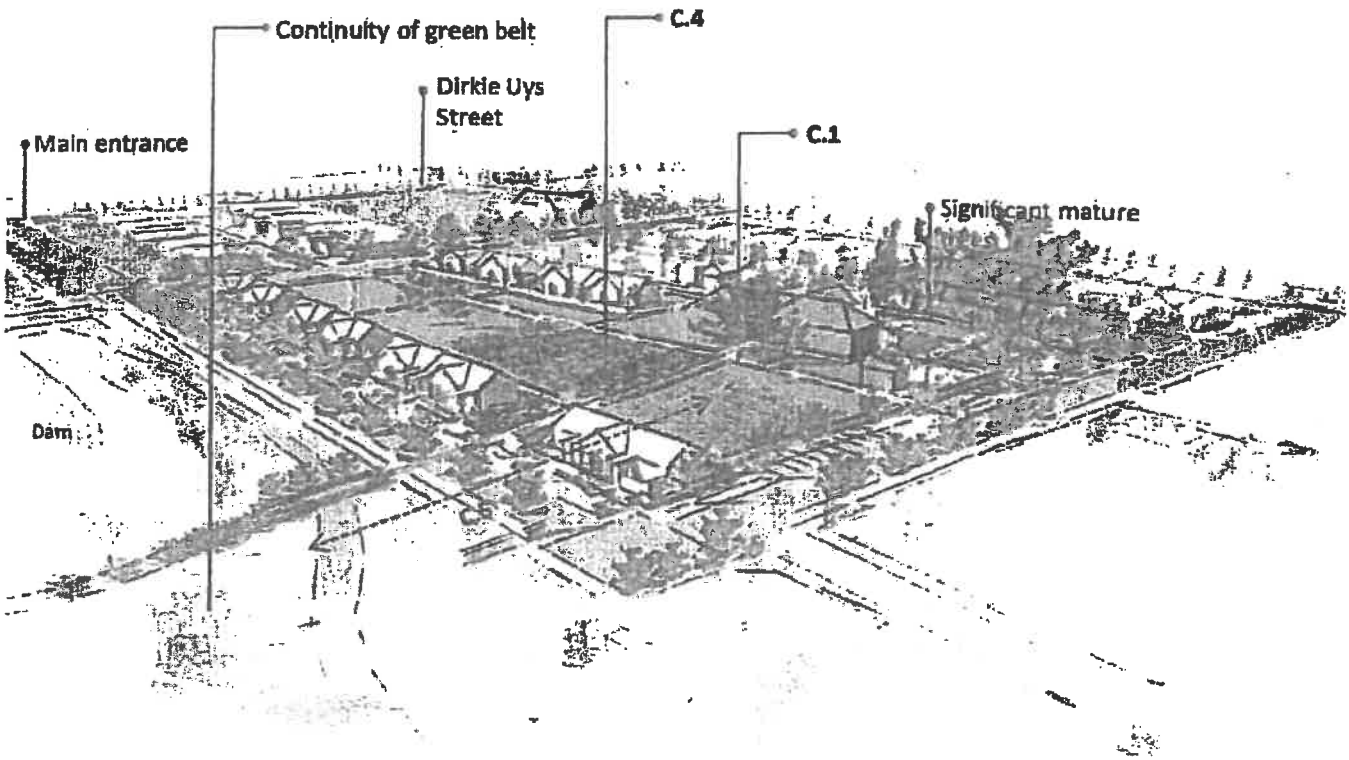


Figure 44 Urban Design response to built environment indicators [Urban Concepts]

B. SIGNIFICANT HISTORIC AXIS

B: AXIS OF DIRKIE UYS STREET		
INDICATORS		RESPONSE
B.1	The significance of the Dirkie Uys axis should be celebrated by clearly defining the route with appropriate soft and hard landscaping	It is proposed that portions of the agricultural planting be retained/replanted along with the border of Dirkie Uys Street, at the main homestead. This creates a visual and physical continuity of the agricultural activities in parallel to the natural system of the river flowing through the site.
B.2	Design the Eastern border / Urban Edge to appropriately interface with the remaining agricultural land to the east by creating a continuity of agriculture	

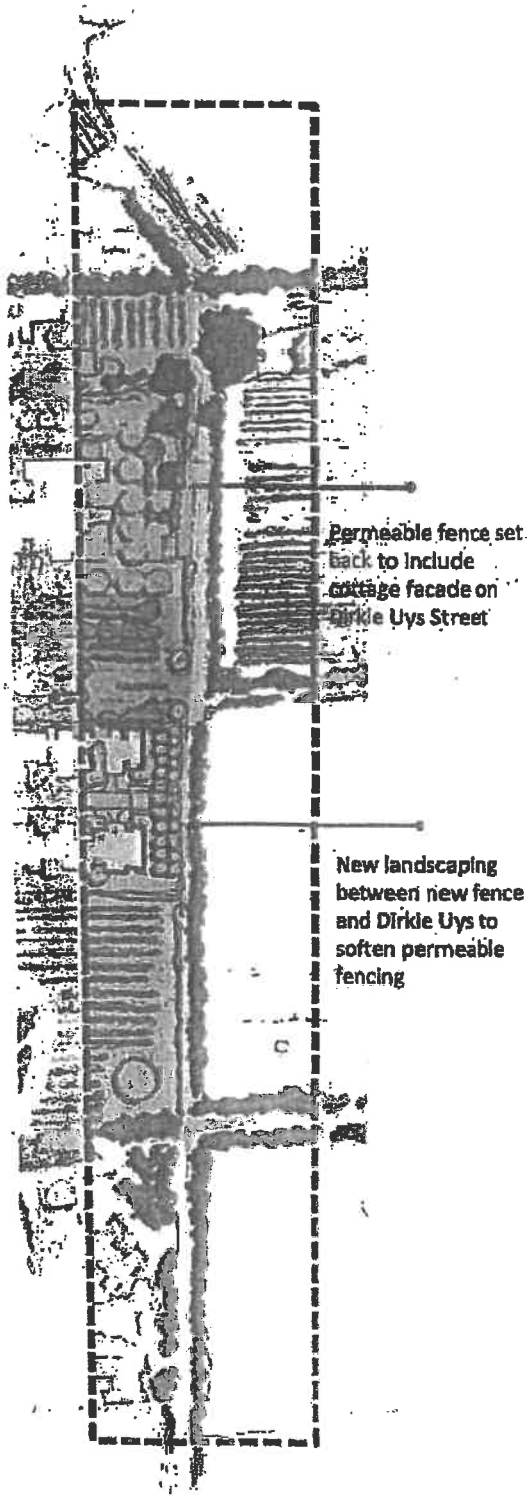


Figure 43 Urban Design response to historic axis indicators [Urban Concepts]

4.3 INTERPRETATION OF DESIGN INDICATORS

The interpretation of the design indicators has been illustrated by means of a set of diagrams and three-dimensional images of the urban design proposal:

A. CULTURAL LANDSCAPE

The three dimensional image of the urban design proposal is aimed at explaining the interpretation of the design indicators for the preservation and enhancement of the cultural landscape

A. CULTURAL LANDSCAPE		
INDICATORS		RESPONSE
A.1	Retain a "green" link or passage from the surrounding area through the site through retaining an element of agricultural activity as a memory	The design proposal allows for a significant green belt along the river, approximately 40 to 100m in width.
A.2	Celebrate the pattern of agricultural land use by using the existing tree alignments of the agriculture as a guideline for the development layout	Refer to image below
A.3	Conserve and rehabilitate river system and dam, taking storm water management and flood protection into account, to not negatively affect the natural character and ecology of the site	The green belt allows for a large central open area, accommodating a dam and associated landscaping.
A.4	Retain significant trees and tree alignments, replace trees associated with the stream	Refer to image below
A.5	Where overshadowing occurs by tree lanes, replace with smaller species but retain character of landscape rooms	noted
A.6	Protect / enhance views across the site to the mountains	noted

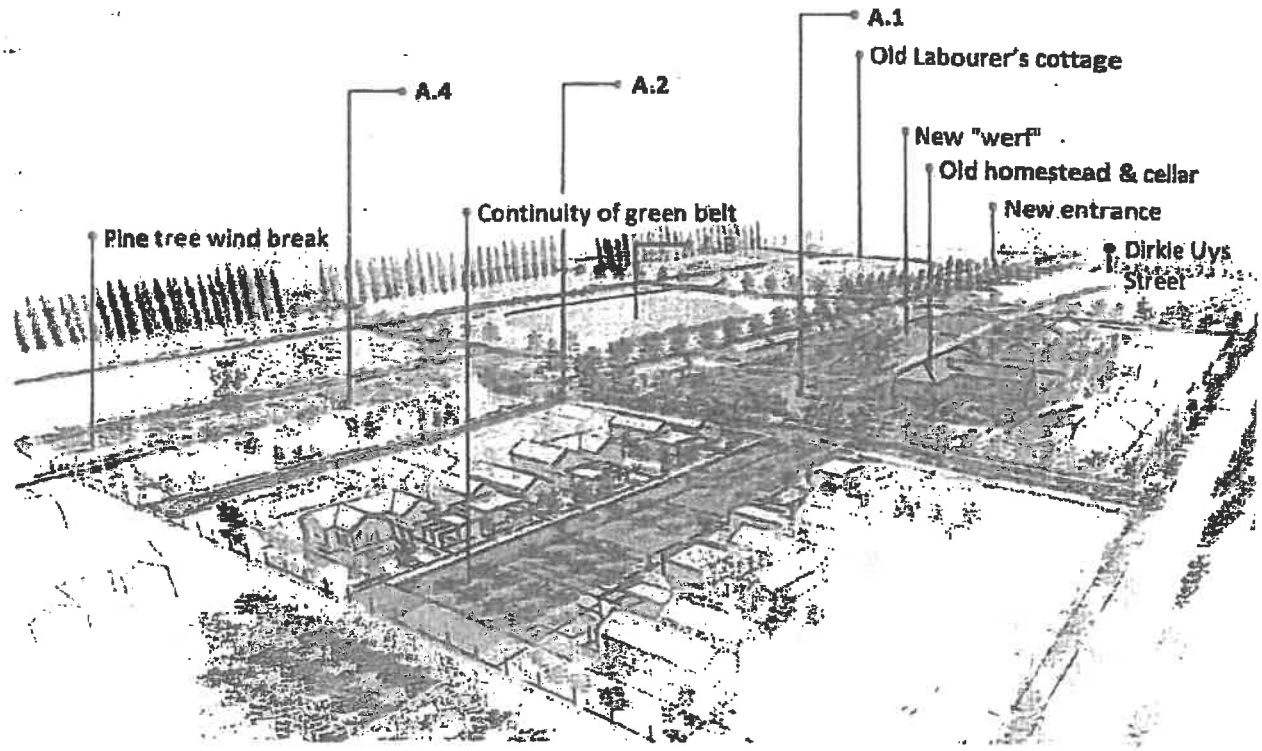


Figure 42 Urban Design response to Cultural Landscape indicators [Urban Concepts]

4.2 SITE DESCRIPTION & DEVELOPMENT INTENT

The entire site is approximately 11 ha in extent. There are existing windbreaks, orchards, vineyards and a few significant mature trees around the historical homestead. There is also a natural watercourse, on which an irrigation dam was constructed in 1997 which often floods.

EXISTING BUILDINGS ON THE SITE:
The existing buildings on the site are as follows:

- Old Homestead and wine cellar (approximately 350m²);
- The old cottage (78m²);
- The main farmstead (approx. 350m²).
- The farm manager's cottage in the south western corner of the site.

A 1ha area of the property (south eastern corner) containing the main farmstead is to be subdivided and retained by the original owner and farmer. Other than the subdivision, this property does not form part of this development proposal.

PROPOSED NEW ENTRANCE TO SITE:
The new entrance is proposed directly opposite the access to Erven 1078 and 1075/2, and creates a visual axis into site with the dam visible and directly to the north of this axis; and the historical homestead to the south.

DEVELOPMENT INTENT:
The proposed new development brief is to create a retirement village with approximately 91 freestanding single storey houses of approximately 100 to 180sqm; and 22 single storey row houses of approx. 40 - 65 sqm.

The need for a clinic and administration building of approximately 3000sqm has also been identified. This will include clinic rooms and a mixture of 16 one bedroom and bachelor apartments

A guard house and refuse facility along Dirkie Uys Street will be required.

The site coverage to be approximately 20% of the 10.9ha property.

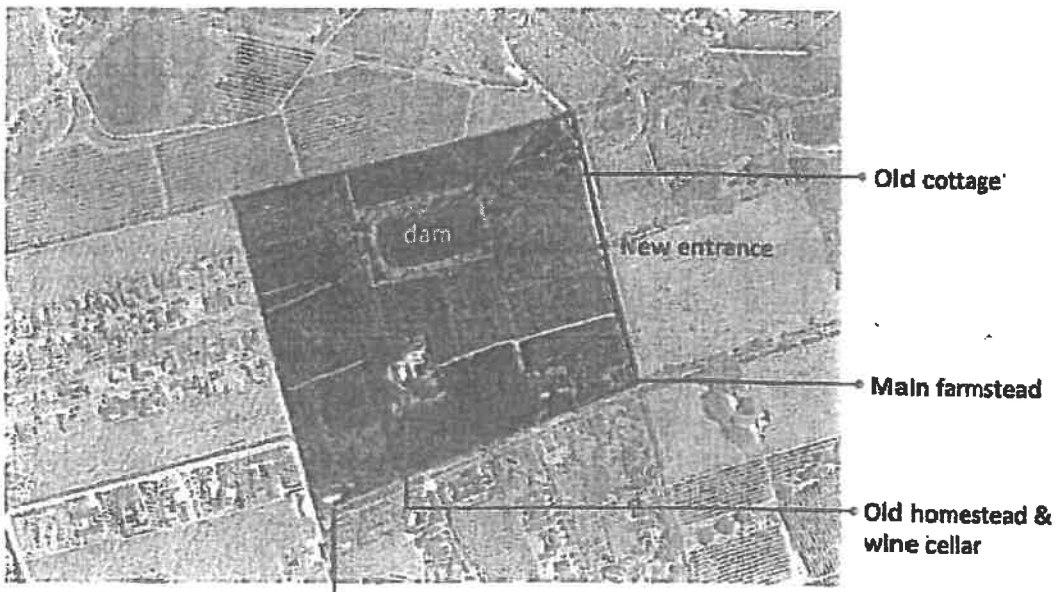


Figure 41 Proposed new entrance [Urban Concepts]

4.1 URBAN DESIGN PROPOSAL

DESIGN RATIONALE

The most important aspect of the urban design vision for the Middelplaas project is the definition & preservation of the key heritage resources of the site.

This has been achieved with the interpretation of the heritage and urban design indicators as stipulated in section 3 of this document.

The design was also informed by the brief from the client - to create a development which offers the elderly a pleasant, safe and aesthetically pleasing environment, whilst being cognizant of developing the urban design parameters within a financially feasible framework.

* It is important to note that even though cues were taken from the previous design proposal (see Annexure A.2), the main structuring elements of the design was based on the heritage and urban design-related principles.

URBAN DESIGN PLAN

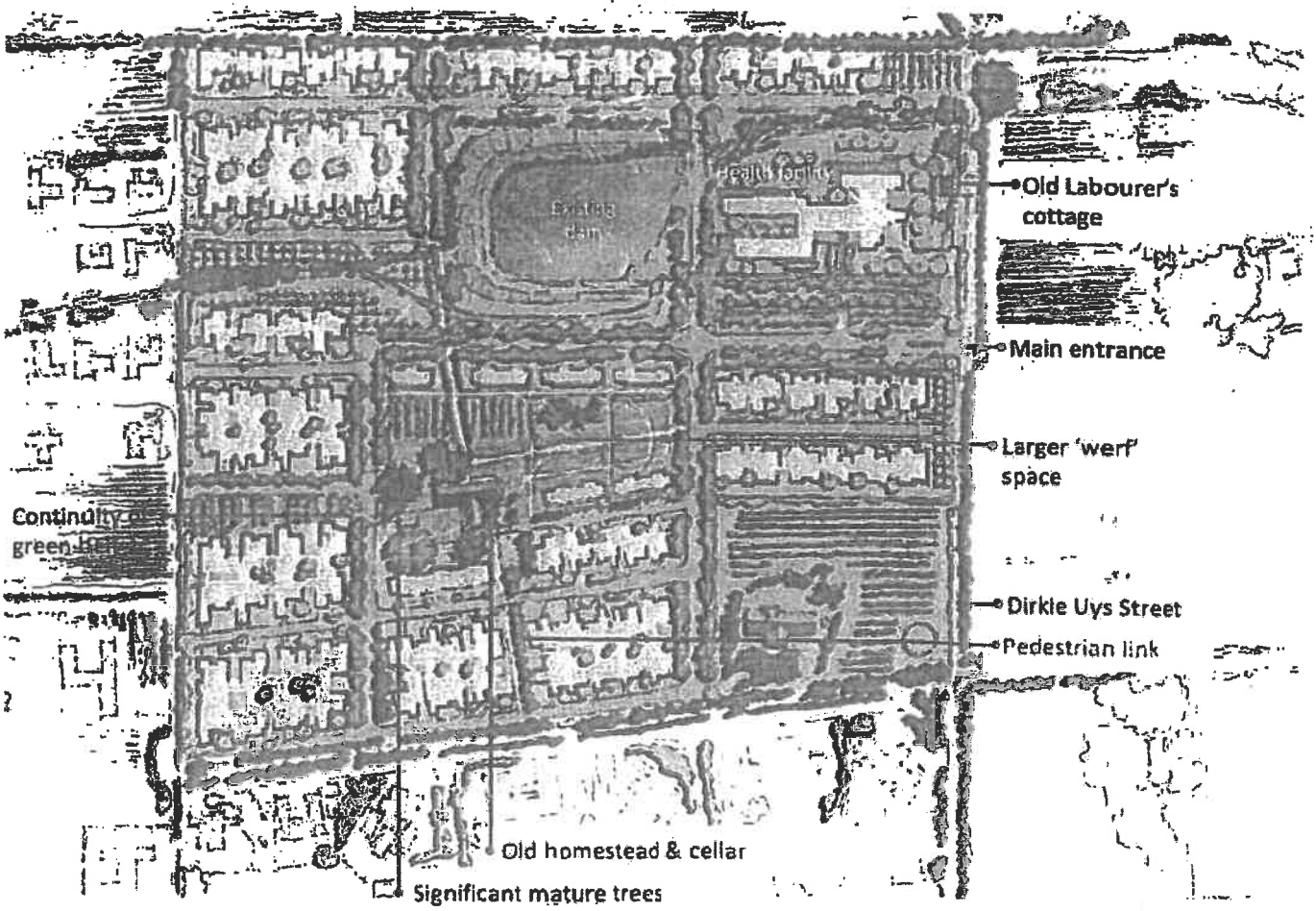


Figure 40 Urban Design plan [Urban Concepts]

ANNEXURE T: URBAN DESIGN FRAMEWORK

4.1 URBAN DESIGN PROPOSAL

DESIGN RATIONALE

The most important aspect of the urban design vision for the Middelplaas project is the definition & preservation of the key heritage resources of the site.

This has been achieved with the interpretation of the heritage and urban design indicators as stipulated in section 3 of this document.

The design was also informed by the brief from the client - to create a development which offers the elderly a pleasant, safe and aesthetically pleasing environment, whilst being cognizant of developing the urban design parameters within a financially feasible framework.

* It is important to note that even though cues were taken from the previous design proposal (see Annexure A.2), the main structuring elements of the design was based on the heritage and urban design-related principles.

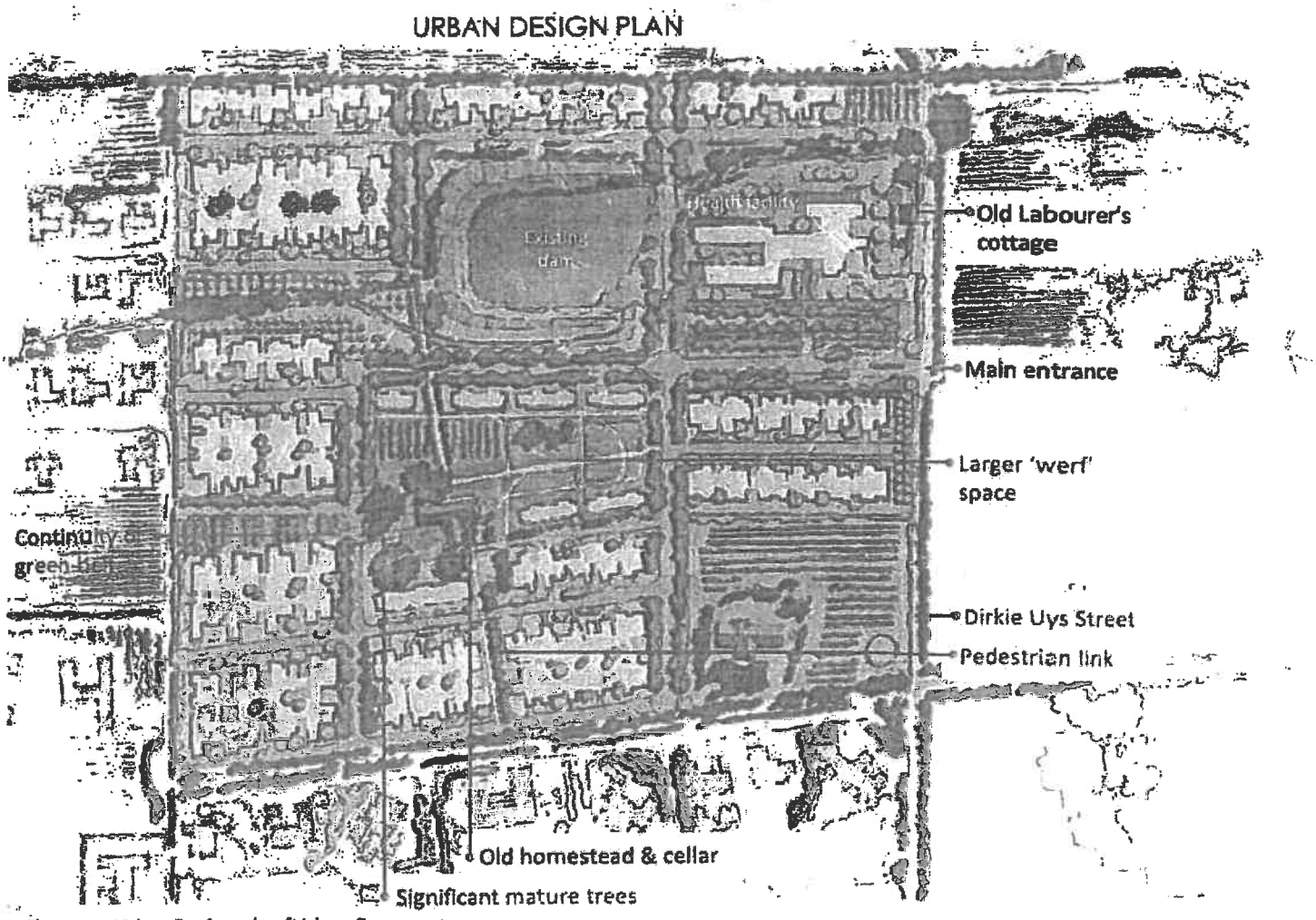


Figure 40 Urban Design plan [Urban Concepts]

4.2 SITE DESCRIPTION & DEVELOPMENT INTENT

The entire site is approximately 11 ha in extent. There are existing windbreaks, orchards, vineyards and a few significant mature trees around the historical homestead. There is also a natural watercourse, on which an irrigation dam was constructed in 1997 which often floods.

EXISTING BUILDINGS ON THE SITE:
The existing buildings on the site are as follows:

- Old Homestead and wine cellar (approximately 350m²);
- The old cottage (78m²);
- The main farmstead (approx. 350m²).
- The farm manager's cottage in the south western corner of the site.

A 1ha area of the property (south eastern corner) containing the main farmstead is to be subdivided and retained by the original owner and farmer. Other than the subdivision, this property does not form part of this development proposal.

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The new entrance is proposed directly opposite the access to Erven 1078 and 1075/2, and creates a visual axis into site with the dam visible and directly to the north of this axis; and the historical homestead to the south.

DEVELOPMENT INTENT:
The proposed new development brief is to create a retirement village with approximately 91 freestanding single storey houses of approximately 100 to 180sqm; and 22 single storey row houses of approx. 40 - 65 sqm.

The need for a clinic and administration building of approximately 3000sqm has also been identified. This will include clinic rooms and a mixture of 16 one bedroom and bachelor apartments

A guard house and refuse facility along Dirkie Uys Street will be required.

The site coverage to be approximately 20% of the 10.9ha property.

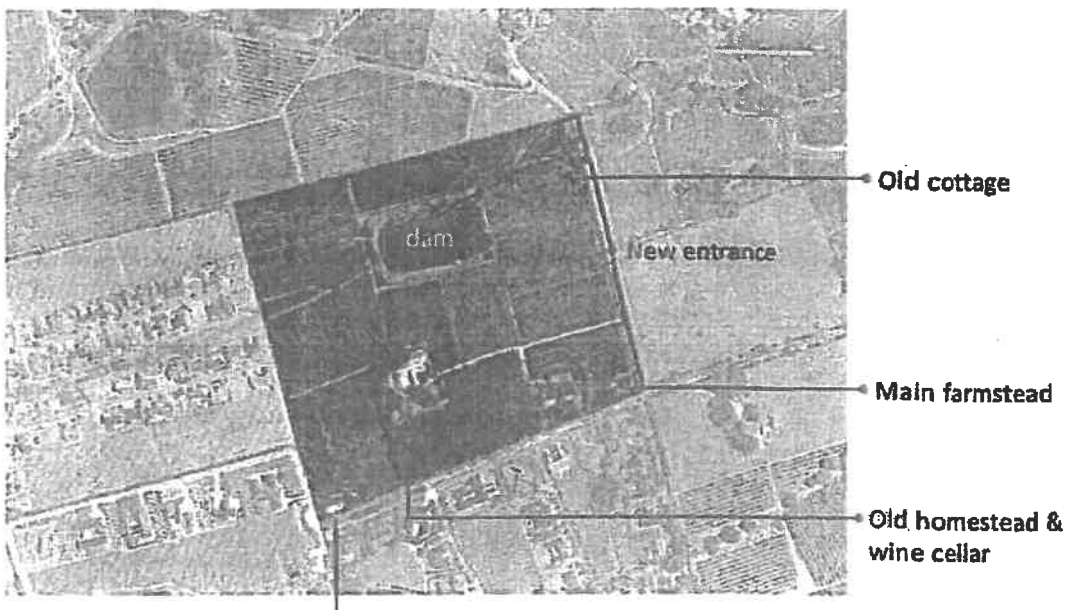


Figure 41 Proposed new entrance [Urban Concepts]

4.3 INTERPRETATION OF DESIGN INDICATORS

The interpretation of the design indicators has been illustrated by means of a set of diagrams and three-dimensional images of the urban design proposal:

A. CULTURAL LANDSCAPE

The three dimensional image of the urban design proposal is aimed at explaining the interpretation of the design indicators for the preservation and enhancement of the cultural landscape

A CULTURAL LANDSCAPE		
INDICATORS		RESPONSE
A.1	Retain a "green" link or passage from the surrounding area through the site through retaining an element of agricultural activity as a memory	The design proposal allows for a significant green belt along the river, approximately 40 to 100m in width.
A.2	Celebrate the pattern of agricultural land use by using the existing alignments of the agriculture as a guideline for the development layout	Refer to image below
A.3	Conserve and rehabilitate river system and dam, taking storm water management and flood protection into account, to not negatively affect the natural character and ecology of the site	The green belt allows for a large central open area, accommodating a dam and associated landscaping.
A.4	Retain significant trees and tree alignments, replace trees associated with the stream	Refer to image below
A.5	Where overshadowing occurs by tree lanes, replace with smaller species but retain character of landscape rooms	noted
A.6	Protect / enhance views across the site to the mountains	noted

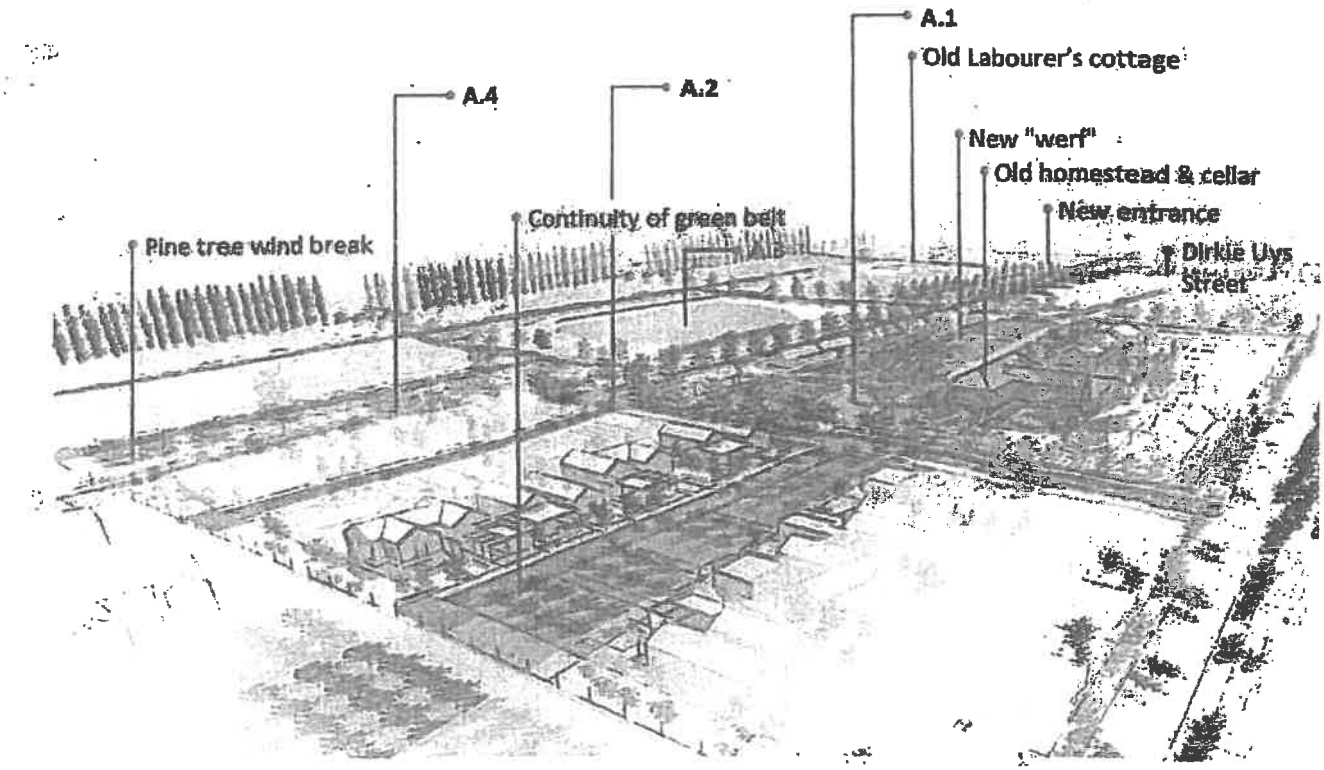


Figure 42 Urban Design response to Cultural Landscape indicators [Urban Concepts]

B. SIGNIFICANT HISTORIC AXIS

B. AXIS OF DIRKIE UYS STREET		
	INDICATORS	RESPONSE
B.1	The significance of the Dirkie Uys axis should be celebrated by clearly defining the route with appropriate soft and hard landscaping	It is proposed that portions of the agricultural planting be retained/replanted along with the border of Dirkie Uys Street, at the main homestead.
B.2	Design the Eastern border / Urban Edge to appropriately interface with the remaining agricultural land to the east by creating a continuity of agriculture	This creates a visual and physical continuity of the agricultural activities in parallel to the natural system of the river flowing through the site.

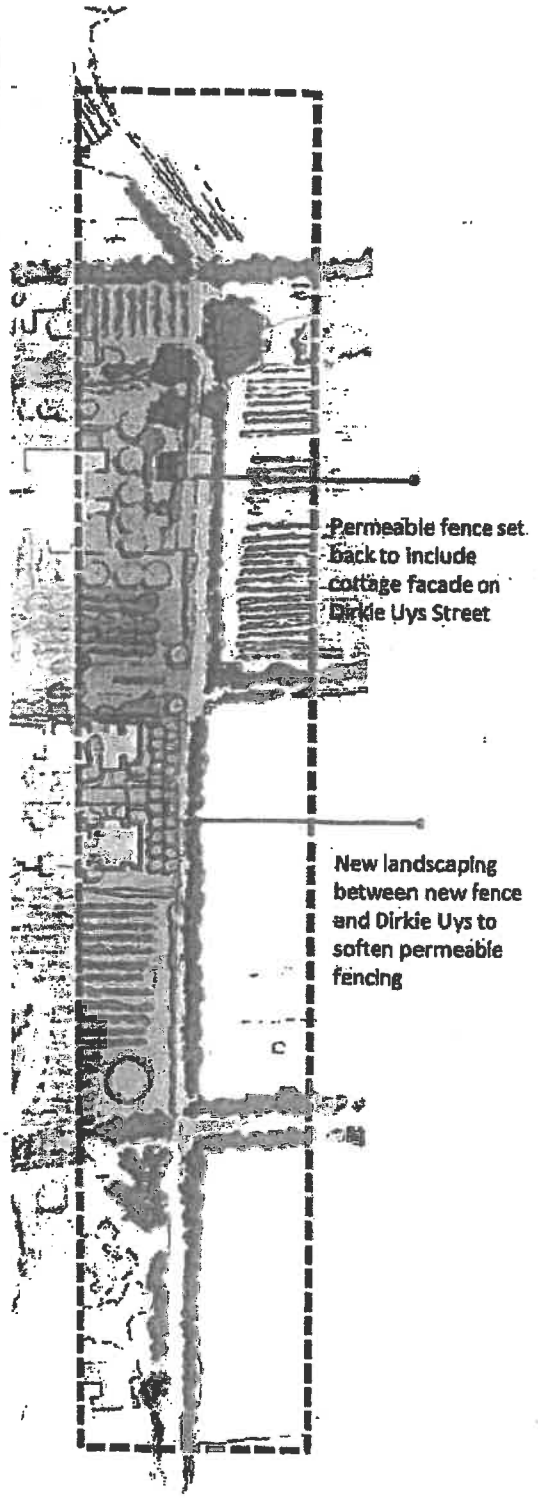


Figure 43 Urban Design response to historic axis indicators [Urban Concepts]

C. HISTORICAL BUILDINGS

INDICATORS		RESPONSE
C.1	Historical homestead and cellar to be retained and rehabilitated for an appropriate new use (residents functions, library, meeting place, social area, etc)	Noted
C.2	Labourer's Cottage to be retained and rehabilitated for an appropriate new use.	Noted
C.3	Labourer's Cottage should maintain a positive interface with the Dirkie Uys axis, and can therefore not be fenced into the development.	The permeable fence to the development is set back to express the labourer's cottage as part of the important axis
C.4	Development around the historical buildings to be designed so as to not compromise the spatial experience and setting.	A larger "werf" space of approximately 7500 sqm is created to define a space around the old building and trees.
C.5	Visual and physical links to the surroundings to be defined within proposed layout.	See image below.
C.6	The outbuilding can be retained with appropriate use	Noted

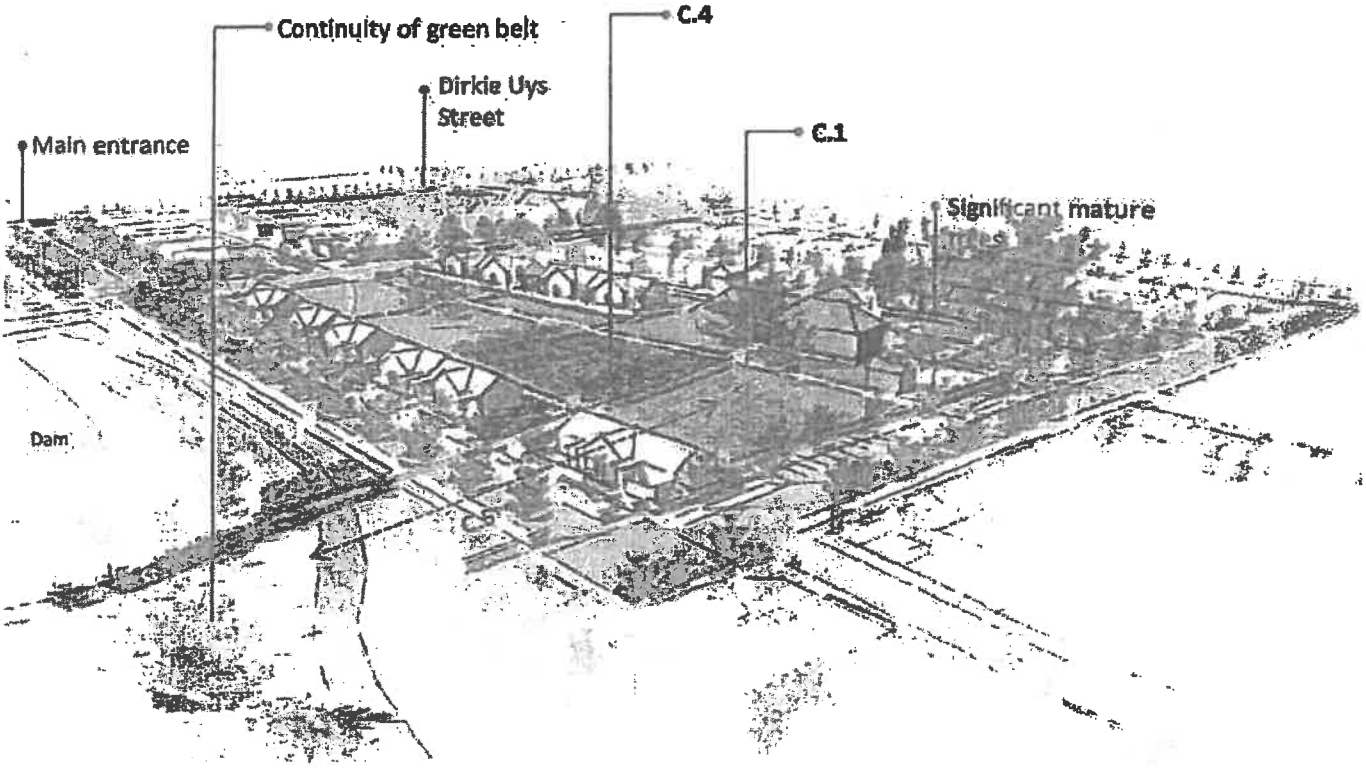


Figure 44 Urban Design response to built environment indicators [Urban Concepts]

4.4 DESIGN PRINCIPLES & GUIDELINES

The aim of the design principles & guidelines noted below, is to ensure that the development responds positively to the spatial system within the site; the guidelines will also form the basis for the further design development (Site development plans & architecture) of the place.

A. PRIORITISE THE MAIN AVENUES AND GREEN AREAS (REFER TO FIGURE 46 BELOW)

Residential units to have a positive interface onto open areas to ensure that these spaces become the backbone to the development, creating a place for social interaction and recreation.

- Double garages to be limited when fronting onto the public green system (a maximum of 60% of the homes in a specific street may have a double garage).
- Homes that front onto main open spaces to have an active edge onto the green space, this means that the living area or a bedroom needs to face onto the green area.

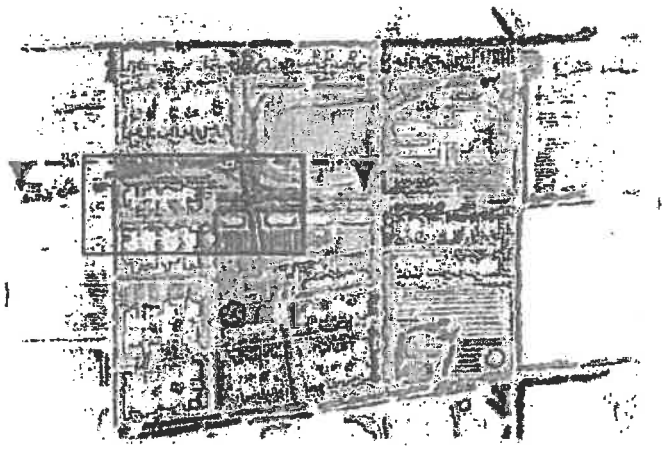


Figure 45 Plan indicating location of section [Urban Concepts]

B. VARIETY AND CHOICE

With this development primarily being a residential development, it is important to create a variety of different residential units. The reason for this is two-fold: To give a variety of options to potential buyers; but most importantly to ensure that the overall impact on the cultural landscape is of a fragmented, well-defined nature. Too much repetition will detract from the visual nature of this unique landscape.

C. DEFINITION OF GREEN SYSTEMS AND SPACES

The public green spaces should be defined by means of "werf" walls, grassed areas and walkways. The buildings that front onto these spaces should not turn its back on it (i.e. not dominated by double garages and inactive rooms)

D. ARCHITECTURAL INTENT

The design principles for the buildings must take cognizance of the built form of the local area (Franschhoek and surrounds), as well as the heritage resources on the site; and the style of the houses should be a contemporary interpretation of the proportions and character of the historical homes within the area. The following section (4.5) is aimed at explaining the architectural vision and underlying principles for this site.

MATERIALS

- All buildings to be plastered and painted.
- Paint colours to be natural tones
- Roofs to be charcoal colour

WINDOWS AND DOORS

- All windows and doors to be of a rectangular form
- No cottage pain windows will be permitted
- Window and door frames to be aluminium or timber.
- No ornate detailing permitted.

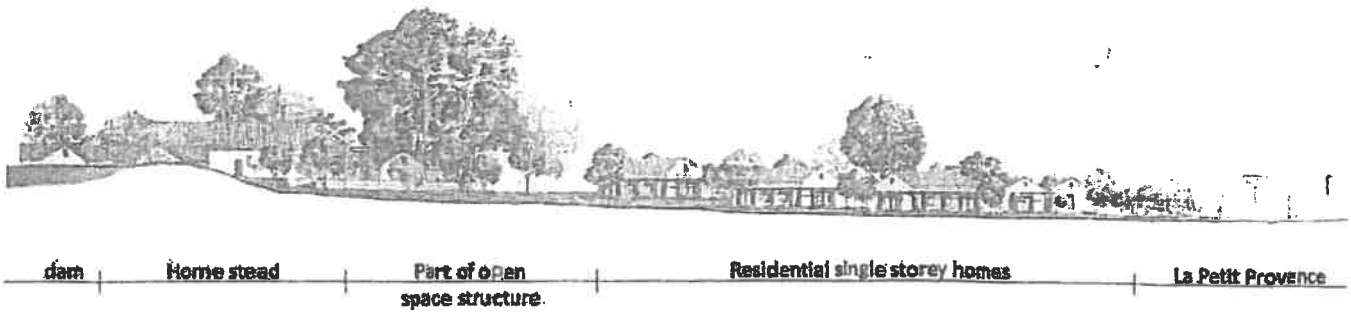


Figure 46 Indicative sectional elevation of new development alongside the new "werf" and homestead [Urban Concepts]

4.5 ARCHITECTURE

A. ARCHITECTURAL VISION

The architectural design should take cognizance of the character of the built form of the local area (Franschhoek and surrounds), as well as the heritage resources on the site. (refer to Section 2: Heritage Statement, pages 30 to 42 of this document). Below an extract of some two of the images indicating the nature and style of the architecture during the late 1800's and early 1900's.

B. INTERPRETATION OF DESIGN PRINCIPLES

Some design principles have been derived from historical buildings of the area. Below a few sketches to illustrate the re-interpretation of the old form and style. The differentiation in height of lean-to roof and main roof, as well as proportions of buildings are noted.

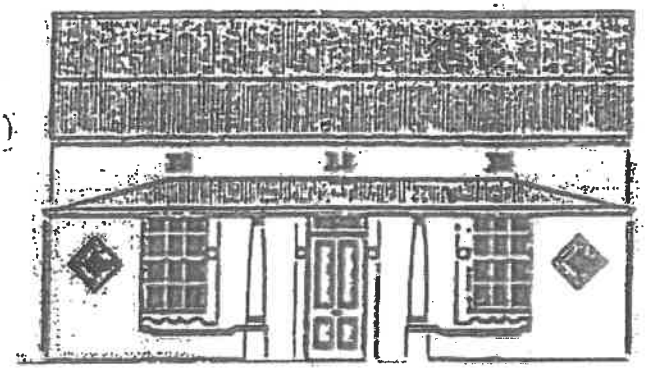


Figure 47 28 Dirkie Uys Street [Todeschini & Japhà 1988]

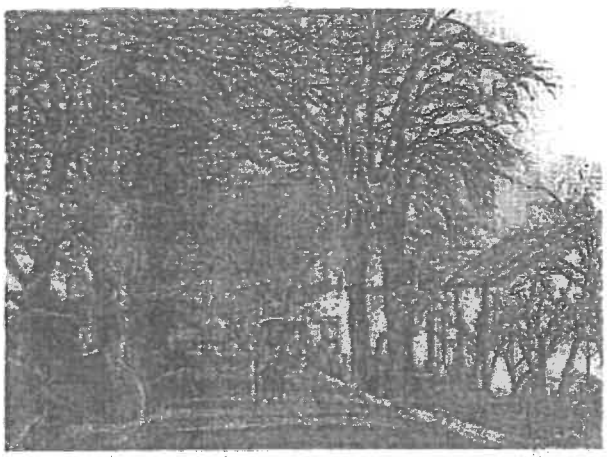


Figure 48 Winter street scene (c.1920) Dirkie Uys Street [Fransen 2006]

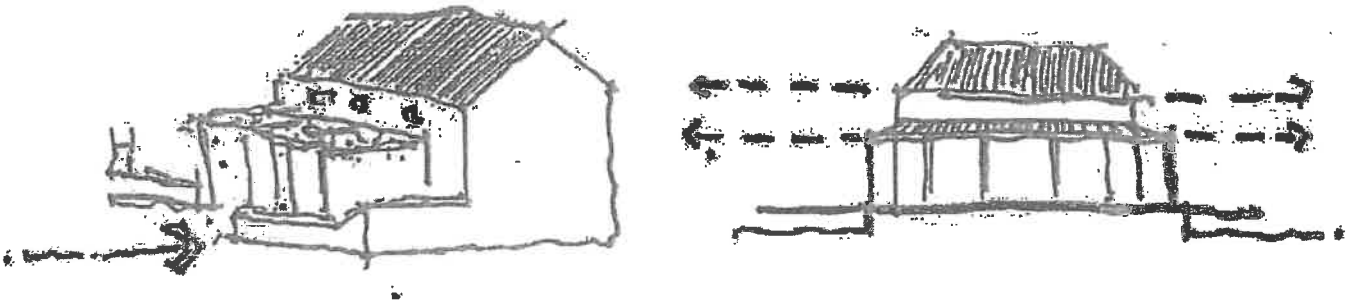


Figure 49 Interpretation of existing architecture in Franschhoek [Urban Concepts]

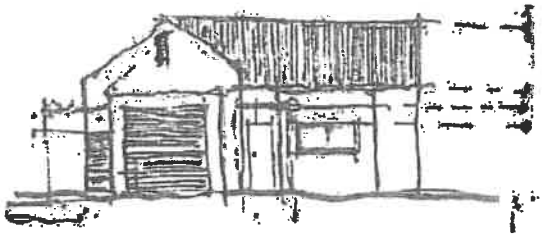
B. HOUSE TYPES

The conceptual design of a few house types have been included in this document to guide the project architect's design process for the development.

From an urban design perspective it is felt that the nature and scale of this site requires a minimum of six house types. As stated in section 4.5 B, it is important to create a variety of different residential units, as to much repetition will detract from the visual nature of this unique landscape.

Each of the six house types should have sufficient variety in building & roof form, therefore small variations and internal layout changes will not be viewed as a new house type.

Three conceptual house types have been drawn to illustrate the intent of the proposed scale of the buildings, as well as the architectural style as described under the architectural vision
These are named the L-shape house; Small barn house & Courtyard house. Plan and elevational views of these are shown on the following pages.



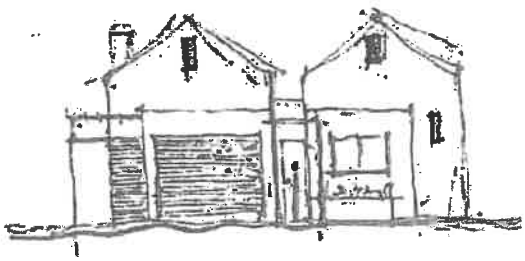
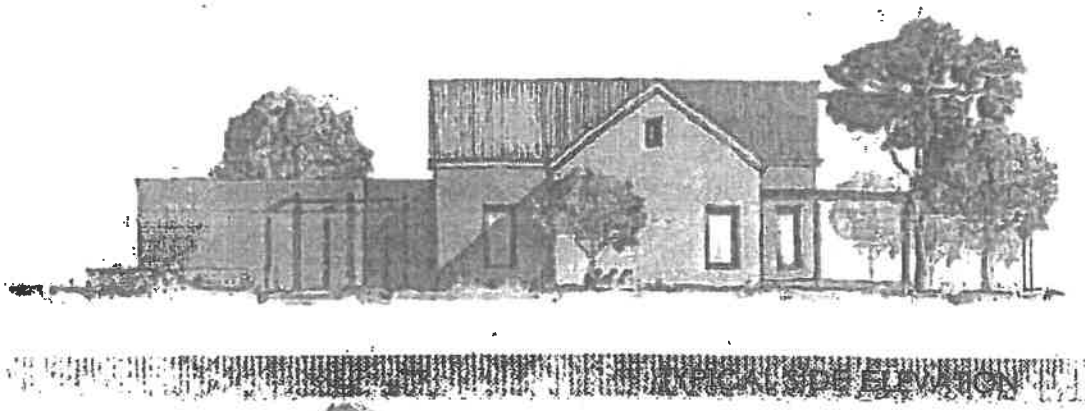
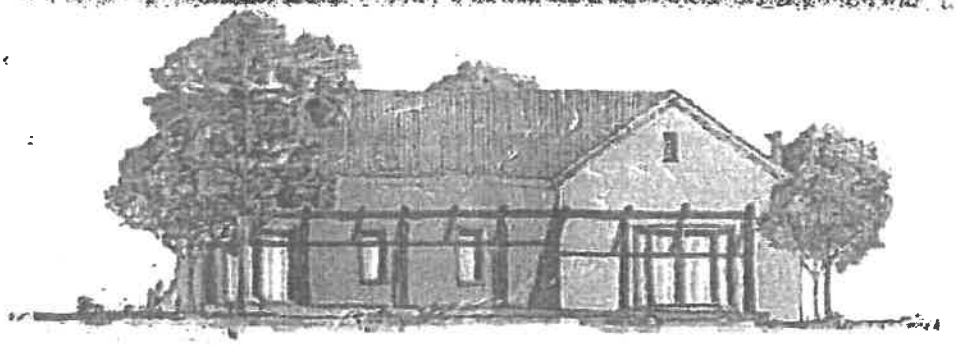


Figure 50 Interpretation of existing architecture in Franschhoek [Urban Concepts]

L-SHAPE HOUSE





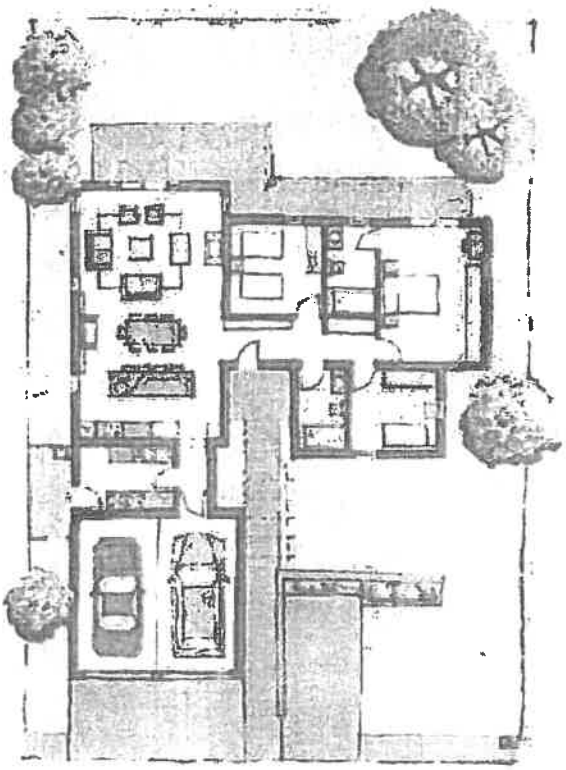
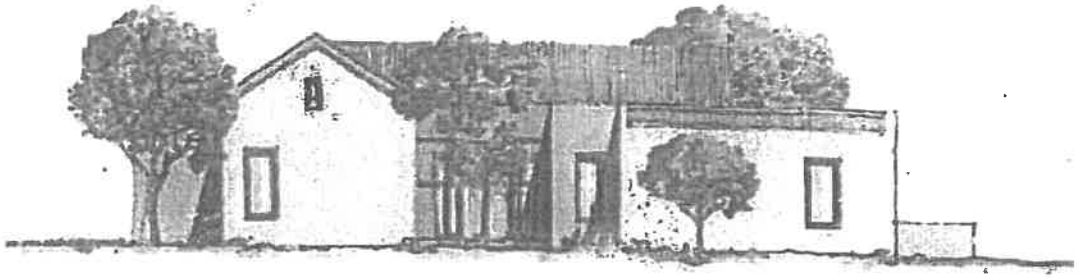


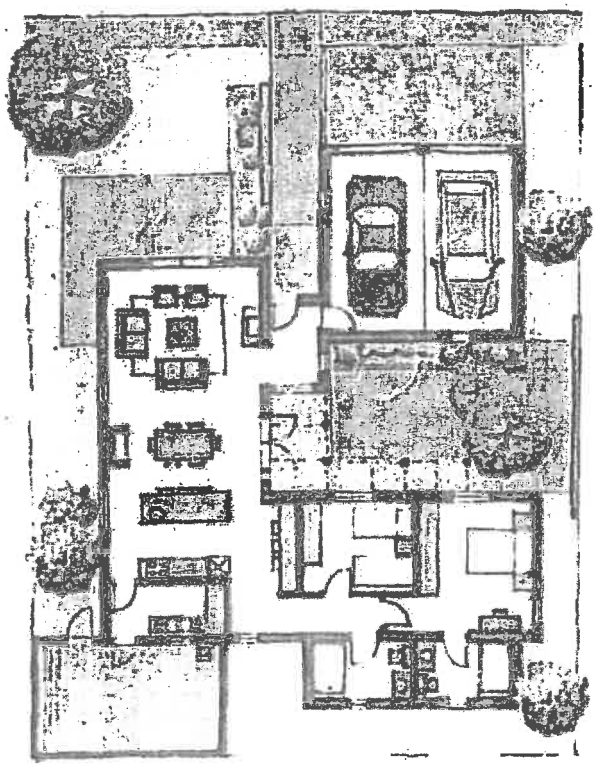
Figure 51 L-shaped house type [Urban Concepts]

COURTYARD HOUSE

TYPICAL SIDE ELEVATION



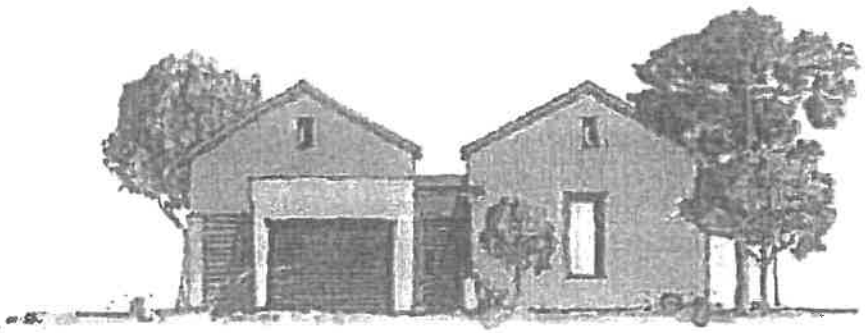
TYPICAL DOOR ELEVATION



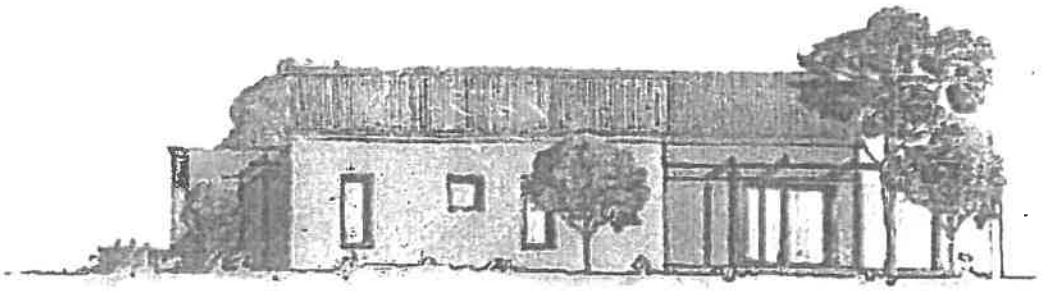
TYPICAL PLAN

Figure 52 Courtyard house type [Urban Concepts]

SMALL BARN HOUSE



TYPICAL SIDE ELEVATION



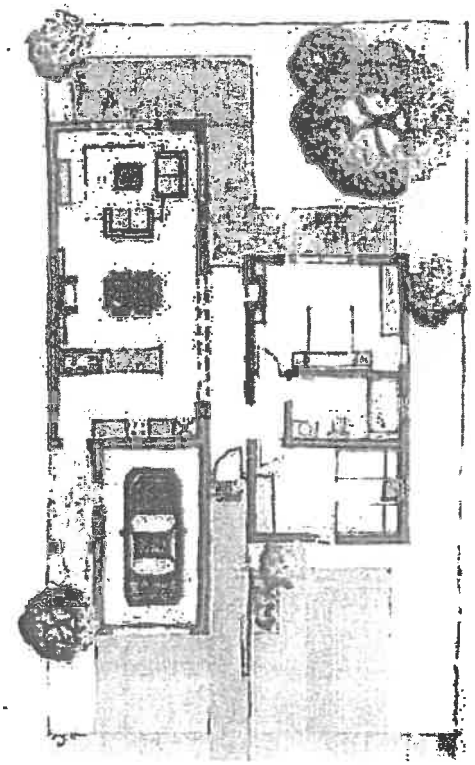


Figure 53 Small barn house type [Urban Concepts]

C GUIDELINES FOR HEALTH FACILITY

As noted in the section 4.4D Architectural Intent, the design of the buildings must take cognizance of the built form of the local area (Franschhoek and surrounds), and consider a contemporary interpretation of the proportions and character of the historical buildings of the area. Later architecture of the area should also be considered, where appropriate.

A set of design guidelines has been developed to inform the architectural design of the building:

FRAGMENTATION

- The building needs to be fragmented to create a maximum building form width of 10m, and a building length of 25 to 40m.
- Linking elements between building forms to be smaller elements with lower roofs. Max width of 8m.

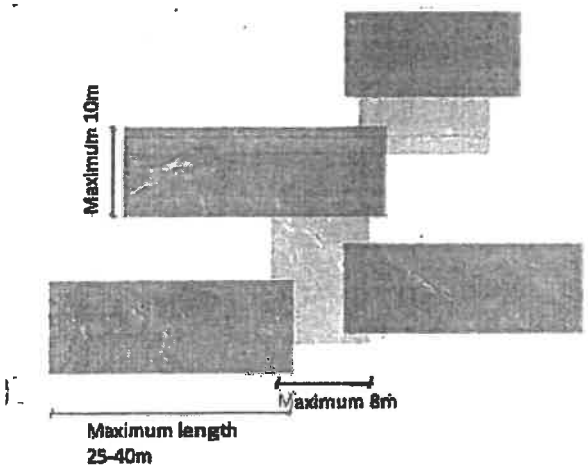


Figure 54 Example of the use of building forms [Urban Concepts]

BUILDING ORIENTATION & INTERFACE

The building to have an active interface with the stream on the Northern side. This would suggest that communal areas be positioned on the ground floor (North side of the building).

- Roofed stoeps or stoeps with pergolas required on the Northern side, and encouraged on the South side of the building forms.
- At least 30 % of the northern side of building forms to have either a lean-to roof or a pergola.
- Lean-to roofs or pergolas encourages within courtyard spaces created by building elements.

LEGIBILITY

The main entrance of the building will be on the South Side. Entrances should be clearly defined by creating a legible pedestrian route, but no significant architectural features to indicate entrances.

HEIGHT

- The building is restricted to a double storey structure to a max height of 8.5m above FFL.
- FFL to be a max of 1.5m above NGL.

ROOFS

- The building forms to be roofed with double pitch roofs (30 or 35 degrees). All building forms to have the same pitch.
- Linking elements to be roofed with flat roofs hidden behind a parapet wall, or a double pitch roof (same pitch as the building forms).
- Lean-to roofs (max pitch 15 degrees) or flat concrete roofs permitted to create walkways

ARCHITECTURE

MATERIALS

- All buildings to be plastered and painted.
- Paint colours to be natural tones
- Roofs to be charcoal colour

WINDOWS AND DOORS

- All windows and doors to be of a rectangular form
- No cottage pain windows will be permitted
- Window and door frames to be aluminium or timber.
- No ornate detailing permitted.