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INFRASTRUCTURE SERVICES

GENERAL GUIDELINES AND STANDARD PRACTICES FOR THE PROVISION OF CIVIL ENGINEERING SERVICES FOR NEW DEVELOPMENTS

Rev 0 - 19 July 2024

Introduction

This document should be read in conjunction with any land use- or building plan approval conditions and sets out the general guidelines and standard practices, processes, and procedures, that a Developer must be aware of and comply with when implementing their development. The aim of this document is to facilitate a smooth development process by clarifying what will be expected by the Municipality during the implementation stages of the development project and prior to subdivision clearance and/or occupation certificates being approved.

Definitions

1. The following words and expressions, 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 the land-use approval / building plan approval.

(d) *"Clearance"* means any approval that must be issued by the municipality, related to the development of a property and includes subdivision clearance (section 28 certification in terms of the Stellenbosch Municipal Land Use Planning By-law) or an occupation certificate in terms of Section 14 of the National Building Regulations and Building Standards Act 103 of 1977.

General

2. Should the "*Developer"* not take up his approved rights for whatever reason within five years from the date of approval, a revised Engineering report addressing services capacities and reflecting infrastructure amendments during the five-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 are not sufficient to accommodate this development, then the implementation of the development must be re-planned around the availability of bulk services as any "*Clearance*" for the development 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.

3. 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.

4. The "*Developer*" must ensure that he / she has an acceptable public liability insurance policy in place.

5. If applicable, the "*Developer*" must 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 "*Clearance*" will be issued.

6. The "*Developer*" must inform the project team for the proposed development (i.e., engineers, architects, etc.) of all the relevant conditions contained in this approval.

7. The latest General Conditions of Contract for Construction Works (GCC), as published by SAICE is applicable to all civil engineering services construction work related to this development.

8. The "*Developer*" must take cognizance of and accepts the following:

   a.) no construction of any civil engineering services may commence before approval of internal – and external civil engineering services drawings;
   b.) no approval of internal – and external civil engineering services drawings will be given before land-use and or SDP approval is obtained;
   c.) 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. This includes approval for the registration of any servitudes, where applicable;
   d.) no building plans will be recommended for approval by the Directorate: Infrastructure Services before land-use and or SDP approval is obtained;
   e.) 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.) no building plans will be recommended for approval by the Directorate: Infrastructure Services before a subdivision clearance is issued.

Site Development Plan

9. 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".

10. 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 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, turning circle movements, 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.

11. 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.

12. An amended Site Development Plan must be submitted for approval prior to the approval of building plans for new buildings not indicated on the original approved Site Development Plan.

Internal- and Link Services

13. The "*Developer*", must 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.

14. 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.

15. Construction of services may only commence after municipal approval of engineering drawings has been obtained.

16. Drawings of all the internal and external civil engineering must be prepared and signed by an ECSA Registered Engineering Professional (the consulting engineer, appointed by the "Developer"), before being submitted to the aforementioned Directorate for approval.

17. The Directorate: Infrastructure Services will require that an Engineering Drawing checklist be completed and signed by the consulting engineer, appointed by the "Developer", when submitting the drawings for approval (**Annexure: Engineering Drawing Checklist**). This checklist contains all the minimum information items that is needed to evaluate and approve the drawings. The consulting engineer must ensure that all the requirements as per the checklist is addressed and reflected accurately on the drawings, otherwise it will be referred back.

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

19. The "*Developer*" must ensure 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.

20. A suitably qualified professional resident engineer must be appointed to supervise the construction of all internal – and external services.

21. All the internal civil services (water, sewer and stormwater), as well as external service that are being connected to, must be indicated on the building plans submitted for approval.

22. Prior to the issuing of any "*Clearance*", all internal - and link services must be inspected for approval by representatives of the various civil engineering departments of the municipality on request by the "*Developer's"* Consulting Engineer. "*Clearance*" will only be issued if the *"Engineer"* confirms he is satisfied that the services has been installed to the approved standards and specification.

23. A Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1 must be issued before "*Clearance*" will be supported by the "*Engineer*".

24. 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 must be kept on permanent record by the consulting engineer and must be submitted to the "Engineer", on request.

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

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

27. The *"Developer*" will be liable for all damages caused to existing civil and electrical services of the "*Municipality"* caused by the implementation of 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.

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

29. The developer must take cognizance of applicable tariffs by Council in respect of availability of services and minimum tariffs payable.

Servitudes

30. The "*Developer*" must ensure 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 "Clearance" will be given.

31. Unless otherwise agree with the *"Engineer",* 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.

32. The *"Developer"* must obtain the written approval of all affected owners where the route of a proposed service crosses the property of a third party before the final approval of a land use application/engineering drawings/building plan (whichever comes first) will be given by the "*Engineer*".

Stormwater Management

33. Taking into account the recent water crisis, and associated increase in borehole usage, it is important that the groundwater be recharged as much as possible. One way of achieving the above is to consider using Sustainable Drainage Systems (SuDS) approach wrt SW management. From Red Book: "SuDS constitute an approach towards managing stormwater runoff that aims to reduce downstream flooding, allow infiltration into the ground, minimise pollution, improve the quality of stormwater, reduce pollution in water bodies, and enhance biodiversity. Rather than merely collecting and discarding stormwater through a system of pipes and culverts, this approach recognises that stormwater could be a resource." The Developer is encouraged to implement SuDS principles that are practical and easily implementable. Details of such systems can be discussed and agreed with the "*Engineer*" and must be indicated on the engineering drawings.

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

35. Overland stormwater escape routes must be provided in the cadastral layout at all low points in the road layout, or the vertical alignment of the road design must 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.

36. 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.

37. No disturbance to the river channel or banks may be made without the prior approval in accordance with the requirements of the National Water Act and or the National Environmental Management Act (NEMA).

38. The consulting engineer, appointed by the "*Developer*", must analyse 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.

39. 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.

40. The approved management plan must be implemented by the "*Developer*", at his/her cost.

41. 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. In such cases, the *"Developer*" needs to connect to the nearest piped municipal stormwater system with a stormwater erf connection.

Roads

42. Where applicable, the application must be submitted to the District Roads Engineer (DRE) for comment and conditions. Any conditions set by the District Roads Engineer will be applicable and must be completed prior to "*Clearance*". Written proof from that the DRE that their requirements have been met and that they support "*Clearance*" must be provided.

43. No access control (i.e. booms or gates) is be allowed in public roads.

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

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

46. Prior to commencement of any demolition / construction work, a traffic accommodation plan for the surrounding roads must be submitted to the Manager: Traffic Engineering for approval, and the approved plan must be implemented by the "*Developer*", at his/her cost.

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

48. Each erf must have its own access (drive-way), constructed to standards as set out by the the Directorate: Infrastructure Services and in line with the Road Access Guideline.

49. The access road to the existing facility must 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.

50. Parking areas must be provided with a permanent surface and parking bays must be clearly demarcated and accessible.

51. No parking required by the development will be allowed in the road reserve and all parking must be accommodated on the development erf.

52. Access to all properties via public roads shall be provided in such a way that collection vehicles and municipal refuse trucks can complete the beats with a continuous forward movement.

53. To accommodate municipal refuse trucks, roads shall be provided with a minimum travelable surface of 5 meters width and a minimum corner radius of 5 meters.

54. 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.

55. Minimum turning circle radius shall be 11 meters to the center line of the municipal refuse truck.

56. Road foundation shall be designed to carry a minimum single axle load of 8.2 tons.

Bridges

57. Any bridge(s) in the proposed road lay-out must be designed and constructed to not impact on the natural flow of water, and to be able to accommodate the 1:50 year flood. The underside of the bridge(s) must be above the 1:100-year flood level;

58. The bridge(s) are be constructed by the *"Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services. An adequate level of supervision by a suitably qualified Registered Engineering Professional must be provided for the full duration of the works. The Registered Engineering Professional shall arrange for any tests that may be necessary to determine whether the workmanship and materials conform to the required standards.

59. A certificate stating that all work has been carried out in accordance with the Directorate: Infrastructure Services's specifications and requirements, signed by the Registered Engineering Professional, must be submitted with the "As Built" drawings on completion of the bridge(s). The certificate must make reference to all material testing and confirm that the test results meet or exceed the requirements of the specifications.

Culverts

60. Any culvert in the proposed road lay-out must be designed and constructed by a professional engineer and to the satisfaction of all affected institutions i.e., Provincial Government, Stellenbosch Municipality, Metrorail, PRASA, etc.

61. The culvert is to be constructed by the "*Developer*", to the standards of the Directorate: Infrastructure Services. An adequate level of supervision by a suitably qualified Registered Engineering Professional must be provided for the full duration of the works. The Registered Engineering Professional shall arrange for any tests that may be necessary to determine whether the workmanship and materials conform to the required standards.

62. That a certificate stating that all work has been carried out in accordance with the Directorate: Infrastructure Services's specifications and requirements, signed by the Registered Engineering Professional, must be submitted with the "As Built" drawings on completion of the culvert. The certificate must make reference to all material testing and confirm that the test results meet or exceed the requirements of the specifications.

Wayleaves

63. Wayleaves / work permits must 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.

64. Wayleaves will only be issued after approval of relevant engineering design drawings.

65. It is the Developer's responsibility to obtain wayleaves from any other authorities/service provider's whose services may be affected.

Solid Waste

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

    a) Households to reduce waste produced
    b) Re-use resources wherever possible
    c) 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:

    d) Procedures should be stipulated for the collection and sorting of recyclable materials;
    e) Provision should be made for centralized containers for recyclable materials including cardboard, glass, metal, and plastic and green waste;

f) 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;
g) Procedures for removal of waste (materials that cannot be reused or recycled) from the site should be stipulated;
h) General visual monitoring should be undertaken to identify if these measures are being adhered to;
i) Record shall be kept of any steps taken to address reports of dumping or poor waste management within the development.

Where a Homeowner's Association is to be established, the Constitution of the Homeowner's Association shall incorporate the above in the Constitution, as well as:

j) Each party's (Developer/Owner's Association/Homeowner's) responsibilities w.r.t. waste management and waste minimization should be clearly;
k) A set of penalties for non-compliance should be stipulated.

67. It must 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.

68. The Municipality will provide a Solid Waste removal service and the Developer may not utilize a private service provider, unless agreed in writing with the Stellenbosch Municipality: Solid Waste department - contact person: Senior Manager: Solid Waste (021 808 8241; clayton.hendricks@stellenbosch.gov.za).

69. Should it not be possible for the *"Municipality"* to enter into an agreement with the *"Developer*" due to capacity or other practical constraints, the "*Developer*" will have to enter into a service agreement with a service provider approved by the *"Municipality*".

70. Proof that a solid waste removal service has been secured must be provided before "*Clearance*".

71. that if the "*Developer*" removes the waste by private service provider, provision must still be made for a refuse room should this function in future revert back to the "*Municipality*", The refuse room does not necessarily have to be constructed, but a large enough area should at least be identified and kept open on the development site to allow for the construction of a refuse room in the future, if it becomes necessary. This area must also be clearly indicated on any site development plan and/or building plans.

72. 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.

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

74. 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.

75. 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.

76. 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

77. With regards 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.

78. 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.

79. 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 meters 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 which discharges to a sewer gully outside the building. In some cases, a grease gully may be required.

80. Should the refuse storage area be located at a level different from the level of the street entrance to the property, access ramps are to be provided as stairs are not allowed. The maximum permissible gradient of these ramps is 1:7.

81. A refuse bay with minimum dimensions of 15 meters in length x 2, 5 meters in width plus 45 degrees splay entrance, on a public street, must be provided where either traffic flows or traffic sight lines are affected. The refuse bays must be positioned such that the rear of the parked refuse vehicle is closest to the refuse collection area.

82. Any containers or compaction equipment acquired by the building owner must be approved by the Directorate: Infrastructure Services, to ensure their compatibility with the servicing equipment and lifting attachments.

83. Refuse should not be visible from a street or public place. Suitable screen walls may be required in certain instances.

84. Access must be denied to unauthorized persons and refuse storage areas should be designed to incorporate adequate security for this purpose.

85. All refuse storage areas and refuse bays must be indicated on the site development plans, engineering drawings and building plans, to be approved by the "*Engineer*", to ensure that the

"*Municipality*" is able to service all installations, irrespective of whether these are currently serviced by them, or other companies.

As-Builts

86. The "*Developer*" shall provide the "*Municipality*" with:

a) a complete set of as-built paper plans, signed by an ECSA professional registered engineer;

b) a USB drive containing the signed as-built plans in an electronic DXF- / DWG file format, reflecting compatible layers and formats as will be requested by the "Engineer" and is reflected herewith as **Annexure: GIS**;

c) a completed Asset Verification Sheet in Excell format, reflecting the componitization of municipal services installed as part of the development. The Asset Verification Sheet will have to be according to the electronic format confirmed by the "Engineer" at any point in time, and is to be verified as correct by a professional registered engineer;

d) 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;

e) Written verification by the developer's consulting engineer that all professional fees in respect of the planning, design, and supervision of any services to be taken over by the "Municipality" are fully paid.

87. All relevant as-built detail, as reflected in the item above, of civil engineering services constructed for the development, must be submitted to the "*Engineer"* and approved by the "*Engineer"* before any application for "*Clearance*" will be supported by the "*Engineer*".

88. The consulting civil engineer appointed by the "*Developer"* shall certify that the location and position of the installed services are in accordance with the plans submitted for each of the services. The consulting civil engineer will be solely responsible for any errors / omissions and any implications as a result of such error / omissions on these drawings.

89. All As-built drawings are to be signed by a professional engineer who represents the consulting engineering company responsible for the design and or site supervision of civil engineering services.

90. "*Clearance*" shall not be issued unless said services have been inspected by the "*Engineer*" and written clearance given, by the "*Engineer"*.

Unbundling of municipal assets

91. Where a project runs over more than one financial year (not concluded by 30 June of a year) the following forms part of the "*Developer's*" responsibilities, and this information must be provided to the "*Engineer*" when required. This information must be provided by the developer's consulting engineer responsible for the project:

92. If construction is still in progress over the year-end period of the Stellenbosch Municipality, being 30 June of each year, the consulting engineer appointed by the "*Developer*", must supply the "*Engineer*" with a report / certificate at year-end (30 June), which details:

    a) the cumulative expenditure incurred up to 30 June for the project;

    b) any details if the project is taking a significant longer period of time to complete than expected, including reasons for any delays;

    c) details where construction or development has been halted either during the current or previous reporting period(s), including reasons for halting the construction or development of the asset/project;

93. For all completed projects, the consulting engineer appointed by the "*Developer*" must provide the following information to the "*Engineer*".

    a) As-built drawings/ google images with dimensions/ Diagrams with dimensions;

    b) As-built drawings, diagrams, list of addresses where infrastructure was installed w.r.t meter panels, streetlights;

    c) Invoices, expenditure; final BOQ, final payment certificate;

    d) Completion certificate;

    e) Location information – list indicating a street location, kmz files, marked up map.

"*Clearance*" applications and approvals

94. It is specifically agreed that the "*Developer"* undertakes to comply with all conditions of approval as laid down by the "*Municipality*" before any "*Clearance*" shall be issued.

95. The "*Municipality*" reserves the right to withhold any "*Clearance*" until such time as the "*Developer*" has complied with all the development's land use and/or building plan conditions of approval with which he/she is in default. Any failure to pay monies payable in terms of the approval conditions within 30 (thirty) days after an account has been rendered shall be regarded as a breach and the "*Municipality*" reserves the right to withhold any "Clearance" until such time as the amount owing has been paid.

96. "*Clearance*" will only be given per phase and not for any individual erven in any phase, and the onus is on the "*Developer*" to phase his development to meet their needs.

97. The onus will be on the "*Developer*" and or his professional team to ensure that all development approval conditions have been complied with before submitting an application for "*Clearance*". To assist the "*Developer*", a clearance checklist must be completed and signed by the consulting engineer, appointed by the "*Developer*", to be submitted with the clearance application (**Annexure: Clearance Checklist**). This checklist contains all the minimum information items that are needed to evaluate and approve the application. The consulting engineer must ensure that all the requirements as per the checklist are addressed and all supporting documentation is provided, otherwise the application will be referred back to the consulting engineer.

Avoidance of waste, nuisance and risk

98. 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 HOMEOWNER'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 HOMEOWNER'S ASSOCIATION.

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ANNEXURE: GIS

Geographic Information System (GIS) data capturing standards

In drawing up the As-built Plans relating to this development, the consultant must create the following separate layers in ESRI Feature class or shapefile, 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
C0MPLEX 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 feature class or .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 feature class or shapefiles; the road name, the from_street and to_street where applicable as well as the start and 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 or Hartebeeshoek (LO19) Geographic Coordinate System, the drawing must be completed using real world coordinates based on the Stellenbosch Municipality standard as follows:

- Datum : Hartebeeshoek (LO 19) or 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: ENGINEERING DRAWING CHECKLIST

Checklist: Engineering Drawings - minimum requirements **(Version 1 - 3 August 2015)**

Based on: "Design Guidelines and Minimum Standards for Civil Engineering Services Rev 0 – June 2015"

Project Description: _____

The following information needs to be clearly indicated on the drawings before it can be considered for approval.

General:

1. All services to be designed in accordance with Design Guidelines and Minimum Standards for Civil Engineering Services Rev 0 – June2015.
2. All construction details should be as per the standard details in the Design Guidelines and Minimum Standards for Civil Engineering Services Rev 0 – June 2015. If there are any deviations, please submit those for approval.

Please indicate if the project is funded from Development Charges (DC) ***(YES/NO)***	**CONSULTING**		**STELLENBOSCH**	
	Complies (√/x)	**Notes**	**Complies (√/x)**	**Notes**
Does the design comply with General - Item 1 above?				
Does the design comply with General - Item 2 above?				
Drawings signed by a professional engineer/technologist, registered with ECSA				
Scale not smaller than 1:500				
All drawings to be geo referenced in WGS84 coordinate system				
Name of Development / Project				
Grid positions with X and Y values at 100m c/c				
North sign				
Legend indicating all symbols, existing and proposed services etc.				
Street names/numbers				
Erf numbers				
Servitudes and their widths				
Dimensions of midblock services in relation to cadastral boundary				
Clear indication whether the development has **PRIVATE or PUBLIC** owned services				
Bulk Water Meter details for private developments (Type, Make, Serial No. Reading, Account Holder details.)				
Existing services on premises				
Connection to existing external system				
Connection details (including specials and fittings to be used)				
Typical cross sections for the different Road Reserve widths, indicating the dimensioned positions of all services within the reserve (or use Stellenbosch Municiplaity's standard details).				
All attribute data, must be clearly indicated on the layout drawings, positioned at the entity:				
pipe sizes (i.e. 110mm dia)				
pipe material and class (i.e. uPVC Class 12)				
pipe slopes (1:x)				
pipe lengths (m)				
cover levels, invert levels and depths of structures i.e. manholes and catchpits				
flow direction arrows on pipes				
dimensions of services in relation to cadastral boundaries				
Checked By:				
Signature:				
Date:				
Contact details:				

ANNEXURE: CLEARANCE CHECKLIST

STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

CIVIL ENGINEERING CLEARANCE APPLICATION (SECTION 28) CHECKLIST

Mother Erf: _____ (Erf number of the subdivision application)

Civil Engineering Clearance Reference: _____ (Municipality to complete)

1. Please provide all the information listed below in electronic format: Email to charne.williams@stellenbosch.gov.za.
2. The naming of the electronic folders must correspond with the numbering below.

REQUIREMENTS		APPLICANT (YES/NO)	NOTES	OFFICIAL	NOTES
1.	Application form fully completed with the correct Erf number and GP Diagram number.				
2.	GP diagram attached				
3.	Municipal Land use approval letter including Civil Engineering Land use approval Memo				
4.	As-built drawings signed by Professional Engineer				
5.	Civil Engineering Completion Certificate signed by Professional Engineer				
6.	Proof of site Inspection with Municipal Engineers				
7.	Proof of Servitude/s Registration (if Applicable)				
8.	Development Charges (if Applicable), Invoice and Proof of Payment				
9.	DC Projects (if applicable) proof of completion and payment of any DC balance. If DC project is still underway, provide an updated financial summary of DCs payable vs project expenditure				
10.	Any other relevant Approval Conditions as per Land-Use Approval Memorandum complied with.				

NAME OF APPLICANT: _____

SIGNATURE: _____

DATE: _____

NAME OF DELEGATED OFFICIAL: _____

SIGNATURE: _____

DATE: _____