

20 & 21 Boorea Ave Lakemba Flood Impact Report

Report Prepared for:
Impact Group

May 2017
Project No. 1982



Prepared by:
Storm Consulting Pty Ltd

SUSTAINABLE WATER
STORMWATER & RUNOFF
STREAMS & WATERWAYS
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1.0 INTRODUCTION

1.1. Background

Storm has been engaged by Impact Group to prepare a flood impact report for the proposed development at 20 & 21 Boorea Ave, Lakemba. This assessment has been undertaken as a part of Development Application (DA) to appreciate the design implications that may be imposed by Canterbury-Bankstown Council (Council) in relation to 1% ARI flood level and Onsite Detention (OSD) requirements.

The site is located adjacent to Coxs Creek and currently is used as a storage area/warehouse. The proposed development is a residential aged care facility (AMAN).

As such, through the progression of this assessment, Storm has consulted with the Council to discuss and formulate a feasible strategy with consideration to flood planning levels and feasible legal point of discharge.

1.2. Scope

This drainage and flood impact assessment is prepared in support of DA with the following scope applying:

- Review the development expectations and site constraints with respect to impacts on flooding and drainage;
- Discuss and continually liaise with Council to obtain all relevant information with respect to potential implications of the application;
- Review Council's flood maps and advise on the parking/garage and habitable area flood levels;
- Undertake hydraulic analysis and complete Council's checklist to size OSD;
- Provide drainage conceptual drawings to support DA.

2.0 SITE OVERVIEW

2.1. Site Visit and Existing Conditions

A site visit was conducted by Storm Civil Engineer, Marcia Amir_Abdollahian, on 02 May 2017. The purpose of the inspection was to confirm existing conditions, topography, potential flood conditions and site constraints. Key to this was observing existing drainage system, overland flow path and Coxs Creek's profile adjacent the site.

The property at 20 & 21 Boorea Ave, Lakemba covers an area of 0.31 Ha and No. 20 is currently a house and No. 21 is used as a warehouse. The land is bound by the Coxs Creek to the north, Boorea Ave to the south and abutting industrial/residential properties to the east and west. Figure 1 shows the site layout.



Figure 1 – Existing site layout

The site is located at a cul-de-sac. Boorea Ave slopes towards north/cul-de-sac. Two side entry pits are located with the cul-de-sac. One between lots 20 & 21 and the other one between lots 21 Boorea Ave and 5 Frazer St (Figure 2). The current entrance to lot 21 is raised and is higher than the road and the side entry pits. The remainder of the site slopes toward the Cocks Creek (Figure 3). The site entry pits have 2.1m lintel with 0.9 m grates (measured on site). It is likely that any surface runoff in excess to the site entry capacity ponds within the cul-de-sac and ultimately it is drained by the pit/pipe system. If the ponding level reaches the raised entrance of number 20 Boora Ave, it can form an overland flow towards the Cocks Creek.

The warehouse exists (on the boundary with Cocks Creek) with openings at the base of the corrugated iron wall (Figure 4&5). Any flooding from Cocks creek can potentially leak into the warehouse. However, the walls will provide a partial barrier for the water entering the site.



Figure 2
Side Entry pits- Boorea Ave Cul-de-sack



Figure 3
Raised entrance- 21 Boorea Ave



Figure 4
Corrugated iron wall- site boundary adjacent to Cocks Creek



Figure 5
Looking at Cocks Creek through the opening in the corrugated iron

There was no safe access to the Cox creek adjacent to the site. No existing stormwater pipes and pits was observed within 20 Boorea Ave.

Considering site layout and slopping toward the creek, Coxs creek is identified as a suitable point of discharge for the proposed development. Figure 6 shows the stormwater outlets of the neighbouring property to the creek.



Figure 6 – Stormwater connection to the creek- neighbouring property

2.2. Canterbury-Bankstown council requirements

Key criteria from Council's DCP and Engineering Specifications which relate to the subject site are summarised below:

Flood management:

- Ensure development will not increase the flood hazard or flood damage to other properties or adversely affect them in any way during times of flooding.
- Habitable floor levels for all residential and institutional buildings are to be a minimum of 500mm above the 1 in 100 year ARI flood level.
- All garages and parking areas are to be at least 150mm above the 1 in 100 year flood level.

On-Site Detention (OSD):

- Submit an OSD check list with the development application.
- Provide OSD with all development consisting of multi dwelling housing and residential flat building, regardless of the impervious area before and after the development, and regardless of whether the site falls toward or to the street.
- The minimum tank depth to allow access is 700mm.
- The permissible site discharge (PSD) is limited to 150 litres per second per hectare for a 1 in 10 ARI storm event.
- Ponding and overflow levels shall not be less than 300 mm below any habitable floor levels of building and not less than 150mm below non-habitable floor level.

- Where OSD is a part of the proposed stormwater system, up to 25% of the required volume for the above systems can be offset into a rainwater tank.

Basement pump system:

- Design the pump out pit to have sufficient volume for a 10 year ARI rainfall event for two hours duration so that a minimum volume of water can be retained in the sump when the pumps are in the off position.
- Minimum pump-out pit size 3 m³.

Pipe drainage:

- The pipe drainage system be designed to cater for 1 in 20 year ARI storm rainfalls.
- In addition to the 20 year ARI event, design the piped drainage system to ensure any potential overflows generated from system blockage, or overflows in storm events with an ARI of 100 years, do not present a hazard to people or cause significant damage to property (surface runoff or overland flow paths must be indicated on the design plans).

2.3. Proposed Development

The proposal comprises a multi-storey residential aged care centre as shown on the elevation view provided in Figure 7. The proposed building has 4 levels with an underground basement. The carparks are located in the basement as well as the kitchen, water and storage rooms, staff room and maintenance room and plant.



Figure 7 – Elevation view of the Proposed Development

Figure 8 shows the plan view of the ground floor of development with the proposed ramp to the basement parking.



Figure 8 – Plan View of Development, showing basement ramp

3.0 FLOOD AND DRAINAGE ASSESSMENT

3.1. Flood Impact Assessment

The Council completed a flood study in the area and provided 1% ARI flood depth contours (Appendix A). Figure 9 shows the 1% flood level contours in this site.

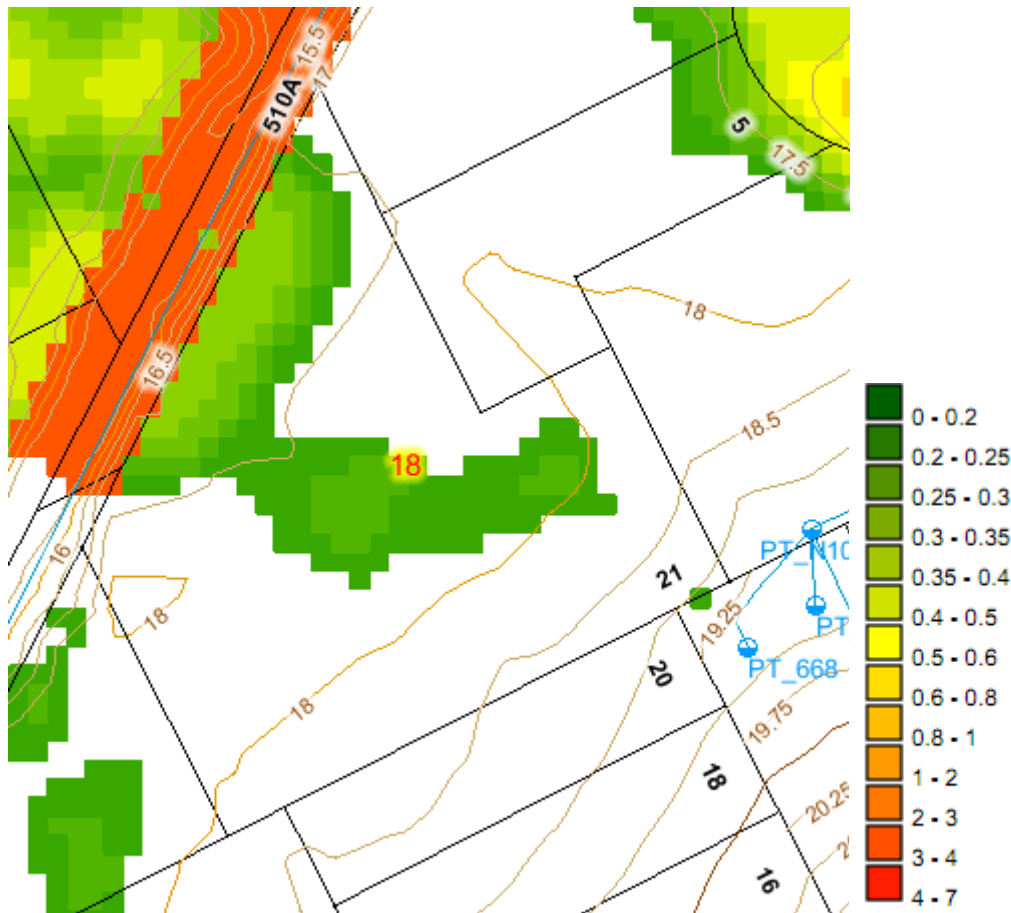


Figure 9 – 1% ARI flood depths

Planning certificate, section 149 for lots 20 and 21 Boorea Ave was issued by the council (Appendix B). Section 2.6 (flooding) of the planning certificates specifies:

- Lot 20 is not subject to any flood related development controls.
- Lot 21 is subject to flood related development controls due to possible flooding from overland flow.

Consultation with Council's Development team was undertaken early in the assessment in the form of email and phone communication to ascertain overall flood related development controls. The following key points are addressed:

- i. Council reported the highest 1% flood level as RL 19.25m AHD. It is at the entrance of lot 21 in Boorea Ave. It is due to overflow from the street drainage within Boorea Ave. The entrance of the proposed building should be raised or a hump should be located to RL 19.40m AHD (including 150mm free board).

- ii. 1% ARI flood is contained within the creek and lot 21 is subject to flooding due to overland flow.
- iii. Figure 10 shows the proposed ground level planed on the site survey. Comparing the flooding extent and the layout of the proposed building, the critical location is the south-east corner of the building. The existing ground level is about RL 18.05 AHD. 1% flood depth is 0.3 m (Figure 9). Therefore, Ground level should be at minimum RL 18.85m (including 500 mm free board).

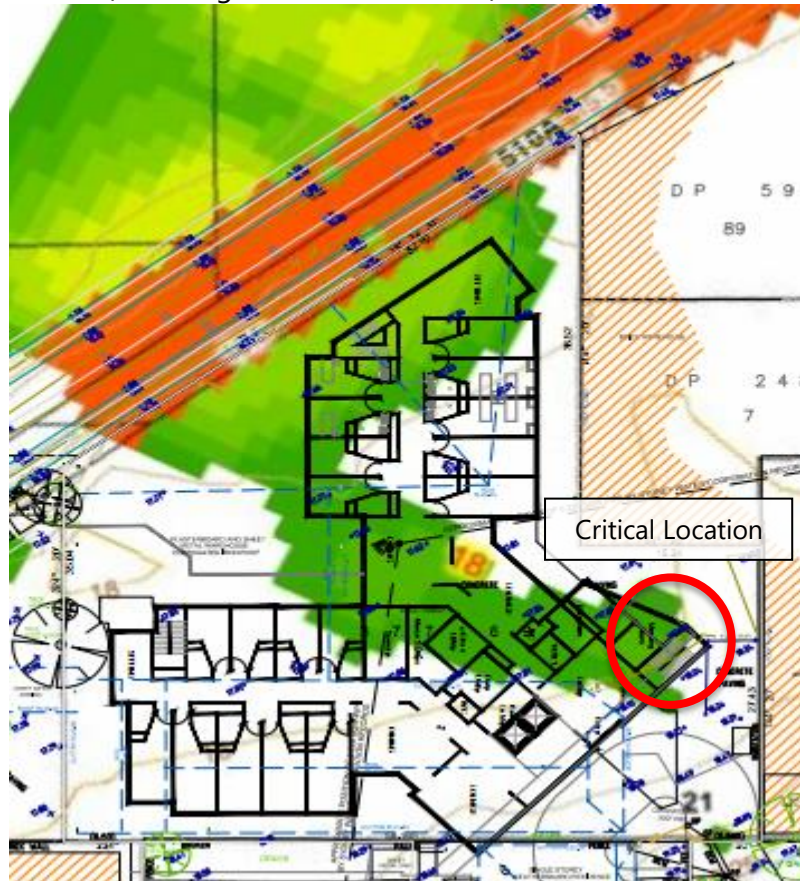


Figure 10 – Proposed ground level overlay on the site survey

- iv. The proposed ramp to the entrance is located within lot 20. This lot is not affected by 1% ARI flooding and is not subject to any flood related development controls. The ramp may start at the same level as the existing ground level.
- v. The basement level is below 1% ARI flood level. Therefore, any opening to the outside area including staircases must be avoided.

Consultation with Council's Development team identified the area adjacent to the creek as critical flooding zone. The 1% flood map provided by council does not show any barrier between the creek's top of the bank and the lot. However currently is a building with corrugated iron walls at the boundary of the site and the creek. These walls provide partial blockage of the water entering the site. Since the proposed layout includes an open space on the west side of this boundary, it is expected that the proposed development will provide additional flood storage compared to the existing layout.

A flood storage assessment was carried out to ensure the proposed development will not increase the flood hazard or flood damage to other properties or adversely affect them in any way during times of flooding. This assessment assumes that currently there is no barrier at the site boundary (a conservative assumption).

Figure 11 shows the lost flood storage is red and the available additional flood storage in blue. The red and blue areas are measured as 179 m² and 191 m², respectively. This confirms that the proposed layout can provide additional flood storage to compensate for the lost storage, if required.



Figure 11 – Flood storage assessment

3.2. Drainage Strategy

3.2.1. On-Site Detention

Council's OSD check list is included in Appendix C.

Unrestricted site discharge in 1 in 10 Yr event is 119 L/S. The Permissible Site Discharge (PSD) is 47 L/S (150 L/S per hectare). The OSD storage and an orifice is designed to restrict the site discharge and reduce it to 47 L/S.

DRAINS software, a Stormwater Drainage System design and analysis program is used to design the OSD system. Drains uses ILSAX hydrologic model which has been widely used for urban stormwater system design and analysis in Australia and New Zealand.

Model parameters have been adopted from Council's DCP as well as the DRAINS User Manual. Key parameters used have been listed below:

Catchment runoff:

- Soil Type: 3

- Antecedent Moisture Content, AMC: 3
- Paved (impervious) area depression storage: 1mm
- Grassed (pervious) area depression storage: 5mm

Intensity-Frequency-Distribution (IFD) Data has been obtained from the Bureau of Meteorology (BOM) for the subject site to provide a range of design storms.

Time of concentration (Tc) calculated using the kinematic wave formula.

- Orifice coefficient: 0.6 (circular shaped, square edge cut in a flat plate)
- Manning's n roughness values:
 - ✓ Impervious areas: 0.013
 - ✓ Pervious areas: 0.03
 - ✓ Concrete pipes: 0.013

The catchment is modelled as 56% impervious. Based on the modelling results, 55.25 m³ detention storage is required. 25% of this storage is provided in the rainwater tank and the remaining in the OSD. The OSD footprint area is 39.12 m². Max water level is OSD is at RL. 17.17 m AHD and a 146mm orifice at RL. 16.065 m AHD is required. Figure 12 shows the Detention storage graph (combined rainwater tank and OSD) in a 1 in 10 years- 1.5 hours storm. The reduced peak discharge is 47 L/S.

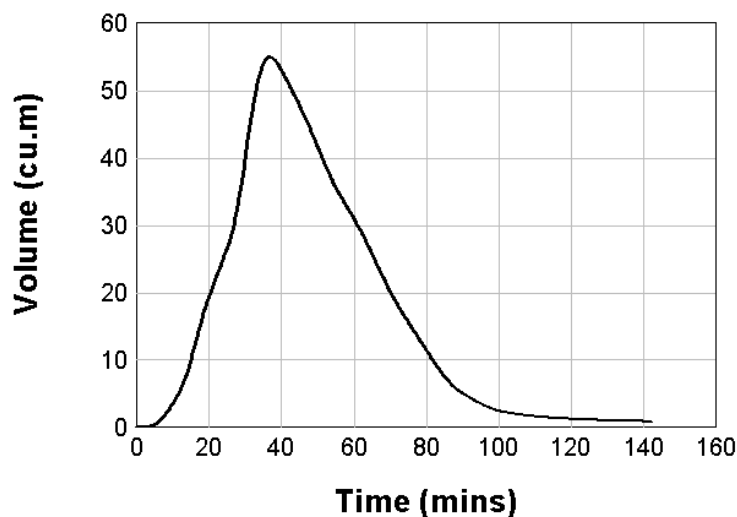


Figure 12 – Total detention storage graph- 1 in 10 years- 1.5 hours event

3.2.2. Basement Pump System

The contribution catchment area to the basement pump out system is limited to the basement access ramps only. A trench grate is proposed at the lower end of the ramp to divert away all other surface flows from the basement.

The pump out pit is designed to have sufficient volume for a 10 year ARI rainfall event for two-hours duration so that a minimum volume of water can be retained in the sump when the pumps are in the off position.

Key information about the basement sump/pump system is listed below:

- Contribution catchment (limited to the exposed access ramp): 160 m²
- Use two pumps to work in tandem to ensure that both pumps received equal usage and neither pump remains continuously idle.

DRAINS was used to model the driveway runoff. Figure 13 shows the runoff hydrograph of the ramp catchment for 1 in 10 years- 2 hours storm. Total volume of runoff is 11.2 m³. Max discharge is 7 L/S.

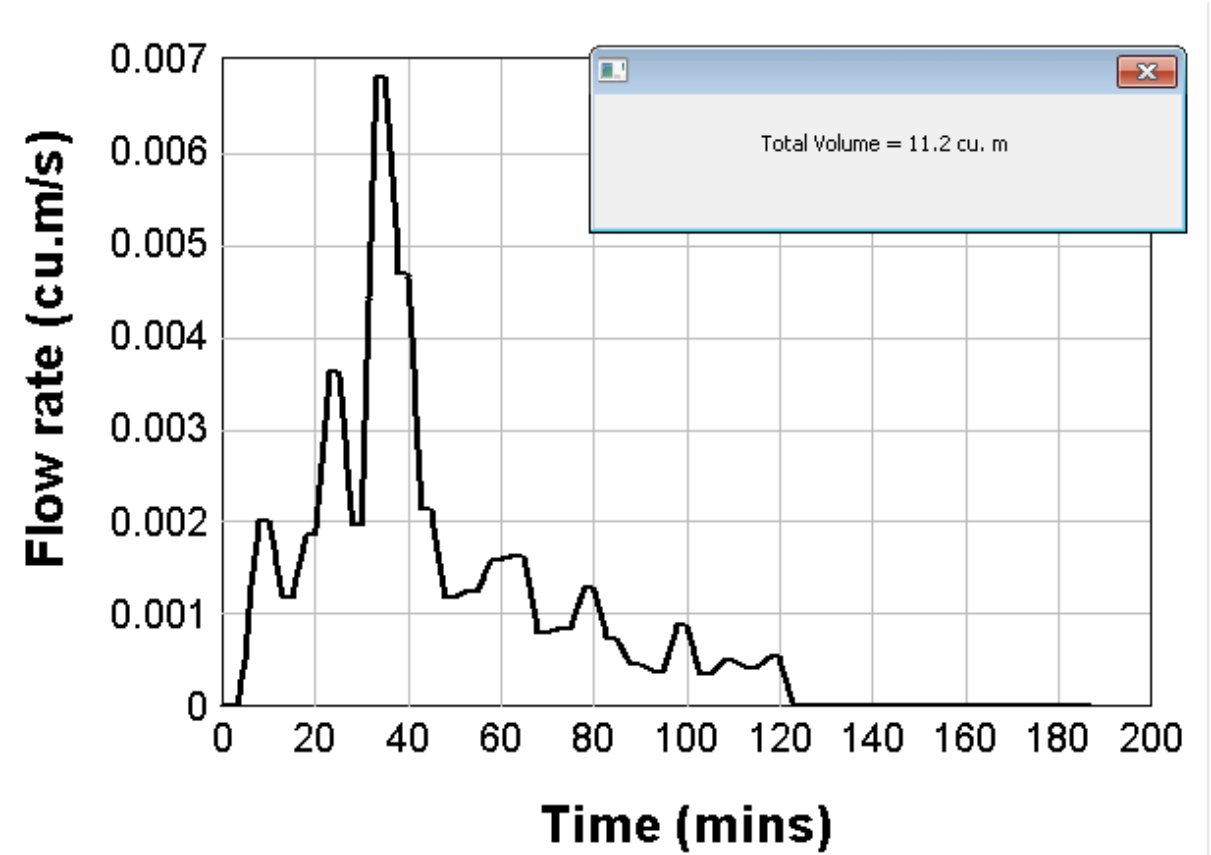


Figure 13 – Driveway runoff hydrograph and total volume- in 10 years, 2 hours storm

The basement pump system needs to provide 4 m head with 7 L/S discharge. This is to pump the driveway runoff from the basement level RL14.80m AHD to the ground level pit at RL18.80 m AHD (refer to the drainage network drawings in Appendix D). A D75VA single phase pump (Davey) or equivalent is proposed. This is to be confirmed at the detailed design stage. Figure 14 shows the characterises curve of a D75VA-Davery pump.

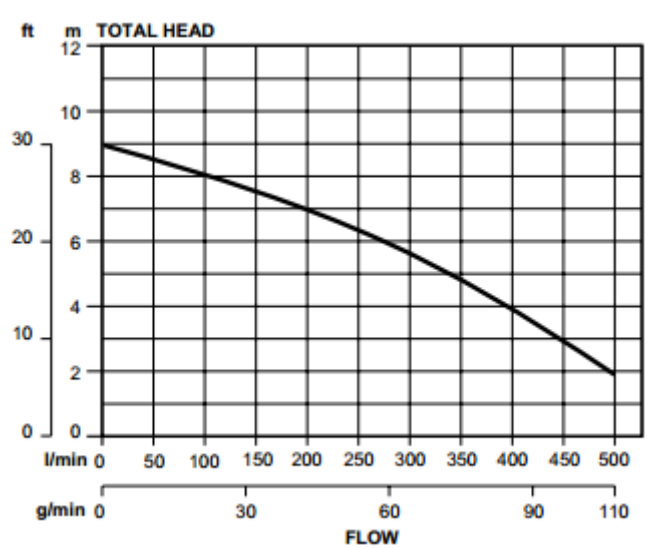


Figure 14 – D75VA pump characteristics curve

3.2.1. Drainage Network

Drainage network layout is proposed to convey 1 in 20 year events and overland flow routes are specified to cater for 1 in 100 year events. The proposed network is included in Appendix D. The proposed drainage network is prepared as a part of the DA and all levels are to be confirmed at the detailed design stage.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The flood assessment has shown that the proposed building can maintain flood storage. The proposed ground level is at RL 19.00 m AHD which is above 1% ARI flood level plus 500mm free board.

With respect to drainage assessment and design, an OSD is designed to restrict site discharge to PSD. The drainage layout including pipes and pits are designed to cater for 1 in 20 Years events and overland flow routes are specified to convey 1 in 100 year flows.

Basement access ramp drains to a sump and pump system. The sump volume is calculated to have enough storage for 1 in 10 years, 2 hours storm. The ramp runoff is to be pumped to the OSD.

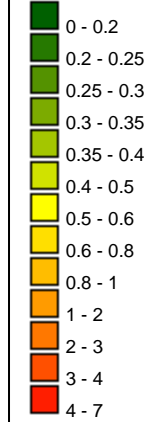
APPENDIX A

1 in 100 years (1% ARI)

flood depth

Overland Flow Tagging

Salt Pan Creek Overland flow



Salt Pan Creek 100Y Levels

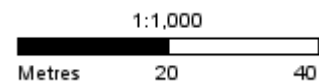
- Stormwater Pits
- Stormwater Pipes
- Tonkin Pits
- Tonkin Pipes

25cm Interval Contours

- Basic Contour
- Major Contour
- Minor Contour

50cm Interval Contours

- Basic Contour
- Major Contour

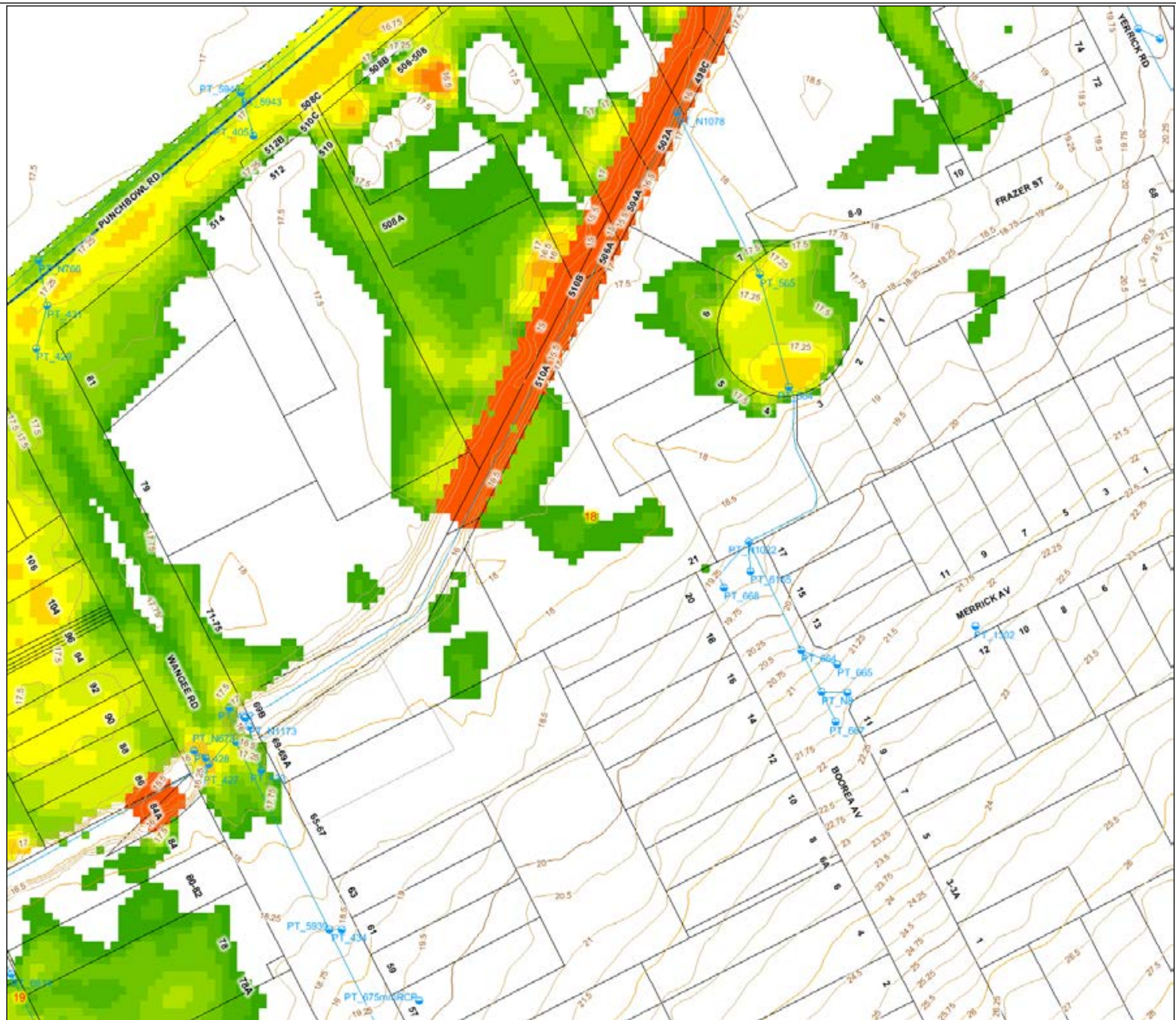


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APPENDIX B

Planning Certificate: Section
149 of the Environmental
Planning and Assessment
Act, 1979



**CANTERBURY
BANKSTOWN**

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Marcia Amir-Abdollahian
C/- Storm Consulting Pty Ltd
Suite 12, 130-134 Pacific Highway
GREENWICH NSW 2065

PLANNING CERTIFICATE

Section 149 of the Environmental Planning and Assessment Act, 1979.

Certificate No: 40428
19 April 2017

Land which Certificate is issued for:

Lot 25 DP 13586

20 Boorea Avenue, LAKEMBA NSW 2195

**INFORMATION PROVIDED UNDER SECTION 149 (2)
OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979.**

Land which Certificate is issued for:

Lot 25 DP 13586

20 Boorea Avenue, LAKEMBA NSW 2195

**PART 1:
ENVIRONMENTAL PLANNING INSTRUMENTS**

1.1 Principal Environmental Planning Instrument

Canterbury Local Environmental Plan 2012

Date effective from

1 January 2013

Land Use Zone

ZONE R4 HIGH DENSITY RESIDENTIAL

1. Permitted without consent

Home occupations

2. Permitted with consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Business premises; Car parks; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Environmental protection works; Exhibition homes; Flood mitigation works; Home-based child care; Home businesses; Hostels; Multi dwelling housing; Neighbourhood shops; Office premises; Places of public worship; Recreation areas; Residential flat buildings; Respite day care centres; Restaurants or cafes; Roads; Semi-detached dwellings; Serviced apartments; Shop top housing; Shops

3. Prohibited

Any development not specified in item 1 or 2

1.2 State Environmental Planning Policies

Note:

The following information indicates those State Environmental Planning Policies (SEPP) which may apply to the subject land. A summary explanation of each SEPP can be sourced from the Department of Planning (DoP) website at www.planning.nsw.gov.au. The full wording of each SEPP can also be accessed via the DoP website.

State Environmental Planning Policies:

No. 19 - Bushland in Urban Areas
No. 21 - Caravan Parks
No. 30 - Intensive Agriculture
No. 33 - Hazardous and Offensive Development
No. 50 - Canal Estates
No. 55 - Remediation of Land
No. 64 - Advertising and Signage
No. 65 - Design Quality of Residential Flat Development
No. 71 - Coastal Protection
State Environmental Planning Policy - (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy - Building Sustainability Index: BASIX 2004
State Environmental Planning Policy - (Repeal of Concurrence and Referral Provisions) 2004,
State Environmental Planning Policy - (Major Projects) 2005
State Environmental Planning Policy - (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy - (Temporary Structures and Places of Public Entertainment) 2007
State Environmental Planning Policy - (Infrastructure) 2007
State Environmental Planning Policy (Repeal of Concurrence and Referral Provisions) 2008
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy (Affordable Rental Housing) 2009

Proposed State Environmental Planning Policies

State Environmental Planning Policy (Competition) 2010
State Environmental Planning Policy (Coastal Management) 2016
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

1.3 Proposed Environmental Planning Instruments (including any Planning Proposals) that are or have been the subject of community consultation or on public exhibition under the Act Not applicable.

1.4 Development Control Plans.

Canterbury Development Control Plan 2012

Contains detailed design guidelines and development standards for development in Canterbury City.

1.5 Contribution Plans.

Council has in place a Development Contributions Plan prepared and adopted under the Environmental Planning and Assessment Act, 1979.

**PART 2:
RESTRICTIONS ON DEVELOPMENT****2.1 Heritage**

Not applicable.

2.2 Coastal Protection

There is no notification that the subject property is affected by the provisions of Section 38 or 39 of the Coastal Protection Act, 1979.

2.3 Mine Subsidence

The subject land is not within a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

2.4 Road Widening and Road Realignment

Whether or not the land is affected by a road widening or road realignment proposal under Division 2 or Part 3 of the Roads Act 1993 or an environmental planning instrument;

The land is not affected by a road widening or road realignment proposal under Division 2 or Part 3 of the Roads Act 1993, or an environmental planning instrument.

Whether or not the land is affected by a road widening or road realignment proposal under any resolution of Council.

The land is not affected by a road widening or road realignment proposal under any resolution of Council.

2.5 Council and Other Public Authority Policies on Hazard Risk Restrictions

Whether or not the land is affected by a policy adopted by Council or adopted by any other public authority (and notified to the Council for the express purpose of its adoption by that authority being referred to) that restricts the development of the land because of the likelihood of:

- **Land Slip**
The land is not affected by a policy restriction relating to landslip
- **Bushfire**
The land is not bushfire prone land (as defined in the Act).
- **Tidal Inundation**
The land is not affected by a policy restriction relating to tidal inundation
- **Subsidence**
The land is not affected by a policy restriction relating to subsidence
- **Acid Sulfate Soils**
The land is not affected by a policy restriction relating to acid sulfate soils.
- **Unhealthy Building Land**
The land is not affected by a policy restriction relating to Unhealthy Building Land.
- **Any Other Risk**
Not applicable.

- 2.6 Flooding**
Development on the land, or part of the land, for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is not subject to any flood related development controls.

Development on the land, or part of the land, for any other purpose is not subject to flood related development controls.
- 2.7 Matters arising under the Contaminated Land Management Act, 1997.**
Not applicable.
- 2.8 Land Reserved For Acquisition**
There is no environmental planning instrument, or proposed environmental planning instrument, applying to the land that makes provision for the acquisition of the land (or any part thereof) by a public authority, as referred to in Section 27 of the Act.
- 2.9 Property Vegetation Plans**
Not applicable
- 2.10 Orders under Trees (Disputes Between Neighbours) Act 2006**
Not applicable
- 2.11 Directions under Part 3A**
Not applicable
- 2.12 Site Compatibility Certificates and Conditions for Seniors Housing**
Not applicable
- 2.13 Site Compatibility Certificates for Infrastructure**
Not applicable
- 2.14 Site Compatibility Certificates and Conditions for Affordable Rental Housing**
Not applicable
- 2.15 Certain Information Relating to Beaches and Coasts**
Not applicable
- 2.16 Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works**
Not applicable
- 2.17 Biodiversity Certified Land**
Not applicable
- 2.18 Paper Subdivision Information**
Not applicable
- 2.19 Site Verification Certificates**
Not applicable
- 2.20 Loose-Fill Asbestos Ceiling Insulation**
Not applicable

2.21 Complying Development

Whether or not the land is land on which complying development may be carried out under each of the Codes for complying development because of the provisions of clauses 1.17A (c) and (d) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 and, if no complying development may be carried out on that land under that Policy, the reasons why complying development may not be carried out on that land.

General Housing Code (if in a residential zone)	Yes
Housing Alterations Code	Yes
General Development Code	Yes
Commercial and Industrial (New Buildings and Additions) Code	Yes
Commercial and Industrial Alterations Code	Yes
Demolition Code	Yes
Subdivision Code	Yes
Fire Safety Code	Yes

Important Disclaimer: This clause of the Certificate only contains information in respect of that required by clause 3 of Schedule 4 of the Environmental Planning and Assessment Regulation 2000, in relation to Complying Development under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. Other provisions contained in the SEPP, including but not limited to, minimum allotment size requirements, specified development standards or any other general exclusions, may preclude Complying Development under the SEPP from being able to be carried out. You will need to refer to the SEPP for complete details. It is your responsibility to ensure that you comply with all other general requirements of the SEPP. Failure to comply with these provisions may mean that any Complying Development Certificate issued under the provisions of the SEPP is invalid.

PART 3**INFORMATION PROVIDED UNDER SECTION 149 (5)
OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979.**

Note: When information pursuant to Section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that Section. Council draws your attention to Section 149(6), which states that a Council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

3.1 Amending Local Environmental Plans

Site specific and, where relevant, general amendments to the principal planning instrument are identified below:

Not applicable

3.2 Tree Preservation Order

A tree preservation order applies to the whole of the City of Canterbury.

3.3 Council Policy on Contaminated Land

On the 10 June 1999 Council adopted a policy on contaminated land. This policy will restrict development of land:

- a) which is affected by contamination;
- a) which has been used for certain purposes;
- b) in respect of which there is not sufficient information about contamination;
- c) which is proposed to be used for certain purposes;
- d) in other circumstances contained in the policy.

3.4 General Advice Regarding Use of Property

Persons considering commencing a use of or purchasing a property are advised to seek confirmation that the current, or intended, use (as the case may be) has been approved by Council, or does not require Council approval. It is pointed out that the question of "existing use rights" within the meaning of the Environmental Planning and Assessment Act, 1979, is a complex matter, and that the commencement of a use without Council approval (where required) is unlawful and may be subject to enforcement action.

3.5 Other Matters

Not applicable.



per **MATTHEW STEWART**
INTERIM GENERAL MANAGER



Marcia Amir-Abdollahian
C/- Storm Consulting Pty Ltd
Suite 12, 130-134 Pacific Highway
GREENWICH NSW 2065

PLANNING CERTIFICATE

Section 149 of the Environmental Planning and Assessment Act, 1979.

Certificate No: 40427
19 April 2017

Land which Certificate is issued for:

Lot X DP 377169

21 Boorea Avenue, LAKEMBA NSW 2195

**INFORMATION PROVIDED UNDER SECTION 149 (2)
OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979.**

Land which Certificate is issued for:

Lot X DP 377169

21 Boorea Avenue, LAKEMBA NSW 2195

**PART 1:
ENVIRONMENTAL PLANNING INSTRUMENTS**

1.1 Principal Environmental Planning Instrument

Canterbury Local Environmental Plan 2012

Date effective from

1 January 2013

Land Use Zone

ZONE IN2 LIGHT INDUSTRIAL

1. Permitted without consent

Home occupations

2. Permitted with consent

Agricultural produce industries; Depots; Garden centres; Hardware and building supplies; Industrial training facilities; Landscaping material supplies; Light industries; Markets; Neighbourhood shops; Plant nurseries; Restaurants or cafes; Roads; Take away food and drink premises; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Any other development not specified in item 1 or 3

3. Prohibited

Agriculture; Airstrips; Amusement centres; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Eco-tourist facilities; Educational establishments; Environmental facilities; Exhibition homes; Exhibition villages; Extractive industries; Forestry; Freight transport facilities; Function centres; General industries; Health services facilities; Heavy industrial storage establishments; Heavy industries; Helipads; Highway service centres; Home occupations (sex services); Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Open cut mining; Passenger transport facilities; Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Residential accommodation; Restricted premises; Rural industries; Sex services premises; Tourist and visitor accommodation; Water recreation structures; Wharf or boating facilities

1.2 State Environmental Planning Policies

Note:

The following information indicates those State Environmental Planning Policies (SEPP) which may apply to the subject land. A summary explanation of each SEPP can be sourced from the Department of Planning (DoP) website at www.planning.nsw.gov.au. The full wording of each SEPP can also be accessed via the DoP website.

State Environmental Planning Policies:

No. 19 - Bushland in Urban Areas
No. 21 - Caravan Parks
No. 30 - Intensive Agriculture
No. 33 - Hazardous and Offensive Development
No. 50 - Canal Estates
No. 55 - Remediation of Land
No. 64 - Advertising and Signage
No. 65 - Design Quality of Residential Flat Development
No. 71 - Coastal Protection
State Environmental Planning Policy - (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy - Building Sustainability Index: BASIX 2004
State Environmental Planning Policy - (Repeal of Concurrence and Referral Provisions) 2004.
State Environmental Planning Policy - (Major Projects) 2005
State Environmental Planning Policy - (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy - (Temporary Structures and Places of Public Entertainment) 2007
State Environmental Planning Policy - (Infrastructure) 2007
State Environmental Planning Policy (Repeal of Concurrence and Referral Provisions) 2008
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy (Affordable Rental Housing) 2009

Proposed State Environmental Planning Policies

State Environmental Planning Policy (Competition) 2010
State Environmental Planning Policy (Coastal Management) 2016
State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

1.3 Proposed Environmental Planning Instruments (including any Planning Proposals) that are or have been the subject of community consultation or on public exhibition under the Act Not applicable.

1.4 Development Control Plans. **Canterbury Development Control Plan 2012** Contains detailed design guidelines and development standards for development in Canterbury City.

1.5 Contribution Plans. Council has in place a Development Contributions Plan prepared and adopted under the Environmental Planning and Assessment Act, 1979.



**PART 2:
RESTRICTIONS ON DEVELOPMENT**

2.1 Heritage

Not applicable.

2.2 Coastal Protection

There is no notification that the subject property is affected by the provisions of Section 38 or 39 of the Coastal Protection Act, 1979.

2.3 Mine Subsidence

The subject land is not within a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

2.4 Road Widening and Road Realignment

Whether or not the land is affected by a road widening or road realignment proposal under Division 2 or Part 3 of the Roads Act 1993 or an environmental planning instrument;

The land is not affected by a road widening or road realignment proposal under Division 2 or Part 3 of the Roads Act 1993, or an environmental planning instrument.

Whether or not the land is affected by a road widening or road realignment proposal under any resolution of Council.

The land is not affected by a road widening or road realignment proposal under any resolution of Council.

2.5 Council and Other Public Authority Policies on Hazard Risk Restrictions

Whether or not the land is affected by a policy adopted by Council or adopted by any other public authority (and notified to the Council for the express purpose of its adoption by that authority being referred to) that restricts the development of the land because of the likelihood of;

- **Land Slip**

The land is not affected by a policy restriction relating to landslip

- **Bushfire**

The land is not bushfire prone land (as defined in the Act).

- **Tidal Inundation**

The land is not affected by a policy restriction relating to tidal inundation

- **Subsidence**

The land is not affected by a policy restriction relating to subsidence

- **Acid Sulfate Soils**

The land is not affected by a policy restriction relating to acid sulfate soils.

- **Unhealthy Building Land**

The land is not affected by a policy restriction relating to Unhealthy Building Land.

- **Any Other Risk**

Not applicable.

2.6 Flooding

Policy Restriction - Flooding (Overland Flow)

Development on the land, or part of the land, for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls due to possible flooding from overland flow.

Development on the land, or part of the land, for any other purpose is subject to flood related development controls due to possible flooding from overland flow.

You are advised to contact Councils' City Works Division for more detailed information.

2.7 Matters arising under the Contaminated Land Management Act, 1997.

Not applicable.

2.8 Land Reserved For Acquisition

There is no environmental planning instrument, or proposed environmental planning instrument, applying to the land that makes provision for the acquisition of the land (or any part thereof) by a public authority, as referred to in Section 27 of the Act.

2.9 Property Vegetation Plans

Not applicable

2.10 Orders under Trees (Disputes Between Neighbours) Act 2006

Not applicable

2.11 Directions under Part 3A

Not applicable

2.12 Site Compatibility Certificates and Conditions for Seniors Housing

Not applicable

2.13 Site Compatibility Certificates for Infrastructure

Not applicable

2.14 Site Compatibility Certificates and Conditions for Affordable Rental Housing

Not applicable

2.15 Certain Information Relating to Beaches and Coasts

Not applicable

2.16 Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

Not applicable

2.17 Biodiversity Certified Land

Not applicable

2.18 Paper Subdivision Information

Not applicable

2.19 Site Verification Certificates

Not applicable

2.20 Loose-Fill Asbestos Ceiling Insulation

Not applicable

2.21 Complying Development

Whether or not the land is land on which complying development may be carried out under each of the Codes for complying development because of the provisions of clauses 1.17A (c) and (d) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 and, if no complying development may be carried out on that land under that Policy, the reasons why complying development may not be carried out on that land.

General Housing Code (if in a residential zone)	Yes
Housing Alterations Code	Yes
General Development Code	Yes
Commercial and Industrial (New Buildings and Additions) Code	Yes
Commercial and Industrial Alterations Code	Yes
Demolition Code	Yes
Subdivision Code	Yes
Fire Safety Code	Yes

Important Disclaimer: This clause of the Certificate only contains information in respect of that required by clause 3 of Schedule 4 of the Environmental Planning and Assessment Regulation 2000, in relation to Complying Development under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. Other provisions contained in the SEPP, including but not limited to, minimum allotment size requirements, specified development standards or any other general exclusions, may preclude Complying Development under the SEPP from being able to be carried out. You will need to refer to the SEPP for complete details. It is your responsibility to ensure that you comply with all other general requirements of the SEPP. Failure to comply with these provisions may mean that any Complying Development Certificate issued under the provisions of the SEPP is invalid.

PART 3**INFORMATION PROVIDED UNDER SECTION 149 (5)
OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979.**

Note: When information pursuant to Section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that Section. Council draws your attention to Section 149(6), which states that a Council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

3.1 Amending Local Environmental Plans

Site specific and, where relevant, general amendments to the principal planning instrument are identified below:

Not applicable

3.2 Tree Preservation Order

A tree preservation order applies to the whole of the City of Canterbury.

3.3 Council Policy on Contaminated Land

On the 10 June 1999 Council adopted a policy on contaminated land. This policy will restrict development of land:

- a) which is affected by contamination;
- a) which has been used for certain purposes;
- b) in respect of which there is not sufficient information about contamination;
- c) which is proposed to be used for certain purposes;
- d) in other circumstances contained in the policy.

3.4 General Advice Regarding Use of Property

Persons considering commencing a use of or purchasing a property are advised to seek confirmation that the current, or intended, use (as the case may be) has been approved by Council, or does not require Council approval. It is pointed out that the question of "existing use rights" within the meaning of the Environmental Planning and Assessment Act, 1979, is a complex matter, and that the commencement of a use without Council approval (where required) is unlawful and may be subject to enforcement action.

3.5 Other Matters

Not applicable.



per **MATTHEW STEWART**
INTERIM GENERAL MANAGER

APPENDIX C

OSD checklist

Appendix 1 Engineering Specifications

1: On-Site Stormwater Detention (OSD) Checklist

For Dual Occupancy and Single Dwelling including Additions and Alterations

This form is to be used to determine if OSD will be required for residential developments and must be completed before the submission of any Application. Please read the reverse side of this form carefully for its applications and definitions.

Part A. Address and type of proposed development

Lot.....DP.....

No. 222 Street... Essex Ave.....

Suburb. Lakemba.....

Type of development (tick relevant boxes):

☐ Dual Occupancy

☐ Single Dwelling

☐ Extensions

☒ Garage, outbuildings and others (specify)... Residential... Aged... Care...

Part B. Exemption for flood affected areas

Is the subject site located within an established 100 year floodplain and the site also floods in 20 and 50 year storm events (tick one only):

☐ Yes

☒ No

If yes, OSD is not required. If no, go to Part C.

Part C. Exemption for minimum allowable size of site impervious area

Refer to the back of this page for definitions and explanations.

(a) Site area = 3144..... (m²)

(b1) Total existing impervious area = 3144..... (m²)

(b2) Total remaining existing impervious area = 0..... (m²)

(C) Proposed impervious area:

(C1) roofed areas = 1217..... (m²)

(C2) paved areas = 657..... (m²)

(C3) supplementary areas = 0..... (m²)

(d) Total post-development impervious area (b2) + (C1 + C2 + C3) = 1871..... (m²)

(e) Total proposed impervious area (C1 + C2 + C3) x 100 / (a) = 59.5..... (%)

(f) Existing impervious area percentage (b1) x 100 / (a) = 100..... (%)

(g) Post-development impervious area percentage (d) x 100 / (a) = 59.5..... (%)

OSD will not be required if either of the following is satisfied:

- ☒ (g) is less than 70%
- ☐ (f) is greater than 70% and (e) is less than or equal to 5%

Notes:

Developments covered by this form are for dual occupancy, single dwelling including alterations and additions and works that involve driveways, garage, outbuildings and hardstand areas. Commercial and multiple occupancy developments are not exempt from OSD.

Definitions:

Site Area (a): This is the total area of the site for which the development is proposed for residential development, the total site area is taken to be the area as shown on the Deposited Plan (DP).

Existing impervious Area (b1): This refers to all of the impervious areas, within the site of the development, prior to any proposed works. This includes, calculated in plan view, all of the existing roofed areas, paved surfaces, hardstand areas, garages, outbuildings, etc.

Remaining existing impervious Area (b2): This refers to the existing impervious areas of the site which will not be removed or demolished as part of the proposed works, but will remain after the proposed works have been carried out. If a building is to be altered internally, that is, works involving only the removal/demolition of internal non-structural members/walls within the footprint of the building, then the remaining impervious areas shall be calculated as the total area of the building. Existing Dwelling

Proposed impervious Area (C): This includes all new impervious areas created as part of the proposed development, such as; all proposed roofed, paved, supplementary (i.e. In-ground swimming pools), garages, outbuildings and hardstand areas.

Post-development impervious Area (d): This includes **ALL** of the impervious areas within the site that are to remain after the development is completed, that is, the finished works and includes all of the remaining existing and proposed impervious areas.

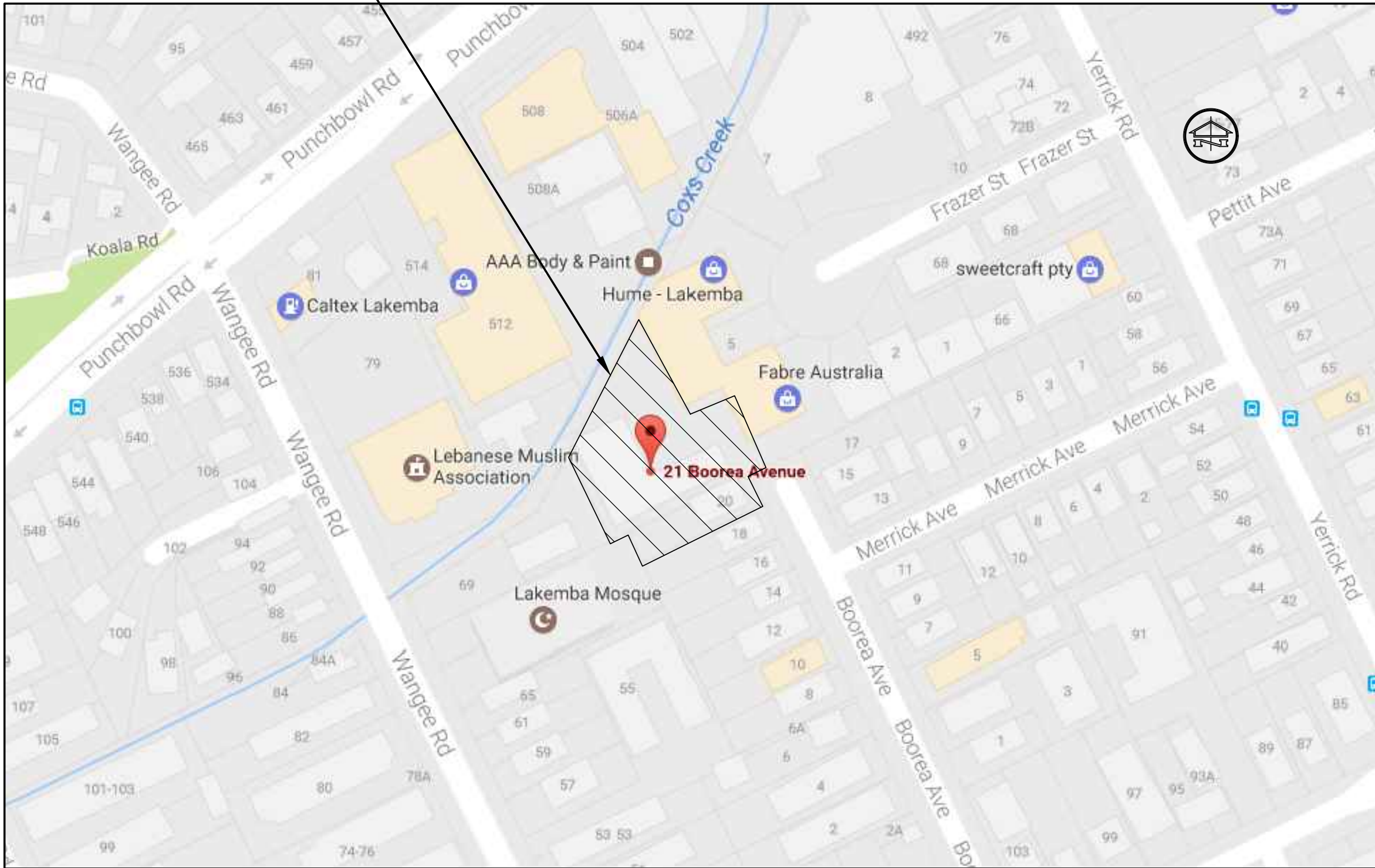
APPENDIX D

Drainage layout

BOOREA AVENUE SUBDIVISION DEVELOPMENT APPLICATION

21 & 20 BOOREA AVENUE , LAKEMBA NSW

SITE OF WORKS



LOCALITY PLAN
NOT TO SCALE

SHEET INDEX & REVISION DETAIL		
SHEET	DESCRIPTION	REVISION
C01	COVER SHEET, LOCALITY, SHEET INDEX	-
P02	GENERAL ARRANGEMENT PLAN	-
P03	DETAIL GROUND FLOOR PLAN 1/2	-
P04	DETAIL GROUND FLOOR PLAN 2/2	-
P05	DETAIL BASEMENT PLAN	-

				Designed: M.A & V.Z	Authorised: -
				Checked: -	Approved: ---
				NOT TO SCALE	
				Original sheet size A1	
Rev.	Revision Description			Designed	Date

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CLIENT

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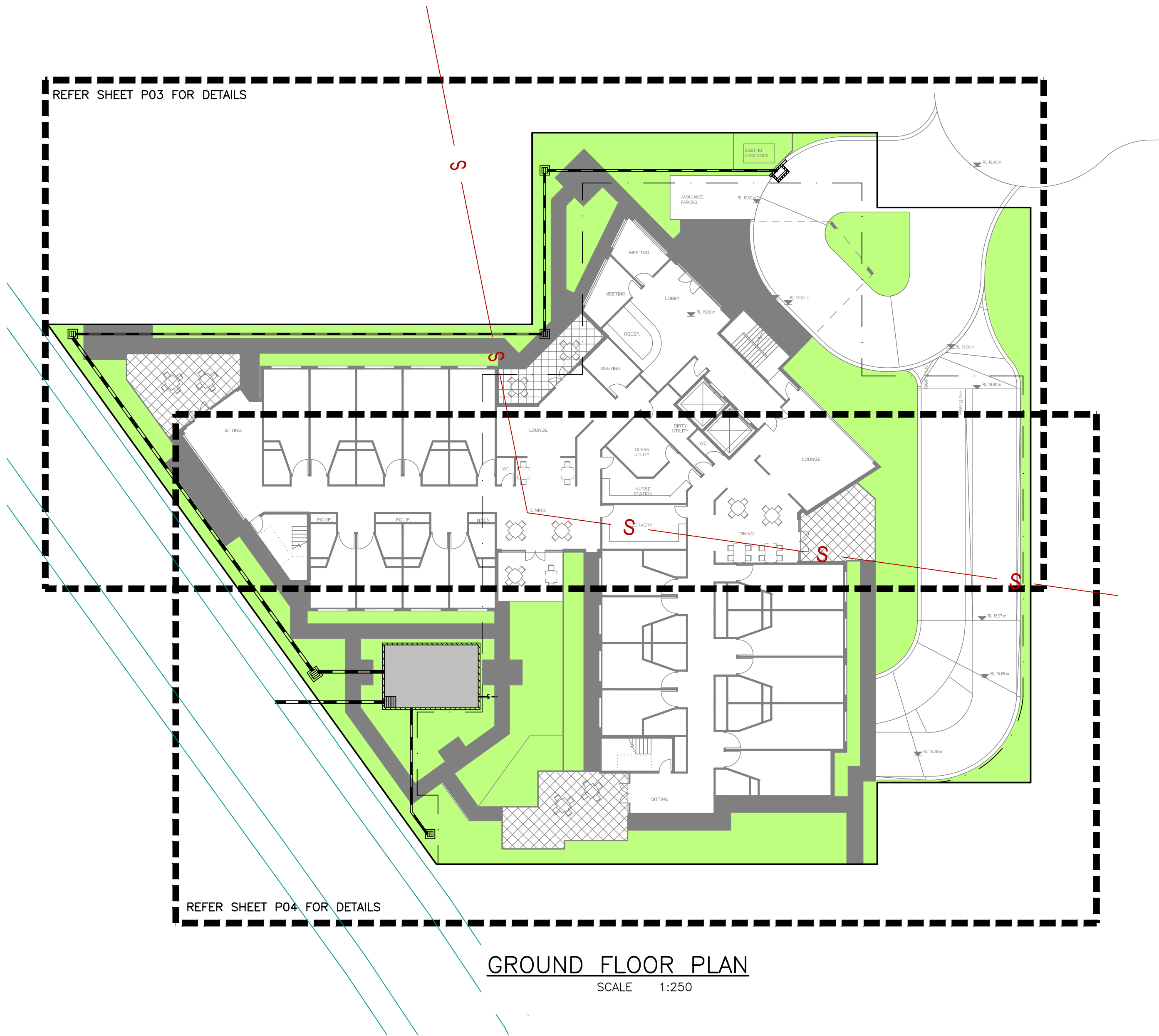
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BOOREA AVENUE SUBDIVISION

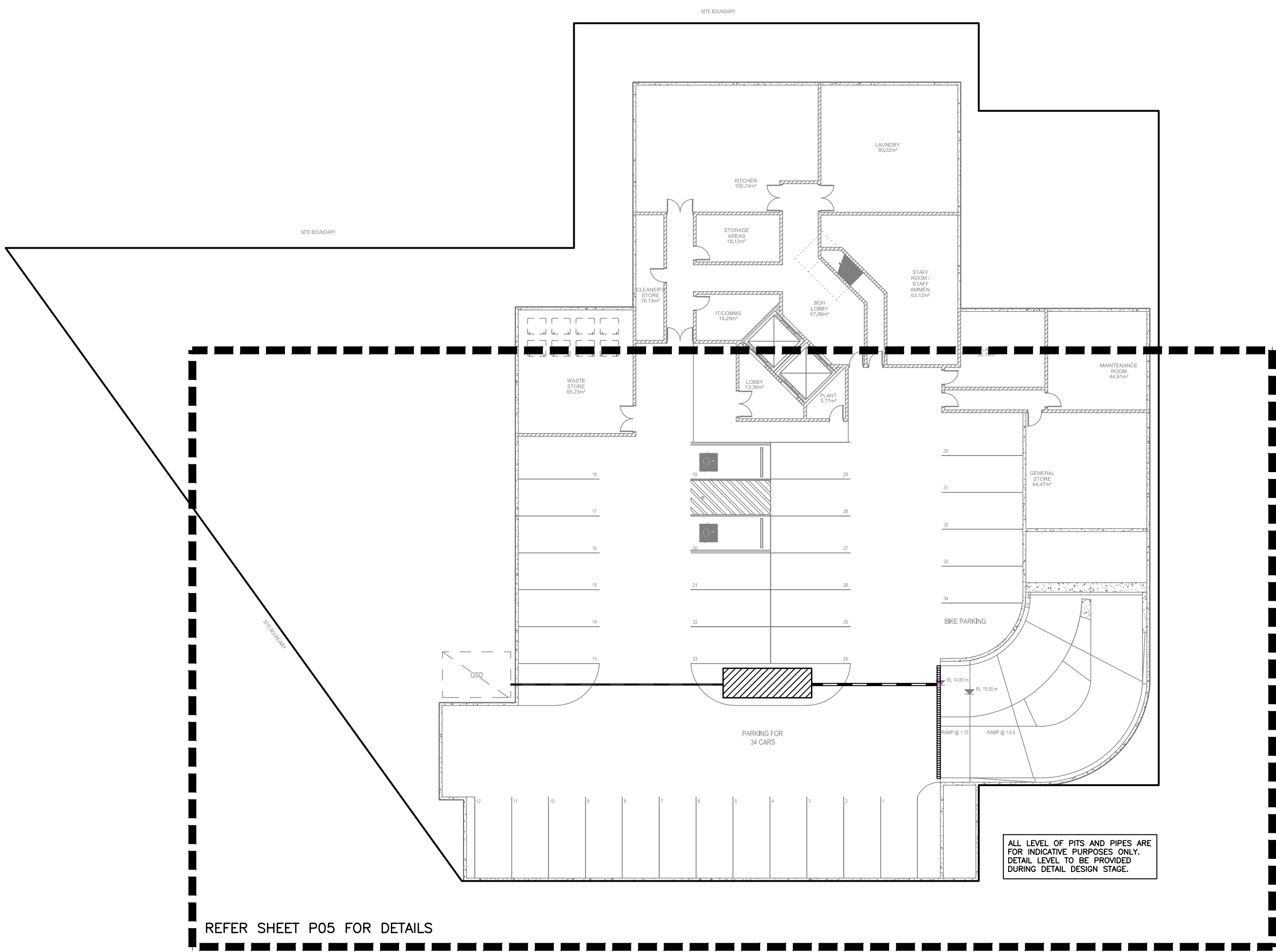
DEVELOPMENT APPLICATION - DRAFT
20 & 21 BOOREA AVENUE, LAKEMBA NSW

COVER SHEET, LOCALITY, SHEET INDEX

Date 17.05.2017 Drawing No. 1982-DA- COVER Sheet 01 of 05




GROUND FLOOR PLAN
SCALE 1:250



BASEMENT PLAN
SCALE 1:250

LEGEND:

- PROPOSED DRAINAGE
- GRATED PIT
- OSD UNDERGROUND TANK
- FOOTPATH AREA
- LANDSCAPE AREA
- GRATED SIDE ENTRY PIT WITH LINTEL
- PROPOSED DRAINAGE
- TRENCH GRATED
- 11.2m³ PUMP AND SUMP

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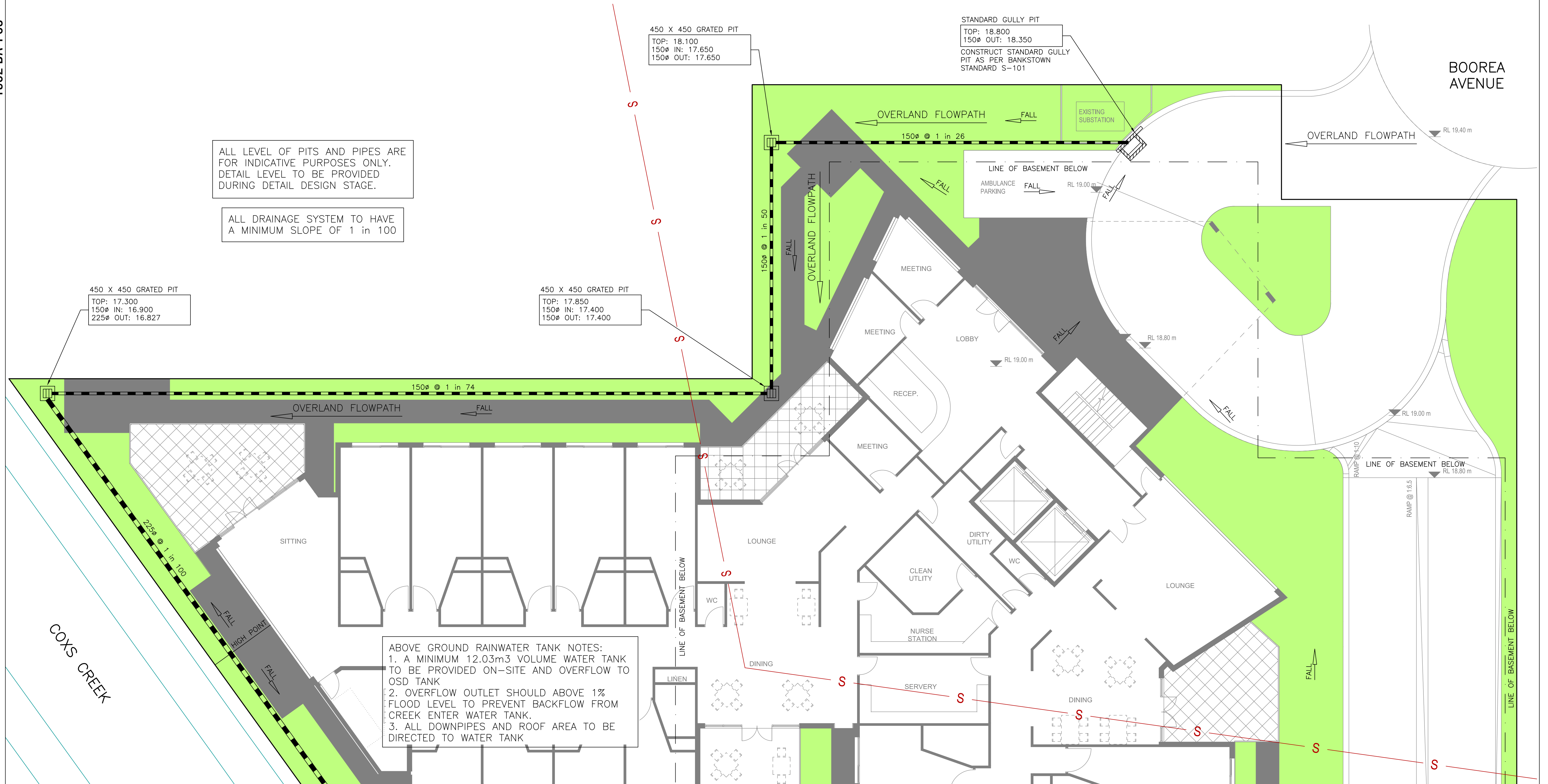
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DEVELOPMENT APPLICATION - DRAFT

20 & 21 BOOREA AVENUE, LAKEMBA NSW





GENERAL ARRAGEMENT PLAN

Date 17.05.2017 Drawing No. 1982-DA-P02 Sheet 02 of 05



DETAILED GROUND FLOOR PLAN 01

LEGEND:

-  - PROPOSED DRAINAGE
  - FOOTPATH AREA
-  - GRATED SIDE ENTRY PIT WITH LINTEL
  - LANDSCAPE AREA
- - GRATED PIT

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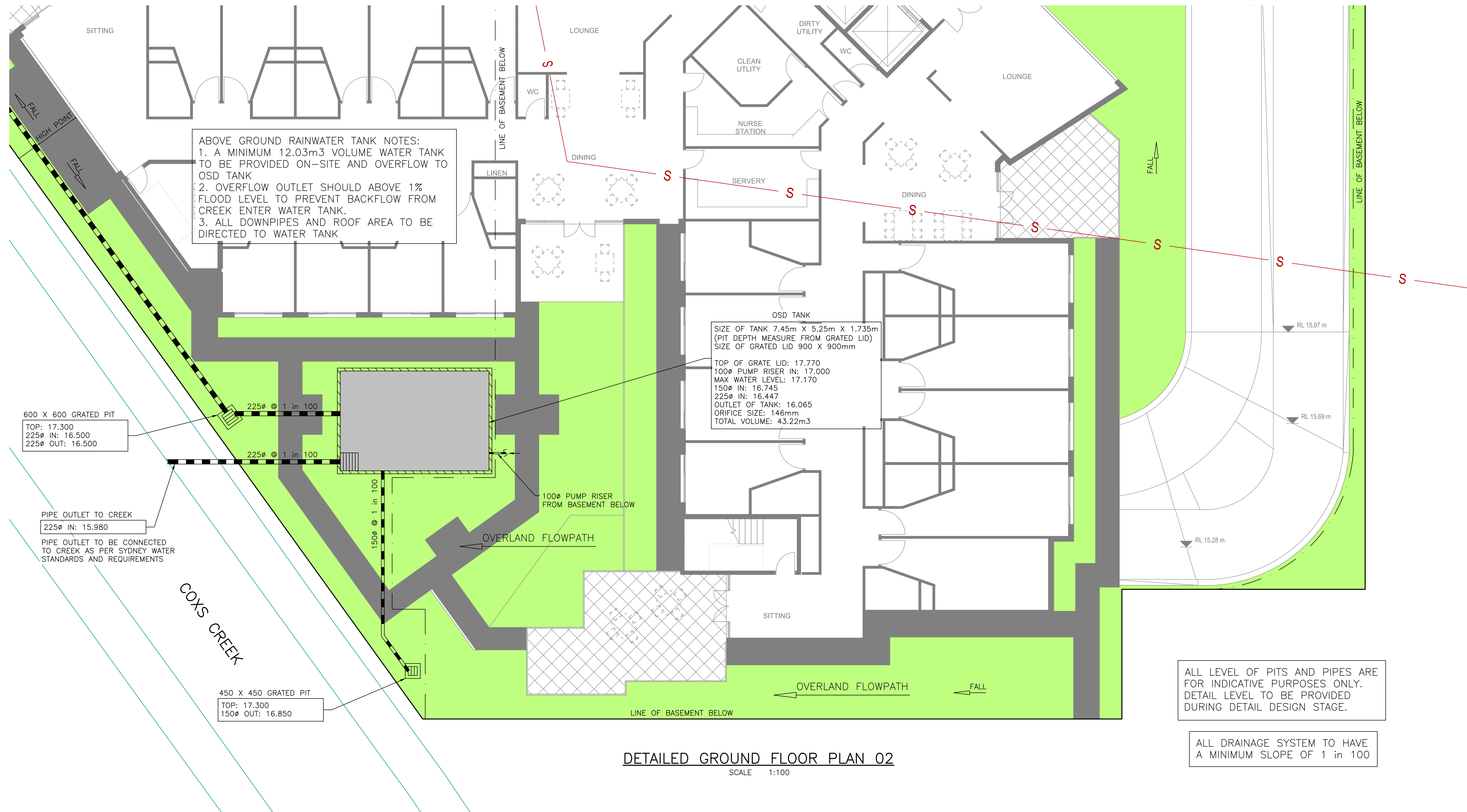
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DEVELOPMENT APPLICATION - DRAFT
20 & 21 BOOREA AVENUE, LAKEMBA NSW

DETAIL GROUND FLOOR PLAN 1/2

Date 17.05.2017 Drawing No. 1982-DA-P03

Sheet 03 of 05



LEGEND:

- PROPOSED DRAINAGE
- GRATED PIT
- OSD UNDERGROUND WATER TANK
- FOOTPATH AREA
- LANDSCAPE AREA

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				Checked: -	Approved: ---
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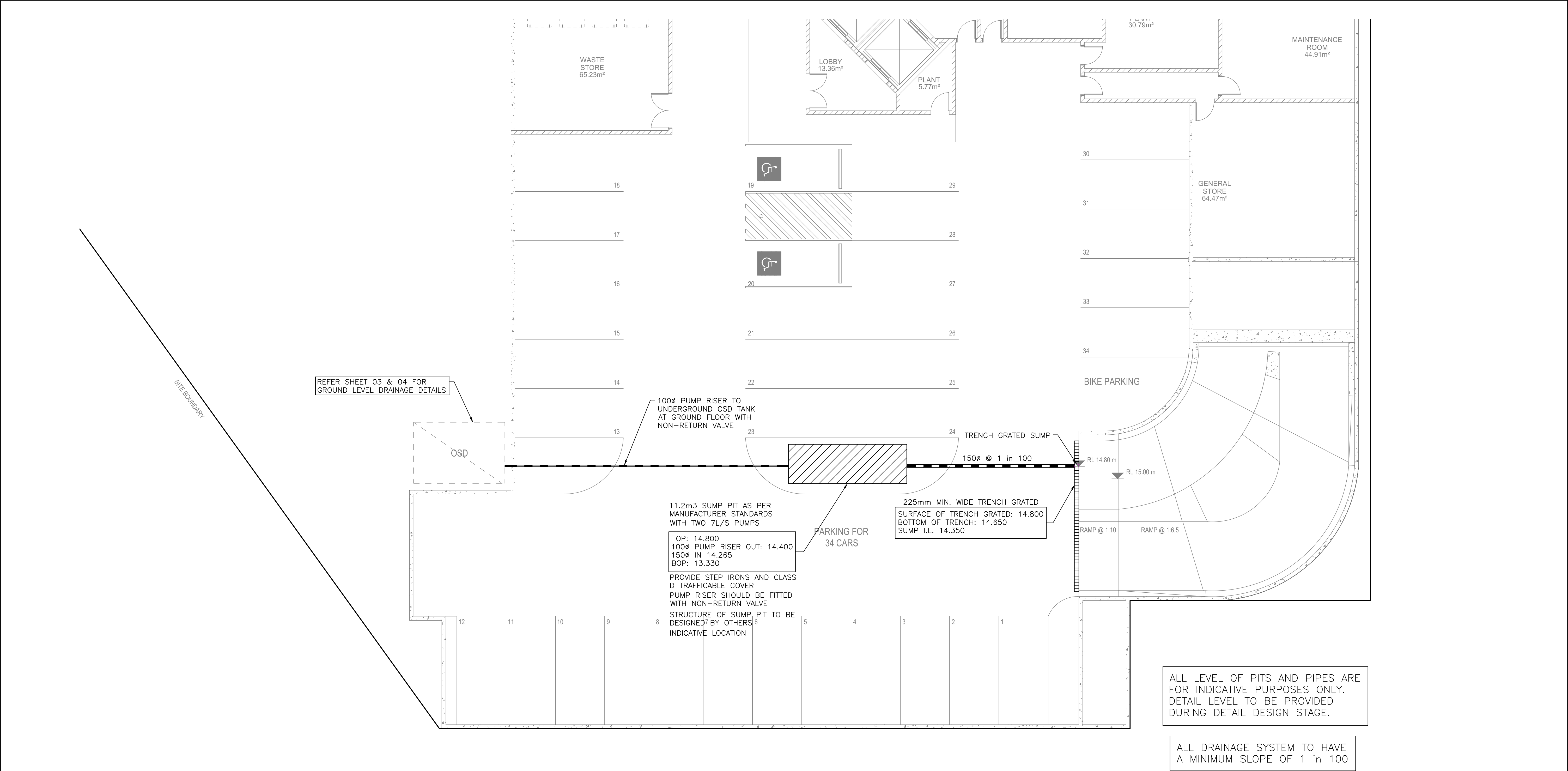
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DEVELOPMENT APPLICATION - DRAFT
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DETAILED GROUD FLOOR PLAN 2/2

Date 17.05.2017 Drawing No. 1982-DA-P04

Sheet 04 of 05



DETAILED BASEMENT PLAN
SCALE 1:100

LEGEND:

- PROPOSED DRAINAGE
- TRENCH GRATED
- 11.2m³ PUMP AND SUMP

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