

4 May 2024

Our ref: 72322

Your ref: MCUC 2024_5568/1

Chief Executive Officer
Douglas Shire Council
PO Box 723
Mossman QLD 4883

via email: enquiries@douglas.qld.gov.au

Attention: Jenny Elphinstone

Dear Jenny,

Response to Information Request – Material Change of Use (Multiple dwelling and Short-term accommodation) – 8 Davidson Street, Port Douglas– Lot 704 on PTD2092

I refer to Council's information request dated 6 February 2024 and provide the following in response to the items raised:

Information request Item 1

Construction over Sewer and Stormwater – Easement Area

The land is constrained by an easement running parallel to the rear boundary. The proposal nominates the construction of building work over the easement. While this sometimes occurs in the Centre Planning area, it is an unusual proposal in the Tourist Accommodation Zone. This would be the first full construction over this easement – refer to the aerial image below.

Existing sewer and stormwater infrastructure are situated in this rear area including a deep sewer manhole. Council requires the ability to maintain and service this infrastructure 24/7. This includes access to the sewer manhole and ability to work machinery freely in the easement area. Any gated access will need to be available to be opened for infrastructure servicing. All pool work needs to be designed having regard to the underground service infrastructure.

Concern is also raised with the intent to significantly deep landscape this easement area.

Please provide Engineering advice that the infrastructure will not be compromised by the development and the infrastructure will be able to be maintained with the proposed development. The advice should suitably address Council's concerns.

Response

The engineering advice provided by CMG Consulting Engineers provided as **Attachment 1** details how the sewer and stormwater infrastructure will not be compromised as well as how it can be maintained.

Information request Item 2

Disability Access

Use for short-term accommodation requires disability access be provided from the road and from the onsite parking to the front door of the dwelling units. Please provide a statement and demonstrate how this has been achieved.

Response

The plans of development provided as **Attachment 2** have been amended to provide car parking spaces within the carport being 3.2m x 5.4m in accordance with the National Construction Code Liveable Housing Design Code. This allows for an all access travel path to the units from the street through the carport as required.

The engineering advice provided by CMG Consulting Engineers provided as **Attachment 1** provides further detail regarding the access grades within the site and the adjacent road frontage.

Information request Item 3

Please provide a local drainage study of the site to determine the drainage impacts on upstream and downstream properties and the mitigation measures required to minimise such impacts. In particular, the study must address the following:

- a. The contributing catchment boundaries;*
- b. The extent of the 100 year ARI flood event in relation to the site both pre and post development;*
- c. Primary and secondary flow paths for the 5, 20, 50 and 100 year ARI flood events;*
- d. Identify any requirement for further or additional drainage easements;*
- e. Identify the need and tenure for flood detention areas to ensure a no worsening impact on downstream properties for the entire development;*
- f. post development must not detrimentally impact on Council's sewerage infrastructure and must include suitable immunity for significant events; and*
- g. Information on the proposed works and any impacts proposed at the drainage outlet from the proposed development;*

The post-development discharge of stormwater from the subject site must have no worsening effect on the drainage of upstream or downstream properties.

Response

The engineering advice provided by CMG Consulting Engineers provided as **Attachment 1** provides further detail in response to the items raised.

Information request Item 4

Concern is raised with the use of grass and paving to the visitor's car parking spaces. Please clarify the design of these spaces comply with Australian standards and to have suitable drainage.

Response

The plans of development have been amended to remove the grass pavers from the visitor's parking spaces. The amended plans detail concrete steppers with infill landscaping to the visitor's parking spaces. The landscaping plans provided as **Attachment 3** detail the species to be provided as infill between the steppers. The landscaping within this area has been specified with consideration to the potential impact from vehicular traffic. The engineering advice provided by CMG Consulting Engineers provided as **Attachment 1** confirms that the area pavement will remain serviceable in all weather conditions.

Information request Item 5

Please provide swept path turn details for proposed on-street parking spaces. Concern is raised with the rear turning interfering with the bicycle lane.

Response

The engineering advice provided by CMG Consulting Engineers provided as **Attachment 1** provides further detail including swept path diagrams to demonstrate that the end vehicle does not conflict with the bicycle lane. Additional swept path diagrams are provided to demonstrate how on-site vehicular access is serviceable and conforms with Australian Standards.

Information request Item 6

Architectural Matters

Please provide details to clarify the following issues:

- a. Clarify the width of eave overhangs, in particular for the western side boundary (to the driveway). Concern is held with western sun on this elevation.*
- b. Clarify the windows for bedroom 2 of units 1 and 3 to ensure privacy is achieved for each while achieving suitable light and ventilation.*
- c. Clarify the screens for the rear external staircases do not result in a loss of privacy to residents of neighbouring properties;*
- d. Clarify detail of the separating wall to the entertaining / outdoor kitchen / bbq area for Unit 1 to ensure suitable privacy, light, ventilation and amenity is afforded to the neighbouring property.*
- e. Clarify how the front gate is incorporated into the adjacent fence or swings into the site.*
- f. Consideration is recommended to be given to the separate rubbish bin housing area due to the odours that can be generated and the impact to the adjacent street. An alternative arrangement of provision for two bins at each unit could be supported by Council.*

Response

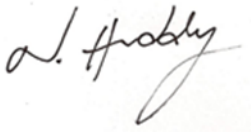
The following is provided in response to the items raised:

- a. The plans of development have been amended to detail the existing mature landscape that provides dense sun screening to the development. To provide additional sun screening, the landscape plan details additional screen and succession planting along the western boundary.
- b. The window layout for bedroom 2 of units 1 and 3 has been amended to ensure privacy is achieved for each bedroom whilst achieving suitable light and ventilation.
- c. Although the external staircase between the ground floor and the first floor are setback from the property boundary to maintain the privacy of the neighbouring properties, vertical battens are proposed to provide enhanced visual screening.
- d. The BBQ gazebo for Unit 1 has been relocated in response to the information request item.
- e. The plans of development have been amended to detail that the front gate is a sliding gate that been designed to slide within the refuse storage enclosure.

- f. It is proposed to retain the single refuse storage enclosure as shown on the plans of development as a property manager will be engaged to manage the entire property to ensure that bins, landscaping and common areas are maintained at an appropriate standard. The refuse storage location is adjacent to the driveway of the adjacent development, minimising the potential for any odour (should it occur) to impact neighbouring properties. The location at the front of the site is consistent with existing development on Davidson Street. Accordingly, the refuse for three dwellings will not introduce a new impact on the adjacent street.

If you require any further information, please call me.

Yours sincerely,



Nikki Huddy (FPIA)
Registered Planner
Planz Town Planning

Att:

1. Engineering advice – CMG Consulting Engineers
2. Updated Plans of Development – TPG Architects
3. Landscape plans – Landplan Landscape Architecture

Date: 19 April 2024
Our Ref 47256RFI (1)
Development Application MCUC2024_5568/1 (Doc ID 1208441)
Approval Sought Development Permit
Property Address 8 Davidson Street Port Douglas
Property Description Lot 704 PTD 2092
Application Proposal Material Change of Use for Multiple Dwelling and Short-term Accommodation
Contact: Jenny Elphinstone

RESPONSE TO INFORMATION REQUEST ITEMS 1, 2, 3, 4 & 5

1. Introduction

With reference to the 8 Davidson Street Material Change of Use (MCU) Development Application, the purpose of correspondence is to respond to Item 1, 2, 3, 4 & 5 of Council's Information Request dated 6 February 2024 (Council Ref MCUC 2024_5568/1).

For completeness, Item 1 of the Information Request is reproduced below:

Information Request Item 1 – Construction over Sewer and Stormwater-Easement Area

- a. *The land is constrained by an easement running parallel to the rear boundary. The proposal nominates the construction of building work over the easement. While this sometimes occurs in the Centre Planning area, it is an unusual proposal in the Tourist Accommodation Zone. This would be the first full construction over this easement.*
- b. *Existing sewer and stormwater infrastructure are situated in this rear area including a deep sewer manhole. Council requires the ability to maintain and service this infrastructure 24/7. This includes access to the sewer manhole and ability to work machinery freely in the easement area. Any gated access will need to be available to be opened for infrastructure servicing. All pool work needs to be designed having regard to the underground service infrastructure.*
- c. *Please provide Engineering advice that the infrastructure will not be compromised by the development and the infrastructure will be able to be maintained with the proposed development. The advice should suitably address Council's concerns.*

The proposed BBQ deck and boardwalk within the easement area will be a lightweight, bolted timber and steel structure above ground level. The foundations can and will be founded at a depth that will not place load on or compromise the structural integrity of the existing sewer and stormwater infrastructure and are self-supporting if excavation to the sewer and stormwater network is required. The founded depth of any foundations will be outside the Zone of Influence.

The lightweight bolted deck structure can also be dismantled quickly and easily if required.

Access to this sewer and stormwater network can generally be obtained along several locations through various lots via driveways running from the street frontage through to the easement. Local access can be gained through a large gate at the rear or the immediately adjacent driveway and timber fence in the adjoining lot.

For completeness, Item 2 of the Information Request is reproduced below:

Information Request Item 2 – Disability Access

- a. *Use for short-term accommodation requires disability access be provided from the road and from the onsite parking to the front door of the dwelling units. Please provide a statement and demonstrate how this has been achieved.*

The proposed, finished ground floor level of all units is 4.8m AHD. This level allows for a maximum of 1 in 33 grade from the existing footpath to the front boundary and 1 in 20 maximum grade from the front boundary to the front unit (Unit 1).

The finished ground floor level of 4.8m AHD will allow conforming disability access from the road and existing footpath to all units.

For completeness, Item 3 of the Information Request is reproduced below.

Information Request Item 3 – Drainage Study

Please provide a local drainage study of the site to determine the drainage impacts on upstream and downstream properties and the mitigation measures required to minimise such impacts. In particular, the study must address the following:

- a. *The contributing catchment boundaries.*
- b. *The extent of the 100-year ARI flood event in relation to the site both pre and post development.*
- c. *Primary and secondary flow paths for the 5-, 20-, 50- and 100-year ARI flood events;*
- d. *Identify any requirement for further or additional drainage easements.*
- e. *Identify the need and tenure for flood detention areas to ensure a no worsening impact on downstream properties for the entire development.*
- f. *Post development must not detrimentally impact on Council's sewerage infrastructure and must include suitable immunity for significant events; and*
- g. *Information on the proposed works and any impacts proposed at the drainage outlet from the proposed development.*

The post-development discharge of stormwater from the subject site must have no worsening effect on the drainage of upstream or downstream properties.

This report provides the required drainage study to address each requirement in Item 3 of Council's Information Request.

2. Background

2.1. Development Site

The subject site (Lot 704 on PTD2092) is located at 8 Davidson Street, Port Douglas. The subject site has an area of 1012 m².

The subject site generally falls from northwest to southeast away from its Davidson Street frontage.

Currently, the stormwater runoff from the Davidson Street Road reserve appears to flow through the subject site. The proposed development will maintain this flow path.

The subject site is currently the only vacant (undeveloped) lot in a “city block” bound by Davidson Street, Macrossan Street, Garrick Street and Mowbray Street. This “city block” has an area of approximately 3.1 ha.

Refer to Figure 1 below for the aerial imagery of the site.

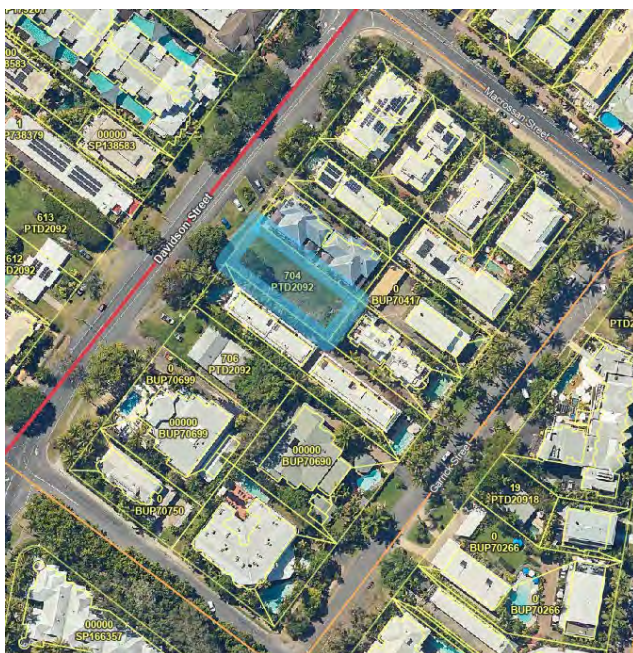


Figure 1 Subject Site Aerial Imagery (Queensland Globe)

Figure 2 below shows the road frontage of the subject site.



Figure 2 Road Frontage of Subject Site (8 Davidson Street) (Google Street View)

2.2. Adjacent Sites

The subject site is between the developed sites of 6 Davidson Street to the northeast and 10 Davidson Street to the southwest.

The adjacent lots are occupied with buildings and serviced by concrete driveways connecting to the Davidson Street sealed carriageway.

Refer to the figures below showing the road frontage of these adjacent lots.



Figure 3 Road Frontage of 6 Davidson Street (Google Street View)

Note: A field inlet pit (in the driveway of 6 Davidson Street) and a kerb inlet pit (at the kerb fronting 6 Davidson Street) are observed from the Google Street View photo and QLD Globe. However, no data is available to confirm the connections and outlet for these pits.



Figure 4 Road Frontage of 10 Davidson Street (Google Street View)

The two adjacent lots have addressed stormwater runoff within the road frontage. Surface runoff is contained and conveyed by kerbing and formalised driveways within each of the adjacent lot.

It is understood that road reserve runoff from either adjacent lot does not enter the subject site. Therefore, the development site will only need to cater for Davidson Street runoff from its immediate frontage.

3. Drainage

3.1. Catchment and Topography

The subject site is located within the “city block” bound by Davidson Street, Macrossan Street, Garrick Street and Mowbray Street. This “city block” forms an overall localised drainage catchment.

LiDAR elevation data was sourced to understand the local drainage flow paths and potential implications of any localised flooding within this catchment.

A catchment plan is provided. Refer to Attachment B.

The catchment plan considers sub-catchment contributing to existing drainage infrastructure within the rear allotment drainage easement. This will be further discussed in Section 3.3 of this report.

Refer to Figure 5 below showing the LiDAR elevation colour mapping with orange and red being higher elevated land and blue being lower lying land.

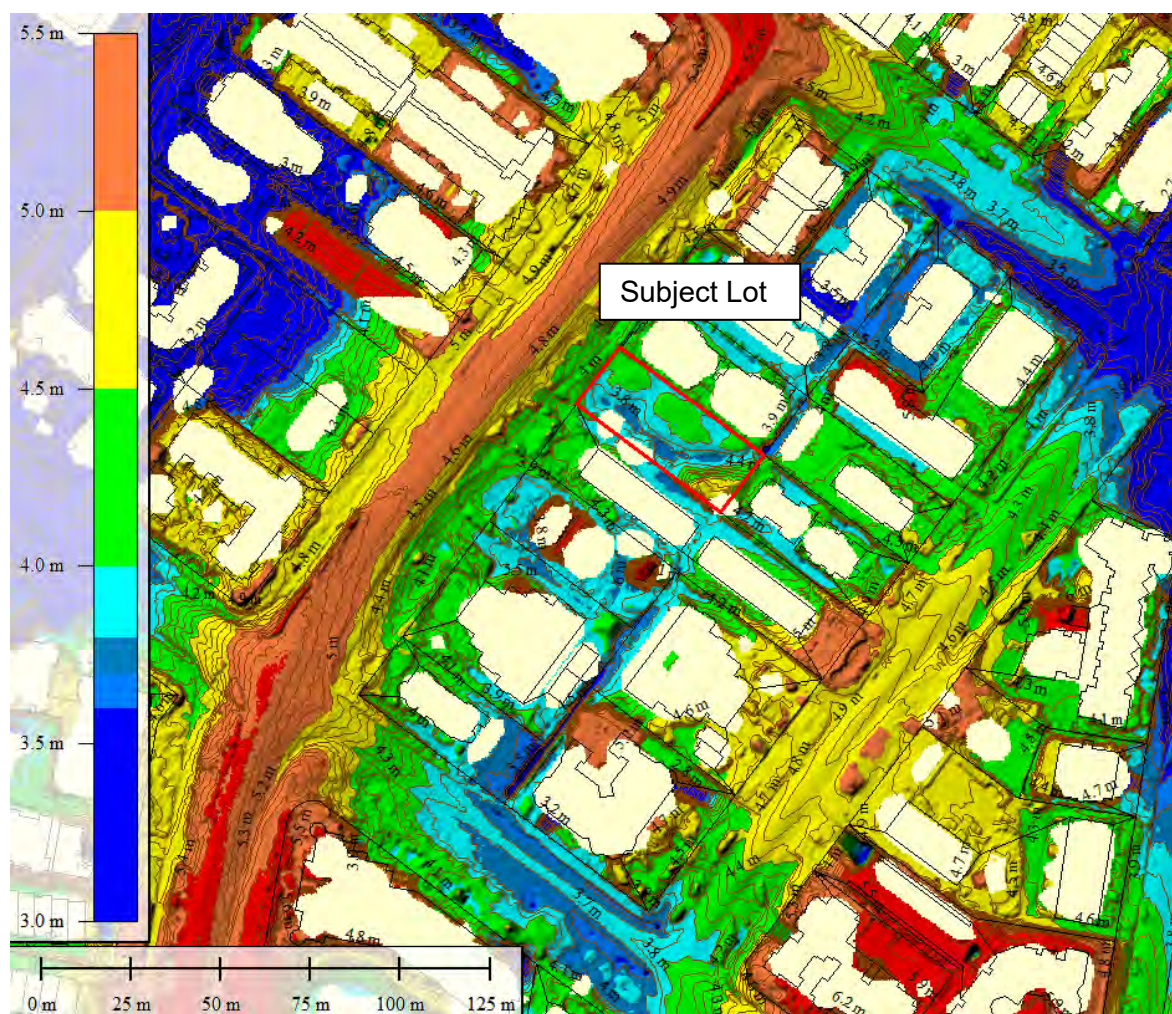


Figure 5 LiDAR Elevation Mapping

The LiDAR elevation data indicates the following key features within the localised catchment:

- Within the “city block”, the lower elevated areas are generally along the rear allotment boundaries (areas in blue).
- A ridge exists along Davidson Street Road crown to the northwest from the subject site, defining the edge of this catchment (orange and red shading in Figure 5).

- The longitudinal profile of Davidson Street has a low point located “mid-block” between Mowbray Street and Macrossan Street.

That is, the Davidson Street Road reserve does not drain to another road reserve as the surface levels rise as per following:

- northeast to the intersections with Macrossan Street; and
- southwest to the intersections with Mowbray Street.
- The longitudinal profile of Garrick Street has a highpoint located “mid-block” between Mowbray Street and Macrossan Street (orange and yellow shading in Figure 5).
- The street network and road formations essentially bund this entire “city block” except for two stormwater outlets:
 - one outlet through the northeastern corner of the catchment at the intersection of Garrick Street and Macrossan Street; and
 - a second outlet to the southern extent of the catchment across Mowbray Street, discharging downstream into Garrick Street and further south to the Beryl Street drain.

The above catchment features have resulted in an unusual development outcome where the allotment surface levels are all generally below the surrounding roads.

As a result, rear allotment drainage is provided in these lots to capture and convey the stormwater runoff to the two catchment outlet points.

A drainage easement has been established along the rear boundaries of these lots.

3.2. Flooding

Per Council’s Flood and Storm Tide Inundation Overlay Map, the subject site is located outside the 100-year ARI flood extent (dark blue hatch in Figure 6 below).



Figure 6 Extract of Council’s Flood and Storm Tide Inundation Overlay Map

Therefore, it is considered that the proposed development site is not subject to the 100-year ARI flood event from external catchments (beyond the “city block”).

The flood extent does not change in the post-development scenario.

In terms of localised flooding, the “city block” enclosed by the road formation of Macrossan Street, Davidson Street, Mowbray Street and Garrick Street has an area of approximately 3.1ha.

Refer to Figure 7 below including flow arrows of each lot.



Figure 7 Identified “City Block” Markup (Queensland Globe)

With reference to LiDAR elevation data, the local drainage flow patterns and implications for potential localised flooding within this block are informed by Figure 5 in Section 3.1 of this report.

The lower elevated areas are generally along the rear allotment drainage easement and connect to external outlet points to the northeast (Macrossan Street/Garrick Street intersection), and to the south (Mowbray Street then into Garrick Street and Beryl Street).

The lower elevated areas are generally the conveyance paths for overland flows in a 100-year ARI flood event. Refer to Figure 5, the lower elevated areas are shown in blue.

The subject site is currently the only vacant (undeveloped) lot in this “city block”. However, historic aerial imagery confirms that a house previously occupied the site.

Noting that the subject site has an area of approximately 1000 m² (or 0.1 ha) in the 3.1 ha local catchment of the “city block”. It represents approximately 3% of this local catchment.

The subject site is a relatively small percentage of the localised “city block” catchment and the subject site is on the “crest” of the rear allotment drainage easement corridor. Refer to the longitudinal section markup in Figure 9.

With reference to Queensland Urban Drainage Manual (QUDM) terminology, it is considered that the proposed development on the subject site will not result in an actionable nuisance on the overall flooding characteristics of this area. Also, the proposed development will not alter flow paths or the extent of the localised inundation under a 100-year ARI rainfall event in this area post development.

3.3. Existing Drainage Characteristics

Council records on existing drainage infrastructure have been investigated.

Refer to Figure 8 below, showing the information on existing drainage infrastructure.

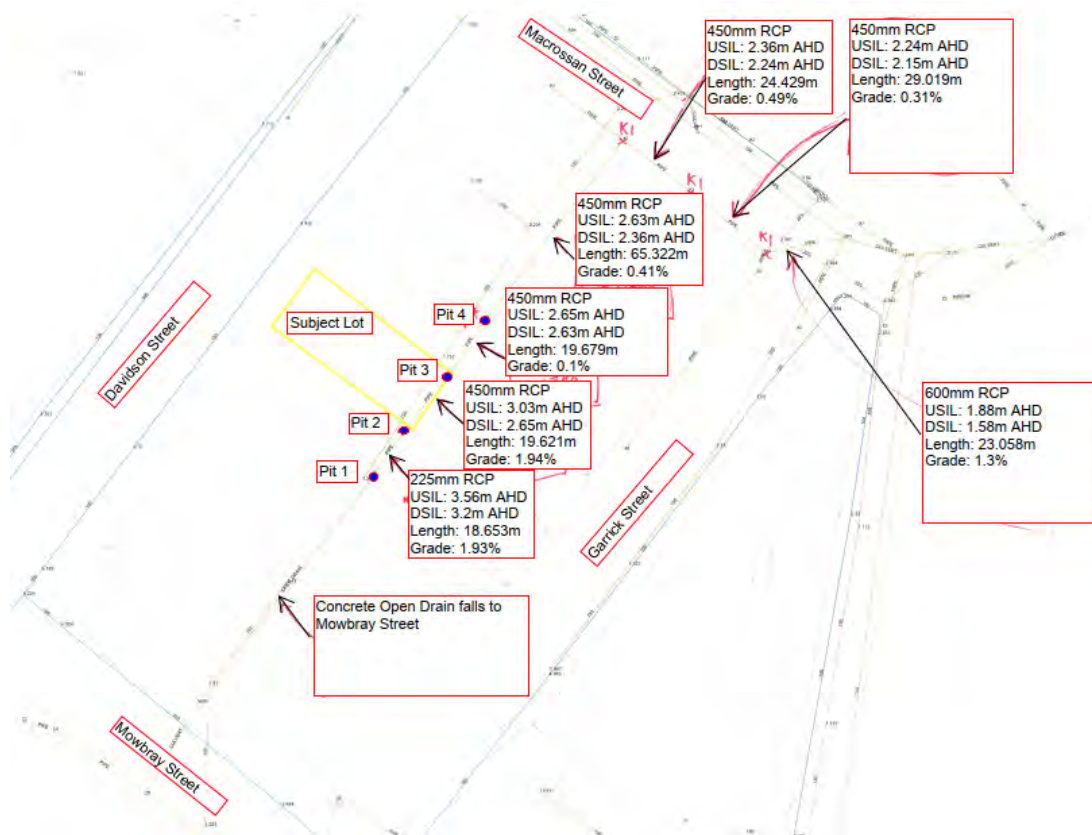


Figure 8 Council Drainage Records Markup

The drainage records from Council confirm that a 450 mm diameter reinforced concrete pipe (RCP) provides the primary flow path for the local catchment. This pipe is along the rear boundaries of the lots commencing at an inlet pit (Pit 2) at the northeastern boundary of 10 Davidson Street, immediately south from the subject site.

Currently, stormwater runoff from the subject site appears to be captured at Pit 3 in the Lot immediately north from the subject site.

This 450 mm diameter drainage pipe runs through the rear allotment drainage easement to Macrossan Street in a northeasterly direction.

The pipework then continues east through the Macrossan Street/Garrick Street intersection to an ocean outlet in Council parkland.

It is understood that stormwater runoff from the lots south from 10 Davidson Street is conveyed by an open drain within the rear allotment drainage easement and discharged south away from the subject site.

In addition, a markup of LiDAR surface elevation mapping with existing drainage infrastructure is enclosed as Attachment C.

The secondary flow path (overland flow) is also the rear allotment drainage easement (refer to dark blue shaded zones along the rear allotment boundary in Figure 5).

Based on the LiDAR elevation data, the longitudinal section along the rear boundaries of lots was investigated. This is enclosed as Attachment D.

Refer to Figure 9 below (extract of Attachment D) for the longitudinal section markup, showing that the subject site is located at the highpoint of the rear allotment drainage easement corridor.

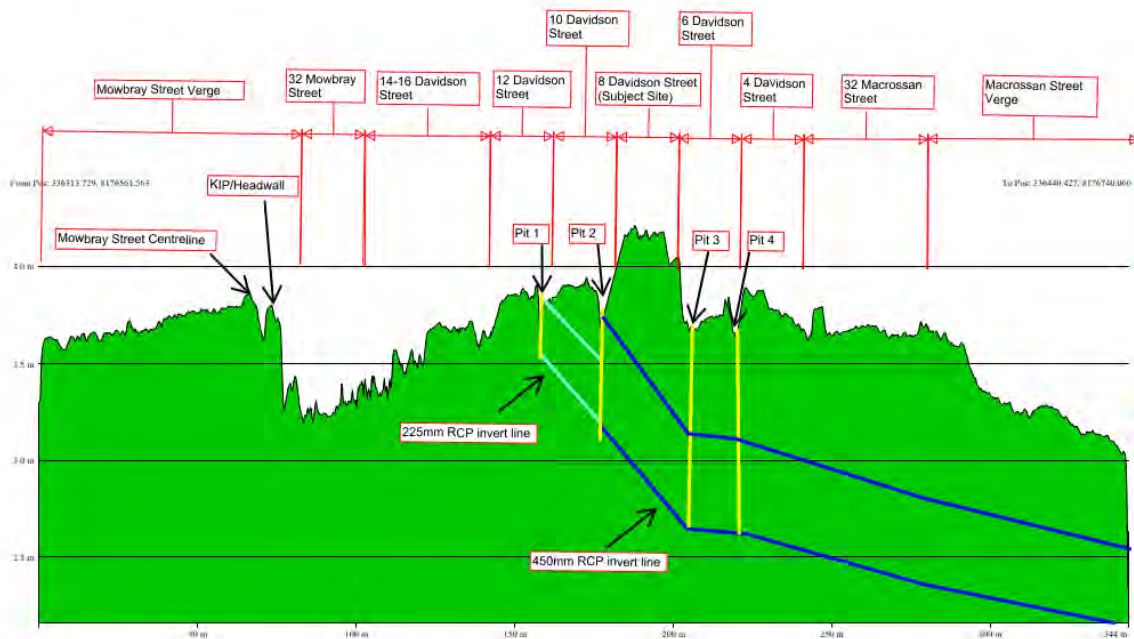


Figure 9 Investigated Longitudinal Section from LiDAR elevation data

The drainage easement runs northeast and southwest from the approximate midpoint of the “city block”. The longitudinal section profile shows that the subject site is located at the highpoint of the rear allotment drainage paths.

It is noteworthy that the piped drainage that serves 10 Davidson Street appears to cross the natural sub-catchment boundary based on the longitudinal section above.

3.4. Comparison of LiDAR Data and Detail Survey

A limitation of the sourced LiDAR elevation data is that where dense vegetation existed, the data collected may not be fully representative of ground surface levels.

This potentially occurs at the southeastern corner of the subject site and also along the common boundary between 8 and 10 Davidson Street.

A markup of Detail Survey is enclosed as Attachment E.

The LiDAR and Detail Survey levels are generally consistent within the subject site with some minor exceptions.

3.4.1. Southeastern Corner Mound

Near the southeastern corner of the subject site, but just outside the drainage easement, the Detail Survey indicates a large tree on a mound with a ground surface level of 4.85m AHD.

The Detail Survey suggests that this mound tapers back towards the rear allotment drainage easement and the levels within the drainage easement may not remain as high as suggested in the LiDAR data. This part of the site is under the tree canopy where LiDAR resolution may be less precise.

Levels information from the Detail Survey indicates a highpoint within Easement C at the rear of the subject site, with surface levels in the order of 4.28m AHD to 4.48m AHD at approximately the midpoint of the lot.

Noting the surveyed level of 3.92m AHD at the grate of the inlet pit (Pit 2) in 10 Davidson Street, the survey information is still considered consistent with the LiDAR elevation data, indicating that surface levels within the drainage easement of 8 Davidson Street are higher than those found in lots on either side.

Therefore, the general findings represented in the Longitudinal Section (Attachment D) are supported by Detail Survey data.

This confirms that the opportunity for overland flow out of 10 Davidson Street northeast through 8 Davidson Street is significantly constrained.

3.4.2. Bund/Gardens between 10 Davidson Street and 8 Davidson Street

With regards to the densely planted gardens along the southwestern boundary of the subject site, Detail Survey shows that the “Bottom of Bank” levels are generally between 4 m AHD and up to 4.2 m AHD. As the garden beds also exist within 10 Davidson Street, limited survey is available for that private property.

However, the Detail Survey levels provided indicate that the garden beds appear to be approximately 200 mm above the subject site levels (and even higher compared to the internal levels within 10 Davidson Street).

The LiDAR elevation data indicates that, at the point which the ponding is deep enough to potentially overtop the garden beds and enter Easement C in the subject site (8 Davidson Street), the runoff would likely also be directed southwest through the lower levels of the drainage system to Mowbray Street.

3.5. Site Photos of Adjacent Lot

Photos taken in 10 Davidson Street are enclosed as Attachment F.

Within 10 Davidson Street, photographs show evidence that the driveway levels are lower than the garden bed levels.

Rainfall runoff within 10 Davidson Street is initially collected on the driveway and directed to Pits 1 and 2 within that site.

As ponding occurs within that site, there is a conventional barrier kerb containing flows on the driveway. The abovementioned raised garden bed is behind the barrier kerb.

The information shown in these photos confirms that overland flow out of 10 Davidson Street is extremely constrained and requires significant ponding on site.

3.6. Proposed Development

The proposed development is described on drawings prepared by TPG Architects.

Refer to Figure 10 below for an extract of the proposed development layout.



Figure 10 Proposed Development Plan by TPG Architects

The proposed development consists of:

- Three (3) Units.
- Access crossover from Davidson Street connecting to the site;
- A new on-site common driveway along southwestern lot boundary for the three units (carports);
- Filling of the site (outside the easement) to achieve a flat site and required access grades into carports.
- Conveyance of all site stormwater to the rear allotment easement; and
- On street parking and formalisation of the lot frontage (with drainage to convey runoff through the site to the rear easement); and
- No filling within the drainage easement is proposed (suspended deck and boardwalk only).

In relation to the proposed development, the key features of the existing drainage easement are summarised below:

- Based on the LiDAR and site Detail Survey, there is currently no defined overland flow profile through the drainage easement within the subject site (8 Davidson Street);
- Longitudinal section extracted from LiDAR elevation data suggests that the subject site is at the top (highpoint) of the localised catchment.
- Stormwater runoff from the Davidson Street Road reserve appears to flow through the subject site onto the drainage easement. The proposed development will maintain this flow path on the driveway and by piping the runoff through the site.
- Currently, no apparent surface flow outlet exists from 10 Davidson Street to the northeast (through subject site) as indicated by the following.
 - the presence of driveway kerb and raised garden beds (refer to Detail Survey Markup in Attachment E and photos in Attachment F); and
 - LiDAR elevation data of the broader area suggests that 10 Davidson Street can also drain to the southwest via the open drain within the rear allotment drainage easement corridor (refer to Attachment D).
- 6 Davidson Street appears to grade toward the northeast (including the pipeline within drainage easement) and does not drain into the subject site.

The proposal to adopt a revised boardwalk and elevated (suspended) deck allows for overland flow to pass under these lightweight structures within the drainage easement.

Refer to Figure 11 below for an extract of the proposed development layout section view.

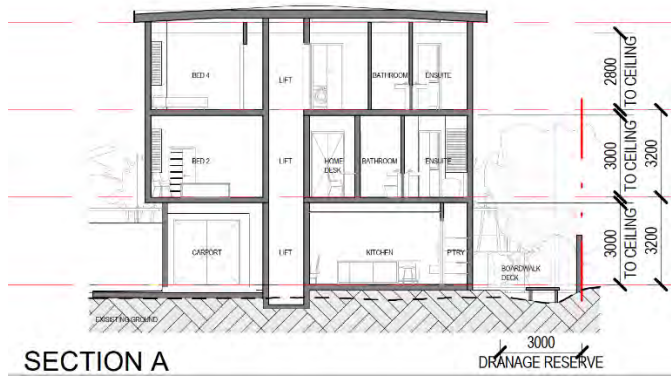


Figure 11 Proposed Development Plan by TPG Architects

This type of treatment appears to have been adopted with the built form in 6 Davidson Street. Refer to Figure 12 below.



Figure 12 Suspended Deck in 6 Davidson Street

It is possible to formalise an overland flow path to benefit 10 Davidson Street with minor profiling of the easement.

However, as with all drainage improvements, caution must be used to ensure that the increased capacity within the drainage easement does not allow additional flows to be directed to downstream areas.

In this regard, concern is raised that the drainage of 10 Davidson Street is currently limited to the inlet capture of the pits and pipes. Excess flows appear to be contained on site as ponding or possibly directed south as overland flow.

Whilst it is possible to increase the drainage easement capacity for conveyance of overland flows northeast through the subject site, concern is raised that this should not occur without more detailed catchment studies. These are not the subject of this Development Application.

4. Summary

As far as the required supporting material for this current Development Application, it has been demonstrated that opportunities exist to facilitate drainage outcomes within the rear allotment drainage easement without impacting the available development footprint, proposed site layout and development levels. The proposed development will maintain the existing overland flow path.

It is considered that the proposed development will not result in an actionable nuisance on the drainage characteristics of the area and will not result in an worsen impact on upstream and downstream properties.

Therefore, it is considered that there is no impediment to the proposed development proceeding with flexibility to achieve some minor amendments to suit Council's broader drainage outcomes.

5. Response to Information Request Item 3

In response to each item required for the Drainage Study, additional information/clarification is provided below:

a. **The contributing catchment boundaries:**

Section 3.3 of this report provides detail information on existing underground drainage.

The Catchment Plan (Attachment B) demonstrates the contributing catchment boundaries, including sub-catchments contributing to Pit 2 to 4.

Review of detailed survey, LiDAR elevation data and drainage network records by Council indicated that four inlet pits are located within the easement parcels along the rear of the subject site, connecting to a series of 450 mm diameter RCPs downstream.

Currently, runoff of the subject site appears to be captured by Pit 3 in the Lot immediately north from the subject site.

Refer to Figure 13 below showing Pit 3 in the detail survey.

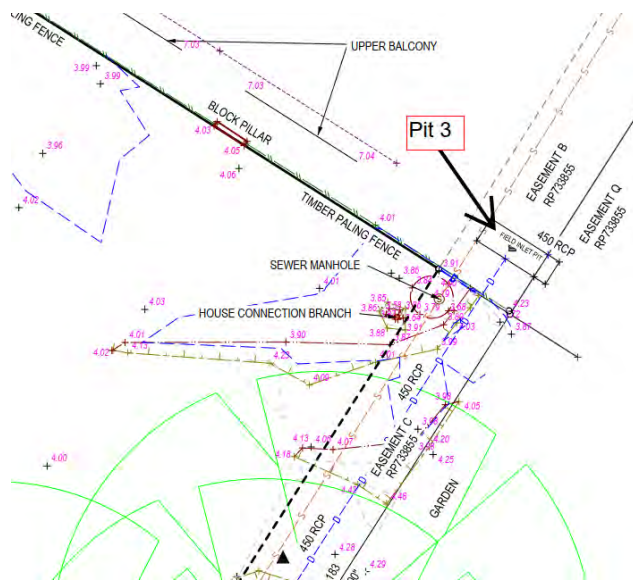


Figure 13 Extract of detail survey showing Pit 3

The contributing catchment boundaries are shown in the Catchment Plan (Attachment B).

b. **The extent of the 100-year ARI flood event in relation to the site both pre and post development;**

This has been addressed in Section 3.2 of this report.

It is considered that the proposed development site is not subject to the 100-year ARI flood event.

In terms of localised flooding, it is considered that the proposed development will not result in an actionable nuisance on the overall flooding characteristics of this area and will not alter the extent of the localised flooding under 100-year ARI rainfall event in this area post development.

c. **Primary and secondary flow paths for the 5, 20, 50 and 100 year ARI flood events;**

The primary flow path is the rear allotment drainage easement.

With reference to Section 3.3 of this report, the 450mm diameter RCPs start at Pit 2 and continues within the rear allotment drainage easement to Macrossan Street, then along the Macrossan Street verge into a 600mm diameter RCP across the Macrossan Street/Garrick Street intersection.

Based on Lidar elevation data, the secondary flow path (overland flow) is also the rear allotment drainage easement (refer to dark blue shaded zones along the rear allotment boundary in Figure 5).

South from the subject site is 10 Davidson Street. Within this lot, the driveway has a barrier kerb line and a raised garden bund formation.

Figure 14 below is an extract of Attachment E (Detail Survey markup), showing the driveway kerb line and bund formation.

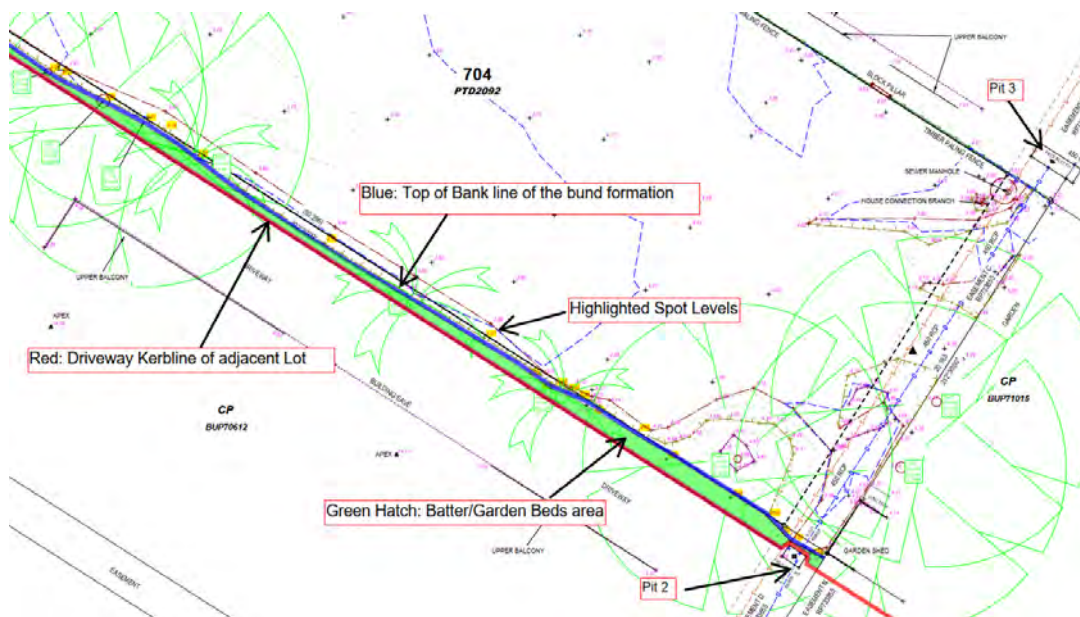


Figure 14 Detail Survey Markup

It is understood that the kerb line and bund direct runoff from 10 Davidson Street into Pit 2 and prevent runoff from entering the subject site.

Overall, the primary and secondary flow paths for the 5-, 20-, 50- and 100-year ARI flood events are the rear allotment drainage easement.

d. **Identify any requirement for further or additional drainage easements;**

An easement parcel CRP733855 is already established at the rear of the subject site.

The proposed development includes an elevated boardwalk and deck within the rear allotment drainage easement.

This is intended to allow overland flow to pass under these lightweight structures within the drainage easement.

It is considered that the proposed development will not result in an actionable nuisance on the drainage characteristics of the area and will not result in an adverse impact on upstream and downstream properties.

Therefore, it is considered that no further or additional drainage easements are required for the proposed development.

e. **Identify the need and tenure for flood detention areas to ensure a no worsening impact on downstream properties for the entire development;**

The existing 450mm diameter RCP within the rear allotment drainage easement has capacity restrictions (assessed as approximately 1-year ARI level of service downstream from Pit 4).

It is noted that there were no pits identified within the drainage easement between Pit 4 and Macrossan Street. The conveyance of stormwater runoff from majority of the lots downstream from Pit 4 (within this “city block”) appear to rely on overland flows only.

The subject site of approximately 0.1ha is the only lot in the “city block” (of approximately 3.1 ha) that is currently undeveloped.

No flood detention areas were identified in the developed lots within this catchment.

It is considered that providing flood detention area on the subject site would not have a noticeable impact on the peak flow characteristics of the area.

Therefore, there is no need for flood detention areas.

f. **Post development must not detrimentally impact on Council’s sewerage infrastructure and must include suitable immunity for significant events; and**

The proposed development can be designed to ensure no detrimental impact on Council’s sewer main crossing the rear of the subject site within the drainage easement.

The existing sewer and the existing 450mm diameter stormwater pipe are contained in the same easement corridor and the development layout has been designed to avoid impacts on these existing services.

It is considered that the proposed development does not detrimentally impact the current flood immunity of Council’s sewerage infrastructure.

g. **Information on the proposed works and any impacts proposed at the drainage outlet from the proposed development;**

The development proposes to keep the existing pipe and pit arrangement on either side of subject site within the easement and will include an additional pit within the subject site to connect site drainage directly to the 450mm diameter pipe within the site.

The proposed development will direct site runoff (including overland flows) from the site frontage to the new pit in the rear allotment drainage easement.

It is considered that the proposed development will not have an impact at the drainage outlet.

f. **The post-development discharge of stormwater from the subject site must have no worsening effect on the drainage of upstream or downstream properties.**

Considering the size of the overall catchment contributing to the Macrossan Street/Garrick Street intersection, the increase of stormwater runoff from proposed development will not result in actionable nuisance to worsen the drainage of upstream or downstream properties.

The development can be conditioned to ensure that current surface profile within the rear allotment drainage easement (Easement C as shown on Detail Survey) are reprofiled to achieve free draining conditions to the northeast and Pit 3.

It is considered that the proposed development will not result in an actionable nuisance on the drainage characteristics of the area and will not result in an worsen impact on upstream and downstream properties.

Therefore, there is no impediment to the proposed development proceeding with flexibility to achieve some minor amendments to suit Council's broader drainage outcomes.

For completeness, Item 4 of the Information Request is reproduced below.

Information Request Item 4 – Visitor Parking

Concern is raised with the use of grass and paving to the visitor's car parking spaces. Please clarify the design of these spaces comply with Australian standards and to have suitable drainage.

The pavement for the visitor car parks consists of large concrete slabs and a small, grassed separation gap. This proposed pavement will remain serviceable in all weather conditions. Grassed Pavers will not be used.

For completeness, Item 5 of the Information Request is reproduced below.

Information Request Item 5 – Swept Paths

Please provide swept path turn details for proposed on-street parking spaces. Concern is raised with the rear turning interfering with the bicycle lane.

The location of the on-street parking is determined by the alignment of the footpath which is determined by the position of an existing tree in the road reserve.

The swept path of the end vehicle does not conflict with the bicycle path, however, the geometry/positioning of each angled carpark allows for uninterrupted visibility when reversing out minimizing any potential for conflict with the cycle path. (Refer Attachment A)

The swept path diagrams in Attachment A also show vehicular access to the internal car parks and garages. The access to internal carparks is serviceable and conforms with Australia Standard Codes.

C.M.G. CONSULTING
ENGINEERS PTY. LTD.

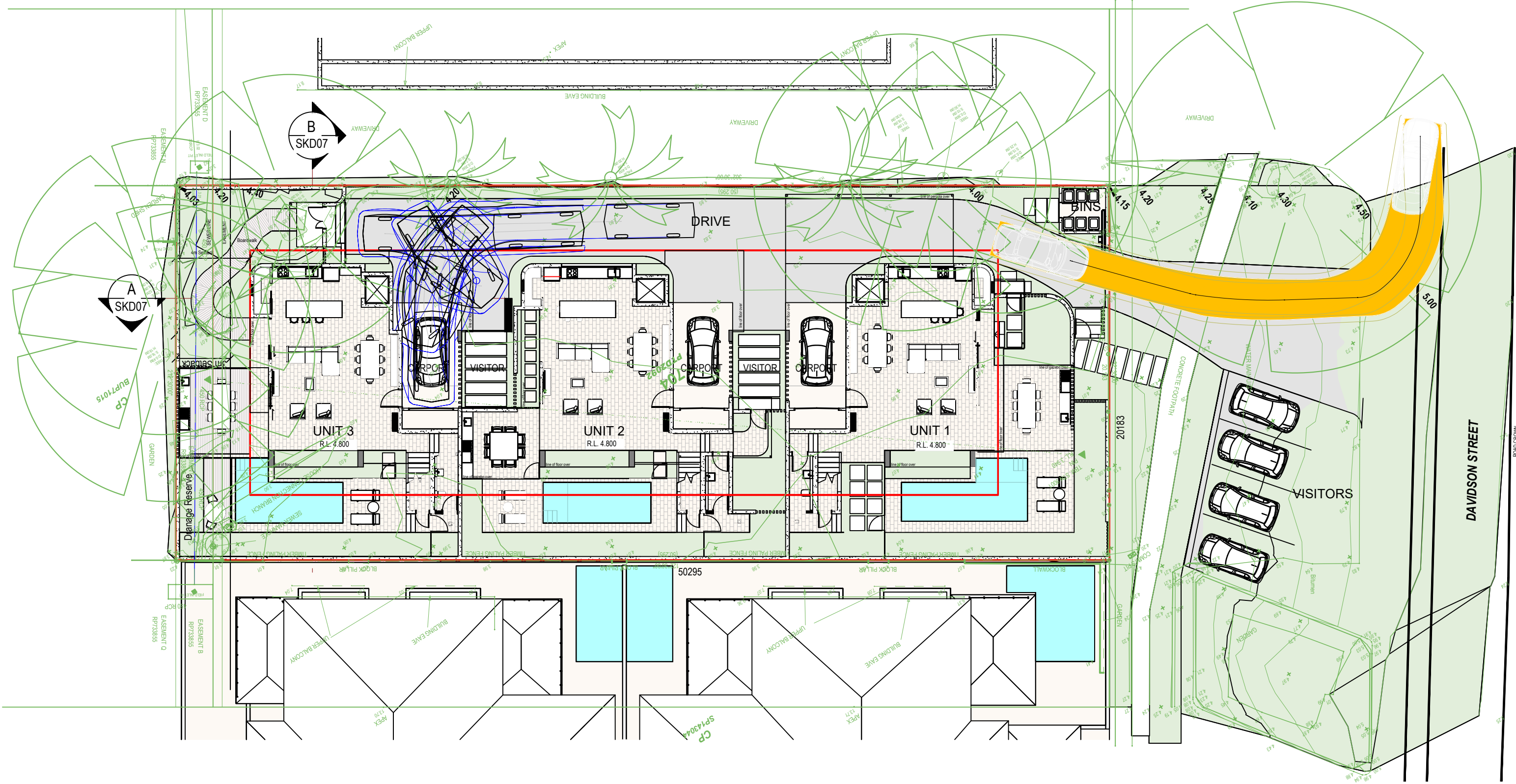


C.M. GIANARAKIS (RPEQ 1370)
208 Buchan Street, Cairns Qld 4870
P: (07) 40312775
E: chas@cmgengineers.com.au

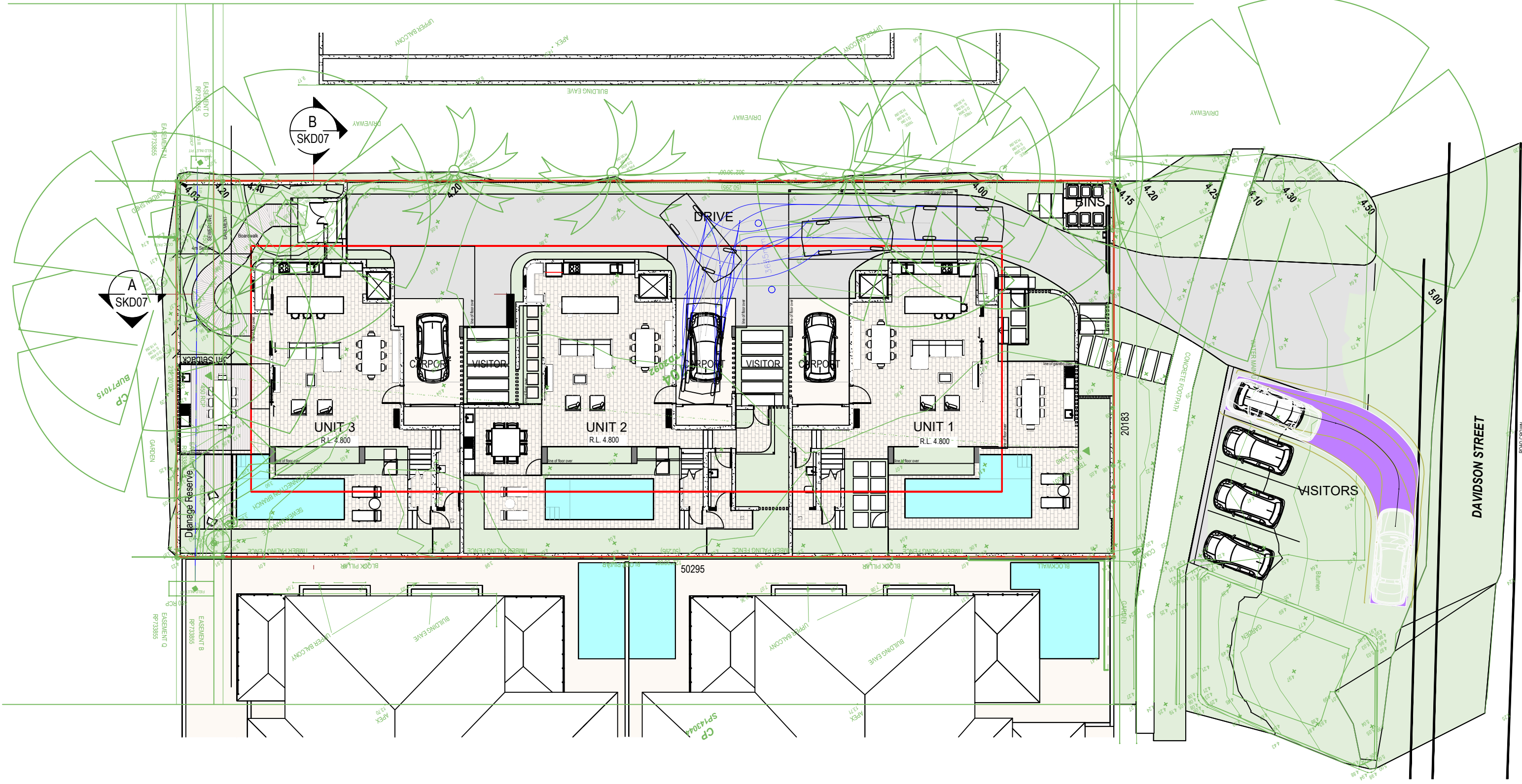
Enclosed: Attachment A: Swept Paths
Attachment B: Catchment Plan
Attachment C: LiDAR Plan Markup
Attachment D: LiDAR Longitudinal Section Markup
Attachment E: Detail Survey Markup
Attachment F: 10 Davidson Street Photos Markup

Attachment A

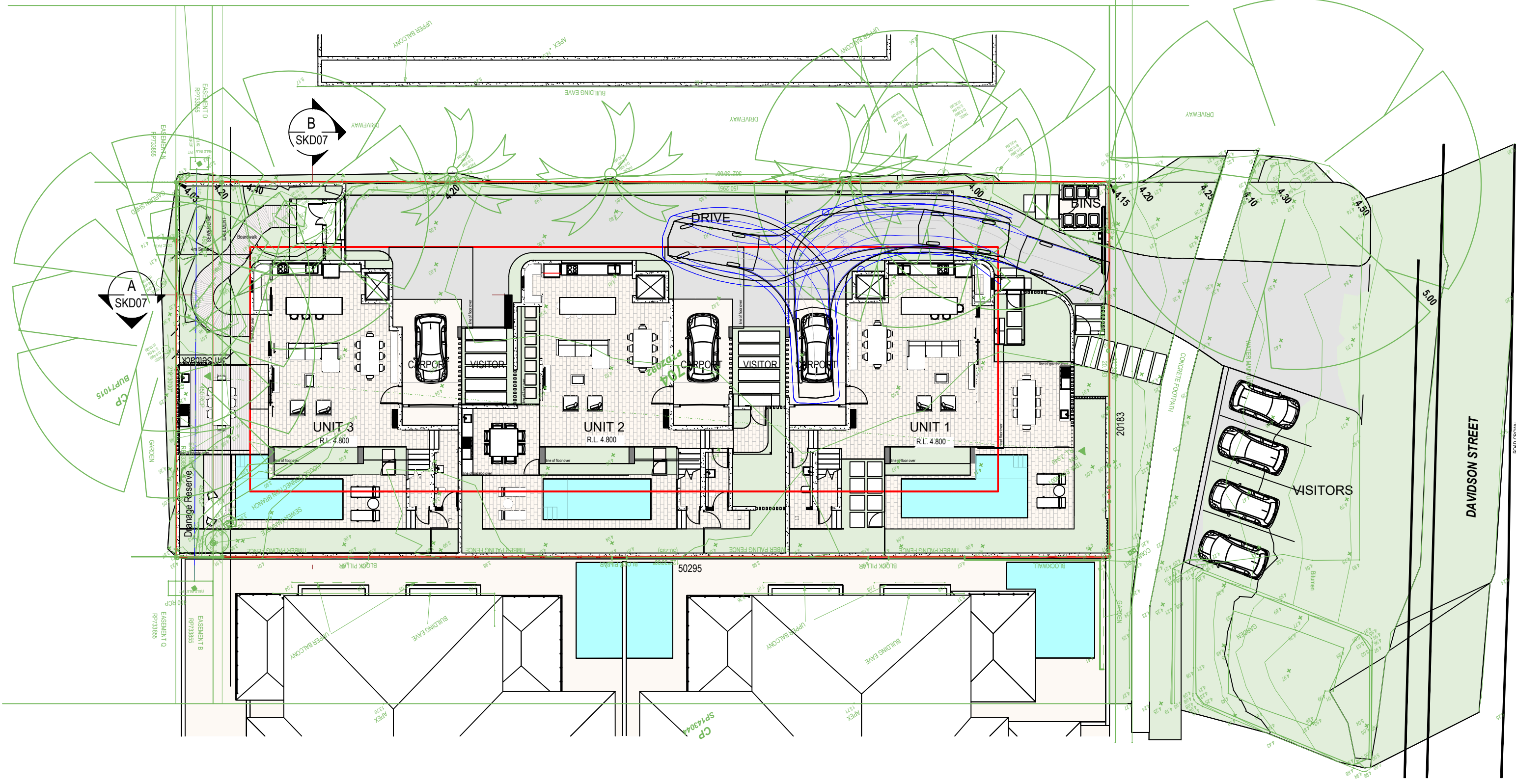
SWEPT PATH DIAGRAM



UNIT 1
SCALE - 1:200



UNIT 2
SCALE - 1:200



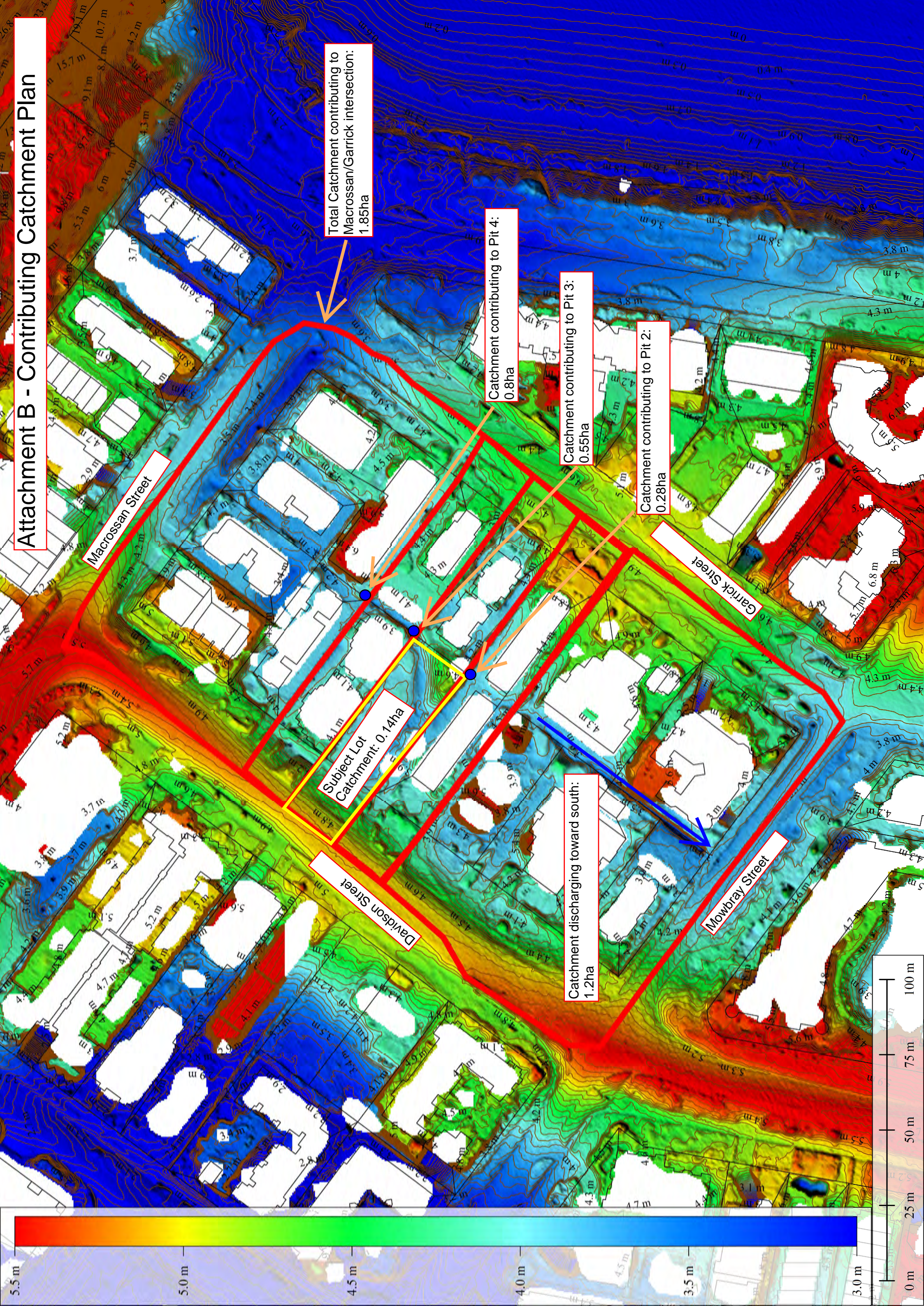
UNIT 3
SCALE - 1:200

issue		amendments		associated consultants		C.M.G. CONSULTING ENGINEERS PTY. LTD.		LEVI TURNER		SCALE		AS SHOWN		DRAWN		AGM	
A	ORIGINAL ISSUE	12.12.23				AC.N. 011 065 375	STRUCTURAL AND CIVIL	PROPOSED UNIT DEVELOPMENT		DATE	DEC. 23	DATE	DEC. 23	DESIGNED	CHECKED	C.M.G.	C.M.G.
B	RFI ISSUE	18.04.24				208 Buchanan Street Sydney, NSW 2000 Phone: (07) 4031 2775 Fax: (07) 4051 9013		AT 8 DAVIDSON STREET, PORT DOUGLAS		APPROVED							
								TITLE: VEHICLE SWEEP PATH		DWG NUMBER	47256 -C01	AMDT		B			

Attachment B

CATCHMENT PLAN

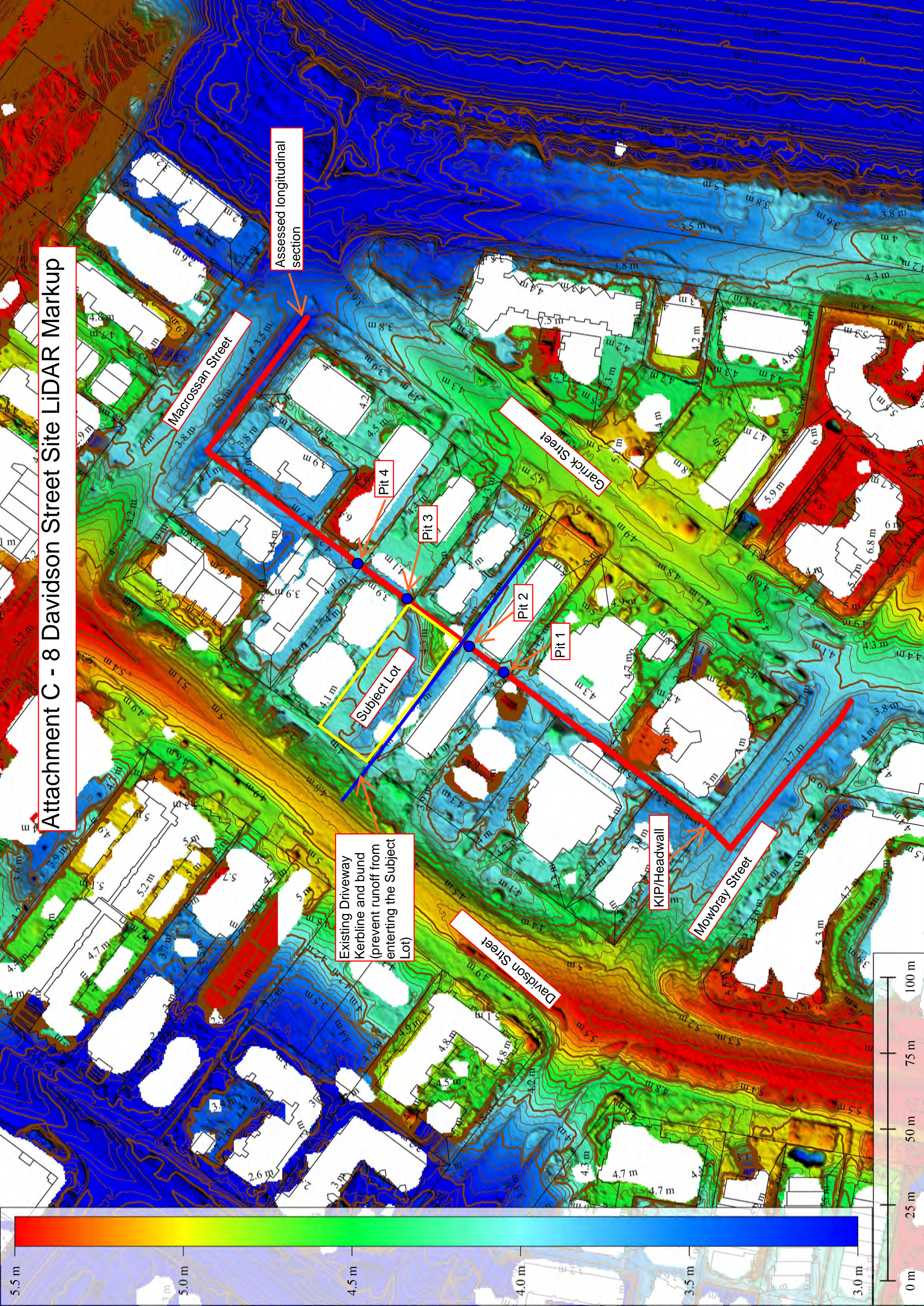
Attachment B - Contributing Catchment Plan



Attachment C

LIDAR PLAN MARKUP

Attachment C - 8 Davidson Street Site LiDAR Markup



Assessed longitudinal section

Macrossan Street

Garrick Street

Pit 4

Pit 3

Pit 2

Pit 1

Subject Lot

KIP/Headwall

Mowbray Street

Davidson Street

Existing Driveway
(prevent runoff from
Kerblne and bund
entering the Subject
Lot)

5.5 m

5.0 m

4.5 m

4.0 m

3.5 m

3.0 m

100 m

75 m

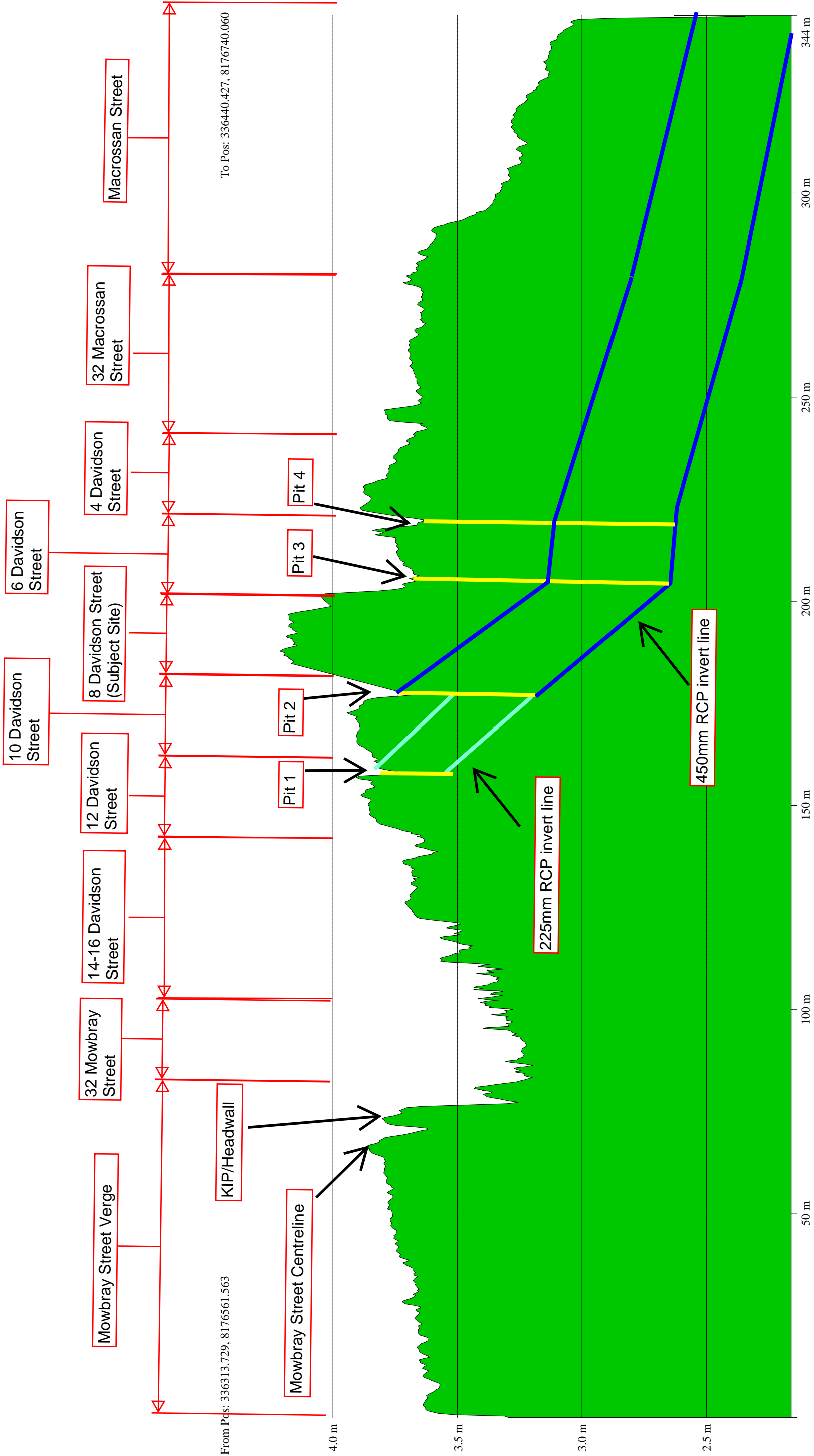
50 m

25 m

0 m

Attachment D

LIDAR LONGITUDINAL SECTION MARKUP

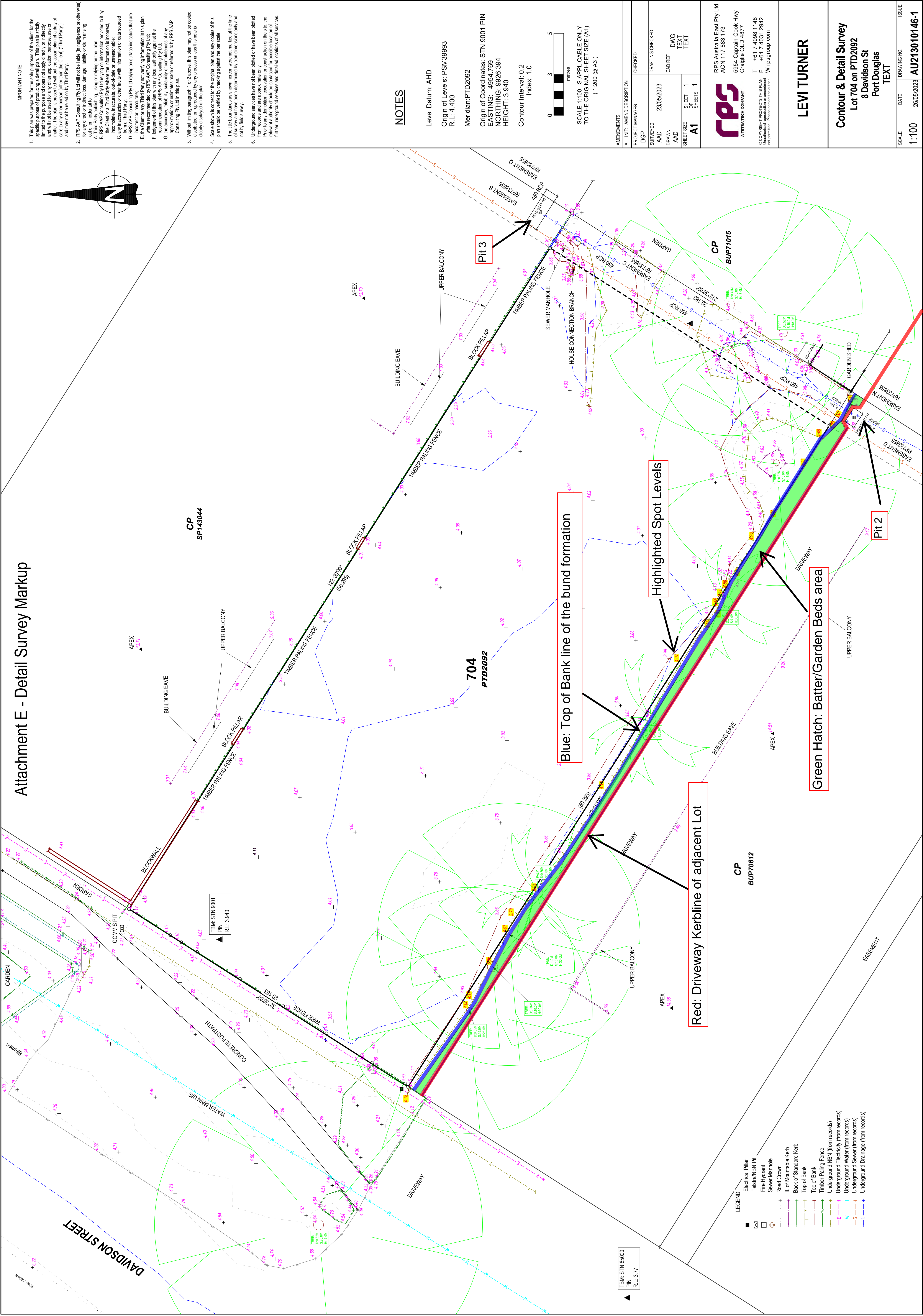


Attachment D - 8 Davidson Street Assessed Longitudinal Section Markup

Attachment E

DETAIL SURVEY MARKUP

Attachment E - Detail Survey Markup



Attachment F

10 DAVIDSON STREET PHOTOS MARKUP



Kerblne along northern
boundary of 10 Davidson Street

Standing near Pit 2
Looking east



Garden beds and bund formation
(prevent runoff from entering the
Subject Lot)

Pit 2

Kerbline along northern
boundary of 10 Davidson Street

Looking north to Pit 2

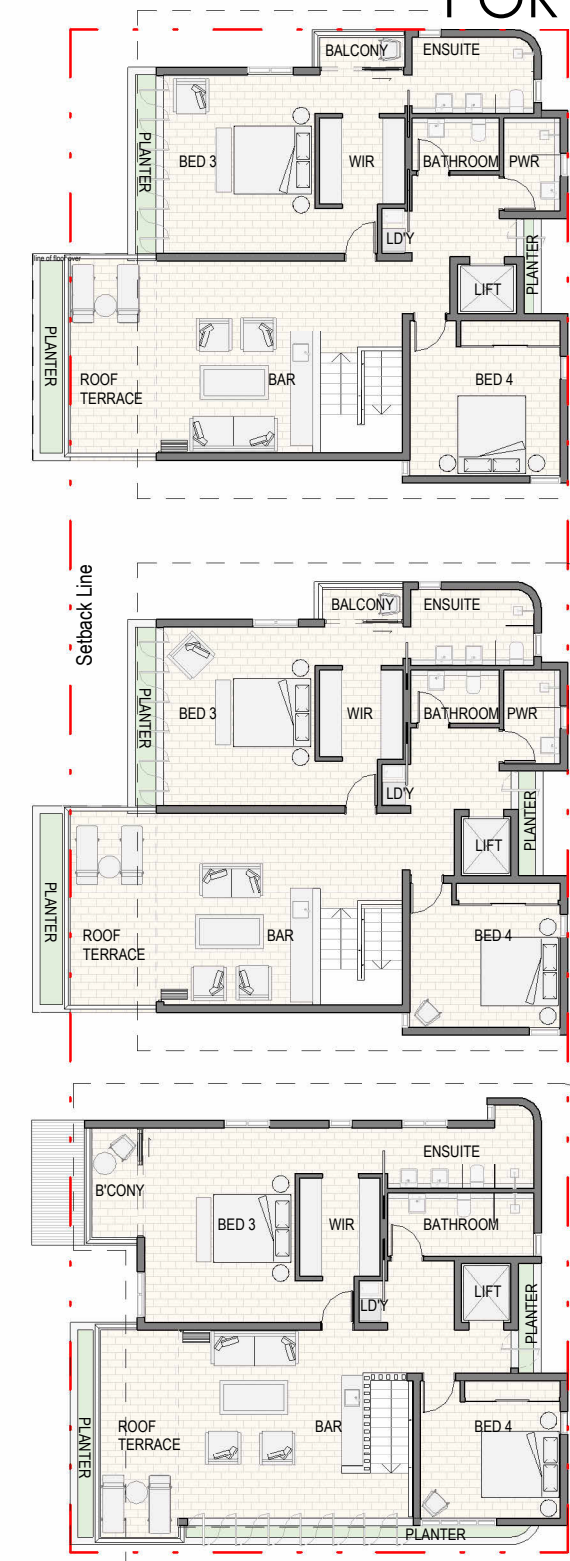
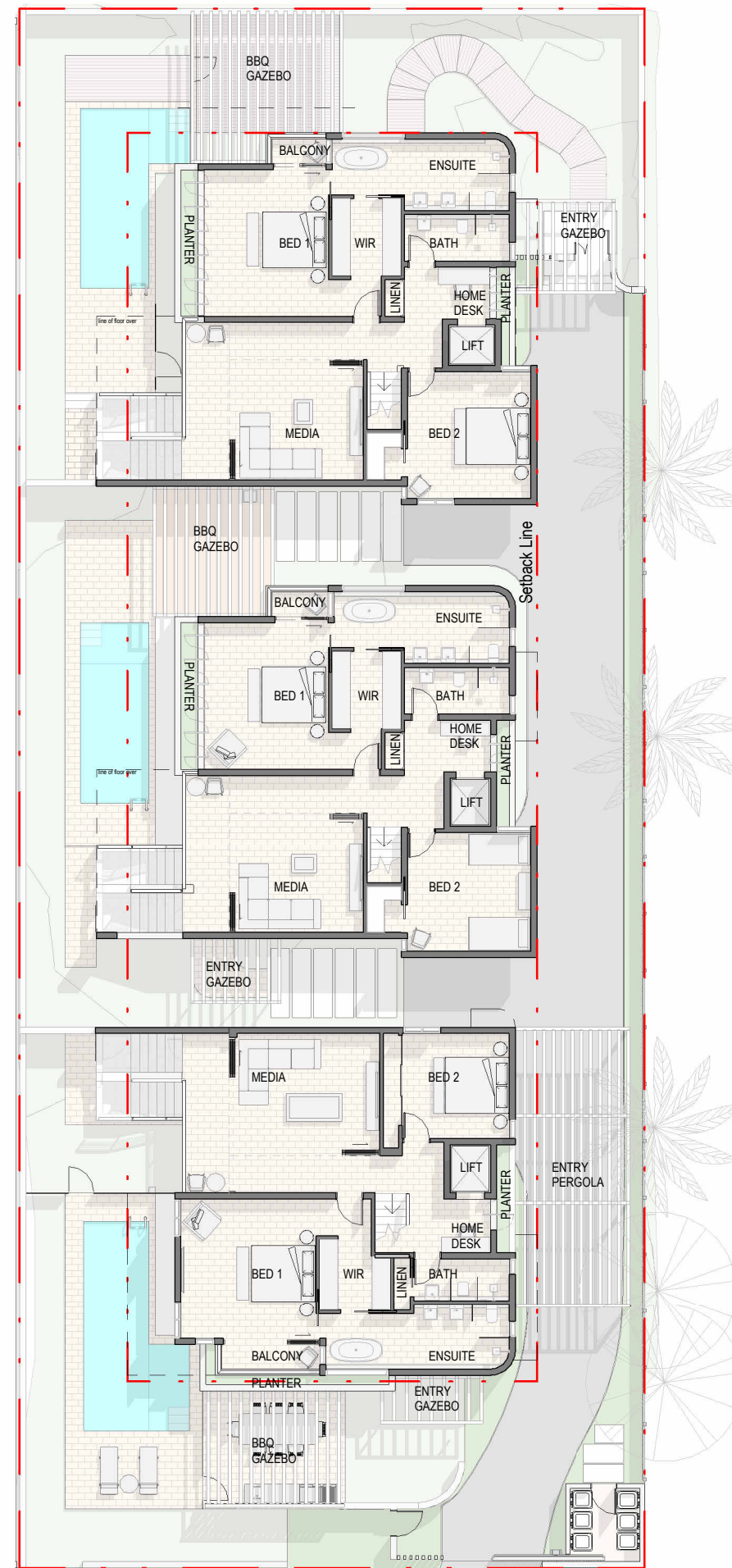
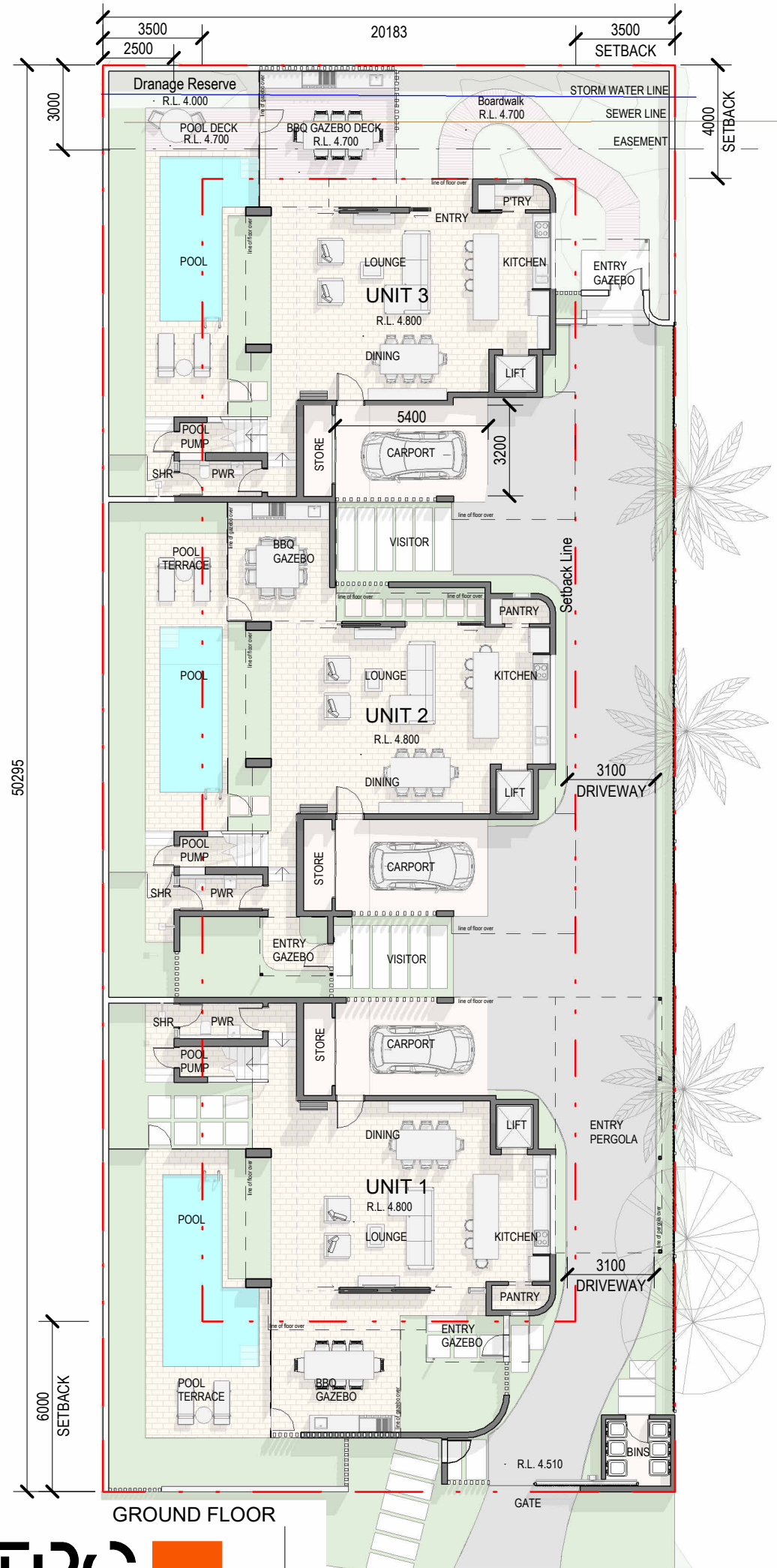


Garden beds and bund formation
(prevent runoff from entering the
Subject Lot)

Kerb line along northeastern
boundary of 10 Davidson Street

Standing near Pit 2
Looking west

8 DAVIDSON ST.
----- PORT DOUGLAS

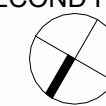
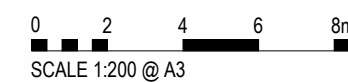


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FIRST FLOOR

1/124 COLLINS AVENUE EDGE HILL QLD, 4870

PO Box 560 Manunda 4870 **ABN** 61 063 799 333
 cairns@tpgarchitects.com.au **t.** +617 4032 1944



NORTH

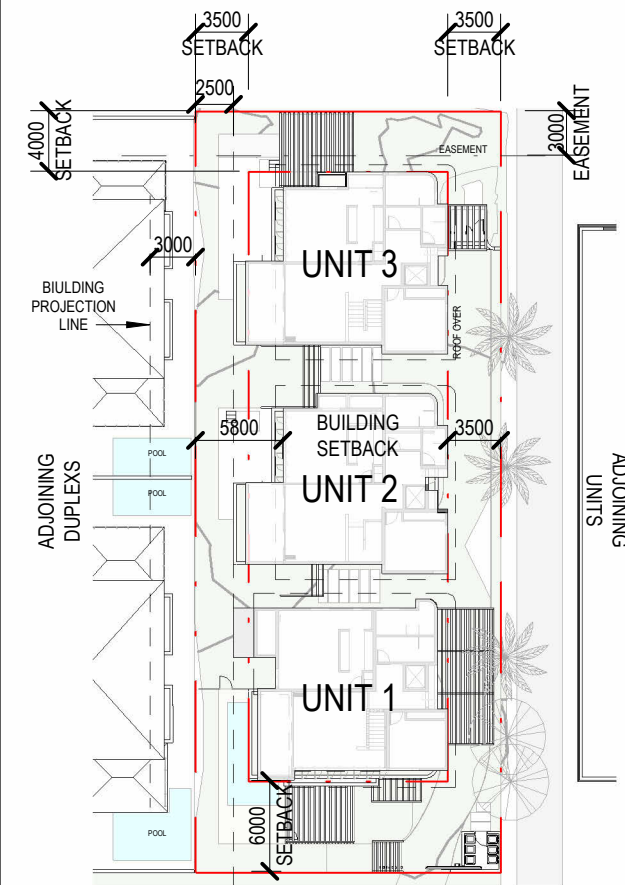
SECOND FLOOR

PROPOSED FLOOR PLAN

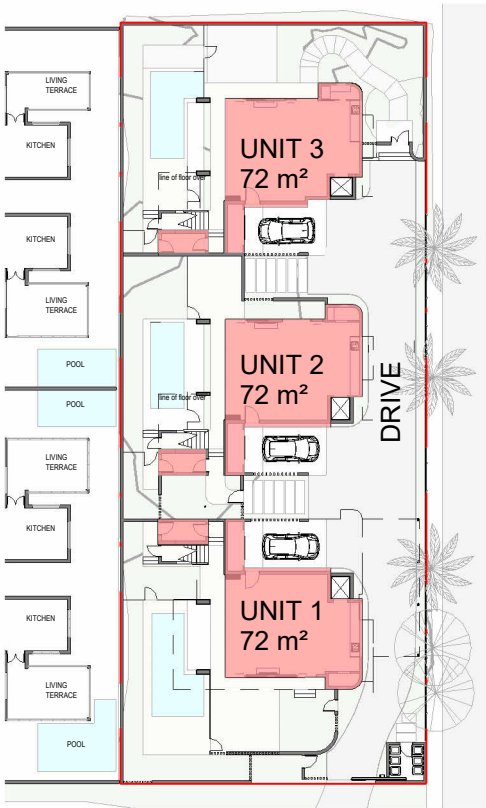
LBT-01 SKD01 (J)

Apr. 2024

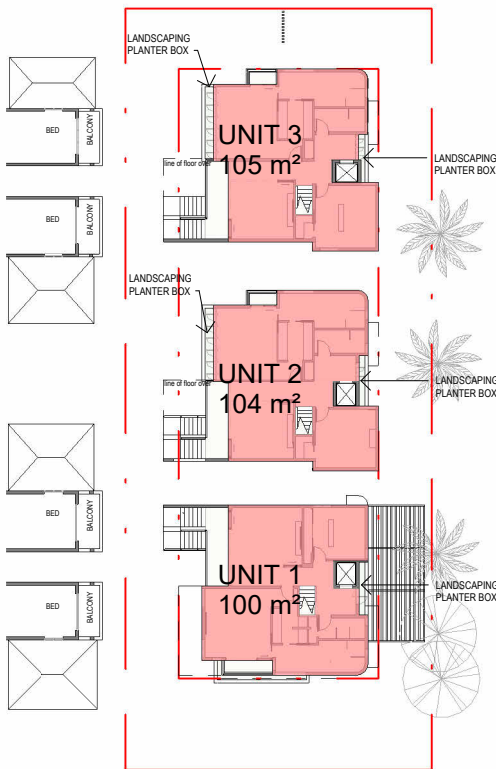
8 DAVIDSON ST. PORT DOUGLAS



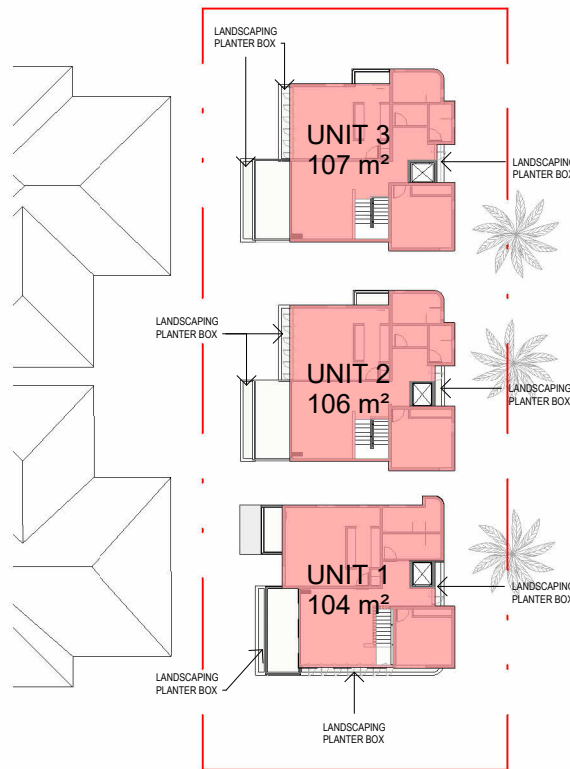
SETBACKS



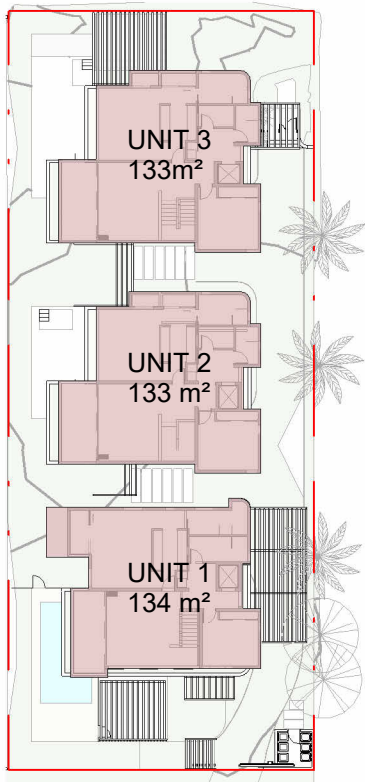
GROUND FLOOR GFA



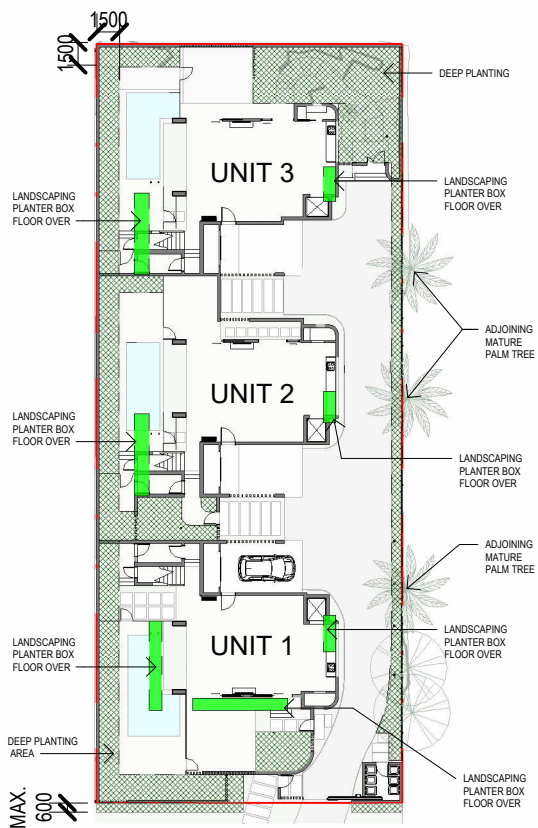
1st FLOOR GFA



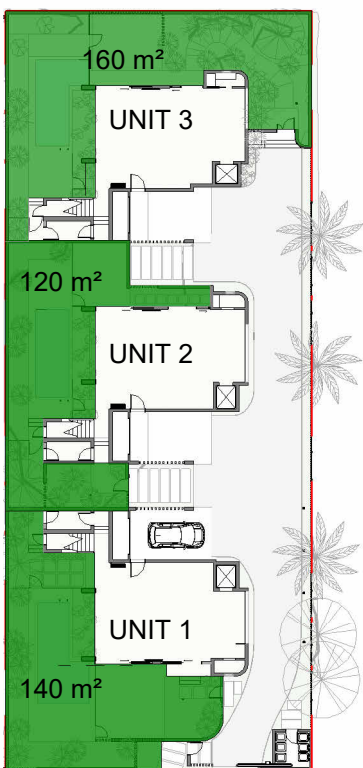
2nd FLOOR GFA



SITE COVER

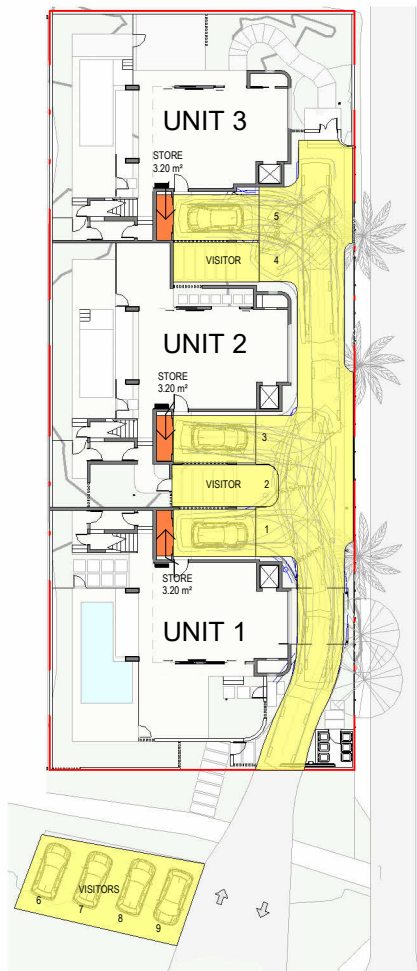


LANDSCAPING & DEEP PLANTING AREA



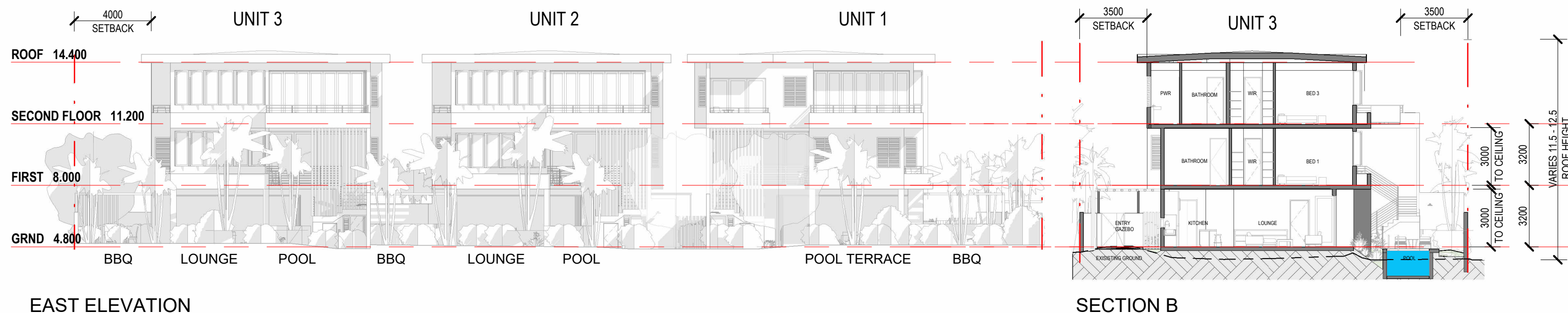
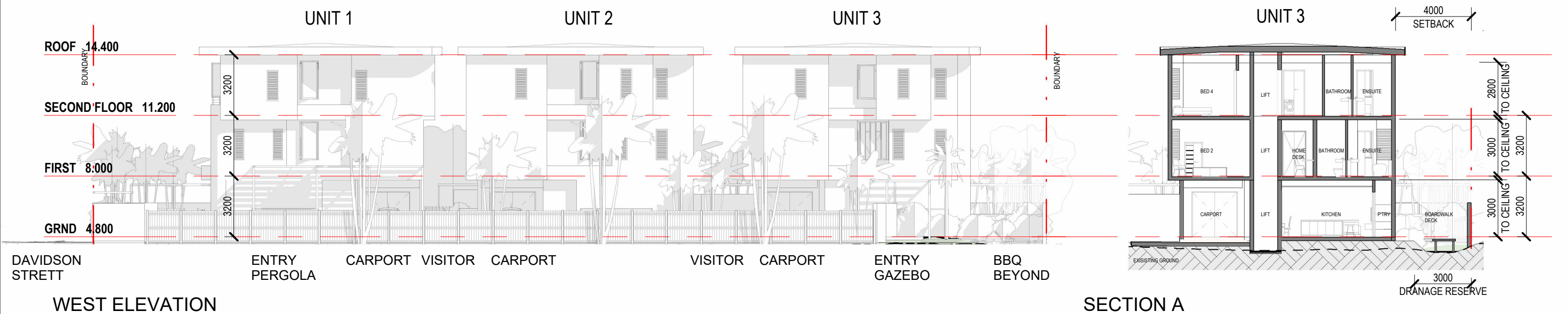
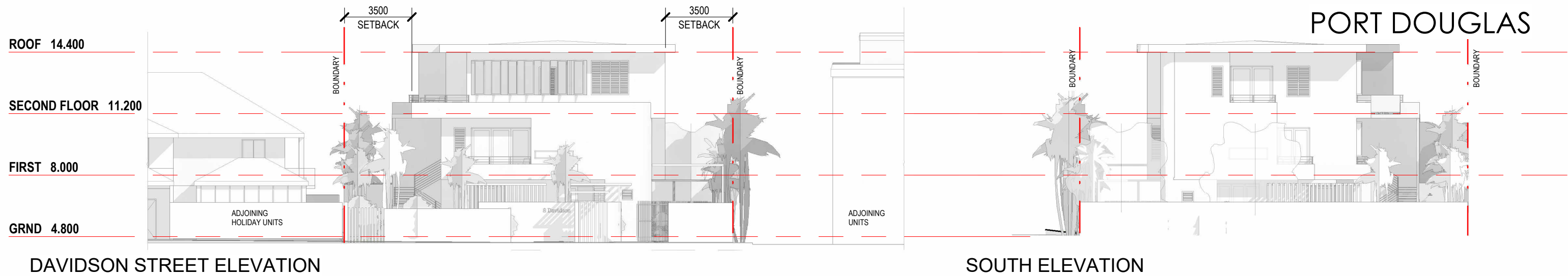
LANDSCAPING & RECREATIONAL AREA

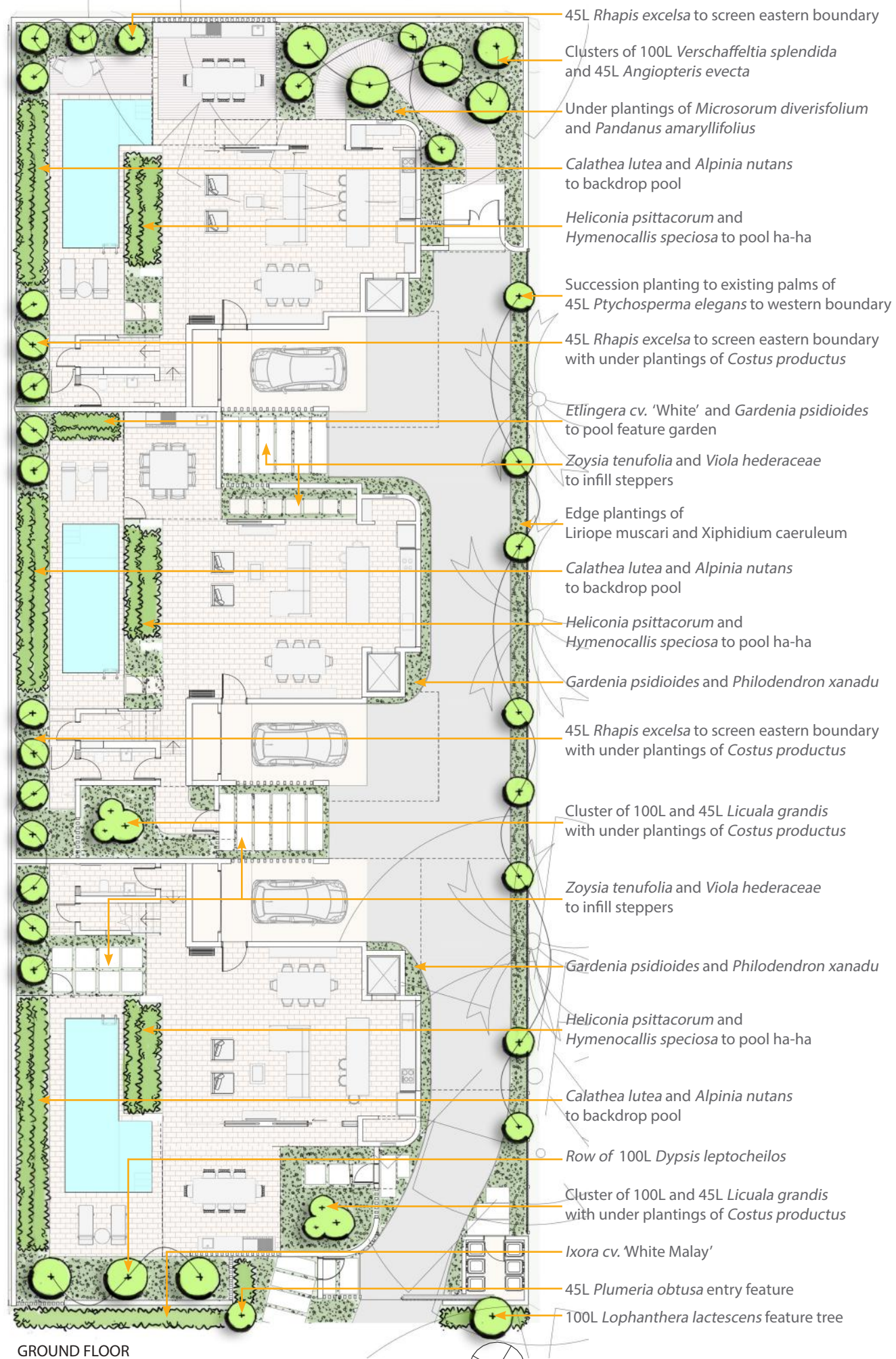
CAR PARKING
CIRCULATION



ZONE	USE	PROVIDED
TOURISM ACCOMMODATION	MULTI DWELLING SHORT TERM ACCOMMODATION	
Site Area	min. 1000 m ²	1015 m ²
Site Cover	max. 40% 406 m ²	39% 400 m ²
Plot Ratio GFA	max. 1.2 x Site Area =1218 m ²	840 m ² = 0.82
Height Ceiling Height	max. 13.5 m 3 storey min. 2.7 m	11.5-12.5 m 3 storey min. 2.8 m
SETBACKS		
Front	6 m	6 m
Sides - 2nd STOREY	2.5 m	2.5 m
Sides - 3rd STOREY	3.5 m	3.5 m
Rear	4 m	4 m
LANDSCAPING AREA		
Setback	Front: 2 m Side & Rear: 1.5 m	2m - 6m 0.6m - 4m
Area	min. 35 % = 355 m ²	515 m ² = 51% PLANTERS: 30 m ²
RECREATIONAL LANDSCAPING		
	min. 35 m ² /unit min. 3 m Wide	Unit 1: 140 m ² Unit 2: 120 m ² Unit 3: 160 m ²
CARPARKING		
Multi Dwelling Houses	1.5 Spaces/Unit (3x1.5) = 4.5 spaces min. 60% Covered	On Site: 3 Covered 2 Uncovered Off Site: 4 Uncovered

8 DAVIDSON ST. PORT DOUGLAS





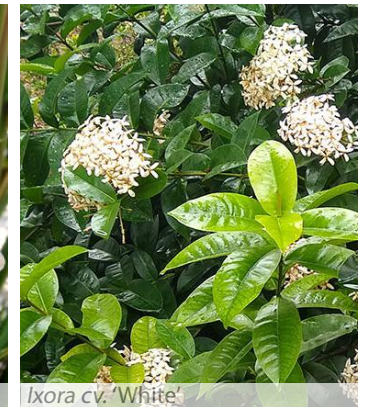
PALMS & TREES

Structurally elegant palm and tree species creating height and filtered shade to proposed gardens. Flowering and foliage species to frame the built form and existing views. Feature riverine species aggregated around boardwalk and swale beneath, forming a natural creek atmosphere.



SCREENING & MID STORY

Robust species to screen hard walls and create mid story depth. Visually striking flowering species to create pockets of interest to pool surrounding gardens.



GROUND COVERS & UNDER STORY

Dense plantings of hardy, low growing, ground covering species. Illustrating garden extents, whilst creating further depth and detail to garden understory.



LANDPLAN
LANDSCAPE ARCHITECTURE

PLANTING CONCEPT
REVISED

L1.01 1:200 @ A3 18/04/2024



ARBOURS

Prolific flowering climbers to veil overhead arbours, casting dense shade to beneath surfaces and creating 'green corridors'. Species planted to arbour posts and planters above to creep onto arbour framing.



TERRACE PLANTERS

Vertical greening to building facade with the use of cascading species. Broad leaved foliage species to contrast. Showy feature tree and robust ground covers planted within large feature pots to roof terraces, framing views.

