

UNIT 1

GROUND FLOOR	71 m²
FIRST FLOOR	90 m²
FRONT PORCH	3.0 m²
GARAGE	36 m²
BALCONY	7m²
TOTAL AREA	207 m² -----22.3 Sq.

UNIT 2

GROUND FLOOR	70 m²
FIRST FLOOR	88 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	7 m²
TOTAL AREA	203 m² -----21.8 Sq.

UNIT 3

GROUND FLOOR	80 m²
FIRST FLOOR	96 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	5m²
TOTAL AREA	219 m² -----23.5 Sq.

UNIT 4

GROUND FLOOR	80 m²
FIRST FLOOR	87 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	5 m²
TOTAL AREA	210 m² -----20.6 Sq.

UNIT 5

GROUND FLOOR	68 m²
FIRST FLOOR	75 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	3m²
TOTAL AREA	184 m² -----19.8 Sq.

SITE AREA	1343 m²	
BUILDING AREA INC. GARAGE	560 m²	
SITE COVERAGE		41.7 %
AREA OF DRIVEWAY/PATHWAY	290 m²	
IMPERMEABLE AREA	**850 m²**	**63.2 %**
PERMEABILITY	**493m²**	**36.8 %**

NO SYNTHETIC LAWN TO BE USED

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GROUND FLOOR

A-101

Date	03 SEP 2021	Project number	20:-
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		REVISION	G

1 GROUND FLOOR
1 : 100



EXTERNAL GROUND FLOOR WALLS
FACE BRICKWORK – Austral Bricks - Hawthorn - London



ENTRY PORCH
RENDERED BRICKWORK – COLORBOND WHITE COLOUR



Entry Door
Painted Timber Finish Door
with glass infil



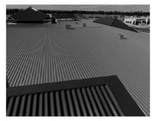
TIMBER CLADDING

EXTERNAL FIRST FLOOR WALLS
TIMBER CLADDING



EXTERNAL FIRST FLOOR WALLS
RENDERED CLADDING – COLORBOND WHITE COLOUR





Proposed Sheet Roof
Colorbond Sheet Roof - Dark Gray Colour





GUTTER, FASCIA + DOWNPIPES
COLORBOND – MONUMENT COLOUR





GARAGE DOORS
SELECTED PANEL LIFT DOORS – TIMBER FINISHED





WINDOWS
ALUMINIUM WINDOWS – ANODIC GREY





PROPOSED DRIVEWAY
COLOURED SEALED CONCRETE – LIGHT GREY





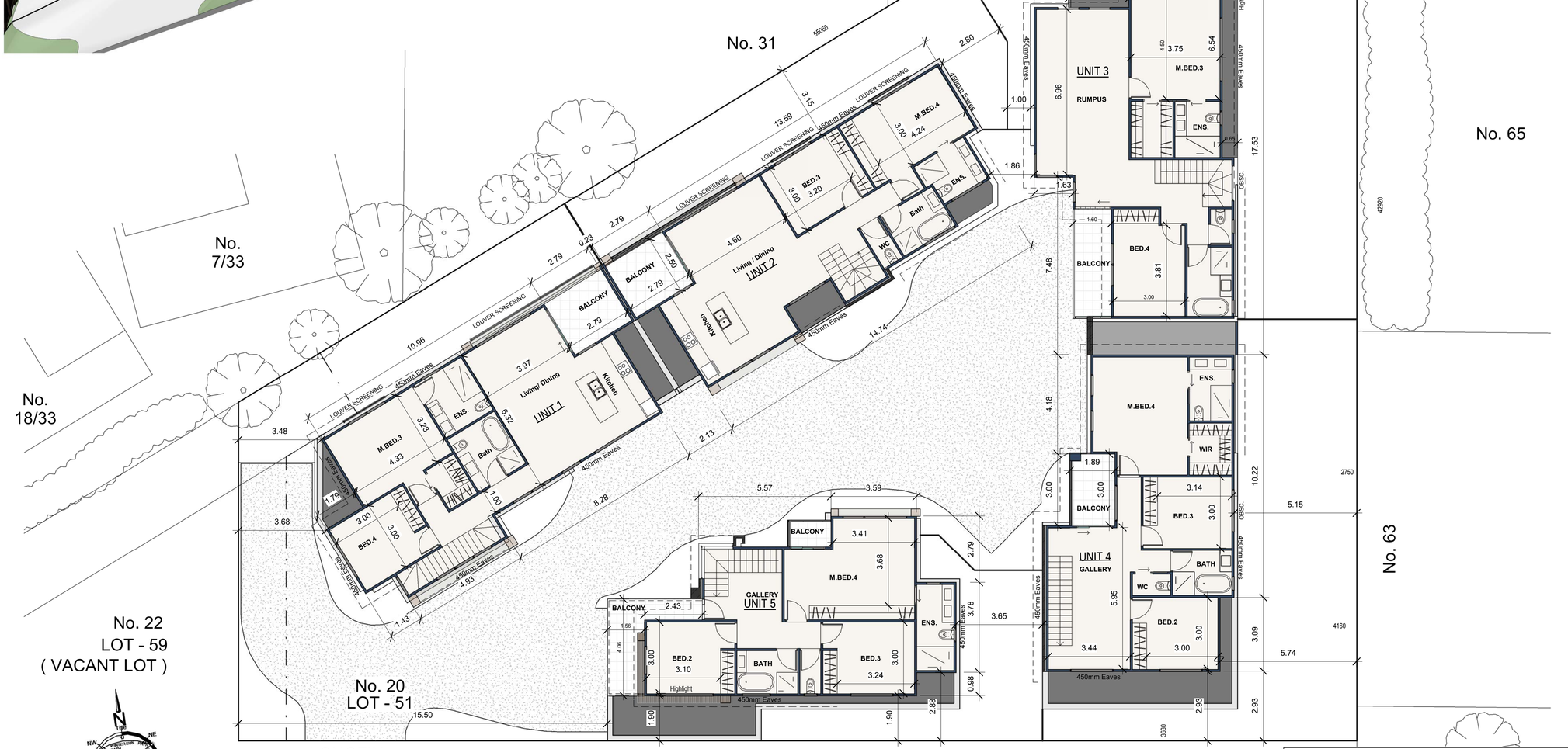
FIXED SCREENING
SELECTED SCREENING– ANODISED ALUMINIUM





PROPOSED DECKING
SELECTED TIMBER – STAINED FINISH





1 FIRST FLOOR
1 : 100

WATER TANK 2500L



- Meterboxes must be colour coordinated with the wall it is fixed to.

• Hot water services, solar hot water tanks, air conditioning units, clothes lines, satellite dishes, antennas & bin areas must not be visible to the public.

• Evaporative cooling units must be of low profile and colour matched to the roof.

• A letterbox, compliant with Australia Post standards, must be installed and it must be consistent with the colour palette and character of the dwelling

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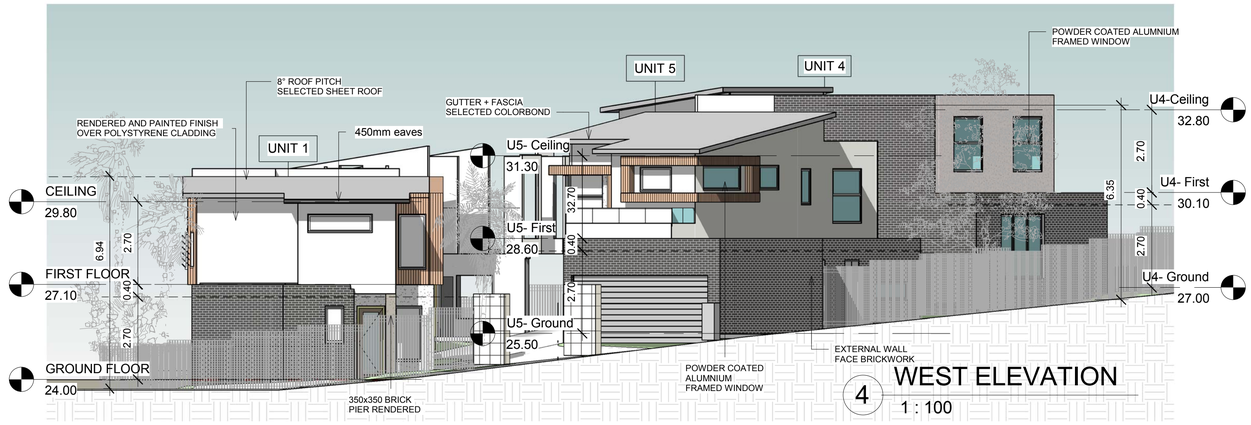
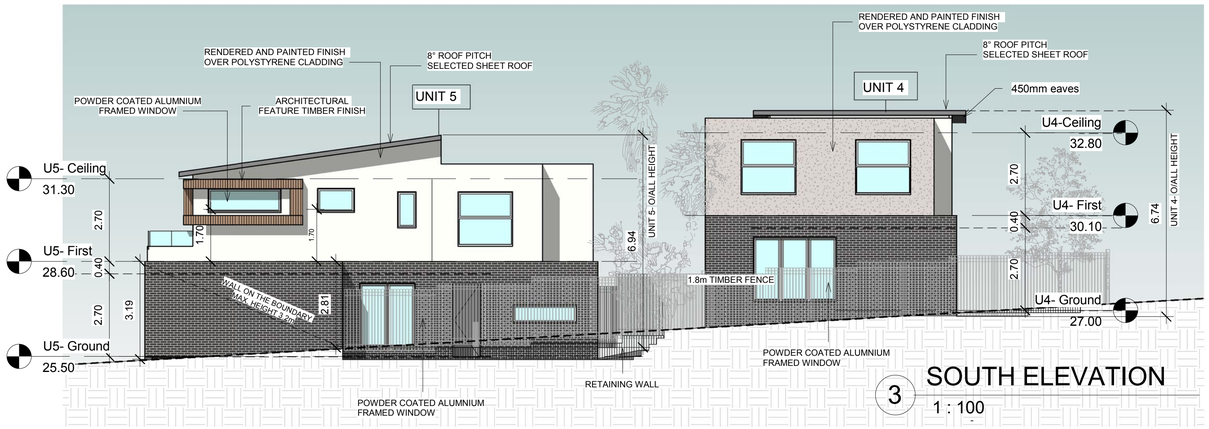
FIRST FLOOR

A-102

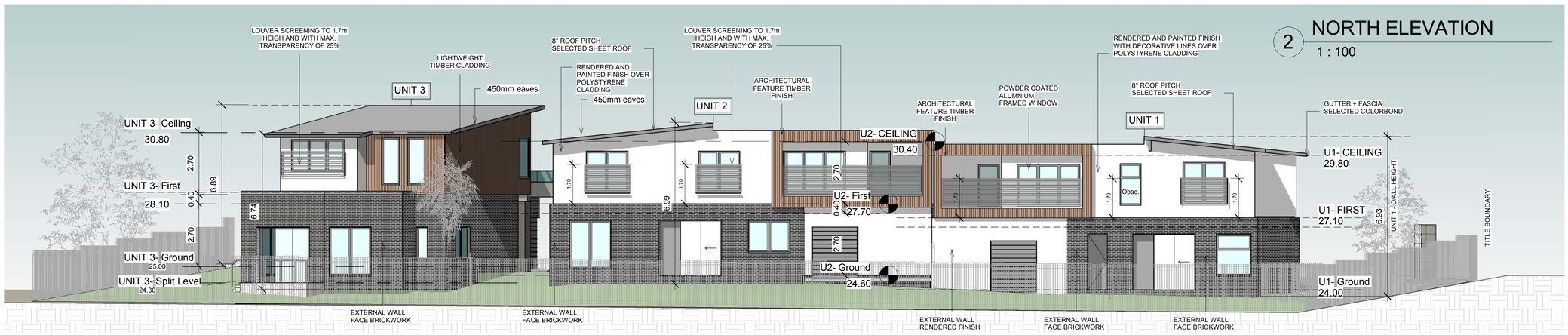
Date	03 SEP 2021	Project number	20:-
Scale	1 : 100	Drawn by	P.D
		REVISION	G



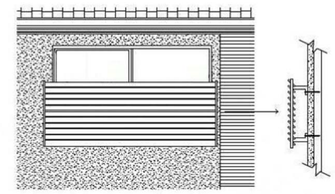
4 WEST ELEVATION
1 : 100



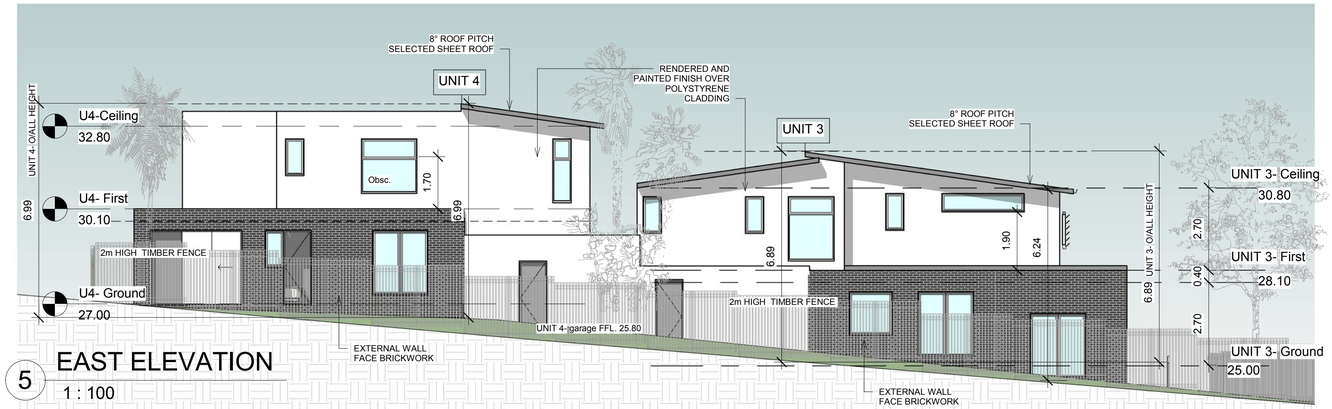
3 SOUTH ELEVATION
1 : 100



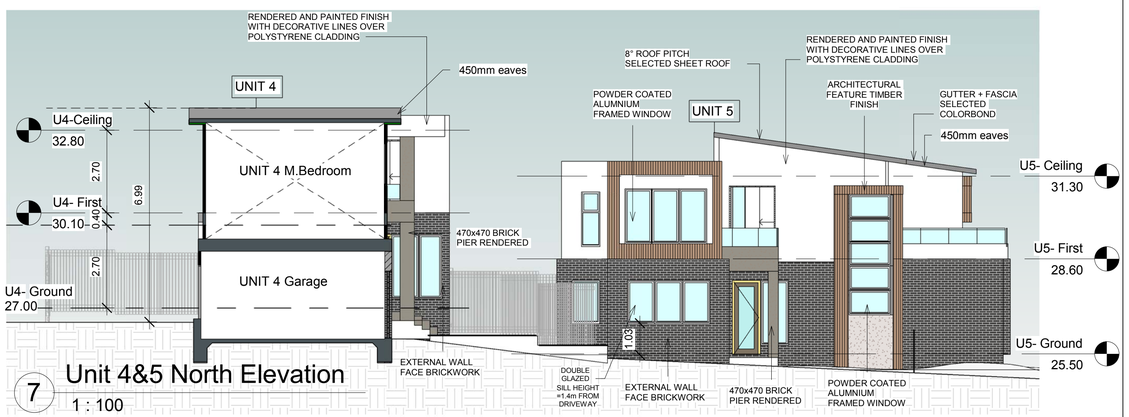
2 NORTH ELEVATION
1 : 100



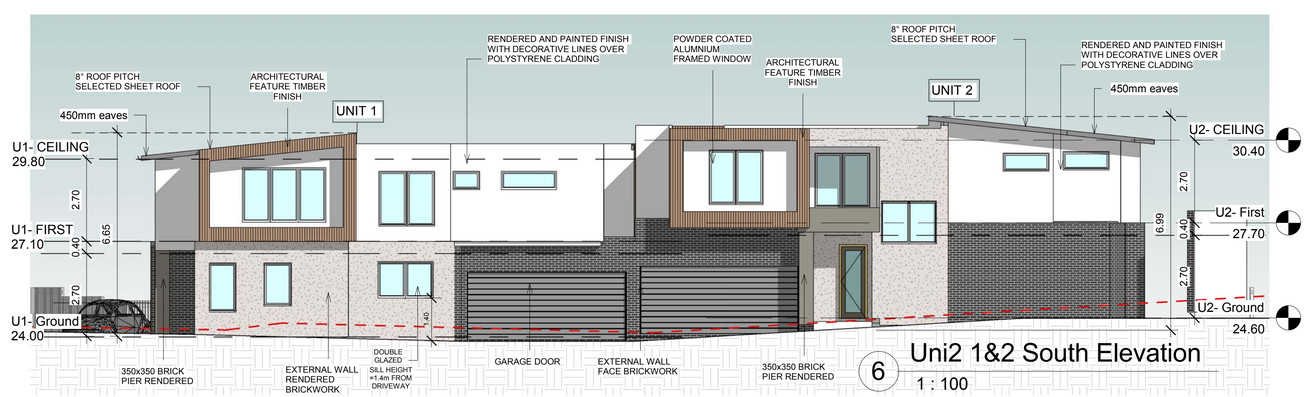
Unit 1&2 Balconey Screens used to obscure the view to be:
- vertical timber slats with a maximum of 25 per cent openings.
- Permanent, fixed and durable.
- Designed and coloured to blend in with the development.



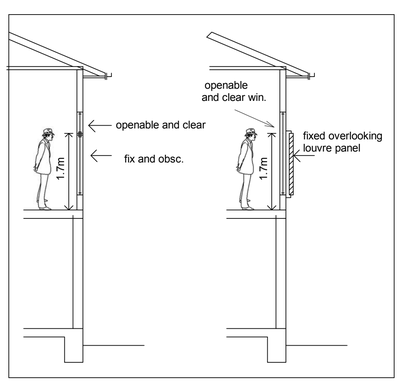
5 EAST ELEVATION
1 : 100



7 Unit 4&5 North Elevation
1 : 100



6 Uni2 1&2 South Elevation
1 : 100



THE WINDOWS TO BE SCREENED, WILL HAVE FIXED OBSCURE GLAZING (NON-OPENABLE) OR FIXED OVERLOOKING LOUVRE PANELS TO A HEIGHT OF 1.7m ABOVE FINISH FLOOR LEVEL.
ADHESIVE FILM MUST NOT BE USED

a minimum 450mm eaves to the entire dwelling to be provided

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ELEVATIONS

A-103

Date	03 SEP 2021	Project number	20:-
Scale	1 : 100	Drawn by	P.D
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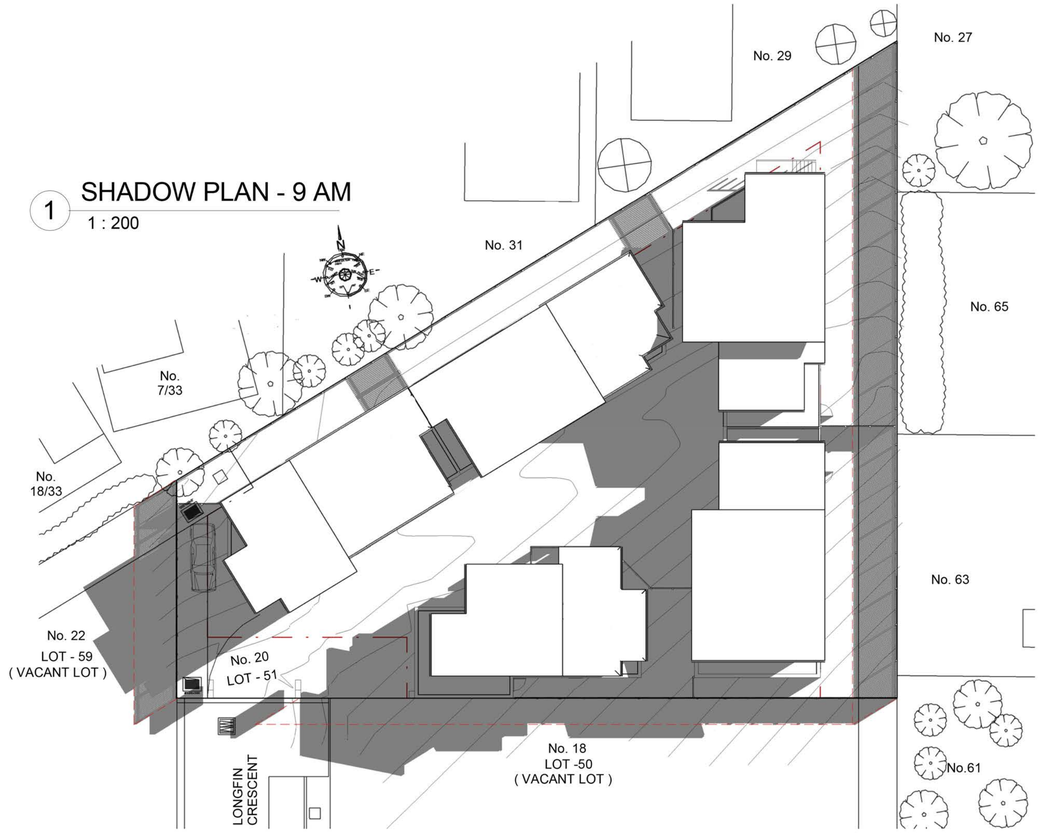
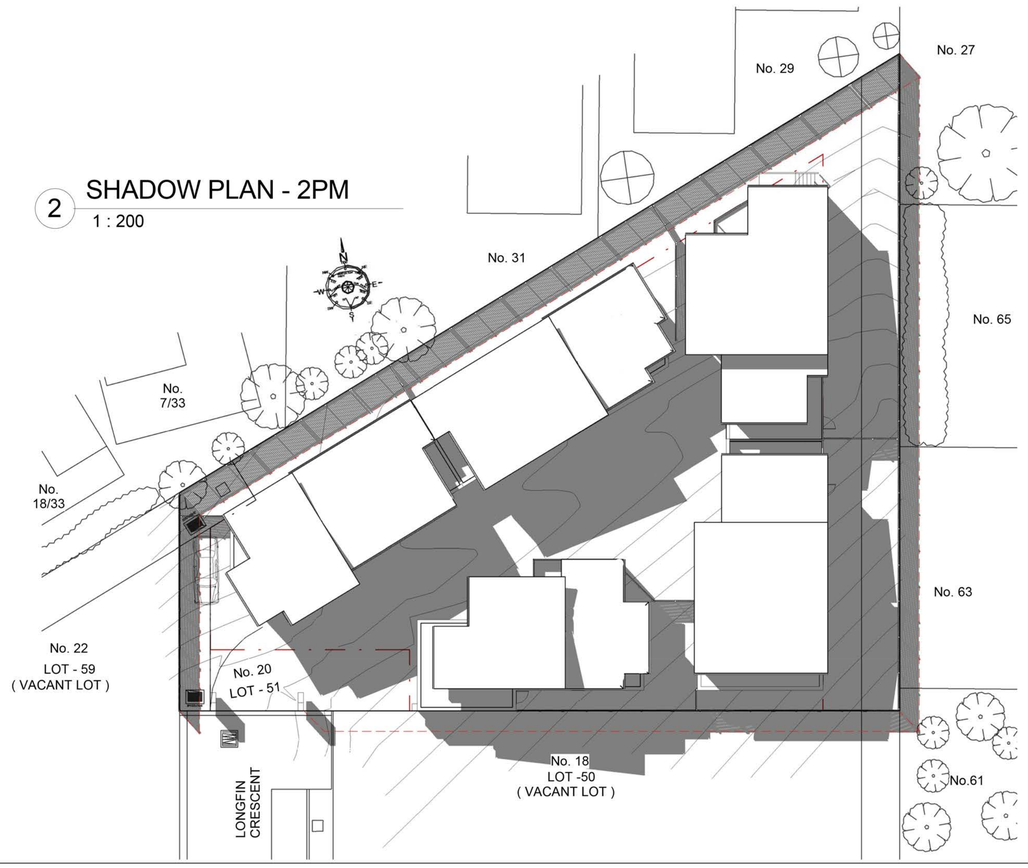
1 SHADOW PLAN - 9 AM

1 : 200



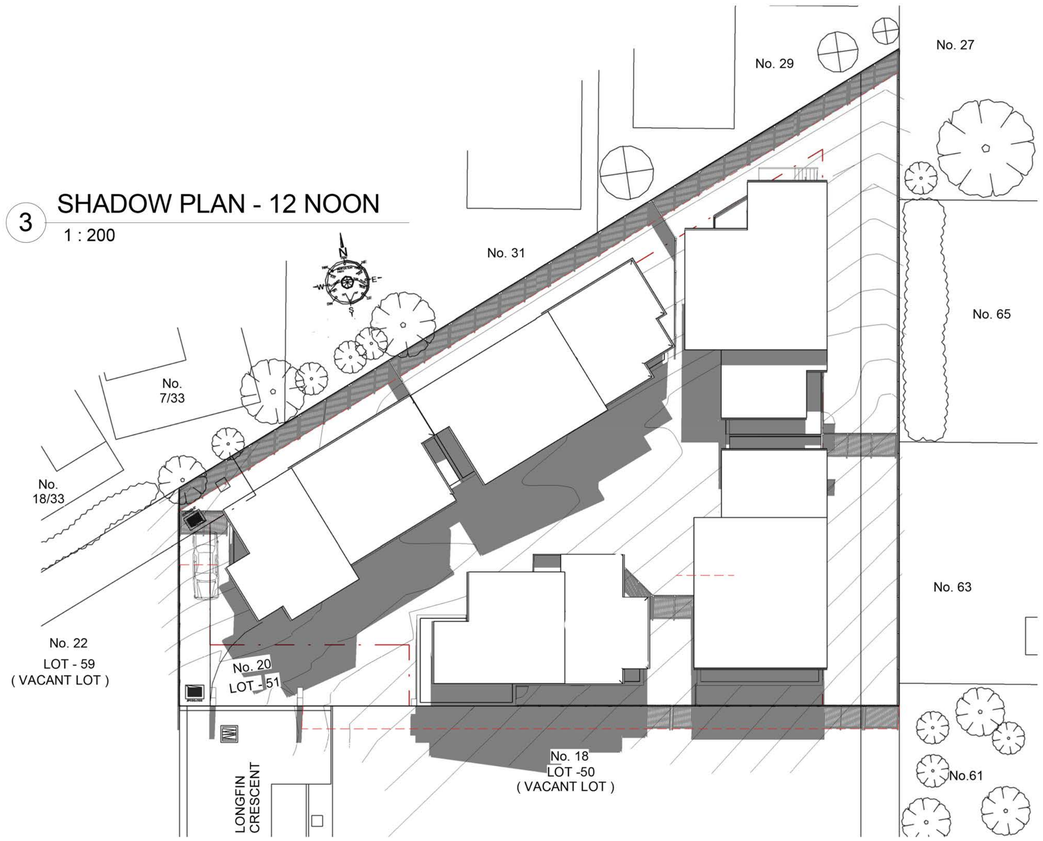
2 SHADOW PLAN - 2PM

1 : 200



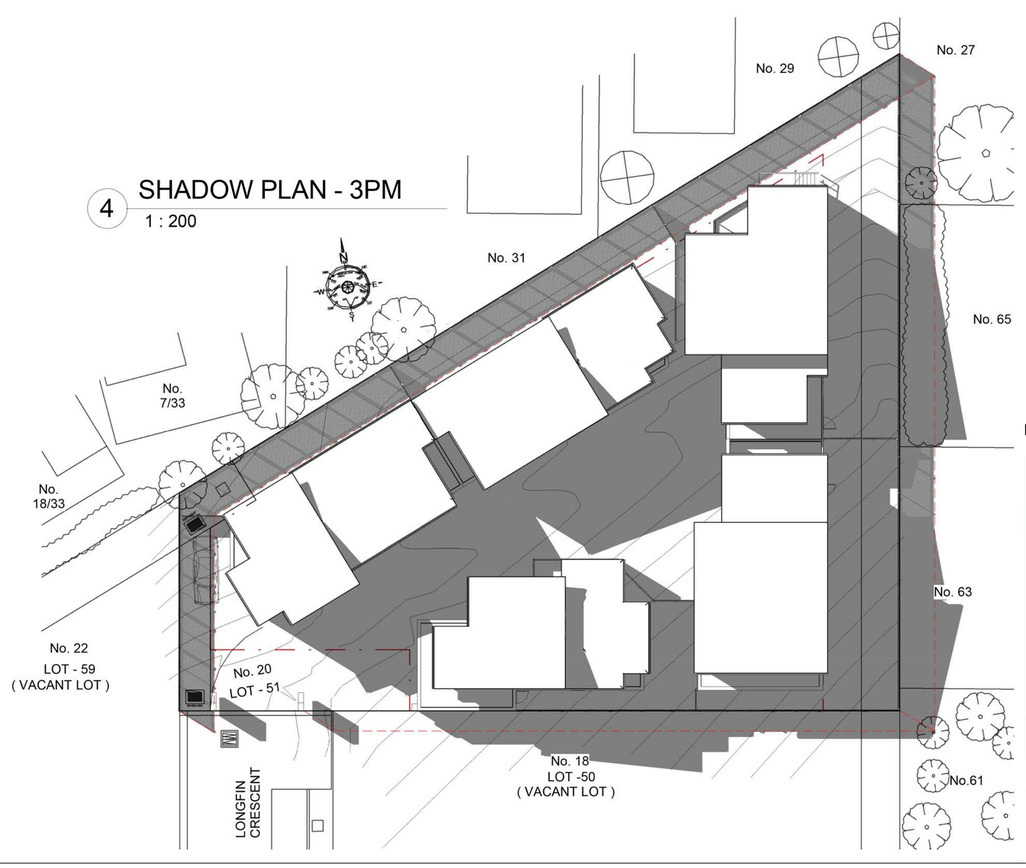
3 SHADOW PLAN - 12 NOON

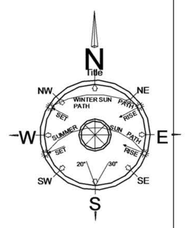
1 : 200



4 SHADOW PLAN - 3PM

1 : 200





NOTE:
ALL SHADOWS HAVE BEEN CALCULATED DURING SEPTEMBER EQUINOX

FENCE SHADOW

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SHADOW PLAN

A-105

Date	27 JUNE 2021	Project number	20:-
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MINIMUME GARDEN AREA REQUIREMENT

SITE AREA = 1343m²
MINIMUM GARDEN AREA= %35X1343= 470.05 m²

LANDSCAPE STRIP >1m WIDTH 18 m² + 33.2m² = 51.2m²

UNIT 1 P.O.S	47.7m²
UNIT 2 P.O.S	65.5m²
UNIT 3 P.O.S	168m²
UNIT 4 P.O.S	100m²
UNIT 5 P.O.S	40m²

TOTAL LANDSCAPE AREA 472.4m2 ------35.1%

1 GARDEN ARE REQUIREMENT
1 : 100

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GARDEN AREA REQUIREMENT

A-104

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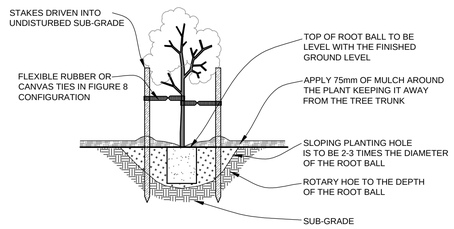
PLANTING SCHEDULE

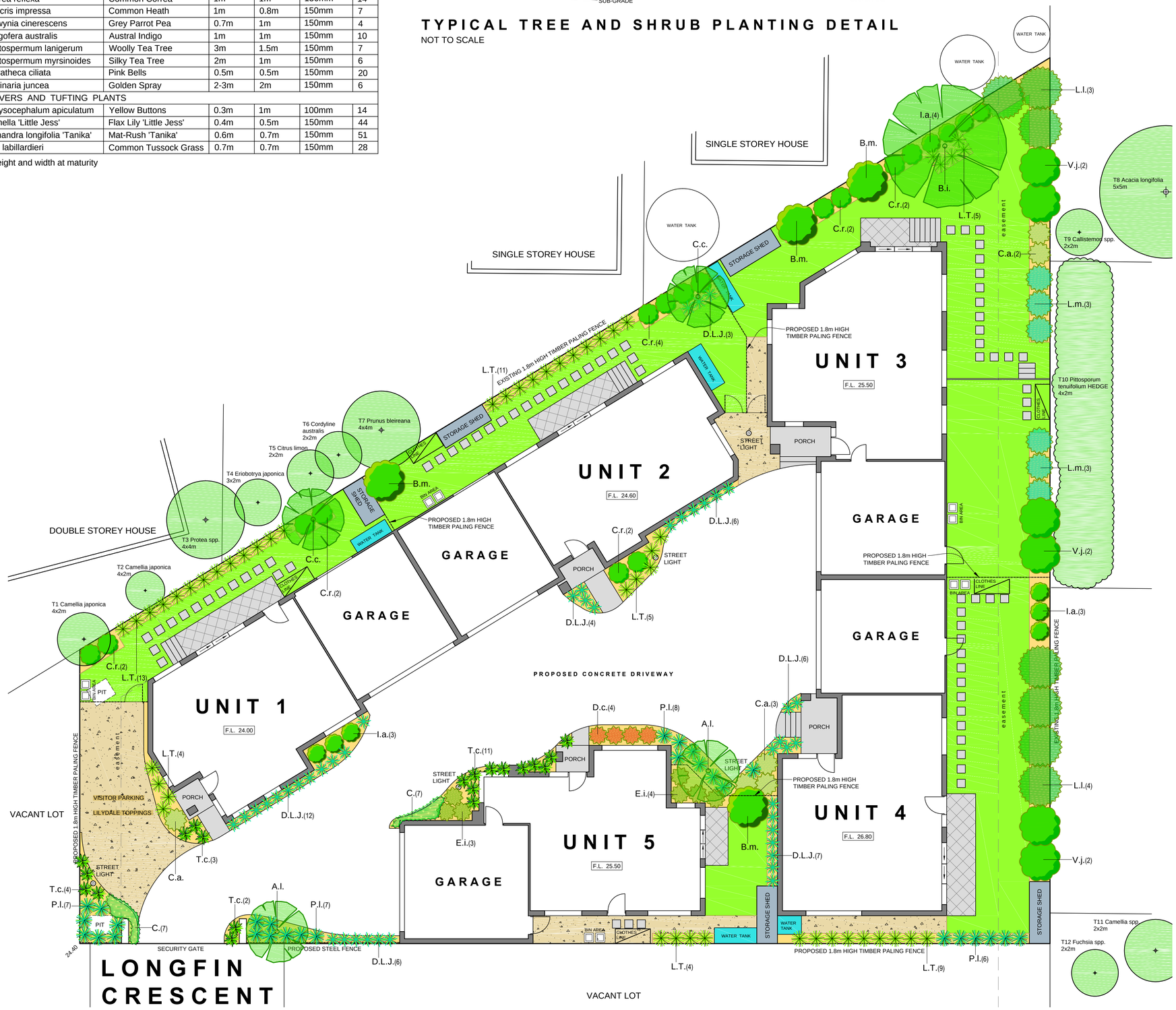
CODE	BOTANICAL NAME	COMMON NAME	HEIGHT*	WIDTH*	POT SIZE	QTY
EVERGREEN TREES						
A.l.	Allocasuarina littoralis	Black Sheoak	8m	3-4m	2m TALL	2
B.i.	Banksia integrifolia	Coast Banksia	10m	6m	2m TALL	1
C.c.	Corymbia citriodora 'Scentuous'	Dwarf Lemon Scented Gum	7m	3-4m	2m TALL	2
SHRUBS						
B.m.	Banksia marginata	Silver Banksia	5m	2m	200mm	4
C.a.	Correa alba	White Correa	1m	1m	150mm	6
C.r.	Correa reflexa	Common Correa	1m	1m	150mm	14
E.i.	Epacris impressa	Common Heath	1m	0.8m	150mm	7
D.c.	Dillwynia cinerescens	Grey Parrot Pea	0.7m	1m	150mm	4
I.a.	Indigofera australis	Austral Indigo	1m	1m	150mm	10
L.l.	Leptospermum lanigerum	Woolly Tea Tree	3m	1.5m	150mm	7
L.m.	Leptospermum myrsinoides	Silky Tea Tree	2m	1m	150mm	6
T.c.	Tetratheca ciliata	Pink Bells	0.5m	0.5m	150mm	20
V.j.	Viminaria juncea	Golden Spray	2-3m	2m	150mm	6
GROUNDCOVERS AND TUFTING PLANTS						
C.	Chrysocephalum apiculatum	Yellow Buttons	0.3m	1m	100mm	14
D.L.J.	Dianella 'Little Jess'	Flax Lily 'Little Jess'	0.4m	0.5m	150mm	44
L.T.	Lomandra longifolia 'Tanika'	Mat-Rush 'Tanika'	0.6m	0.7m	150mm	51
P.l.	Poa labillardieri	Common Tussock Grass	0.7m	0.7m	150mm	28

* Denotes height and width at maturity



TYPICAL TREE AND SHRUB PLANTING DETAIL

NOT TO SCALE



LEGEND

EXISTING TREE TO BE RETAINED

EXISTING TREE TO BE REMOVED

PROPOSED CANOPY TREE

PROPOSED SHRUBS

PROPOSED TUFTING PLANTS

PROPOSED GROUND COVERS

GRASSED AREA

GRAVEL SURFACE

SELECTED PAVING

CONCRETE SURFACE

MULCHED GARDEN BED

SELECTED PAVERS

NOTES

EXISTING TREES: Existing trees to remain are to be adequately protected during site works. Tree protection measures are to be in accordance with Australian Standard AS4970-2009 Protection of Trees on Development Sites.

TOPSOIL: Soil, if imported to the site is to be screened and free from perennial weeds. Cultivate existing site soil to 200mm depth. To garden areas spread imported topsoil to a lightly rolled depth of 150mm over cultivated site soil. To lawn areas spread imported topsoil to lightly rolled depth of 100mm. Imported topsoil to be a 70/30 mix of screened topsoil and organic compost, pH range 6-7. Apply gypsum where necessary.

TREES: All canopy trees to be a minimum 2.0 metres tall when planted.

PLANTS AND PLANTING: All plants to be healthy disease-free specimens. Over-excavate all plant holes by at least twice pot volume. Spread a slow release fertiliser to each plant hole at the manufacturers specifications. Stake and tie trees by two 2100x32x32 pointed stakes and large shrubs with one 1800x25x25 pointed stake. All ties to be flexible rubber or canvas ties in 'figure 8' configuration. Immediately after planting, water-in all plants and maintain regular follow-up watering during establishment period.

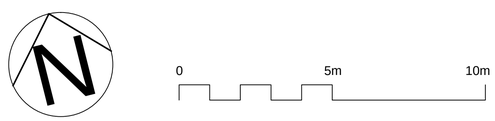
LAWN: Soil to finish as a lightly rolled layer 8mm above adjacent paved surfaces, or plinth board. Spread lawn seed at the rate of 40gms/m squared. For instant turf grass finish top soil as lightly rolled layer flush to adjacent paved surfaces. Ensure seed bed and instant turf areas are kept moist during the establishment period.

EDGING: Separate garden bed, gravel and lawn areas by a 100x20 C.C.A. treated pine plinth board pegged at 1200mm centres, or similar hard edging.

MULCH: After planting spread shredded pinewood mulch to a depth of 75mm to all garden beds.

MAINTENANCE: Maintain all garden beds in a neat and tidy condition. Regularly water garden beds and lawn areas during establishment period and during dry spells. Eradicate any weed growth.

DISCLAIMER: Bradbury Culina shall not be liable for any damage caused to the existing vegetation retained on and surrounding the site, it is the sole responsibility of the owner or builder. It is the Landscape Contractor's responsibility to locate and prove all services prior to undertaking works and various authorities are to be notified. Should any existing services be damaged during construction works, the contractor shall make arrangement for repairs. All costs for this shall be borne by the contractor.



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ABN 96 045 663 757

DESIGN BY: S.C.
DRAWN BY: S.C.

CLIENT: Kostic & Associates
PROJECT ADDRESS: Lot 51 Longfin Cres. San Remo
DATE: 17 August 2020
SCALE (@A1): 1:100

DRAWING TITLE: Landscape Plan
DRAWING NUMBER: 3429
SHEET: 1 / 1

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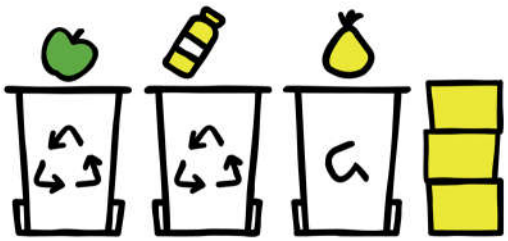

Waste Management Plan

Multiunit townhouse development

20 Longfin Crescent, San Remo

Prepared for: Kostic & Associates Pty Ltd
Prepared by: NF– Low Impact Development Consulting

DATE: 24/08/2020

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w: www.lidconsulting.com.au

Summary

1 x 240L garbage, 1 x 240L organics and 1x 240L recycling bins are recommended to be stored separately in each of the 5 proposed townhouses for a private collection service. Bins types are each to be collected on the alternate week by a private collection service from within the property boundary. It is the resident's responsibility to place bins at the designated collection points. Bins are to be returned by residents on the same day as collection occurs.

Version	Date	Description	Prepared by
1.0	28/08/2020	**For Issue**	**NF**

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The content of this document represents the entirety of work output or recommendations offered by LID Consulting for this particular project. This content supersedes all other verbal discussions undertaken by LID Consulting representatives in relation to this project. Commercial waste calculations are based on rates provided by government organisations and adopted and used as an industry standard. Bin numbers and spatial requirements have been calculated in accordance with these guidelines. The end user requirements may vary from this depending on the business use, type and operational practice.

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2.1 Residential 2
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Commercial waste calculations are based on rates provided by government organisations and adopted and used as an industry standard. Bin numbers and spatial requirements have been calculated in accordance with these guidelines. The end user requirements may vary from this depending on the business use, type and operational practice.

Collection Summary

Residential waste	**Private Collection Service – collection from onsite**	
Waste stream	**No. of bins and capacity**	**Collection frequency**
Garbage	5 x 240L	Fortnightly (alternate to Recycling)
Co-mingled Recycling	5 x 240L	Fortnightly (alternate to Garbage)
Organic Food Waste	5 x 240L	Once Weekly
Green Waste	Council Waste Facility	As Required
Hardwaste	Private Collection Service	As Required
E-waste	1 x 120L	As Required

NOTE: the approved Waste Management Plan (WMP) will be the model to be adopted for this development. Detailed design and as-built installation must incorporate the design proposed and approved under this WMP. Any revisions of the WMP or changes to the approved waste system of the development require Council approval and may require a re-submitted Waste Management Plan.

More detail is contained within this report.

1 Waste Management

A waste management analysis has been undertaken based on the:

- Sustainability Victoria Better Practice Guide for Waste Management and Recycling in Multi-Unit Developments 2018;
- Bass Coast City Council planning scheme clauses 11.06-6,19.03-5 addressing Standard B45 / D23; and
- In consultation with Bass Coast City Council's Officer Lachlan Stephenson on 21/8/2020.

The purpose of this report is to document a Waste Management Plan for the above project, as required by Statutory Planning. The report is based on A-101 & A-102 Rev A supplied by the Client.

2 Proposed Collection Solution

2.1 Residential

Break up of units	5 x 4 bed townhouses
Collection Type	Council collection service to collect all Waste Streams
Collection Location	From the collection points onsite
Bin Store Location	Rear yard of each individual townhouse

	Garbage Waste Streams	**Recycling Waste Streams**
Council residential waste allowances	Garbage – 80L per tenement per week.	Recycling – 240L per tenement per fortnight.
Estimated volume of weekly garbage and recycling per dwelling *(based on the rule of thumb on p14 of the Best Practice Guidelines and confirmed with council).	120L per townhouse per week.	240L per townhouse per fortnight.
Total estimated weekly waste volume	5 x 120L = 600L 600L of Garbage per week 1200L of Garbage per fortnight	5 x 240 = 1200L 1200L of Co-mingled Recycling per fortnight
Proposed bins and collection frequency including diverted waste streams:	5 x 240L garbage (landfill) bins collected fortnightly 5 x 240L organic food waste bins collected weekly	5 x 240L Co-mingled recycling bins collected fortnightly 1 x 120L E-waste bin emptied as required

Standard bin sizes



Size	Width	Depth	Height
80L	450mm	530mm	800mm
120L	485mm	560mm	930mm
240L	580mm	735mm	1100mm
360L	600mm	885mm	1100mm
660L	1370mm	850mm	1215mm
1100L	1370mm	1245mm	1300mm

* NOTE: size may vary between Councils and contract suppliers

Standard bin colours (refer AS4123.7)	Garbage (landfill)	Red
	Co-mingled recycling	Yellow
	Green organics	Light Green
	E-waste	Light Grey

Refer to Appendix 3 'How-to: Council Kerbside Recycling' for further information for residents to carry out better recycling practices specific to this council area.

3 Additional information

3.1 General Waste Considerations

- Space for the collection, separation and storage of waste and recyclables has been provided as appropriate.
- Collection, storage and reuse of garden waste, including opportunities for on-site treatment, where appropriate, or off-site removal for reprocessing.
- Townhouse residents are responsible for placing bins in the designated collection location on the morning of the allocated collection day. Bins are to be returned on the same day of collection.
- Utilizing the Council collection service is not possible in this instance for general waste/recycling, green waste or hard waste due to the large volume of bins to be placed on the kerbside for collection and requirement for bins to be placed in one row all 300mm apart. There is insufficient space on the nature strip.
- The private collection service is to occur on an alternate day to the Council service so that the services are not confused.
- Onsite collection is the most feasible option with a waste truck able to enter and exit the site in a forward direction traversing along the internal driveway.
- Onsite collection may be possible with many companies now collecting onsite. They use smaller 6.4m rear mini loading vehicles (Easywaste, WasteWise, Kartaway, iDump, CSC Waste) that can negotiate limited turning spaces and exit in a forward direction.

- Council will not collect from this site as there is insufficient space for a side mechanical arm service.

3.2 Green Garden Waste

- Council has a user pays green waste collection with an annual fee. If the council service for garbage and recycling is not utilized, the Council green waste service cannot be utilized. As such a private collection service will need to be arranged by residences if required.

- More commonly the private maintenance contractor will be responsible for removing any green waste from common areas and can also by arrangement, remove green waste from private spaces.

- Council currently collects combined food organics and green organics (FOGO) weekly from the kerbside but a private contractor will be required to collect from this site.

3.3 Hard waste collection

- A private collection service can be engaged for hard waste items as required, or items can be taken directly to the Council run local waste recovery:
    - Cowes Recycling Bank
    - Grantville Transfer Station
    - Inverloch Transfer Station
    - Wonthaggi Transfer Station

- Residents should liaise with body corporate to ensure hard waste collection occurs throughout the year, minimising substantial hard waste that is placed on the kerbside.

3.4 Organics (food) waste collection

- Per the Sustainability Victoria Waste Management Better Practice Guidelines where councils offer food organic collection services, these should be incorporated into the waste system to reduce garbage and landfill rates for all developments. It is expected that organics collection will become standard practice amongst all councils over the next 1-3 years, so the option for separate organics collection should be included where space allows. As a formula for allowing for space, reduce garbage volumes by 40% (representing the typical volume of garbage that is food waste) and use this 40% for calculation of how many food organics bins will be required.

- Food waste collections should occur a minimum 2-3 times per week (depending on the temperature of the bins) to avoid a build up of odour and unwanted mess.

3.5 E-Waste (electronic waste) Recycling

- As of 1st July 2019 there is a ban on e-waste to landfill in Victoria. Any item with a plug, battery or cord can no longer be placed in kerbside bins and instead must be deposited at a designated e-waste drop-off point. Electronic waste includes old mobile phones, computers, audio devices, refrigerators and other white goods, hair dryers, TVs, heaters, and air-conditioners.

- A 120L bin is to be included in every townhouse rear yard for the collection of electronic waste, for correct disposal as arranged by the individual tenant.

- Authorised electrical waste disposal locations can be found at https://recyclingnearyou.com.au/electrical. More details can also be found at https://www.sustainability.vic.gov.au/Campaigns/eWaste/Where-do-I-take-ewaste and https://www.mobilemuster.com.au

3.6 The VIC bag ban

- As of 1st November 2019 there is a ban on lightweight plastic shopping bags. All retailers including restaurants are not permitted to provide or use these plastic bags.

- The ban applies to all lightweight plastic shopping bags that have a thickness of 35 microns or less at any part of the bag, including degradable, biodegradable and compostable bags.
- The Department of Environment, Land, Water and Planning has engaged the National Retail Association (NRA) to help retailers' transition away from lightweight plastic bags.
- EPA Victoria is managing compliance monitoring and reports of suspected banned bags. Further information can be found at: https://vicbagban.com.au & https://www.sustainability.vic.gov.au/PlasticBags

3.7 Miscellaneous recycling containers

- Container(s) with drawers or number of small stackable plastic crates minimum footprint 500x500mm are to be supplied to collect recyclables such as:
  - batteries
  - light globes
  - printer cartridges
  - clothes.

  These items are to be recycled periodically as arranged by an interested tenant or the Owners Corporation eg by the maintenance or gardening contractor.

  Note in addition to Council recycling hubs and the e-waste links to over 1000 locations state-wide, Officeworks provide recycling drop-off points for printer cartridges, old IT equipment, and mobile phones.

3.8 Waste Vehicle Requirements

- A private collection service is required to collect all residential waste from within the property weekly.

- A 6.4m rear mini loader vehicle only is to enter the site from Longfin Crescent and travel to the east of the site to perform 3 point turn, then returning towards the site entrance where it will collect and empty bin from collection point at the "visitors carpark" and leave in a forwards direction.

- The waste contractor will be responsible for retrieving, emptying and returning bins to/from the bin collection points at the time of collection.

- Building Management is responsible for ensuring the waste contactor has access to the site on the days of collection.

Vehicle	**Typical size**
Rear mini loader	6.4m long x 2.35m wide truck (basement collections) – 2.2m head clearance
NOTE: Larger vehicle may need to be assessed for clearances prior to entering the site.	

4 Allowance for different rates of waste generation

- The total waste capacity exceeds the required allowance calculation by rounding up to the nearest bin size so there is built in capacity should waste levels increase beyond estimates.
- Should the garbage allowance be exceeded, the first action should be to encourage the tenants to reduce their garbage and recycle more.
- Garbage volumes can also be reduced if food waste and soft plastics are directed to recycling streams (see below).
- Should recycling be exceeded while garbage is not exceeded then, residents should be reminded to crush and flatten all cardboard boxes and plastic containers before placing these in the recycling bin(s). If this occurs effectively and there is still an issue it may be appropriate to swap a garbage bin for a recycling bin.
- A waste audit can be undertaken to understand the content of the waste bins and provide images and feedback to clients of good or poor recycling practices.
- Should recycling be exceeded then it may be appropriate to obtain an additional recycling bin.
- More space could readily be made available in the bin store / property for additional bin storage.
- More regular collections of garbage or recycling could occur.

5 Design inclusions

The WMP approved under this permit must be implemented and complied with at all times to the satisfaction of the Responsible Authority. No alterations to the WMP may occur without the written consent from the Responsible Authority.

5.1 Litter spread

- Litter spread is to be managed by ensuring garbage and recycling bins are not overloaded, and lids are always closed.
- Bins can be placed out the night before collection. Bins must be returned to the bin store area on the same day as collection.
- Litter spread is to be managed by the system of contractors collecting bins from within the property. As bins are not left outside overnight, the possibility of vandals overturning bins is removed.
- The private collection contractor's agreement should require their pickup of any waste that spills from the bins during collections.

5.2 Traffic Management

Traffic management along Longfin Crescent will not be an issue with collection occurring within the property boundary.

Engineering standards – appropriate engineering standards will need to be addressed in the detailed design stage to ensure adequate basement pavement depths and roadway widths,

heavy duty pit lids that are trafficable by collection vehicles, wider driveway splays and sweep paths.

5.3 Noise Management

Minimizing noise associated with waste collections include:

- Locating collection points at an appropriate distance from residences including minimising the need for the waste vehicle to reverse; insulating waste chutes.
- Collections occurring during the below stipulated collection times restricts the hours of noise from collections.
- Collection vehicles should not break up bottles at the point of collection, only once off site.
- Compaction of waste should only be carried out whilst waste vehicles are on the move.

5.4 Odour reduction

Odour from waste primarily emanates from bin store areas. Control of odour must occur in the bin store area with the provision of suitable natural ventilation.

- In this case, bins are stored privately within each townhouse. It is each resident's responsibility to ensure bins are maintained.
- The bin store area and bins are to be monitored and cleaned on a regular basis to remove sources of smells.

5.5 Collection Times

Collection times - **Domestic waste –** bin collection shall be in accordance with EPA and Council guidelines and shall be completed at times of least interference / inconvenience to the local amenity and traffic conditions. The EPA Noise Control Guidelines Publication 1254[1] it states:

- Collections occurring once a week are to be restricted to the hours 6 am — 6 pm Monday to Saturday
- Collections occurring more than once a week are to be restricted to the hours 7 am — 6 pm Monday to Saturday

Collection times - Waste collection from private services are best suited on an alternate day to the Council service and completed at times of least interference/inconvenience to the local amenity and traffic conditions.

5.6 Internal waste Management

- General landfill **garbage shall be placed in plastic bags** before placement into bins
- **Recycling materials are <u>not</u> to be bagged** and but are to be placed loosely into the recycling bins. (Items in plastic bags in recycling bins are not recycled). Recyclable items in domestic bin collections include:
    - Rigid plastic containers
    - Paper, cardboard

[1] https://www.epa.vic.gov.au/about-epa/publications/1254

    - Glass bottles and jars
    - Steel cans, aluminium cans and aluminium foil are among items that can be recycled.
- But exclude:
    - Plastic bags
    - Garden hoses
    - Rope (ropes and garden hoses can wrap around and damage equipment in the recycling plant).
- To improve recycling:
    - Empty containers and bottles of any leftover food or liquid. Ideally rinse them out.
    - Leave lids on everything
    - Don't squash plastic bottles or containers or put anything inside
    - Paper – if it can't be ripped, it can't be recycled due to the plastic coating.

- All waste bins are not to be placed out prior to 24 hours before the collection and to be returned to the storage are within 24hours of collection.

- **Screening of bins** – All bins are stored within the development and not visible from the street.

- **Mobile Garbage Bins (MGB's)** implemented in the development are to be in accordance with Council's specifications in terms of manufacture, composition & colour coding, and are to have required street address and stickers applied per normal Council practice.

5.7 Signage, education & safety

It will be the responsibility of the Owner's Corporation / Building Management to ensure all occupants have all of the material available to them and that they adhere to the required practices regarding waste management, sustainability and promoting waste minimization. All occupants are to operate and maintain safe practiced in all aspects involving the waste management of the development.

- All education material will be in accordance with Council requirements or if this is not available, per signage on the following website: https://www.sustainability.vic.gov.au/government/waste-management/public-place-recycling?query=signage

- Directional signage should be installed to direct occupants and bin collectors to the bin collection points.

- A "No Standing" sign effective only for the weekly hours of bin collection should be installed covering the collection zone, to ensure there is enough space for the location of all waste bins on collection day.
- **A preliminary OHS risk assessment** has been included to identify potential OHS issues, however this risk assessment does not replace the need for the building management/Owners Corporation and collection contractors to complete their own OHS assessment for the bin collection process.

6 Ongoing management

The management and maintenance of the waste system will be the responsibility of townhouse residents or owner's corporation (if any). Items to be addressed in maintaining the system include:

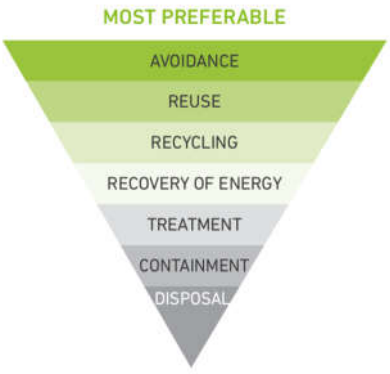
- The tenancy agreements are to outline a schedule of waste collection dates in accordance with the above parameters.
- Ensuring the waste contractor has access to the site and bin collection points on the days of collection and for also providing signage to make building occupants aware that waste vehicles enter the site.
- It is the responsibility of individual residents to bring bins from individual garages to the bin collection points on the night before collection, and also for returning the emptied bins on the collection day.
- Managing communal composting areas (if applicable)
- Provision of information to residents in relation to the requirements of using the system eg boxes to be flattened, containers for recycling washed, bagged recycling not permitted, bins to not be over-full etc
- Monitoring and feedback to residents if the system is not working properly. Undertake a waste audit should it be suspected waste is not being placed in the correct bins

7 Further Waste Reduction Measures

7.1 Sustainability Initiatives

Residents / Occupants are be made aware of Sustainability Victoria's recommendations for waste reduction www.sustainability.vic.gov.au

Where possible they should practice the waste reduction hierarchy identified in the Environmental Protection Act 1970;



The first step to reducing waste, particularly food waste is to avoid and minimise waste from occurring in the first instance. Changing purchasing habits and implementing waste avoidance include:

- Purchase only what you will consume
- Use re-usable drink bottles, lunch containers, shopping bags
- Avoid single use plastics
- Compost anything that once was alive
- Meal plan, shop seasonally, shop locally

- Sustainability Victoria provides information for households, schools and businesses alike to reduce food waste through their **Love a List Challenge.**

  Love Food Hate Waste aims to raise awareness of avoidable food waste from Victorian households. The average family in Victoria loses over $2,000 a year from wasting food. And two thirds of it could have been eaten. https://www.sustainability.vic.gov.au/Campaigns/Love-Food-Hate-Waste#Howtosavefood

- Reducing your food waste can save you money. And it helps the environment by conserving the water, energy and natural resources that are used to grow, transport

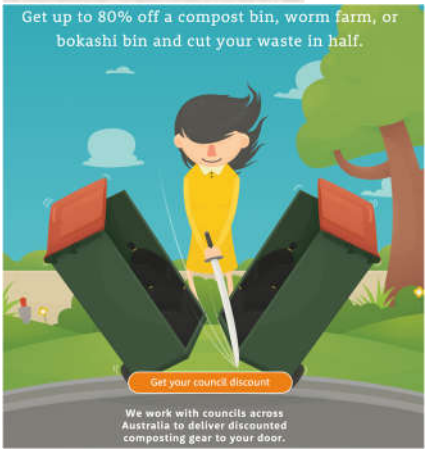
and then dispose of food waste. There are a number of resources including meal planners, recipes and you can register to take up the challenge.

- For more information about where your food goes and how you can use it, see https://backtoearth.vic.gov.au



- **Join the Compost Revolution**
  https://compostrevolution.com.au provides up to a 80% discount on a number of composting bins and accessories. It also has a range of tutorials on how to compost.

  Co-designed with councils, the Compost Revolution is a multi-award-winning program that educates and equips residents to cut their waste in half through home composting and worm farming. This platform is the only all-in-one education, infrastructure logistics and marketing program of its kind streamlining the process so that councils achieve waste and emissions reduction targets while saving money.



- Local information regarding the disposal and recycling of common household items for each Council can be found at:
  - https://www.sustainability.vic.gov.au/You-and-your-home/Waste-and-recycling/Council-waste-and-recycling-services
  - www.recyclingnearyou.com.au



- **Polystyrene** is collected for recycling by various councils.

- In addition suppliers such as **Ecycle** http://www.ecyclesolutions.net.au will deliver whitegoods and either collect clean polystyrene from retailers or take polystyrene away after delivery.

- **TerraCycle** is a national initiative where you can look up where to deposit non-recyclable waste such as contact lenses, coffee capsules, mailing satchels, toothbrushes & tubes.
  - http://www.terracyclemap.com

- Unwanted bulky items, clothes and other consumables can be donated to charities, sold on online or at second-hand local market places as is if in good condition. If repair is required, seek out repair community centres for re-purposing. Search PlanetARK for a comprehensive listing to each council.
  - https://recyclingnearyou.com.au/councils/
  - Mattress Recycle Australia https://www.mattressrecycle.com.au/ operates out of NSW but does bulk collections from Victorian councils. MRA recycles 100% of mattress materials, separating the steel, wool and fabric. The fabric is being mixed with crushed glass bottles to produce tiles – a UNSW driven production.

- Other sites that look to match unwanted items with new owners:
  - https://au.ziilch.com
  - https://www.freecycle.org
  - https://www.ozrecycle.com

- Residents or tenants can register with the **Sharewaste network** www.Sharewaste.com to find local residents who are happy to accept compostable food in their compost heaps. The website allows the parties to connect – the parties donating food scraps and the composters.

7.2 Separating Recycling

- Separation of garbage and recycling is to initially occur in each residence. For this reason, the development must include streamed waste bins (perhaps included under the sink) in each dwelling. Bin types include garbage (Landfill) waste, Recycling, Organic Food Waste, Soft Plastics.

All bins are to be placed alongside each other to ensure recycling is easy.

- Alternately, companies such as Reground do similar soft plastic collections as well as coffee grounds. https://www.reground.com.au/soft-plastic/

7.3 Organic food waste diversion options

- As 40% of domestic waste is from food, reducing the volume of food waste in bins, will assist in reducing their volume of garbage. See http://yourenergysavings.gov.au/waste/reducing-recycling/kitchen-food-waste

- Aerobic **green cone bio-digesters** are an option for some households including multi-unit developments to divert a larger range of food waste (including bread, dairy, meat and small bones). Refer to https://www.treehugger.com/lawn-garden/green-cone-solar-food-digester-will-reduce-90-food-waste-your-backyard.html


Green cone bio-digester

- Alternatively try the new **Subpod in-ground composting unit** www.subpod/com that composts faster, and ensures worms don't die off as they can sometimes in typical above ground worm farms.



Subpod in-ground compost unit

- **Compost bins and worm farms** are great way for residents to re-use kitchen waste and turn it into compost for their garden. Many Councils provide discounted packages for worm farms, compost bins and bokashi bins with free delivery.

- Council in partnership with community gardens may accept food waste that can be composted and used to grow food. Residents can register to use a community composting hub where they can take their food waste for composting for example. Capacity may be limited so registration is often

required. Partially decomposed bokashi bin contents are ideal for composting in council or community garden facilities if available.

- Food waste collections should occur on a weekly (depending on the temperature of the bins). However food waste collection rates can be reduced by fixing inexpensive bio-filter lids to the tops of 80-240L wheelie bins. These lids contain a natural compound containing micro-organisms that become active and utilize the foul smelling food fermentation gases to metabolise. Metabolisation causes the micro-organisms transform the smells into odourless carbon dioxide and water. The carbon dioxide is released into the surrounding air, and the water drips back into the waste bin. Enzymes in this water penetrate the waste and help commence the composting process in the bin. The process may not happen perfectly to remove all smells but it does reduce smells. See www.smart-biz.com.au



Worm farm – multiple layers of worm beds



Bio bin lids

7.4 Waste to Energy

Waste to Energy (WtE) is a process where waste is used to generate a usable form of energy from waste materials. Examples of usable forms of energy include electricity, heat and transport fuels. WtE may be more applicable to large precinct developments (or uses with greater control over waste volumes and contamination eg hospitals, universities, hotels).

Anaerobic digestion is the application most likely to be found in MUDs. Investigations are underway to explore the role of WtE technologies in Victoria's waste management system. The Energy from waste guideline (EPA publication 1559, published 9 December 2013) provides guidance on the thermal efficiency and regulatory requirements that apply to WtE facilities.

During the planning and design of MUDs, WtE may need to be considered in terms of physical design and disposal options.

7.5 Hospitality waste reduction

Reducing takeaway food container waste - The website Trashless Takeaway www.trashlesstakeaway.com.au lists restaurants around Australia that allow you to bring your own container to pick up your takeaway food, enabling a reduction in use of recyclable or compostable (only in some commercial composters) food containers.

8 Supplementary information

8.1 Tips for Food Organics collection

- Place all food waste direct into Council provided FOGO bins

- Keep the organics bin in a shady spot
- Use paper towel to line the bottom of plastic bags to soak up any moisture that can cause the liner to break down quicker than normal
- Double wrap meat, bones and unwanted pet food (with newspaper or paper towel) before placing in your caddy
- Line the organics bin with newspaper to aid cleaning
- Wrap fish and seafood waste (in newspaper or paper towel) and place in your freezer until your next collection is due
- Sprinkle vinegar, baking soda, charcoal or eucalyptus oil in your organics bin to combat odours
- A mix of garden and food waste helps keep bin odours under control
- Purchase a Bin Kill tag that can be attached to the inside of your organics bin. The tag emits a vapour that kills flies and maggots. The product is available from Bunnings, Coles or Woolworths supermarkets

8.2 Links

Bass Coast City Council website: http://www.basscoast.vic.gov.au
Waste collection companies in Victoria (examples only):

- Waste Wise Environmental www.wastewise.com.au (complete basement collections)
- Kartaway http://www.kartaway.com.au/melbourne/index.html (incl basement collections)
- iDump Waste Management www.idump.com.au (mini truck waste collection)
- Citywide www.citywide.com.au
- JJ Richards & Sons www.jjrichards.com.au
- KS Environmental – www.ksenvironmental.com.au
- Sita – www.sita.com.au
- Thiess Services www.thiess-services.com.au
- Wastech www.wastech.com.au
- Easy Waste - http://www.easywaste.com.au
- Waste Ninja https://www.wasteninja.com.au

Appendix 1 - Bin collection plan



Private Collection

240L Garbage Bin
735mm x 580mm
Collected Alternate Week to Recycling

240L Recycling Bin
735mm x 580mm
Collected Alternate Week to Garbage

240L Organics Bin
735mm x 580mm

120L E-Waste Bin
560mm x 485mm

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All dimensions shall be verified on site.

Project
20 LONGFIN CRESCENT
SAN REMO

Drawing
BIN STORE & COLLECTION ZONES
GROUND FLOOR

Date	Scale	Sheet Size
Reg No.	Drawn	Chk.
		CH
Job No.	Drawing No.	Revision

LOW IMPACT DEVELOPMENT
(LID) CONSULTING
Suite 7, Level 1
252 St Georges Rd
North Fitzroy Vic 3068
P 03 9016 9486
E craigharris@lidconsulting.com.au

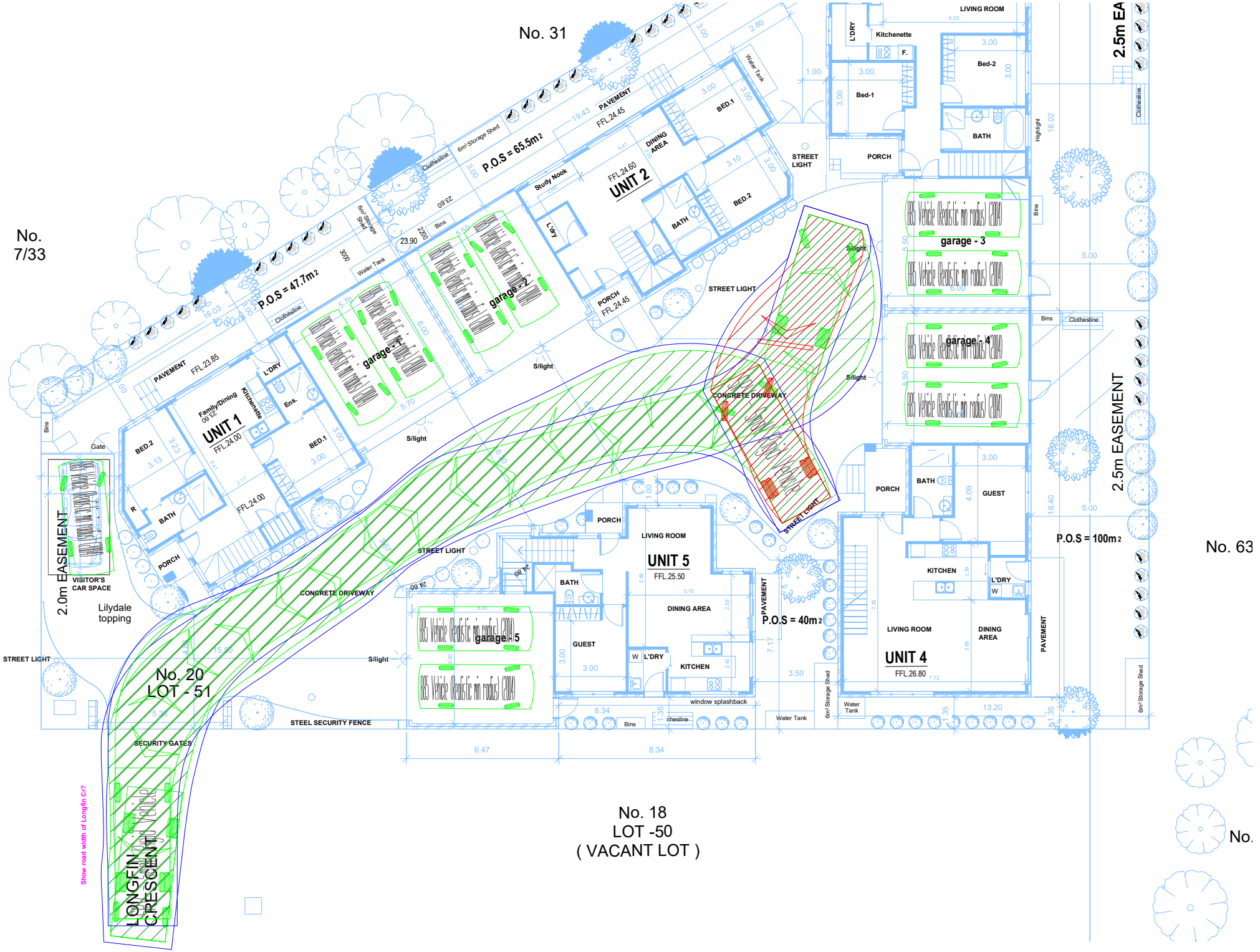
lid
cap your footprint

Appendix 2 - Preliminary risk review

Class 1 Risk = Potential to cause death or permanent injury.	**Class 2 Risk** = Potential to cause injury requiring medical attention.	**Class 3 Risk** = Potential to cause an injury treatable with first aid.

Activity	**Steps involved in completing activity & risk**	**Risk level**	**Risk mitigating measures**	**Implementation responsibility**
Moving of bins from bin store to collection point	Distance bins to be moved approx. max 40m. Risk of manual handling injuries	2	Use max bin sizes of 240L Minimise distance of travel, with the area kept free of all obstacles including loose gravel or dirt, steps, kerbs, speed bumps, berms, sills or ramps. Ensure all access points have suitably wide doorways and circulation areas.	Building Designer / Owners Corporation
Vehicle comes on site for collection	Large vehicle entering site, and reversing before exiting site. Major risk is hitting, particularly when reversing, young children, the elderly or unaware people	1	Vehicle driver entering site is to survey the site for activity. If there is no activity near reversing location, driver to execute reverse move immediately before the situation can change. If there is activity, the driver should ensure the person/persons moving on the site are aware of the pending reversing action, and have time to stay away from the reversing zone or ensure children are away from the reversing zone. Reversing should be at very slow speed. There should be no/few children/elderly people in the area. Reversing buzzers to be applied to all trucks. A "No parking" sign effective at the times of collection to be installed in the visitor space of the carpark.	Waste collection contractor / Owners Corporation

Appendix 3 - Swept Path Analysis


No. 31
No. 7/33
No. 20
LOT - 51
No. 18
LOT -50
(VACANT LOT)
No. 63
LONGFIN CRESCENT
Show road width of Longfin Cr?
UNIT 1
FFL.24.00
UNIT 2
FFL.24.60
UNIT 4
FFL.26.80
UNIT 5
FFL.25.50
P.O.S = 65.5m2
P.O.S = 47.7m2
P.O.S = 40m2
P.O.S = 100m2
garage - 1
garage - 2
garage - 3
garage - 4
garage - 5
2.0m EASEMENT
2.5m EASEMENT
2.5m EA
VISITOR'S CAR SPACE
Lilydale topping
CONCRETE DRIVEWAY
STEEL SECURITY FENCE
SECURITY GATES
STREET LIGHT
S/light
PAVEMENT
LIVING ROOM
DINING AREA
KITCHEN
BATH
PORCH
GUEST
BED.1
BED.2
Bed-1
Bed-2
Study Nook
Kitchenette
L'DRY
Ens.
Bins
Clothesline
Water Tank
6m³ Storage Shed
window splashback

PSY Inv Pty Ltd ACN 066 791 231 ABN 71 795 544 198
7 Maureen Street Mount Waverley VIC 3149
Arboricultural Consultant – Chartered Biologist
M +61 419 559658 **E** pyau@psy.com.au



ARBORICULTURAL REPORT

PROPERTY ADDRESS: **Lot-1 Panoramic Drive, 51 Longfin Crescent, San Remo**
Client: **TCG Doreen Pty Ltd ATF TCG Doreen Family Trust c/o Kostic & Assoc**

Our Ref: PSY/2020/0803
Date of Report: 03 August 2020
Tree Inspection: 03 August 2020 by Dr Peter Yau

- **Abstract Summary of the report**

The ground floor design plan provided shows there is no tree inside the subject property land.

The plan shows there is absolutely no impact on any of the neighbouring adjoining trees TPZs. There is at least 3m setback to boundary fence line, outside the TPZ of the adjoining trees.

The design plan is perfectly acceptable and can be endorsed and recommended to council approval.

All neighbours trees shall be protected according to AS4970-2009 recommendations, a summary is provided:

- **INTRODUCTION**

This arborist report has been commissioned by the client to assess trees in the adjoining lands for a proposed development of the property. The site plan is provided and attached. This report is to respond to Bass Coast Shire Council RFI:

- Consider TPZ of adjoining vegetation

- **METHODOLOGY OF TREE ASSESSMENT**

Tree Assessment Methodology was by means of VTA method (Visual Tree Assessment as per Matthecks).
Tree size DBH measurements were made with tape measure, and tree height with clinometer.
No other tools or instrumentation were used or deemed necessary in this instance.
The report is based on the format and contents in Australian Standard AS4970:2009 – *'Protection of Trees on Development Sites'*.

- **LIMITATIONS IN TREE ASSESSMENT**

All the trees are located in adjoining lands beyond arms' length reach. Their DBH figures were taken by visual best estimate only from over the fence top.

The site is a vacant piece of land with no tree on the property.

- **ARBORICULTURAL DATA COLLECTED IN ASSESSMENT**

Tree No. **1 - neighbour's tree**
Species: *Camellia japonica* (Flowering Camellia)
DBH: 100mm
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 4m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small flowering tree for greenery amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **2 - neighbour's tree**
Species: *Camellia japonica* (Flowering Camellia)
DBH: 50+50mm - double stems
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 3m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small flowering tree for greenery amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **3 - neighbour's tree**
Species: *Proteas spp* (Flowering Proteas)
DBH: 150mm
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 4m
Height: 4m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small flowering tree for greenery amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**



Tree-1+2


Tree-3

Tree No. **4 - neighbour's tree**
Species: *Eriobotrya japonica* (Loquat tree)
DBH: 100mm
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 3m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small loquat fruit tree for greenery
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **5 - neighbour's tree**
Species: *Citrus limon* (Lemon tree)
DBH: 50mm
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 2m
Health: Fair
Structure: Fair
Form: Fair
Significance: Exotic small lemon fruit tree for greenery
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **6 - neighbour's tree**
Species: *Cordyline australe* (Cabbage Palm tree)
DBH: 6x stems of 20mm
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 2m
Health: Poor
Structure: Poor
Form: Poor
Significance: Exotic small cabbage palm tree for greenery
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**


Tree-4


Tree-5


Tree-6

Tree No. **7 - neighbour's tree**
Species: *Prunus bleireana* (Flowering Prunus)
DBH: 4x 100mm - multiple trunks
TPZ: 2.4m radius
SRZ: 1.5m radius
Canopy: 4m
Height: 4m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small flowering amenity tree for greenery & amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **8 - neighbour's tree on eastern side property No.27**
Species: *Acacia longifolia* (Flowering Wattle)
DBH: 200mm - visual estimate - tree hidden behind thick foliage - invisible from subject site over fence top
TPZ: 2.4m radius
SRZ: 1.5m radius
Canopy: 5m
Height: 5m
Health: Good
Structure: Fair
Form: Fair
Significance: Native small flowering greenery tree for greenery & amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **9 - neighbour's tree on eastern side property No.27**
Species: *Callistemon spp* (Flowering Bottlebrush)
DBH: 2x 100mm - visual estimate - tree hidden behind thick foliage - invisible from subject site over fence top
TPZ: 2.0m radius
SRZ: 1.5m radius
Canopy: 2m
Height: 2m
Health: Poor - canopy in dieback condition
Structure: Fair
Form: Fair
Significance: Native small flowering greenery tree for greenery & amenity
ULE: Short (depends on future maintenance)
Retention: **Neighbour's tree to be retained**


Tree-7


Tree-8


Tree-9

Tree No. **10 - neighbour's tree-hedge on eastern side property No.65**
Species: *Pittosporum tenuifolium* (Kohuhu Pittosporum)
DBH: Multiple stems 3-4 x 80-100mm - direct measured
TPZ: 2.4m radius
SRZ: 1.5m radius
Canopy: 2m - each
Height: 4m
Health: Poor - canopy in dieback condition
Structure: Fair
Form: Fair
Significance: Exotic NZ small greenery tree for hedge screening shade
ULE: Short (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

Tree No. **11 - neighbour's tree - on eastern side property No.61 corner**
Species: *Camellia spp* (Flowering Camellia)
DBH: Multiple stems 4 x 50 - visual estimate from over fence top
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 2m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small greenery flowering tree for amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**

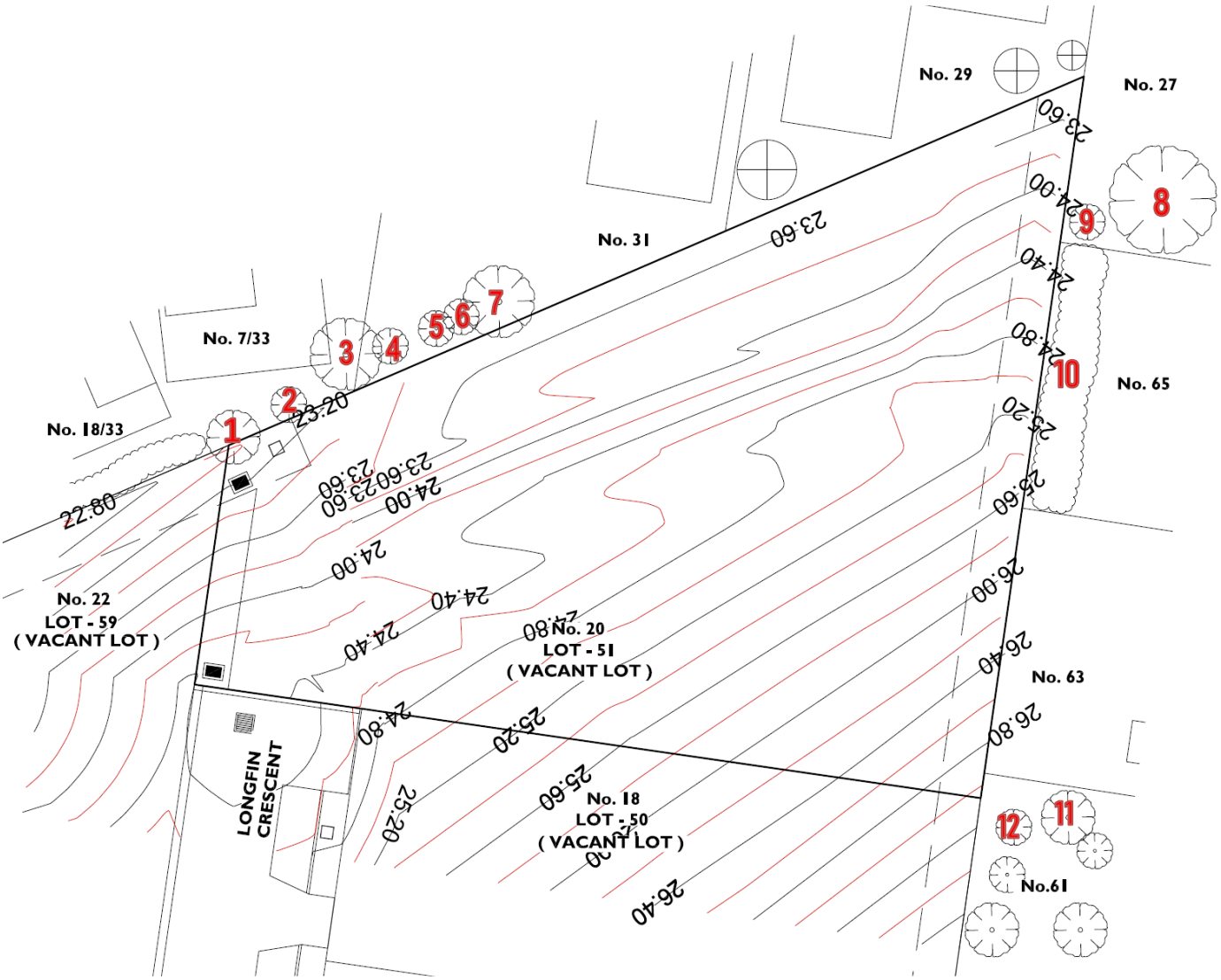
Tree No. **12 - neighbour's tree - on eastern side property No.61 corner**
Species: *Fuchsia spp* (Flowering Fuchsia)
DBH: Multiple stems 10-20 mm - visual estimate from over fence top
TPZ: 2.0m radius - minimum TPZ according to AS4970-20090
SRZ: 1.5m radius - minimum SRZ according to AS4970-20090
Canopy: 2m
Height: 2m
Health: Good
Structure: Fair
Form: Fair
Significance: Exotic small greenery flowering tree for amenity
ULE: Medium (depends on future maintenance)
Retention: **Neighbour's tree to be retained**



Trees-10 Hedge of Kohuhu



Trees 11-12



SITE SURVEY PLAN

TREE IMPACT ASSESSMENT

The ground floor design plan below has been provided - all trees inside subject site had been removed on the plan.

There is absolutely no impact on any of the neighbouring adjoining trees TPZs. There is at least 3m setback to boundary fence line, outside the TPZ of the adjoining trees.

The design plan is perfectly acceptable and can be endorsed and recommended to council approval.



• CONCLUSION & RECOMMENDATIONS

The ground floor design plan provided shows there is no tree inside the subject property land.

The plan shows there is absolutely no impact on any of the neighbouring adjoining trees TPZs. There is at least 3m setback to boundary fence line, outside the TPZ of the adjoining trees.

The design plan is perfectly acceptable and can be endorsed and recommended to council approval.

All neighbours trees shall be protected according to AS4970-2009 recommendations, a summary is provided:

STRUCTURAL ROOT ZONE (SRZ) AND TREE PROTECTION ZONE (TPZ)

SRZ is the distance calculated from AS4970-2009 formula: $R_{(SRZ)} = (D \times 50)^{0.42} \times 0.64$ (P.13). Construction should not be conducted within a tree's SRZ.

TPZ is the radial distance equivalent to 12 times a tree's DBH (Diameter at Breast Height measured at 1.4m above ground level) according to AS4970:2009 "Tree protection on development sites".

Up to 10% TPZ area encroachment is allowed under AS4970:2009. Encroachment is defined in AS4970-2009 as "excavation, compacted fill and machine trenching". If proposed encroachment is greater than 10% of the TPZ, detailed root investigation by non-destructive methods should be carried out (by hand digging, ground penetration radar, hydro or air knife excavation methods) to determine root distribution pattern and root density to the satisfaction of the project arborist that the tree will remain viable. The area lost to encroachment must be compensated for elsewhere and contiguous with the TPZ.

Crossing and driveway construction within TPZ/SRZ shall use porous permeable paving materials to allow air and water infiltration into the subsoil stratum for roots. Driveway construction must be of non-excavation method - above grade that does not damage the roots of protected trees.

Underground pipes conduits channels etc for utility services if located in the TPZ must be laid by tunneling method and NOT by open cut trench excavation.

- Physical damage to tree trunk, branches and bark by impact, fire or tearing.

  A protective fence of adequate construction around each protected tree's TPZ shall be erected and maintained throughout construction. Operators of tall machinery (eg mobile cranes, forklifts or similar equipment) working in the vicinity of the tree should take special care not to cause collision damage to the tree branches overhead.

  A strong sturdy chain-link wire fence supported by star droppers and tied with reflective warning tapes would be acceptable as an adequate protective fence for this purpose. This fenced-off area shall be known as the TPZ. The ground surface of the TPZ shall be mulched and irrigated, and a warning sign displayed on the fence to ward off potential intruders and unauthorized personnel. The protective fence may only be taken down for the duration to facilitate authorized construction works inside the TPZ, but must be reinstated at works completion at the end of the day.

  Any tree pruning, canopy uplifting or branch removal must be performed by a skilled arborist to meet approved arboricultural standards as per AS 4373-2007 *"Pruning of amenity trees*".

- Root damage

  Root damage is commonly caused by soil excavation, cut and fill, soil grade reduction, trenching or other earthworks. It is critically important not to induce any soil level changes around the protected tree, especially within the tree's TPZ. An approved arboriculturist (the project arborist) should be consulted, and be present on site to supervise any earthworks within the TPZ of the protected tree.

- Soil aeration

  Soil aeration deprivation may be caused by soil level buildup, soil compaction and waterlogging. Anoxic or hypoxic soils will kill tree roots, leading to tree mortality. No soil dumping, soil fill & stockpile, soil compacting, blockage of natural drainage patterns and the like should be allowed within the tree's TPZ.

- Soil water content changes

  Soil water content changes in both extremes of water deprivation or waterlogging can adversely affect tree health and survival.

  Site works that alter natural water table level, water flow, soil water infiltration, retention or drainage should not be permitted.

- Soil compaction

  Soil compaction by construction machinery can adversely affect soil physical properties, eg porosity, aeration, water retention, soil strength etc which in turn would affect root growth and tree health. Planks or rumble boards should be placed over mulched soil surfaces to reduce the compaction pressure of machinery tyres on soil surfaces.

- Spilling or dumping of building materials

  Spillage or dumping of building materials (eg lime, cement, concrete etc) or other chemicals (acids, petrol, oil, herbicides etc) is harmful to tree roots and can lead to tree mortality. Building materials or other toxic materials should not be stored close to or within the critical root zone of the tree. Any spillage should be cleaned up immediately and reported to the project manager.

EXPLANATORY NOTES

SIZE DIMENSIONS:

DBH (Diameter Breast Height) is a measurement of trunk diameter taken at 1.4m above ground level.
Trunk Girth is circumference measured at 1.4m above ground level or at ground level at base.

For multiple trunk trees, $DBH_T = \{ (DBH_1)^2 + (DBH_2)^2 + (DBH_3)^2 \}^{1/2}$

Canopy Spread is a measurement of canopy diameter measured from edge-to-edge of canopy drip-line.

Height is a measurement of the tree's height by clinometer.

Tree Protection Zone (TPZ) is estimated as 12 times the tree trunk DBH as per AS 4970:2009 'Protection of Trees on Development Sites' – it is a radius distance from tree trunk base

Structural Root Zone (SRZ) is estimated as per AS 4970:2009 'Protection of Trees on Development Sites' – it is a radius distance from tree trunk base

VIGOUR/HEALTH:

The health condition of the tree is classified as **Very Good**, **Good**, **Fair**, **Poor, Moribund/Dead.**

These observations are based on factors such as physical damage, broken branches, scars, root damage, rotten cavities, visible fungal bodies, branches dieback, deadwood, branch stubs, observable diseases or insect damage/infestation, foliar colour and density of the canopy, growth extension over the last year etc.

Vigour/Health:

Category	Description
Very Good	Outstanding specimen. Full & balanced canopy. Good shape and form. Foliage dense, entire with good colour, no pest/disease damage. No dieback or deadwood. Excellent growth indicators, eg extension growth.
Good	Canopy full, may be slightly asymmetrical. Foliage dense, entire with good colour, minimal pest/disease damage. Negligible quantity of deadwood (<10%). Good growth indicators, eg extension growth.
Fair	Canopy may be unbalanced. Foliage density thin, generally with good colour, some discoloration may be present. Minor pest or disease damage present. (Typical for species in location). Minor quantity of deadwood (<30%).
Poor	Major quantity of deadwood & dead/broken limbs (>30%). Foliage density thin & sparse, may be severely defoliated, wilting, chlorotic or necrotic, may have excessive epicormic or basal sprout growth. Serious pest/disease damage, and stress level leading to tree decline.
Dead Moribund	Tree is moribund or dead, totally defoliated or no live-foliage and green bark on the tree. Bark may be peeling off trunk-branch.

STRUCTURE:

The structure of the tree is classified as **Very Good**, **Good**, **Fair**, **Poor, Dead**.

These observations are based on factors such as canopy balance and symmetry, straight or leaning trunk, single or multiple trunks, bifurcated codominants with included bark, risk of branch drop or tree collapse, presence of decay in trunk or roots, evidence of instability etc.

Structure:

Category	Description
Very Good	Excellent branch attachment, no structural defects. Trunk straight, sound and solid, with no exposed wounds, cavities and decay. No damage to roots, and good root buttressing. Good trunk and scaffold branch taper. No branch over extension.
Good	Good branch attachment with minor structural defects. Trunk straight, sound, may show minor non-hazard wounding. No damage to roots, with good buttressing.
Fair	Some minor structural defects and/or minor damage to trunk. Regenerated crown after severe pollarding. Bark torn and missing on main trunk or branches. Cavities and decay may be present. May have minor damage to roots not threatening tree stability. May have slight leaning and slightly lopsided canopy.
Poor	Major structural defects eg trunk bifurcation with included bark, cracked or split branches, pollarded canopy not regenerated, trunk/branch damage and/or missing bark, large rotten cavities, girdling or damaged roots that destabilize the tree. Root buttress not visible above ground. Serious lean, not straight growing. Canopy halved and lopsided.
Dead	Dead tree poses imminent risk or high hazard risk

SHAPE/FORM:

The shape and form of the tree is classified as **Good**, **Fair**, **Poor**.
These observations are based on factors such as canopy shape, balance and symmetry, straight or leaning trunk, single or multiple trunks.

Category	Description
Good	Single upright straight tree trunk. No leaning. Well-balanced full density symmetrical canopy.
Fair	Multiple trunks. Tree with minor leaning (<30 degrees off vertical). Slightly lopsided unbalanced canopy. Regenerated canopy after lopping/pollarding.
Poor	Tree trunk with serious leaning (>30 degrees off vertical), tree trunk with kinking, twisting, Canopy lopped/pollarded. Canopy halved, badly leaning and/or lopsided. Tree top cut off for overhead powerlines clearance or top dieback, or blown off in strong winds.

SIGNIFICANT TREES

This rating is to be used to rate the significance of trees in the area.
Trees that are of State or National significance would normally be registered by The National Trust or Heritage Council and would be identified as such.

Local Councils planning scheme may have separate listings of Significant Trees in the Municipality.

Trees may be considered as significant if they fall into one or more of the following categories:-

- Exceptional size and/or age
- Rare or threatened/endangered species.
- Unusual shape or form
- Aboriginal cultural value
- Heritage or Historic value
- Exceptional example of a species.
- Genetical Biodiversity Value
- Outstanding feature in the landscape
- Habitat Value.

Generally trees are described according to their flowering and foliage amenity, greenery contribution, shade, shelter, screening, or being classified as noxious weeds or **environmental weeds.** Council has a published list of environmental weeds for residents education purposes.

USEFUL LIFE EXPECTANCY (ULE)

Long	Over 50 years
Median	10-50 years
Short	Under 10 years

RETENTION

High	Retention recommended
Median	Retention/Removal Optional
Low	Removal recommended
Remove	Removal a matter of necessity or urgency



Dr Peter Yau ***MSc(Oxon) PhD(Melb) CBiol FRSB***
Adjunct Professor – Dept of Horticulure & Landscape, Faculty of Design & Environment - THEi (HK)
Arboricultural Consultant

3 AUGUST 2020

Summary of Author's qualifications and experience

(a) I (Dr Peter Yau) am the arboriculturist who prepared this arborist report.

(b) My qualifications include:

a. Bachelor of Science (Honours) in Botany & Biochemistry – Hong Kong University, HKG
b. Master of Science (Forestry/Arboriculture) – Oxford University England, UK
c. Doctor of Philosophy (Forestry/Arboriculture) – Melbourne University Victoria AUST
d. Graduate Diploma in Business Administration – Swinburne University of Technology, Victoria Australia
e. Chartered Biologist (CBiol) & Fellow of Royal Society of Biology (FRSB) UK
f. Editorial Board Member (1995-2008) of Arboricultural Journal (International Journal of Urban Forestry) Arboricultural Association of UK.

My professional experience in arboriculture includes:

a. 1976-1995 Arboriculturist of the Melbourne City Council being responsible for the policy and management issues relating to the planting, maintenance, removal, transplanting, protection, preservation of all trees within the municipal district of the City of Melbourne. Also appointed to membership of Victorian state government task force for Elm tree diseases.

b. 1995- now Arboricultural Consultant to public and private sector clients eg
   i. Office of The Governor, Government House, Victoria
   ii. Energy & Water Ombudsman of Victoria
   iii. Public Transport Ombudsman of Victoria
   iv. Municipal Councils in Victoria and NSW
   v. State Government - Places Victoria (Former VicUrban)
   vi. Private property developers, architects, planners, lawyers etc
   vii. Hong Kong Government – Leisure & Cultural Services Department (LCSD), Agriculture Forestry & Conservation Department (AFCD), MTR Corporation
   viii. Appointed Member of Expert Panel of Tree Management Office, Development Bureau, Hong Kong Government, 2011-2016
   ix. Appointed Member of Arboriculture-Horticulture Industry Development Advisory Committee – Tree Management Office, Development Bureau, Hong Kong Government 2020-2022
   x. Appointed Member of Applied Science Discipline Advisory Board of the HK Vocation Training Council (VTC) and Adjunct Professor of Faculty of Design & Environment THEi (Technology & Higher Education Institute, Hong Kong)
   xi. P.R. China – Registered Foreign Expert

My academic experience in arboriculture includes:

c. Adjunct Professor of Faculty of Design & Environment, THEi (HK)
d. External Lecturer in Arboriculture – Burnley College, The University of Melbourne
e. External Examiner of Post-Graduate Research Degree Thesis
f. I have given arboricultural training courses, keynote addresses and presentations to national and international conferences, workshops and seminars nationally and internationally, and I have published peer-reviewed papers in international journals in arboriculture. I have written critique reviews on other scientists' books, publications and papers.

Disclaimer

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Any alteration to any part of the document unless authorized by or undertaken by the author will invalidate the entire document.

All observations made and all information provided in this document represents the assessor's personal professional opinion based on the trees' conditions **at the time of inspection** only.

Except as otherwise stated in the report, all observations and assessments are made by visual inspection (VTA – Visual Tree Assessment of Matthecks) conducted at ground level only.

All comments made are based on current professional scientific knowledge and available published research findings.

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DEVELOPMENT OF FIVE (5) DWELLINGS AT
PANORAMA DRIVE, SAN REMO VIC 3925 (LOT 1 TP629597)
BASS COAST CITY COUNCIL
PLANNING PERMIT NO: 200141

LEGEND		
POS	-	PRIVATE OPEN SPACE
RWT	-	RAIN WATER TANK
DP	-	DOWN PIPE
IL	-	INVERTED LEVEL
FL	-	FINISHED FLOOR LEVEL
IO	-	INSPECTION OPENING
EP	-	EXISTING COUNCIL SW PIT
FSL	-	FINISH SURFACE LEVEL
GSL	-	GROUND SURFACE LEVEL
—•——•—	-	COUNCIL STORM WATER PIPE
— — — —	-	UPVC STORM WATER PIPES
—▪—▪—	-	CHARGED PIPE
→	-	FLOW DIRECTION
⟶	-	FINISHED SURFACE SLOPE
——AG——	-	AGGI PIPE

STORMWATER DRAINAGE PLAN NOTE:

1. PROVIDE 100 MM DIA UPVC PIPE SEWER GRADE WHERE NO SIZE IS SPECIFIED FROM DOWN PIPES, WITH INSPECTION OPENINGS.

2. MIN FALL TO 100 & 150 DIA STORM WATER PIPE IS TO BE 1 IN 100

3. DP-DENOTES POSSIBLE DOWN PIPE LOCATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE, STYLE & CORRECT LOCATIONS. ALL WATER TANKS, DOWN PIPES AND STORM WATER DRAINAGE ARE TO BE INSTALLED IN ACCORDANCE WITH B.C.A. AND PLUMBING INDUSTRY ASSOCIATION STANDARDS CURRENT AT THE TIME OF CONSTRUCTION.

4. ALL WORKS TO BE DONE IN ACCORDANCE WITH BASS COAST CITY COUNCIL SPECIFICATIONS & STANDARD DRAWINGS.

5. PRIOR TO THE COMMENCEMENT OF ANY STORM WATER DRAINAGE WORKS, THE CONTRACTOR SHALL VERIFY THE INVERT LEVEL (SHOWN ON THIS DRAWING) AT THE DOWNSTREAM END OF THE DOCUMENTED OUTFALL DRAIN. IF THAT LEVEL VARIES FROM THAT SHOWN ON THE DRAWING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT MANAGER.

THE CONTRACTOR NEED TO GET ROAD OPENING PERMIT/ ENGINEERING PERMIT FROM THE LOCAL COUNCIL PRIOR TO START ANY WORK OUTSIDE THE PROPERTY BOUNDARY

6. GRATED SURFACE DRAINS TO BE PROVIDED WHERE LANDSCAPING PREVENTS RUN OFF SURFACE WATER.

7. ALL INTERNALS DRAINAGE WORKS MUST BE IN ACCORDANCE WITH AS/NZS 3500.3.2:1998 STORMWATER DRAINAGE- ACEPTABLE SOLUTIONS.

8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LOCATION AND LEVEL OF ALL EXISTING SERVICES ON SITE PRIOR TO COMMENCING CONSTRUCTION. ALLOW FOR ANY PROTECTION TO EXISTING SERVICES REQUIRED BY AUTHORITIES. ANY SERVICE DAMAGED BY THE CONTRACTOR SHALL BE REINSTATED BY HIM AT HIS OWN EXPENSE.

9. PRIOR TO THE COMMENCEMENT OF ANY WORK BUILDING OVER EASEMENT APPROVAL IS REQUIRED IF ANY WORK OR STRUCTURE IS PROPOSED OVER THE EASEMENT.

10. ALL VEHICLES CROSSING TO COMPLY WITH RELEVANT AUTHORITY SPECIFICATIONS.

11. ALL DISTURBED AREAS TO BE COVERED WITH 100MM TOP SOIL AND SEEDED WITH GRASS AS DIRECTED. NO TOPSOIL TO BE REMOVED FROM THE SITE.

12. CARE MUST BE TAKEN WHEN BREAKING INTO COUNCIL DRAINS, KERBS AND CHANNELS AND FOOTPATHS AND IT IS THE CONTRACTORS' RESPONSIBILITY TO ENSURE THESE ARE REINSTATED TO THE SATISFACTION OF THE COUNCIL. ALL REQUIRED PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS.

13. WHERE PIPES ARE LOCATED UNDER CAR-PARK AND ROADWAY, TRENCHES ARE TO BE BACK FILLED AND COMPACTED WITH 20MM CLASS 2 FINE CRUSHED ROCK BEDDING. COMPACTED IN 150MM LAYERS TO 95% MODIFIED COMPACTION IN ACCORDANCE WITH AS 1289 5.2.1.

15. PROPOSED VEHICULAR CROSSING MUST BE FULLY CONSTRUCTED TO THE SATISFACTION OF RESPONSIBLE AUTHORITY.

16. PRIOR TO COMMENCEMENT OF THIS DEVELOPMENT, BUILDING PERMIT MUST BE OBTAIN FROM REGISTERED BUILDING SURVEYOR.

17. IT IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER AND BUILDING SURVEYOR TO ENSURE THAT ALL BUILDING DEVELOPMENT WORKS APPROVED BY ANY BUILDING PERMIT IS CONSISTENT WITH THE PLANNING PERMIT.

18. BEFORE REMOVING/PRUNING ANY VEGETATION FROM THE SITE, THE DEVELOPER SHOULD CONSULT COUNCIL'S VEGETATION MANAGEMENT OFFICE TO VERIFY IF A LOCAL LAWS PERMITS IS REQUIRED FOR THE REMOVAL OF SUCH VEGETATION.

19. DRIVEWAY IS TO BE SHAPE TO PREVENT OVERFLOWS ON TO ADJACENT PROPERTIES.

20. THE NATURE STRIP, KERB AND CHANNEL VEHICLE CROSSOVER AND FOOTPATH MUST BE REINSTATED TO THE SATISFACTION OF THE RESPONSIBLE AUTHORITY.

SUBSURFACE DRAINAGE

1. PROVIDE 90MM DIA AGI DRAIN ALONG THE RETAINING WALL , WITHIN THE PROPERTY BOUNDARY AT 1 IN 100 MIN SLOPE.
2. PROVIDE SCORIA ROCK AROUND AGI PIPE AND ALSO AGI PIPE TO HAVE SILT SOCK.
3. CONNECT THE AGI PIPE TO NEAREST DOWNSTREAM PIT

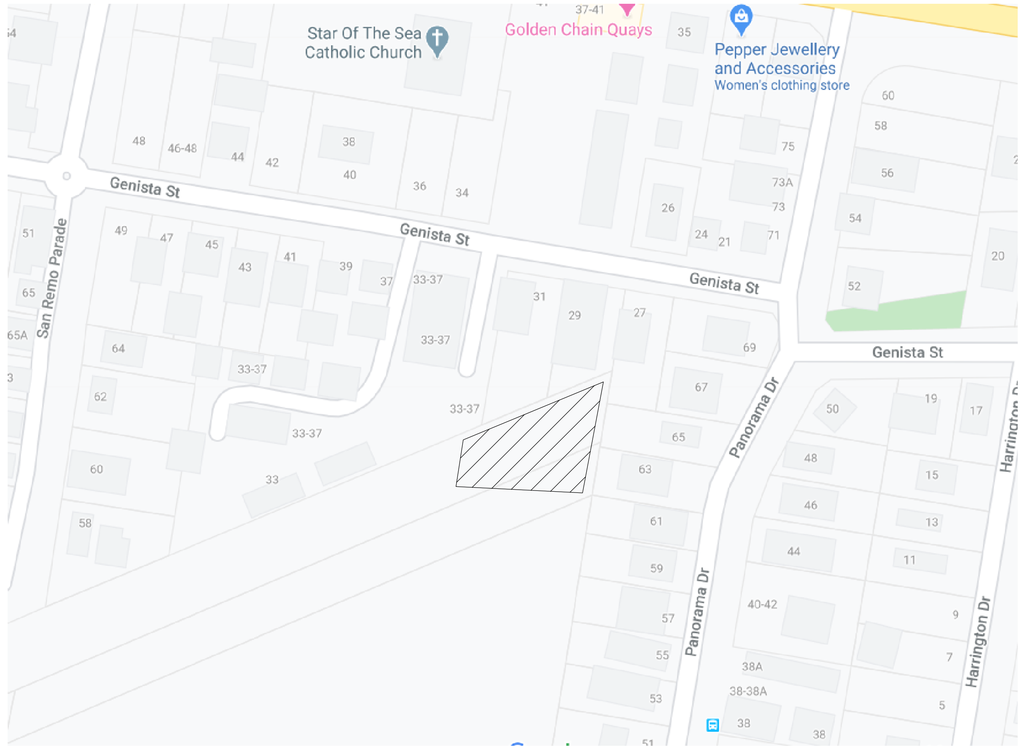
BUILDER MUST ENSURE AND DO NOT UNDERMINE THE BOUNDARY FENCE. PART OF AGI PIPE & RETAINING WALL MUST NOT ENCOURAGE IN TO THE ADJOIN PROPERTY AND COMPLETELY LOCATED WITHIN THE PROPERTY BOUNDARY.

AGI PIPES TO BE PLACED AT BACK OF RETAINING WALL (HIGHER SIDE)

CONCRETE

CONCRETE CRUSHING STRENGTH AT 28 DAYS SHALL BE AT LEAST :-
PAYING WORKS 32 MPA
DRAINAGE WORKS 25 MPA
REINSTATEMENT AND CLEANUP

CONTRACTOR SHALL REINSTATE ALL EXISTING ASSETS AFFECTED BY THE WORKS AND CLEAN UP TO THE SATISFACTION OF THE RELEVANT AUTHORITIES AND THE ENGINEER



LOCATION MAP (NTS)

DESIGN	U.W.	DRAWING TITLE	NORTH
CHECK	R.K.	STORM WATER DRAINAGE PLAN - GENERAL NOTES	
SCALE	1:100(A1)		
JOB No	5610	PROJECT TITLE	
DRG No	D0	DEVELOPMENT OF FIVE DWELLINGS AT PANORAMA DRIVE, SAN REMO VIC 3925	
REV	A		
DATE	03/08/2020		

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STORMWATER PIT DETAILS								
PIT	NO	INT SIZE (mm x mm)			DEPTH (mm)	SURFACE LEVEL (m)	IL OF PIT (m)	REMARKS
P	1	1300	X	600	**760**	23.40	22.64	ORIFICE PIT , CLASS D GRATE FOR INLET CHAMBER
P	2	900	X	600	**1220**	23.90	22.68	GRATED PIT, CLASS D GRATE
P	3	900	X	900	**1270**	24.00	22.73	GRATED PIT, CLASS D GRATE
P	4	900	X	900	**1310**	24.10	22.79	GRATED PIT, CLASS D GRATE
P	5	450	X	450	**590**	25.30	24.71	GRATED PIT, CLASS D GRATE
P	6	450	X	450	**480**	23.60	23.12	GRATED PIT, CLASS A GRATE
P	7	450	X	450	**500**	23.45	22.95	GRATED PIT, CLASS A GRATE
P	8	450	X	450	**530**	23.55	23.02	GRATED PIT, CLASS A GRATE
P	9	450	X	450	**450**	23.60	23.15	GRATED PIT, CLASS A GRATE
P	10	350	X	350	**450**	25.30	24.85	GRATED PIT, CLASS A GRATE
P	11	350	X	350	**450**	26.20	25.75	GRATED PIT, CLASS A GRATE
P	12	350	X	350	**450**	25.05	24.60	GRATED PIT, CLASS A GRATE
P	13	350	X	350	**450**	25.70	25.25	GRATED PIT, CLASS A GRATE
LEGAL POINT OF DISCHARGE IS EXISTING COUNCIL STORMWATER PIT IN THE PROPERTY EASEMENT - NORTHWEST CORNER								

LPD IS EXISTING COUNCIL STORMWATER PIT(P19) LOCATED IN THE REAR NORTH WEST CORNER WITHIN THE PROPERTY EASEMENT.

CONNECTION TO COUNCIL PIT MUST BE TO THE SATISFACTION OF CITY OF BASS COAST COUNCIL.

PRIOR TO START ANY CONSTRUCTION WORK , CONTRACTOR MUST COMPLETE THE CONSTRUCTION OF PROPERTY CONNECTION TO LPD TO THE SATISFACTION OF CITY OF BASS COAST.

CONTRACTOR MUST VERIFY THE INVERT LEVEL OF THE PIT AT THE CONNECTION POINT PRIOR TO START ANY CONSTRUCTION WORK.

IF THAT LEVEL VARIES FROM THAT SHOWN ON THE DRAWING, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER FOR RE DESIGN.

BUILDER MUST ENSURE AND DO NOT UNDERMINE THE BOUNDARY FENCE.
PART OF AGI PIPE & RETAINING WALL MUST NOT ENCROACH IN TO THE ADJOIN PROPERTY AND COMPLETELY LOCATED WITHIN THE PROPERTY BOUNDARY.

AGI PIPES TO BE PLACED AT BACK OF RETAINING WALL (HIGHER SIDE)

SUBSURFACE DRAINAGE

1. PROVIDE 90MM DIA AGI DRAIN ALONG THE RETAINING WALL , WITHIN THE PROPERTY BOUNDARY AT 1 IN 100 MIN SLOPE.
2. PROVIDE SCORIA ROCK AROUND AGI PIPE AND ALSO AGI PIPE TO HAVE SILT SOCK.
3. CONNECT THE AGI PIPE TO NEAREST DOWNSTREAM PIT

ALL INTERNAL DRAINAGE WORKS MUST BE IN ACCORDANCE WITH AS/NZS 3500.3:2018 STORMWATER DRAINAGE

INFORMATION FROM "1100 DIAL BEFORE YOU DIG" SERVICE & RELAVENTAUTHORITIES SHOULD BE OBTAINED IN WRITING BEFORE ANY CONSTRUCTION IS COMMENCED.

TPZ NOTE:

ONLY HAND EXCAVATION OR BORING IS PERMITTED WITHIN IN THE TPZ.

ROOT DIA >30MM MUST NOT BE CUT.

ALL THE WORK WITH IN THE TPZ MUST BE TO THE SATISFACTION OF RESPONSIBLE AUTHORITY.

1. PROVIDE 100 MM DIA PIPE WHERE NO SIZE IS SPECIFIED FROM DOWN PIPES, WITH INSPECTION OPENINGS.

2. MIN FALL TO 100 & 150 DIA STORMWATER PIPE IS TO BE 1 IN 100

DOWN PIPE LOCATIONS ARE INDICATIVE ONLY AND CAN BE CHANGED TO SUIT SITE CONDITIONS AT THE PLUMBER'S DISCRETION. SPREADER DOWNPIPES TO BE INSTALLED FOR UPPER STOREY UNITS AT CONVENIENT. PROVIDE BOX GUTTER IF REQUIRED TO MANUFACTURER REQUIREMENTS.

BOX GUTTER NOTES:

1. U.N.O MINIMUM BOX GUTTER SIZE IS 300MM X 150MM.
2. RAINHEAD TO BE PROVIDED PARALLEL TO THE FLOW DIRECTION IN THE BOX GUTTER.
3. IF RAINHEAD IS PROVIDED PERPENDICULAR TO THE FLOW DIRECTION, THEN MINIMUM 150MM SUMP TO BE PROVIDED IN THE BOX GUTTER WITH VERTICAL OUTLET PIPE. AND THEN THE VERTICAL OUTLET PIPE CAN BE CONNECTED TO RAIN HEAD.
4. PROVIDE BULKHEAD TO HIDE THE VERTICAL PIPE IF REQUIRED. (TYPICAL FOR ALL BOX GUTTERS).

WORKS WITHIN THE ROAD RESERVE REQUIRE SEPARATE ROAD OPENING PERMIT & TAPPING FEE NEED TO BE PAID TO COUNCIL FOR STORMWATER CONNECTION BEFORE START ANY WORK.

SHAPING THE DRIVEWAY SO THAT STORM WATER IS COLLECTED IN A GRATED PIT

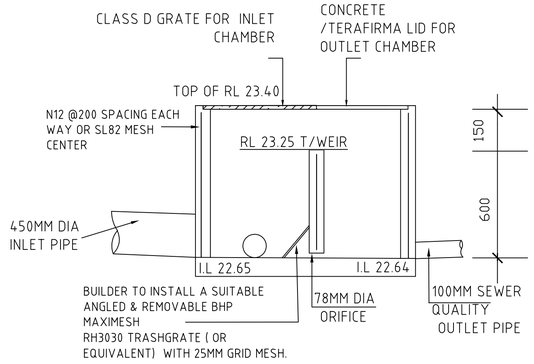
OVERFLOW OF THE RAINWATER TANK MUST BE CONNECTED TO THE NEAREST PIT (TYPICAL FOR EACH TANK)

2000L RWT FOR TOILET FLUSHING AND GARDEN USE.

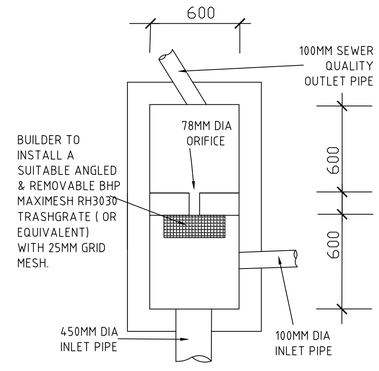
DESIGN	U.W.	DRAWING TITLE
CHECK	R.K.	STORM WATER DRAINAGE PLAN
SCALE	1:100(A1)	
JOB No	5610	PROJECT TITLE
DRG No	D1	DEVELOPMENT OF FIVE DWELLINGS AT PANORAMA DRIVE, SAN REMO VIC 3925
REV	A	
DATE	07/08/2020	

NORTH

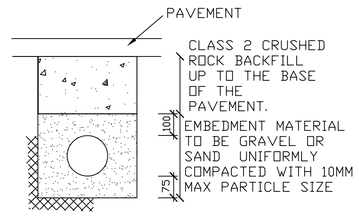
TSK CONSULTANT PTY LTD
CIVIL ENGINEERING
8 GRAHAM ROAD
KNOXFIELD VIC 3180
PH: 0423 019 527
Email: info@tskconsultant.com.au



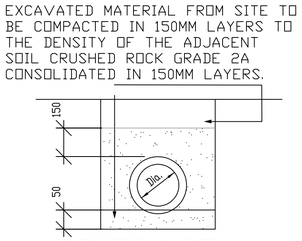
ORIFICE PIT P1 SECTION (NTS)



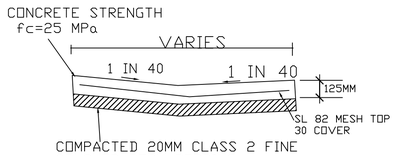
ORIFICE PIT P1 PLAN (NTS)



TYPICAL TRENCH DETAILS UNDER THE PAVEMENT (NTS)



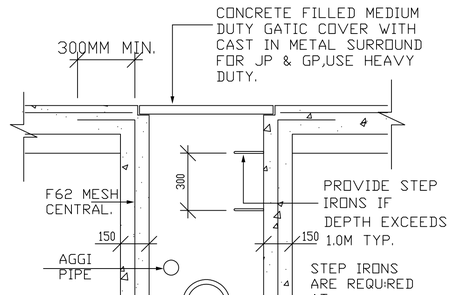
PIPE TRENCH DETAIL UNDER LANDSCAPE (NTS)



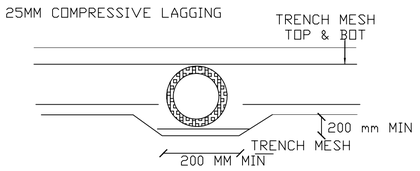
CONTRACTION JOINT REQUIRED EVERY 1500MM.
EXPANSION JOINTS ARE REQUIRED AT THE CORNERS, AT EVERY CHANGE OF GRADE, AT EVERY CHANGE IN PAVEMENT THICKNESS AND AT EVERY 15M INTERVALS.
EXPANSION JOINT RESIN BONDED CORK STRIP TO BE PLACED AT THE BUILDING/PAVEMNET INTERFACE.
SAW CUT 3MM WIDE 40MM DEEP FOR CONSTRUCTION JOINT.2-3 DAYS AFTER POURING, AT FIVE METER MAXIMUM GRID.

TYPICAL CONCRETE DRIVEWAY CROSS SECTION (NTS)

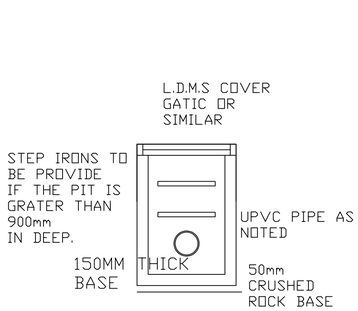
CONCRETE EDGE STRIP (NTS)



JUNCTION / GRATED PIT DETAIL (NTS)



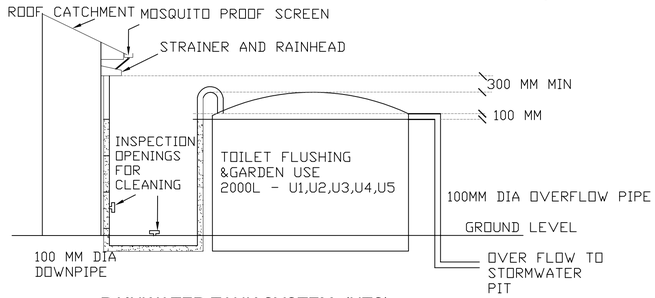
PIPE PENETRATION DETAILS THROUGH FOOTING



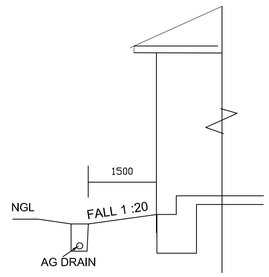
TYPICAL PIT SECTION (NTS)

2000L RWT SIZE FOR U4
KINGSPAN TANK OR SIMILAR
1560mm height
1200mm width
1200mm length

2000L RWT SIZE FOR U1, U2, U3, U5
ALL OZ TANK OR SIMILAR
2170mm height
620mm width
2000mm length



RAINWATER TANK SYSTEM (NTS)



SURFACE DRAIN DETAIL (NTS)

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CHECK	R.K.	STORM WATER DRAINAGE PLAN - SECTION DETAILS	CIVIL ENGINEERING
SCALE	1:100(A1)		
JOB No	5610	PROJECT TITLE	**8 GRAHAM ROAD**
DRG No	D2	DEVELOPMENT OF FIVE DWELLINGS AT PANORAMA DRIVE, SAN REMO VIC 3925	**KNOXFIELD VIC 3180**
REV	A		**PH: 0423 019 527**
DATE	03/08/2020		*Email: info@tskconsultant.com.au*

Job Address: **20 Longfin Crescent, San Remo**

STORMWATER DETENTION SYSTEM

Total Site Area =	1343	m^2	
% of site area for impermeable area =	30	%	
Existing Roof & Pavement Area =	403	m^2	C = 0.9
Existing Lawn/Garden area =	940	m^2	C = 0.35
Average C for existing =	**0.35**		
Proposed Roof Area =	560	m^2	
Proposed Pavement area =	290	m^2	
Total Impervious Area =	850	m^2	
Total Pervious Area =	493	m^2	
Average C for new Development =	**0.61**		

For critical point in catchment tc= 5 mins

Return period = 1 in 5 years

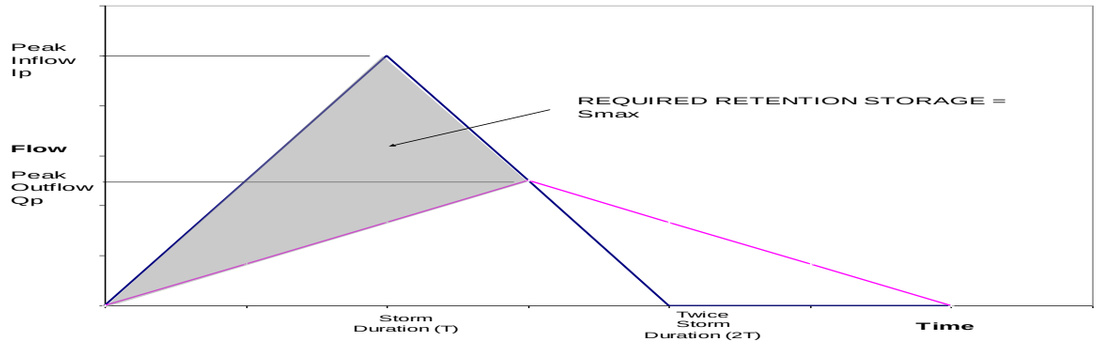
From Charts for: I = 88 mm/hr

Qexisting = CIA/360

= 0.30*87.7*0.1343/360

Flow to be restricted as per rational formula is = 9.82 l/s

CALCULATION OF DETENTION PARAMETERS USING
BOYDS FORMULA



$$S_{max} = V_1 (1 - Q_p/I_p)$$

S_{max} = Maximum Volume of temporary Storage (m^3)
V_1 = Volume of inflow flood (m^3)
I_p = Peak discharge of inflow hydrograph (m^3/s)
Q_p = Peak discharge of outflow hydrograph (m^3/s)

Catchment Area (A) =	0.1343	ha
Runoff Coefficient Post development =	0.63	
Effective Catchment Area = ∑CA =	0.09	ha
Restricted outflow requirement for 5yr ARI =	0.00982	m^3/s

Storage requirement is highest value of S_{max} calculated in the table below
Critical storm duration is the storm duration when S_{max} occurs

Storm Duration (min)	10 Year Intensity (mm/hr)	I_p (m^3/s)	Q_p (m^3/s)	V_1 (m^3)	S_{max} (m^3)
4	112	0.03	0.01	6	4.0
5	103	0.02	0.01	7	4.3
10	75.3	0.02	0.01	11	4.8
15	61.3	0.01	0.01	13	4.2
20	52.5	0.01	0.01	15	3.1

1 1in 10 year detention storage required is 4.8m3

Therefore provide 1 in 10 year detention storage underground ie,
underground min storage required is 4.8m3

Flow to be restricted as per rational formula is = 9.82 l/s

Outlet Design

Assuming pipe acts as an orifice and pits don't overflow from lids

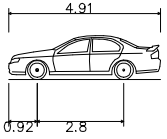
Q =	limiting discharge =	9.82	l/s
C =	discharge co-efficient =	0.6	
g =		9.81	m/s^2
H =	head of orifice =	0.60	m
using D = (((4*Q)/(PI*C*((2*g*H)^0.5))^0.5 =		77.93	mm
	Size of the orifice Diameter is	78	mm

Storage required as per boyds formula is= 4.80 m^3

Total detention storage allowable in RWTS is =	0	0	m3
Min undergroundstorage required is =	4.8-0=	4.80	m3
PIT1 Storage =	0.6x0.6x0.6=	0.22	
PIT2 Storage =	.9x0.6x0.57=	0.31	
PIT3 Storage =	.9x0.9x0.52=	0.42	
PIT4 Storage =	.9x0.9x0.46=	0.37	
1x450mm Dia Pipe Pit P1& P2=	ı.45)^2/4x5x1	0.79	
1x450mm Dia Pipe Pit P2& P3=	ı.45)^2/4x8x1	1.27	
1x450mm Dia Pipe Pit P3& P4=	ı.45)^2/4x9x1	1.43	
Total underground storage provided is =		**4.81**	>4.8
Total detention storage allowable in RWTS is =		**0.00**	>0
Total Storage Volume Provided		**4.81**	>4.8
Total =		**4.81**	**m^3**

Exceeds storage req'ts….OK!!!





B85 Vehicle (Realistic min radius) (2004)

Overall Length	4.910m
Overall Width	1.870m
Track Width	1.770m
Kerb to Kerb Turning Radius	5.750m
Max Speed	5km/h
Vehicle Body Forward	Green
Vehicle Body Reverse	Red
300mm Clearance	Blue

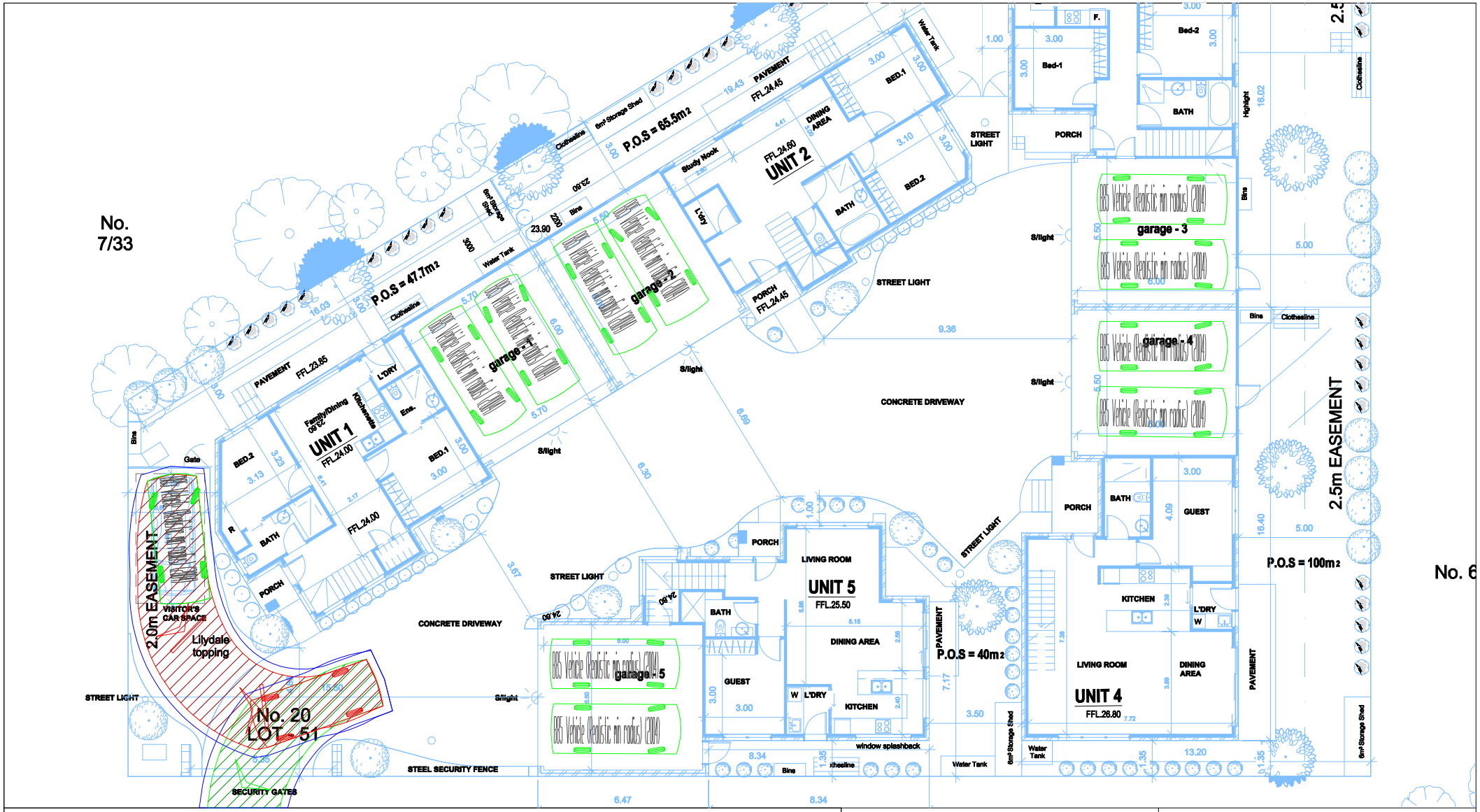
Note: Landscaping to be restricted to 150mm max height from accessway level within blue clearance line of swept paths

Title:

20 Longfin Crescent
San Remo

Dwg No:	Z3178ATR3
Date:	13/08/20
Checked:	AZ
Scale:	1:200@A4

3T8
Engineered By Zav Pty Ltd
Suite 313 / 1 Princess Street
Kew VIC 3101
Ph: (03) 9853 6624



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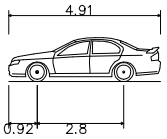

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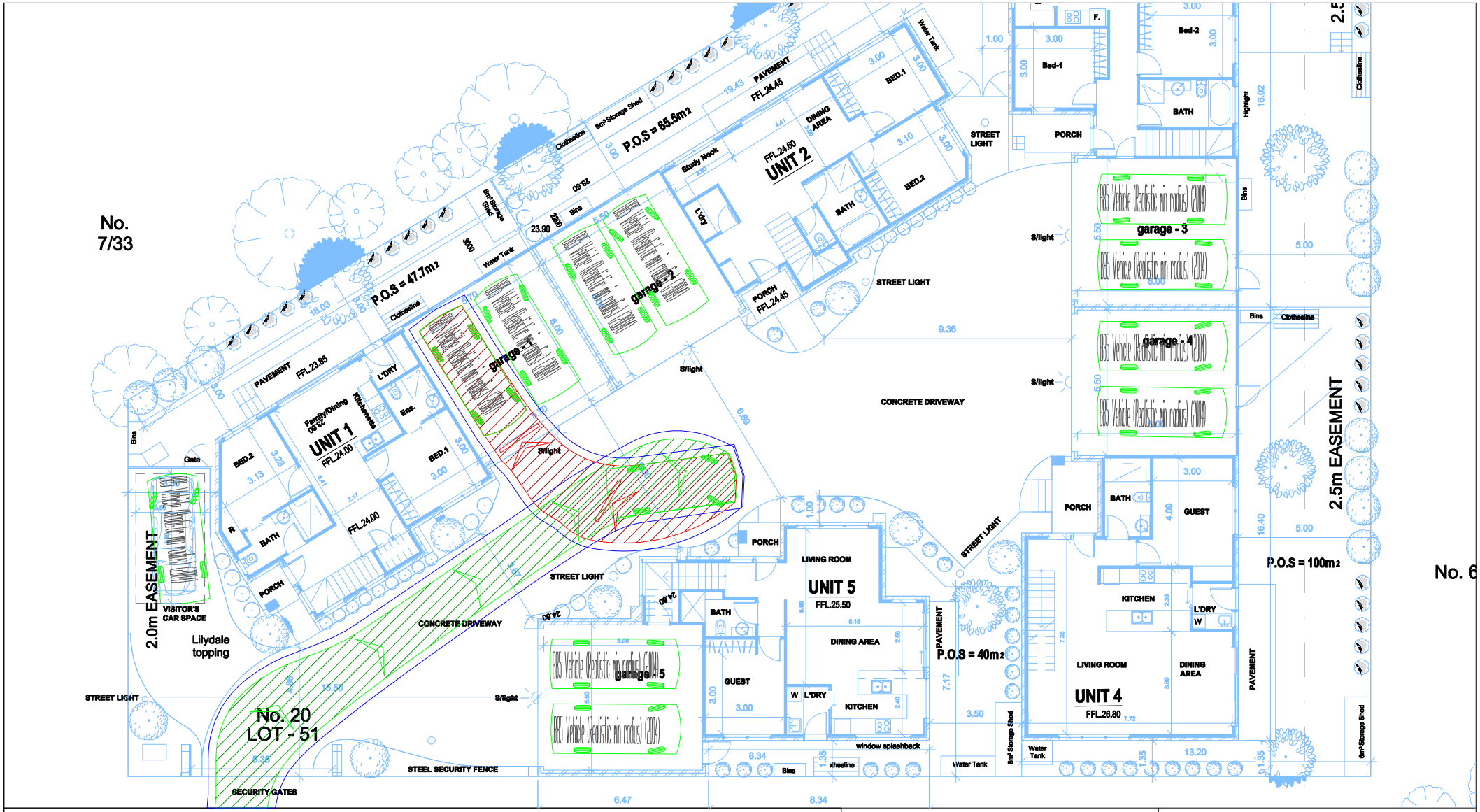

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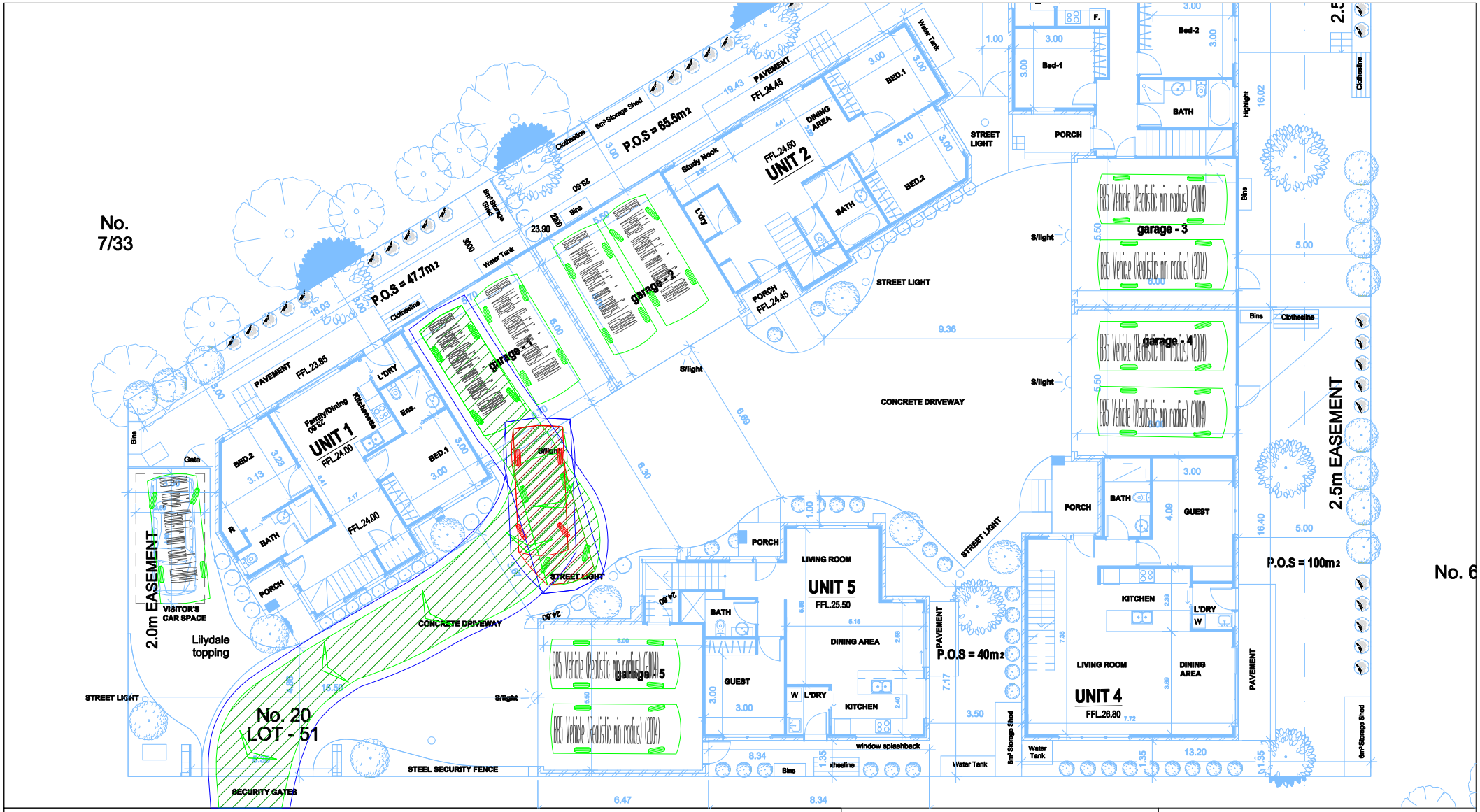

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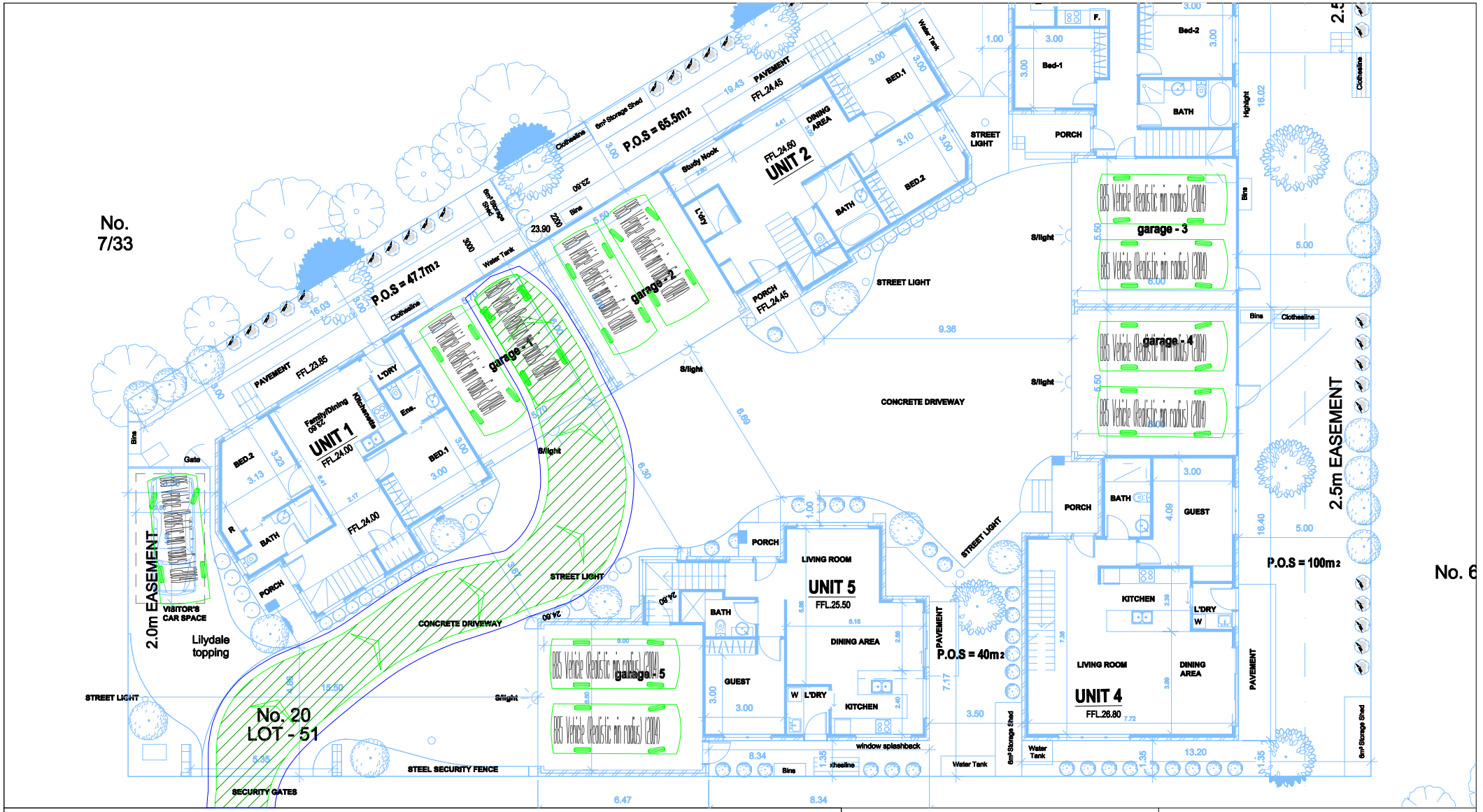

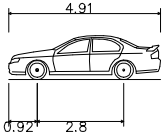

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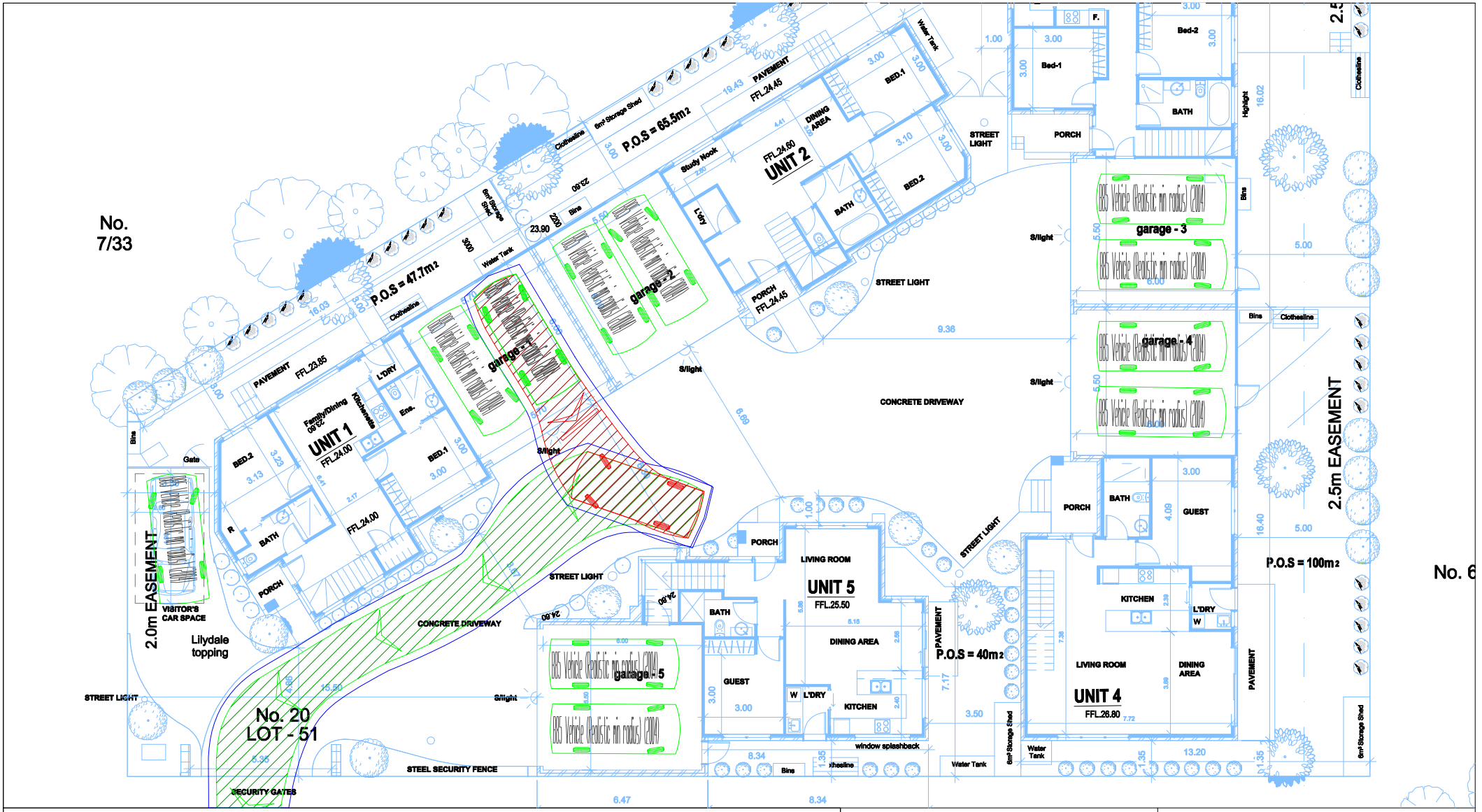

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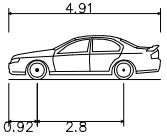

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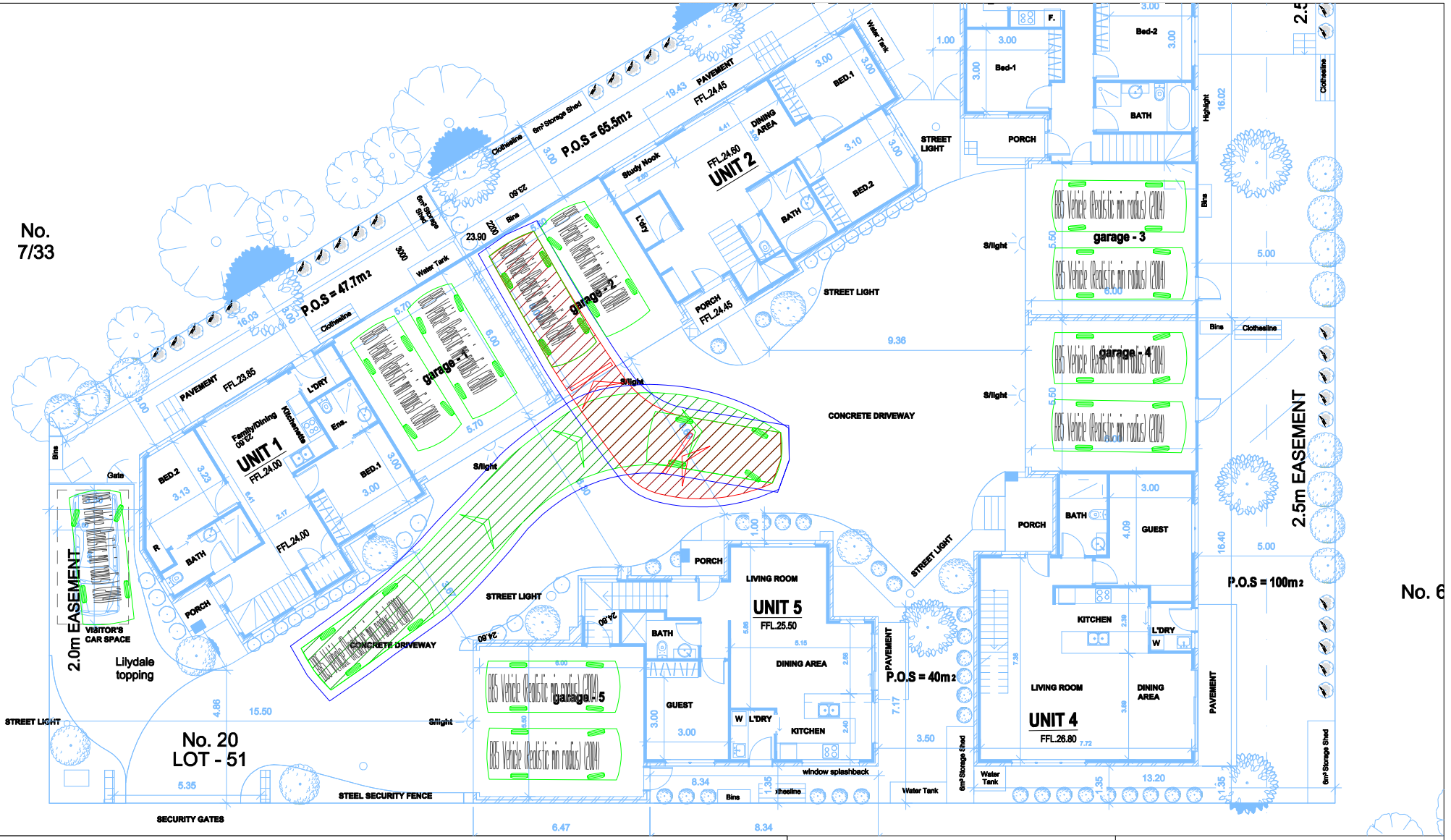

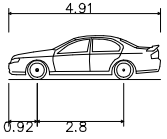

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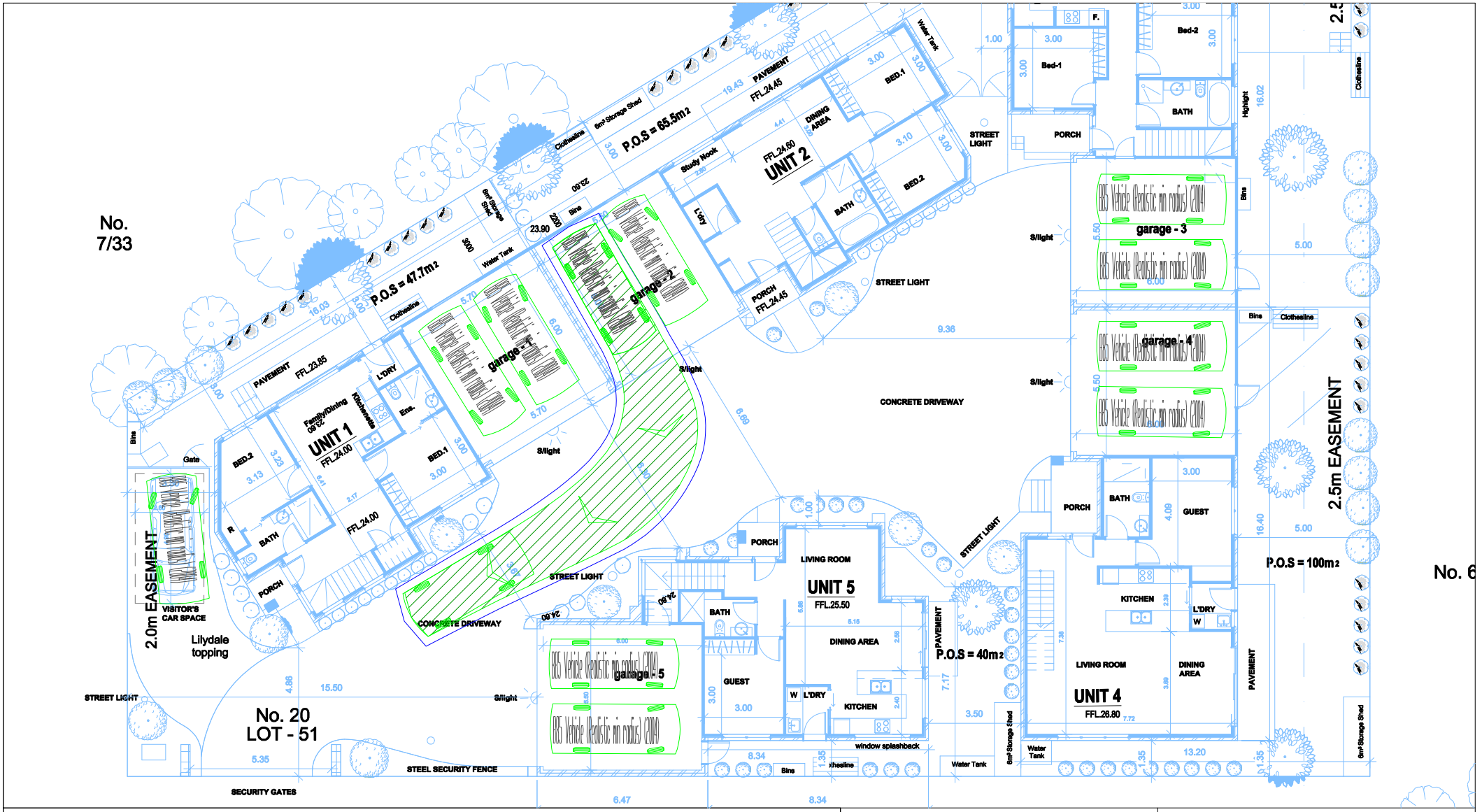

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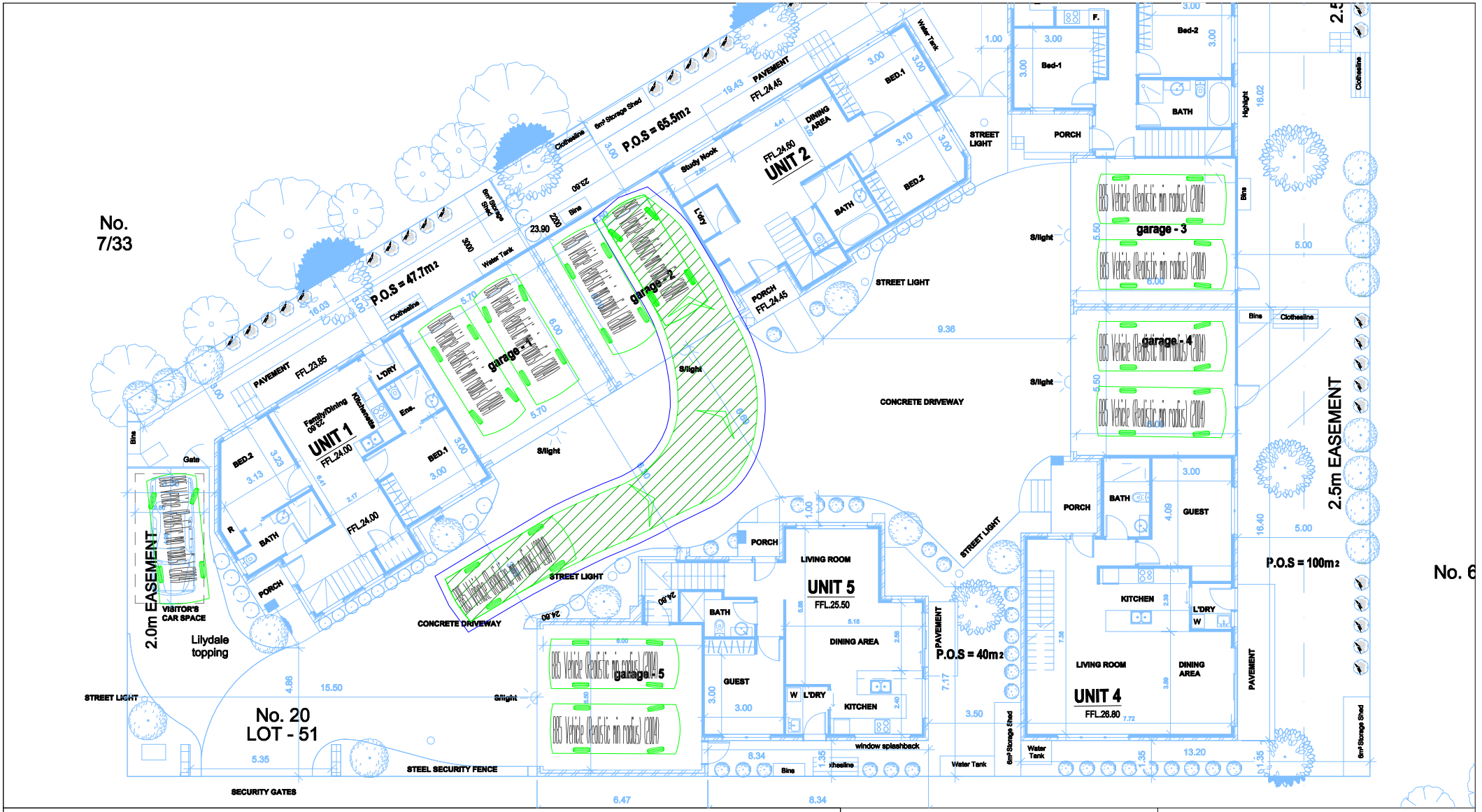

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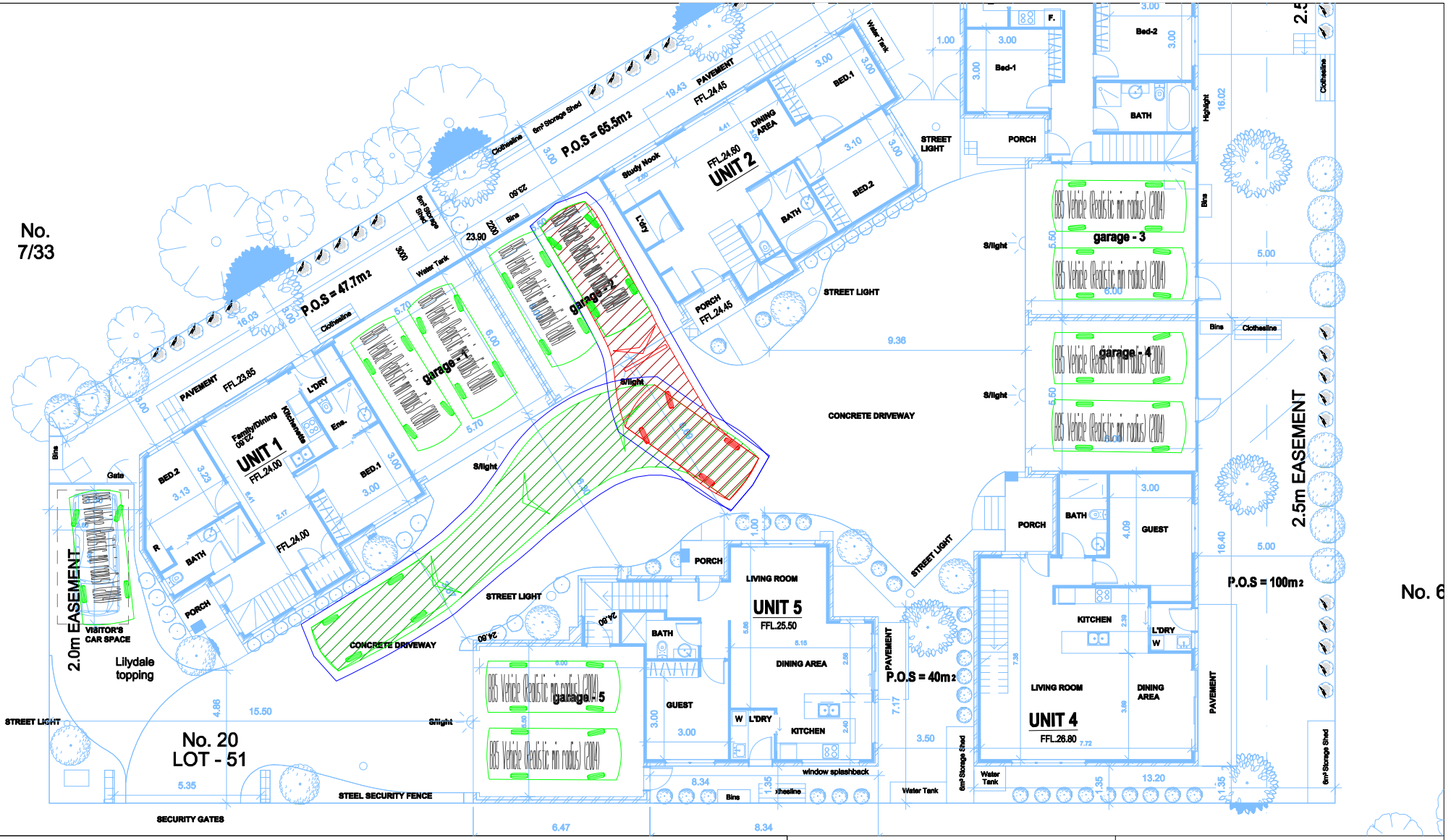

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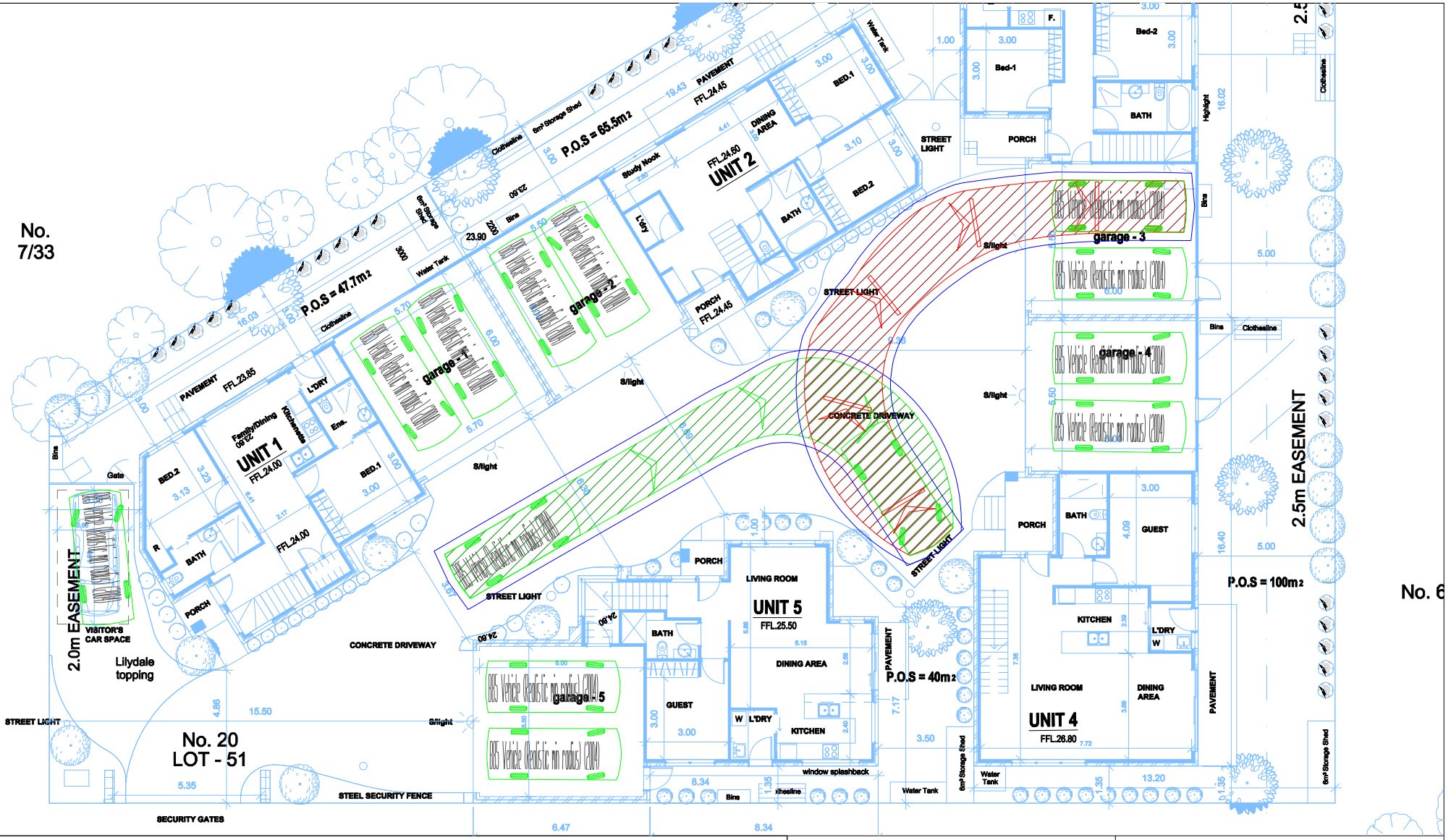

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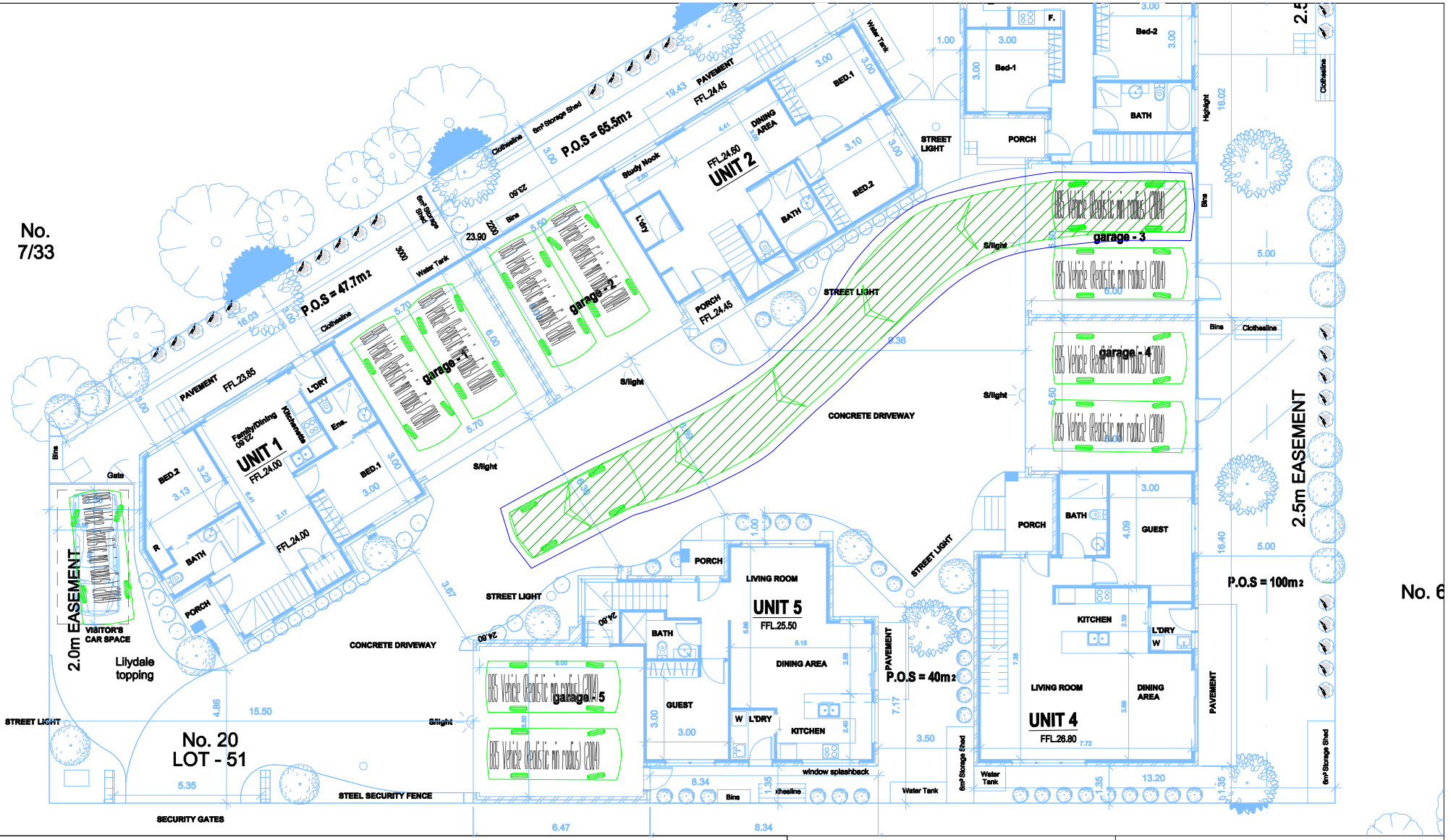

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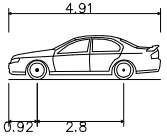

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300mm Clearance	Blue

Note: Landscaping to be restricted to 150mm max height from accessway level within blue clearance line of swept paths

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20 Longfin Crescent
San Remo

Dwg No:	Z3178ATR3
Date:	13/08/20
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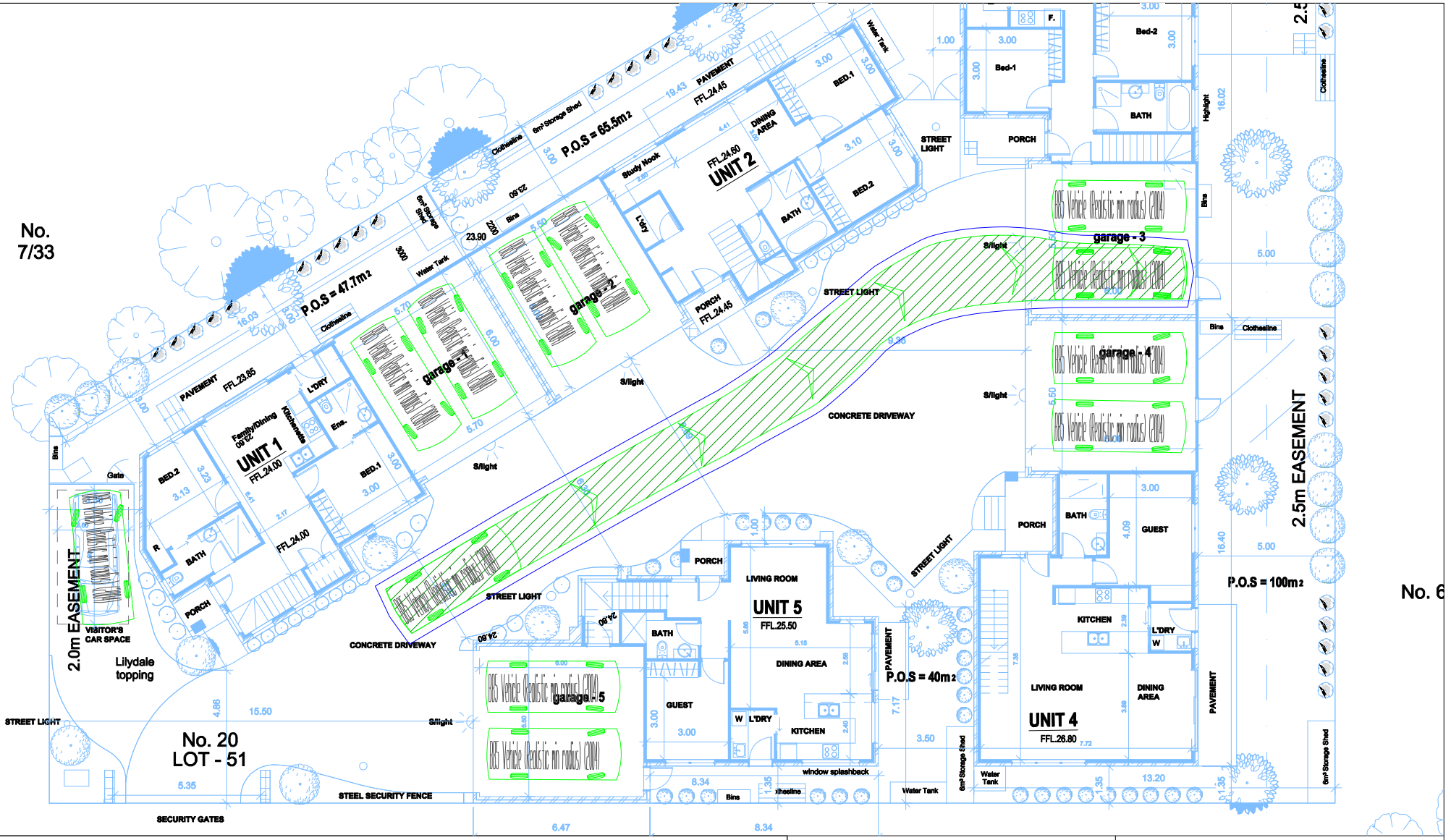

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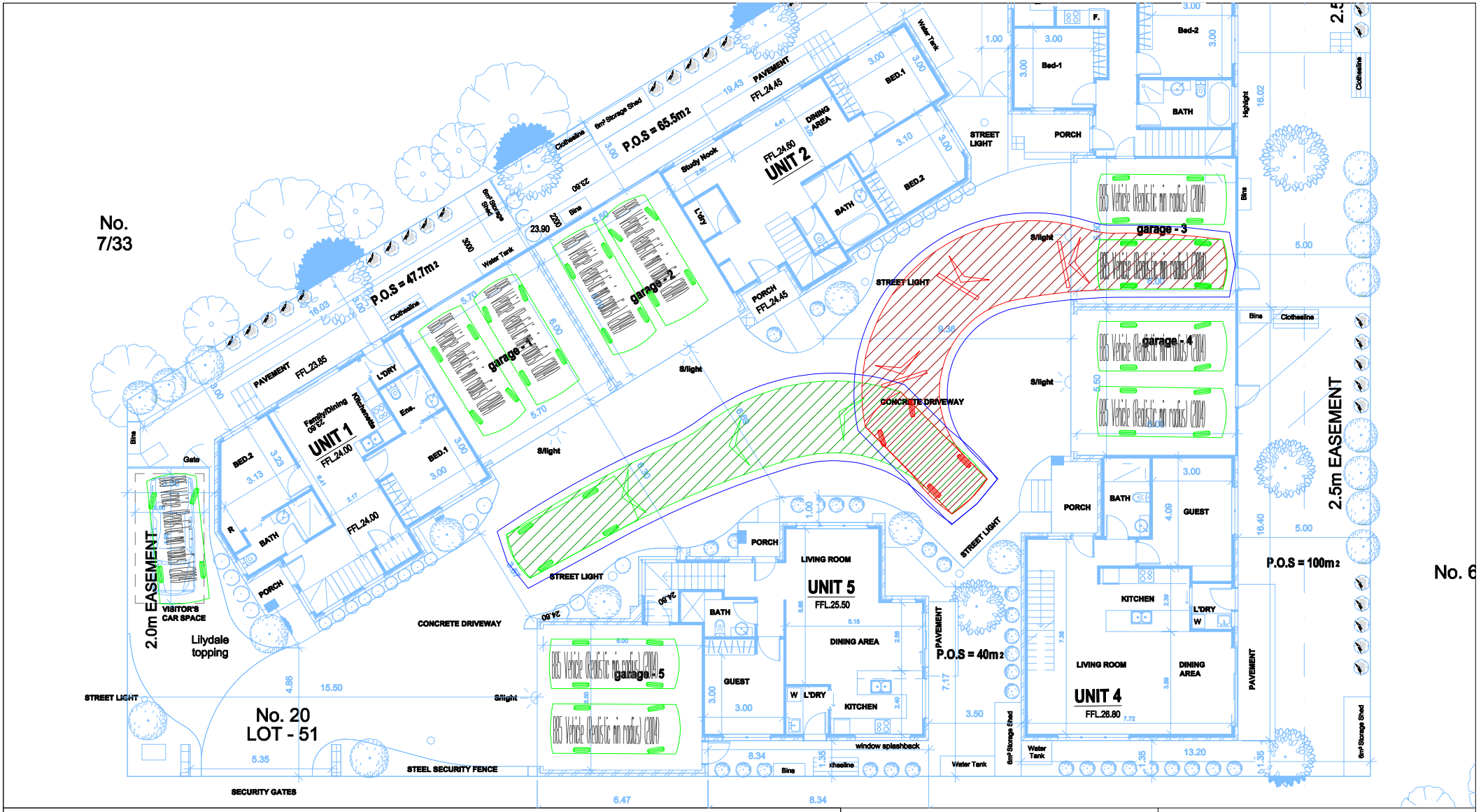

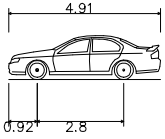

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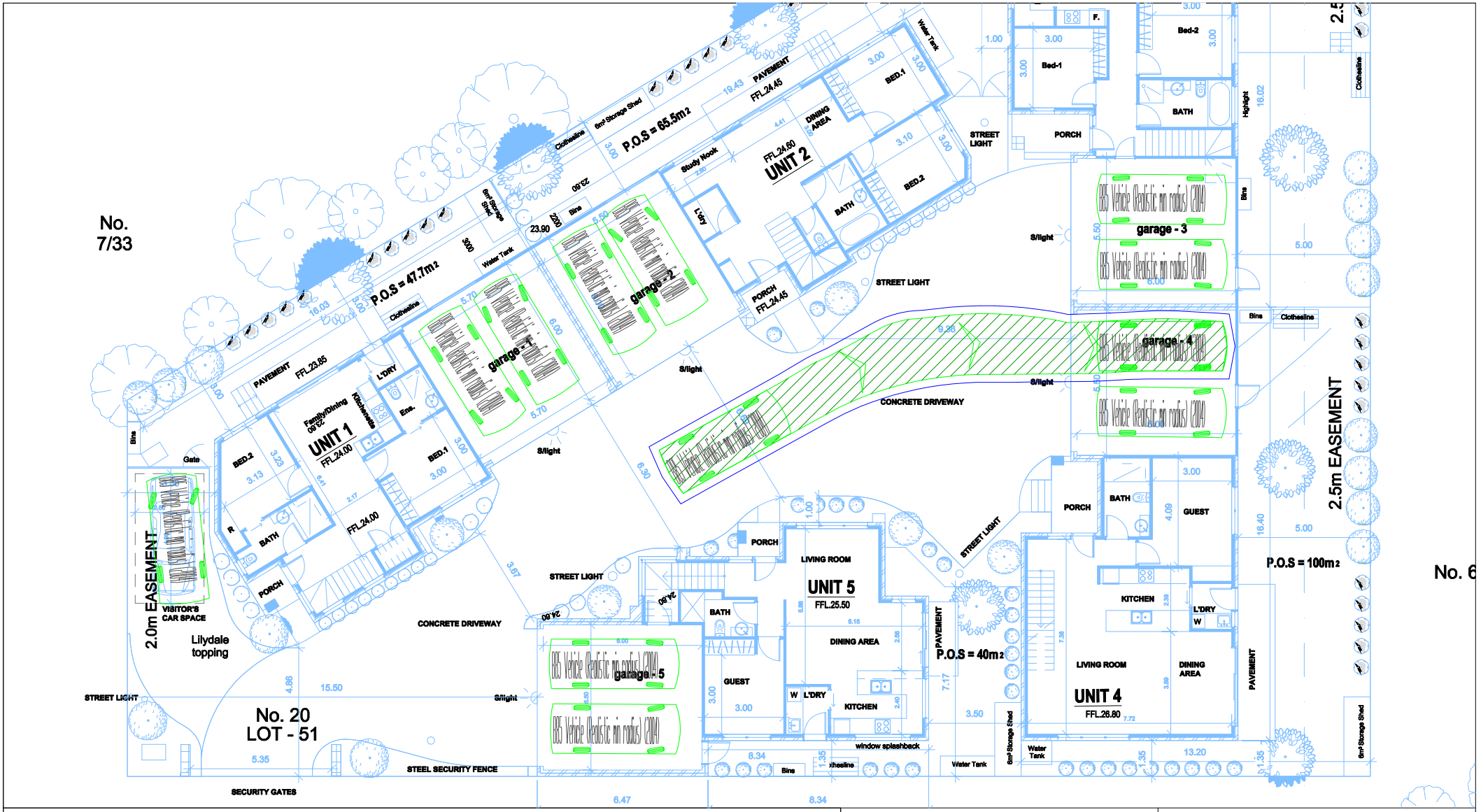

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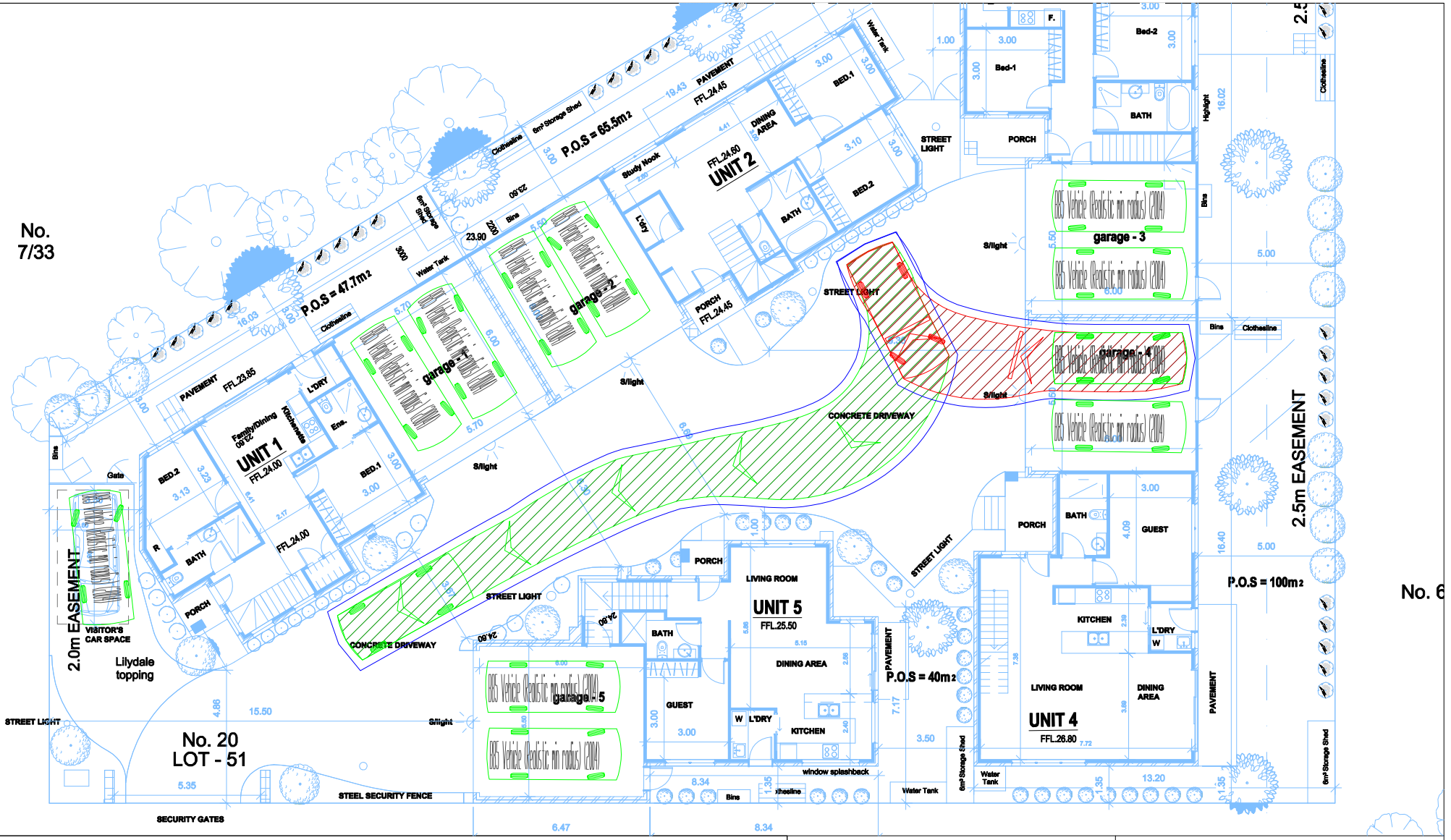

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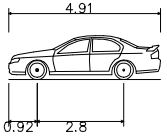

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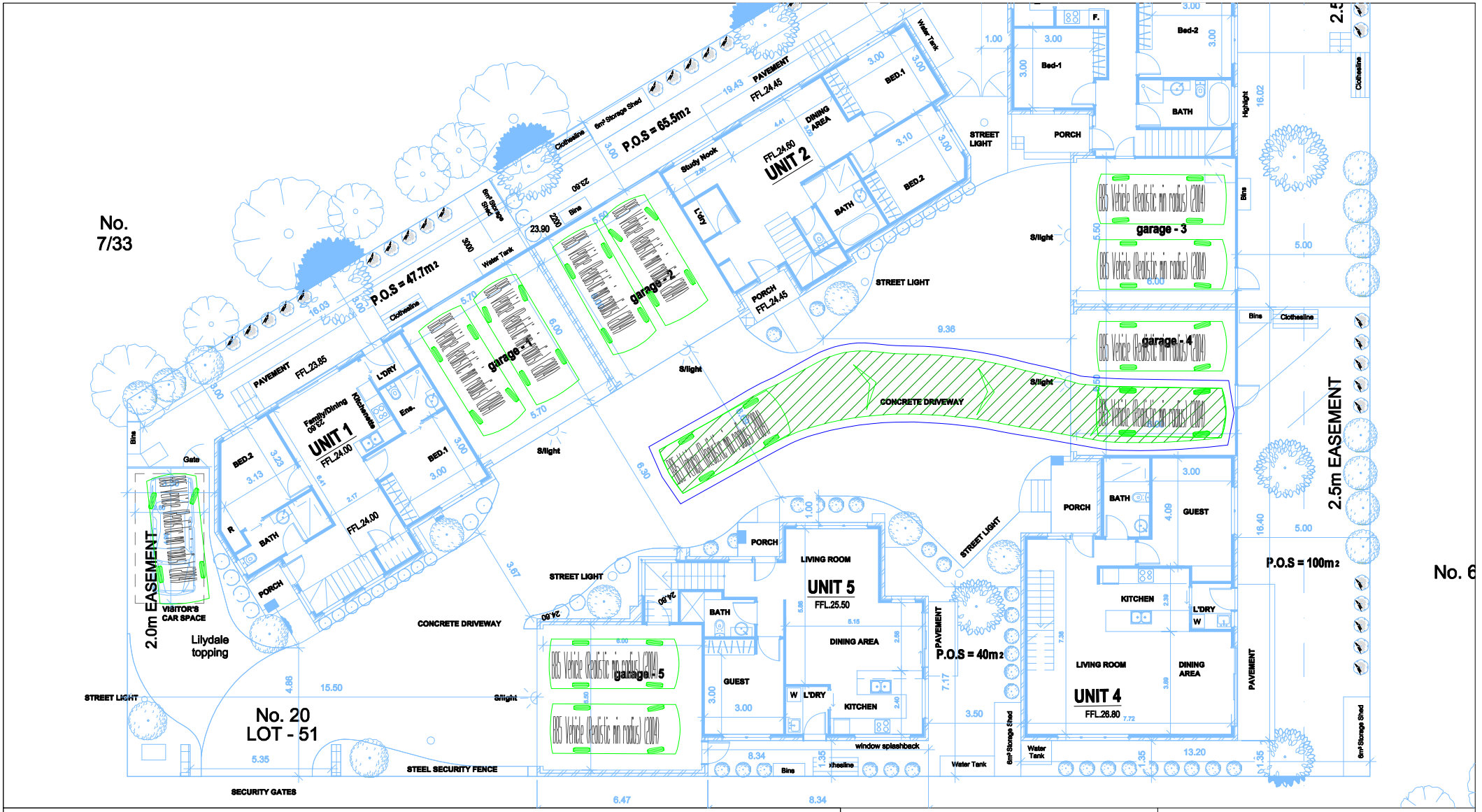

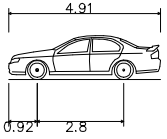

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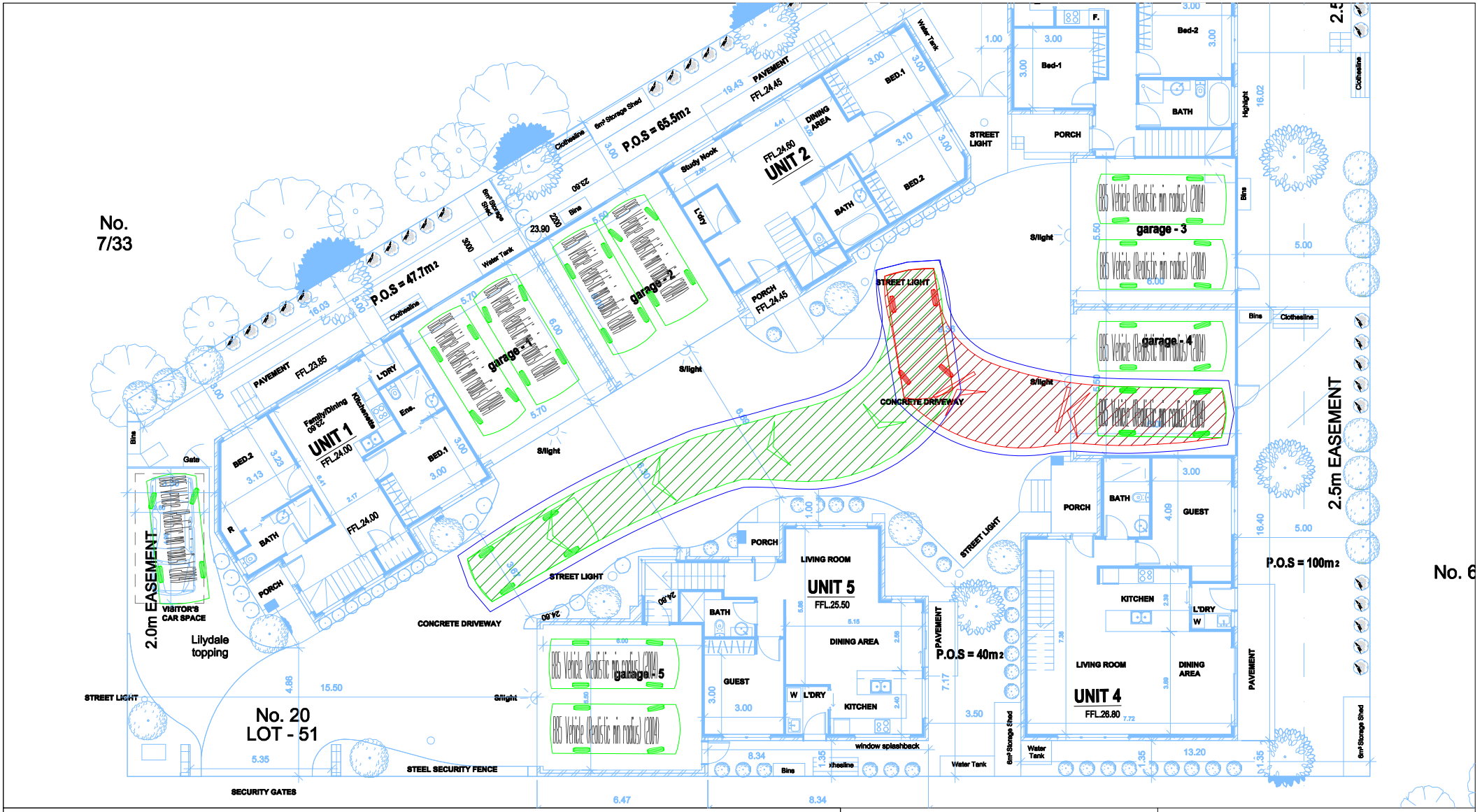

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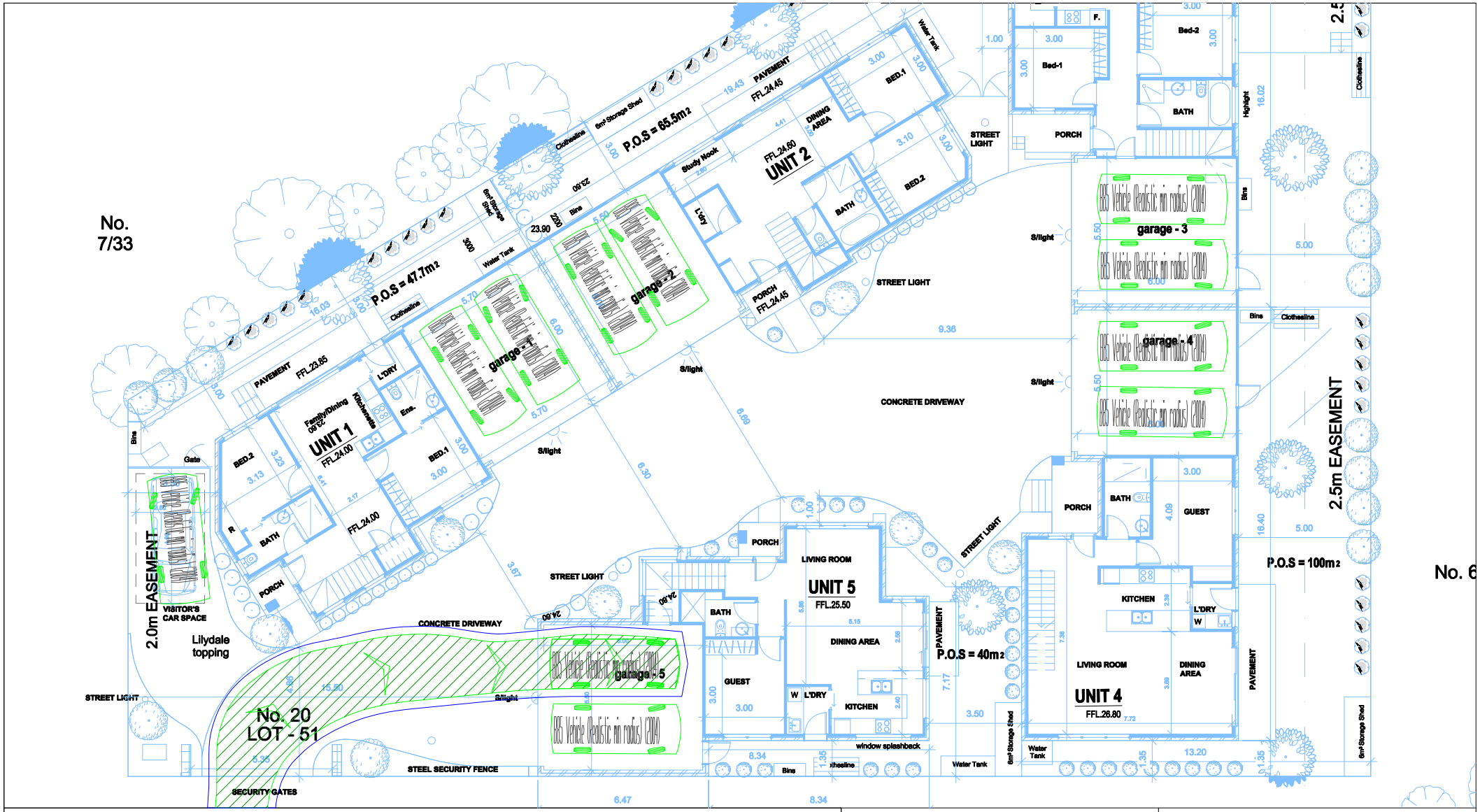

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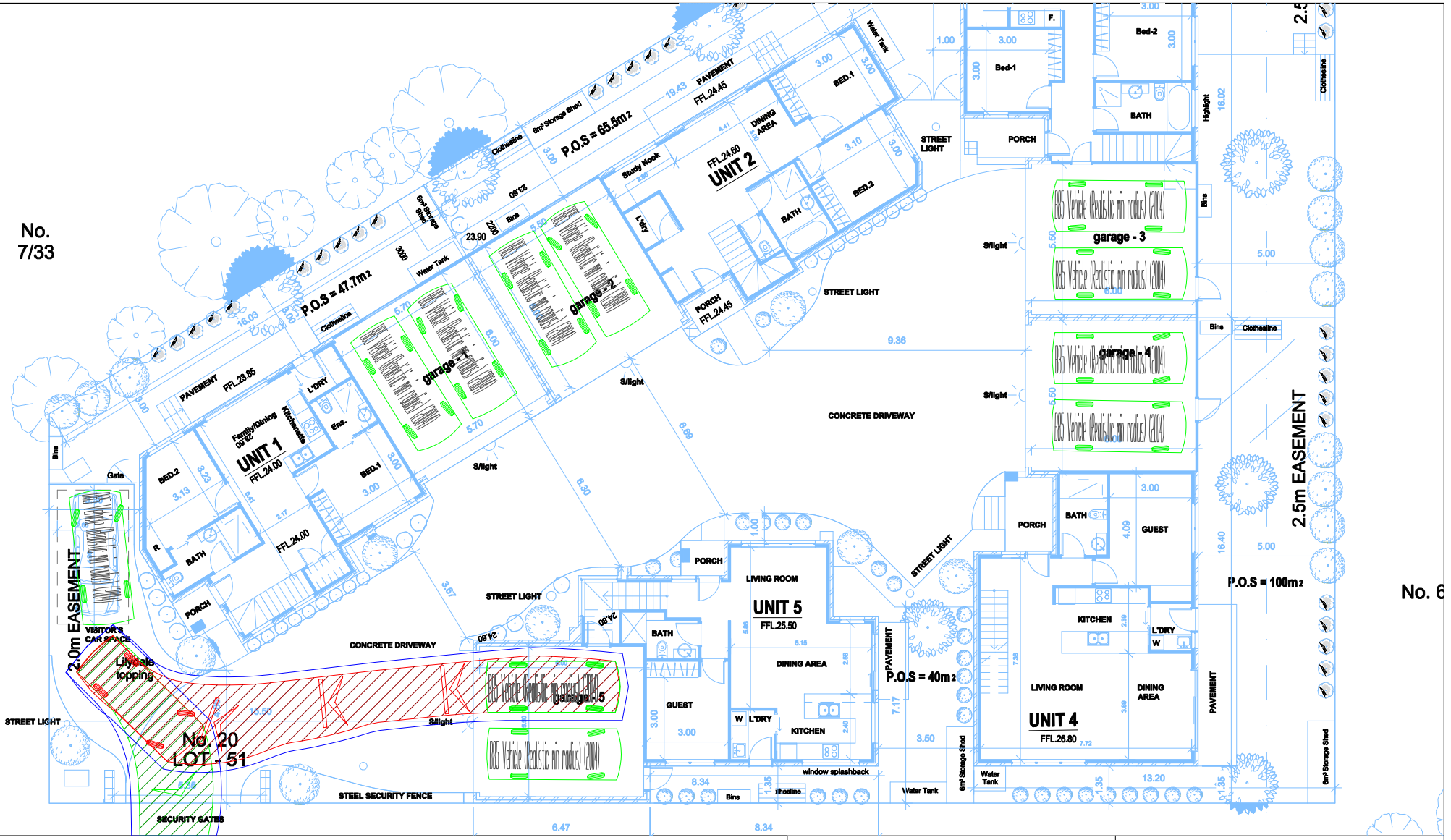

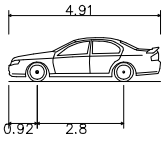

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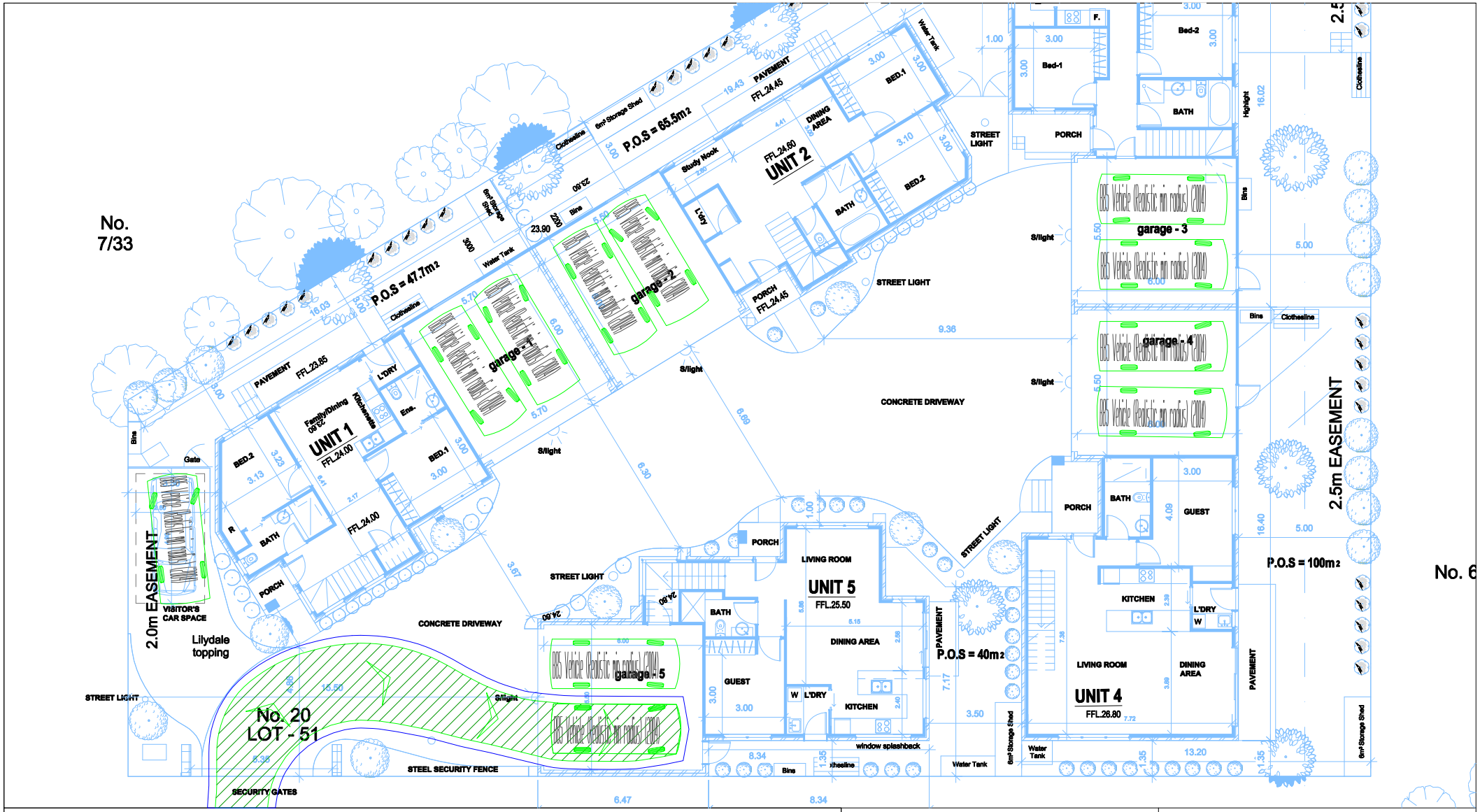

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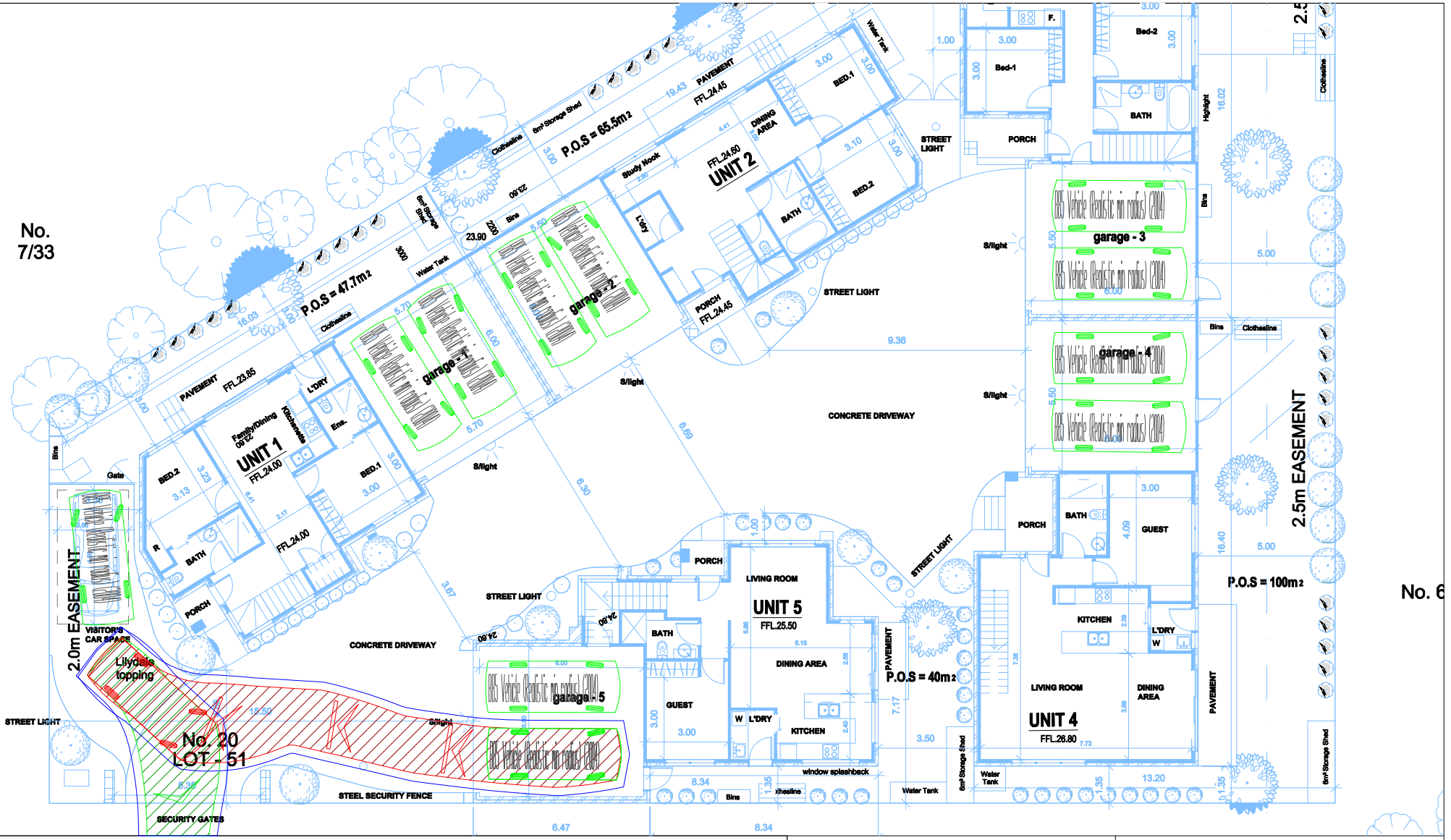

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Multi Dwelling Development and Residential Subdivision, 20 Longfin Crescent, San Remo, Victoria:

Cultural Heritage Management Plan

Number: 17790

Sponsor: TCG Doreen Pty Ltd ATF TCG Doreen Family Trust

Heritage Advisors: Jen Burch, Talia Green and Emily Evans

Authors: Jen Burch, Talia Green, Emily Evans and Brian Porrett

Date: 3 June 2021



JEM ARCHAEOLOGY

Bunurong Land Council
ABORIGINAL CORPORATION

ABN: 66 129 413 297 ICN:3630
16/395 Nepean Hwy, Frankston VIC 3199
PO Box 11219, Frankston VIC 3199
Ph: (03) 9770 1273
www.bunuronglc.org

7 June 2021

To whom it may concern,

Approval Notice for Cultural Heritage Management Plan 17790 – Multi Dwelling Development and Residential Subdivision, 20 Longfin Crescent, San Remo, Victoria. Cover date: 3 June 2021.

We refer to your application to the Bunurong Land Council Aboriginal Corporation requesting approval of the above cultural heritage management plan (CHMP).

With reference to section 63(1)(a)(i) of the *Aboriginal Heritage Act 2006* (Act), the Bunurong Land Council Aboriginal Corporation as the Registered Aboriginal Party (RAP), have evaluated and approved this CHMP. The conditions set out in this CHMP are now compliance requirements.

Kind regards,



Rob Ogden
Heritage Manager
Robert.ogden@bunuronglc.org.au

*This notice of approval must be inserted after the title page and bound with the body of the CHMP

STATEMENT OF ACKNOWLEDGEMENT

Our community culturally and spiritually acknowledge our ancestors who have provided our community today with the opportunity to continue to practice our culture and be a representative voice for our land, waters and community. We value and acknowledge the relationships we have with all practitioners on Bunurong country to facilitate and nurture the protection and preservation of our shared culture, Bunurong culture.

Multi Dwelling Development and Residential Subdivision, 20 Longfin Crescent, San Remo, Victoria:

Cultural Heritage Management Plan

Number: 17790

Assessment: Complex

Activity Size: Small

Is Registered Aboriginal Cultural Heritage Present?: No

Sponsor: TCG Doreen Pty Ltd ATF TCG Doreen Family Trust

Heritage Advisors: Jen Burch, Talia Green and Emily Evans

Authors: Jen Burch, Talia Green, Emily Evans and Brian Porrett

Date: 3 June 2021

PROTOCOLS FOR HANDLING SENSITIVE INFORMATION

The information contained in this CHMP may be culturally sensitive. Before releasing the contents of this CHMP to the general public, permission should be obtained from the relevant authorities and communities, including but not limited to DPC, AV and any relevant RAP/s, RAP applicant/s or other stakeholder Aboriginal corporation/s.

Please note this CHMP may contain pictures of and/or information about people who may have passed away.

JEM ARCHAEOLOGY

ACKNOWLEDGEMENTS

Jem Archaeology Pty Ltd would like to thank the following people and organisations for their contributions to this CHMP:

- Nick Corcoris, TCG Doreen Pty Ltd ATF TCG Doreen Family Trust;
- Jackson Lai, Kostic & Associates Pty Ltd;
- Rob Ogden, Bradley Ward, Alvin Rajkovic, Tommy Corrigan, Billy Corrigan and Casey Sweetman, Bunurong Land Council Aboriginal Corporation; and
- Aboriginal Victoria.

DISCLAIMER

The information contained within this CHMP has been compiled from standard government heritage databases and at the time of production is true and correct as far as Jem Archaeology Pty Ltd is aware. While this CHMP contains a summary of information pertaining to the activity area, it does not provide, nor does it intend to provide, a comprehensive summary of all available information. Jem Archaeology Pty Ltd does not take responsibility for errors or omissions in primary or secondary sources cited in this CHMP.

Any opinions provided in this CHMP are those of Jem Archaeology Pty Ltd and do not constitute legal advice or necessarily represent the opinions of any third parties. Jem Archaeology Pty Ltd has undertaken all reasonable measures to actively consult with representatives of the relevant Registered Aboriginal Party or other Aboriginal corporations or community groups who are, to the best of our knowledge and advice, the legal and proper representatives of the relevant and appropriate Aboriginal community. However, Jem Archaeology Pty Ltd does not take responsibility for any opinions or actions of dissenting persons or organisations. This CHMP has been prepared in accordance with and aims to comply with the relevant current Victorian heritage legislation.

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JEM ARCHAEOLOGY

EXECUTIVE SUMMARY

Compliance requirements are set out in Part 1 of this Cultural Heritage Management Plan.

This mandatory Aboriginal Cultural Heritage Management Plan (CHMP) details the findings of a complex archaeological assessment of 20 Longfin Crescent, San Remo, Victoria (Bass Coast Shire Council). Jem Archaeology Pty Ltd was commissioned by TCG Doreen Pty Ltd ATF TCG Doreen Family Trust (the Sponsor) to prepare this CHMP.

The activity area is located in the Bass Coast region approximately 90km southeast of the Melbourne CBD at 20 Longfin Crescent, San Remo, Victoria (Bass Coast Shire Council). The activity area is bounded by Longfin Crescent and private property to the south and private properties to the north, east and west and is approximately 1,343 square metres in size (Map 1).

The Sponsor proposes to develop the activity area into a multi dwelling development (Appendix C).

The desktop assessment did not identify any previously recorded Aboriginal places within the activity area. The results of the desktop assessment suggest that it is likely that Aboriginal cultural heritage may be present within the activity area, as the activity area lies within a declared Ramsar Wetland, and the fringes of wetlands are considered to be likely to contain Aboriginal cultural heritage.

The standard assessment (archaeological survey) of the activity area did not identify any Aboriginal places, however one area of Aboriginal archaeological sensitivity was identified. This area comprises the entire activity area, excluding the land within 5m of the eastern and western boundaries where services are known to be located (Map 5).

The complex assessment (archaeological sub surface testing) included the excavation of four test pits (TP) (Map 6).

No Aboriginal places were discovered during the complex assessment.

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ABBREVIATIONS

The following abbreviations may appear throughout this CHMP:

AV:	Aboriginal Victoria
BOM:	Bureau of Meteorology
BP:	Before Present
CHMP:	Cultural Heritage Management Plan
DELWP:	Department of Environment, Land, Water and Planning
DJPR:	Department of Jobs, Precincts and Regions
DPC:	Department of Premier and Cabinet
DSE:	Department of Sustainability and Environment
EVC:	Ecological Vegetation Class
GDA:	Geocentric Datum of Australia
GPS:	Global Positioning System
HA:	Heritage Advisor
NLA:	National Library of Australia
PGC:	Primary Grid Coordinate
RAP:	Registered Aboriginal Party
SLV:	State Library of Victoria
STP:	Shovel Test Pit
TP:	Test Pit
VAHR:	Victorian Aboriginal Heritage Register
VAHC:	Victorian Aboriginal Heritage Council

A glossary of terms is presented in Appendix A.

PART 1: CULTURAL HERITAGE MANAGEMENT CONDITIONS

1 SPECIFIC CULTURAL HERITAGE MANAGEMENT REQUIREMENTS

NB: These conditions become compliance requirements once the Cultural Heritage Management Plan is approved. Failure to comply with a condition is an offence under section 67A of the *Aboriginal Heritage Act 2006*.

The Cultural Heritage Management Plan must be readily accessible to the Sponsor and their employees and contractors when carrying out the activity.

No Aboriginal cultural heritage or areas of Aboriginal archaeological sensitivity are located within the activity area; therefore no specific cultural heritage management conditions are required.

1.1 General Conditions

1.1.1 General Condition 1: Adherence to the Cultural Heritage Management Plan (CHMP), Before, During and After the Activity

- A hard copy of the approved CHMP must always be available and present onsite.
- The Sponsor, site supervisor and all relevant personnel must read the approved CHMP and be aware of the legal management conditions and contingency plans concerning Aboriginal cultural heritage within the activity area.
- The Sponsor or site supervisor is responsible for ensuring that all personnel onsite are aware of the management conditions and contingency plans, and of the onsite location of the hard copy of the approved CHMP.
- The Sponsor, site supervisor and all relevant personnel are responsible for implementing the management conditions contained within the CHMP.
- The Sponsor or site supervisor is responsible for ensuring that the activity adheres to the activity description as detailed in Section 4 of the CHMP. Any change to the activity area, the activity description or the approved management conditions will require either an amendment to the CHMP or the preparation of a new CHMP.

Bromsgrove District Council

1.1.2 General Condition 2: Cultural Heritage Induction to be Undertaken Before the Activity

- A cultural heritage induction must be undertaken prior to the commencement of any ground disturbance works within the activity area.
- The Sponsor or site contractor must submit a booking request to the relevant RAP at least two weeks before the cultural heritage induction is required.
- The cultural heritage induction must be conducted by representatives of the relevant RAP, including a RAP Heritage Advisor.
- The cultural heritage induction must include the Sponsor or their representative/project manager and where possible, the site supervisor and all relevant personnel directly involved in ground disturbing works within the activity area.
- The cost of the cultural heritage induction must be met by the Sponsor or site contractor.
- The Sponsor or site contractor must indicate during the induction both the commencement date of the activity and the likely completion date of the activity.

1.1.3 General Condition 3: Protocol for Handling Sensitive Information Before, During and After the Activity

- Apart from publicly available information there shall be no communication or public release of information concerning Aboriginal cultural heritage without the written permission of the relevant RAP.
- No photographs of onsite cultural heritage, or information concerning Aboriginal cultural heritage is to be circulated to the media or via public media without the written permission of the relevant RAP.

2 CONTINGENCY PLANS

2.1 Contingency 1: Proposed Changes to the Activity

The contingency plans presented in this section are specific to the activity area and the activity described within this CHMP. If, following the approval of this CHMP, changes to the activity or the activity area requiring statutory authorisation or which require any changes to the management conditions contained within the approved CHMP occur, the Sponsor must either apply to amend the approved CHMP or prepare a new CHMP which incorporates any changes.

2.2 Contingency 2: Matters referred to in Section 61 of the Act

If Aboriginal cultural heritage is unexpectedly discovered during the activity, the following contingencies (which take into account matters referred to in Section 61 of the *Aboriginal Heritage Act 2006* with regard to harm avoidance and minimisation) must be implemented by the Sponsor or the relevant representative of the Sponsor.

2.3 Contingency 3: Dispute Resolution Process

Procedures for dispute resolution aim to ensure that all parties are fully aware of their rights and obligations, that full and open communication between parties occurs and that those parties conduct themselves in good faith.

If a dispute arises that may affect the conduct of the activity, resolution between the parties using the following dispute resolution procedure is required:

1. All disputes will be jointly investigated and documented by both the relevant RAP and the Sponsor.
2. Where a breach of the CHMP conditions has been identified, and there is no agreement between the parties as to how that breach is to be remedied, the relevant RAP and the Sponsor must meet within one week of the initial notification of the breach to seek agreement as to a suitably appropriate remedial measure.
3. The Sponsor and the relevant RAP must arrange for authorised representatives to be present at the meeting.
4. At the meeting, the authorised representatives of both the relevant RAP and the Sponsor must state their understanding of the issue(s) in dispute and ensure each party is aware of their position. If requested by either the relevant RAP or the sponsor, third party mediation may be held during the meeting.
5. If the authorised representatives of the parties reach agreement, the agreed corrective method for the breach must be recorded in writing and signed by both parties (Agreed Method Statement). If the authorised representatives of the parties do not reach agreement, the parties will participate in third party mediation of the dispute by an agreed mediator within two weeks. Any costs of the mediation are to be met equally by the parties.

Any agreed outcome of the mediation must be recorded in writing and signed by both parties (Agreed Method Statement).

6. The Sponsor, site supervisor, contractor and any relevant personnel will not undertake any correction or remedial activities except in accordance with the Agreed Method Statement. Any correction or remedial activities required must:
    i. Be recorded in writing and signed off by the authorised representatives of the relevant RAP and Sponsor.
    ii. Be supervised by a relevant RAP representative.
    iii. Occur in accordance with the instructions of the RAP representative, providing they are consistent with the agreed correction activities.
    iv. The RAP will strive to minimise delays to work schedules while not compromising Aboriginal cultural heritage, places or values.

Issues related exclusively to cultural heritage management, which do not have an impact on the conduct of the activity, will be handled through the following dispute resolution mechanism:

1. Within one week of notification to each party that a breach is deemed to exist, authorised representatives of the relevant RAP and the Sponsor must attempt to negotiate a resolution to any dispute related to the cultural heritage management of the activity area within two working days.
2. If the authorised representatives of the relevant RAP and the Sponsor do not reach agreement, the parties will participate in third party mediation of the dispute by an agreed mediator within two weeks. Any costs of the mediation are to be met equally by both parties. Any agreed outcome of the mediation must be recorded in writing and signed by both parties (Agreed Method Statement).

Regardless of the category of dispute, the dispute resolution process does not preclude:

1. The parties seeking advice from Aboriginal Victoria to assist in resolution of the dispute; and
2. Any legal recourse open to the parties being taken; however, the parties must agree that the above resolution mechanism will be implemented before such recourse is made.

2.4 Contingency 4: Management of Aboriginal Cultural Heritage found during the Activity

A series of fact sheets regarding the identification of Aboriginal cultural heritage is contained in Appendix F.

Discovery of Human Remains

If any suspected human remains are found during any activity, works must cease. The Victoria Police and the State Coroner's Office should be notified immediately. If there are reasonable grounds to believe the remains are Aboriginal, the Coronial Admissions and Enquiries hotline must be contacted immediately on 1300 888 544. This advice has been developed further and is described in the following five-step contingency plan.

Any such discovery at the activity area must follow these steps:

1) <u>Discovery:</u>
    - If suspected human remains are discovered, all activity in the vicinity must stop; and,
    - The remains must be left in place and protected from harm or damage.
2) <u>Notification:</u>
    - If suspected human remains have been found, the State Coroner's Office and the Victoria Police must be notified immediately;
    - If there are reasonable grounds to believe the remains are Aboriginal Ancestral Remains, the Coronial Admissions and Enquiries hotline must be immediately notified on 1300 888 544;

- All details of the location and nature of the human remains must be provided to the relevant authorities; and,
- If it is confirmed by these authorities the discovered remains are Aboriginal Ancestral Remains, the person responsible for the activity must report the existence of them to the Victorian Aboriginal Heritage Council in accordance with Section 17 of the *Aboriginal Heritage Act 2006*.

3) Impact Mitigation or Salvage:
   - The Victorian Aboriginal Heritage Council, after taking reasonable steps to consult with any Aboriginal person or body with an interest in the Aboriginal Ancestral Remains, will determine the appropriate course of action as required by Section 18(2)(b) of the *Aboriginal Heritage Act 2006*; and,
   - An appropriate impact mitigation or salvage strategy as determined by the Victorian Aboriginal Heritage Council must be implemented by the Sponsor.
4) Curation and Further Analysis:
   - The treatment of salvaged Aboriginal Ancestral Remains must be in accordance with the direction of the Victorian Aboriginal Heritage Council.
5) Reburial:
   - Any reburial site(s) must be fully documented by an experienced and qualified archaeologist, clearly marked and all details provided to Aboriginal Victoria; and,
   - Appropriate management measures must be implemented to ensure the Aboriginal Ancestral Remains are not disturbed in the future.

Discovery of Low Density Artefact Distributions

If 10 or less stone artefacts within a 10 m x 10 m area (100 m^2 area) are uncovered during the activity, the following measures must be undertaken:

1. The person in charge of the activity must notify both the relevant RAP and a Heritage Advisor of the suspected Aboriginal cultural heritage within one business day of the discovery. The person in charge of the works at the time of the discovery is deemed to be the person who discovered the Aboriginal cultural heritage place or object(s).
2. All works must cease within 10 m of the discovery area, and all personnel contracted to undertake the activity must be notified of the suspected discovery.
3. The suspected Aboriginal cultural heritage must be cordoned off by a suitable barrier (e.g. safety barrier mesh, temporary fencing, or flagging tape) and remain in place until it has been assessed by the relevant RAP and a Heritage Advisor;
4. The Heritage Advisor must facilitate the participation of the relevant RAP in the assessment of the Aboriginal cultural heritage.
5. The Heritage Advisor and a relevant RAP representative must inspect the suspected Aboriginal cultural heritage as soon as practicable and within a maximum of five business days of the notification of the discovery.
6. The Heritage Advisor, in consultation with the relevant RAP, must identify the extent, nature and significance of the Aboriginal cultural heritage material in the activity area.
7. The Sponsor, the Heritage Advisor and relevant RAP must discuss opportunities of avoiding and minimising harm to the Aboriginal cultural heritage. The Sponsor must attempt to avoid or minimise harm to the Aboriginal cultural heritage as the first priority.
8. Where harm cannot be avoided or minimised, the Heritage Advisor in consultation with the relevant RAP must salvage the Aboriginal cultural heritage material. The salvage must involve the recording, collection (labelled and packaged according to provenance), and analysis of the

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Aboriginal cultural heritage. The Heritage Advisor must use a DGPS (<1 m accuracy) when mapping the cultural material.

9. The Heritage Advisor within three weeks of the salvage must submit a place inspection form or new place registration form, as well as an object collection form, to the VAHR.
10. All costs associated with the procedures specified in this section must be organised and paid for by the Sponsor.
11. The activity may recommence within the 10 m exclusion area once:
    i. All the procedures specified in this section have been followed; and
    ii. No dispute occurs as to the course of action(s) required.

Discovery of Artefact Scatters, Stratified Deposits and/or Cultural Features

If artefact scatters, stratified deposits, and/or other cultural heritage features are identified during the activity, then the following measures must be undertaken:

1. The person in charge of the activity must notify both the relevant RAP and a Heritage Advisor of the suspected Aboriginal cultural heritage within one business day of if its discovery. The person in charge of the works at the time of the discovery is deemed to be the person who discovered the Aboriginal cultural heritage place or object(s).
2. All works must cease within 10 m of the discovery area, and all personnel contracted to undertake the activity must be notified of the suspected discovery.
3. The suspected Aboriginal cultural heritage must be cordoned by a suitable barrier (e.g. safety barrier mesh, temporary fencing, or flagging tape) and remain in place until it has been assessed by the relevant RAP and a Heritage Advisor;
4. The Heritage Advisor must facilitate the participation of the relevant RAP in the assessment of the Aboriginal cultural heritage.
5. The Heritage Advisor and a relevant RAP representative must inspect the suspected Aboriginal cultural heritage as soon as practicable and within a maximum of five business days of the notification of the discovery.
6. The Heritage Advisor, in consultation with the relevant RAP, must identify the extent, nature and significance of the Aboriginal cultural heritage material in the activity area.
7. The Sponsor, the Heritage Advisor and the relevant RAP must discuss opportunities of avoiding and minimising harm to the Aboriginal cultural heritage. The Sponsor must avoid or minimise harm to the Aboriginal cultural heritage as the first priority.
8. Where harm cannot be avoided or minimised, and the identified Aboriginal cultural heritage is suitable for salvage excavation, then this must be undertaken by a Heritage Advisor in consultation with the relevant RAP. The purpose of the salvage is to establish the extent, nature, and significance of the Aboriginal Place. The Heritage Advisor must use a DGPS (<1 m accuracy) when mapping the cultural material and features. Any salvage methodology must be approved by the relevant RAP. The objectives of the salvage must establish, but are not limited to:
    i. The stratigraphy, with an emphasis of where the Aboriginal cultural heritage material was found (e.g. the context of the stratigraphic layer);
    ii. The chronological sequence (if possible) of the Aboriginal cultural heritage material, features, and/or remains;
    iii. The composition and characteristics of the Aboriginal cultural heritage;
    iv. Whether there is any spatial variability or patterning of the Aboriginal cultural heritage investigated.
9. If the Aboriginal archaeological remains are assessed as being *in situ*, appropriate age determinations to establish the age of the Aboriginal heritage must include Optically

Stimulated Luminescence (OSL) when sufficient organic samples cannot be obtained for radiocarbon analysis (Carbon 14 dating). All Aboriginal cultural heritage material recovered from the activity area must be stored by the Heritage Advisor until the salvage excavation has been concluded.

10. The Heritage Advisor within three weeks of the salvage must submit a place inspection form or new place registration form, as well as an object collection form, to the VAHR.
11. The salvage excavation must be supervised by a person appropriately qualified in archaeology and be undertaken in accordance with Regulation 65(3-7) of the *Aboriginal Heritage Regulations 2018*, and the Aboriginal Victoria Practice Note on Salvage Excavation.
12. The Heritage Advisor must lodge the final salvage report to the relevant RAP and Aboriginal Victoria no later than six months after the completion of the salvage excavation and analysis.
13. All costs associated with the procedures specified in this section must be organised and paid for by the Sponsor.
14. The activity may recommence within the 10 m exclusion area once:
    i. All the procedures specified in section have been followed; and
    ii. No dispute occurs as to the course of action(s) required.

2.5 Contingency 5: Removal, Custody, Curation and Management of Aboriginal Cultural Heritage During the Activity

The Heritage Advisor must ensure that all Aboriginal cultural heritage (other than Aboriginal Ancestral Remains) recovered from the activity area during the activity is managed in the following way:

- The Heritage Advisor must fully document, package, and securely store all recovered cultural material until it is repatriated to the relevant RAP.
- The Heritage Advisor must submit all relevant documentation to the VAHR.
- The Heritage Advisor may initially retain custody of the recovered cultural material for scientific analysis for a period of up to six months from the completion of the activity.
- Within six months after the completion of the activity the Heritage Advisor must contact the relevant RAP to arrange the repatriation of all cultural material recovered within the activity area.

Upon completion of the activity, the Heritage Advisor must repatriate all recovered cultural material to the relevant RAP. The repatriation process must occur as follows:

- All cultural material must be appropriately packaged in a durable container and sorted by archaeological context from which it was recovered.
- The packaged cultural material must be accompanied by the relevant artefact catalogue as well as the nature, extent and significance statement for the associated place.
- All relevant recording and documentation, including submission of object collection forms to the VAHR, must be undertaken by the heritage advisor.
- All costs associated with the repatriation must be borne by the Sponsor.

Following the repatriation of the recovered cultural material to the relevant RAP, should the relevant RAP wish to rebury the recovered cultural material the following must occur:

- Available space within the activity area must be set aside which is protected from future development or disturbance.
- The location of the reburial area must be negotiated and agreed upon between the Sponsor and the relevant RAP.
- All cultural material must be appropriately packaged in a durable container and sorted by archaeological context from which it was recovered.

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- The packaged cultural material must be accompanied by the relevant artefact catalogue as well as the nature, extent and significance statement for the associated place.
- The reburial of the cultural material must be conducted by a relevant RAP representative and RAP Heritage Advisor.
- A smoking ceremony must be undertaken by a relevant RAP representative during the reburial.
- All relevant recording and documentation, including submission of object collection forms to the VAHR, must be undertaken by the RAP Heritage Advisor.
- All costs associated with the reburial must be borne by the Sponsor.

2.6 Contingency 6: Subdivision (if applicable)

Any future activities undertaken within each lot created by the subdivision of the activity area must comply with the conditions and contingencies contained in this CHMP and must abide by the use and development of each lot permitted by the relevant planning scheme (see relevant appendix).

2.7 Contingency 7: Reviewing Compliance and Mechanisms for Remedying Non-compliance with the CHMP

The Sponsor or nominated representative is responsible for remedying non-compliance with this CHMP. In the event that the conditions or contingencies set out in this CHMP are not adhered to, all works must cease, and the relevant RAP contacted immediately. A record of the breach must be documented, and immediate action taken to remedy the breach, under the direction of the relevant RAP. The record of the breach must include the reasons for non-compliance. The Sponsor or nominated representative must take immediate action to remedy non-compliance in accordance with the relevant condition or contingency. All acts of non-compliance must be reported to both the relevant RAP and Aboriginal Victoria, which may result in an investigation by an Authorised Officer or Aboriginal Heritage Officer. A record of CHMP compliance must also be maintained by the Sponsor or nominated representative at all times and must be available for inspection by either an Authorised Officer or Aboriginal Heritage Officer under the *Aboriginal Heritage Act 2006* or any other representative of the relevant RAP or Aboriginal Victoria.

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Table 1: Compliance Checklist

Contingency	Yes/No	If no...
Ensuring Compliance		
Have all the conditions in Section 1 of the approved Cultural Heritage Management Plan been met?		All works must immediately cease and the relevant RAP contacted immediately. Refer to Section 1.
Contingency Plans for Discovery of Aboriginal Heritage During Works		
If suspected human remains have been identified, have all works immediately ceased and the Coroner, the VAHC and the RAP been contacted as per the 5-step contingency plan in Contingency 4?		All works must immediately cease and the relevant RAP and authorities contacted immediately. Refer to Contingency 4.
If a Low Density Artefact Distribution has been discovered, has the correct procedure been followed as per Contingency 4?		All works must immediately cease within a 10m buffer of the suspected heritage and the relevant RAP contacted immediately. Refer to Contingency 4.
If an artefact Scatter, Stratified Deposit and/or Cultural Feature has been discovered, has the correct procedure been followed as per Contingency 4?		All works must immediately cease and the relevant RAP contacted immediately. Refer to Contingency 4.
Management of Aboriginal Cultural Heritage Identified During Works		
Has the procedure been followed for management of Aboriginal Cultural Heritage identified during works?		Refer to Contingency 5.

Bunurong Land Council Aboriginal Corporation

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PART 2: ASSESSMENT

3 INTRODUCTION

Jem Archaeology Pty Ltd has been commissioned by TCG Doreen Pty Ltd ATF TCG Doreen Family Trust (the Sponsor) to prepare this mandatory complex Aboriginal Cultural Heritage Management Plan (CHMP) for the proposed multi dwelling development, 20 Longfin Crescent, San Remo, Victoria (Bass Coast Shire Council) (Map 1).

3.1 Activity Area Location

The activity area is located in the Bass Coast region approximately 90km southeast of the Melbourne CBD at 20 Longfin Crescent, San Remo, Victoria (Bass Coast Shire Council). The activity area is bounded by Longfin Crescent and private property to the south and private properties to the north, east and west and is approximately 1,343 square metres in size (Map 1). The cadastral details of the activity area are:

- Volume 12234, Folio 186, Lot 51 PS813242S.

A detailed description of the activity area is located in Section 4.

3.2 Sponsor

The Sponsor of this CHMP is TCG Doreen Pty Ltd ATF TCG Doreen Family Trust, ACN: 609 540 847.

3.3 Heritage Advisors (HAs)

This CHMP has been prepared by Jem Archaeology Archaeologists/Heritage Advisors (HAs) Jen Burch, Talia Green and Emily Evans.

Jen Burch is an Archaeologist/Heritage Advisor who has worked in the Victorian heritage management industry for more than 13 years. Jen has managed and worked on more than 600 archaeological projects for a variety of developments and clients, including residential and commercial developments, wind farms, the desalination project, mining projects, rail projects, electricity installations, water and sewerage pipelines and other developments.

Jen has experience in a variety of tasks, including project management, background research and due diligence assessments, archaeological survey, sub surface testing and salvage excavation, supervision of field work programs, Aboriginal and non-Aboriginal historical site identification, recording and photography, preparation of site cards, site significance assessment, development of recommendations to mitigate the impact of development upon Aboriginal and non-Aboriginal historical heritage, flaked stone and historical artefact recording, analysis and interpretation, communication and consultation with regulatory bodies (Aboriginal Victoria [AV] and Heritage Victoria [HV]), clients, landowners and Aboriginal Registered Aboriginal Parties (RAPs) and other Aboriginal corporation and community representatives, preparation of Consents to Disturb for HV, preparation of Historical Heritage Assessments (HHA) and preparation of desktop, standard and complex Aboriginal Cultural Heritage Management Plans (CHMP).

Jen's formal qualifications and memberships are as follows:

- Bachelor of Archaeology (Honours) (First Class), La Trobe University, Bundoora, (2007);

- Full membership of the Australian Association of Consulting Archaeologists Inc. (MAACAI);

- Membership of the Australian Archaeological Association Inc. (AAA);

- Membership of the Victorian Planning and Environmental Law Association (VPELA); and

- Membership of the Urban Development Institute of Australia (UDIA).

Talia Green is an Archaeologist and Heritage Advisor with over three years' experience in the Victorian heritage industry. Talia has worked on and managed a variety of consulting projects including residential and commercial developments, pipelines, precinct structure plans, water management and road and rail projects in the form of CHMP's, Preliminary Aboriginal Heritage Tests, Aboriginal and Historical Heritage Assessments, Due Diligence Assessments, Historical Assessments, and excavation of Aboriginal places.

Talia is experienced in a wide variety of tasks including project management, background research, due diligence assessments, Aboriginal and historical heritage assessments, archaeological survey, sub surface testing and salvage excavation, Aboriginal and historical site identification, site recording and photography, preparation of Aboriginal and historical site cards, site significance assessments, development of recommendations to mitigate the impact of development upon Aboriginal heritage, analysis and interpretation, communication and consultation with regulatory bodies (Aboriginal Victoria [AV] and Heritage Victoria [HV]), clients, landowners and Registered Aboriginal Parties (RAPs), and preparation of desktop, standard and complex Aboriginal Cultural Heritage Management Plans.

Talia completed her Bachelor of Science degree at the University of New England in 2017, majoring in Archaeology and Palaeoanthropology, and completed her Honours degree in 2018 where she specialized in Zooarchaeology. Talia's research focused on reconstructing the diet of a human population from Colonia-era Sydney by analyzing the butchery patterns on sheep remains, and subsequently relating dietary preference and resource availability to different socio-economic classes inhabiting colonial Sydney. Talia has spent time working in forensic archaeology/bioarchaeology in Cyprus where she worked in the excavation, exhumation, skeletal analysis and repatriation of modern humans remains. Talia is currently a PhD Candidate in Bioarchaeology at the University of New England where her current research is focused on the analysis of non-metric traits of the crania as a tool for ancestry evaluation in a modern Greek-Cypriot population.

Talia is trained in historical and Indigenous artefact analysis, faunal and human remains analysis and has experience in project management, report production, standard and complex heritage assessment and salvage operations across Victoria. Her formal qualifications and memberships include:

- Bachelor of Science (Archaeology and Palaeoanthropology), University of New England (2017);

- Honours in Archaeology (Zooarchaeology), University of New England (2018); and

- PhD Candidate, University of New England (in progress); and

- Membership of the Australian Archaeological Association Inc. (AAA).

Emily Evans is an Archaeologist/HA who has worked in the Victorian heritage management industry for more than two years. Emily's Masters project involved the analysis of vertebrate

faunal remains from within anthropogenic shell middens located in Weipa, North Queensland. Emily has been involved in international archaeological projects including excavation of Etruscan sites in Italy and a Late Minoan IIIc/Archaic period settlement in Crete, Greece. Emily has worked on more than 150 projects for a variety of clients and developments, including residential subdivisions, multi dwelling developments, utilities installations, road construction and commercial developments.

Emily has experience in a variety of tasks, including background research archaeological survey, sub surface testing and salvage excavation, supervision of field work programs, Aboriginal site identification, recording and photography, faunal recording and analysis communication and consultation with clients, landowners and RAPs and other Aboriginal corporation and community representatives and preparation of desktop, standard and complex CHMPs.

Emily's formal qualifications and memberships are as follows:

- Bachelor of Arts majoring in Archaeology and Ancient History (Honours), Monash University, Clayton, (2014);
- Masters of Archaeology and Heritage Management, Flinders University, Adelaide (2020); and
- Membership of the Australian Archaeological Association Inc. (AAA).

3.4 Owner

The activity area is owned by an entity associated with the Sponsor, TGC Doreen Pty Ltd. The activity area is vacant.

3.5 Registered Aboriginal Party

The Registered Aboriginal Party (RAP) for the activity area is the Bunurong Land Council Aboriginal Corporation (Bunurong).

There are currently no Native Title claims extending over the activity area and the activity area comprises privately owned land, therefore Native Title has been extinguished.

3.6 Reasons for Preparation of CHMP

Under Section 47 of the *Aboriginal Heritage Act 2006*, this CHMP is required by the *Aboriginal Heritage Regulations 2018*. The specific Regulations which trigger the requirement of this CHMP are:

- Under Regulation 29(1), the activity area is within an area of cultural heritage sensitivity as it is located within 200m of a declared Ramsar wetland;
- Under Regulation 48, the proposed activity is a high impact activity as it involves the construction of three or more dwellings on a lot or allotment; and
- Under Regulation 49, the proposed activity is a high impact activity as it involves the subdivision of land.

3.7 Notice of Intention to Prepare CHMP

Under s.54 (1) of the *Aboriginal Heritage Act 2006*, a Notice of Intent to prepare a Cultural Heritage Management Plan (NOI) must be submitted by the Sponsor to the appointed RAP and to the Secretary of the Department of Premier and Cabinet (DPC) and to the relevant municipal council before the preparation of a CHMP commences.

Under s.54 (1) (a) of the *Aboriginal Heritage Act* 2006, a NOI was submitted by Jem Archaeology Archaeologist/HA Jen Burch on behalf of the Sponsor to the RAP on 1 March 2021. A copy of this notice is attached in Appendix B. The RAP submitted a notice to evaluate on 2 March 2021. The RAP has elected to evaluate this CHMP.

Under s.54 (1) (b) of the *Aboriginal Heritage Act 2006*, a NOI was submitted by Jem Archaeology Archaeologist/HA Jen Burch on behalf of the Sponsor to the Secretary of DPC and to Bass Coast Shire Council on insert 1 March 2021. A copy of this notice is attached in Appendix B. The Secretary of DPC submitted an acknowledgement letter of this notice to the Sponsor on 1 March 2021. A copy of this notice is attached in Appendix B. The Aboriginal Victoria (AV) Project Number for this CHMP is 17790.

3.8 CHMP Distribution

Copies of this CHMP will be distributed to the following organisations:

- TCG Doreen Pty Ltd ATF TCG Doreen Family Trust;
- Kostic & Associates Pty Ltd;
- Bunurong Land Council Aboriginal Corporation;
- Bass Coast Shire Council; and
- Aboriginal Victoria.

4 ACTIVITY DESCRIPTION

The Sponsor proposes to subdivide the activity area and develop the area into a multi dwelling development (preliminary plans are shown in Appendix C). The proposed activity will involve the preparation of the ground surface for construction activities, construction of multiple dwellings, and the installation of associated assets and utilities. The proposed activity will impact on the surface of the land and buried former land surfaces to a maximum depth of 2m for sewerage and stormwater drainage.

The activity area is zoned by Bass Coast Shire Council as General Residential (GRZ1). This zoning sets out the requirements which must be met by any development within the activity area. The schedule to this zoning (32.08, Sections 1 to 15) is presented in Appendix D.

It should be noted that any and all development plans depicting the proposed activity contained within this CHMP are preliminary only and will not be finalised until such time that any relevant statutory authorisation is granted.

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5 EXTENT OF ACTIVITY AREA

The activity area is located in the Bass Coast region approximately 90km southeast of the Melbourne CBD at 20 Longfin Crescent, San Remo, Victoria (Bass Coast Shire Council). The activity area is bounded by Longfin Crescent and private property to the south and private properties to the north, east and west and is approximately 1,343 square metres in size (Map 1). The cadastral details of the activity area are:

- Volume 12234, Folio 186, Lot 51 PS813242S.

The activity area comprises cleared, vacant land (Map 1). The northern and eastern boundaries of the activity area are marked by permanent fencing, and a newly developed road pavement extends for a very short distance into the southwestern portion of the activity area. No mature trees or other plantings are present.





Legend

Activity Area

Road

Contour

N

0 10 20 m

Map 1: Location and Extent of the Activity Area (Bass Coast Shire Council)

6 CONSULTATION

The Registered Aboriginal Party (RAP) for the activity area is the Bunurong Land Council Aboriginal Corporation (Bunurong).

6.1 Consultation in Relation to the Assessment

A project inception meeting was held on 23 March 2021 at via video conference. The meeting was attended by Bunurong Archaeologist/HA Bradley Ward and Jem Archaeology Archaeologist/HA Jen Burch, who represented the Sponsor. During the meeting the nature of the activity area, the details of the proposed activity and the results of the desktop assessment were discussed. The proposed standard and complex assessment methodologies were also discussed, and Bunurong Archaeologist/HAs Bradley Ward indicated that it would be appropriate for a standard assessment to be conducted across the entire activity area and for four 1x1m test pits (TP) to be excavated across the activity area.

6.2 Participation in the Conduct of the Assessment

No representatives of the Bunurong participated in the conduct of the desktop assessment.

Despite being invited to attend, no representatives of the Bunurong participated in the standard assessment.

Table 2 details the Bunurong representatives who attended the complex assessment. The Bunurong representatives participated in all aspects of the fieldwork, aside from recording, including archaeological excavation and sieving activities.

Table 2: Bunurong Fieldwork Participants

Date	Names	Assessment
8 April 2021	Alvin Rajkovic Tommy Corrigan Billy Corrigan Casey Sweetman	Complex

6.3 Consultation in Relation to the Conditions

A results and management conditions meeting was held on 29 April 2021 via video conference. The meeting was attended by Kostic & Associates Pty Ltd Draftsman Jackson Lai, who represented the Sponsor, TCG Doreen Pty Ltd ATF TCG Doreen Family Trust, Bunurong Archaeologist/HAs Bradley Ward and Jem Archaeology Archaeologist/HA Jen Burch. During the meeting the results of the standard and complex assessments and the required management conditions were discussed. Bunurong Archaeologist/HAs Bradley Ward indicated that he was satisfied with the methodology and results of the standard and complex assessments and that the CHMP must include conditions for a hard copy of the approved CHMP to be kept on site during the activity and for a cultural heritage induction to occur prior to the commencement of ground disturbing works within the activity area.

6.4 Summary of Consultation Outcomes

All of the Bunurong representatives named in Table 2(Section 6.2 above) indicated that they were satisfied with the methodology and results of the complex assessment undertaken on the day that each individual attended.

During consultation activities, Bunurong Archaeologist/HAs Bradley Ward indicated that he was satisfied with the methodology and results of the standard and complex assessments and that the CHMP must include conditions for a hard copy of the approved CHMP to be kept on site during the activity and for a cultural heritage induction to occur prior to the commencement of ground disturbing works within the activity area.

7 ABORIGINAL CULTURAL HERITAGE ASSESSMENT

7.1 Desktop Assessment

7.1.1 Introduction

The desktop assessment aims to identify the known environmental, ethnohistorical, historical and archaeological context of the activity area and the surrounding geographic region.

The desktop assessment was undertaken by Jem Archaeology Archaeologist/HA Talia Green. No limitations were encountered during the desktop assessment.

7.1.2 Geographic Region

The geographic region of which the activity area forms a part, and which is relevant to any Aboriginal cultural heritage which may be present within the activity area, is the San Remo region. The geographic region comprises the State government localities of Anderson and San Remo on the mainland and Cape Woolamai and Newhaven on Phillip Island (Map 2). This area is considered to be an adequate representative sample of the geology and geomorphology of the activity area as it contains a large sample of the same geomorphology and geology sited in the region close to the coastline.

7.1.3 Environmental Context

7.1.3.1 Geology

The geology of the activity area comprises Mornington Volcanic Group (-Pum). This geology was laid down during the Lutetian stage of the Eocene epoch of the Paleogene Period (approximately 47.8 million years ago to approximately 41.2 million years ago). The Mornington Volcanic Group consists of basanite with lesser alkali basalt, hawaiite, mugearite and nephelinite with lava flows, shallow intrusive and pyroclastics, minor interbedded fluvial sediments and lignite (DJPR 2019a). The geology of the geographic region is shown in Figure 1.

7.1.3.2 Geomorphology and Landform

The activity area itself is situated within the two discrete geomorphological units, namely Basaltic residuals (Warragul, Red Hill) (unit 3.2.3), and Basaltic residuals (Phillip Island) (unit 3.3.3) (DPC 2021). Both geomorphological units are subunits of the Southern Uplands.

The Basaltic residuals (Warragul, Red Hill) geomorphological unit (3.2.3) comprises Older basalt (Palaeogene) deposits. At Warragul, deposits extend over an area of 300 square kilometres and form the north-central part of the low elevation plateau between Grantville, to just south of Nerrim South. At Red Hill, deposits over 100m in elevation form a broad plateau that gradually slopes southwest, and extends over an area of approximately 100 square kilometres (DJPR 2019b).

The Basaltic residuals (Phillip Island) geomorphological unit (3.3.3) comprises Older basalt (Palaeogene) with late Neogene alluvium in the drainage lines and is characterised by low rounded crests with broadly spaced flats and depressions (DJPR 2019c).



Legend

Activity Area

Geographic Region

VAHR Place

- Burial
- Burial/Shell Midden
- Artefact Scatter
- Artefact Scatter/Shell Midden
- LDAD
- Shell Midden
- Shell Midden/Earth Feature

Historical Reference

N

0 1000 2000 m

Map 2: Aboriginal Places and the Geographic Region

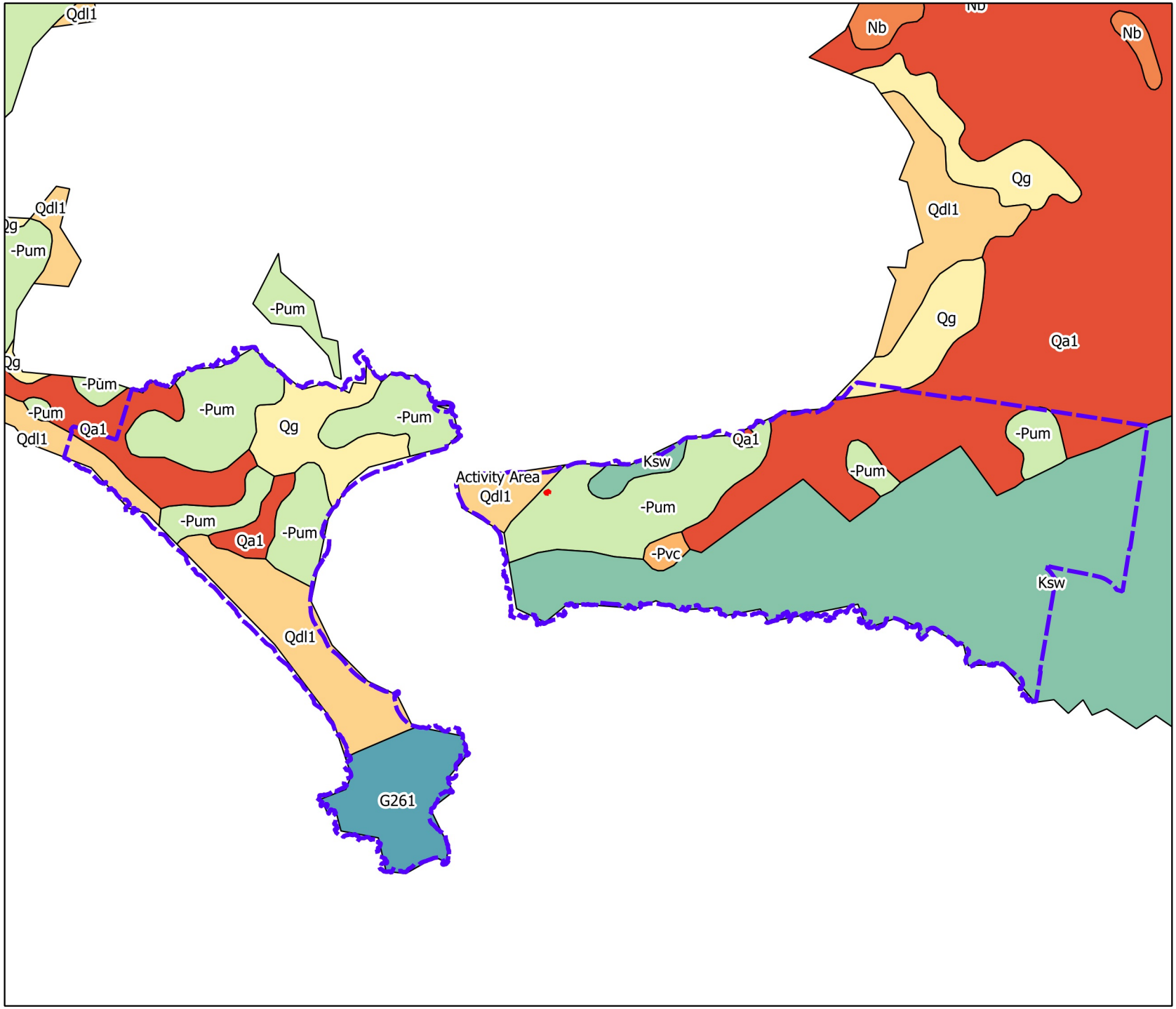


Figure 1: Geology of the Geographic Region

7.1.3.3 Soils

Soils in the geographic region typically consist of yellow to brown gradational soils (Dermosols) with similarly coloured sodic texture contrast soils (Chromosols and Sodosols) (DJPR 2019b and DJPR 2019c).

7.1.3.4 Flora

Prior to 1750, vegetation in the majority of the activity area comprised Grassy Woodland (Ecological Vegetation Class [EVC] 175) (DELWP 2020). This EVC consisted of an open Eucalypt or Sheoak woodland with a sparse shrub component over a ground layer of diverse species of grasses and herbs. Canopy species present would have included *Eucalyptus radiata* s.l. (Narrow-leaf Peppermint) and *Allocasuarina verticillata* (Drooping Sheoak) over understorey trees including *Acacia mearnsii* (Black Wattle), *Allocasuarina littoralis* (Black Sheoak) and *Exocarpos cupressiformis* (Cherry Ballart). Understorey shrubs present would have included *Epacris impressa* (Common Heath) and *Pimelea humilis* (Common Rice-flower) while herbs present included *Drosera* (Sundew) species and grasses included *Themeda triandra* (Kangaroo Grass) and *Poa sieberiana* (Grey Tussock-grass) (DSE 2004a).

Vegetation in a small portion of the southern section of the activity area consisted of Swamp Scrub (Ecological Vegetation Class [EVC] 53) (DELWP 2017). This vegetation class comprised a dense scrub to eight metres in height dominated by *Melaleuca ericfolia* (Swamp Paperbark) or *Leptospermum lanigerum* (Woolly Tea-tree), both of which formed a dense thicket limiting the growth of other species. Mosses, lichens and herbs would have covered the ground layer if sun could penetrate the dense vegetation above. Other species present would have included *Coprosma quadrifida* (Prickly Currant-brush), *Leptospermum continentale* (Prickly Tea-tree), *Poa labillardierei* (Common Tussock-grass), *Gahnia radula* (Thatch Saw-sedge) and *Calystegia sepium* (Large Bindweed) (DSE 2004b).

The straight stems of *Melaleuca* species trees were used to make hard wooden spears, clubs and digging sticks, while the soft, large papery bark could be used to wrap babies (Gott and Conran 1998: 63). *Acacia mearnsii* (Black Wattle) gum or sap was used to make flavoured drinks or eaten raw and may have also been used to make a kind of cement by mixing it with ash or burnt shell, while the bark was used to make an infusion for the treatment of indigestion (Zola and Gott 1996: 55). Acacias more generally were used for a variety of purposes, including the use of the inner bark to manufacture string, cooking and eating of the green seed pods, grinding of dry seed pods into flour, applying gum to wounds or taken to treat dysentery, and use of the bark to treat boils (Zola and Gott 1996: 63). The leaves and stems of *Themeda triandra* (Kangaroo Grass) were used by Aboriginal people to make string and to create fishing nets (Zola and Gott 1996: 58).

Eucalypt barks were commonly used by Aboriginal people to make canoes and dishes, with large burls being hollowed out and used to make water containers. Saps were used to make medicinal treatments for injuries and illness and were occasionally mixed to produce flavoured drinks or eaten raw; Eucalypt leaves were also used in medicinal steam baths (Gott and Conran 1998:50; Zola and Gott 1996:14, 55). Specifically, the inner bark of *Eucalyptus obliqua* (Messmate Stringybark) was used by Aboriginal people to make coarse string for fishing nets and bags, whilst the outer bark was used as tinder (Gott and Conran 1998: 56; Zola and Gott 1996: 60). Given the extensive uses of the natural flora associated with the geographic region, the activity area would have contained valuable natural resources that would have been utilised by Aboriginal people.

7.1.3.5 Climate

The activity area and surrounding region currently has a temperate climate, with hot and dry summers and cool and wet winters. Climate data from the nearest weather recording

station indicates that average maximum temperatures range between 13.4°Celsius in July to 24.4°Celsius in Februaru. Average minimum temperatures range between 8.2°Celsius in July to 15.9°Celsius in February. Monthly mean rainfall peaks in August with 80.3mm and is lowest in January with 39mm. Average annual rainfall for the region is 699.8mm (BOM 2021).

Climatic conditions in Australia are known to have fluctuated greatly during the late Pleistocene and Holocene periods and within the 65,000 or more years that Australia has been occupied by Aboriginal peoples. The last glacial period, commencing 80,000 years ago, resulted in global cooling that peaked approximately 18,000 years BP. At the height of the Last Glacial Maximum (LGM), temperatures in southeastern Australia were between 6 and 10 degrees cooler, winds were stronger and the sea level dropped up to 120mlower than it is today, resulting in the connection of Tasmania to the mainland via a land bridge. As the glacial conditions receded towards the end of the Pleistocene and conditions ameliorated during the early Holocene, temperatures and rainfall gradually increased to be more consistent with current conditions and Bass Strait filled with water, severing the land bridge between mainland Australia and Tasmania. Approximately 5,000 years BP, conditions became slightly cooler and drier before returning to the temperate conditions that continue to the present time (Kershaw 1995). Bay floor channelling evidence, seismic and core dating suggests that between approximately 2,800 and 1,000 years BP Port Phillip became a lake before drying out, despite sea levels remaining stable at modern levels. This drying of the bay is likely to have been caused by sand blockage at the mouth of the bay, coupled with high rates of evaporation. At around 1,000 years BP the blockage at the bay entrances cleared and the modern marine bay was established (Holdgate, Wagstaff and Gallagher 2011).

7.1.4 Historical Context

7.1.4.1 Land Use History

The first European explorations of the Bass Coast were carried out by George Bass between 1797 and 1798. Bass entered Western Port Bay via the Eastern Passage, located between San Remo and Phillip Island (Victorian Places 2015a). The Bass Coast comprised rich and fertile land, which was quickly taken up by squatters for farming practices and agriculture however, the activity area did not fall within the bounds of these pastoral runs (Figure 2). The land surrounding San Remo was first surveyed in 1850, with the township originally known as Griffiths Point. A parish map dating to 1867 indicates that the activity area fell within the boundary of Crown Allotment 8, Parish of Woolamai, County of Mornington (Figure 3). A notation on the Parish map describes the land as moderately timbered good agricultural and pastoral land.

During the mid to late 1800s, as the San Remo township slowly expanded, the land surrounding the San Remo locality was predominantly used for livestock grazing and farming. A school opened in 1874 and by this time, a jetty had been constructed to facilitate the transportation of coal from Kilcunda. A notation on a geological map dating to 1892 indicates that coal deposits were believed to be located to the north and northwest of the activity area (Figure 4). In 1875 stockyards were constructed, with livestock herded across the Narrows when the tide was out (Victorian Places 2015b).

A notation on a geological map dating to 1892 indicates that coal deposits were believed to be located to the north and northwest of the activity area and a tramway was located to the south of the activity area (Figure 4). In 1875 stockyards were constructed in the locality, with livestock herded across the Narrows from Phillip Island when the tide was out (Victorian Places 2015b). The Councils at Phillip Island and Woolamai met at Griffiths Point from 1876 until 1913. The township was renamed San Remo in 1888, after the portside town in northern Italy. The area contained excellent pastoral land and a dairy industry soon flourished in the region (Victorian Places 2015b).

The early 20th century saw increased accessibility from Melbourne to San Remo and nearby Phillip Island. On 9 May 1910 a railway line was opened from Nyora to Wonthaggi, with a station located at Anderson, only 6km away from the San Remo township (VicSig 2020). Motorised travel saw increased tourism with two boarding houses, two hotels, a dance hall and a general store accommodating visitors. In 1940 the construction of a suspension bridge facilitated easier travel between San Remo and Phillip Island. This suspension bridge was subsequently replaced by the larger extant concrete bridge in 1969 (Victorian Places 2015b), and by this time, commercial fishing was well established as a dominant industry in the region. In 1949, the fishing co-operative was opened to facilitate sales (Victorian Places 2015b).

More specific to the activity area itself, developments around the activity area are discernible over time. An aerial photograph dated 1977 indicates that by this time, the activity area remained undeveloped however, a clear alignment of planted vegetation on a northeast/southwest alignment is visible (Figure 5). With an allowance for a margin of error, this alignment is relatively consistent with the position of the tramway shown in Figure 4, indicating that it is possible that the remnants of an historic tramway may pass through the activity area. Few changes had occurred by 1984, with the exception of vegetation growth (Figure 6).

More recent satellite interpretation indicates that until recently, the activity area remained undeveloped, whilst the areas to the immediate north and east were subject to increased urbanisation. However, satellite imagery shows that by October 2019 road/driveway construction had begun to the immediate south and west which has impacted the southwestern extent of the activity area (Figure 7). Satellite imagery taken on 19 November 2020 shows that the sealed driveways seen mid-construction in Figure 7 have now been completed, and intrude slightly into the southwestern boundary of the activity area (Map 1).

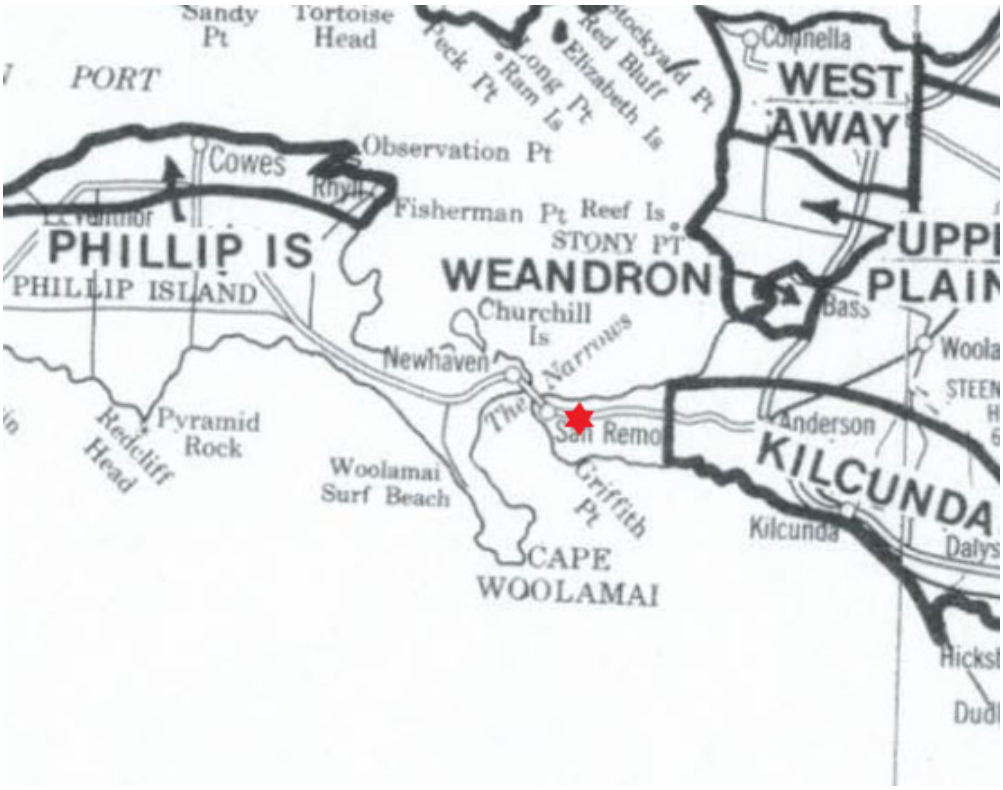


Figure 2: Pastoral runs of the Settled Districts region (Spreadborough and Anderson 1983). General location of the activity area shown in red



Figure 3: Country Lands, Parish of Woolamai, Country of Mornington 1867, and the current activity area shown in red (Department of Crown Lands and Survey)



Figure 4: Parts of the Parishes of Woolamai and Phillip Island 1892, and the current activity area shown in red (Geological Survey of Victoria)



Figure 5: Aerial image dated 1977 showing the undeveloped activity area in red, with a clear alignment marked by planted vegetation (Aerial Survey of Victoria 1977)



Figure 6: Aerial image dated 1984 showing the activity area in red, with few changes in comparison to imagery dated 1977 (Aerial Survey of Victoria 1984)



Figure 7: Satellite imagery taken on 13 October 2019 showing the activity area in red, with road construction activities impacting the southwestern extent of the activity area (NearMap 2019)

7.1.5 Aboriginal Context

7.1.5.1 Ethnohistory

Archaeological evidence from sites around Australia indicates that Aboriginal peoples occupied all environmental zones by 40,000 years BP. In Victoria, archaeological evidence from Bend Road 2 (7921-0736 [VAHR]) at Keysborough in southeast suburban Melbourne suggests that this area was occupied ca. 35,000 years BP (Hewitt and de Lange 2007). Aside from archaeological evidence, the majority of information regarding Aboriginal peoples and their lifeways comes from ethnohistorical accounts.

At the time of European contact with Aboriginal peoples in Victoria, the region surrounding Port Phillip and extending north to Euroa was occupied by people belonging to six distinct but related language groups. These language groups formed a confederacy known as the Kulin Nation and shared close cultural and religious ties (Presland 1994: 36). The groups making up the Kulin Nation comprised the Woi wurrung, Bun wurrung, Wada wurrung, Djadja wurrung, Ngurai-Illam Wurrung and Daung wurrung (Clark 1990; Presland 1994). The groups within the Kulin Nation followed a patrilineal descent model and adhered to a moiety system. Each clan within the Kulin Nation language groups belonged to either one of two moieties; Bunjil (eaglehawk) and Waa (crow). The moiety of a given clan had economic, religious and social implications and obligations (Barwick 1984: 105).

At the time of European contact, the activity area and surrounding region lay within the traditional lands of the Aboriginal people of the Bun wurrung language group (Figure 8). Bun wurrung translates to “no language” (Clark 1990: 362). The boundary of Bun wurrung speaking Aboriginal people extended along a narrow strip of the coast from the Werribee River in the west, around the northern and eastern parts of Port Phillip Bay, incorporating

the Mornington Peninsula, the watershed draining into Westernport Bay, extended north to the southern reaches of the Dandenong Range, and east to Corner Inlet, taking in Cape Liptrap and Wilsons Promontory (Clark 1990: 363-365).

The Bun wurrung language group, or tribe, was made up of six clans who lived within and moved across smaller estates within the Bun wurrung tribal territory (Clark 1990: 365). Each clan consisted of a number of interrelated family units known as bands, and each clan was identified with an individual name and moiety (Presland 1994: 39). The clan whose estate covered the activity area at the time of contact was the Yallock balug. Their estate extended across the eastern side of Westernport Bay, including along the Bass River (Clark 1990: 368).

Yallock balug translates to "river people" (from "yallock" = river, and "balug" = people) (Clark 1990: 367). The Yallock balug moiety was Bunjil (Clark 1990: 368). Following the marriage laws associated with the moiety system, Yallock balug women would most likely have married into Waa clans of the Wada wurrung or Woi wurrung tribes (Cotter 2001: 2).

The leader (Arweet) of the Yallock balug in 1846 was Worindidjolog/Warendedolong/Warrengittolong, who guided William Thomas during his 1841 expedition to the Bass River (Clark 1990: 368).

European settlement in the region had a devastating effect on local Aboriginal populations. Steep declines in population were recorded soon after European settlement, although it is likely that by the time of the official settlement of Melbourne in 1835, Bun wurrung peoples had already suffered severe population decline due to the impact of conflict with settlers, sealers and whalers, and fast-spreading infectious diseases.

In 1837 the Native Police Corps was formed by Charles De Villiers following a request by the Police Magistrate William Lonsdale. The Corps was to be made up of Aboriginal police troopers largely from the same clans to minimise internal conflict. The police camp was situated at Narre Narre Warren. Many Bun wurrung people joined the Corps and moved to the police camp. De Villiers resigned from his post in 1838 after criticism from the Anglican missionary George Langhorne. Langhorne subsequently took over the Native Police Corps but failed to make a success of the scheme. De Villiers was reappointed but lasted less than a year in the role and the Native Police Corps was disbanded in early 1839 (Presland 1994: 93-94).

In 1839 the Aboriginal protectorate scheme was introduced in Victoria. A Chief Protector, George Augustus Robinson, was appointed and supported by four Assistant Protectors. The role of the protectorates was to provide food, shelter and medical supplies, record cultural and population information and to indoctrinate Aboriginal peoples into European cultural and economic systems. Aboriginal reserves and stations were established across the state and Aboriginal people were encouraged to move to them. Bun wurrung people moved to protectorate stations and reserves located at Narre Narre Warren, Warrandyte, Acheron River and Mordialloc. A school for Aboriginal children was established at Merri Creek (Presland 1994: 100). The Protectorate was largely unsuccessful and was disbanded in 1849.

In 1860, the Central Board for the Protection of the Aborigines was founded to manage Aboriginal people in Victoria. Numerous government stations and missions were established throughout the state. In the 1860s the Coranderrk Mission Station was opened near Healesville. Many Bun wurrung people lived and worked on the station almost semi-autonomously up until the 1880s (Presland 2010: 112). Throughout the late 1800s Aboriginal people began to leave the missions and live in surrounding areas. Coranderrk Mission Station was closed in 1924 (Presland 1994: 100) and the majority of occupants were forcibly removed and relocated to the mission at Lake Tyers. Nine people refused to leave Coranderrk Station and in 1933 the last person was born at Coranderrk; Ngurungaeta and AFL footballer James

(Jim) Wandin was born at the home of his grandmother Jemima, who had refused to leave the station in 1924.

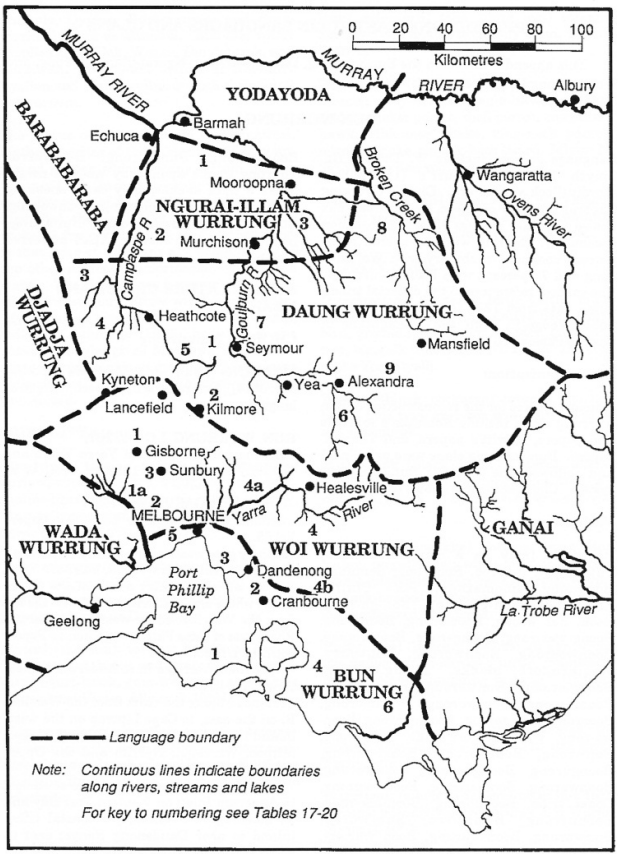


Figure 8: East Kulin Nation Clans (Clark 1990: 364)

7.1.5.2 Oral History

No oral history information specifically relating to the activity area was able to be determined in consultation with the Bunurong.

7.1.6 Archaeological Context

7.1.6.1 Victorian Aboriginal Heritage Register (VAHR)

The Victorian Aboriginal Heritage Register (VAHR) was accessed by Jem Archaeology Archaeologist/HA Talia Green on 22 March 2021 and was searched for information relating to previously identified Aboriginal places within the activity area and the identified geographic region.

A total of 131 previously recorded Aboriginal places are present within the defined geographic region (see Map 2 and Appendix E). These include 62 shell middens/artefact scatters, 44 artefact scatters, 17 shell middens, four low density artefact distributions, one earth feature (hearth)/shell midden, one Aboriginal ancestral remains (burial), one shell midden/Aboriginal ancestral remains (burial) and one quarry. There are two Aboriginal historical references within the geographic region: San Remo Village (12.2-23), a campsite/meeting place, and San Remo Fight (8.3-20) a place where Europeans were killed/assaulted/threated by Aboriginal people.

No Aboriginal places are present within the activity area, however one previously recorded Aboriginal place is located within 200m of the activity area:

- San Remo Police Station 1 (7920-0235 [VAHR]) (Map 3).

San Remo Police Station 1 (7920-0235 [VAHR]) is an artefact scatter comprising one definite Aboriginal surface artefact in the form of a flake made from a raw material of silcrete, with a maximum dimension of 28mm; and one possible artefact (surface), the details of which are unspecified. This Aboriginal place is located within a gently undulating coastal landform and was identified during monitoring activities following grass removal in 2006.

A summary of Aboriginal places located within one kilometre of the activity area is presented in Table 3.

Table 3: Aboriginal places listed on the VAHR within 1km of the activity area

VAHR Number	Place Name	Site Type	Location	Description
7920-0199-1	W.P. Hotel 1	Aboriginal Ancestral Remains (Burial)	Coastal dune landform	Aboriginal Ancestral Remains (burial) and associated grave goods, including small macropod incisors, kangaroo fibulae, and one possum incisor
7920-0199-2	W.P. Hotel 1	Shell Midden	Coastal dune landform	Shell midden deposits including *Subninella* and other unspecified shell species
7920-0207	San Remo 1	Shell Midden	Coastal dune landform	Shell midden measuring 50x50m in dimension, featuring *Subninella*, *Austrocochlea*, *Mytilus* and *Cabestana* shell species
7920-0208	San Remo 2	Artefact scatter	Coastal cliff landform	Single exposed artefact located on side of walking track. No further details available

VAHR Number	Place Name	Site Type	Location	Description
7920-0229	Phillip Island Road Cutting 1	Artefact scatter	Undulating land	Surface and subsurface artefact scatter revealed in a road cutting comprising 26 silcrete, chert, quartzite and basalt
7920-0235	San Remo Police Station 1	Artefact Scatter	Undulating coastal plain	One surface silcrete flake, and one possible surface artefact which has not been specified
7920-0271	Phillip Island Road, Island View Estate 3	Artefact scatter	Coastal plain	Sub surface artefact scatter comprising 211 silcrete, quartz, quartzite, crystal quartz, basalt and coastal flint stone artefacts at 0 to 30cm depth
7920-0272	Phillip Island Road, Island View Estate 1	Artefact scatter	Slope of a gently inclined rise	Sub surface artefact scatter comprising two silcrete artefacts at 30 to 50cm depth
7920-0273	Phillip Island Road, Island View Estate 2	Artefact scatter	Gently sloping land	Sub surface artefact scatter comprising one sedimentary rock flaked piece at 0 to 20cm depth
7920-0274	Phillip Island Road, Island View Estate 4	Artefact scatter	Mid to lower slope of a coastal plain	820 silcrete, quartz, quartzite, crystal quartz, basalt, coastal flint, shell and ochre at 0 to 40cm depth
7920-0284-1	San Remo 4	Artefact Scatter	Crest of an eroding coastal cliff face	Shell midden measuring 30x5m in dimension, featuring a lens of highly fragmented burnt shell, predominately comprised of *Mytilus* species

VAHR Number	Place Name	Site Type	Location	Description
7920-0284-2	San Remo 4	Artefact Scatter	Crest of an eroding coastal cliff face	Stone artefacts associated with shell midden, including a slab-like manuport and a series of flaked pieces
7920-0292	Mary Grove AS	Artefact Scatter	Crest of a slope within a coastal landform	Artefact scatter measuring 492sqm comprising a total of 201 surface and sub-surface lithic deposits, including in the form of complete and broken flakes, cores, cobbles/pebbles, angular fragments and formal tools, made from raw materials of silcrete, quartz, crystal quartz, coastal flint and 'other'



Legend

Activity Area

Road

Contour

VAHR Place

N

0 30 60 m

Map 3: Aboriginal Place within 200m of the Activity Area

7.1.6.2 Previous Archaeological Investigations

A number of previous regional and localised archaeological investigations have been undertaken within the geographic region surrounding the activity area. A review of the most relevant reports, which were determined as being relevant due to proximity to the activity area, and within the same sensitive Ramsar Wetland area, is presented below.

Gaughwin (1981) undertook an archaeological survey (Report #4) of the Western Port catchment. During the survey a total of 266 Aboriginal places were recorded, 90 of which are located in the geographic region relevant to the current CHMP. Shell middens were the most common place type, often located in blowouts and dunes. *Cellana tramoserica*, *Subninella undulata* and *Dicathias textilosa* were the most frequently identified shellfish species. Artefact scatters were also located, often in association with shell middens. Marine chert and quartz were the most common raw materials present, with silcrete also observed in some locations.

Gaughwin and Stockton (1983) undertook a desktop review and ground survey (Report #69) of previously recorded Aboriginal places within the Bass Coast Shire. The aim of the study was to use previous reports and Aboriginal place information to generate a prediction model for the landscapes and landforms most likely to contain Aboriginal heritage. A review of these places indicated that unrecorded Aboriginal places close to the coast were most likely to be found in landscapes that contained elevated well drained land, areas close to woodlands for the procurement of firewood and plant resources, areas where seals and mutton birds were likely to have been available and areas with ready accessibility to fresh water.

Freslov (1996) undertook an archaeological survey (Report #1852) of the Aboriginal places along the Victorian coast. The most commonly occurring places in the region were found to be shell middens, artefact scatters and isolated artefacts. While burials were found to be rare, 30 such sites were recorded along dune systems associated with the coast. A total of 58 Aboriginal places were reviewed, with shell middens found to show the poorest rates of preservation. The majority of coastal Aboriginal places were found to occur within 200 metres of the coast. The archaeological record along the Victorian coast was found to reflect interplay between behaviour in the past, environmental factors, development and study of these places in the present. Development along the Bass Coast was identified as the activity that may be causing the most destruction of Aboriginal places.

Feldman (2003) undertook a desktop assessment and archaeological survey (Report #2620) of land at Potters Hill Road, approximately 370m east of the current activity area. The desktop assessment found one Aboriginal place was located immediately north of the study area, Phillip Island Road Cutting 1 (7920-0229 [VAHR]) comprising seven stone artefacts. The archaeological survey did not locate any new Aboriginal places; however, the study area was considered to be sensitive for sub surface artefact scatters and isolated artefacts.

Long (2005) undertook an archaeological survey (Report #3187) of land at the proposed Silverwater Resort at the corner of Potters Hill Road and Phillip Island Tourist Road, San Remo, approximately 1.2km east of the current activity area. During the survey two areas of moderate archaeological potential were identified, a basalt spur in the northeastern portion of the study area, and an aeolian landform in the southeastern section. No new Aboriginal places were identified; however, it was recommended that the sensitive landforms identified during the survey undergo sub surface testing prior to any disturbance.

Feldman (2005) undertook an archaeological survey (Report #3314) at the proposed The Cliffs Golf Resort, at the corner of Punchbowl Road and Phillip Island Tourist Road, San Remo, approximately 2km east of the current activity area. The survey resulted in the identification of three areas of Aboriginal archaeological sensitivity: the cliff edge in the southern portion

of the study area, the coastal margin across the northwest and a series of low lying hill slopes. Two new Aboriginal places were revealed during the survey: The Cliffs 2 (7920-0232 [VAHR]) located in the cliff edge landform; and The Cliffs 1 (7920-0233 [VAHR]), located just outside the study area. Both places are isolated silcrete flakes.

Feldman (2006) undertook sub surface testing (Report #3431) at the proposed Silverwater Resort, in the same study area previously investigated by Long (2005), approximately 1.2km east of the current activity area. The sub surface testing program focused on the three areas of sensitivity identified by Long (2005). A total of seven mechanical transects were excavated varying between 10x1.2m and 20x1.2m in size to a maximum depth of 40cm and were subjected to sample sieving. Soils within the basalt spur landform comprised dark brown loam to 15cm overlying basalt floaters, and soils within the aeolian sands comprised grey sandy loams to 15cm overlying a brown clay soils with buckshot to 40cm. One new Aboriginal place was revealed during the sub surface testing: Silverwater 1 (7920-0234 [VAHR]) comprising two quartzite flakes at a maximum depth of 25cm.

Collins (2011) prepared a complex CHMP (#11759) for 26 hectares of land at the corner of Potters Hill Road and Phillip Island Road, San Remo, approximately 370m east of the current activity area and covering land previously investigated by Feldman (2003). The desktop assessment found that one Aboriginal place was located just outside the northern boundary of the activity area: Phillip Island Road Cutting 1 (7920-0229 [VAHR]) comprising seven stone artefacts. During the standard assessment one new Aboriginal place was located: Phillip Island Road, Island View Estate 4 (7920-0274 [VAHR]) comprising three silcrete artefacts on a sloping hill. The complex assessment involved the excavation of three 1x1m test pits and ten 50x50cm shovel test pits. Soils generally comprised very dark brown clay loam with grass roots and basalt to 10cm, over a dark greyish brown clay loam with increasing clay content, basalt and buckshot to 38cm, over a mottled orange to brown clay. Two additional sub surface artefacts associated with Phillip Island Road Cutting 1 (7920-0229 [VAHR]) were located at 25cm depth, and a further 15 silcrete and basalt artefacts were located at Phillip Island Road, Island View Estate 4 (7920-0274 [VAHR]) at 40cm depth. A total of three new Aboriginal places were revealed during the complex assessment: Phillip Island Road, Island View Estate 3 (7920-0271 [VAHR]) comprising 12 silcrete and quartz artefacts at 0 to 30cm depth, Phillip Island Road, Island View Estate 1 (7920-0272 [VAHR]) comprising two silcrete artefacts between 30 to 50cm depth and Phillip Island Road, Island View Estate 2 (7920-0273 [VAHR]) containing one sedimentary rock artefact between 0 to 20cm depth. Silcrete was the most frequently identified raw material.

Barker (2012) undertook an archaeological salvage program (Report #4475) at Aboriginal places Phillip Island Road Cutting 1 (7920-0229 [VAHR]), Phillip Island Road, Island View Estate 3 (7920-0271 [VAHR]) and Phillip Island Road, Island View Estate 4 (7920-0274 [VAHR]), approximately 570m east of the current activity area. The salvage program involved the excavation of one 2x2m salvage pit within the place extent of Phillip Island Road Cutting 1 (7920-0229 [VAHR]) and two 3x3m salvage pits excavated within the place extents of Phillip Island Road, Island View Estate 3 (7920-0271 [VAHR]) and Phillip Island Road, Island View Estate 4 (7920-0274 [VAHR]). Soils were generally consistent with those observed by Collins (2011). An additional 19 artefacts were found associated within Phillip Island Road Cutting 1 (7920-0229 [VAHR]), a further 199 stone artefacts were located within Phillip Island Road, Island View Estate 3 (7920-0271 [VAHR]), and 802 stone artefacts were located within Phillip Island Road, Island View Estate 4 (7920-0274 [VAHR]). These additional artefacts were all located between 0 to 30cm depth, with silcrete being the dominant raw material. Quartz, quartzite, crystal quartz, marine chert and basalt artefacts were also identified.

Orr et al. (2019) prepared a complex CHMP (#16410) at 1 Bonwick Avenue, San Remo, approximately 280m southeast of the current activity area. The complex assessment involved the excavation of one 1x1m test pit and 12 1.5x1m machine trenches. Soils within the activity area were compact and generally comprised a dark brown clay loam to 18cm, over

a light grey clayey silt to 25cm, over a dark grey silty clay to 38cm, over a dark brown very compact clay base at 40cm. No Aboriginal places were identified.

Burch and Evans (2020a) prepared a complex CHMP (#17224) for land at part of 145 Potters Hill Road, San Remo, approximately 1.17km east of the current activity area. No previously recorded places were revealed during the desktop assessment or the standard assessment. During the standard assessment two landforms were identified: elevated land across the west, southwest and northeast, with lower lying swales across the centre and southeast. The complex assessment involved the excavation of 28 test pits and four radial shovel test pits. Soils within the activity area were typically the same across all landforms and comprised damp to wet silts to between 10 and 22cm over clayey silts with ironstone and buckshot inclusions over silty clays reached at between 20 and 44cm depth. These clays varied in silt content and colour, from grey to grey with yellow mottling. One new Aboriginal place was located during the complex assessment: Potters Hill LDAD (7920-0295 [VAHR]), comprising an isolated silcrete flake at 40 to 44cm depth on a rise.

Burch and Evans (2020b) prepared a standard CHMP (#17469) for land along part of Potters Hill Road and part of Shetland Heights Road, San Remo, approximately 1.2km southeast of the current activity area at the closest point. The desktop assessment indicated that the majority of the activity area contained sub surface utilities which had caused substantial disturbance. The standard assessment identified high levels of disturbance and the only part of the activity area that was not substantially disturbed was not proposed to be impacted by the activity, therefore no further assessment was undertaken.

7.1.7 Conclusion

7.1.7.1 Site Prediction Model

The desktop assessment did not identify any previously recorded Aboriginal places within the activity area. The results of the desktop assessment suggest that it is likely that Aboriginal cultural heritage may be present within the activity area, as the activity area lies within a declared Ramsar Wetland, and the fringes of wetlands are considered to be likely to contain Aboriginal cultural heritage. With the exception of the southwestern corner which has been subject to recent disturbance, it is considered likely that the entirety of the activity area is sensitive for surface and sub-surface cultural deposits.

The site types which are most likely to be present within the activity area are:

- artefact scatters; and
- low density artefact distributions.

7.1.7.2 Conclusion

The results of the desktop assessment suggest that it is reasonably possible that Aboriginal cultural heritage may be present within the activity area. Therefore, under r.62(1) of the *Aboriginal Heritage Regulations 2018*, a standard assessment of the activity area is required.

7.2 Standard Assessment

7.2.1 Introduction

A standard assessment of the activity area was undertaken on 7 April 2021 by Jem Archaeology Archaeologist/HA Emily Evans and Jem Archaeology Archaeologist Tegan Herrick. No representatives from the Bunurong were able to undertake the standard assessment.

7.2.2 Aims

The standard assessment aimed identify any Aboriginal cultural heritage which may be present within the activity area and identify any areas of Aboriginal archaeological sensitivity which may be present within the activity area.

7.2.3 Methodology

The standard assessment involved a detailed pedestrian survey of the activity area. The surveyors walked in transects spaced 2-3m apart across the entire activity area, to ensure that the activity area was thoroughly examined (Map 4). Jem Archaeology Archaeologist/HA Emily Evans took photographs of the activity area and recorded detailed field notes. The standard assessment was undertaken in accordance with proper archaeological practice as described by Burke and Smith (2004: 65). If present, all mature native trees were inspected for evidence of cultural scarring and the activity area inspected for rock shelters, caves and cave entrances.

7.2.4 Limitations and Obstacles

The effectiveness of the standard assessment was limited by low ground surface visibility. Effective survey coverage is estimated to be less than 5%.

7.2.5 Results

The activity area comprises grassy slightly undulating land sloping from south to north. The western portion of the activity area comprises part of a driveway in the south with a series of services including inspection openings for sewerage or drainage (Photos 1 to 4). The central portion of the activity area is free of structures or utilities, with dense grasses located across the central northern boundary (Photos 5 to 9). The land across the southern and southeastern portions of the activity area is at a significantly higher elevation than the northern extent, with evidence of soil mounding and ground surface undulations present across the east and central portions (Photos 9 to 12). These undulations may be indicative of a tramway and other access tracks that were identified as possibly being present within the activity area during the desktop assessment. The northeastern portion is the lowest point of the activity area, with grasses and small shrubs present (Photos 13 to 16). No mature native trees are present within the activity area. No rockshelters, caves or cave entrances are present within the activity area.

No Aboriginal places were identified during the standard assessment; however one area of Aboriginal archaeological sensitivity was identified. This area comprises the entire activity area, excluding the land 5m along the western and eastern boundaries where services are known to be located (Map 5). It is considered likely that Aboriginal cultural heritage may be present within the activity area, therefore a complex assessment is required.



Photo 1: Southwest of the activity area facing east.



Photo 2: Northwest of the activity area facing south.



Photo 3: Northwest of the activity area facing north.



Photo 4: Western portion of the activity area facing east.



Photo 5: Western portion of the activity area, facing northeast.



Photo 6: Central northern portion of the activity area facing east.



Photo 7: Central northern portion of the activity area facing west.



Photo 8: Central southern portion of the activity area facing southeast.



Photo 9: Central southern portion of the activity area facing north.



Photo 10: Central eastern portion of the activity area facing northwest.



Photo 11: Eastern portion of the activity area facing west.



Photo 12: Eastern portion of the activity area facing south.



Photo 13: Northeastern portion of the activity area facing southwest.



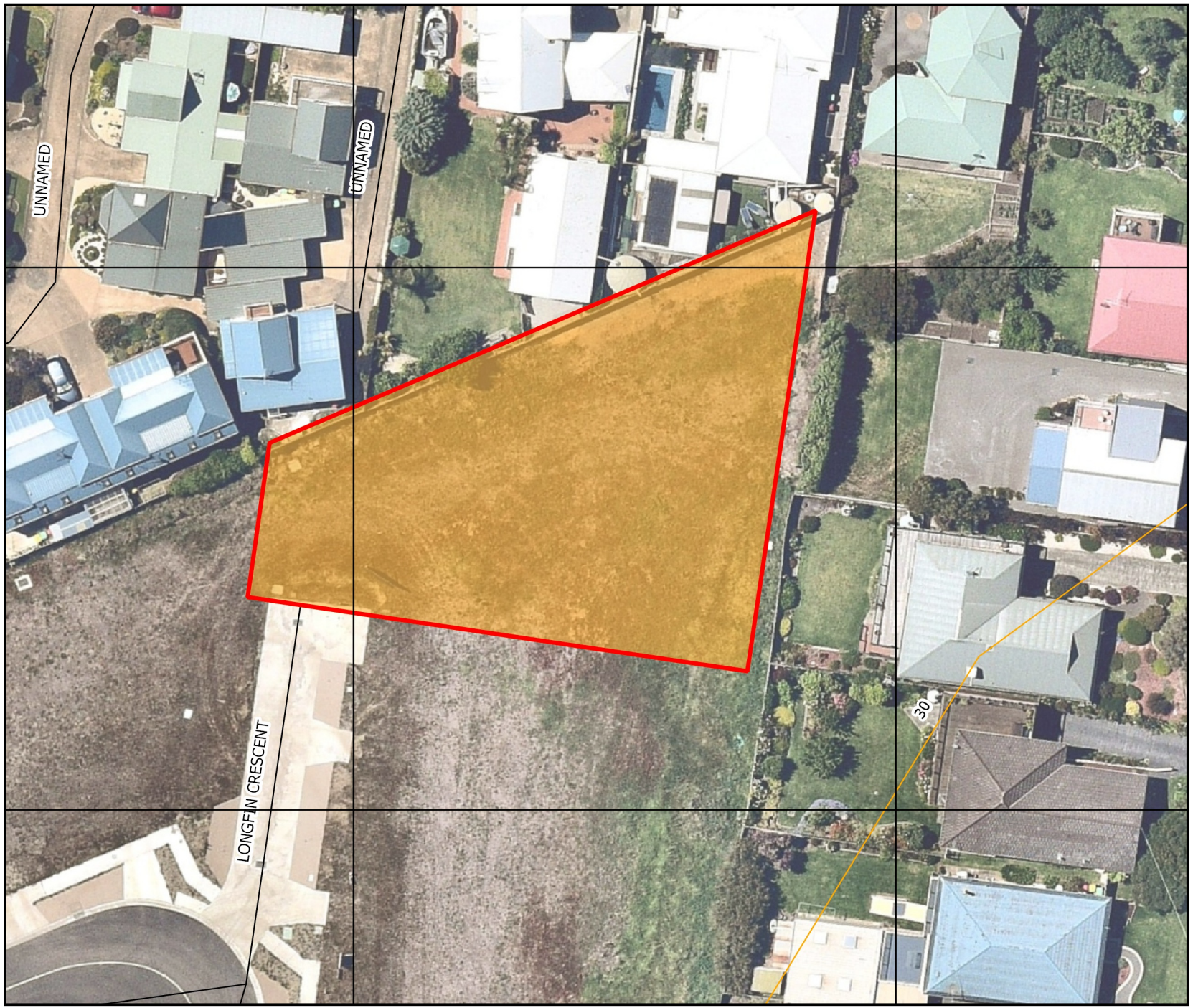
Photo 14: Northeastern corner of the activity area facing northeast.



Photo 15: Northeastern portion of the activity area facing south.



Photo 16:Northeastern portion of the activity area showing ground surface facing southwest.



Legend

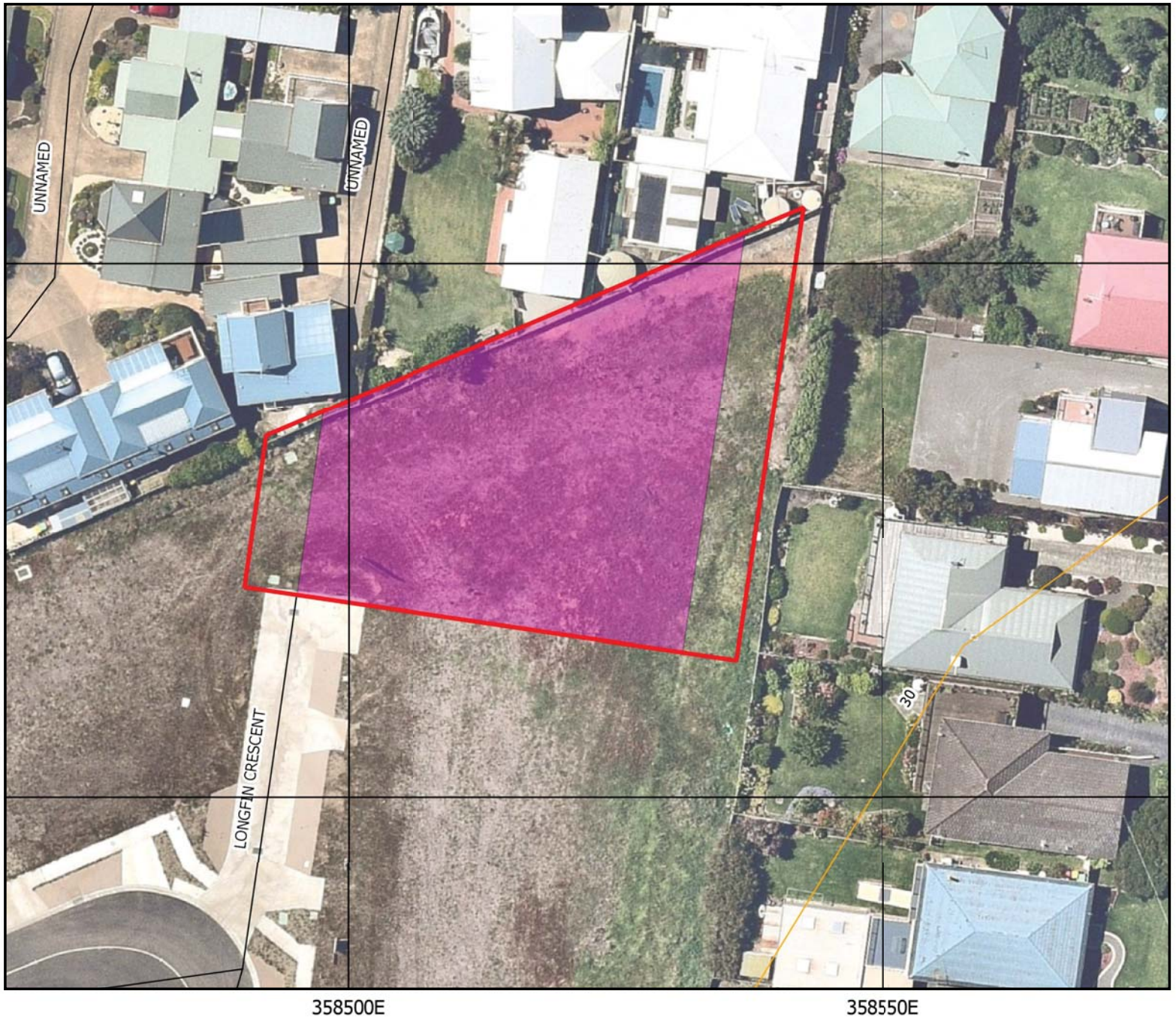
- Activity Area
- Survey Area (<5% Effective)
- Road
- Contour

N

0 10 20 m

1:500

Map 4: Survey Area



Legend

- Activity Area
- Sensitivity
- Road
- Contour

N

0 10 20 m

1:500

Map 5: Area of Aboriginal Archaeological Sensitivity within the Activity Area

7.2.6 Conclusion

It is considered likely that Aboriginal cultural heritage may be present within the activity area, therefore under r.64(1)(a) of the *Aboriginal Heritage Regulations 2018*, a complex assessment is required.

7.3 Complex Assessment

7.3.1 Introduction

A complex assessment of the activity area was undertaken on 7 and 8 April 2021 by Jem Archaeology Archaeologist/HA Emily Evans and Jem Archaeology Archaeologist Teagan Herrick. No Bunurong representatives were able to undertake the complex assessment on 7 April. On 8 April Bunurong representatives Alvin Rajkovic, Tommy Corrigan, Billy Corrigan, and Casey Sweetman participated in the complex assessment. Jem Archaeology Archaeologist/HA Emily Evans supervised the complex assessment.

7.3.2 Aims

The complex assessment aimed to investigate the stratigraphy of sub surface deposits and soil types within the activity area, and to identify any Aboriginal cultural heritage which may be present within the activity area.

7.3.3 Methodology

The complex assessment comprised controlled manual archaeological excavations in the form of four 1x1m test pits (TP) (Map 6). The excavations were undertaken in accordance with proper archaeological practice and the guidelines contained in AV's (2016) *Aboriginal Heritage Act 2006* Practice Note: Subsurface Testing. The 1x1m TPs were excavated to determine the stratigraphy of the single landform within the activity area and to search for any sub surface Aboriginal cultural heritage.

The TPs measured 1x1m and were excavated using shovels to remove surface vegetation, the topsoil and culturally sterile layers in each spit. Excavation proceeded in arbitrary spits of no more than 5cm and all excavated material was hand sieved through 5mm mesh. Jem Archaeology Archaeologist/HA Emily Evans recorded the TPs in full, including recording TP locations using a Trimble GNSS receiver (differential GPS), photographing and drawing stratigraphic profiles, describing soil types from each stratigraphic context, testing soil samples from each stratigraphic context for pH level, and describing the colour of soil samples from each stratigraphic context using Munsell colour charts.

7.3.4 Limitations and Obstacles

The complex assessment involved the excavation of a total area which is relatively small in comparison with the total size of the activity area. Therefore, there is a minor possibility that undiscovered Aboriginal cultural heritage may be present in unexcavated sub surface contexts within the activity area. However, the sampling strategy employed targeted all areas of Aboriginal archaeological sensitivity within the activity area and ensured that the nature of sub surface deposits within the activity area was well documented.

7.3.5 Results

A total of four TPs were excavated within the activity area (Map 6). The details of all excavations undertaken within the activity area are presented below.

No Aboriginal places were discovered during the complex assessment.



Legend

Activity Area

Test Pits

Negative

Road

Contour

N

0 10 20 m

1:500

Map 6: Location of Excavations within the Activity Area

7.3.5.1 Test Pits

Project: CHMP 17790
Pit ID: TP1
Coordinates: E 358502 N 5734952

Date: 7/4/2021
Landform: mid slope
Disturbance: Fill top 14cm

Table 4: TP1 description

Context No.	Soil Horizon	Depth (cm)	Munsell Colour	pH	Texture	Moisture	Structure	Consistency	Inclusions	Boundary	Artefacts
1	-	0cm-14cm	Very Dark Greyish Brown (10YR 3/2)	6	Silt and Clay Fill	Dry	Medium grained	Compact	Gravel, Rootlets	Smooth, Abrupt	-
2	A1	14cm-26/20cm	Dark Brown (10YR 3/3)	7	Silt	Dry	Fine grained	Very compact	Occasional gravel and buckshot, medium roots	Smooth, clear	-
3	A2	26/20cm-40/36/40/36cm	Dark Greyish Brown (10YR 4/2)	6.5	Slightly clayey silt	Dry	Medium grained	Very compact	Frequent buckshot increasing with depth	Smooth, gradual	-
4	B1	40/36/40/36cm-60cm	Dark Greyish Brown (10YR 4/2)	6.5	Clayey silt	Dry	Platy	Very compact	Buckshot, approximately 80%	Smooth, abrupt	-
5	B2	60cm+	Brown (10YR 4/3)	6	Clay	Dry	Blocky	Extremely compact	Buckshot	-	-

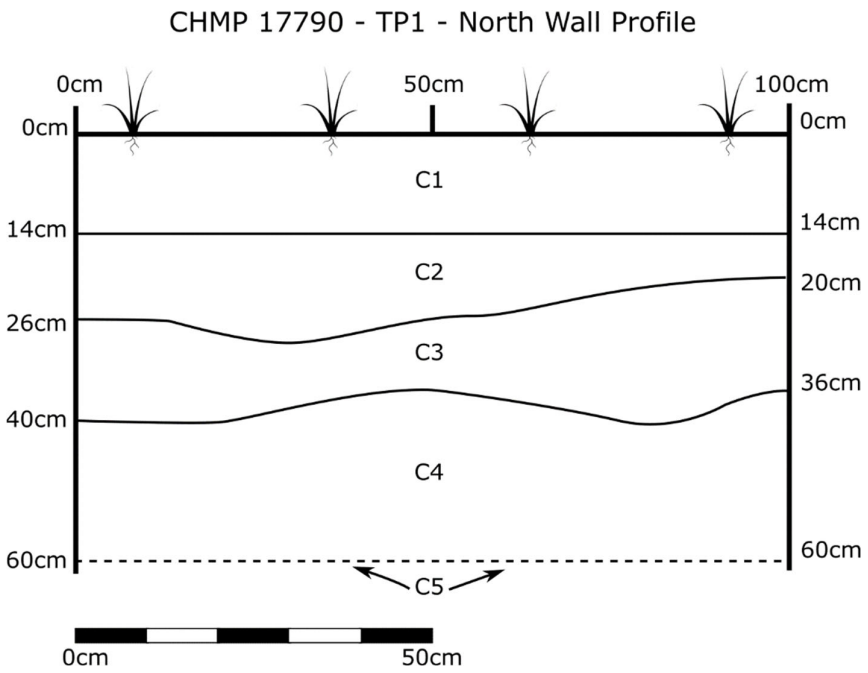


Figure 9: TP1 stratigraphic profile, north wall



Photo 17: TP1 facing north
Scale increments 20cm.



Photo 18: TP1 facing north
Scale increments 20cm.

Project: CHMP 17790
Pit ID: TP2
Coordinates: E 358518, N 5734957

Date: 8/4/2021
Landform: Mid Slope
Disturbance: Fill to 30cm

Table 5: TP2 description

Context No.	Soil Horizon	Depth (cm)	Munsell Colour	pH	Texture	Moisture	Structure	Consistency	Inclusions	Boundary	Artefacts
1	-	0cm-13cm	Very Dark Greyish Brown (10YR 3/2)	6	Silt and Clay Fill	Dry	Medium grained	Compact	Gravel, Rootlets	Smooth, Abrupt	-
2	-	13cm-28/30cm	Dark Yellowish Brown (10YR 3/4)	7.5	Clay fill	Dry	Blocky	Extremely compact	Glass	Smooth, abrupt	-
3	A1	28/30cm-30/34cm	Brown (10YR 5/3)	6.5	Silt	Dry	Fine grained	Compact		Smooth, abrupt	-
4	A2	30/34cm-53cm	Dark Greyish Brown (10YR 4/2)	6.5	Slightly clayey silt	Dry	Fine grained	Very compact	Frequent buckshot increasing with depth	Smooth, gradual	-
5	B1	53cm-60cm	Dark Greyish Brown (10YR 4/2)	6.5	Clayey silt	Dry	Platy	Very compact	Buckshot, approximately 80%	Smooth, abrupt	-
6	B2	60cm+	Brown (10YR 4/3)	6	Clay	Dry	Blocky	Extremely compact	Buckshot	-	

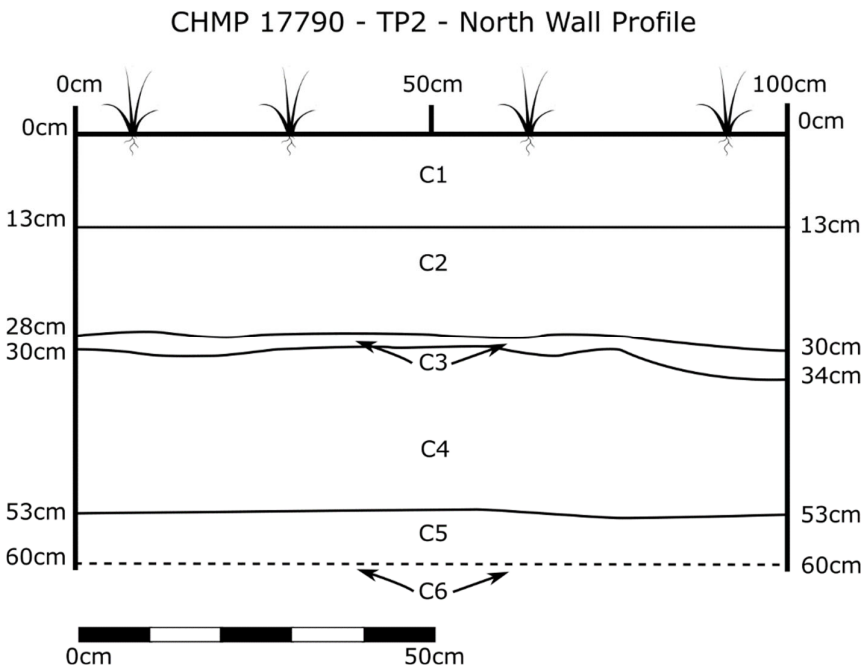


Figure 10: TP2 stratigraphic profile, north wall



Photo 19: TP2 facing north
Scale increments 20cm.



Photo 20: TP2 facing north
Scale increments 20cm.

Project: CHMP 17790
Pit ID: TP3
Coordinates: E 358532, N 5734947

Date: 8/4/2021
Landform: Mid Slope
Disturbance: Fill top 11cm

Table 6: TP3 description

Context No.	Soil Horizon	Depth (cm)	Munsell Colour	pH	Texture	Moisture	Structure	Consistency	Inclusions	Boundary	Artefacts
1	-	0cm-11cm	Very Dark Greyish Brown (10YR 3/2)	6	Silt and Clay Fill	Dry	Medium grained	Compact	Gravel, Rootlets	Smooth, Abrupt	-
2	A1	11cm-23cm	Dark Brown (10YR 3/3)	7	Silt	Dry	Fine grained	Compact	-	Smooth, clear	-
3	A2	23cm-36cm	Dark Greyish Brown (10YR 4/2)	6.5	Slightly clayey silt	Dry	Fine grained	Compact	Frequent buckshot increasing with depth	Smooth, gradual	-
4	B1	36cm-48cm	Dark Greyish Brown (10YR 4/2)	6.5	Clayey silt	Dry	Platy	Compact	Buckshot, approximately 50%	Smooth, abrupt	-
5	B2	48cm+	Brown (10YR 4/3)	6	Clay	Dry	Blocky	Extremely compact	Buckshot	-	-

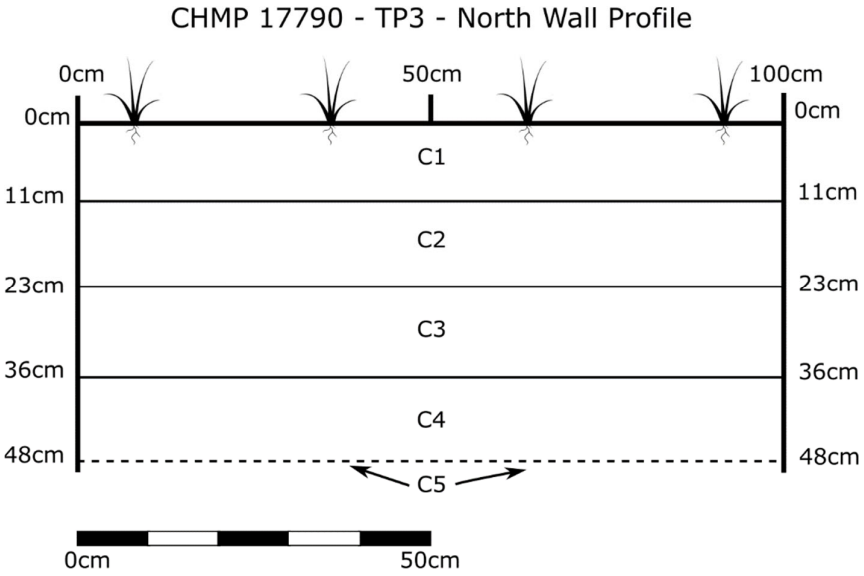


Figure 11: TP3 stratigraphic profile, north wall



Photo 21: TP3 facing north
Scale increments 20cm.



Photo 22: TP3 facing north
Scale increments 20cm.

Project: CHMP 17790
Pit ID: TP4
Coordinates: E 358534, N 5734965

Date: 8/4/2021
Landform: Mid slope
Disturbance: Fill to 30cm

Table 7: TP4 description

Context No.	Soil Horizon	Depth (cm)	Munsell Colour	pH	Texture	Moisture	Structure	Consistency	Inclusions	Boundary	Artefacts
1	-	0cm-10cm	Very Dark Greyish Brown (10YR 3/2)	6	Silt and Clay Fill	Dry	Medium grained	Compact	Roots	Smooth, Abrupt	-
2	-	10cm-25cm	Dark Yellowish Brown (10YR 3/4)	7.5	Clay fill	Dry	Blocky	Extremely compact	Glass	Smooth, abrupt	-
3	A1	25cm-36cm	Dark Greyish Brown (10YR 4/2)	6.5	Silt	Dry	Platy	Very compact	Frequent gravel inclusions with grass roots, glass	Smooth, abrupt	-
4	B	36cm-45cm+	Dark Greyish Brown (10YR 4/2)	6.5	Clay	Dry	Blocky	Friable	Modern rubbish disturbance until 40cm	-	-

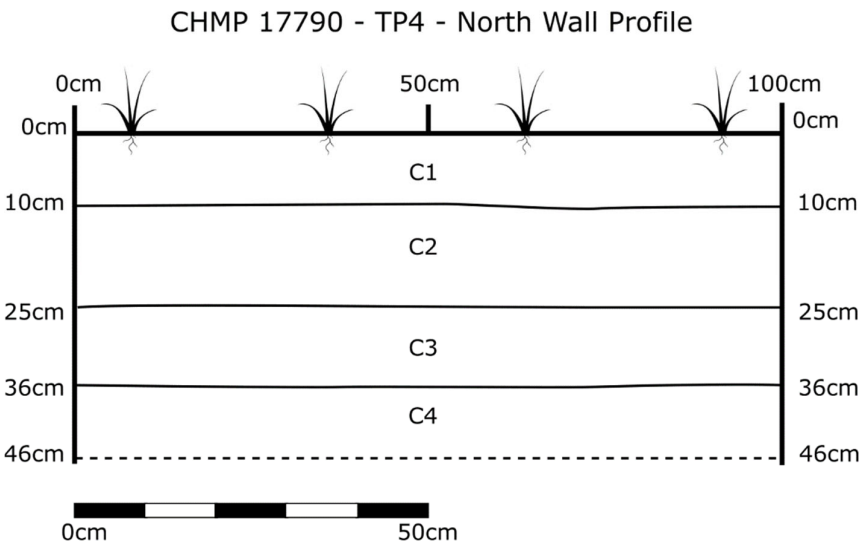


Figure 12: TP4 stratigraphic profile, north wall



Photo 23: TP4 facing north
Scale increments 20cm.



Photo 24: TP4 facing north
Scale increments 20cm.

7.3.6 Conclusion

A total of four TPs were excavated within the activity area (Map 6). The complex assessment revealed that sub surface deposits within the activity area generally comprise a disturbed topsoil occasionally followed by compact clay fill, over natural silts with occasional buckshot inclusions, over a compact natural clay base. Disturbance in for form of introduced silty soils were observed in all four TPs, with TP2 and TP4 both containing a distinct clay fill layer. Natural soils were encountered in all four TPs, generally comprising silts or clayey silts with occasional disturbance from the contexts above. Clay was reached at varying depths of 45cm to 60cm.

No Aboriginal places were discovered during the complex assessment; therefore no remaining areas of Aboriginal archaeological sensitivity are considered to exist within the activity area.

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8 CONSIDERATION OF SECTION 61 MATTERS: IMPACT ASSESSMENT

8.1 Consideration of Cumulative Impacts

As there is no known Aboriginal cultural heritage within the activity area, the proposed activity will have no cumulative impact on Aboriginal cultural heritage in the region. The preparation of this CHMP has contributed to the cumulative knowledge of Aboriginal cultural heritage in the identified geographic region. Aboriginal places previously recorded within the geographic region include artefact scatters, shell middens and burials. If future CHMP assessments identify Aboriginal places in the region, every effort should be made to retain and protect any such places.

8.2 Consideration of Section 61 Matters

There is no requirement for harm avoidance measures to be included in this CHMP in accordance with s.61(a) of the *Aboriginal Heritage Act 2006*, as no known Aboriginal cultural heritage is present within the activity area.

There is no requirement for harm minimisation measures to be included in this CHMP in accordance with s.61(b) of the *Aboriginal Heritage Act 2006*, as no known Aboriginal cultural heritage is present within the activity area.

There is no requirement for specific conditions for the management of Aboriginal cultural heritage within the activity area in accordance with s.61(c) of the *Aboriginal Heritage Act 2006*, as no known Aboriginal cultural heritage is present within the activity area.

Matters relating to s.61(d) and s.61(e) of the *Aboriginal Heritage Act 2006*, regarding disputes and custody and management of cultural heritage respectively are contained within Section 2 of this CHMP.

8.3 General Requirements

8.3.1 Contingency Plans

Under the *Aboriginal Heritage Regulations 2018* (Schedule 2, Clause 13[1]), the CHMP must include contingency plans for the following:

- the matters referred to in Section 61 of the *Aboriginal Heritage Act 2006*;
- the resolution of any disputes between the Sponsor and relevant RAP in relation to the implementation of the CHMP or the conduct of the activity;
- reviewing compliance with the CHMP and mechanisms for remedying non-compliance;
- the management of Aboriginal cultural heritage found during the activity; and
- the notification, in accordance with the *Aboriginal Heritage Act 2006*, of the discovery of Aboriginal cultural heritage during the activity.

The contingency plans are contained in Section 2.

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APPENDIX A: Glossary

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Aboriginal cultural heritage:	Aboriginal Places, Aboriginal objects and Aboriginal human remains (*Aboriginal Heritage Act 2006*).
Aboriginal human remains:	The whole or part of the bodily remains of an Aboriginal person, but does not include a body or the remains of a body, buried in a public cemetery (within the meaning of the *Cemeteries and Crematoria Act 2003* that is still used for the internment of human remains (*Aboriginal Heritage Act 2006*).
Aboriginal object:	An object that relates to the Aboriginal occupation of any part of Australia, whether or not the object existed prior to the occupation of that part of Australia by people of non-Aboriginal descent, and is of cultural heritage significance to the Aboriginal people of Victoria, or an object, material or thing that is removed or excavated from an Aboriginal place; and is of cultural heritage significance to the Aboriginal people of Victoria (*Aboriginal Heritage Act 2006*).
Aboriginal Place:	An area of land, expanse of water, natural feature, formation or landscape, archaeological site, feature or deposit, the area immediately surrounding a natural feature, formation or landscape, archaeological site, feature or deposit, to the extent that it cannot be separated from the thing without diminishing or destroying the cultural heritage significance attached to the thing by Aboriginal people, land set aside for the purpose of enabling Aboriginal human remains to be re-interred or otherwise deposited on a permanent basis or a building or structure that is of cultural heritage significance to the Aboriginal people of Victoria (*Aboriginal Heritage Act 2006*)..
Aboriginal tradition:	The body of traditions, observances, customs and beliefs of Aboriginal people generally or of a particular community or group of Aboriginal people; and any such traditions, observances, customs or beliefs relating to particular persons, areas, objects or relationships (*Aboriginal Heritage Act 2006*).
Angular fragment:	An artefact resulting from knapping which exhibits no identifiable platform, bulb of percussion, impact point or termination (Holdaway and Stern 2004: 113).
Archaeological site:	A place that contains evidence of past human activity in the form of artefacts, structures or features.
Artefact:	An object or item made and/or used by humans in the past.
Artefact scatter:	A concentration of flaked and/or ground stone artefacts, faunal remains or items resulting from the manufacture or use of implements made of wood, bone, hide or other materials, found in surface and/or sub surface contexts.
Assemblage:	A collection of artefacts found in close association.
Basalt:	A volcanic igneous basic rock which is fine grained (containing 45-55% silica), rich in iron and magnesium, and dark in colour (usually grey) (Holdaway and Stern 2004: 22).
Bipolar technique:	A knapping technique where the core is rested on an anvil while being struck with a hammerstone.
Burial:	Human remains, including partial human remains, of one or more individuals, located in an undisturbed or disturbed burial pit or container (e.g. a tree) (AAV 2008: 62).

Chert: A cryptocrystalline siliceous sedimentary rock which is isotropic and has low fracture toughness (Holdaway and Stern 2004: 23). Chert occurs in a range of colours and textures and often feels "greasy" to touch. Marine chert is dark grey and develops a chalky white cortex.

Core: An artefact with one or more negative flake scars more than 10mm in maximum dimension (Holdaway 2004: 24) and no dorsal surface or an artefact with negative flake scars and a dorsal and ventral surface (i.e. a flake which has been used as a core) (Holdaway and Stern 2004: 37-38). Core types include:

- **Unidirectional:** A core from which flakes were removed in one direction from a single platform (Holdaway and Stern 2004: 180).
- **Bidirectional:** A core from which flakes were removed in two directions from two platforms (Holdaway and Stern 2004: 180).
- **Multidirectional:** A core from which flakes were removed in three or more directions from three or more platforms (Holdaway and Stern 2004: 180).

Core fragment: A core with clear evidence of being broken (Holdaway 2004: 24).

Core tool: A core with retouch or edge damage.

Earth feature: A feature made of earth, including a bank, ditch, canal or trench, hearth, mound, oven, posthole, ring, soil deposit or soil feature or pit (AAV 2008: 61).

Flake: An artefact with a dorsal and ventral surface. Subcategories include:

- **Distal flake:** A flake with a termination and the absence of a platform, impact point or bulb of percussion (i.e. no proximal end) (Holdaway and Stern 2004: 111).
- **Medial flake:** A flake with no proximal end and no distal end, but with an identifiable ventral surface (Holdaway and Stern 2004: 111).
- **Proximal flake:** A flake possessing a platform, bulb of percussion or impact point but with no termination (i.e. no distal end) (Holdaway and Stern 2004: 111).
- **Special flake:** Ridge straightening or platform rejuvenation (e.g. tablet) flake (Holdaway and Stern 2004: 150).
- **Split flake:** A flake which is split longitudinally, parallel to the flaking axis (Holdaway and Stern 2004: 111).
- **Whole flake:** An artefact with a dorsal and ventral surface, a platform, an impact point, a bulb of percussion and a termination. Flakes may or may not also exhibit negative flake scars (Holdaway and Stern 2004: 111).

Ground-edge axe: A tool which possesses one or more ground cutting edges which are usually highly polished.

Hammerstone: A cobble or lump of stone which is pitted on at least one surface indicating that it has been used to strike a core during stone knapping (Holdaway and Stern 2004: 4).

Holocene: A geological epoch extending from 10,000 years BP to present.

Isolated artefact: A single surface or sub surface flaked or ground stone artefact not found in association with any other artefacts.

Low density artefact distribution: The occurrence of up to ten flaked or ground stone artefacts within an area of approximately ten x ten metres (AAV 2012: 1).

Manuport: An item (usually stone) which has been introduced into an archaeological site by humans.

Maximum dimension: The maximum dimension of an artefact in any direction.

Oriented length: The dimension of an artefact along the percussion axis.

Oriented width: The dimension of an artefact halfway along and at right angles to the percussion axis.

Oriented thickness: The dimension of an artefact between the dorsal and ventral surfaces, at the point where the measurements of oriented length and width intersect.

Platform: The surface on a flake or tool where the hammerstone originally struck the core at the proximal end. Platform types include:

- **Cortical:** The platform is partly or wholly covered by cortex, indicating

that the flake was removed relatively early in the knapping sequence (Holdaway and Stern 2004: 120).

- **Crushed:** The platform is damaged to the extent that platform attributes

cannot be recorded (Holdaway and Stern 2004: 120). The presence of a crushed platform may indicate the use of too much force by the knapper.

- **Faceted:** The platform exhibits three or more negative flake scars, indicating that the platform of the core from which the flake was removed was subject to extensive preparation (Holdaway and Stern 2004: 120).
- **Flaked:** The platform exhibits one or two negative flake scars, indicating that the flake was removed from a surface which had already been flaked (Holdaway and Stern 2004: 120).
- **Plain:** The platform is plain (Holdaway and Stern 2004: 120).

Pleistocene: A geological epoch extending from approximately 2,500,000 years BP to 10,000 years BP.

Quarry: The location of an exploited stone resource, where stone has been procured or extracted, and may also have been transported and reduced through knapping (Hiscock and Mitchell 1993: 23).

Quartz: A mineral with frequent flaws which influene fracture pathways, occurring in white (milky quartz), clear (rock crystal or crystal quartz), pink (rose quartz) and purple (amethyst) (Holdaway and Stern 2004: 24).

Quartzite: A metamorphic quartz-rich sandstone that has been recrystallised by heat and/or pressure. Quartzite has a granular (or sugary) texture and can occur in a range of colours and grain sizes (Holdaway and Stern 2004: 24).

Retouch: The removal of small flakes along the margins of tools to blunt or sharpen edges or to reshape tools. Retouch types include:

- **Backed:** Abrupt unidirectional or bidirectional retouch which involves blunting (Holdaway and Stern 2004: 159).
- **Edge damage:** Irregular flake scar damage resulting from the use of a tool (Holdaway and Stern 2004: 167).
- **Notched:** Retouch forming a concave shape resulting from one or several flake removals (Holdaway and Stern 2004: 165).

- **Scalar:** Scale-like flake scars (Holdaway and Stern 2004: 163).
- **Step:** Small flake removals with step terminations along the retouched margin (Holdaway and Stern 2004: 163).

Rock art: Images on rock surfaces that can be produced either by the adding of pigment (pictograms: painting, drawing, stencilling, printing, etc.) to the rock surface, or by breaking through or extracting the rock surface (petroglyphs: pecking, pounding, abrading, scratching etc.) (AAV 2008: 71).

Scarred tree: A tree from which Aboriginal people have removed bark for a variety of purposes, including for canoes, shields and containers.

Silcrete: A sedimentary rock consisting of quartz grains in a matrix of either amorphous or fine-grained silica. Silcrete occurs in a variety of textures and colours, especially reds, pinks, browns, greys and beiges as well as mottled varieties.

Shell midden: A surface or sub surface scatter of shells accumulated by cultural mechanisms in estuarine or freshwater contexts. Often the shell is accompanied by other artefacts, including flaked or ground stone, fish and other faunal bone, hearths and human remains (AAV 2008: 83).

Stone feature: A stone structure of feature constructed by Aboriginal people, including cairns, channels (stone races or canals), fish or eel traps, grinding grooves, rockwells, stone arrangements or stone structures (AAV 2008: 86).

Termination: The distal end of a flake or tool where force exited the original core. Termination types include:

- **Axial:** Termination at a right angle or close to a right angle compared to the platform, resulting from the force forming the flake moves right through the core (Holdaway and Stern 2004: 130).
- **Bipolar:** Termination exhibits crushing or small negative flake removals consistent with resting on an anvil during bipolar flaking (Holdaway 2004: 28, Table 3.3).
- **Feather:** A tapering termination with minimal thickness at the dorsal end (Holdaway and Stern 2004: 129). The optimal termination type (Holdaway and Stern 2004: 133).
- **Hinge:** The termination is rippled and the ventral surface curves towards the dorsal surface (Holdaway 2004: 28, Table 3.3). Hinge terminations result in cases where the platform is thick or the removal of the flake was initiated from the wrong angle (Holdaway and Stern 2004: 133).
- **Plunge:** A termination where the base of the core has been removed as a result of curvature of the fracture plane toward the core, resulting in a J-shaped flake (Holdaway and Stern 2004: 132) with the dorsal surface curving towards the ventral surface (Holdaway 2004: 28, Table 3.3). A plunge termination indicates the application of too much force (Holdaway and Stern 2004: 133).
- **Step:** The flake terminates in an abrupt 90° break, or there is evidence of a finial projection (Holdaway and Stern 2004: 130). Step terminations also result from a relatively thick platform or the application of force from the wrong approach angle (Holdaway and Stern 2004: 133).

Tool: A flake with some or all edges modified either by deliberate retouch or by macroscopic edge damage resulting from use (Holdaway and Stern 2004: 153). Tools may be whole, proximal, distal, medial or

split (as defined above for flakes). Common tool types found in Victoria include:

- **Backed blade/artefact:** A tool with blunting retouch located opposite the working edge.
- **Bondi point:** A tool, generally less than 80mm in maximum dimension, which has the form of an asymmetrical point and has been backed along one margin (McCarthy 1976: 44).
- **Concave and nosed scraper:** A tool with one or more retouched 'noses' separated by areas of notched retouch (Jones 1971:425).
- **End scraper:** A tool with retouch at the distal end, larger than a thumbnail scraper.
- **Flat straight edge scraper:** A tool with long straight edges lightly trimmed by retouch with acute angles between the dorsal and ventral surface (mean of 66.6 ±12.4°) (Jones 1971:404).
- **Geometric microlith:** A tool with backing retouch on the proximal and/or distal ends, and sometimes along one lateral margin, forming a symmetrical crescent or triangular shape along the transverse axis (Holdaway and Stern 2004: 263).
- **Notched scraper:** A tool with a small, concave area of retouch on the lateral or distal margin (Jones 1971:415).
- **Point:** A tool which has been retouched along both lateral margins to form a point when viewed in plan (Holdaway and Stern 2004: 266). Points may be unifacial or bifacial.
- **Round edge scraper:** A small, flat scraper with regular, convex curved edges (Jones 1971:340).
- **Steep edge scraper:** A thick tool with steep and stepped retouched margins (Jones 1971:402).
- **Thumbnail scraper:** A small (generally under 20mm) flake which has been retouched on the distal end (and occasionally along the lateral margins) to form a convex scraper edge shaped like a thumbnail (Wright 1970)
- **Utilised:** Where tool form does not conform to any of the above types and retouch type is edge damage.

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APPENDIX B: Notice of Intention to prepare CHMP and Response

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Notice of Intent to prepare a Cultural Heritage Management Plan for the purposes of the *Aboriginal Heritage Act 2006*

This form can be used by the Sponsor of a Cultural Heritage Management Plan to complete the notification provisions pursuant to s.54 of the *Aboriginal Heritage Act 2006* (the "Act").

For clarification on any of the following please contact Victorian Aboriginal Heritage Register (VAHR) enquiries on 1800-726-003.

SECTION 1 - Sponsor information

Sponsor:	TCG Doreen Pty Ltd ATF TCG Doreen Family Trust		
ABN/ACN:	609 540 847		
Contact Name:	Nick Corcoris		
Postal Address	Level 1, 20 Council Street, Hawthorn East 3123		
Business Number:	9882 9533	Mobile:	
Email Address:	Nick@thecorcorisgroup.com.au		

Sponsor's agent (if relevant)

Company:	Kostic & Associates Pty Ltd		
Contact Name:	Jackson Lai		
Postal Address			
Business Number:	03 9796 8360	Mobile:	
Email Address:	jackson@kostic.com.au		

SECTION 2 - Description of proposed activity and location

Project Name:	20 Longfin Crescent San Remo
Municipal district:	Bass Coast Shire Council

Clearly identify the proposed activity for which the cultural heritage managment plan is to be prepared (ie. Mining, road construction, housing subivision)

Dwellings (3+)

SECTION 3 - Cultural Heritage Advisor

Name	Company	Email address
Jennifer Burch	Jem Archaeology Pty Ltd	jen.burch@jemarchaeology.com.au

SECTION 4 - Expected start and finish date for the cultural heritage management plan

Start Date:	01-Mar-2021	Finish Date:	01-Mar-2022

Submitted on: 01 Mar 2021

SECTION 5 - Why are you preparing this cultural heritage management plan?

☑ A cultural heritage management plan is required by the Aboriginal Heritage Regulations 2007

What is the high Impact Activity as it is listed in the regulations?

Is any part of the activity an area of cultural heritage sensitivity, as listed in the regulations? 1

☐ Other Reasons (Voluntary)

☐ An Environment Effects Statement is required

☐ A Cultural Heritage Management Plan is required by the Minister for Aboriginal Affairs.

☐ An Impact Management Plan or Comprehensive Impact Statement is required for the activity

SECTION 6 - List the relevant registered Aboriginal parties (if any)

This section is to be completed where there are registered Aboriginal parties in relation to the management plan.

BUNURONG LAND COUNCIL ABORIGINAL CORPORATION

SECTION 7A - List the relevant Aboriginal groups or Aboriginal people with whom the Sponsor intends to consult (if any)

*This section is to be completed only if the proposed activity in the management plan is to be carried out in an area where there is **no Registered Aboriginal Party.***

SECTION 7B - Describe the intended consultation process (if any)

*This section is to be completed only if the proposed activity in the management plan is to be carried out in an area where there is **no Registered Aboriginal Party.***

SECTION 8 – State who will be evaluating this plan (mandatory)

The plan is to be evaluated by:

☐ Joint - Registered Aboriginal Party AND The Secretary

☑ A Registered Aboriginal Party

If checked, list the relevant Registered Aboriginal Party Evaluating:

☐ The Secretary

☐ Victorian Aboriginal Heritage Council

SECTION 9 – Preliminary Aboriginal Heritage Tests (PAHTs)

List the Reference Number(s) of any PAHTs conducted in relation to the proposed activity:

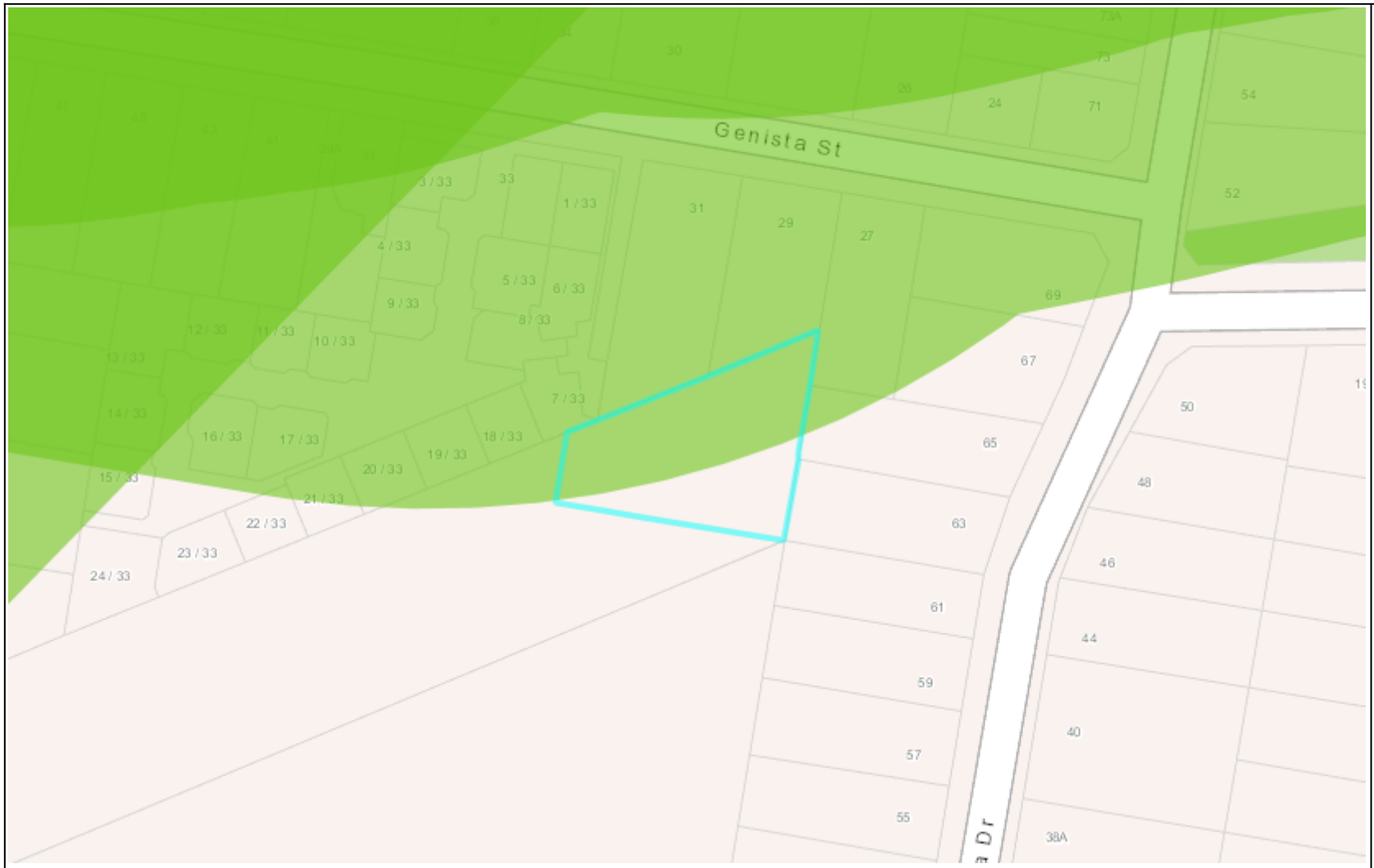
SECTION 10 - Notification checklist

Submitted on: 01 Mar 2021

Ensure that any relevant registered Aboriginal party/ies is also notified. A copy of this notice with a map attached may be used for this purpose.
(A registered Aboriginal party is allowed up to 14 days to provide a written response to a notification specifying whether or not it intends to evaluate the management plan.)

In addition to notifying the Deputy Director and any relevant registerd Aboriginal party/ies, a Sponsor must also notify any owner and/or occupier of any land within the area to which the management plan relates. A copy of this notice with a map attached may be used for this purpose.

Ensure any municipal council, whose municipal district includes an area to which the cultural heritage management plan relates, is also notified. A copy of this notice, with a map attached, may also be used for this purpose.



Aboriginal Victoria

20 Longfin Crescent San Remo

Areas of Cultural Heritage Sensitivity

VICTORIA State Government

Produced by Aboriginal Victoria
for
Jem Archaeology

1:1,250
Metres 20 40

GDA

N

Date: 25 February 2021

This document contains culturally sensitive information concerning the heritage of Victoria's Aboriginal communities, and cannot be included in any reports resulting from research associated with this document. This information is accurate at the date of production. However, the State of Victoria and its employees do not guarantee that the information in this document is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on this information.

Jen Burch

From: VAHR@dpc.vic.gov.au
Sent: Monday, 1 March 2021 8:18 PM
To: Nick@thecorcorisgroup.com.au; jackson@kostic.com.au; Jen Burch; heritagemanager@bunuronglc.org.au; heritageadvisor@bunuronglc.org.au; submissions@bunuronglc.org.au
Subject: Notice of Intent to Prepare CHMP 17790

[WARNING: This message was sent by an external sender (outside of your organisation). Use caution when opening any attachments or links] _____

To whom it may concern,

This is a formal automated response indicating that, on 01-Mar-2021, the Secretary, Department of Premier and Cabinet received a Notice of Intent to Prepare a Cultural Heritage Management Plan (CHMP) for:

TCG Doreen Pty Ltd ATF TCG Doreen Family Trust - 20 Longfin Crescent San Remo

The notification has been allocated the AV Project Number:

CHMP Plan ID. 17790

Please quote this number when making any future enquiries to AV regarding this project.

If your activity lies within the boundaries of a registered Aboriginal party (RAP) you must also notify this organisation of your intention to prepare the CHMP (if you have not already done so). Forwarding this email to the RAP does not satisfy the requirements of notification under section 54(3) of the Act. Please refer to that section for the required details. Further information about registered Aboriginal parties can be found at:

http://www.dpc.vic.gov.au/index.php/aboriginal-affairs/registered-aboriginal-parties

THE INFORMATION RELATING TO YOUR DEVELOPMENT HAS BEEN ENTERED BY YOUR HERITAGE ADVISOR. If you detect an error in the information, please email VAHR@dpc.vic.gov.au with the correct information and quoting the CHMP five digit number.

Please provide additional notification provisions (as set out below) to VAHR@dpc.vic.gov.au.

Additional Notification Provisions:

1. Ensure any municipal council, whose municipal district includes an area to which the cultural heritage management plan relates, is notified. You may provide a copy of your Notice of Intent for this CHMP, to the relevant municipal council, for this purpose.

2. List the relevant Aboriginal groups or Aboriginal people with whom the Sponsor intends to consult (if any). This section is to be completed only if the proposed activity in the management plan is to be carried out in an area where there is no Registered Aboriginal Party. Consultation is for the purpose of obtaining an adequate assessment of the existence and significance of Aboriginal cultural heritage. Traditional Owner groups, inclusively representing individual Traditional Owners, are more likely to be the relevant bodies with which to consult in preparing a CHMP. Sponsors should endeavour to consult accordingly. This information may also assist the Secretary in determining whether to appoint an Activity Advisory Group for the activity and who to appoint to that group.

Bunurong Land Council
ABORIGINAL CORPORATION

ABN: 66 129 413 297 ICN:3630
PO Box 11219, Frankston VIC 3199
336-340 Nepean Hwy, Frankston VIC 3199
Ph: (03) 9770 1273
www.bunuronglc.org

2 March 2021

To whom it may concern,

Notice to Evaluate Cultural Heritage Management Plan 17790 - Proposed Dwellings, 20 Longfin Crescent, San Remo.

Your notification has been accepted and the Bunurong Land Council Aboriginal Corporation (BLCAC) advises that it intends to evaluate this plan when complete, in accordance with Division 4, Section 55 of the *Aboriginal Heritage Act 2006.* We also advise that during the preparation of this plan, the BLCAC wishes to:

- Consult with you in relation to the assessment of the area for the purposes of the plan.
- Participate in the conduct of the assessment.
- Consult with the sponsor in relation to the conditions to be included in the plan.

Please note that before any fieldwork program commences it will be necessary for your heritage advisor to participate in a Project Inception Meeting to discuss the project. It is preferable for the project sponsor to attend the Project Inception Meeting. As the Project Inception Meeting provides an opportunity for all parties to clarify the aims of the CHMP and methodology for any fieldwork program, it is helpful if you and/or your heritage advisor can bring along the following information to expedite these discussions:

- A clear map of the Activity Area.
- Aboriginal site location data within the geographic region.
- Site cards of any sites already recorded in the Activity Area.
- Any geotechnical reports undertaken for the Activity Area.

To organise a Project Inception Meeting please contact the office on 0455 559 727.

Please ensure that when sending this CHMP to BLCAC for evaluation that it **must** be accompanied with proof of the evaluation fee (receipt of payment) and a hard copy of the CHMP. Failure to do so will mean the evaluation period will not commence.

If you require any additional information about this advice, please contact Angela Thompson on 0425 308 256.

We look forward to meeting with you soon to discuss the project.

Yours sincerely,



Robert Ogden
Heritage Manager
Robert.Ogden@bunuronglc.org.au

APPENDIX C: Preliminary Activity Development Plans

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UNIT 1

GROUND FLOOR	71 m²
FIRST FLOOR	90 m²
FRONT PORCH	3.0 m²
GARAGE	36 m²
BALCONY	7m²
TOTAL AREA	207 m² -----22.3 Sq.

UNIT 2

GROUND FLOOR	70 m²
FIRST FLOOR	88 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	7 m²
TOTAL AREA	203 m² -----21.8 Sq.

UNIT 3

GROUND FLOOR	80 m²
FIRST FLOOR	96 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	5m²
TOTAL AREA	219 m² -----23.5 Sq.

UNIT 4

GROUND FLOOR	80 m²
FIRST FLOOR	87 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	5 m²
TOTAL AREA	210 m² -----20.6 Sq.

UNIT 5

GROUND FLOOR	68 m²
FIRST FLOOR	75 m²
FRONT PORCH	2.0 m²
GARAGE	36 m²
BALCONY	3m²
TOTAL AREA	184 m² -----19.8 Sq.

SITE AREA	1343 m²	
BUILDING AREA INC. GARAGE	560 m²	
SITE COVERAGE		41.7 %
AREA OF DRIVEWAY/PATHWAY	290 m²	
IMPERMEABLE AREA -------	850 m²	63.2 %
PERMEABILITY	493m²	36.8 %

NO SYNTHETIC LAWN TO BE USED

Kostic & Associates Pty. Ltd
www.kostic.com.au
M: PO Box. 15, Narre Warren North. VIC 3804
P: 9796 8360
E: admin@kostic.com.au

51 LONGFIN CRESCENT SAN REMO

GROUND FLOOR

A-101

Date	27 August 2020	Project number	20:-
Scale	1 : 100	Drawn by	P.D
		REVISION	D

1 GROUND FLOOR
1 : 100

Jem Archaeology Pty Ltd



EXTERNAL GROUND FLOOR WALLS
FACE BRICKWORK – Austral Bricks - Hawthorn - London



ENTRY PORCH
RENDERED BRICKWORK – COLORBOND WHITE COLOUR



Entry Door
Painted Timber Finish Door
with glass infil



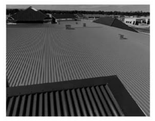
TIMBER CLADDING

EXTERNAL FIRST FLOOR WALLS
TIMBER CLADDING



EXTERNAL FIRST FLOOR WALLS
RENDERED CLADDING – COLORBOND WHITE COLOUR





Proposed Sheet Roof
Colorbond Sheet Roof - Dark Gray Colour





GUTTER, FASCIA + DOWNPIPES
COLORBOND – MONUMENT COLOUR





GARAGE DOORS
SELECTED PANEL LIFT DOORS – TIMBER FINISHED





WINDOWS
ALUMINIUM WINDOWS – ANODIC GREY



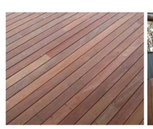


PROPOSED DRIVEWAY
COLOURED SEALED CONCRETE – LIGHT GREY





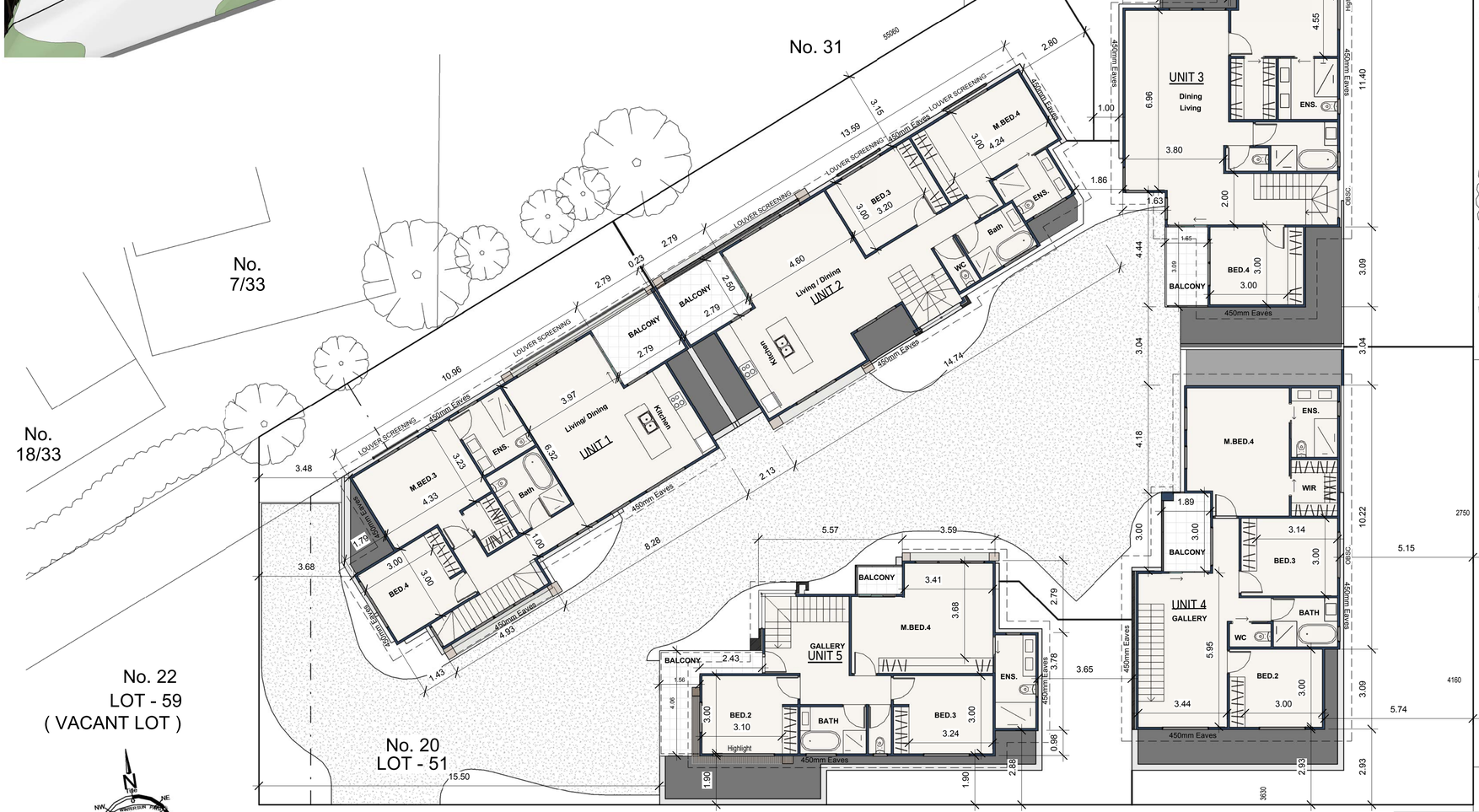
FIXED SCREENING
SELECTED SCREENING– ANODISED ALUMINIUM





PROPOSED DECKING
SELECTED TIMBER – STAINED FINISH





1 FIRST FLOOR
1 : 100

WATER TANK 2500L



- Meterboxes must be colour coordinated with the wall it is fixed to.

• Hot water services, solar hot water tanks, air conditioning units, clothes lines, satellite dishes, antennas & bin areas must not be visible to the public.

• Evaporative cooling units must be of low profile and colour matched to the roof.

• A letterbox, compliant with Australia Post standards, must be installed and it must be consistent with the colour palette and character of the dwelling

Kostic & Associates Pty. Ltd
www.kostic.com.au
M: PO Box. 15, Narre Warren North. VIC 3804
P: 9796 8360
E: admin@kostic.com.au

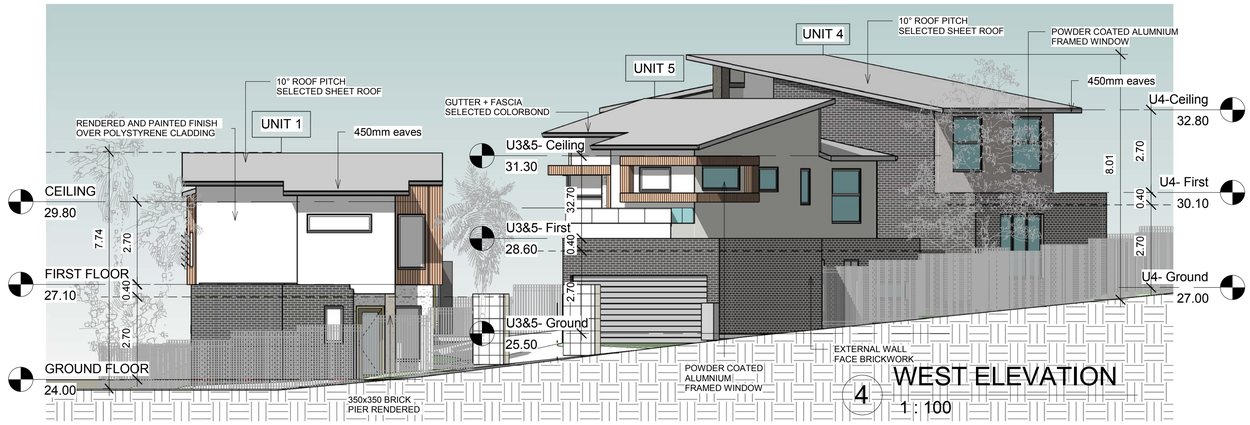
51 LONGFIN CRESCENT SAN REMO

FIRST FLOOR

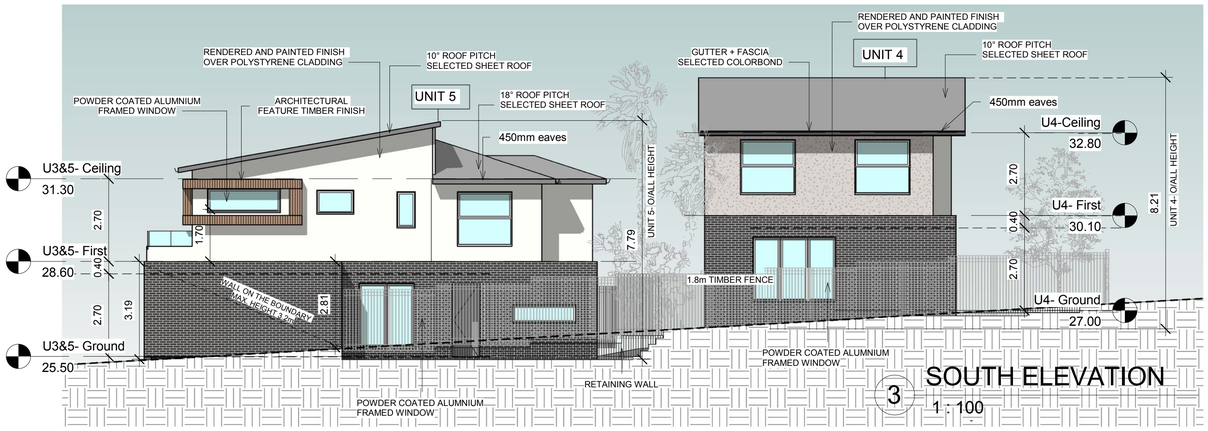
A-102

Date	27 August 2020	Project number	20:-
Scale	1 : 100	Drawn by	P.D
		REVISION	D

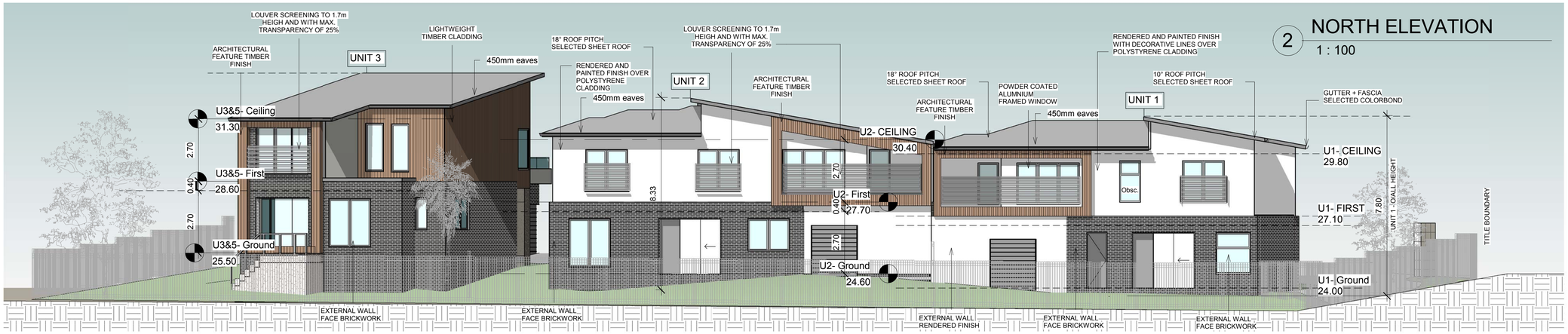
Jem Archaeology Pty Ltd



4 WEST ELEVATION
1 : 100



3 SOUTH ELEVATION
1 : 100

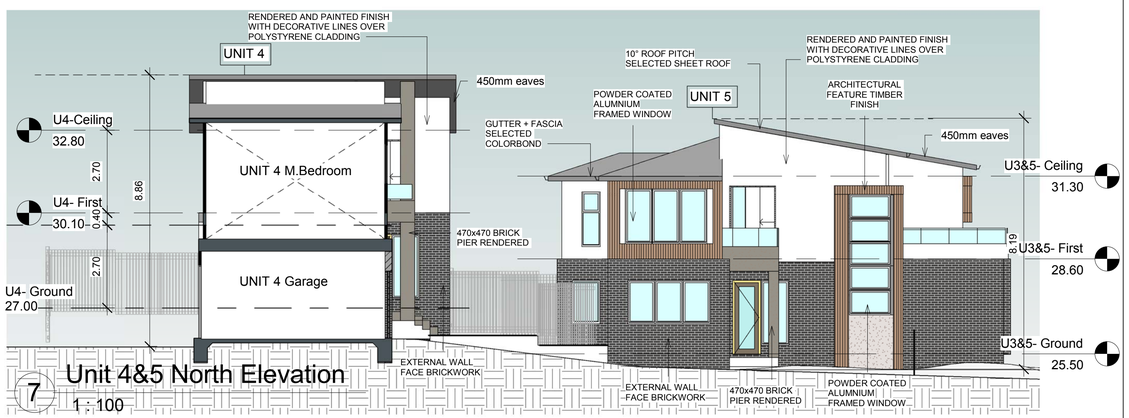


2 NORTH ELEVATION
1 : 100

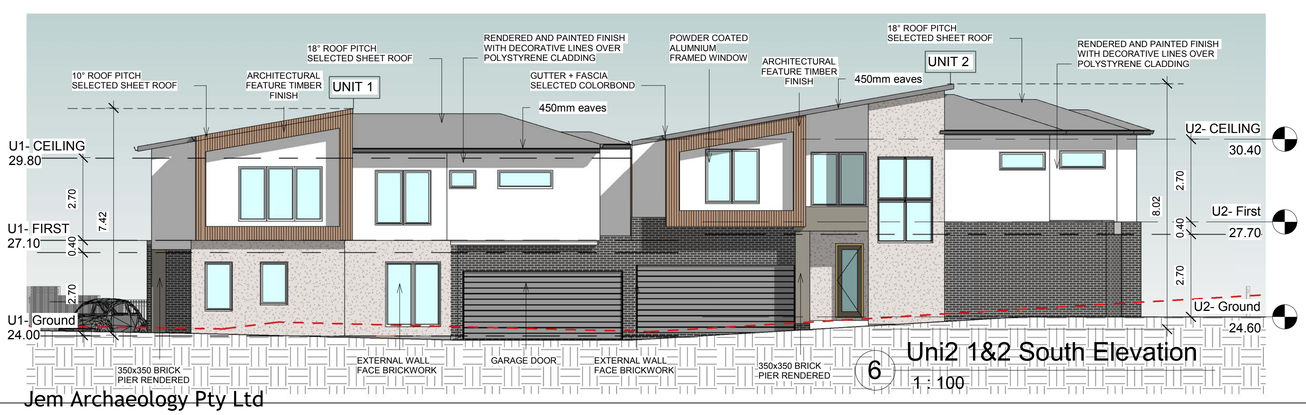
a minimum 450mm eaves to the entire dwelling to be provided



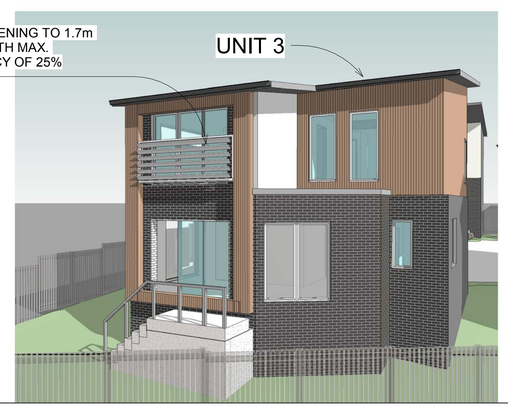
5 EAST ELEVATION
1 : 100



7 Unit 4&5 North Elevation
1 : 100



6 Uni2 1&2 South Elevation
1 : 100



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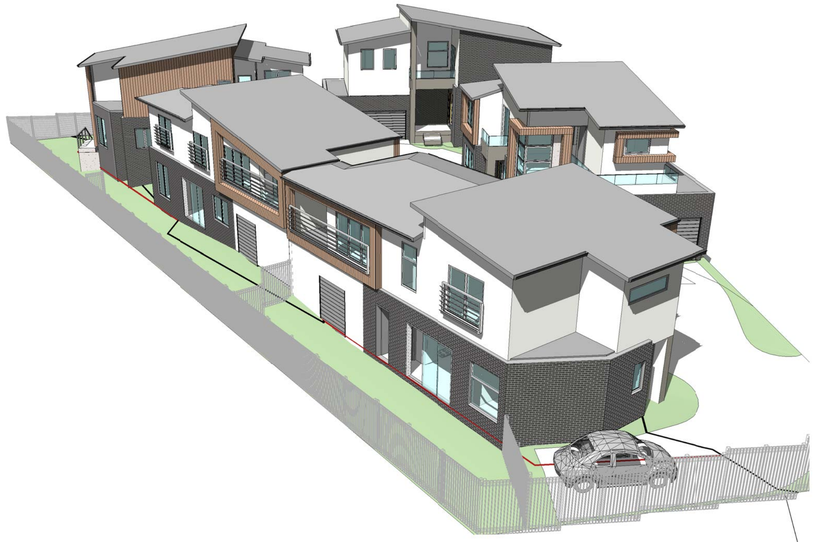
51 LONGFIN CRESCENT SAN REMO

ELEVATIONS

A-103

Date	27 August 2020	Project number	20:-
Scale	1 : 100	Drawn by	P.D
		REVISION	D

Jem Archaeology Pty Ltd





MINIMUME GARDEN AREA REQUIREMENT

SITE AREA = 1343m²
MINIMUM GARDEN AREA= %35X1343= 470.05 m²

LANDSCAPE STRIP >1m WIDTH 18 m² + 33.2m² = 51.2m²
UNIT 1 P.O.S 47.7m²
UNIT 2 P.O.S 65.5m²
UNIT 3 P.O.S 168m²
UNIT 4 P.O.S 100m²
UNIT 5 P.O.S 40m²
Visitor Car space 17m²

TOTAL LANDSCAPE AREA 489.4m2 ------36.4%

1 GARDEN ARE REQUIREMENT
1 : 100

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51 LONGFIN CRESCENT SAN REMO

GARDEN AREA REQUIREMENT

A-104

Date	27 August 2020	Project number	20:-
Scale	1 : 100	Drawn by	P.D
		REVISION	D

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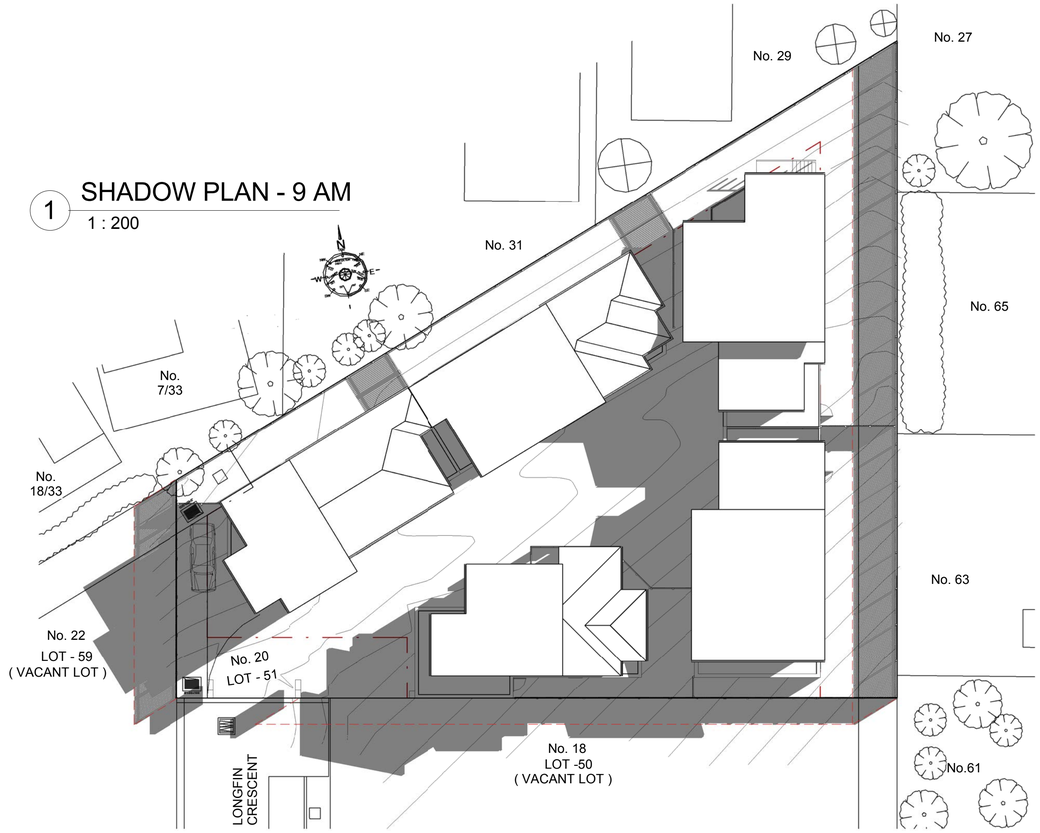
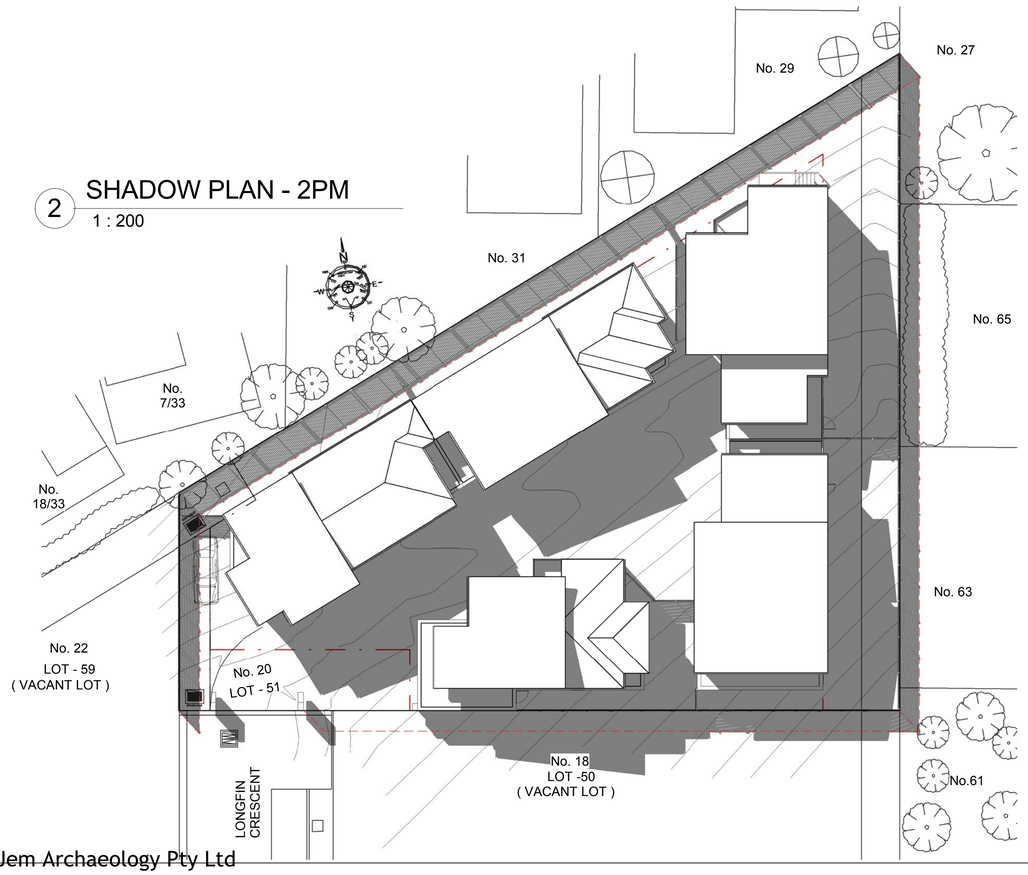
1 SHADOW PLAN - 9 AM

1 : 200



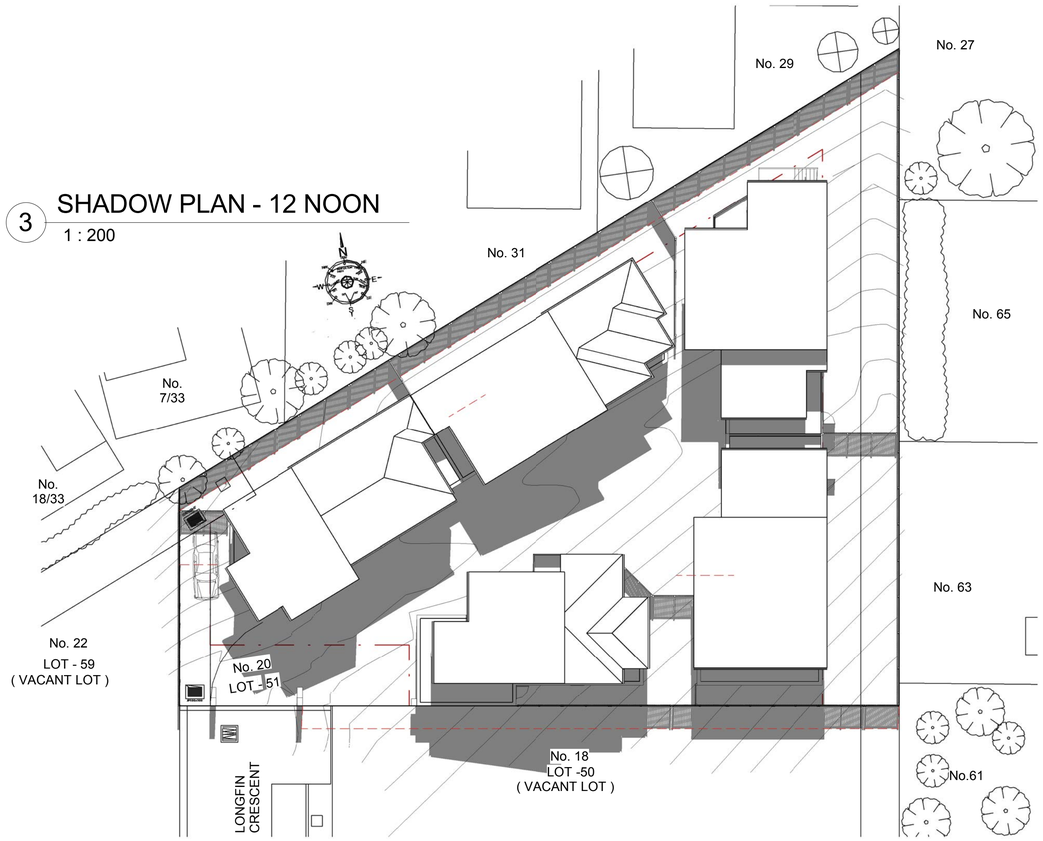
2 SHADOW PLAN - 2PM

1 : 200



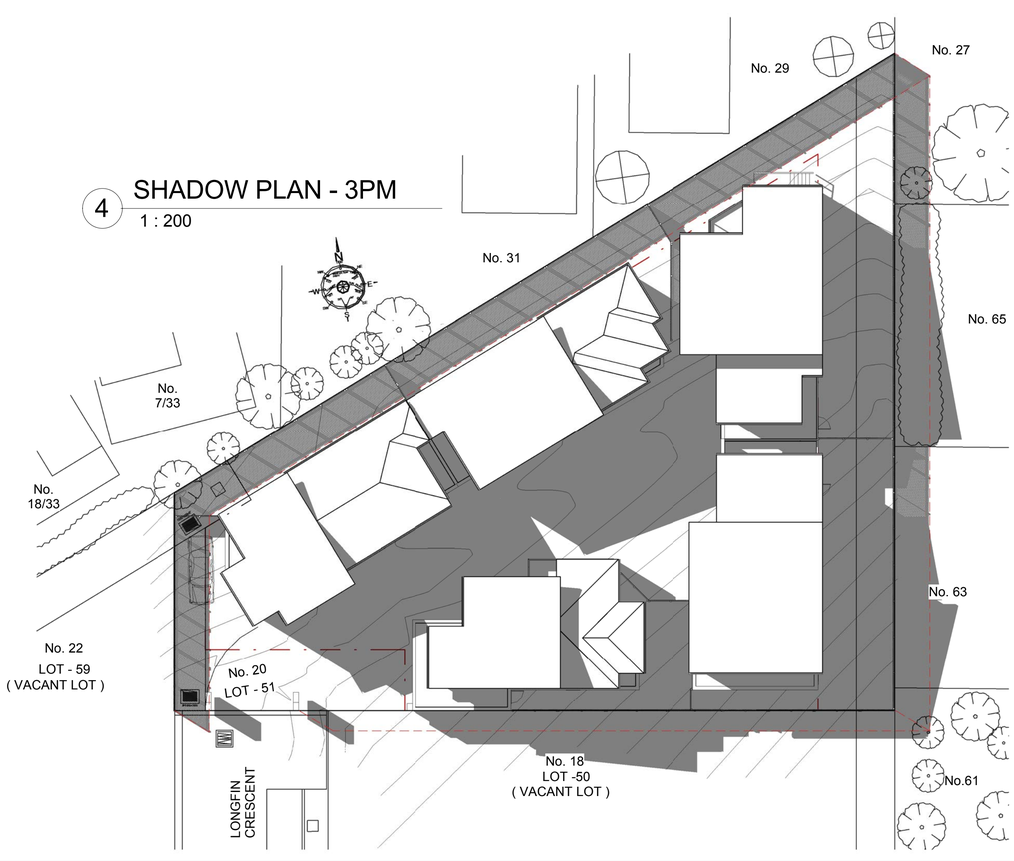
3 SHADOW PLAN - 12 NOON

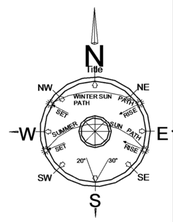
1 : 200



4 SHADOW PLAN - 3PM

1 : 200





NOTE:
ALL SHADOWS HAVE BEEN CALCULATED DURING SEPTEMBER EQUINOX

FENCE SHADOW

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51 LONGFIN CRESCENT SAN REMO

SHADOW PLAN

A-105

Date	31 JULY 2020	Project number	20:-
Scale	1 : 200	Drawn by	P.D
		REVISION	A

Jem Archaeology Pty Ltd

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APPENDIX D: Zoning Schedule

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32.08 GENERAL RESIDENTIAL ZONE

31/07/2018
VC148

Shown on the planning scheme map as **GRZ**, **R1Z**, **R2Z** or **R3Z** with a number (if shown).

Purpose

To implement the Municipal Planning Strategy and the Planning Policy Framework.

To encourage development that respects the neighbourhood character of the area.

To encourage a diversity of housing types and housing growth particularly in locations offering good access to services and transport.

To allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs in appropriate locations.

32.08-1 Neighbourhood character objectives

27/03/2017
VC110

A schedule to this zone may contain neighbourhood character objectives to be achieved for the area.

32.08-2 Table of uses

24/01/2020
VC160

Section 1 - Permit not required

Use	Condition
Bed and breakfast	No more than 10 persons may be accommodated away from their normal place of residence. At least 1 car parking space must be provided for each 2 persons able to be accommodated away from their normal place of residence.
Community care accommodation	Must meet the requirements of Clause 52.22-2.
Dependent person's unit	Must be the only dependent person's unit on the lot.
Domestic animal husbandry (other than Domestic animal boarding)	Must be no more than 2 animals.
Dwelling (other than Bed and breakfast) **Home based business** **Informal outdoor recreation**	
Medical centre	The gross floor area of all buildings must not exceed 250 square metres. Must not require a permit under Clause 52.06-3. The site must adjoin, or have access to, a road in a Road Zone.
Place of worship	The gross floor area of all buildings must not exceed 250 square metres. The site must adjoin, or have access to, a road in a Road Zone.
Racing dog husbandry	Must be no more than 2 animals.
Railway	

Use	Condition
Residential aged care facility	
Rooming house	Must meet the requirements of Clause 52.23-2.
Tramway	
Any use listed in Clause 62.01	Must meet the requirements of Clause 62.01.

Section 2 - Permit required

Use	Condition
Accommodation (other than Community care accommodation, Dependent person's unit, Dwelling, Residential aged care facility and Rooming house) **Agriculture (other than Animal production, Animal training, Apiculture, Domestic animal husbandry, Horse husbandry and Racing dog husbandry)**	
Car park	Must be used in conjunction with another use in Section 1 or 2.
Car wash	The site must adjoin, or have access to, a road in a Road Zone.
Convenience restaurant	The site must adjoin, or have access to, a road in a Road Zone.
Convenience shop	
Domestic animal husbandry (other than Domestic animal boarding) – if the Section 1 condition is not met	Must be no more than 5 animals.
Food and drink premises (other than Convenience restaurant and Take away food premises) **Grazing animal production** **Leisure and recreation (other than Informal outdoor recreation and Motor racing track)** **Market** **Place of assembly (other than Amusement parlour, Carnival, Cinema based entertainment facility, Circus, Nightclub and Place of worship)** **Plant nursery**	
Service station	The site must either: ▪ Adjoin a commercial zone or industrial zone. ▪ Adjoin, or have access to, a road in a Road Zone. The site must not exceed either:

Use	Condition
	▪ 3000 square metres. ▪ 3600 square metres if it adjoins on two boundaries a road in a Road Zone.
Store	Must be in a building, not a dwelling, and used to store equipment, goods, or motor vehicles used in conjunction with the occupation of a resident of a dwelling on the lot.
Take away food premises	The site must adjoin, or have access to, a road in a Road Zone.
Utility installation (other than Minor utility installation and Telecommunications facility)	
Any other use not in Section 1 or 3	

Section 3 – Prohibited

Use
Amusement parlour
Animal production (other than Grazing animal production)
Animal training
Brothel
Cinema based entertainment facility
Domestic animal boarding
Extractive industry
Horse husbandry
Industry (other than Car wash)
Motor racing track
Nightclub
Office (other than Medical centre)
Retail premises (other than Convenience shop, Food and drink premises, Market, and Plant nursery)
Saleyard
Transport terminal
Warehouse (other than Store)

32.08-3 Subdivision

31/07/2018
VC148

Permit requirement

A permit is required to subdivide land.

An application to subdivide land that would create a vacant lot less than 400 square metres capable of development for a dwelling or residential building, must ensure that each vacant lot created less than 400 square metres contains at least 25 percent as garden area. This does not apply to a lot created by an application to subdivide land where that lot is created in accordance with:

- An approved precinct structure plan or an equivalent strategic plan;
- An incorporated plan or approved development plan; or
- A permit for development.

An application to subdivide land, other than an application to subdivide land into lots each containing an existing dwelling or car parking space, must meet the requirements of Clause 56 and:

- Must meet all of the objectives included in the clauses specified in the following table.
- Should meet all of the standards included in the clauses specified in the following table.

Class of subdivision	Objectives and standards to be met
60 or more lots	All except Clause 56.03-5.
16 – 59 lots	All except Clauses 56.03-1 to 56.03-3, 56.03-5, 56.06-1 and 56.06-3.
3 – 15 lots	All except Clauses 56.02-1, 56.03-1 to 56.03-4, 56.05-2, 56.06-1, 56.06-3 and 56.06-6.
2 lots	Clauses 56.03-5, 56.04-2, 56.04-3, 56.04-5, 56.06-8 to 56.09-2.

VicSmart applications

Subject to Clause 71.06, an application under this clause for a development specified in Column 1 is a class of VicSmart application and must be assessed against the provision specified in Column 2.

Class of application	Information requirements and decision guidelines
Subdivide land to realign the common boundary between 2 lots where: - The area of either lot is reduced by less than 15 percent. - The general direction of the common boundary does not change.	Clause 59.01
Subdivide land into lots each containing an existing building or car parking space where: - The buildings or car parking spaces have been constructed in accordance with the provisions of this scheme or a permit issued under this scheme. - An occupancy permit or a certificate of final inspection has been issued under the Building Regulations in relation to the buildings within 5 years prior to the application for a permit for subdivision.	Clause 59.02

Subdivide land into 2 lots if:
- The construction of a building or the construction or carrying out of works on the land:
  – Has been approved under this scheme or by a permit issued under this scheme and the permit has not expired.
  – Has started lawfully.
- The subdivision does not create a vacant lot.
	Clause 59.02

32.08-4 Construction or extension of a dwelling or residential building

15/05/2018
VC143

Minimum garden area requirement

An application to construct or extend a dwelling or residential building on a lot must provide a minimum garden area as set out in the following table:

Lot size	Minimum percentage of a lot set aside as garden area
400 - 500 sqm	25%
Above 500 - 650 sqm	30%
Above 650 sqm	35%

This does not apply to:

- An application to construct or extend a dwelling or residential building if specified in a schedule to this zone as exempt from the minimum garden area requirement;
- An application to construct or extend a dwelling or residential building on a lot if:
  - The lot is designated as a medium density housing site in an approved precinct structure plan or an approved equivalent strategic plan;
  - The lot is designated as a medium density housing site in an incorporated plan or approved development plan; or
- An application to alter or extend an existing building that did not comply with the minimum garden area requirement of Clause 32.08-4 on the approval date of Amendment VC110.

32.08-5 Construction and extension of one dwelling on a lot

31/07/2018
VC148

Permit requirement

A permit is required to construct or extend one dwelling on:

- A lot of less than 300 square metres.
- A lot of between 300 square metres and 500 square metres if specified in a schedule to this zone.

A permit is required to construct or extend a front fence within 3 metres of a street if:

- The fence is associated with one dwelling on:
  - A lot of less than 300 square metres, or
  - A lot of between 300 and 500 square metres if specified in a schedule to this zone, and
- The fence exceeds the maximum height specified in Clause 54.06-2.

A development must meet the requirements of Clause 54.

No permit required

No permit is required to:

- Construct or carry out works normal to a dwelling.
- Construct or extend an out-building (other than a garage or carport) on a lot provided the gross floor area of the out-building does not exceed 10 square metres and the maximum building height is not more than 3 metres above ground level.
- Make structural changes to a dwelling provided the size of the dwelling is not increased or the number of dwellings is not increased.

VicSmart applications

Subject to Clause 71.06, an application under this clause for a development specified in Column 1 is a class of VicSmart application and must be assessed against the provision specified in Column 2.

Class of application	Information requirements and decision guidelines
Construct an outbuilding or extend a dwelling if the development: Meets the minimum garden area requirement of Clause 32.08-4. ▪ Does not exceed a building height of 5 metres. ▪ Is not visible from the street (other than a lane) or a public park. ▪ Meets the requirements in the following standards of Clause 54: – A10 Side and rear setbacks. – A11 Walls on boundaries. – A12 Daylight to existing windows. – A13 North-facing windows. – A14 Overshadowing open space. – A15 Overlooking. For the purposes of this class of VicSmart application, the Clause 54 standards specified above are mandatory. If a schedule to the zone specifies a requirement of a standard different from a requirement set out in the Clause 54 standard, the requirement in the schedule to the zone applies and must be met.	Clause 59.14
Construct or extend a front fence within 3 metres of a street if the fence is associated with one dwelling.	Clause 59.03

32.08-6 Construction and extension of two or more dwellings on a lot, dwellings on common property and residential buildings

31/07/2018
VC148

Permit requirement

A permit is required to:

- Construct a dwelling if there is at least one dwelling existing on the lot.
- Construct two or more dwellings on a lot.
- Extend a dwelling if there are two or more dwellings on the lot.
- Construct or extend a dwelling if it is on common property.
- Construct or extend a residential building.

A permit is required to construct or extend a front fence within 3 metres of a street if:

- The fence is associated with 2 or more dwellings on a lot or a residential building, and
- The fence exceeds the maximum height specified in Clause 55.06-2.

A development must meet the requirements of Clause 55. This does not apply to a development of five or more storeys, excluding a basement.

An apartment development of five or more storeys, excluding a basement, must meet the requirements of Clause 58.

A permit is not required to construct one dependent person's unit on a lot.

VicSmart applications

Subject to Clause 71.06, an application under this clause for a development specified in Column 1 is a class of VicSmart application and must be assessed against the provision specified in Column 2.

Class of application	Information requirements and decision guidelines
Construct or extend a front fence within 3 metres of a street if the fence is associated with 2 or more dwellings on a lot or a residential building.	Clause 59.03

Transitional provisions

Clause 55 of this scheme, as in force immediately before the approval date of Amendment VC136, continues to apply to:

- An application for a planning permit lodged before that date.
- An application for an amendment of a permit under section 72 of the Act, if the original permit application was lodged before that date.

Clause 58 does not apply to:

- An application for a planning permit lodged before the approval date of Amendment VC136.
- An application for an amendment of a permit under section 72 of the Act, if the original permit application was lodged before the approval date of Amendment VC136.

32.08-7 Requirements of Clause 54 and Clause 55

27/03/2017
VC110

A schedule to this zone may specify the requirements of:

- Standards A3, A5, A6, A10, A11, A17 and A20 of Clause 54 of this scheme.
- Standards B6, B8, B9, B13, B17, B18, B28 and B32 of Clause 55 of this scheme.

If a requirement is not specified in a schedule to this zone, the requirement set out in the relevant standard of Clause 54 or Clause 55 applies.

32.08-8 Residential aged care facility

26/10/2018
VC152

Permit requirements

A permit is required to construct a building or construct or carry out works for a residential aged care facility.

A development must meet the requirements of Clause 53.17 - Residential aged care facility.

32.08-9 Buildings and works associated with a Section 2 use

04/12/2020
VC180

A permit is required to construct a building or construct or carry out works for a use in Section 2 of Clause 32.08-2.

VicSmart applications

Subject to Clause 71.06, an application under this clause for a development specified in Column 1 is a class of VicSmart application and must be assessed against the provision specified in Column 2.

Class of application	Information requirements and decision guidelines
Construct a building or construct or carry out works where: ▪ The building or works are not associated with a dwelling, primary school or secondary school and have an estimated cost of up to $100,000; or ▪ The building or works are associated with a primary school or secondary school and have an estimated cost of up to $500,000; and ▪ The requirements in the following standards of Clause 54 are met, where the land adjoins land in a residential zone used for residential purposes: – A10 Side and rear setbacks. – A11 Walls on boundaries. – A12 Daylight to existing windows. – A13 North-facing windows. – A14 Overshadowing open space. – A15 Overlooking. For the purposes of this class of VicSmart application, the Clause 54 standards specified above are mandatory. If a schedule to the zone specifies a requirement of a standard different from a requirement set out in the Clause 54 standard, the requirement in the schedule to the zone applies and must be met.	Clause 59.04

32.08-10 Maximum building height requirement for a dwelling or residential building

26/10/2018
VC152

A building must not be constructed for use as a dwelling or a residential building that:

- exceeds the maximum building height specified in a schedule to this zone; or
- contains more than the maximum number of storeys specified in a schedule to this zone.

If no maximum building height or maximum number of storeys is specified in a schedule to this zone:

- the building height must not exceed 11 metres; and
- the building must contain no more than 3 storeys at any point.

A building may exceed the applicable maximum building height or contain more than the applicable maximum number of storeys if:

- It replaces an immediately pre-existing building and the new building does not exceed the building height or contain a greater number of storeys than the pre-existing building.
- There are existing buildings on both abutting allotments that face the same street and the new building does not exceed the building height or contain a greater number of storeys than the lower of the existing buildings on the abutting allotments.

- It is on a corner lot abutted by lots with existing buildings and the new building does not exceed the building height or contain a greater number of storeys than the lower of the existing buildings on the abutting allotments.
- It is constructed pursuant to a valid building permit that was in effect prior to the introduction of this provision.

An extension to an existing building may exceed the applicable maximum building height or contain more than the applicable maximum number of storeys if it does not exceed the building height of the existing building or contain a greater number of storeys than the existing building.

A building may exceed the maximum building height by up to 1 metre if the slope of the natural ground level, measured at any cross section of the site of the building wider than 8 metres, is greater than 2.5 degrees.

A basement is not a storey for the purposes of calculating the number of storeys contained in a building.

The maximum building height and maximum number of storeys requirements in this zone or a schedule to this zone apply whether or not a planning permit is required for the construction of a building.

Building height if land is subject to inundation

If the land is in a Special Building Overlay, Land Subject to Inundation Overlay or is land liable to inundation the maximum building height specified in the zone or schedule to the zone is the vertical distance from the minimum floor level determined by the relevant drainage authority or floodplain management authority to the roof or parapet at any point.

32.08-11 Application requirements

26/10/2018
VC152

An application must be accompanied by the following information, as appropriate:

- For a residential development of four storeys or less, the neighbourhood and site description and design response as required in Clause 54 and Clause 55.
- For an apartment development of five or more storeys, an urban context report and design response as required in Clause 58.01.
- For an application for subdivision, a site and context description and design response as required in Clause 56.
- Plans drawn to scale and dimensioned which show:
  - Site shape, size, dimensions and orientation.
  - The siting and use of existing and proposed buildings.
  - Adjacent buildings and uses.
  - The building form and scale.
  - Setbacks to property boundaries.
- The likely effects, if any, on adjoining land, including noise levels, traffic, the hours of delivery and despatch of good and materials, hours of operation and light spill, solar access and glare.
- Any other application requirements specified in a schedule to this zone.

If in the opinion of the responsible authority an application requirement is not relevant to the evaluation of an application, the responsible authority may waive or reduce the requirement.

32.08-12 Exemption from notice and review

26/10/2018
VC152

Subdivision

An application to subdivide land into lots each containing an existing dwelling or car parking space is exempt from the notice requirements of section 52(1)(a), (b) and (d), the decision requirements of section 64(1), (2) and (3) and the review rights of section 82(1) of the Act.

32.08-13 Decision guidelines

24/01/2020
VC160

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

General

- The Municipal Planning Strategy and the Planning Policy Framework.
- The purpose of this zone.
- The objectives set out in a schedule to this zone.
- Any other decision guidelines specified in a schedule to this zone.
- The impact of overshadowing on existing rooftop solar energy systems on dwellings on adjoining lots in a General Residential Zone, Mixed Use Zone, Neighbourhood Residential Zone, Residential Growth Zone or Township Zone.

Subdivision

- The pattern of subdivision and its effect on the spacing of buildings.
- For subdivision of land for residential development, the objectives and standards of Clause 56.

Dwellings and residential buildings

- For the construction and extension of one dwelling on a lot, the objectives, standards and decision guidelines of Clause 54.
- For the construction and extension of two or more dwellings on a lot, dwellings on common property and residential buildings, the objectives, standards and decision guidelines of Clause 55. This does not apply to an apartment development of five or more storeys, excluding a basement.
- For the construction and extension of an apartment development of five or more storeys, excluding a basement, the objectives, standards and decisions guidelines of Clause 58.

Non-residential use and development

- Whether the use or development is compatible with residential use.
- Whether the use generally serves local community needs.
- The scale and intensity of the use and development.
- The design, height, setback and appearance of the proposed buildings and works.
- The proposed landscaping.
- The provision of car and bicycle parking and associated accessways.
- Any proposed loading and refuse collection facilities.
- The safety, efficiency and amenity effects of traffic to be generated by the proposal.

32.08-14 Signs

26/10/2018
VC152

Sign requirements are at Clause 52.05. This zone is in Category 3.

32.08-15 Transitional provisions

26/10/2018
VC152

The minimum garden area requirements of Clause 32.08-4 and the maximum building height and number of storeys requirements of Clause 32.08-9 introduced by Amendment VC110 do not apply to:

- A planning permit application for the construction or extension of a dwelling or residential building lodged before the approval date of Amendment VC110.
- Where a planning permit is not required for the construction or extension of a dwelling or residential building:
  - A building permit issued for the construction or extension of a dwelling or residential building before the approval date of Amendment VC110.
  - A building surveyor has been appointed to issue a building permit for the construction or extension of a dwelling or residential building before the approval date of Amendment VC110. A building permit must be issued within 12 months of the approval date of Amendment VC110.
  - A building surveyor is satisfied, and certifies in writing, that substantial progress was made on the design of the construction or extension of a dwelling or residential building before the approval date of Amendment VC110. A building permit must be issued within 12 months of the approval date of Amendment VC110.

The minimum garden area requirement of Clause 32.08-3 introduced by Amendment VC110 does not apply to a planning permit application to subdivide land for a dwelling or a residential building lodged before the approval date of Amendment VC110.

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APPENDIX E: VAHR Places within the Geographic Region

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Place No	Aboriginal Place Name	Component No	Component Type	Feature Type
7920-0002	CAPE WOOLAMAI	7920-0002-1	Shell Midden	
7920-0003	PHILLIP ISLAND	7920-0003-1	Shell Midden	
7920-0006	RUBY 1	7920-0006-1	Shell Midden	
7920-0007	SANDY WATERHOLES	7920-0007-1	Shell Midden	
7920-0013	CAPE WOOLAMAI 1	7920-0013-2	Earth Feature	Hearth
7920-0013	CAPE WOOLAMAI 1	7920-0013-1	Shell Midden	
7920-0014	CAPE WOOLAMAI 2	7920-0014-1	Shell Midden	
7920-0015	CAPE WOOLAMAI 3	7920-0015-1	Artefact Scatter	
7920-0016	CAPE WOOLAMAI 4	7920-0016-1	Quarry	
7920-0017	CAPE WOOLAMAI 5	7920-0017-1	Artefact Scatter	
7920-0018	CAPE WOOLAMAI 6	7920-0018-2	Artefact Scatter	
7920-0018	CAPE WOOLAMAI 6	7920-0018-1	Shell Midden	
7920-0019	CAPE WOOLAMAI 7	7920-0019-1	Artefact Scatter	
7920-0020	CAPE WOOLAMAI 8	7920-0020-1	Artefact Scatter	
7920-0021	WOOLAMAI BEACH 1	7920-0021-2	Artefact Scatter	
7920-0021	WOOLAMAI BEACH 1	7920-0021-1	Shell Midden	
7920-0022	WOOLAMAI BEACH 2	7920-0022-2	Artefact Scatter	
7920-0022	WOOLAMAI BEACH 2	7920-0022-1	Shell Midden	
7920-0023	WOOLAMAI BEACH 3	7920-0023-2	Artefact Scatter	
7920-0023	WOOLAMAI BEACH 3	7920-0023-1	Shell Midden	
7920-0024	WOOLAMAI BEACH 4	7920-0024-2	Artefact Scatter	
7920-0024	WOOLAMAI BEACH 4	7920-0024-1	Shell Midden	
7920-0025	WOOLAMAI BEACH 5	7920-0025-2	Artefact Scatter	
7920-0025	WOOLAMAI BEACH 5	7920-0025-1	Shell Midden	
7920-0026	WOOLAMAI BEACH 6	7920-0026-2	Artefact Scatter	
7920-0026	WOOLAMAI BEACH 6	7920-0026-1	Shell Midden	
7920-0027	WOOLAMAI BEACH 7	7920-0027-2	Artefact Scatter	
7920-0027	WOOLAMAI BEACH 7	7920-0027-1	Shell Midden	
7920-0028	WOOLAMAI BEACH 8	7920-0028-2	Artefact Scatter	
7920-0028	WOOLAMAI BEACH 8	7920-0028-1	Shell Midden	
7920-0029	WOOLAMAI BEACH 9	7920-0029-1	Artefact Scatter	
7920-0030	WOOLAMAI BEACH 10	7920-0030-2	Artefact Scatter	
7920-0030	WOOLAMAI BEACH 10	7920-0030-1	Shell Midden	
7920-0031	WOOLAMAI BEACH 11	7920-0031-2	Artefact Scatter	
7920-0031	WOOLAMAI BEACH 11	7920-0031-1	Shell Midden	
7920-0032	WOOLAMAI BEACH 12	7920-0032-2	Artefact Scatter	
7920-0032	WOOLAMAI BEACH 12	7920-0032-1	Shell Midden	
7920-0033	WOOLAMAI BEACH 13	7920-0033-2	Artefact Scatter	
7920-0033	WOOLAMAI BEACH 13	7920-0033-1	Shell Midden	
7920-0034	WOOLAMAI BEACH 14	7920-0034-2	Artefact Scatter	
7920-0034	WOOLAMAI BEACH 14	7920-0034-1	Shell Midden	
7920-0035	WOOLAMAI BEACH 15	7920-0035-1	Artefact Scatter	
7920-0036	WOOLAMAI BEACH 16	7920-0036-2	Artefact Scatter	
7920-0036	WOOLAMAI BEACH 16	7920-0036-1	Shell Midden	
7920-0037	WOOLAMAI BEACH 17	7920-0037-2	Artefact Scatter	
7920-0037	WOOLAMAI BEACH 17	7920-0037-1	Shell Midden	
7920-0038	WOOLAMAI BEACH 18	7920-0038-1	Artefact Scatter	
7920-0039	WOOLAMAI BEACH 19	7920-0039-2	Artefact Scatter	
7920-0039	WOOLAMAI BEACH 19	7920-0039-1	Shell Midden	
7920-0040	WOOLAMAI BEACH 20	7920-0040-2	Artefact Scatter	
7920-0040	WOOLAMAI BEACH 20	7920-0040-1	Shell Midden	
7920-0041	WOOLAMAI BEACH 21	7920-0041-2	Artefact Scatter	

Place No	Aboriginal Place Name	Component No	Component Type	Feature Type
7920-0041	WOOLAMAI BEACH 21	7920-0041-1	Shell Midden	
7920-0042	WOOLAMAI BEACH 22	7920-0042-2	Artefact Scatter	
7920-0042	WOOLAMAI BEACH 22	7920-0042-1	Shell Midden	
7920-0043	WOOLAMAI BEACH 23	7920-0043-2	Artefact Scatter	
7920-0043	WOOLAMAI BEACH 23	7920-0043-1	Shell Midden	
7920-0044	WOOLAMAI BEACH 24	7920-0044-2	Artefact Scatter	
7920-0044	WOOLAMAI BEACH 24	7920-0044-1	Shell Midden	
7920-0045	WOOLAMAI BEACH 25	7920-0045-2	Artefact Scatter	
7920-0045	WOOLAMAI BEACH 25	7920-0045-1	Shell Midden	
7920-0046	WOOLAMAI BEACH 26	7920-0046-2	Artefact Scatter	
7920-0046	WOOLAMAI BEACH 26	7920-0046-1	Shell Midden	
7920-0047	WOOLAMAI BEACH 27	7920-0047-2	Artefact Scatter	
7920-0047	WOOLAMAI BEACH 27	7920-0047-1	Shell Midden	
7920-0048	WOOLAMAI BEACH 28	7920-0048-1	Artefact Scatter	
7920-0049	WOOLAMAI BEACH 29	7920-0049-2	Artefact Scatter	
7920-0049	WOOLAMAI BEACH 29	7920-0049-1	Shell Midden	
7920-0050	WOOLAMAI BEACH 30	7920-0050-2	Artefact Scatter	
7920-0050	WOOLAMAI BEACH 30	7920-0050-1	Shell Midden	
7920-0051	WOOLAMAI BEACH 31	7920-0051-2	Artefact Scatter	
7920-0051	WOOLAMAI BEACH 31	7920-0051-1	Shell Midden	
7920-0052	WOOLAMAI BEACH 32	7920-0052-2	Artefact Scatter	
7920-0052	WOOLAMAI BEACH 32	7920-0052-1	Shell Midden	
7920-0053	WOOLAMAI BEACH 33	7920-0053-2	Artefact Scatter	
7920-0053	WOOLAMAI BEACH 33	7920-0053-1	Shell Midden	
7920-0054	WOOLAMAI BEACH 34	7920-0054-2	Artefact Scatter	
7920-0054	WOOLAMAI BEACH 34	7920-0054-1	Shell Midden	
7920-0055	WOOLAMAI BEACH 35	7920-0055-2	Artefact Scatter	
7920-0055	WOOLAMAI BEACH 35	7920-0055-1	Shell Midden	
7920-0056	WOOLAMAI BEACH 36	7920-0056-2	Artefact Scatter	
7920-0056	WOOLAMAI BEACH 36	7920-0056-1	Shell Midden	
7920-0057	WOOLAMAI BEACH 37	7920-0057-2	Artefact Scatter	
7920-0057	WOOLAMAI BEACH 37	7920-0057-1	Shell Midden	
7920-0058	WOOLAMAI BEACH 38	7920-0058-2	Artefact Scatter	
7920-0058	WOOLAMAI BEACH 38	7920-0058-1	Shell Midden	
7920-0059	WOOLAMAI BEACH 39	7920-0059-2	Artefact Scatter	
7920-0059	WOOLAMAI BEACH 39	7920-0059-1	Shell Midden	
7920-0060	WOOLAMAI BEACH 40	7920-0060-2	Artefact Scatter	
7920-0060	WOOLAMAI BEACH 40	7920-0060-1	Shell Midden	
7920-0061	WOOLAMAI BEACH 41	7920-0061-2	Artefact Scatter	
7920-0061	WOOLAMAI BEACH 41	7920-0061-1	Shell Midden	
7920-0062	WOOLAMAI BEACH 42	7920-0062-2	Artefact Scatter	
7920-0062	WOOLAMAI BEACH 42	7920-0062-1	Shell Midden	
7920-0063	WOOLAMAI BEACH 43	7920-0063-1	Artefact Scatter	
7920-0064	WOOLAMAI BEACH 44	7920-0064-2	Artefact Scatter	
7920-0064	WOOLAMAI BEACH 44	7920-0064-1	Shell Midden	
7920-0065	WOOLAMAI BEACH 45	7920-0065-1	Shell Midden	
7920-0066	WOOLAMAI BEACH 46	7920-0066-1	Artefact Scatter	
7920-0067	WOOLAMAI BEACH 47	7920-0067-1	Artefact Scatter	
7920-0068	WOOLAMAI BEACH 48	7920-0068-1	Shell Midden	
7920-0069	WOOLAMAI WATERS WEST 1	7920-0069-1	Artefact Scatter	
7920-0070	WOOLAMAI WATERS WEST 2	7920-0070-1	Artefact Scatter	
7920-0071	AIRSTRIP 1	7920-0071-1	Artefact Scatter	

Place No	Aboriginal Place Name	Component No	Component Type	Feature Type
7920-0072	AIRPORT 2	7920-0072-2	Artefact Scatter	
7920-0072	AIRPORT 2	7920-0072-1	Shell Midden	
7920-0073	FORREST CAVES 1	7920-0073-2	Artefact Scatter	
7920-0073	FORREST CAVES 1	7920-0073-1	Shell Midden	
7920-0074	FORREST CAVES 2	7920-0074-2	Artefact Scatter	
7920-0074	FORREST CAVES 2	7920-0074-1	Shell Midden	
7920-0075	FORREST CAVES 3	7920-0075-2	Artefact Scatter	
7920-0075	FORREST CAVES 3	7920-0075-1	Shell Midden	
7920-0076	FORREST CAVES 4	7920-0076-2	Artefact Scatter	
7920-0076	FORREST CAVES 4	7920-0076-1	Shell Midden	
7920-0077	FORREST CAVES 5	7920-0077-2	Artefact Scatter	
7920-0077	FORREST CAVES 5	7920-0077-1	Shell Midden	
7920-0078	FORREST CAVES 6	7920-0078-2	Artefact Scatter	
7920-0078	FORREST CAVES 6	7920-0078-1	Shell Midden	
7920-0079	FORREST CAVES 7	7920-0079-2	Artefact Scatter	
7920-0079	FORREST CAVES 7	7920-0079-1	Shell Midden	
7920-0080	FORREST CAVES 8	7920-0080-2	Artefact Scatter	
7920-0080	FORREST CAVES 8	7920-0080-1	Shell Midden	
7920-0081	FORREST CAVES 9	7920-0081-2	Artefact Scatter	
7920-0081	FORREST CAVES 9	7920-0081-1	Shell Midden	
7920-0082	FORREST CAVES 10	7920-0082-2	Artefact Scatter	
7920-0082	FORREST CAVES 10	7920-0082-1	Shell Midden	
7920-0083	FORREST CAVES 11	7920-0083-2	Artefact Scatter	
7920-0083	FORREST CAVES 11	7920-0083-1	Shell Midden	
7920-0084	FORREST CAVES 12	7920-0084-2	Artefact Scatter	
7920-0084	FORREST CAVES 12	7920-0084-1	Shell Midden	
7920-0085	FORREST CAVES 13	7920-0085-2	Artefact Scatter	
7920-0085	FORREST CAVES 13	7920-0085-1	Shell Midden	
7920-0086	FORREST CAVES 14	7920-0086-2	Artefact Scatter	
7920-0086	FORREST CAVES 14	7920-0086-1	Shell Midden	
7920-0087	FORREST CAVES 15	7920-0087-2	Artefact Scatter	
7920-0087	FORREST CAVES 15	7920-0087-1	Shell Midden	
7920-0088	FORREST CAVES 16	7920-0088-2	Artefact Scatter	
7920-0088	FORREST CAVES 16	7920-0088-1	Shell Midden	
7920-0089	FORREST CAVES 17	7920-0089-2	Artefact Scatter	
7920-0089	FORREST CAVES 17	7920-0089-1	Shell Midden	
7920-0090	FORREST CAVES 18	7920-0090-2	Artefact Scatter	
7920-0090	FORREST CAVES 18	7920-0090-1	Shell Midden	
7920-0199	W.P. HOTEL 1	7920-0199-1	Aboriginal Ancestral Remains (Burial)	
7920-0199	W.P. HOTEL 1	7920-0199-2	Shell Midden	
7920-0200	WURRAK 1	7920-0200-1	Artefact Scatter	
7920-0201	WURRAK 2	7920-0201-1	Artefact Scatter	
7920-0202	WURRAK 3	7920-0202-1	Artefact Scatter	
7920-0203	WURRAK 4	7920-0203-1	Shell Midden	
7920-0204	WURRAK 5	7920-0204-1	Shell Midden	
7920-0205	WURRAK 6	7920-0205-2	Artefact Scatter	
7920-0205	WURRAK 6	7920-0205-1	Shell Midden	
7920-0206	NEWHAVEN 1	7920-0206-1	Artefact Scatter	
7920-0207	SAN REMO 1	7920-0207-1	Shell Midden	
7920-0208	SAN REMO 2	7920-0208-1	Artefact Scatter	
7920-0209	SAN REMO 3	7920-0209-2	Artefact Scatter	
7920-0209	SAN REMO 3	7920-0209-1	Shell Midden	

Place No	Aboriginal Place Name	Component No	Component Type	Feature Type
7920-0210	FORREST 1.	7920-0210-1	Artefact Scatter	
7920-0211	GRIFFITH POINT 1	7920-0211-1	Shell Midden	
7920-0212	GRIFFITH POINT 2	7920-0212-1	Shell Midden	
7920-0213	GRIFFITH POINT 3	7920-0213-1	Shell Midden	
7920-0214	GRIFFITH POINT 4	7920-0214-1	Shell Midden	
7920-0215	GRIFFITH POINT 5	7920-0215-1	Artefact Scatter	
7920-0217	RUBY 2	7920-0217-1	Shell Midden	
7920-0218	RUBY 3	7920-0218-1	Shell Midden	
7920-0219	RUBY 4	7920-0219-1	Shell Midden	
7920-0220	SAN REMO BACK BEACH BURIAL	7920-0220-1	Aboriginal Ancestral Remains (Burial)	
7920-0221	NEWHAVEN I A	7920-0221-1	Artefact Scatter	
7920-0229	PHILLIP ISLAND ROAD CUTTING 1	7920-0229-1	Artefact Scatter	
7920-0232	THE CLIFFS 1	7920-0232-1	Artefact Scatter	
7920-0233	THE CLIFFS 2	7920-0233-1	Artefact Scatter	
7920-0234	SILVERWATER 1	7920-0234-1	Artefact Scatter	
7920-0235	SAN REMO POLICE STATION 1	7920-0235-1	Artefact Scatter	
7920-0236	TOURIST RD IA1	7920-0236-1	Artefact Scatter	
7920-0237	TOURIST RD AS1	7920-0237-1	Artefact Scatter	
7920-0241	WOLLAMAI HOUSE 1	7920-0241-1	Artefact Scatter	
7920-0242	WOLLAMAI HOUSE 2	7920-0242-1	Artefact Scatter	
7920-0257	ANDERSON HILLS 1	7920-0257-1	Artefact Scatter	
7920-0258	ANDERSON HILLS 2	7920-0258-1	Artefact Scatter	
7920-0259	ANDERSON HILLS 3	7920-0259-1	Artefact Scatter	
7920-0260	ANDERSON HILLS 4	7920-0260-1	Artefact Scatter	
7920-0261	ANDERSON HILLS 5	7920-0261-1	Artefact Scatter	
7920-0262	ANDERSON HILLS 6	7920-0262-1	Artefact Scatter	
7920-0270	Phillip Island Road 1	7920-0270-1	Artefact Scatter	
7920-0271	Phillip Island Road, Island View Estate 3	7920-0271-1	Artefact Scatter	
7920-0272	Phillip Island Road, Island View Estate 1	7920-0272-1	Artefact Scatter	
7920-0273	Phillip Island Road, Island View Estate 2	7920-0273-1	Artefact Scatter	
7920-0274	Phillip Island Road, Island View Estate 4	7920-0274-1	Artefact Scatter	
7920-0284	San Remo 4	7920-0284-1	Artefact Scatter	
7920-0284	San Remo 4	7920-0284-2	Shell Midden	
7920-0289	Woolamai LDAD	7920-0289-2	Low Density Artefact Distribution	
7920-0290	Woolamai Hill AS	7920-0290-1	Artefact Scatter	
7920-0291	1285 Phillip Island Road, Newhaven LDAD	7920-0291-2	Low Density Artefact Distribution	
7920-0292	Mary Grove AS	7920-0292-2	Artefact Scatter	
7920-0294	Forrest Ave LDAD	7920-0294-1	Low Density Artefact Distribution	
7920-0294	Forrest Ave LDAD	7920-0294-2	Low Density Artefact Distribution	
7920-0295	Potters Hill LDAD	7920-0295-1	Low Density Artefact Distribution	

APPENDIX F: Human Remains and Aboriginal Cultural Heritage Fact Sheets

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ABORIGINAL BURIALS

Site Identification
Mini Poster 5



Source-bordering dune. Aboriginal burials often occur in sand dunes near rivers and lakes

What are Aboriginal Burials?

Aboriginal burials are normally found as clusters of human bones eroding from the ground, or exposed during ground disturbance.

Aboriginal customs for honouring and disposing of the dead varied greatly across Victoria, but burial was common. Aboriginal burial sites normally contain the remains of one or two people, although cemeteries that contain the remains of hundreds of people buried over thousands of years have been found. Sometimes the dead person was buried with personal ornaments and artefacts. Charcoal and ochre are also often found in burial sites.

Where are they Found?

Although Aboriginal burials are quite rare in Victoria, they have been found in almost every kind of landscape, from coastal dunes to mountain valleys. They tend to be near water courses or in dunes surrounding old lake beds. Many burials have been found on high points, such as dune ridges, within surrounding flat plains. They are often near or within Aboriginal occupation sites such as oven mounds, shell middens or artefact scatters.

What to Do if You Find a Burial Site

Do not disturb the site or remove any material. You should immediately report any discovery of human remains to the police. Also check whether the site has the characteristics of an Aboriginal burial. If it does, record its location and write a brief description of its condition.

Note whether it is under threat of disturbance.

Characteristics

- Aboriginal burials are normally found as concentrations of human bones or teeth, exposed by erosion or earth works.
- Remains may be scattered over a wide area, but well-preserved remains occur as tight clusters about the size of a human body.
- Burials tend to be in soft soils and sand, although some burials also occur in rock shelters and caves.
- Recently exposed bones look ‘fresh’, and may be spotted or stained the colour of surrounding soil. Older remains may be covered by a smooth, cement-like substance and be weathered grey or white in colour.
- Soil or sand around the bones may be stained with charcoal or ochre.
- Shell, animal bone and stone tools may sometimes be present.

Please help to preserve Aboriginal cultural sites by reporting their presence to Aboriginal Affairs Victoria.

Contact:

The Heritage Registrar
Aboriginal Affairs Victoria
PO Box 2392
Melbourne VIC 3001

Telephone: 1800 762 003
Website: www.dpcd.vic.gov.au/aav

How were Aboriginal Burial Sites Produced?

Aboriginal people honoured and disposed of their dead in many different ways. The dead were usually buried in the ground, sometimes accompanied by possessions such as stone tools or personal ornaments. In some areas, special clothes were made for the deceased. Small fires were often lit inside or near the grave, and sometimes ochre was sprinkled over the body. In some places, the grave was covered by a special structure such as a small hut or an earth mound, and its location was marked by other earthworks or by cutting bark from surrounding trees.

Other customs included placing the dead person on a wooden platform above the ground, sometimes in a tree, or wrapping the body in bark. After many months, the remains were collected for burial or deposited in a cave or rock crevice.

Aboriginal people were buried in the ground in a variety of positions. Some were placed lying flat on their backs, legs fully extended or lying on their side in a crouched, or 'foetal' position. Others were buried in an upright sitting position.

The dead were buried either singly or in small numbers. The place of burial was either near the place where they happened to be camping at the time, or in cemeteries to which their relatives and descendants returned over hundreds, or even thousands, of years.

Why are Aboriginal Burials Important?

Aboriginal burials have a particular significance for Aboriginal people today and provide important physical and spiritual connections with the land, culture and their past.

The places where the dead are laid to rest have always been important to humans. Burials provide an important link to the ancestral past, for they are physical evidence of a set of spiritual beliefs that lasted many thousands of years. Burials also provide us with valuable information about past Aboriginal ways of life, including diet, health, population, economy and social structures. We can even trace changes in the ways Aboriginal people perceived and related to their environment by looking at the development of large-scale cemeteries.

Threats to Aboriginal Burials

Although human bone can survive for a long time if buried, it deteriorates rapidly once exposed. Many burials are found on the edges of lakes and rivers, or in sand dunes that once lay near fresh water. Wind and water can readily expose and eventually destroy these sites.

Because many burials are found in loose soil or sand, they are often disturbed by burrowing animals such as rabbits.

Human activities such as sand mining, stock grazing, ripping rabbit warrens, ploughing and even trail bike riding can devastate burial sites.

Aboriginal Affairs Victoria records the location, dimensions, and context of Aboriginal burials so that we will have a permanent record of this important part of the heritage of all Australians. Management works, such as the eradication of rabbits, fencing and erosion control, are carried out so that Aboriginal burial locations can be preserved for future generations.

Is it against the Law to Possess Aboriginal Skeletal Remains?

Yes. It is illegal to possess or display Aboriginal skeletal remains without a permit.

Anyone who has such remains is advised to contact Aboriginal Affairs Victoria, so that arrangementscan be made for their appropriate treatment.

Are Aboriginal Burials Protected?

All Aboriginal cultural places in Victoria are protected by law. Aboriginal artefacts are also protected.

It is against the law to disturb or destroy an Aboriginal place. Artefacts should not be removed from sites.

In general, the presence of Aboriginal cultural places on private land will not affect ownership, or stop existing land use from continuing.

June 2008

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ISBN 978-1-921331-56-5

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ABORIGINAL FLAKED STONE TOOLS

Site Identification
Mini Poster 4



A group of artefacts of different size, shape and material

What are Aboriginal Flaked Stone Tools?

Flaked stone tools were made by hitting a piece of stone, called a core, with a 'hammerstone', often a pebble. This would remove a sharp fragment of stone called a flake.

Both cores and flakes could be used as stone tools. New flakes were very sharp, but quickly became blunt during use and had to be sharpened again by further flaking, a process called 'retouch'. A tool that was retouched has a row of small flake scars along one or more edges. Retouch was also used to shape a tool.

Not all types of stone could be used for making tools. The best types of stone are rich in silica, hard and brittle. These include quartzite, chert, flint, silcrete and quartz. Aboriginal people quarried such stone from outcrops of bedrock, or collected it as pebbles from stream beds and beaches. Many flaked stone artefacts found on Aboriginal sites are made from stone types that do not occur naturally in the area. This means they must have been carried long distances.

Where are Stone Tools Found?

Stone tools are the most common evidence of past Aboriginal activities in Australia. They occur in many places and are often found with other remains from Aboriginal occupation, such as shell middens and cooking hearths. They are most common near rivers and creeks. It is easier to find them where there is not much vegetation or where the ground surface has been disturbed, for example by erosion.

Characteristics

General

- Sharp edges.
- Retouch along one or more edges.
- Stone rich in silica.
- Stone type often different to the natural rock in the area.

Flakes

- Usually less than 50 mm long.
- A 'striking platform' (see diagram) visible.
- Impact point often present on the striking platform.
- A 'bulb of percussion' often present below the striking platform.
- May have been shaped into a recognisable tool form, such as a point or scraper.

Cores

- May be fist-sized or smaller.
- May have one or more scars where flakes have been removed.

Not all of these features can be seen on each stone tool and some require an experienced eye to identify them. Breakage can remove some key features.

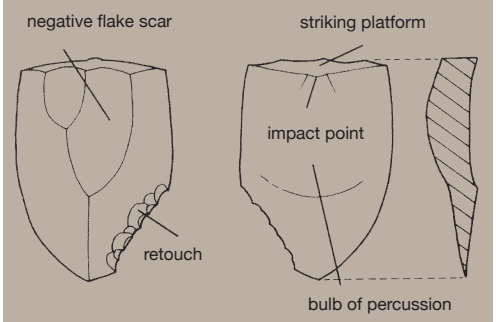
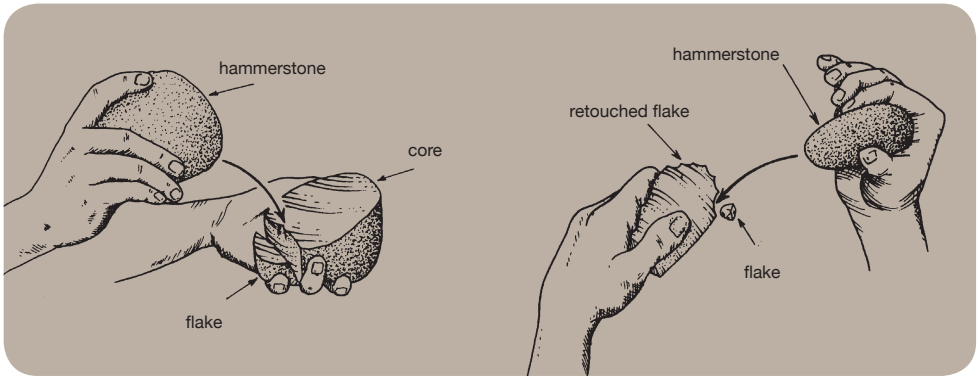


Diagram showing basic flake characteristics



How flaked stone tools were made

What to Do if You Find a Flaked Stone Tool

Do not remove any material from the area. If you pick up a stone to examine it, make sure that you put it back where it came from. Check whether it has some of the key characteristics. Record the location, noting roughly how many stones there are. Note whether the area is under threat of disturbance.

What Were Flaked Stone Tools Used For?

Flaked stone tools could be made quickly, and were used for many everyday tasks, including shaping objects made of wood, bark and bone. They were used as spear-tips in hunting weapons and as knives to butcher game. They were also used to scrape and prepare animal skins for making cloaks, containers and decorative items.

How Else can Stone be Flaked?

Many natural processes can break stone. These include rockfall and extreme changes in temperature. Modern machines, such as ploughs, can also fracture stone. It is important to be able to distinguish stone that has been naturally or accidentally fractured from stone that was deliberately flaked by Aboriginal people. Some of the characteristics of Aboriginal flaked stone artefacts may occasionally occur on naturally fractured stone. However, it is very rare for two or more of these characteristics to occur on the same piece of stone as the result of a natural process.

Why are Flaked Stone Tools Important?

Because stone artefacts do not rot or rust, they are often the only evidence of Aboriginal occupation in a particular area. Stone artefacts can provide information about where Aboriginal people lived, how they made other tools, hunted and prepared food. Sometimes traces of wood, plant food, or animal blood can survive on the edges of flaked stone tools. Specific marks and damage on a tool from use can help tell us what it was used for. This is because different tasks, such as wood carving or scraping animal skins, damaged the edge in different ways.

By finding the original source of stone that was used to make tools, it is sometimes possible to trace the movement of stone within an area. This tells us about Aboriginal systems of trade, exchange and social alliances.

There were a number of changes to the stone tools used by Aboriginal people over time. Because of this, stone tools can help provide an approximate age for the Aboriginal occupation of an area. Flaked stone tools are one of a range of artefacts that provide Aboriginal people today with an important link to their culture and past.

Threats to Aboriginal Stone Tools

Because stone artefacts are found in many different places, and are usually small, they can be difficult to protect. They are sometimes collected by people who do not understand the importance of leaving Aboriginal cultural materials where they are found. Erosion and weathering and activities such as ditch digging and ploughing can disturb flaked stone artefacts. They can also be broken when trampled by animals such as cows, or when run over by vehicles.

Aboriginal Affairs Victoria records flaked stone artefacts so that we will have a permanent photographic and written record of this important part of the heritage of all Australians. Some particularly good examples of sites containing flaked stone artefacts may require active conservation so that they can be preserved for future generations.

Are Flaked Stone Artefacts Protected?

All Aboriginal cultural places in Victoria are protected by law. Aboriginal artefacts are also protected.

It is against the law to disturb or destroy an Aboriginal place. Artefacts should not be removed from sites.

Please help to preserve Aboriginal cultural places by reporting their presence to Aboriginal Affairs Victoria.

Contact:

The Heritage Registrar
Aboriginal Affairs Victoria
PO Box 2392
Melbourne VIC 3001

Telephone: 1800 762 003
Website: www.dpcd.vic.gov.au/aav

June 2008

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ISBN 978-1-921331-55-8

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Victoria The Place To Be
Department of Planning and Community Development

ABORIGINAL SURFACE SCATTERS

Site Identification
Mini Poster 6



A typical surface scatter found when an older land surface has been exposed

What are Aboriginal Surface Scatters?

Surface artefact scatters are the material remains of past Aboriginal people's activities. Scatter sites usually contain stone artefacts, but other material such as charcoal, animal bone, shell and ochre may also be present. No two surface scatters are exactly the same.

Where are They Found?

Surface scatters can be found wherever Aboriginal occupation has occurred in the past.

Aboriginal campsites were most frequently located near a reliable source of fresh water, so surface scatters are often found near rivers or streams where erosion or disturbance has exposed an older land surface.

What to do if You Find an Aboriginal Surface Scatter?

Do not disturb the site or remove any material. Check whether the site has the characteristics of an Aboriginal surface scatter. If it does, record its location and write a brief description of its condition. Note whether it is under threat of disturbance.

Please help to preserve Aboriginal cultural places by reporting their presence to Aboriginal Affairs Victoria.

Contact:

The Heritage Registrar
Aboriginal Affairs Victoria
PO Box 2392
Melbourne VIC 3001

Telephone: 1800 762 003
Website: www.dpcd.vic.gov.au/aav

Characteristics

- The size of scatters may vary from one square metre to one hectare.
- Scatters may contain a few artefacts or many thousands.
- They generally consist of chipped stone artefacts (see Mini Poster 4), but sometimes contain animal bone, shell, charcoal, hearth stones, clay balls and ochre.
- Surface scatters are most visible where erosion, roadwork, ploughing or earthworks have disturbed the ground.
- They can be exposed as a concentration of material on the ground, or as a thin layer (or layers) of material in the side of a bank or cutting.



This Aboriginal camp shows how surface scatters were created
State Library of Victoria

What Produced Surface Scatters?

Surface scatters are the remains of past Aboriginal campsites and other activities. Aboriginal people produced and left the scatter material in the course of their daily life. Activities that produced surface scatters include:

- manufacture of stone implements for a range of everyday tasks;
- production and maintenance of weapons, tools and other items made of wood and bone;
- construction of shelters and huts;
- preparation and consumption of meals;
- preparation of clothes and blankets from animal skins;
- social and spiritual activities.

Away from the camp, activities that produced surface scatters include:

- wood chopping and the removal of bark from trees;
- preparation of large items such as canoes;
- hunting and game processing;
- gathering and processing fruit and vegetables.

Scatters may be the remains from a number of activities in a camp, or from just one activity away from the main camp site.

Large surface scatters with many types of artefacts indicate favoured camping areas. These were often resource-rich areas such as swamps, lakes or riverine environments. Aboriginal people returned to these locations repeatedly, stayed for longer periods, and undertook a wider range of activities. A large scatter may have many thousands of artefacts and cover more than a hectare. The repeated use of an area may have left a dense deposit that is many layers thick, or a huge scatter consisting of artefacts from many overlapping occupations.

Smaller sites generally resulted from single, short occupations such as overnight camps and dinner camps. Some consist of debris at an activity area away from the main camp. Small scatters may cover only a few square metres, consist of only one layer and comprise only a few artefacts. They can be found anywhere, whereas larger scatters are rarer in resource-poor areas such as coastal plains, highlands and deserts.

What Other Factors Produce Surface Scatters?

Scatters of naturally occurring gravel, particularly quartz, may be mistaken for Aboriginal surface scatters. Gravel usually has rounded edges and originates in the immediate area. Imported gravel, particularly from roadwork or building construction, can also be mistaken for surface scatters. Imported gravel has sharp edges and a narrow size range, and it is usually found around earthworks.

Why are Aboriginal Surface Scatters Important?

Surface scatters of artefacts are one of the most common types of Aboriginal site. They provide important information about past Aboriginal people's settlement patterns and lifestyles.

Some organic materials (such as charcoal, bone and shell) found in scatters can be dated by radiocarbon dating. These dates tell us when people were living in a particular area. Artefacts in the surface scatters can show how Aboriginal culture changed over time. The presence of stone from other areas can indicate trade, exchange and contact between different groups that lived many kilometres apart.

Surface scatters are an important link for Aboriginal people today with their culture and past.

Are Aboriginal Surface Scatters under Threat?

Aboriginal surface scatters can be disturbed or destroyed by people or natural processes such as wind and water. Weathering and erosion can damage or disperse artefacts,



Stone Artefacts like these are commonly found in Victorian surface scatters

as can trampling by hard-hoofed animals and rabbit burrowing. Human activities such as mining, road building, damming, clearing and construction can disturb and destroy artefact sites.

Aboriginal Affairs Victoria records the location, dimensions and condition of Aboriginal scatters. The aim is to have a permanent photographic and written record of this important part of the heritage of all Australians. Management works around Aboriginal surface scatters, such as the eradication of rabbits and erosion control, help preserve the sites for future generations.

Are Aboriginal Surface Scatters Protected?

All Aboriginal cultural places in Victoria are protected by law. Aboriginal artefacts are also protected.

It is illegal to disturb or destroy an Aboriginal place. Artefacts should not be removed from sites.

June 2008

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ISBN 978-1-921331-57-2

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