

# Talia Integrated Housing Lots 5-13

Civil Engineering Works Development Application



Prepared for Sekisui House

19 December 2024

## Document Information

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<b>Document Subject</b>	Civil Engineering Works Development Application
<b>Prepared For</b>	Sekisui House
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# Transmittal

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## 1 Introduction

Enspire Solutions (**Enspire**) have been engaged by **Sekisui House** to prepare the civil engineering and stormwater management design and documentation in support of a Development Application (**DA**) submission to Northern Beaches Council for the proposed Integrated Housing works associated with nine (9) x residential lots, as depicted in **Figure 1**.

Works associated with this Development Application include:

- Sediment and erosion controls;
- Bulk earthworks;
- Construction of housing;
- Construction of residential driveways;
- Construction of retaining walls; and
- Installation and commissioning of essential utility services.



**Figure 1 – Integrated Housing Lots 5 – 13 Site Plan**

(Source: Nearmap)



## 2 Related Reports and Documents

This report is to be read in conjunction with the following reports and documents.

- 1) Development Application documentation prepared by Enspire Solutions

**Table 1 - 53A & 53B Warriewood Road Drawing Reference**

Drawing Number	Drawing Title
220122-01-DA-C01.01	COVER SHEET AND DRAWING SCHEDULE
220122-01-DA-C01.21	SPECIFICATION NOTES – SHEET 01
220122-01-DA-C01.41	GENERAL ARRANGEMENT PLAN
220122-01-DA-C03.01	EROSION AND SEDIMENTATION CONTROL PLAN
220122-01-DA-C03.21	EROSION AND SEDIMENTATION CONTROL DETAILS
220122-01-DA-C04.01	BULK EARTHWORKS - CUT AND FILL PLAN
220122-01-DA-C04.21	BULK EARTHWORKS - CUT AND FILL SECTIONS
220122-01-DA-C05.01	SITEWORKS AND STORMWATER MANAGEMENT PLAN – SHEET 01
220122-01-DA-C05.02	SITEWORKS AND STORMWATER MANAGEMENT PLAN – SHEET 02
220122-01-DA-C14.01	SITEWORK DETAILS
220122-01-DA-C21.01	CATCHMENT PLAN

- 2) Northern Beaches Council Water Management for Development Policy, version 2, dated February 2021.
- 3) Northern Beaches Council Warriewood Valley Roads Masterplan, dated June 2018.
- 4) Northern Beaches Council Warriewood Valley Urban Land Release, water management specification, Revised Version, adopted by Pittwater Council on 12 February 2001.
- 5) Warriewood Valley Draft Planning Framework.
- 6) Northern Beaches Engineering Design Code (AUSPEC 1).
- 7) Development Application engineering plans associated with the parent subdivision, prepared by Enspire Solutions [DA2024/1079];
- 8) Development Application engineering plans associated with 53C prepared by Jones Nicholson Consulting Engineers, dated November 2015.
- 9) Engineering plans associated (DA N0511/10), prepared by Proust and Gardner, dated July 2010 (neighbouring development to the north)





## 3 The Development

### 3.1 Proposed Development Works

The development site is located within the Northern beaches Local Government Area (LGA) and occupies a total area of approximately 0.21ha.

The development is generally bound by the following and reflected on **Figure 1**:

- Existing neighbouring residential development to the north; and
- Proposed residential subdivision development to the south, east and west. The parent subdivision is subject to DA2024/1079.
  - An extension of Lorikeet Grove is proposed directly to the west of the site and is expected to be constructed prior to these works commencing.
  - Local road known as 'Road 01' is proposed directly to the south of the site and is expected to be constructed prior to these works commencing.

The proposed development seeks consent for the construction of nine (9) residential dwellings, stormwater works, minor retaining walls and associated landscaping.

The proposed development has been prepared in accordance with the relevant planning requirements and design specifications referenced in Section 2.

Reference shall be made to DA2024/1079 for details pertaining to the parent subdivision.

### 3.2 Existing Site Conditions

To facilitate development of the residential allotments and dwellings, levels across the site have been designed to closely replicate levels proposed under the parent subdivision DA2024/1079. Levels vary from RL 9.5 at the northern corner, to RL 6.0 at the western corner adjacent to Lorikeet Grove.

The proposed development is also largely constrained by works that are proposed to be completed under the parent subdivision, including but not limited to the following:

- Internal road network known as Lorikeet Grove, Road 01 and Road 02;
- Major and minor stormwater pit and pipe network;
- On-Site Detention tanks in Roads 01 and 02;
- Site retaining walls;
- Utilities; and
- Creek corridor rehabilitation works.

An existing sewer carrier main is also located directly east of the site, shall remain un-impeded, retain its current alignment, and be protected throughout all phases of development. Works around the sewer main will require consultation with the relevant authority.

Reference shall be made to DA2024/1079 for further details.



## 4 Erosion and Sediment Control

The objectives of the erosion and sediment control for the development site are to ensure:

- Adequate erosion and sediment control measures are applied prior to the commencement of construction and are maintained throughout construction; and
- Construction site runoff is appropriately treated in accordance with Northern Beaches Council requirements.

As part of the works, the erosion and sedimentation control will be constructed in accordance with Council requirements and the NSW Department of Housing Manual, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book) prior to any earthworks commencing on site.

### 4.1 Sediment Basin

As part of the works, the erosion and sedimentation control will be constructed in accordance with Council requirements and the NSW Department of Housing Manual, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book) prior to any earthworks commencing on site.

The sediment basin is proposed to be constructed under the parent subdivision works and maintained throughout construction of these works. The sediment basin has been designed to capture site runoff during construction of these works.

To ensure the sediment basin is working effectively it will be maintained throughout the construction works. Maintenance includes ensuring adequate settlement times or flocculation and pumping of clean water to reach the minimum storage volume at the lower level of the settling zone. The settling zone will be identified by pegs to clearly show the level at which design storage capacity is available.

The pumped water from the sediment basin can be reused for dust control during construction.

Reference shall be made to DA2024/1079 for further details.

### 4.2 Sediment and Erosion Control Measures

Prior to any earthworks commencing on site, sediment and erosion control measure shall be implemented generally in accordance with the Development Application drawings and the "Blue Book". The measures shown on the drawings are intended to be a minimum treatment only as the contractor will be required to modify and stage the erosion and sedimentation control measures to suit the construction program, sequencing and techniques. These measures will include:

- A temporary site security/safety fence is to be constructed around the site;
- Sediment fencing provided downstream of disturbed areas, including any stockpiles;
- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas;
- Placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around stormwater inlets pits;
- Maintenance of the temporary sediment basin constructed under DA2024/1079; and
- Stabilised site access at the construction vehicle entry/exits.

Any stockpiled material, including topsoil, shall be located as far away as possible from any associated natural watercourses or temporary overland flow paths. Sediment fences shall be



installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations shall be stabilised by hydroseeding or hydro mulching on formation.





## **5 Bulk Earthworks**

### **5.1 Cut and Fill Operations**

The proposed earthworks operations for the site will consist of cut to fill operations to facilitate construction of the public and private roads, residential allotments, retaining walls and public reserve.

The works associated with this Development Application details the following:

- Earthworks and operations to achieve required finished levels;
- Erosion and sediment controls; and
- Retaining wall structures.

Earthworks on the site will consist of cut and fill operations to achieve the desired levels.

Approximate cut to fill earthworks operations for the works subject to this development application are summarised within Enspire's engineering drawing package.

The cut and fill earthworks volumes provided are concept only and are subject to change pending final coordination and detailed civil design. It should be noted the cut and fill operations for this development are based on the following assumptions and parameters:

- No allowance for earthworks bulking factors;
- No allowance for spoil generated from utility service and stormwater drainage trenching;
- Allowance for topsoil stripping of the existing ground plane;
- A preliminary bulk earthworks surface has been adopted and includes benching of the residential dwellings;

Reference shall be made to Enspire's drawing package for further details.



## 6 Stormwater Management Strategy

### 6.1 Objectives and Controls

The stormwater strategy has been developed in accordance with Northern beaches council's Water Management for Development Policy and the proposed stormwater management report prepared by Enspire Solutions under DA2024/1079.

The objectives of Council's Water Management for Development Policy are:

- a) Improve the quality of water discharged to our natural areas to protect the ecological and recreational condition of our, beaches, waterways, riparian areas and bushland.
- b) Minimise the risk to public health and safety.
- c) Reduce the risk to life and property from any flooding and groundwater damage.
- d) A sustainable and holistic catchment wide approach is taken to development, of both private land uses and public facilities, on flood prone land.
- e) Climate change will inform decisions for future water infrastructure.
- f) Water sensitive urban design measures will be integrated into the built form to maximise liveability and reduce the impacts of climate change e.g. urban heat island effect and intensified rainfall events.
- g) Wherever possible, water courses are to be conserved or restored to their natural state.
- h) Reduce the consumption of potable water by encouraging water efficiency, the reuse of water and use of alternative water sources.
- i) Protect Council stormwater drainage assets during development works and to ensure Council's drainage rights are not compromised by development activities.

### 6.2 Proposed Stormwater Management Strategy

In accordance with Council's Water Management for Development Policy, the stormwater management strategy has been designed to ensure site stormwater runoff is managed in the following key areas:

- Existing and developed case catchments;
- Stormwater quantity;
- Stormwater quality; and
- Flooding.

The proposed civil engineering development package documents site levels, grading, and stormwater drainage components and catchments for the site. The overall stormwater management strategy for the site considers external upstream catchments as well as downstream conditions. The lawful point of discharge for the site remains to be to Narrabeen Creek and is consistent with existing conditions.

Reference shall be made to DA2024/1079 for further details around the proposed stormwater management strategy.

### 6.3 Flooding

Flood modelling of the site has been undertaken by Catchment Simulation Solutions (CSS). Results of the flood study are presented under the parent subdivision works (DA2024/1079) and results reflected in the flood study. Reference shall be made to the flood study for further details.



## 6.4 Stormwater Quantity

The proposed stormwater management strategy has been developed as part of the parent subdivision application, DA2024/1079, in accordance with Council's Water Management for Development Policy. As part of Council's policy, OSD is required to be implemented to ensure that the development does not increase stormwater discharge downstream and exceed that of the existing stormwater discharge conditions up to the 1% AEP storm event.

The development site is located within 'Region 1 – Northern Stormwater Region' as per Council's Water Management Policy, Section 9.3.1. To ensure post-development runoff is retained to pre-development flow regimes, two (2) separate OSD tanks are proposed under the parent subdivision to restrict outflows to pre-developed conditions.

Reference shall be made to DA2024/1079 for further details.

## 6.5 Stormwater Quality

### 6.5.1 Stormwater Quality Objectives (Water Sensitive Urban Design)

The stormwater strategy for the development has been developed in accordance with Northern beaches council's Water Management for Development Policy.

The objectives of Council's Water Management for Development Policy are:

- a) Stormwater quality (temperature, salinity, chemical makeup and sediment beds) discharging from the development shall not impact the receiving waters. Reference shall be made to local data if available, including the Warringah Creek Management Study and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC), or other widely accepted guidelines. Stormwater and other drainage shall not be discharged into saltmarsh.
- b) Disturbance to stream and wetland sediments is to be minimised by regulated discharge of stormwater and dissipation of flows at discharge locations. Runoff from the development must be retained at natural discharge rates and sediments controlled at the source.
- c) Stormwater and groundwater flow is to mimic natural conditions and ensure a dispersed pattern of flow, avoiding centralised or concentrated discharge points into the wetland or waterway. Natural flow regimes must be retained. The reduction or increase in flows, alteration in seasonality of flows, changes to the frequency, duration, magnitude, timing, predictability and variability of flow events, altering surface and subsurface water levels and changing the rate of rise or fall of water levels must be avoided.

### 6.5.2 Stormwater Quality Management Strategy

A water quality analysis has been undertaken as part of the parent subdivision application, DA2024/1079, to assess the performance of the proposed WSUD strategy against the adopted stormwater quality targets.

The overall development will include a bio-retention basin in the downstream private buffer strip. The remaining treatment system will include the use of a Gross Pollutant Trap, and rainwater tanks for all residential lots as demonstrated on Enspire's engineering drawing package.

Reference shall be made to DA2024/20179 for the proposed MUSIC Model strategy.



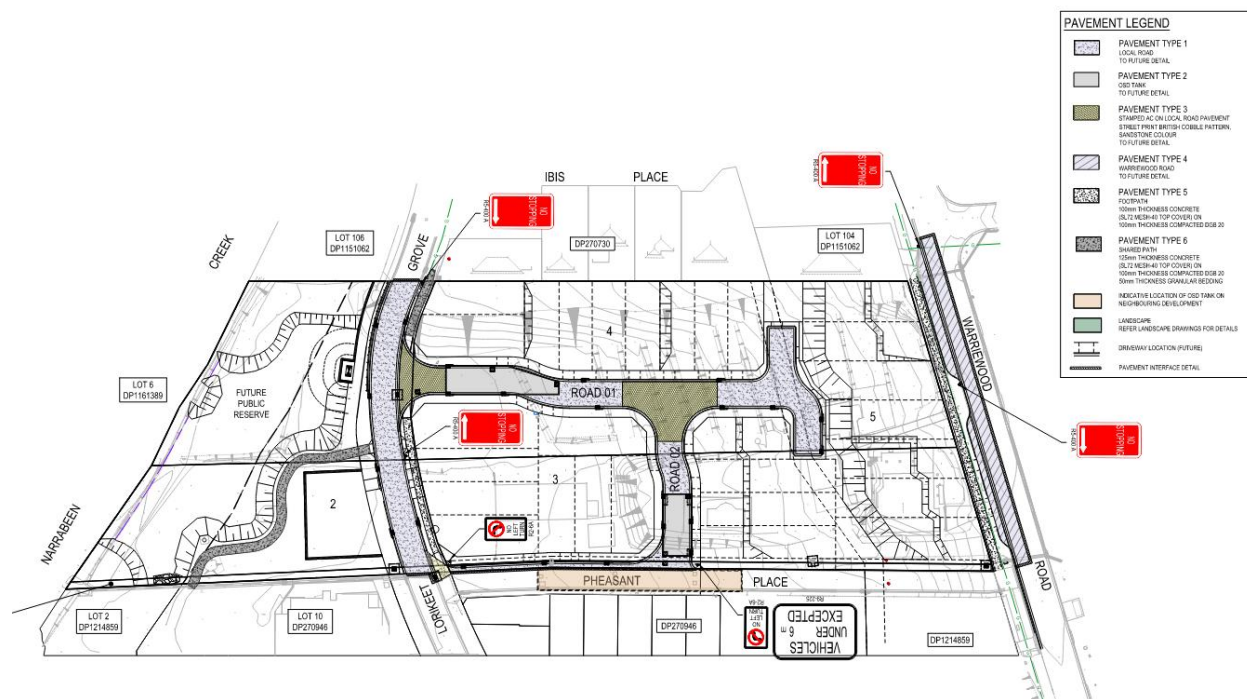


## 7 Siteworks

### 7.1 General

The proposed development works will involve the construction of multiple new residential dwellings, driveways, and retaining walls. The road network servicing the development will include Lorikeet Grove to the West and Road 01 to the south, both to be constructed under DA2024/1079.

**Figure 5** demonstrates the proposed road layout for the parent subdivision.



**Figure 2 - Proposed Road Layout**



## **7.2 Signage & Linemarking**

Signage, line marking, and road pavement surface treatments will be provided for appropriate warning to vehicles, traffic calming at local road intersections and improve driver awareness in critical locations.

Reference is to be made to DA2024/1079 for further details on proposed pavement, signage and line marking.

## **7.3 Pavement Design**

Pavements for the residential driveways will be designed as part of the detailed design phase of the development in accordance with Northern Beaches Engineering Design Code (AUSPEC 1).

- Vehicular Crossings & Residential Driveways – To Council Standard Detail. Indicative profile as follows:
  - 125mm Concrete (SL62 mesh – 50 Top Cover) on
  - 25mm approved fine granular material, except where under the kerb and gutter line where this section is to be placed on
  - 150mm DGB20 Sub-Base

Final pavement design is subject to future detail through the Subdivision Works Certificate phase of the development. Reference shall be made to Enspire's engineering plans for further details on proposed pavement treatments.

## **7.4 Retaining Walls**

Retaining wall structures associated with the development are proposed to be constructed under this Development Application. Wall details and specifications will be provided during the detailed design phase of the development. Indicative sections are reflected on the submitted engineering plans to demonstrate feasibility.

Reference shall be made to Enspire's engineering drawing package for further details.

## 8 Utilities

New utility infrastructure is to be constructed under the parent subdivision DA2024/1079. Services will be placed in typical shared trench arrangements in accordance with the NSW Streets Opening Conference Guide to Codes and Practices for Streets Opening (2009) or equivalent alternative approved by the relevant authority.

The services that will be available to service this development include:

1. Potable Water;
2. Sewer;
3. Telecommunications;
4. High and low voltage electrical services, including street lighting; and
5. Natural Gas.

The design of all utilities will be submitted as part of the Subdivision Works Certificate application and to each relevant authority.

Reference shall be made to the parent subdivision works [DA2024/1079] for further details around utilities and overall servicing strategy.



## 9 Conclusion

This Civil Engineering report has been prepared to provide a summary of the road design assumptions and adopted design procedures, and a guide to the stormwater quantity and quality management techniques for the proposed development as depicted in **Figure 1**.

The overall stormwater management strategy for the site in its entirety has been prepared as part of the parent subdivision works, DA2024/1079. The stormwater management works, including water quantity and water quality, proposed under this package is consistent with the overall strategy.

# Appendix A Detail Survey

Colliers



# Appendix B 53A & 53B Warriewood Road (DA2024/1079)

Enspire Solutions





# Appendix C Lot 105 Lorikeet Grove

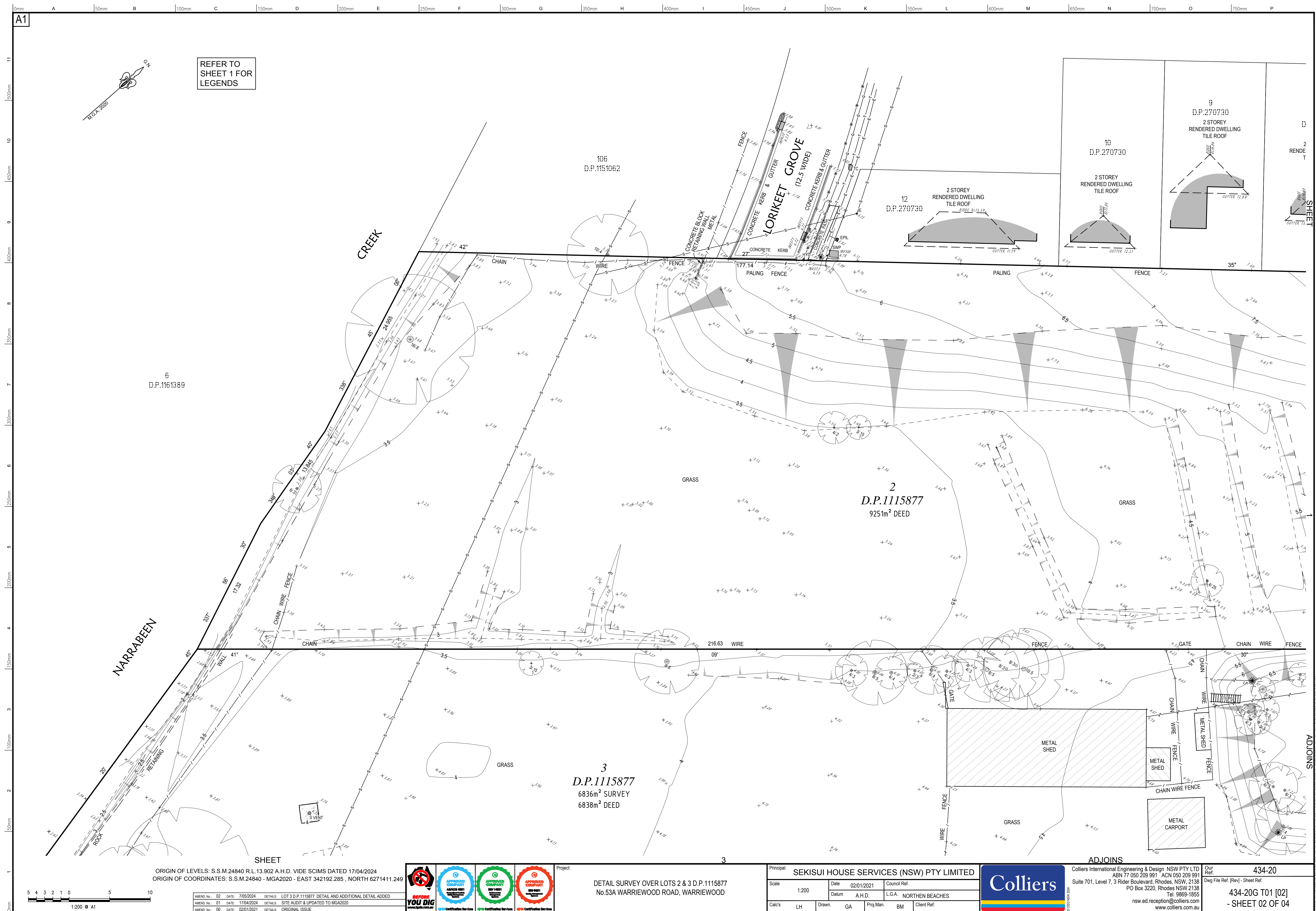
Proust & Gardner & Alkira Homes



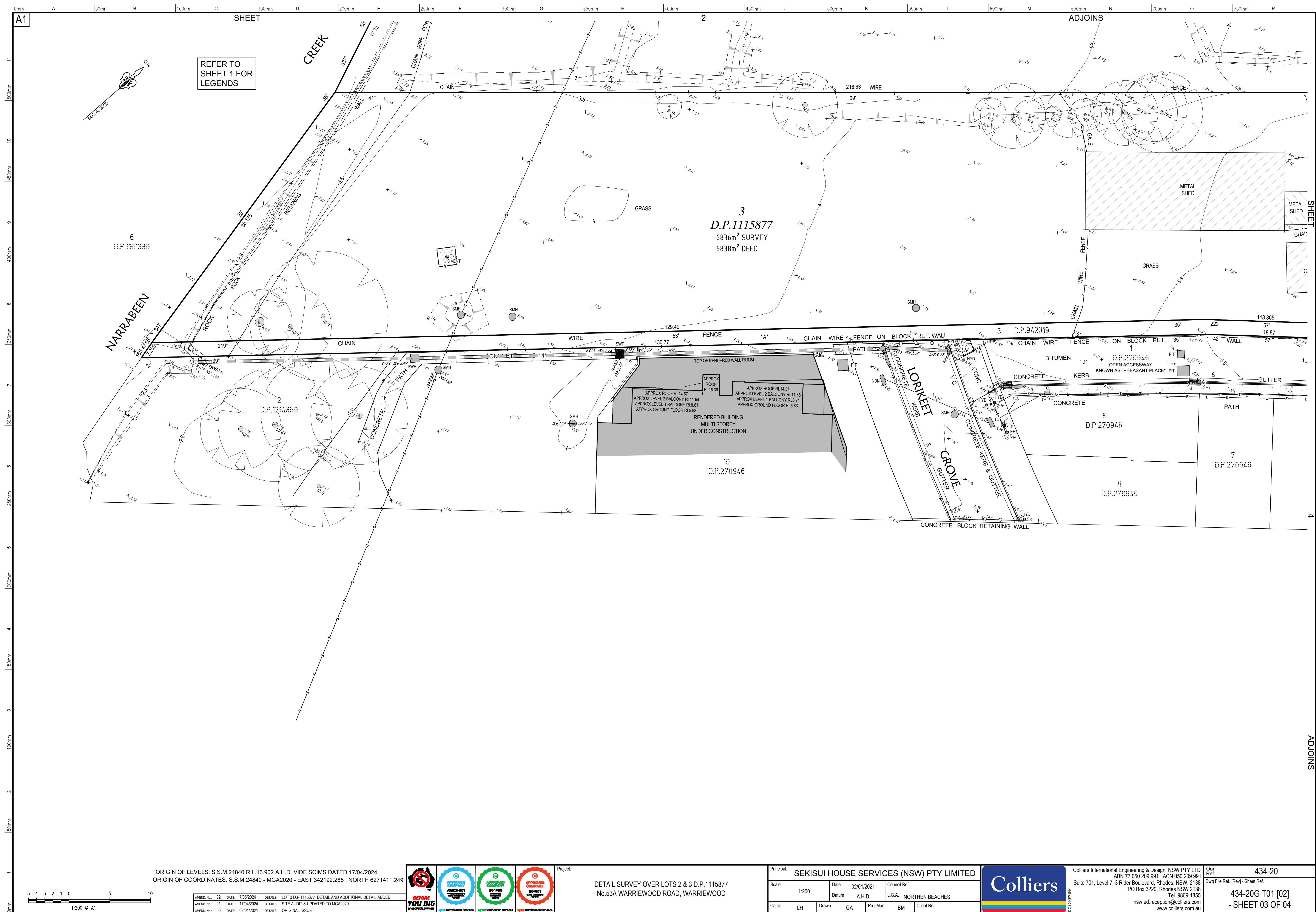




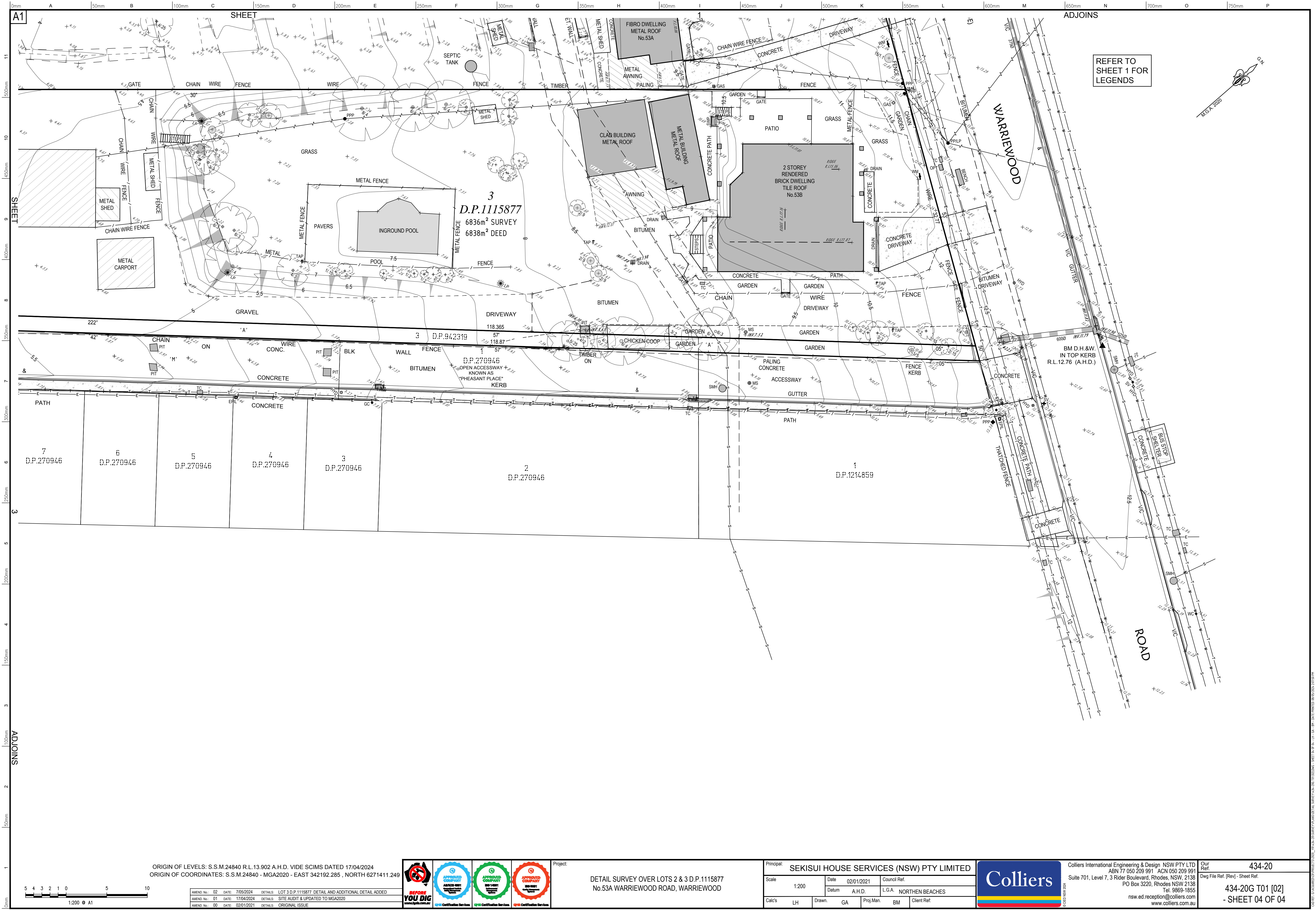












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AMEND. No.	02	DATE	7/05/2024	DETAILS	LOT 3 D.P.1115877 DETAIL AND ADDITIONAL DETAIL ADDED
AMEND. No.	01	DATE	17/04/2024	DETAILS	SITE AUDIT & UPDATED TO MGA2020
AMEND. No.	00	DATE	02/01/2021	DETAILS	ORIGINAL ISSUE



Project:

DETAIL SURVEY OVER LOTS 2 & 3 D.P.1115877  
No.53A WARRIEWOOD ROAD, WARRIEWOOD

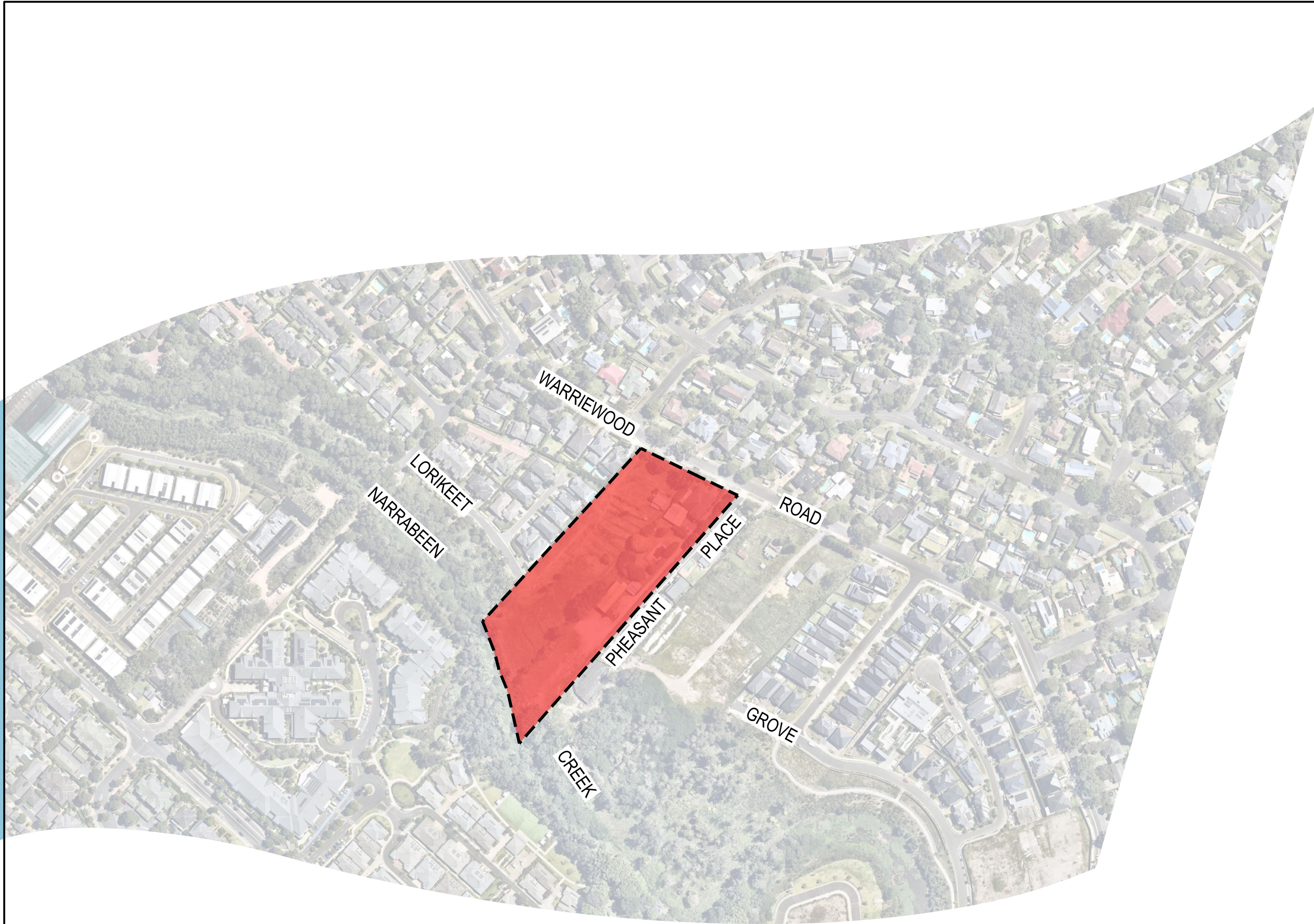
Principal:	SEKISUI HOUSE SERVICES (NSW) PTY LIMITED			
Scale	1:200	Date	02/01/2021	Council Ref.
Datum	A.H.D.	L.G.A.	NORTHERN BEACHES	
Calc's	LH	Drawn	GA	Proj.Man. BM Client Ref.



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Our Ref. 434-20  
Dwg File Ref. (Rev) - Sheet Ref.  
434-20G T01 [02]  
- SHEET 04 OF 04





SEKISUI HOUSE

53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS  
DEVELOPMENT APPLICATION

DRAWING SCHEDULE

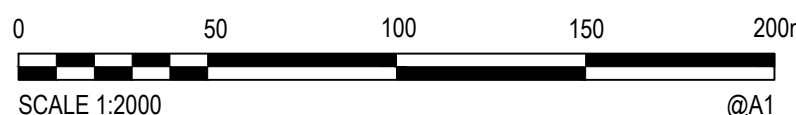
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220122-00-DA-C01.01	COVER SHEET AND DRAWING SCHEDULE
220122-00-DA-C01.21	SPECIFICATION NOTES
220122-00-DA-C01.41	GENERAL ARRANGEMENT PLAN
220122-00-DA-C02.01	DEMOLITION PLAN
220122-00-DA-C03.01	EROSION AND SEDIMENTATION CONTROL PLAN
220122-00-DA-C03.21	EROSION AND SEDIMENTATION CONTROL DETAILS
220122-00-DA-C04.01	BULK EARTHWORKS CUT AND FILL PLAN
220122-00-DA-C04.21	BULK EARTHWORKS CUT AND FILL SECTIONS - SHEET 01
220122-00-DA-C04.22	BULK EARTHWORKS CUT AND FILL SECTIONS - SHEET 02
220122-00-DA-C05.01	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 01
220122-00-DA-C05.02	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 02
220122-00-DA-C06.01	ROAD TYPICAL CROSS SECTIONS
220122-00-DA-C07.01	ROAD LONGITUDINAL SECTIONS
220122-00-DA-C11.01	PAVEMENT, SIGNAGE AND LINEMARKING PLAN
220122-00-DA-C13.01	SITE SECTIONS
220122-00-DA-C14.01	SITEWORKS DETAILS
220122-00-DA-C20.01	PRE-DEVELOPMENT CATCHMENT PLAN
220122-00-DA-C21.01	POST-DEVELOPMENT CATCHMENT PLAN
220122-00-DA-C22.01	TURNING PATH PLAN - SHEET 01
220122-00-DA-C22.02	TURNING PATH PLAN - SHEET 02
220122-00-DA-C22.03	TURNING PATH PLAN - SHEET 03
220122-00-DA-C22.04	TURNING PATH PLAN - SHEET 04

REV.	DATE	DESCRIPTION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION				

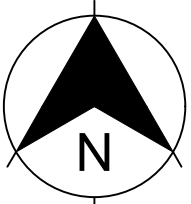
Client

  
**SEKISUI HOUSE**

Scale

  
SCALE 1:2000 @A1

North



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ABN: 71 624 801 690  
Phone: 02 9922 6135

Scale 1:2000	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION	
Date 01/07/2024		
Size A1	Project Number/Drawing Number 220122-00-DA-C01.01	Revision 1
Datum MGA2020		



1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL STANDARDS.
2. NORTHERN BEACHES COUNCIL STANDARDS DETAILS TO BE USED WHERE POSSIBLE.
3. UTILITY ADJUSTMENTS AT DEVELOPERS EXPENSE.
4. CONDUITS TO BE PLACED WHERE REQUIRED BY THE RELEVANT AUTHORITIES.

1. ORIGIN OF SURVEY

PROJECT:	53A WARRIEWOOD ROAD	DATE: 02/01/2021
CARRIED OUT BY:	COLLIERS	
SURVEY NAME:	434-20C T01 [02]	
REFERENCE NO:	434-20	
SSM/PM:	SSM 24840	
E:	342191.825	
N:	36271409.780	
RL:	13.902	
2. THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN SUPPLIED BY REGISTERED SURVEYORS TO PROVIDE A BASIS FOR DESIGN. THE USE OF THIS SURVEY BASE DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
3. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT THE SUPERINTENDENT.
4. THE RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES ARE DIAGRAMMATIC ONLY. WHERE DISTANCES TO BOUNDARIES ARE CRITICAL THEY SHOULD BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION BY FURTHER SURVEY.



## GENERAL INSTRUCTIONS

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, NSW OFFICE OF WATER, OFFICE OF ENVIRONMENT AND HERITAGE. THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
2. THE CONTRACTOR SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED TO SUIT CONSTRUCTION STAGING AND WORK PRACTICES OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT.  
ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
  - a. LOCAL AUTHORITY REQUIREMENTS
  - b. EPA REQUIREMENTS
  - c. LANDCOM MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th edition, MARCH 2004.
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
5. THE CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

6. WHERE PRACTICAL, THE SOIL RESURFACE HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

- a. INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
- b. CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
- c. INSTALL SEDIMENT BASIN AS SHOWN ON PLAN, INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
- d. UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

9. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSTREAM WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.
13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH SECTION 4 OF AS4970 'PROTECTION OF TREES ON DEVELOPMENT SITES' AND COUNCIL CONSENT CONDITIONS.

AT THE COMMENCEMENT OF THE CUT AND FILLING OPERATIONS FOR BULK EARTHWORKS A GEOTECHNICAL ENGINEER IS TO VISIT THE SITE & CONFIRM THE SUITABILITY OF THE METHODOLOGY OF ACHIEVING THE REQUIRED BUILDING PLATFORMS AND COMPACTION REQUIREMENTS. SUBSEQUENTLY, THE HEAD CONTRACTOR IS TO CONFIRM, IN WRITING TO THE SUPERINTENDENT THAT THE METHODOLOGY APPROVED AT THE TIME OF THE GEOTECHNICAL ENGINEERS VISIT WAS MAINTAINED DURING ALL THE BULK EARTHWORKS PROCESS.

2. STRIP TOPSOIL, ORGANIC MATTER AND RUBBLE FROM CONSTRUCTION AREA TO EXPOSE NATURALLY OCCURRING MATERIAL AND STOCKPILE ON SITE AS DIRECTED BY THE SUPERINTENDENT.

3. WHERE FILLING, STRUCTURAL SLABS OR PAVEMENTS ARE REQUIRED, PROOF ROLL THE EXPOSED NATURAL SURFACE WITH A MINIMUM OF TEN PASSES OF A SMOOTH DRUM NON-VIBRATING ROLLER (MINIMUM STATIC WEIGHT OF 10 TONNES) TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER) IN THE PRESENCE OF THE SUPERINTENDENT. THE CONTRACTOR IS TO ALLOW TO REMOVE AND REPLACE A PROVISIONAL QUANTITY OF UNSUITABLE SUBGRADE MATTER.

4. ALL SOFT, WET OR UNSUITABLE MATERIAL IS TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.

5. EXCAVATED MATERIAL IS NOT TO BE USED AS STRUCTURAL FILL UNLESS APPROVED BY THE GEOTECHNICAL ENGINEER.

6. THE CONTRACTOR IS TO PROVIDE CERTIFICATES VERIFYING THE QUALITY OF IMPORTED MATERIAL FOR THE SUPERINTENDENTS APPROVAL.

7. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM LAYER THICKNESS TO COUNCIL SPECIFICATIONS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR -2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289 E3.1 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 E5.1.1.1:

LOCATION	COMPACTION REQUIREMENT
UNDER BUILDING SLABS	95% SMD
LANDSCAPED AREAS	98% SMD
ROADS & PAVED AREAS	100% SMD

8. FOR NON COHESIVE MATERIAL, COMPACT TO NOT LESS THAN

UNDER ROAD	80% DENSITY
OTHER AREA	75% DENSITY

9. THE CONTRACTOR IS TO ALLOW FOR COMPACTION TESTING BY NATA REGISTERED LABORATORY FOR PLATFORMS AND FILL LAYERS IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 - FOR TYPE 1 OPERATIONS (MINIMUM 3 TESTS PER LAYER).

10. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN:

- 1 TEST PER 200m<sup>3</sup> OF FILL PLACED PER LAYER OF FILL.
- 3 TESTS PER VISIT
- 1 TEST PER 1000m<sup>3</sup> OF EXPOSED SUBGRADE

11. TESTING SHALL BE "LEVEL 1" UNDERTAKEN IN ACCORDANCE WITH AS3798.

12. WHERE TEST RESULTS ARE BELOW THE SPECIFIED COMPACTION, RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION STANDARD IS ACHIEVED.

13. ALLOW FOR EXCAVATION IN ALL MATERIALS AS FOUND U.N.O. NO ADDITIONAL PAYMENTS WILL BE MADE FOR EXCAVATION IN WET OR HARD GROUND.

14. WHERE THERE IS INSUFFICIENT EXCAVATED MATERIAL SUITABLE FOR FILLING OR SUBGRADE REPLACEMENT, THE CONTRACTOR IS TO ALLOW TO IMPORT FILL. IMPORTED FILL SHALL COMPLY WITH THE FOLLOWING:

- MAXIMUM SIZE 50mm. PASSING 75% SIEVE ( <25%).
- PLASTICITY INDEX BETWEEN 2-16% AND CBR=8.
- FREE FROM ORGANIC AND PERISHABLE MATTER.

15. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED AT THEIR COST.

16. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE AND MAINTAIN THE INTEGRITY OF ALL SERVICES, CONDUITS AND PIPES DURING CONSTRUCTION. SPECIFICALLY DURING THE BACKFILLING AND COMPACTION PROCEDURE, ANY AND ALL DAMAGE TO NEW OR EXISTING SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST.

17. PROTECT FINAL SURFACE WITH EITHER A TEMPORARY LOOSE SOIL LAYER OR A GRANULAR SUB-BASE LAYER TO PREVENT DRYING OUT PRIOR TO ON-GROUND SLAB CONSTRUCTION.

1. ALL WORKS TO BE IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS, SPECIFICATIONS AND AUSTRALIAN STANDARDS. CONFLICTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO THE SUPERINTENDENT.
3. THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH TNSW AND LOCAL AUTHORITY REGULATIONS AND REQUIREMENTS.
4. THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED.
5. RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION ON COMPLETION OF WORKS.
6. ON COMPLETION OF ANY TRENCHING WORKS, ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL, GRASSED AREAS AND ROAD PAVEMENTS.
7. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO LODGMENT OF TENDER AND ON SITE WORKS. THE PRICE AS TENDERED SHALL BE INCLUSIVE OF ALL WORKS SHOWN ON THE TENDER PROJECT DRAWINGS. ADDITIONAL PAYMENTS FOR WORKS SHOWN ON THE TENDER PROJECT DRAWINGS WILL NOT BE APPROVED.
9. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS AND SPECIFICATIONS, AND ANY OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT OF THE SUBJECT SITE.
10. THESE PLANS SHALL BE READ IN CONJUNCTION WITH ALL APPROVED DRAWINGS AND SPECIFICATIONS PREPARED BY OTHER PROJECT CONSULTANTS.
11. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETERS (mm) AND ALL LEVELS ARE IN METRES (m). UNO. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
12. IN CASE OF DOUBT OR DISCREPANCY REFER TO THE SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. OTHERWISE THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REMEDIATION WORKS.
13. WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
14. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.
15. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO ALL BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.
16. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.
17. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.
18. ALL VARIATIONS TO SPECIFIED PRODUCTS OR DESIGNS SHALL BE REFERRED TO THE DESIGN ENGINEER IN WRITING FOR APPROVAL.
19. EPA AND COUNCIL REQUIREMENTS MUST BE ADHERED TO REGARDING THE LEVEL OF NOISE AND WORKING HOURS, TO ENSURE THAT RESIDENTS AND OTHER APPLICABLE NEIGHBOURS TO THE SITE ARE NOT DISTURBED UNREASONABLY. THE GENERATION OF NOISE MUST BE MINIMISED.

1. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 AND AS/NZS 3500 3.2.
2. SUBSOIL DRAINAGE LINES SHALL BE INSTALLED BEHIND ALL KERBS EXCEPT WHERE STORMWATER DRAINAGE IS LOCATED ALONG THE KERBLINE.
3. A MINIMUM OF 3m OF SUBSOIL LINE SHALL BE LAID INTO UPSTREAM SIDE OF ALL DRAINAGE PITS.
4. FLUSHING POINTS SHALL BE INSTALLED TO COUNCIL SPECIFICATION
5. PIPES UP TO 300 DIA SHALL BE SEWER GRADE uPVC (CLASS SN4) WITH SOLVENT WELDED JOINTS.
6. PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE MIN CLASS 2" APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.
7. ALL PIPES ARE TO BE LAID AT (min) 1.0% GRADE (UNO)
8. ALL PIPES ARE TO BE UNIFORMLY SUPPORTED ALONG THE LENGTH OF THE BARREL BY SUITABLE FILL MATERIAL. REFER TO BEDDING SUPPORT TYPE.
9. PIPES WITH SOCKETS SHALL BE LAID IN BEDDING WHERE SUITABLE RECESSES HAVE BEEN PROVIDED TO ENSURE PIPES DO NOT BEAR ON THEIR SOCKETS.
10. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
11. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE
12. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT.
13. WHERE WORKING METHODS REQUIRE HIGHER CLASS PIPE, THE CONTRACTOR SHALL REFER TO AS 3725 TO DETERMINE THE APPROPRIATE PIPE CLASS. ANY CHANGES IN PROPOSED PIPE CLASS SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO INSTALLATION.
14. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
15. PRECAST PITS MAY BE USED SUBJECT TO WRITTEN APPROVAL BY THE SUPERINTENDENT.
16. ALL PIPE PENETRATIONS (EXISTING, IN-SITU AND PRECAST) ARE TO BE FINISHED FLUSH WITH THE INTERNAL PIT WALL AND PROPERLY SEALED WITH CEMENT RENDER. MASS CONCRETE BENCHING IS TO BE INSTALLED TO MATCH THE OUTLET PIPE INVERT LEVEL AND A LOCKABLE HINGED GRATE AND FRAME WITH CONCRETE SURROUND INSTALLED U.N.O.

7. COVERS

- A. USE HOT DIPPED GALVANISED GRATES AND CONCRETE FILLED COVERS WITH HINGES AND HOLD DOWN BOLTS COMPLYING WITH AS3996 AND OTHER RELEVANT AUSTRALIAN AND COUNCIL STANDARDS.
- B. ALL COVERS AND GRATES TO BE POSITIONED IN A FRAME AND MANUFACTURED AS A UNIT.
- C. ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS.
- D. OBTAIN SUPERINTENDENTS APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPEMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.
- E. UNLESS DETAILED OR SPECIFIED OTHERWISE COVERS AND GRATES TO BE CLASS "D" IN VEHICULAR PAVEMENTS AND CLASS "B" ELSEWHERE.

18. NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH IS 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER.

19. Ø100mm SUB-SOIL DRAINAGE LINES SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT AND PROVIDED IN THE FOLLOWING LOCATIONS:

- A. ADJACENT ALL TRAFFICKED AND CARPARK PAVEMENT AREAS (BEHIND KERB);
- B. ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS;
- C. BEHIND RETAINING WALLS (IN ACCORDANCE WITH DRAWINGS);
- D. BELOW ALL TRAFFICABLE DISH DRAINS;
- E. ALL OTHER AREAS SHOWN ON THE DRAWINGS.

20. THE CONTRACTOR SHALL INSTALL FLUSHING POINTS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS, AT MAXIMUM CENTRES TO COUNCIL SPECIFICATION AND AT ALL UPSTREAM ENDPNTS.



21. PROVIDE 3.0m LENGTH OF Ø100 SUBSOIL DRAINAGE PIPE WRAPPED IN A NON-WOVEN GEOTEXTILE FABRIC, TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO THE DRAINAGE PIT.

22. SUBSOIL TRENCHES SHALL BE BACKFILLED WITH SINGLE SIZED 10mm AGGREGATE WRAPPED IN NON-WOVEN GEOTEXTILE FABRIC. SUBSOIL TRENCHES BELOW TRAFFICABLE PAVEMENTS SHALL BE BACKFILLED WITH NO FINES CONCRETE WRAPPED IN NON-WOVEN GEOTEXTILE FABRIC, U.N.O.

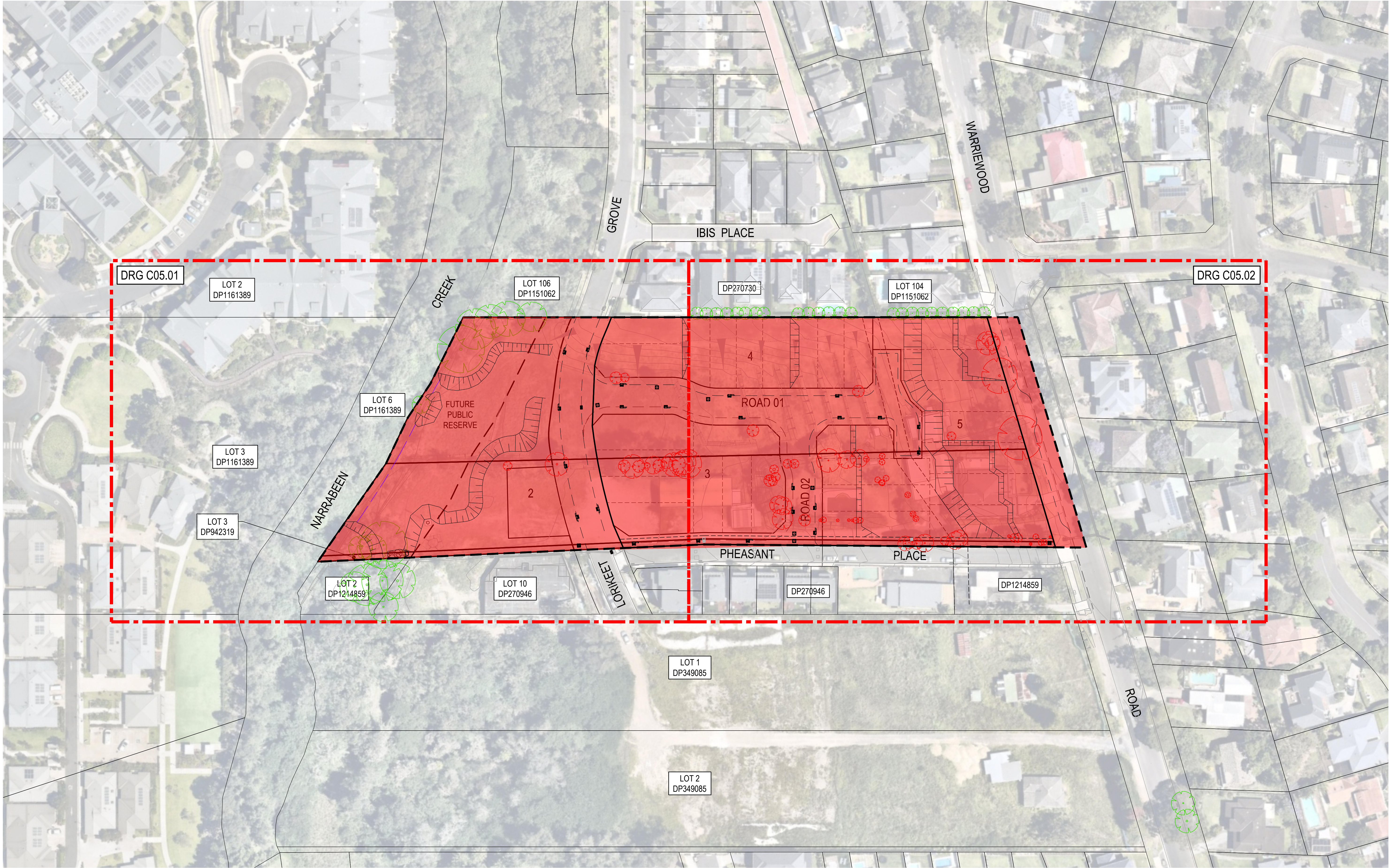
23. ALL RECTANGULAR HOLLOW SECTIONS (RHS) SPECIFIED AS STORMWATER CONDUITS TO BE HOT DIPPED GALVANISED AND HAVE (MINIMUM) 5mm WALL THICKNESS.

24. ALL BOX CULVERTS SHALL BE STRUCTURALLY DESIGNED BY THE MANUFACTURER AND DELIVERED TO SITE AS FIT FOR PURPOSE.
25. ELECTRICAL PITS ARE TO DRAIN TO THE NEAREST STORMWATER PIT WITH VERMIN PROOF NON-RETURN FLAP VALVES AS REQUIRED. THE CONTRACTOR IS TO CONFORM WITH THE ELECTRICAL DESIGNER AS PART OF THE TENDER.
26. THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION, ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.
27. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
28. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.
29. ANY VARIATION TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE SUPERINTENDENT FOR APPROVAL.

1. ALL PAVEMENT MATERIALS SHALL COMPLY WITH CURRENT TNSW SPECIFICATIONS. PROVIDE MECHANICAL ANALYSIS FOR EACH BATCH OF PAVEMENT MATERIAL TO ENSURE CONFORMITY.
2. COMPACTION STANDARDS:
  - A) BASE: 98% MODIFIED MAXIMUM DRY DENSITY
  - B) SUBBASE: 98% MODIFIED MAXIMUM DRY DENSITY
3. THE CONTRACTOR SHALL CONFIRM THE DESIGN CBR WITH A MINIMUM OF 3 TESTS TAKEN AT SUBGRADE LEVEL, WHERE DISCREPANCY IS FOUND, CONTACT THE SUPERINTENDENT.
4. ALLOW FOR COMPACTION TESTING BY NATA REGISTERED LABORATORY FOR: BASE LAYER, SUBGRADE LAYER, SUBGRADE IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 FOR PAVEMENTS. ALLOW FOR AT LEAST TWO SUCCESSFUL COMPACTION TESTS IN EACH LAYER.
5. MATCH NEW PAVEMENT LAYERS NEATLY AND FLUSH WITH EXISTING WHERE REQUIRED.
6. KEY NEW BASE AND SUBBASE LAYERS INTO EXISTING WITH 150mm WIDE STEPS. ASPHALTIC CONCRETE WEARING COURSE IS TO EXTEND 150mm (MIN) PAST BASECOURSE INTERFACE.
7. TRENCHES DURING EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
8. ALL ASPHALTIC CONCRETE (AC) WORK TO BE PREPARED AND CARRIED OUT IN ACCORDANCE WITH GOOD ASPHALTIC PAVING PRACTICE AS DESCRIBED IN AS2734 "ASPHALT (HOT-MIXED) PAVING - GUIDE TO GOOD PRACTICE" AND CURRENT TNSW SPECIFICATIONS (R16).
9. WHERE NOMINATED, THE CONTRACTOR SHALL ALLOW FOR ALL COMPONENTS OF PROPRIETARY JOINTING SYSTEMS INCLUDING FIXING, TEMPLATES & PEGGING TO ENSURE THAT ALL DOWEL BARS REMAIN IN THE CORRECT ALIGNMENT AND POSITION.
10. ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH TNSW. SPECIFICATION 3051, COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m<sup>2</sup> OF BASECOURSE MATERIAL PLACED.
11. ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH TNSW. SPECIFICATION 3051, AND COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m<sup>2</sup> OF SUB-BASE COURSE MATERIAL PLACED.
12. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL IN (11) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH TNSW. SPECIFICATION 3051 WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF THE COUNCIL ENGINEER.
13. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.

										Client	 <b>SEKISUI HOUSE</b>		Scale		North		 Enspire Solutions Pty Ltd Level 4, 153 Walker Street, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135		Project 53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS		Scale N.T.S. Date 28/06/2024		Status  <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION	
											The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.				Title SPECIFICATION NOTES		Size A1 Datum MGA2020		Project Number/Drawing Number  <b>220122-00-DA-C01.21</b>		Revision  <b>1</b>			





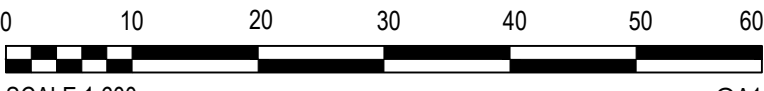
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1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
REV.	DATE	DESCRIPTION	DRN	DES.	VERIF.	APPD.

Client



**SEKISUI HOUSE**

Scale



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SCALE 1:600 @A1

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North



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Phone: 02 9922 6135

Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
GENERAL ARRANGEMENT PLAN

Scale  
1:600

Date  
01/07/2024

Size  
A1

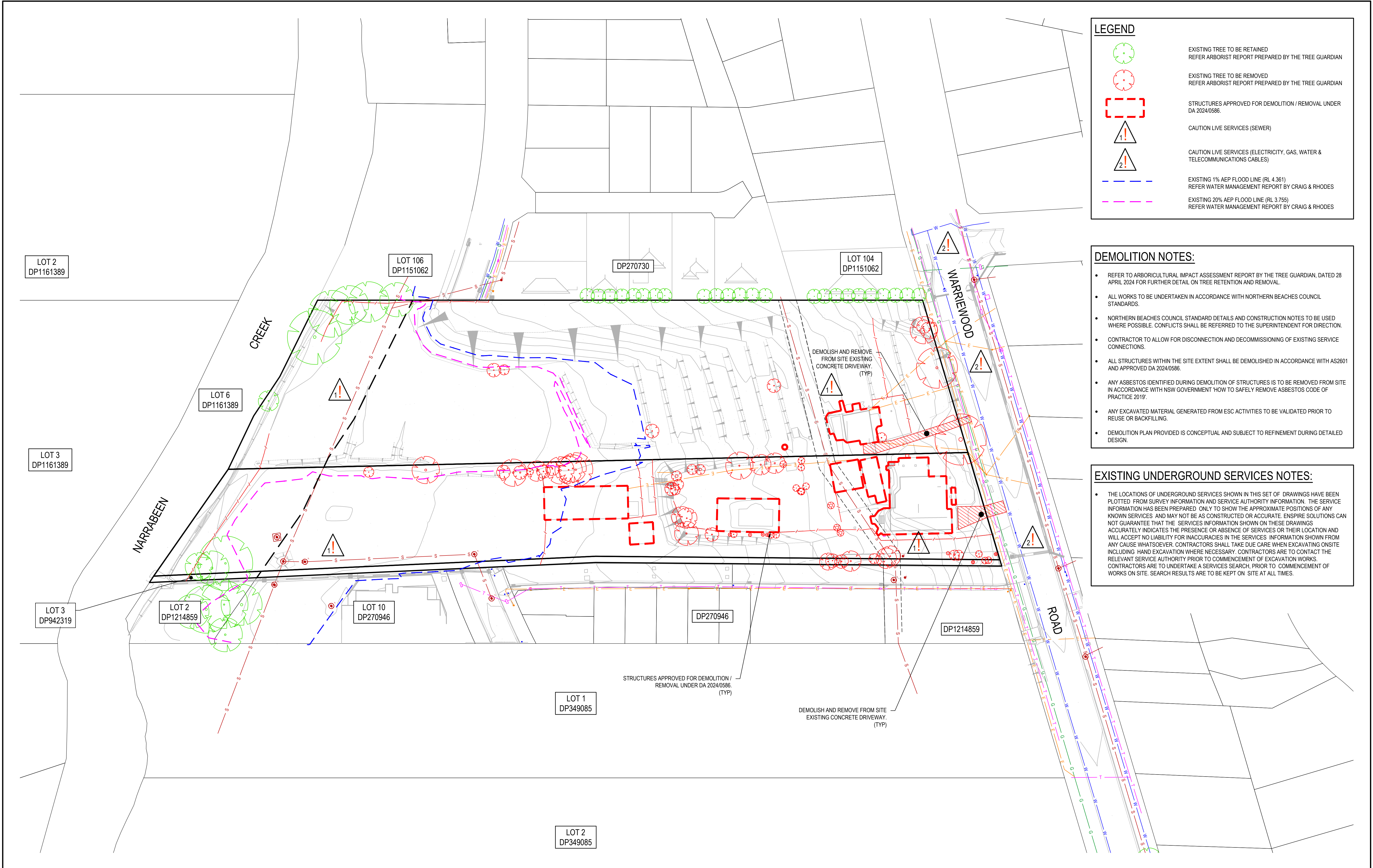
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**220122-00-DA-C01.41**

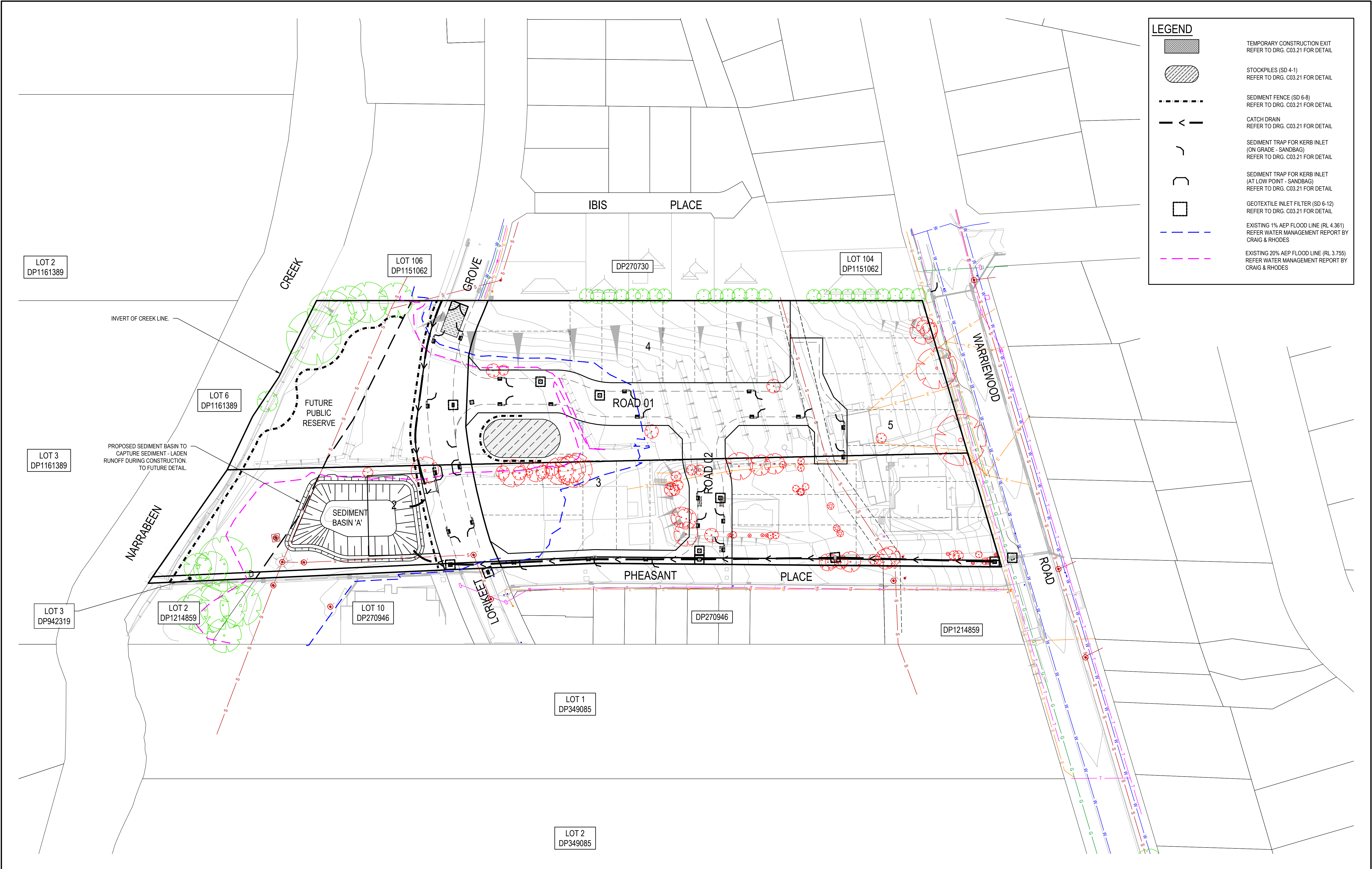
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SEKISUI HOUSE				0 10 20 30 40 50m SCALE 1:500 @A1				enspire				53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS				1:500 First Issue Date 01/07/2024				FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION			
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REV. DATE DESCRIPTION				DRN. DES. VERIF. APPD.				3 5/08/2024 ISSUED FOR DEVELOPMENT APPLICATION SS TPB RLE MC				2 25/07/2024 ISSUED FOR DEVELOPMENT APPLICATION SS TPB RLE MC				1 1/07/2024 ISSUED FOR DEVELOPMENT APPLICATION SS TPB RLE MC							





REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
2	5/08/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC

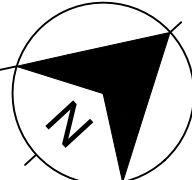
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**SEKISUI HOUSE**

Scale

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SCALE 1:500 @A1

North



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Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
EROSION AND SEDIMENTATION  
CONTROL PLAN

Scale  
1:500

Date  
01/07/2024

Size  
A1

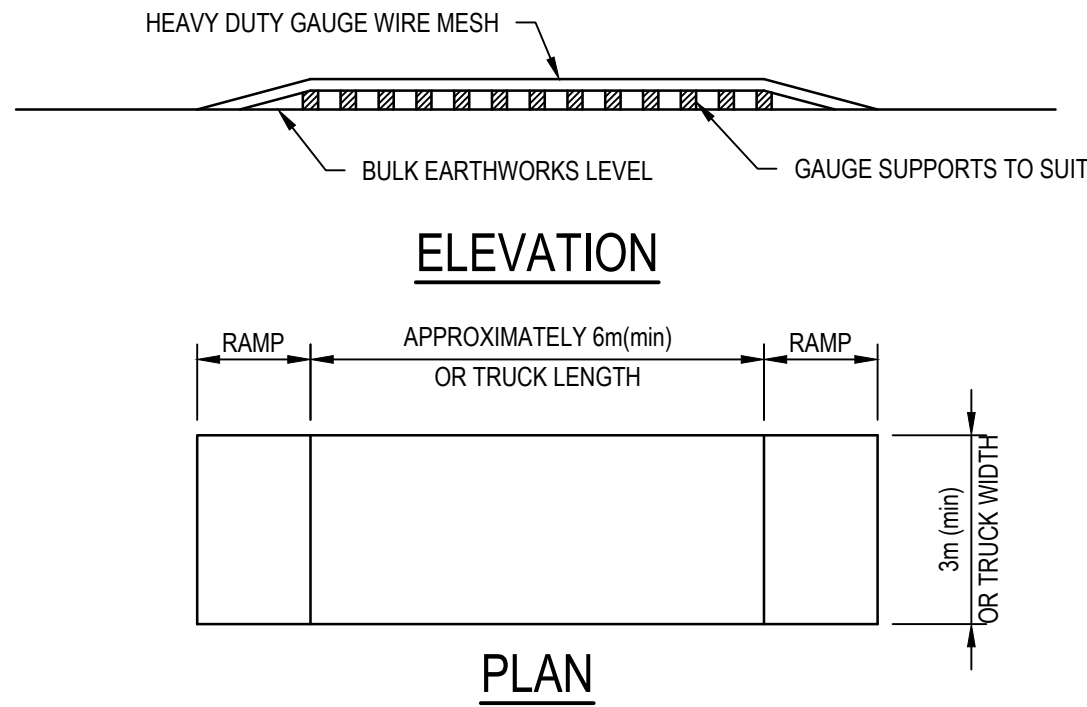
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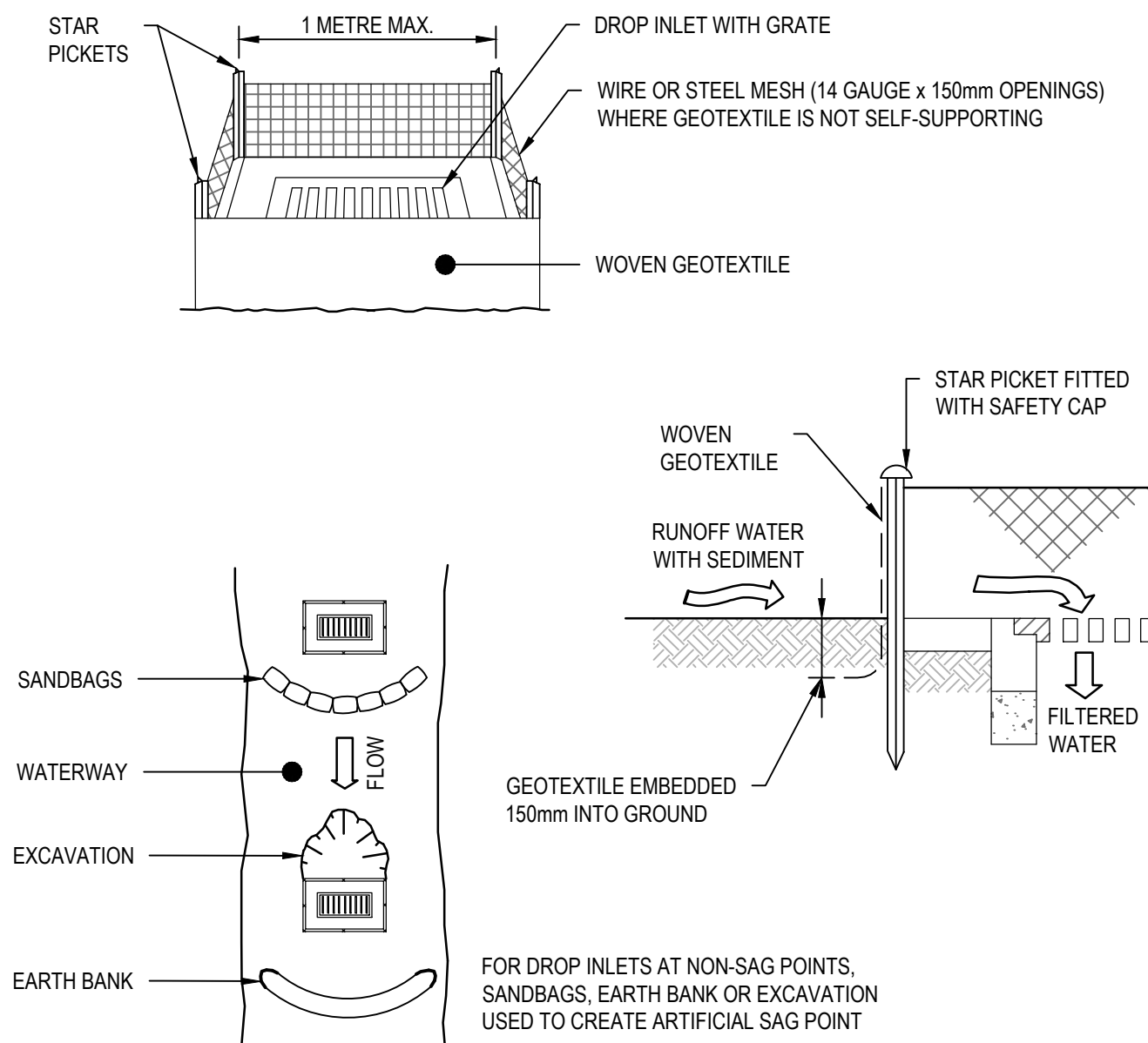
Revision  
**2**





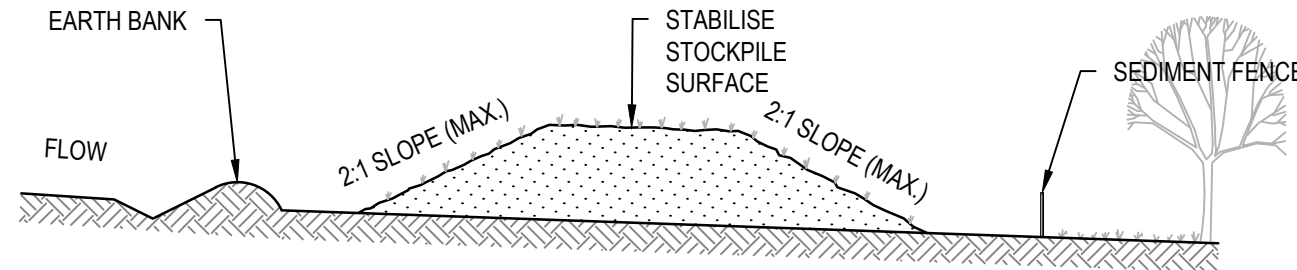
### TEMPORARY CONSTRUCTION EXIT (SHAKER PAD DETAIL)

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE REPAIR AND OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.



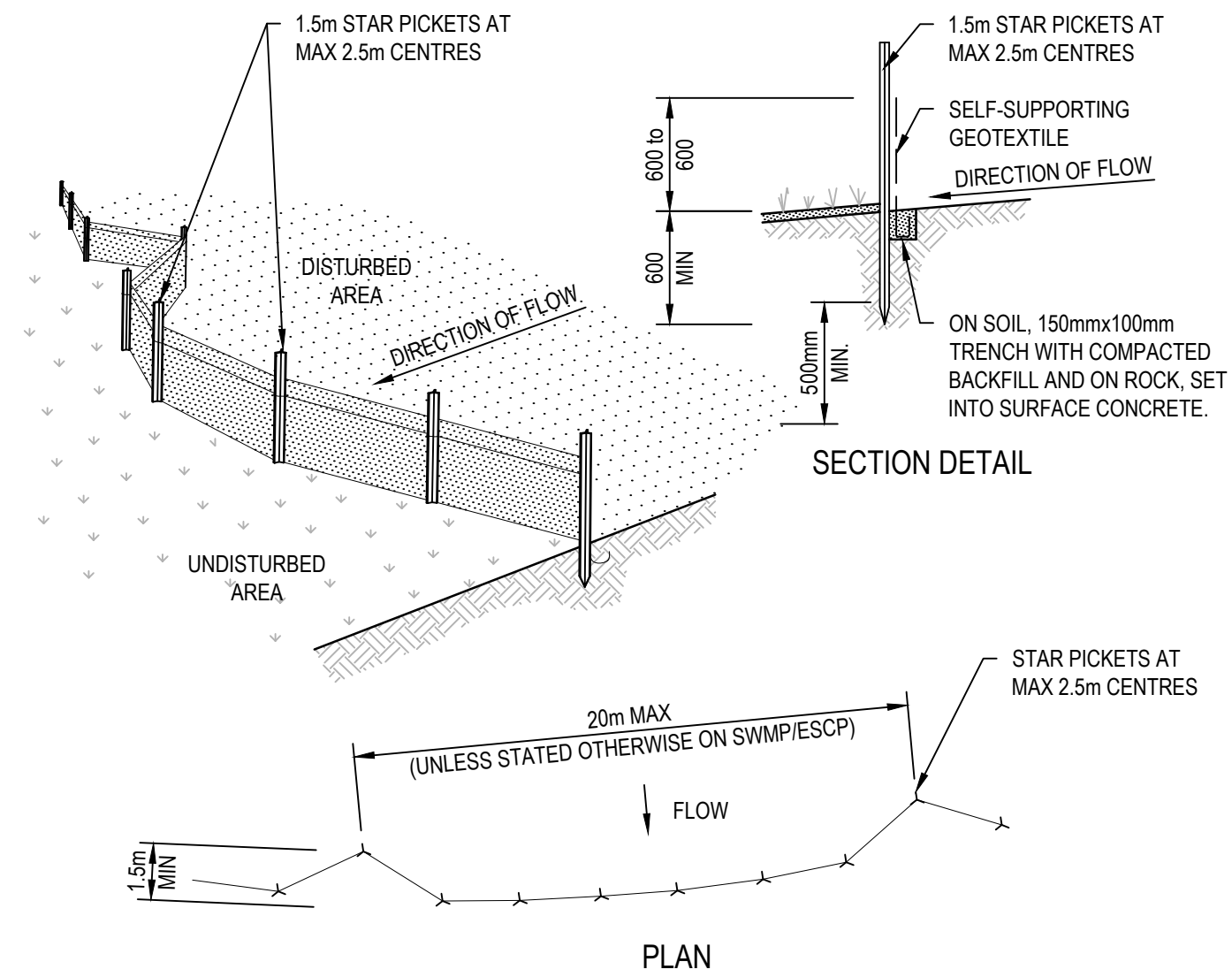
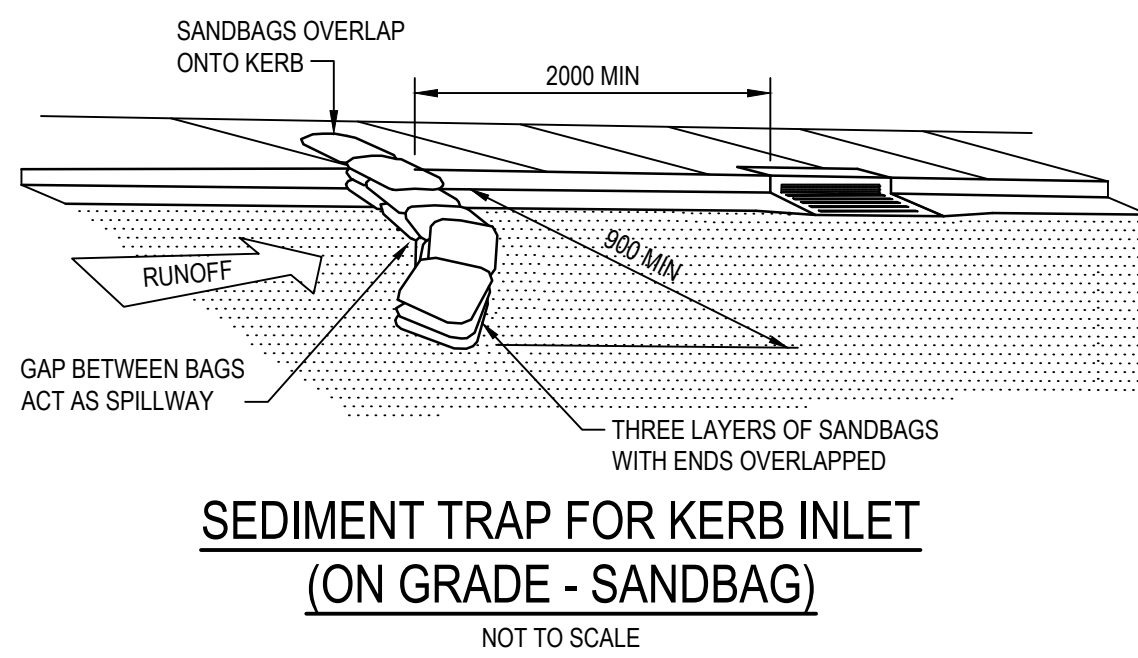
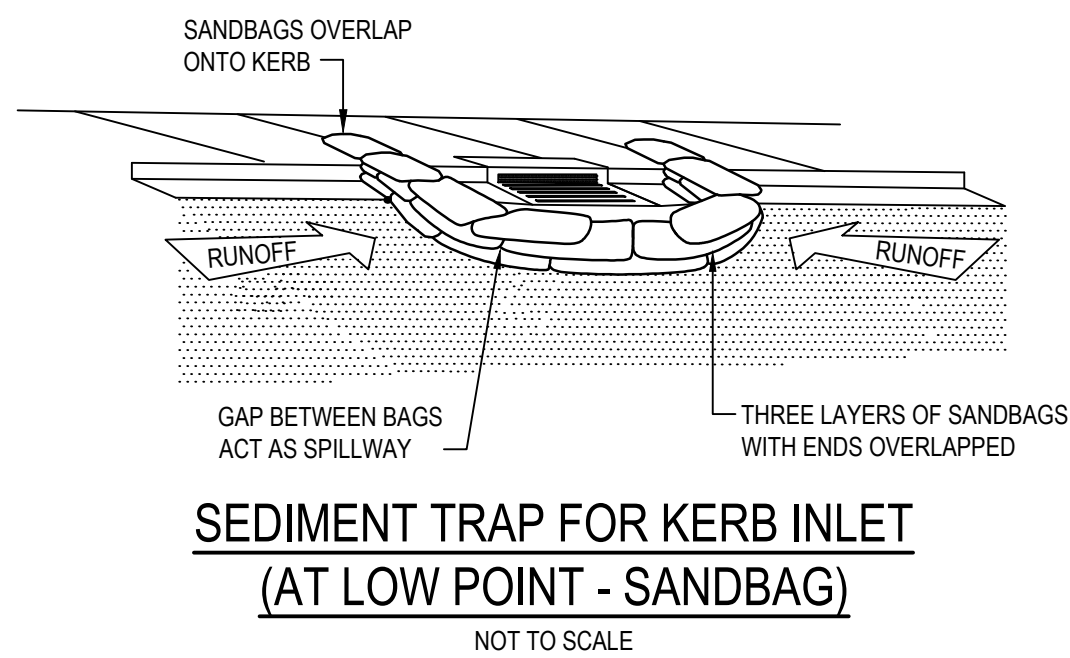
- CONSTRUCTION NOTES**
- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
  - FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
  - IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
  - DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

### GEOTEXTILE INLET FILTER (SD 6-12)



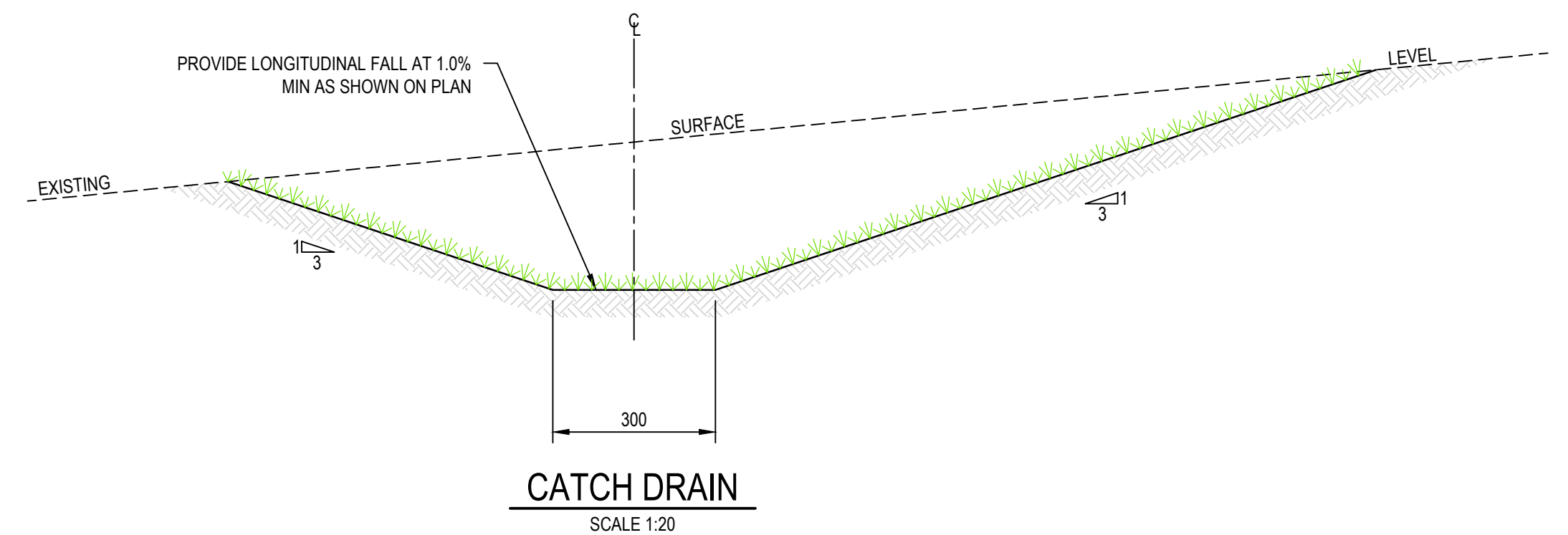
- CONSTRUCTION NOTES**
- PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
  - CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
  - WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
  - WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
  - CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

### STOCKPILES (SD 4-1)

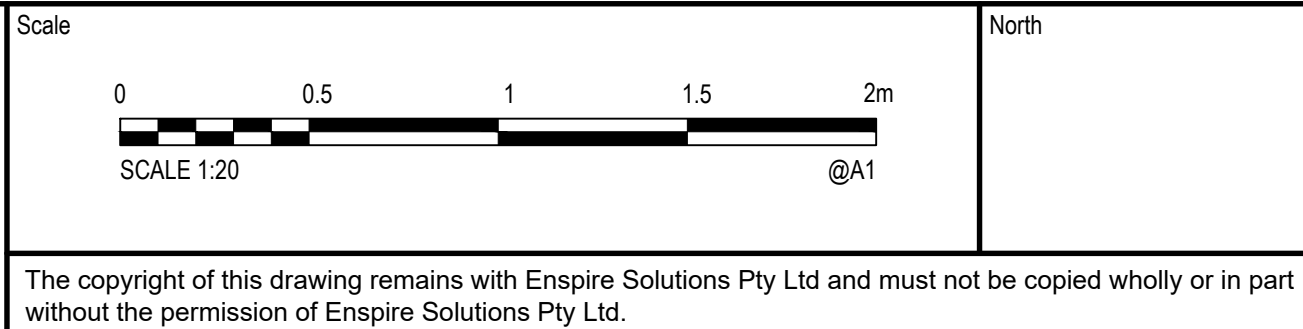


- CONSTRUCTION NOTES**
- CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
  - CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
  - DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
  - FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
  - JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
  - BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

### SEDIMENT FENCE (SD 6-8)

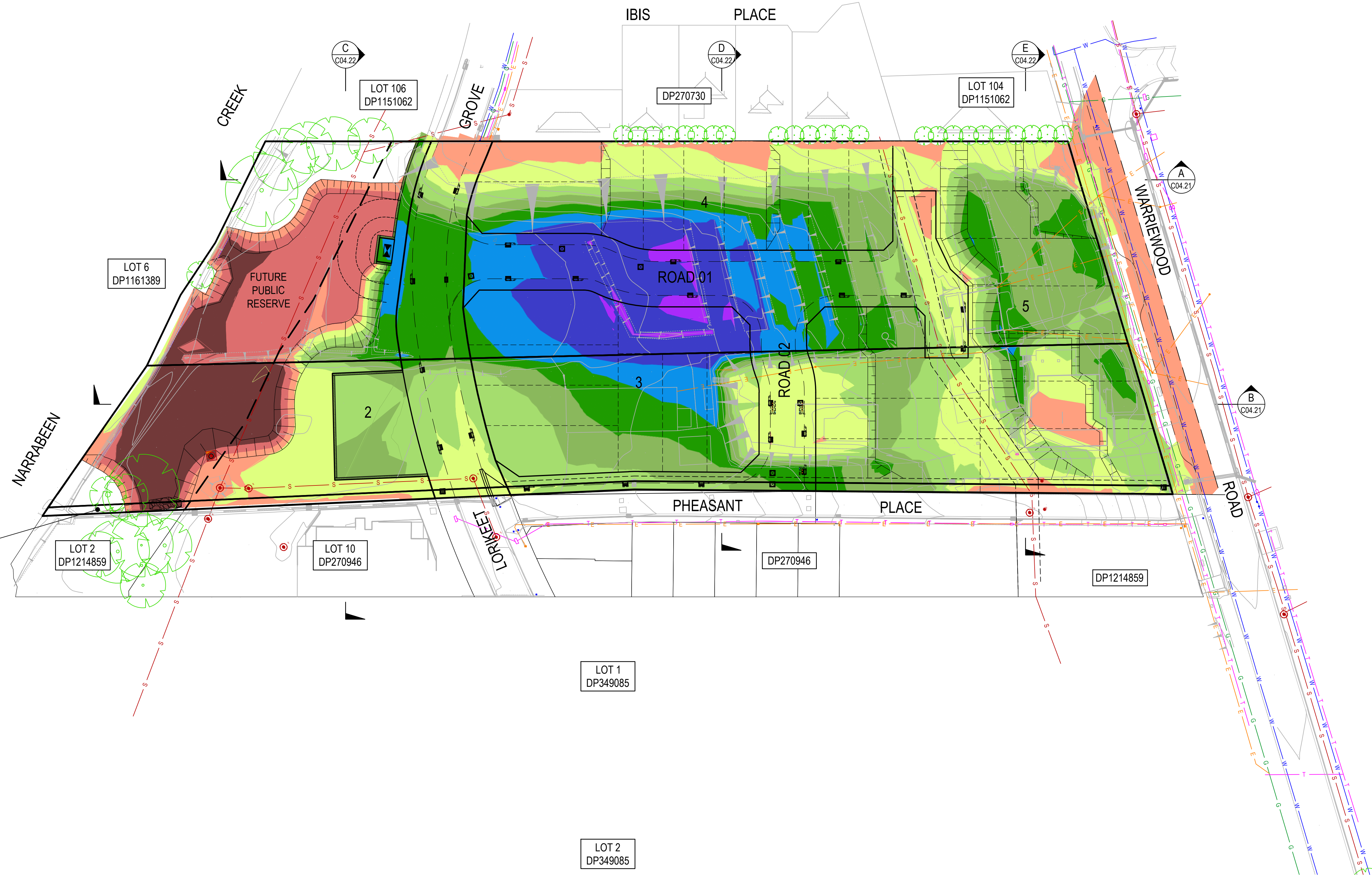


REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
1	28/06/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC



Project 53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS	Scale N.T.S. Date 28/06/2024	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
Title EROSION AND SEDIMENTATION CONTROL DETAILS	Size A1 Datum MGA2020	Project Number/Drawing Number <b>220122-00-DA-C03.21</b> Revision <b>1</b>





LEGEND	
<div></div>	1.5m TO 2.0m CUT
<div></div>	1.0m TO 1.5m CUT
<div></div>	0.5m TO 1.0m CUT
<div></div>	0.0m TO 0.5m CUT
<div></div>	0.0m TO 0.5m FILL
<div></div>	0.5m TO 1.0m FILL
<div></div>	1.0m TO 1.5m FILL
<div></div>	1.5m TO 2.0m FILL
<div></div>	2.0m TO 2.5m FILL
<div></div>	GREATER THAN 2.5m FILL

- NOTES**
- NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS. NOTE ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
  - NO ALLOWANCE HAS BEEN MADE FOR DETAILED EARTHWORKS, ie SERVICE TRENCHING, DETAILED EXCAVATION AND THE LIKE.
  - APPROXIMATE BULK EARTHWORKS VALUES AS FOLLOWS:  
CUT 2,787m<sup>3</sup>  
FILL 15,079m<sup>3</sup>  
BALANCE 12,292m<sup>3</sup> (IMPORT)
  - VOLUMES BASED ON:  
EXISTING SURFACE STRIPPED 200mm  
PRELIMINARY BULK EARTHWORKS SURFACE  
400mm BELOW ULTIMATE DESIGN LEVELS
  - EXCAVATED MATERIAL TO BE ASSESSED DURING DETAILED DESIGN TO CONFIRM STABILITY FOR REUSE ON SITE.

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
2	5/08/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC

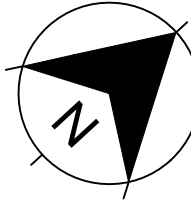
Client

  
**SEKISUI HOUSE**

Scale

0 10 20 30 40 50m  
SCALE 1:500 @A1

North



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Level 4, 153 Walker Street, North Sydney NSW 2060  
ABN: 71 624 801 690  
Phone: 02 9922 6135

Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Scale  
1:500  
Date  
01/07/2024

Title  
BULK EARTHWORKS  
CUT AND FILL PLAN

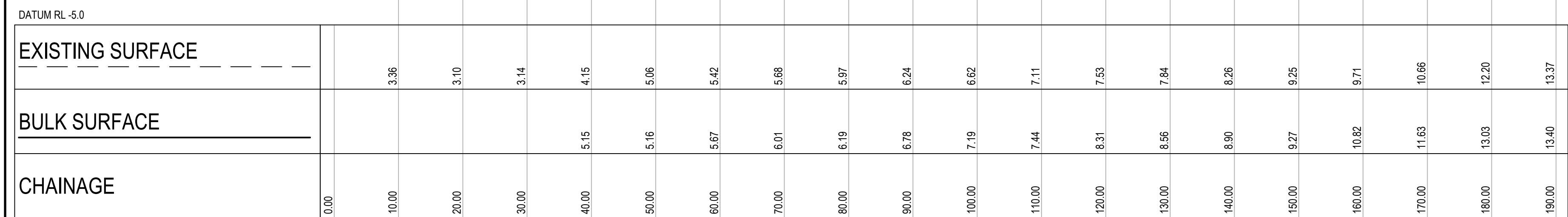
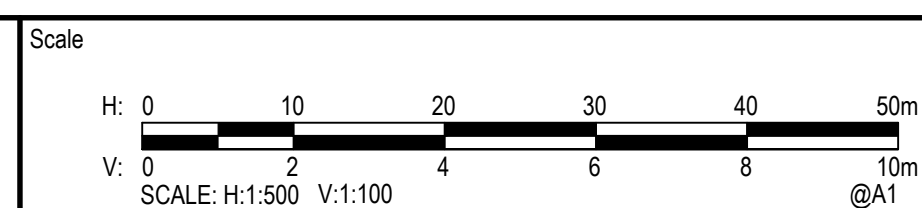
Size  
A1  
Datum  
MGA2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

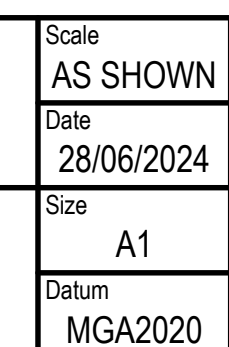
Project Number/Drawing Number  
**220122-00-DA-C04.01**

Revision  
**2**

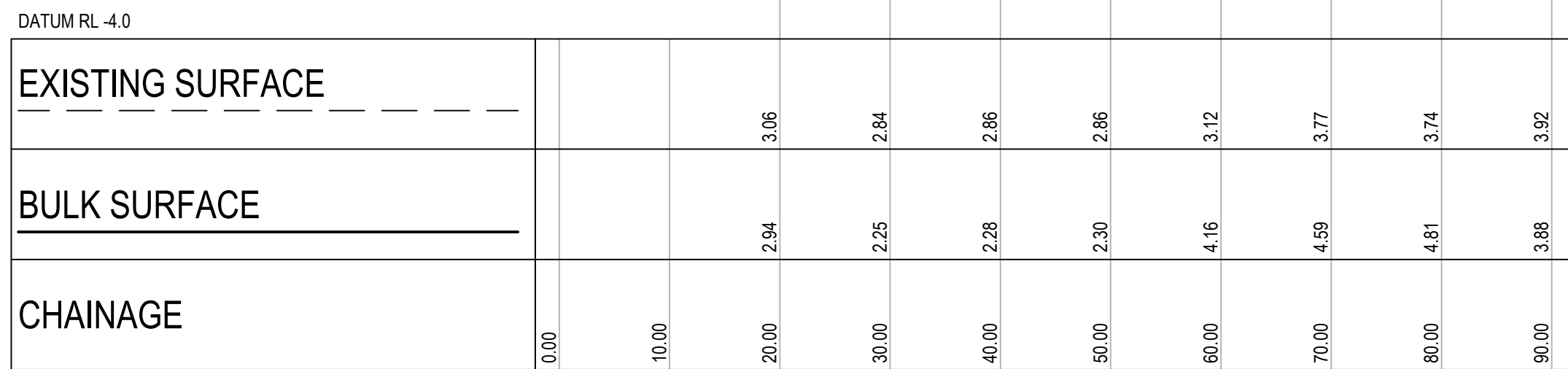


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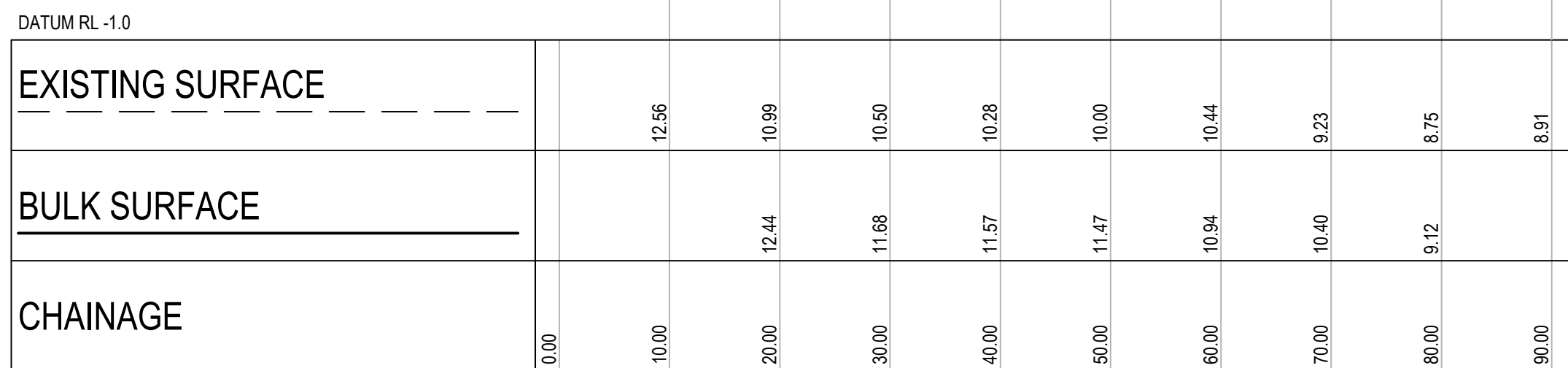
North



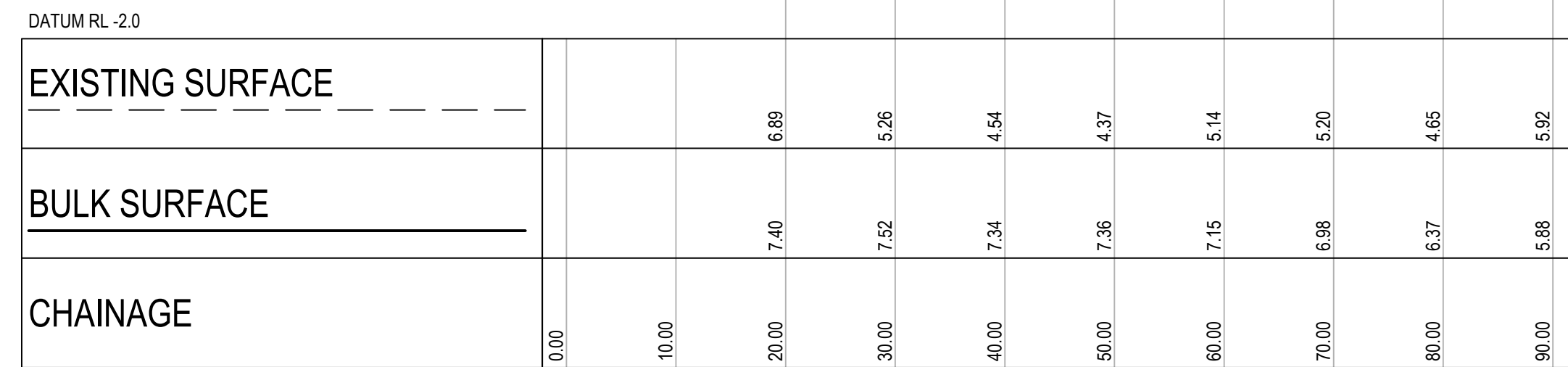
Project Number/Drawing Number	Revision
220122-00-DA-C04.21	1



**LONGITUDINAL SECTION C**  
HORIZONTAL SCALE 1:500@A1  
VERTICAL SCALE 1:100@A1



**LONGITUDINAL SECTION E**  
HORIZONTAL SCALE 1:500@A1  
VERTICAL SCALE 1:100@A1

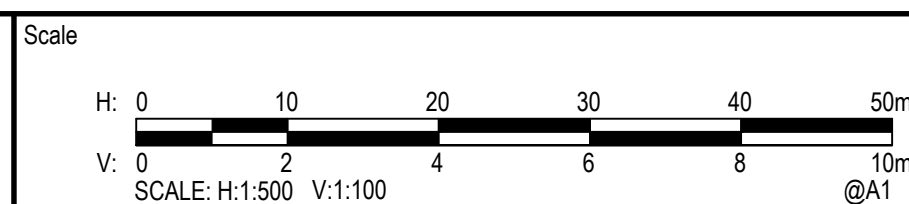


**LONGITUDINAL SECTION D**  
HORIZONTAL SCALE 1:500@A1  
VERTICAL SCALE 1:100@A1

Client



**SEKISUI HOUSE**



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Project	53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS
Title	BULK EARTHWORKS CUT AND FILL SECTIONS SHEET 02

Scale	Status	
AS SHOWN	<div style="text-align: center; color: red; font-weight: bold;">FOR INFORMATION ONLY</div> <div style="text-align: center;">NOT TO BE USED FOR CONSTRUCTION</div>	
Date		
28/06/2024		
Size	Project Number/Drawing Number	Revision
A1	220122-00-DA-C04.22	1
Datum		
MGA2020		



## LEGEND

	SITE BOUNDARY
	CONTOUR
	BATTER
	RETAINING WALL
	KERB AND GUTTER
	ROLL KERB AND GUTTER
	BULK EARTHWORKS PAD LEVEL
	EXISTING LEVEL
	FINISHED LEVEL
	INVERT LEVEL
	SWALE DRAIN
	TEMPORARY DRAINAGE CHANEL
	PIPE SIZE STORMWATER DRAINAGE LINE (SUBDIVISION) FLOW DIRECTION
	TRUNK STORMWATER DRAINAGE LINE
	STORMWATER LINE/PIT NUMBER
	KERB INLET PIT
	SURFACE INLET PIT/JUNCTION PIT
	HEADWALL
	DRIVEWAY LOCATION (FUTURE)
	EXISTING SEWER PIPE
	EXISTING SEWER MAINTENANCE SHAFT & MANHOLE
	STAMPED AC, PORPHYRY PAVERS OR SIMILAR
	EXISTING 1% AEP FLOOD LINE (RL 4.361) REFER WATER MANAGEMENT REPORT BY CRAIG & RHODES
	EXISTING 20% AEP FLOOD LINE (RL 3.755) REFER WATER MANAGEMENT REPORT BY CRAIG & RHODES
	PROPOSED 1% AEP FLOOD LINE (RL 4.361)
	PROPOSED 20% AEP FLOOD LINE (RL 3.755)
	ELECTRICAL SUBSTATION
	OVERLAND FLOW
	SCOUR PROTECTION
	STORMWATER PIT INSERTS (OCEANGUARD)
	PAVEMENT INTERFACE DETAIL
	TNSW STEEL RAIL SAFETY BARRIER TO MANUFACTURER SPECIFICATIONS

## DESIGN SUMMARY:

CATCHMENT AREA = 1.654 ha  
LGA = NORTHERN BEACHES COUNCIL  
REGION = NORTHERN STORMWATER REGION 1.

## A - WATER QUANTITY

- OSD REQUIRED IN ACCORDANCE WITH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY
- REFER DRAINS MODEL BY ENSPIRE SOLUTIONS FOR DETAILS.

STORM EVENT	PRE-DEVELOPMENT FLOWS (m³/s)	POST-DEVELOPMENT FLOWS (m³/s)
20% AEP	0.509	0.487
5% AEP	0.717	0.631
1% AEP	0.921	0.777

## B - WATER QUALITY

- WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

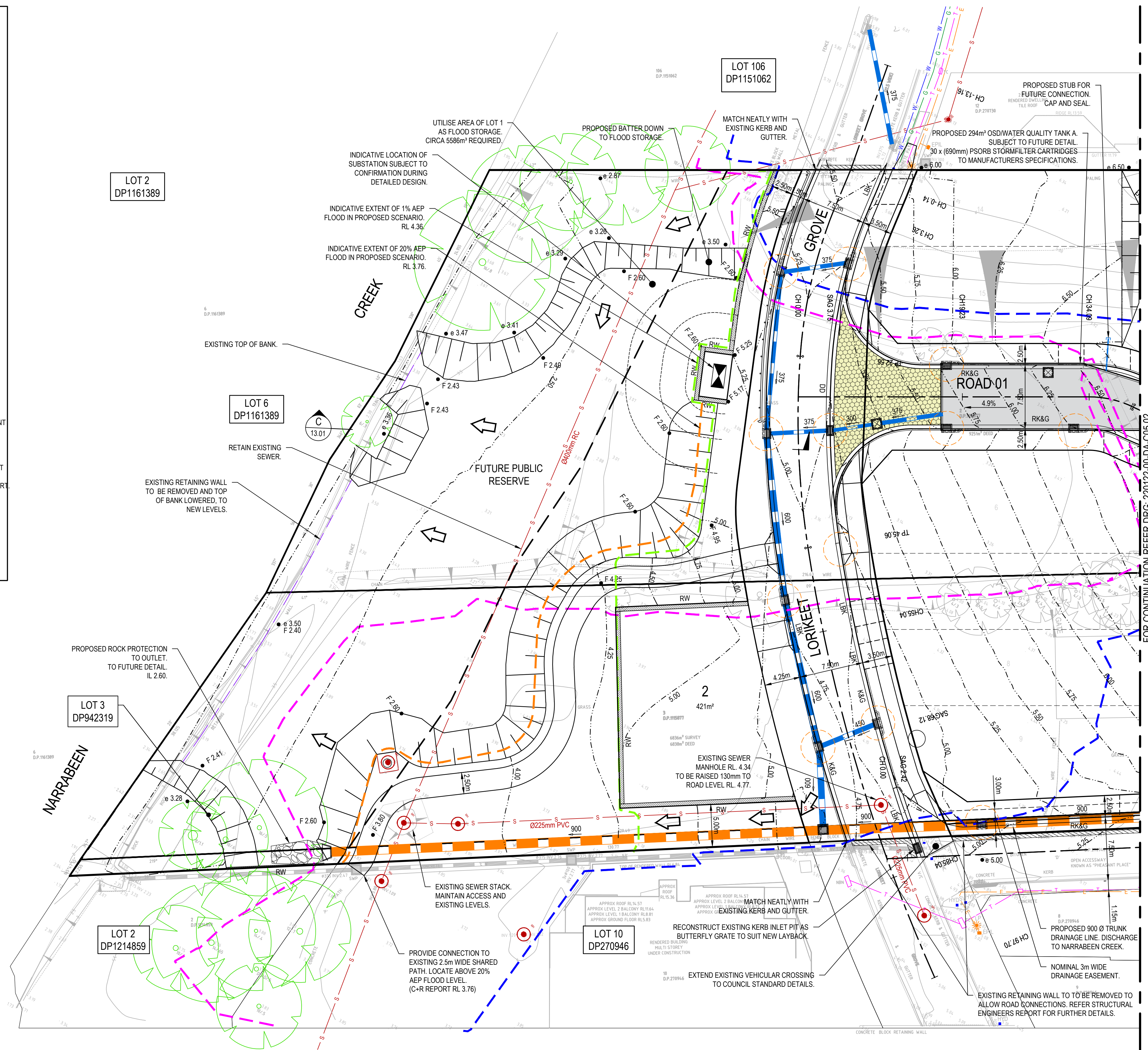
POLLUTANT	TARGET	REDUCTION
GP	90%	96%
TSS	85%	85%
TP	65%	65%
TN	45%	51.1%

- WATER QUALITY TREATMENT PROVIDED BY:
  - PROPRIETARY FILTER CARTRIDGES SYSTEM LOCATED WITHIN OSD/WATER QUALITY TANKS.
  - OCEAN SAVE PIT BASKETS.
  - RAINWATER TANKS IN FUTURE RESIDENTIAL LOTS.
- REFER MUSIC MODEL PREPARED BY ENSPIRE SOLUTIONS FOR DETAILS.
- FILTER CARTRIDGE SYSTEM TO BE INSTALLED AFTER 80% OF CATCHMENT IS DEVELOPED.

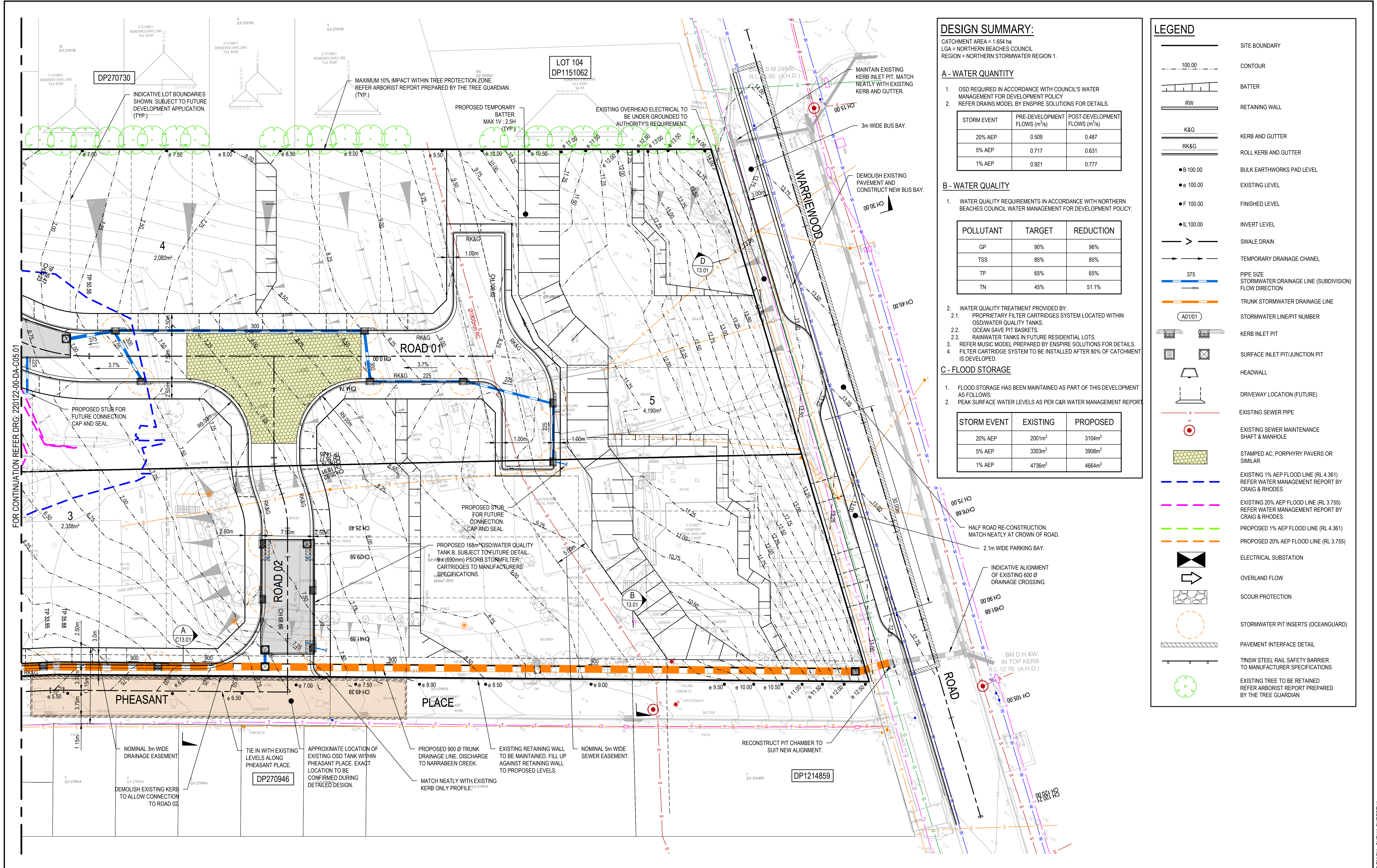
## C - FLOOD STORAGE

- FLOOD STORAGE HAS BEEN MAINTAINED AS PART OF THIS DEVELOPMENT AS FOLLOWS:
- PEAK SURFACE WATER LEVELS AS PER C&R WATER MANAGEMENT REPORT.

STORM EVENT	EXISTING	PROPOSED
20% AEP	2001m³	3104m³
5% AEP	3303m³	3908m³
1% AEP	4736m³	4664m³







DESIGN SUMMARY:

CATCHMENT AREA = 1.654 ha  
LGA = NORTHERN BEACHES COUNCIL  
REGION = NORTHERN STORMWATER REGION 1.

A - WATER QUANTITY

1. OSD REQUIRED IN ACCORDANCE WITH COUNCIL'S WATER MANAGEMENT FOR DEVELOPMENT POLICY  
2. REFER DRAINS MODEL BY ENSPIRE SOLUTIONS FOR DETAILS.

STORM EVENT	PRE-DEVELOPMENT FLOWS (m³/s)	POST-DEVELOPMENT FLOWS (m³/s)
20% AEP	0.509	0.487
5% AEP	0.717	0.631
1% AEP	0.921	0.777

B - WATER QUALITY

1. WATER QUALITY REQUIREMENTS IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL WATER MANAGEMENT FOR DEVELOPMENT POLICY.

POLLUTANT	TARGET	REDUCTION
GP	90%	96%
TSS	85%	85%
TP	65%	65%
TN	45%	51.1%

2. WATER QUALITY TREATMENT PROVIDED BY:  
2.1. PROPRIETARY FILTER CARTRIDGES SYSTEM LOCATED WITHIN OSD/WATER QUALITY TANKS.  
2.2. OCEAN SAVE PIT BASKETS.  
2.3. RAINWATER TANKS IN FUTURE RESIDENTIAL LOTS.  
3. REFER MUSIC MODEL PREPARED BY ENSPIRE SOLUTIONS FOR DETAILS.  
4. FILTER CARTRIDGE SYSTEM TO BE INSTALLED AFTER 80% OF CATCHMENT IS DEVELOPED.

C - FLOOD STORAGE

1. FLOOD STORAGE HAS BEEN MAINTAINED AS PART OF THIS DEVELOPMENT AS FOLLOWS:  
2. PEAK SURFACE WATER LEVELS AS PER C&R WATER MANAGEMENT REPORT

STORM EVENT	EXISTING	PROPOSED
20% AEP	2001m³	3104m³
5% AEP	3303m³	3908m³
1% AEP	4736m³	4664m³

LEGEND

	SITE BOUNDARY
	CONTOUR
	BATTER
	RETAINING WALL
	K&G
	RK&G
	● B 100.00
	● E 100.00
	● F 100.00
	● IL 100.00
	>
	→
	375
	→
	→
	A01/01
	—
	●
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	⬢
	→

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
4	5/08/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
3	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
2	12/06/2024	ISSUED FOR INFORMATION	SS	TPB	RL	MC
1	6/05/2024	ISSUED FOR INFORMATION	JS	TPB	RLE	MC

Client

Scale

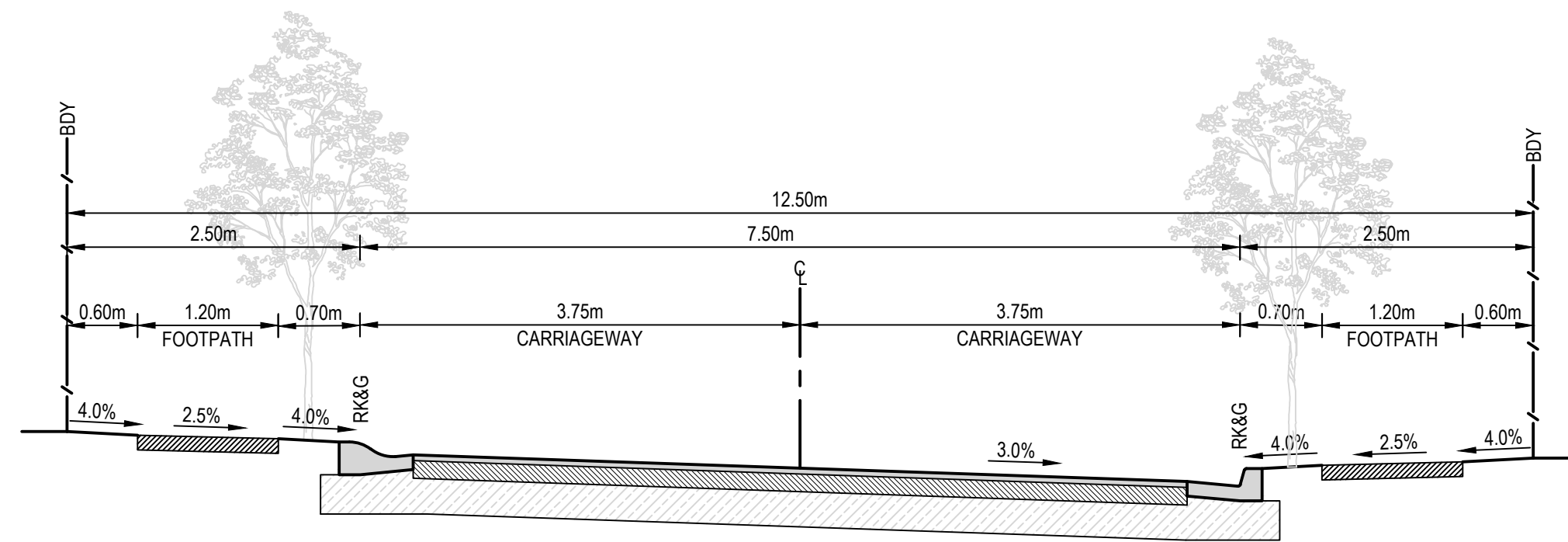
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@A1

North

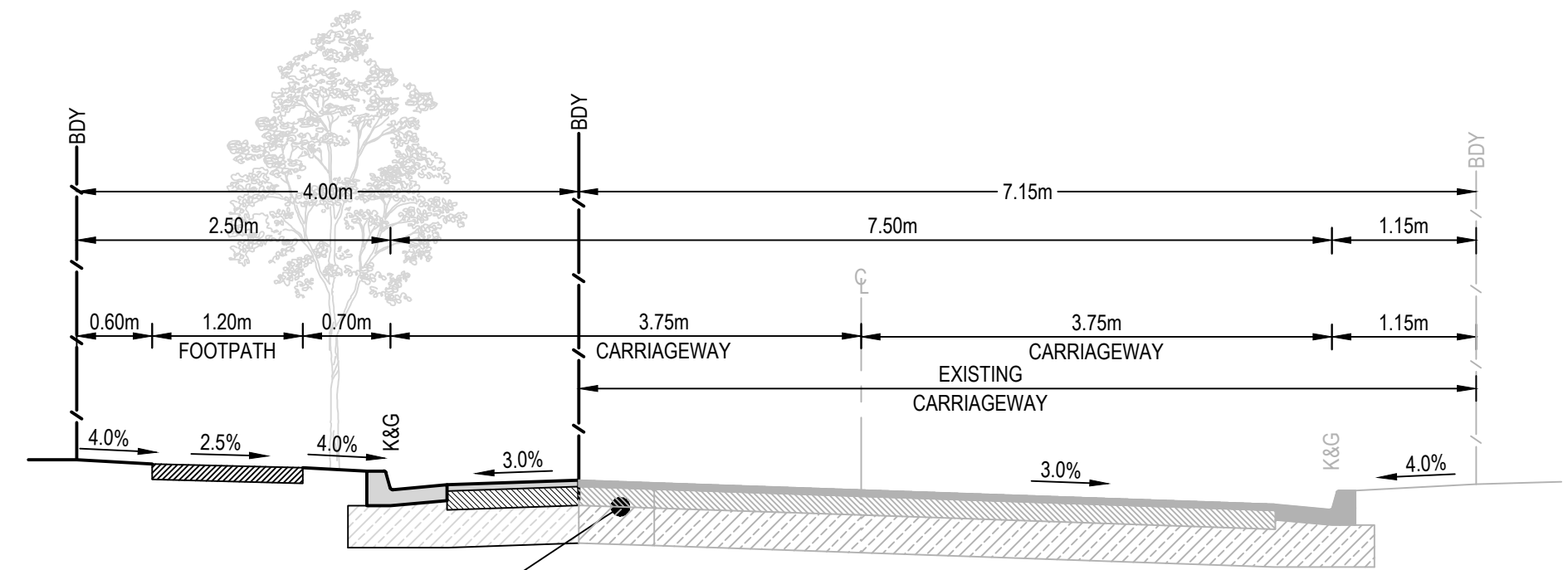
Enspire Solutions Pty Ltd  
Level 4, 153 Walker Street, North Sydney NSW 2060  
ABN: 71 624 801 690  
Phone: 02 9922 6135

Project	53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS	Scale	1:250	Status	FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION
Title	SITWORKS AND STORMWATER MANAGEMENT PLAN	Size	A1	Project Number/Drawing Number	220122-00-DA-C05.02
Sheet	SHEET 02	Datum	MGA2020	Revision	4

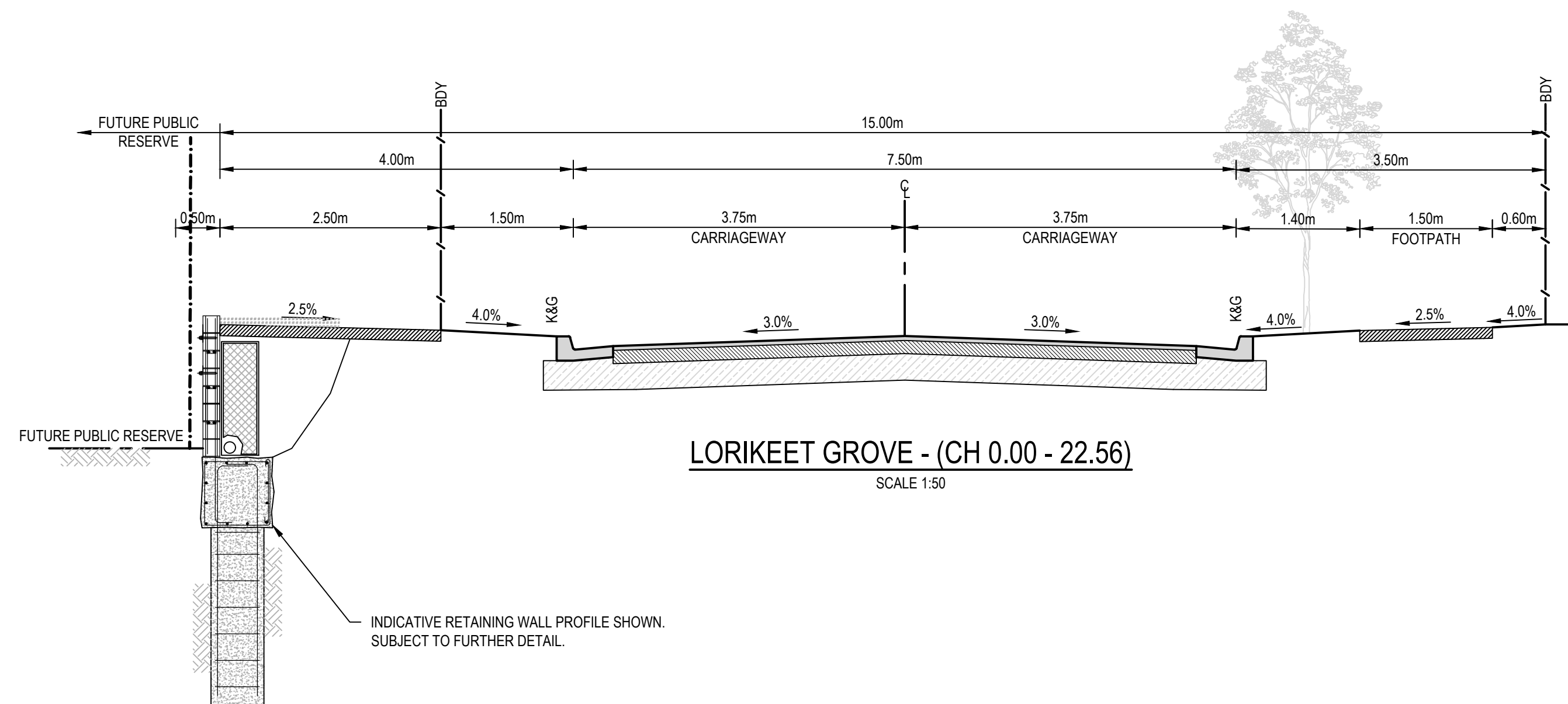




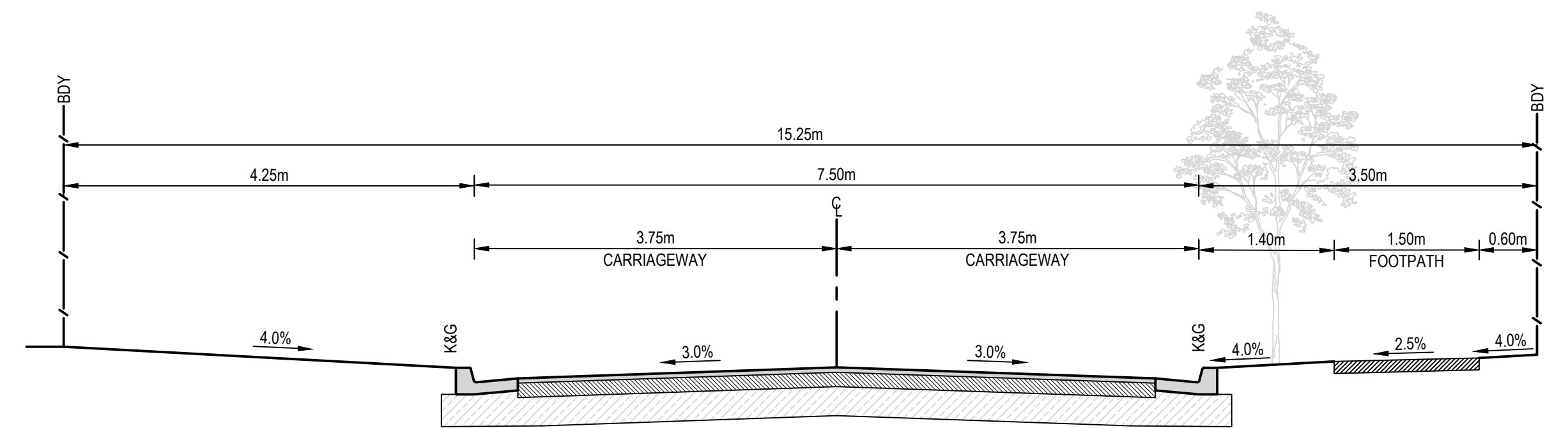
ROAD 01 & ROAD 02  
SCALE 1:50



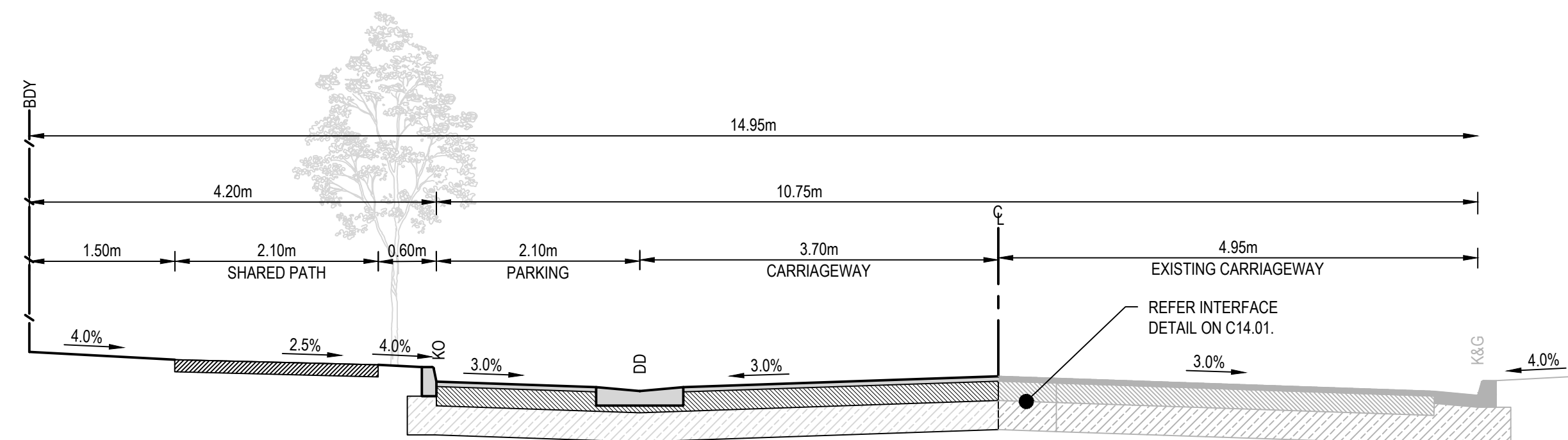
PHEASANT PLACE  
SCALE 1:50



LORIKEET GROVE - (CH 0.00 - 22.56)  
SCALE 1:50



LORIKEET GROVE (CH 28.86 - 97.70)  
SCALE 1:50



WARRIEWOOD ROAD  
SCALE 1:50


REV.	DATE	DESCRIPTION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC

Client



**SEKISUI HOUSE**

Scale



SCALE 1:50 @A1

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Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
ROAD TYPICAL CROSS SECTIONS

Scale  
AS SHOWN

Date  
01/07/2024

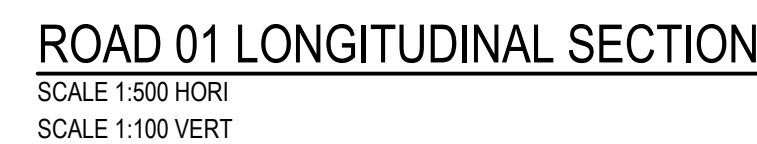
Size  
A1

Datum  
MGA2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**220122-00-DA-C06.01**

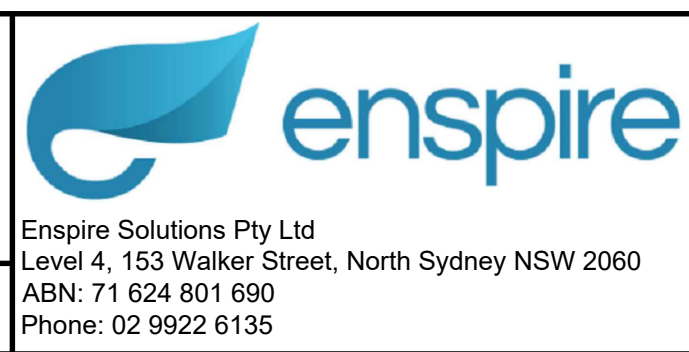
Revision  
**1**



Client



**SEKISUI HOUSE**

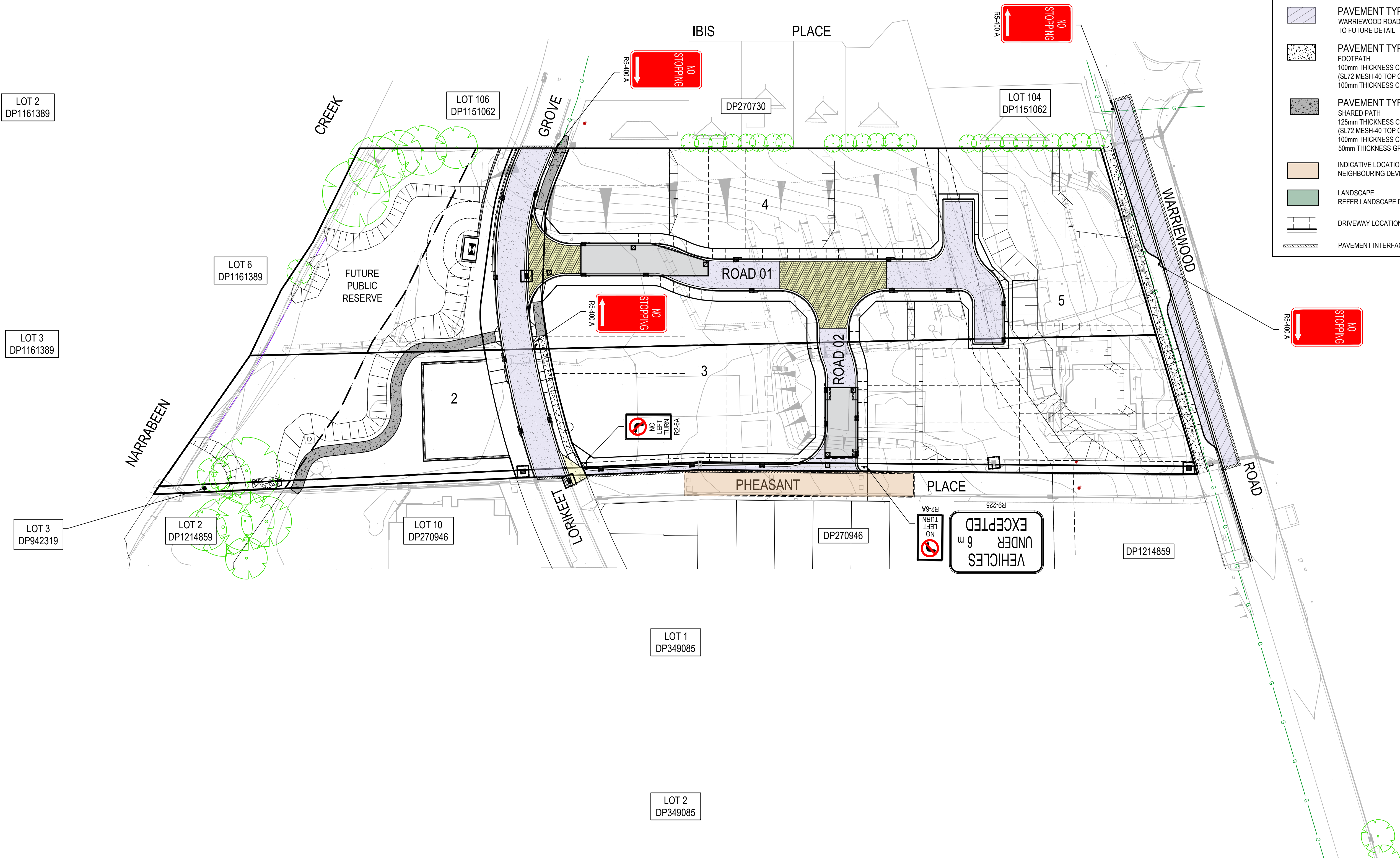


Project 53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 CIVIL ENGINEERING WORKS	Scale AS SHOWN Date R.I.P	Status <div style="text-align: center; color: red; font-weight: bold;">             FOR INFORMATION ONLY              NOT TO BE USED FOR CONSTRUCTION           </div>	
Title ROAD LONGITUDINAL SECTIONS	Size A1 Datum MGA2020	Project Number/Drawing Number <div style="font-size: 24pt; font-weight: bold;">             220122-00-DA-C07.01           </div>	Revision <div style="font-size: 24pt; font-weight: bold;">             1           </div>

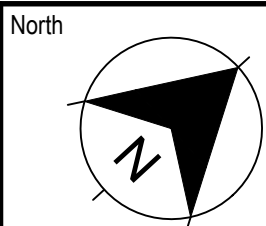
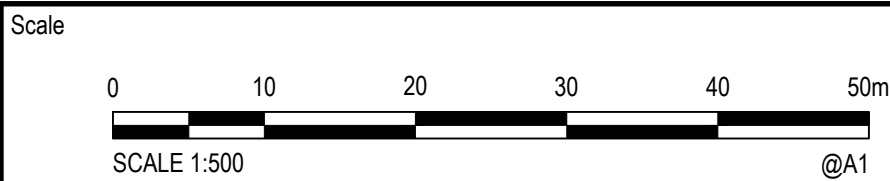


PAVEMENT LEGEND

- PAVEMENT TYPE 1  
LOCAL ROAD  
TO FUTURE DETAIL
- PAVEMENT TYPE 2  
OSD TANK  
TO FUTURE DETAIL
- PAVEMENT TYPE 3  
STAMPED AC ON LOCAL ROAD PAVEMENT  
STREET PRINT BRITISH COBBLE PATTERN,  
SANDSTONE COLOUR  
TO FUTURE DETAIL
- PAVEMENT TYPE 4  
WARRIEWOOD ROAD  
TO FUTURE DETAIL
- PAVEMENT TYPE 5  
FOOTPATH  
100mm THICKNESS CONCRETE  
(SL72 MESH-40 TOP COVER) ON  
100mm THICKNESS COMPACTED DGB 20
- PAVEMENT TYPE 6  
SHARED PATH  
125mm THICKNESS CONCRETE  
(SL72 MESH-40 TOP COVER) ON  
100mm THICKNESS COMPACTED DGB 20  
50mm THICKNESS GRANULAR BEDDING
- INDICATIVE LOCATION OF OSD TANK ON  
NEIGHBOURING DEVELOPMENT
- LANDSCAPE  
REFER LANDSCAPE DRAWINGS FOR DETAILS
- DRIVEWAY LOCATION (FUTURE)
- PAVEMENT INTERFACE DETAIL



REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
2	5/08/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC



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Phone: 02 9922 6135

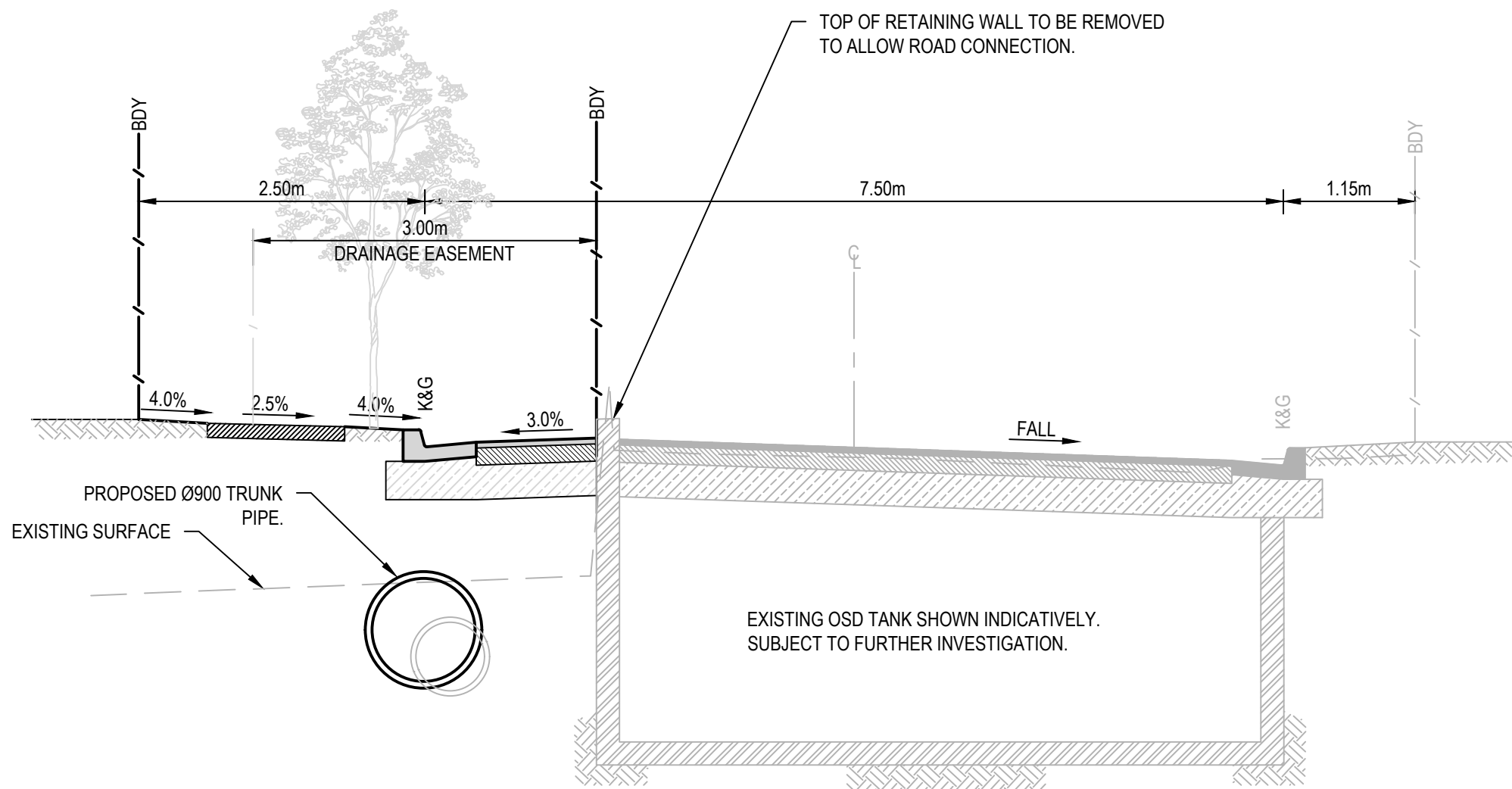
Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS  
Title  
PAVEMENT, SIGNAGE AND  
LINEMARKING PLAN

Scale  
1:500  
Date  
01/07/2024  
Size  
A1  
Datum  
MGA2020

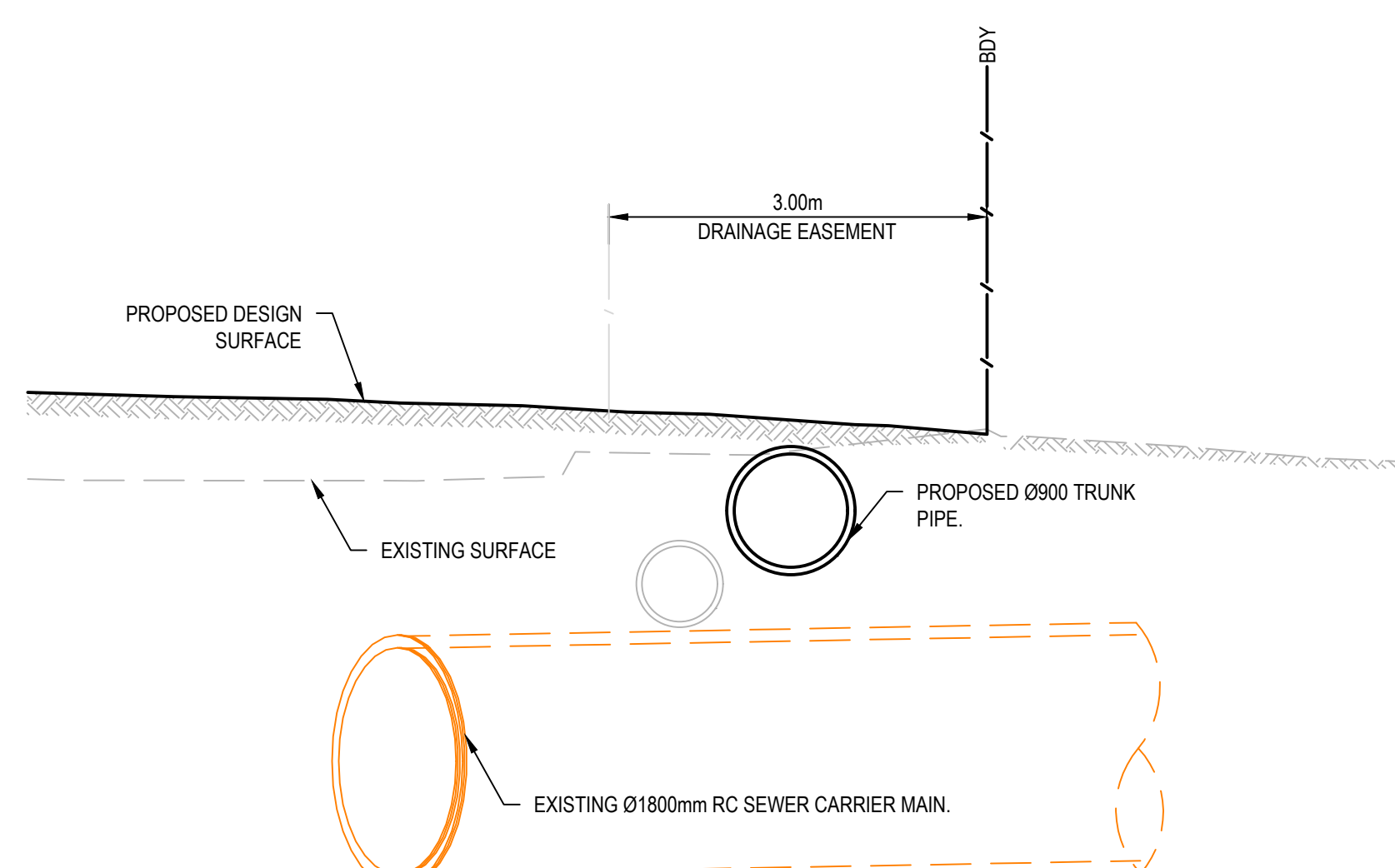
Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**220122-00-DA-C11.01**  
Revision  
**2**

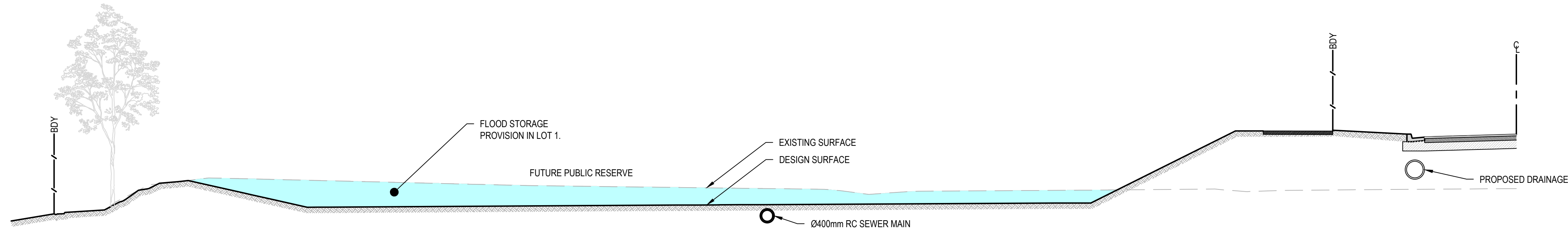




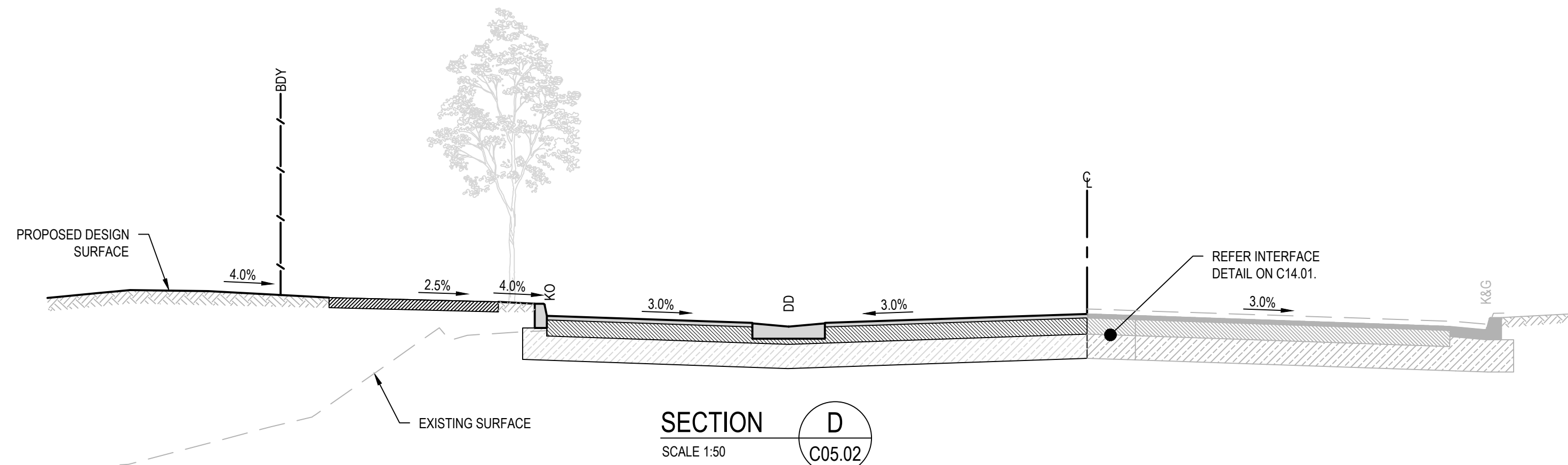
SECTION A  
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C05.02



SECTION B  
SCALE 1:50  
C05.02



SECTION C  
SCALE 1:100  
-



SECTION D  
SCALE 1:50  
C05.02


REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
2	5/08/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC

Client



**SEKISUI HOUSE**


Scale



SCALE 1:50 @A1

North

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Phone: 02 9922 6135

Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

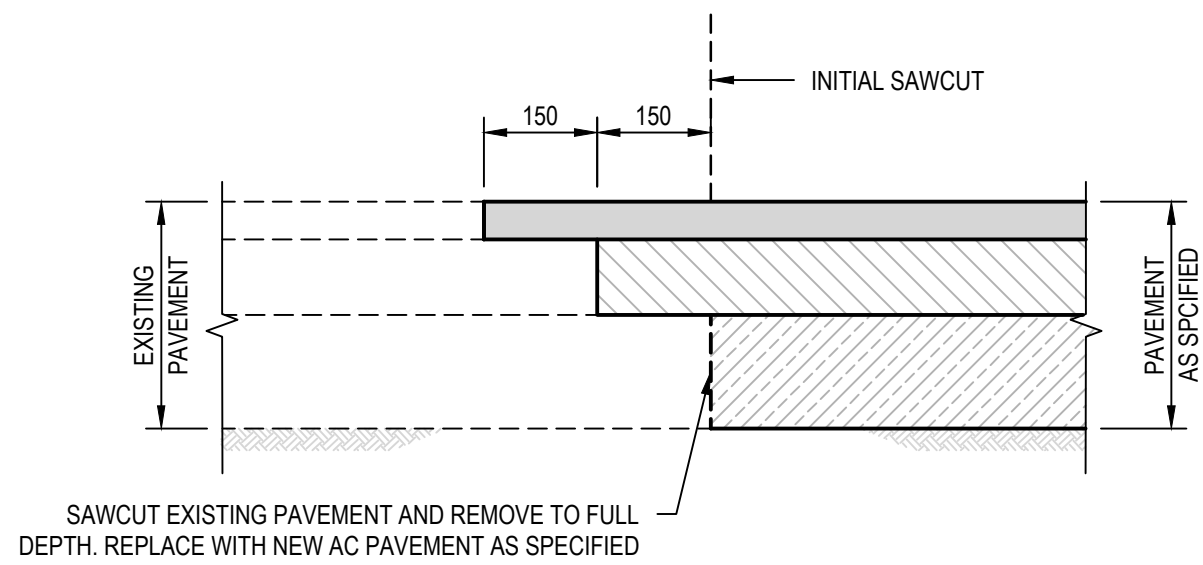
Title  
SITE SECTIONS

Scale  
AS SHOWN  
Date  
01/07/2024

Status  
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NOT TO BE USED FOR CONSTRUCTION

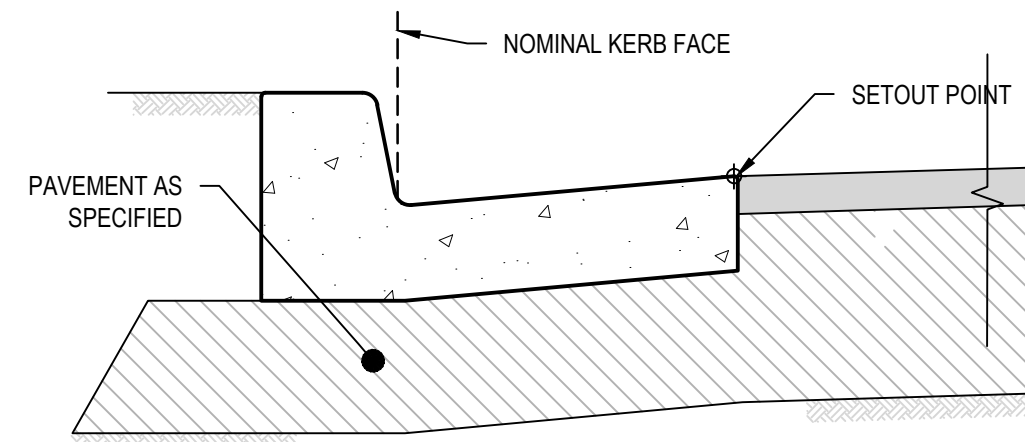
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220122-00-DA-C13.01

Revision  
2

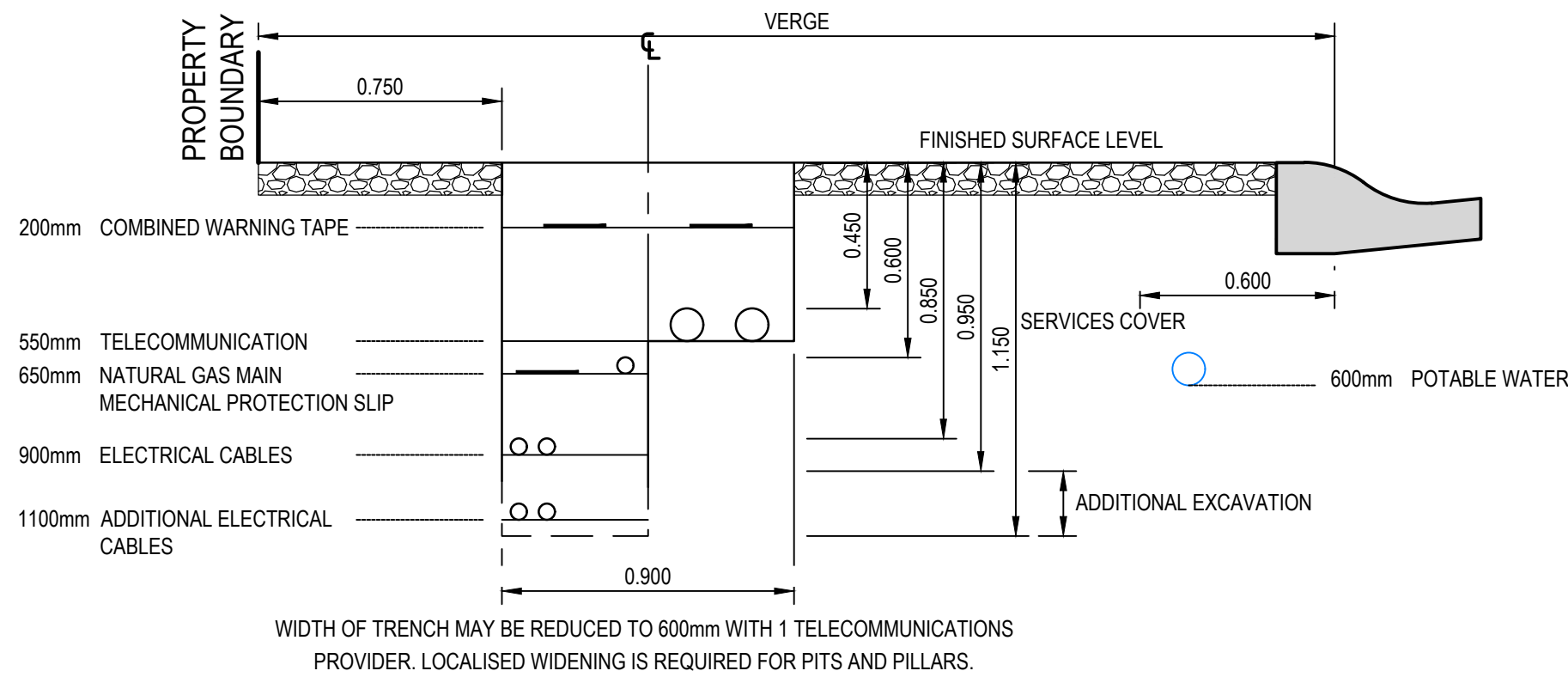


**FLEXIBLE PAVEMENT INTERFACE DETAIL**  
NEW TO EXISTING  
SCALE 1:10

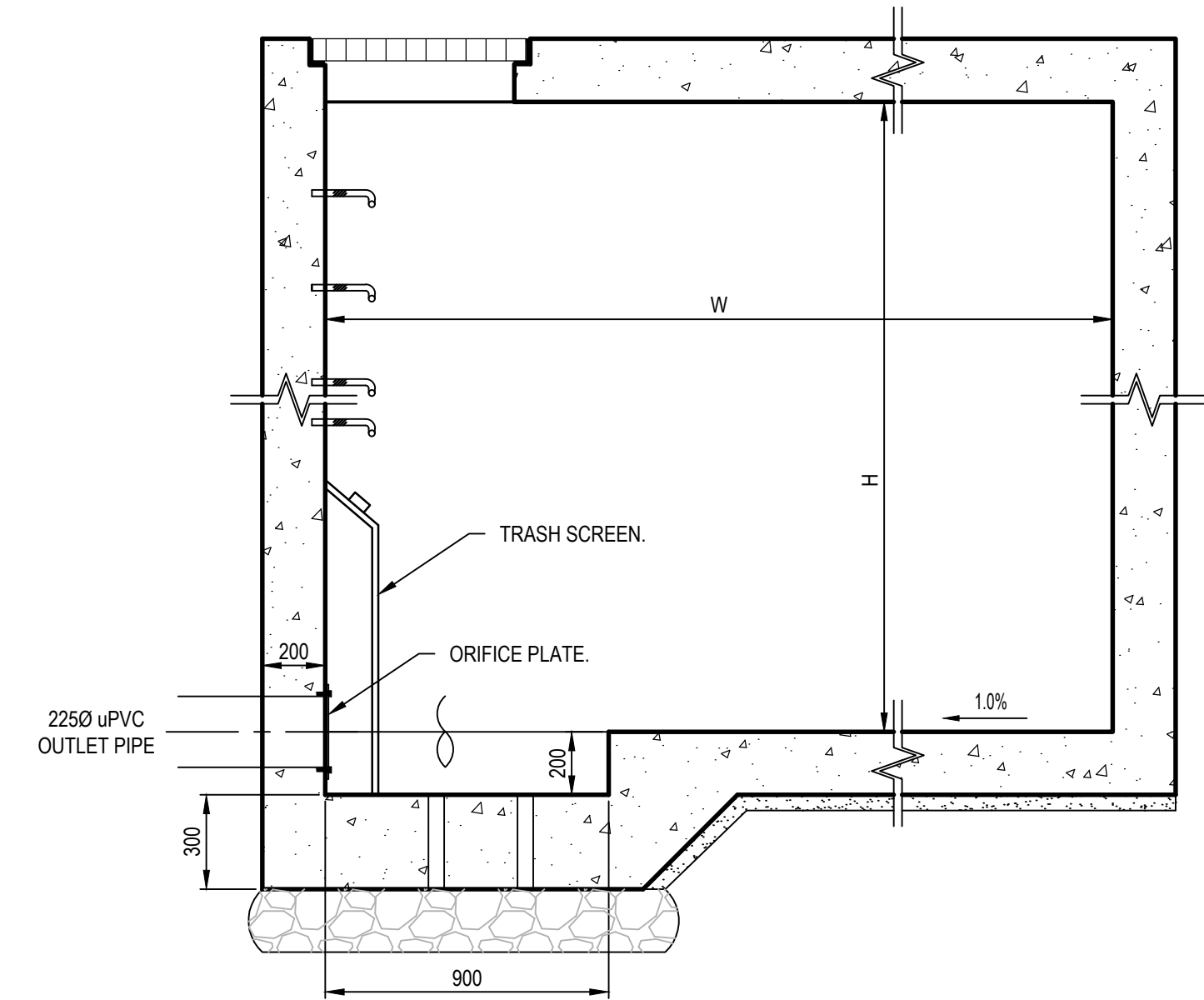
NOTE:  
TACK COAT EXISTING PAVEMENT BASE AND AC INTERFACE  
PRIOR TO PLACEMENT OF NEW AC WEARING COURSE.



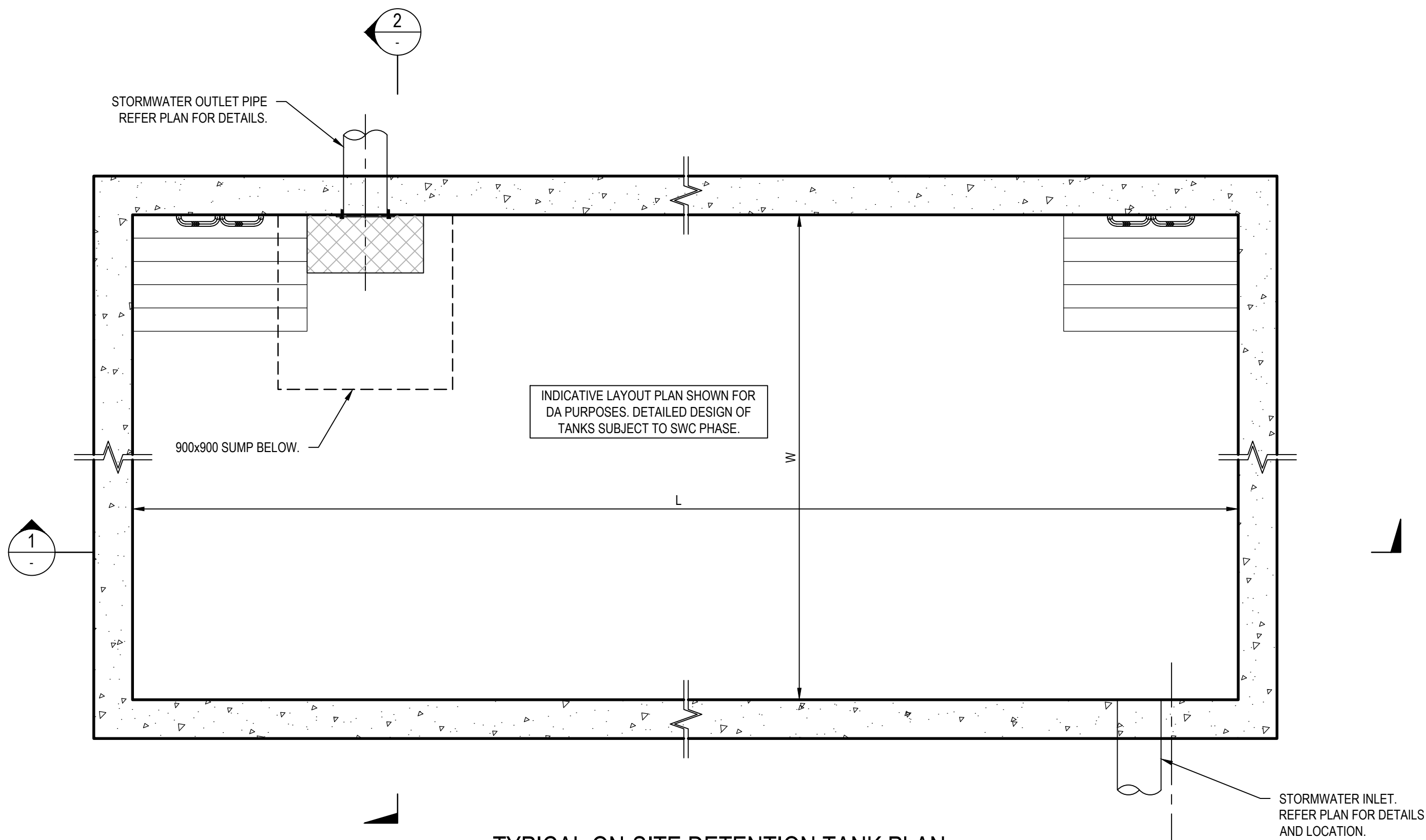
**KERB SETOUT DETAIL**  
SCALE 1:10



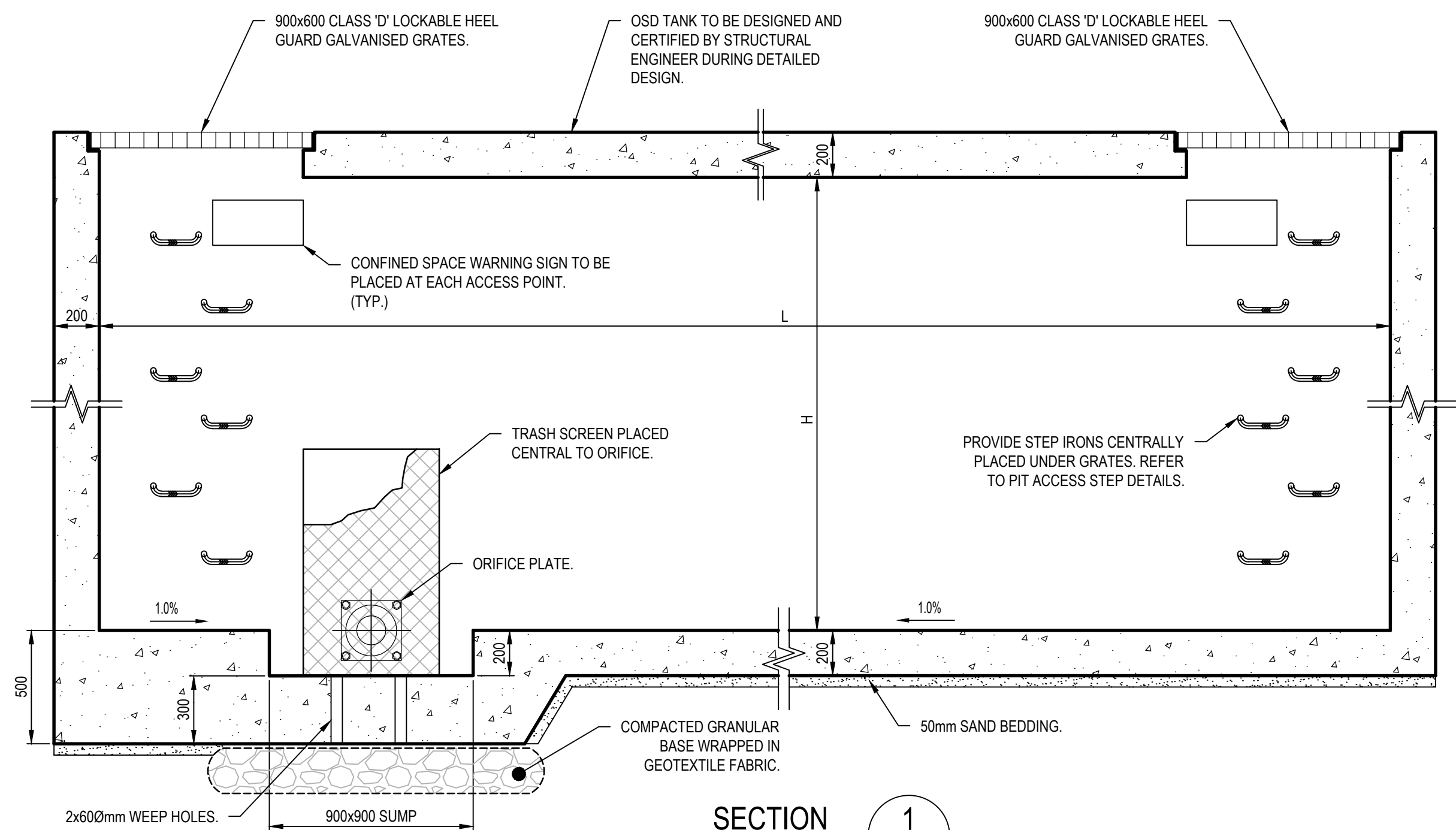
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SCALE 1:20  
DETAIL BASED OFF "NSW STREETS OPENING CONFERENCE  
- GUIDE TO CODES AND PRACTICES FOR STREETS  
OPENING", 7TH EDITION 2009.



**SECTION 2**  
SCALE 1:20



**TYPICAL ON-SITE DETENTION TANK PLAN**  
SCALE 1:20



**SECTION 1**  
SCALE 1:20

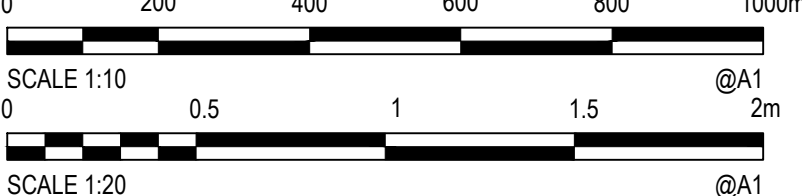
REV.	DATE	DESCRIPTION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION				

Client



**SEKISUI HOUSE**


Scale



0 200 400 600 800 1000mm  
SCALE 1:10 @A1  
0 0.5 1 1.5 2m  
SCALE 1:20 @A1

North

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Phone: 02 9922 6135

Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Scale  
AS SHOWN  
Date  
01/07/2024

Title  
SITEWORKS DETAILS

Size  
A1  
Datum  
MGA2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

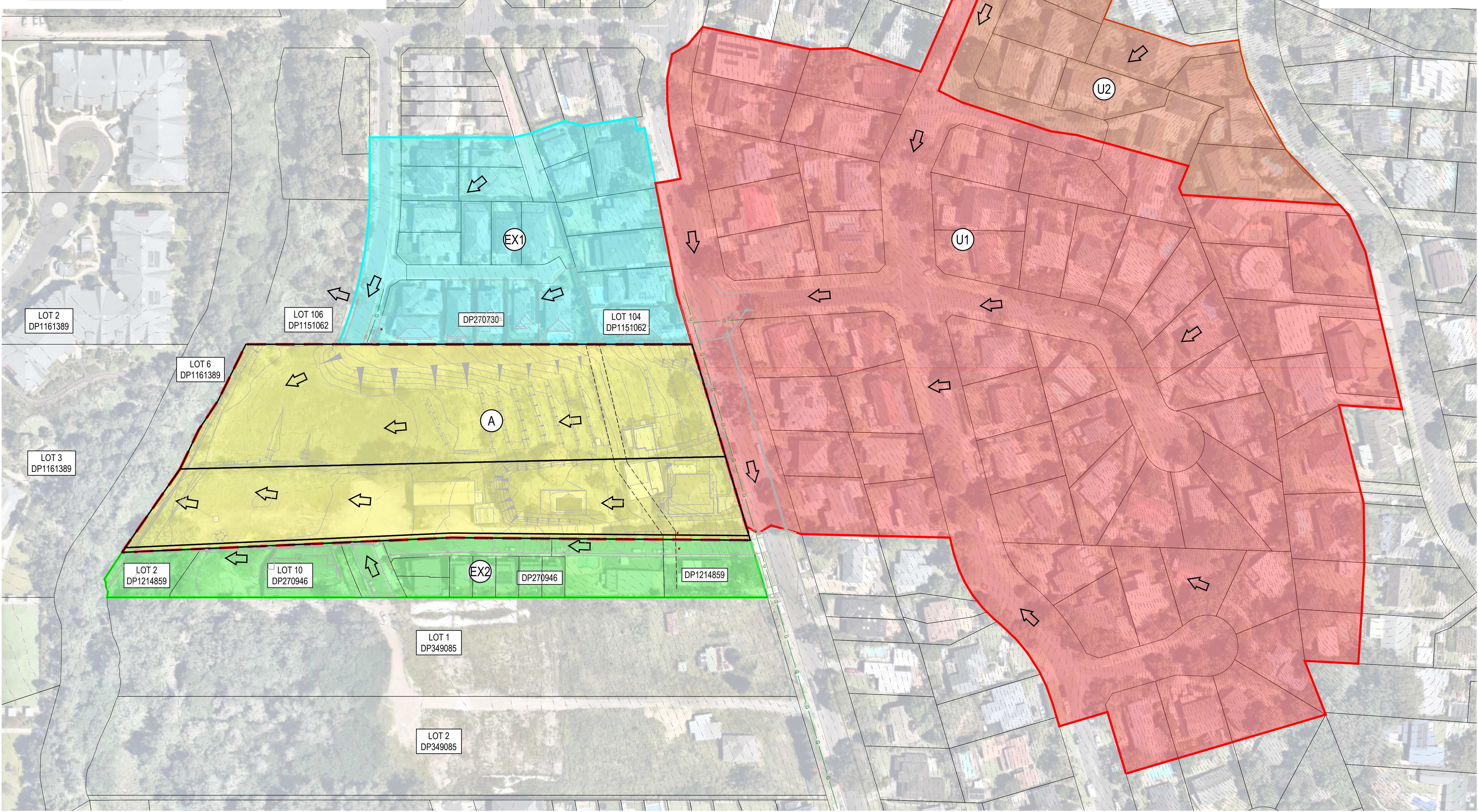
Project Number/Drawing Number  
**220122-00-DA-C14.01**

Revision  
**1**



PRE DEVELOPMENT CATCHMENT BREAKDOWN			
CATCHMENT LABEL	AREA(ha)	DESCRIPTION	
A	1.650	SITE CATCHMENT CURRENTLY DRAINS WEST TO NARRABEEN CREEK.	
EX1	1.022	EXISTING URBAN RESIDENTIAL CATCHMENT. DRAINS TO NARRABEEN CREEK VIA EXISTING PIT AND PIPE NETWORK IN LORIKEET GROVE.	
EX2	0.557	EXISTING URBAN RESIDENTIAL CATCHMENT. DRAINS TO NARRABEEN CREEK VIA EXISTING PIT AND PIPE NETWORK LOCATED ON NORTHERN BDY. PORTION OF CATCHMENT DRAINS VIA EXISTING OSD / WQ TANK IN PHEASANT PLACE.	
U1	5.568	EXISTING URBAN RESIDENTIAL CATCHMENT DRAINS TO NARRABEEN CREEK VIA TRUNK STORMWATER LINE ALONG PHEASANT PLACE (MINOR - PIPED). MAJOR STORMS BYPASS PIT IN WARRIWOOD ROAD.	
U2	0.734	EXISTING URBAN RESIDENTIAL CATCHMENT DRAINS TO NARRABEEN CREEK VIA INTERLOTMENT STORMWATER LINE AT 49 & 51 ALAMEDA WAY (MINOR - PIPED) & DRAINS TO NARRABEEN CREEK VIA TRUNK STORMWATER LINE ALONG PHEASANT PLACE & DOWNSTREAM WARRIWOOD ROAD (MAJOR - OVERLAND).	
TOTAL	9.531		

LEGEND	
<span style="color: red;">—</span>	SITE EXTENT
<span style="color: cyan;">—</span>	CATCHMENT BOUNDARY
<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">A</span>	CATCHMENT LABEL
<span style="font-size: 24px;">➡</span>	CATCHMENT FLOW DIRECTION

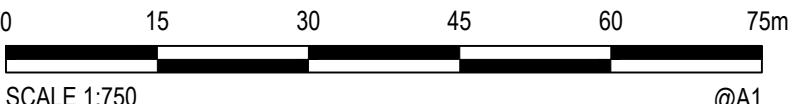


1	28/06/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
REV.	DATE	DESCRIPTION	DRN	DES.	VERIF.	APPD.

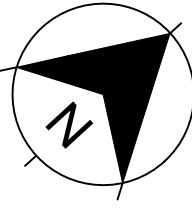
Client

  
**SEKISUI HOUSE**

Scale

  
SCALE 1:750 @A1

North



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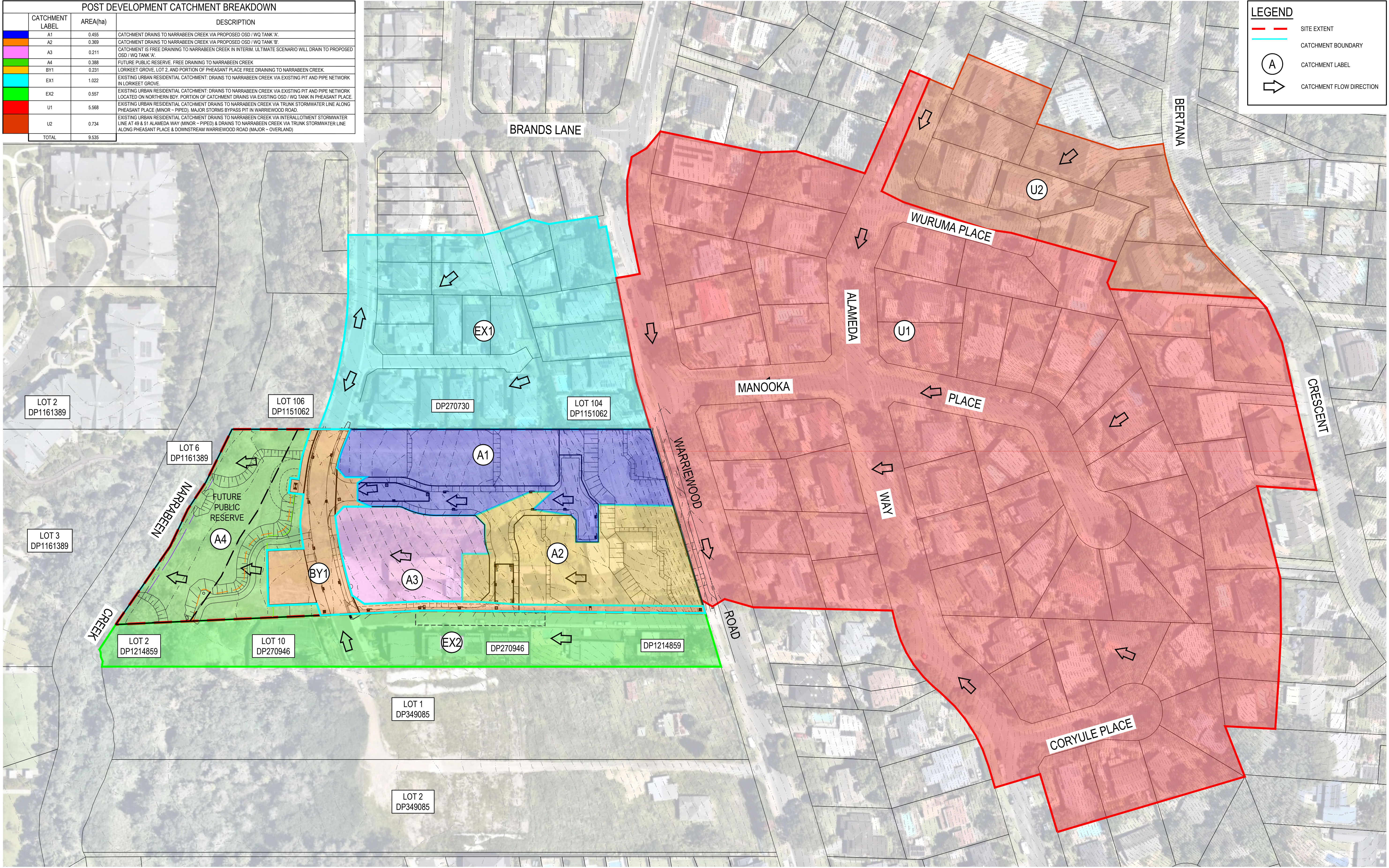
  
Enspire Solutions Pty Ltd  
Level 4, 153 Walker Street, North Sydney NSW 2060  
ABN: 71 624 801 690  
Phone: 02 9922 6135

Project	53A & 53B WARRIWOOD ROAD WARRIWOOD NSW 2102 CIVIL ENGINEERING WORKS
Title	PRE-DEVELOPMENT CATCHMENT PLAN
Scale	1:500
Date	28/06/2024
Size	A1
Datum	MGA2020

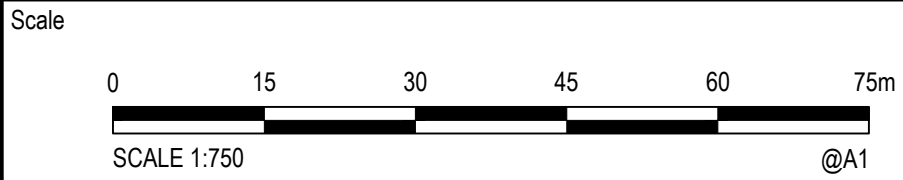
Status	<b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION	
Project Number/Drawing Number	220122-00-DA-C20.01	Revision
		1



POST DEVELOPMENT CATCHMENT BREAKDOWN			
CATCHMENT LABEL	AREA(ha)	DESCRIPTION	
A1	0.455	CATCHMENT DRAINS TO NARRABEEN CREEK VIA PROPOSED OSD / WQ TANK 'K'.	
A2	0.369	CATCHMENT DRAINS TO NARRABEEN CREEK VIA PROPOSED OSD / WQ TANK 'B'.	
A3	0.211	CATCHMENT IS FREE DRAINING TO NARRABEEN CREEK IN INTERIM. ULTIMATE SCENARIO WILL DRAIN TO PROPOSED OSD / WQ TANK 'A'.	
A4	0.388	FUTURE PUBLIC RESERVE. FREE DRAINING TO NARRABEEN CREEK	
BY1	0.231	LORIKEET GROVE. LOT 2, AND PORTION OF PHEASANT PLACE FREE DRAINING TO NARRABEEN CREEK.	
EX1	1.022	EXISTING URBAN RESIDENTIAL CATCHMENT. DRAINS TO NARRABEEN CREEK VIA EXISTING PIT AND PIPE NETWORK IN LORIKEET GROVE.	
EX2	0.557	EXISTING URBAN RESIDENTIAL CATCHMENT. DRAINS TO NARRABEEN CREEK VIA EXISTING PIT AND PIPE NETWORK LOCATED ON NORTHERN BDY. PORTION OF CATCHMENT DRAINS VIA EXISTING OSD / WQ TANK IN PHEASANT PLACE.	
U1	5.568	EXISTING URBAN RESIDENTIAL CATCHMENT DRAINS TO NARRABEEN CREEK VIA TRUNK STORMWATER LINE ALONG PHEASANT PLACE (MINOR - PIPED). MAJOR STORMS BYPASS PIT IN WARRIEWOOD ROAD.	
U2	0.734	EXISTING URBAN RESIDENTIAL CATCHMENT DRAINS TO NARRABEEN CREEK VIA INTERALLOTMENT STORMWATER LINE AT 49 & 51 ALAMEDA WAY (MINOR - PIPED) & DRAINS TO NARRABEEN CREEK VIA TRUNK STORMWATER LINE ALONG PHEASANT PLACE & DOWNSTREAM WARRIEWOOD ROAD (MAJOR - OVERLAND)	
TOTAL	9.535		



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REV.	DATE	DESCRIPTION	DRN	DES.	VERIF.	APPD.



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Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
POST-DEVELOPMENT CATCHMENT PLAN

Scale  
1:500

Date  
01/07/2024

Size  
A1

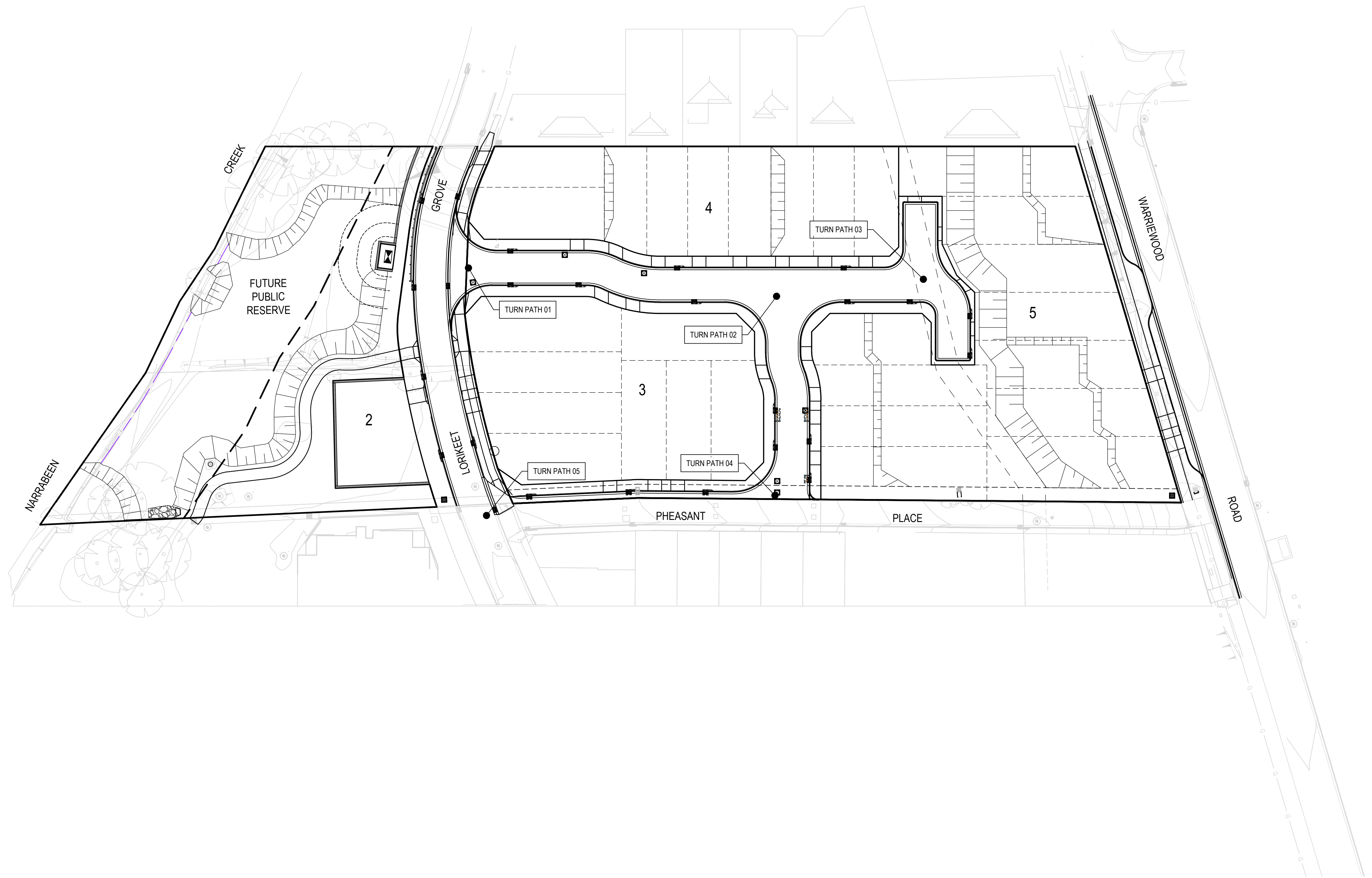
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MGA2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number  
**220122-00-DA-C21.01**

Revision  
**1**






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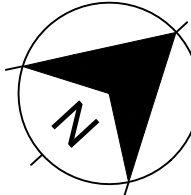
Client

  
**SEKISUI HOUSE**

Scale

  
SCALE 1:500 @A1

North



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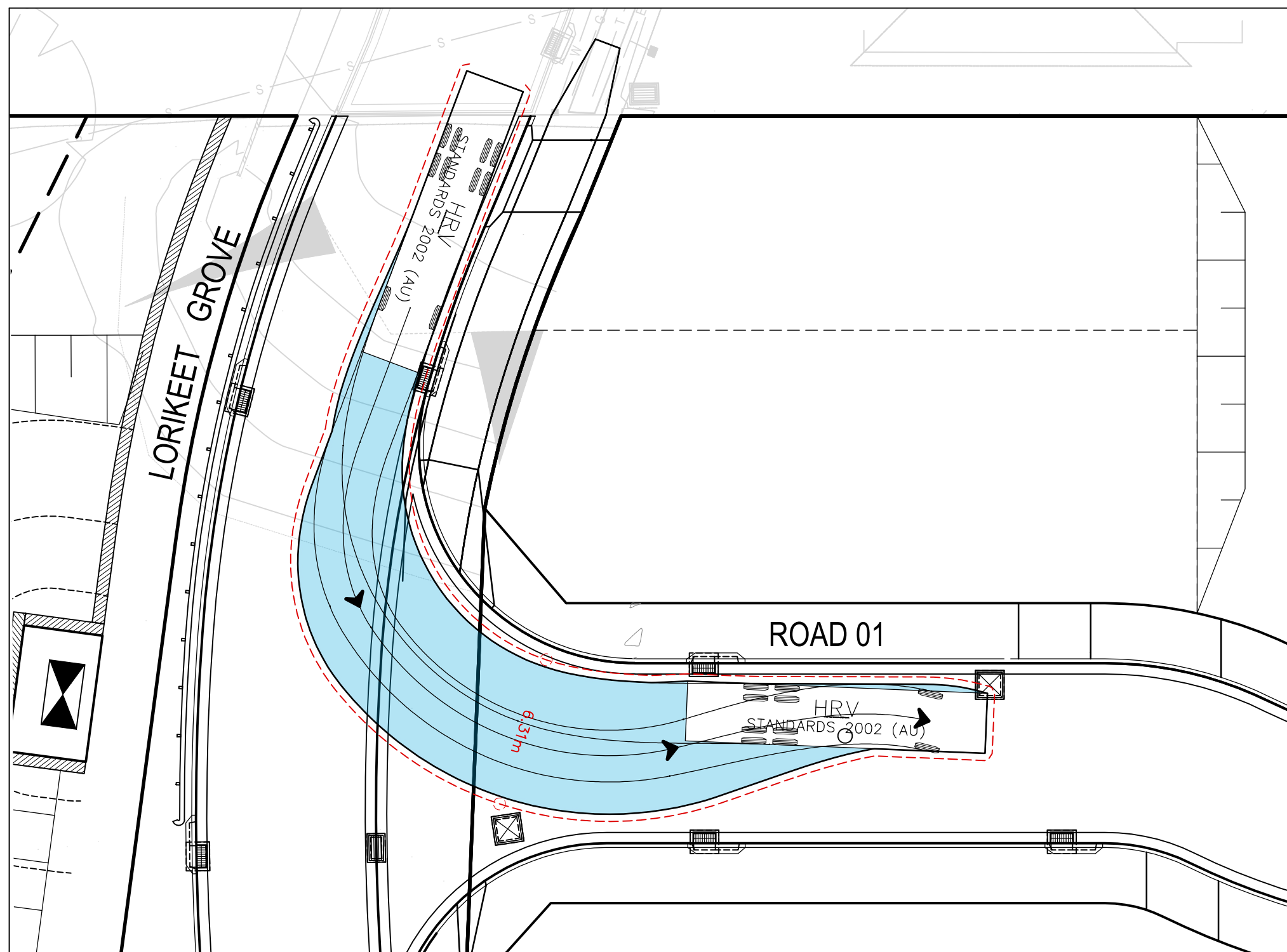
  
Enspire Solutions Pty Ltd  
Level 4, 153 Walker Street, North Sydney NSW 2060  
ABN: 71 624 801 690  
Phone: 02 9922 6135

Project  
53A & 53B WARREWOOD ROAD  
WARREWOOD NSW 2102  
CIVIL ENGINEERING WORKS

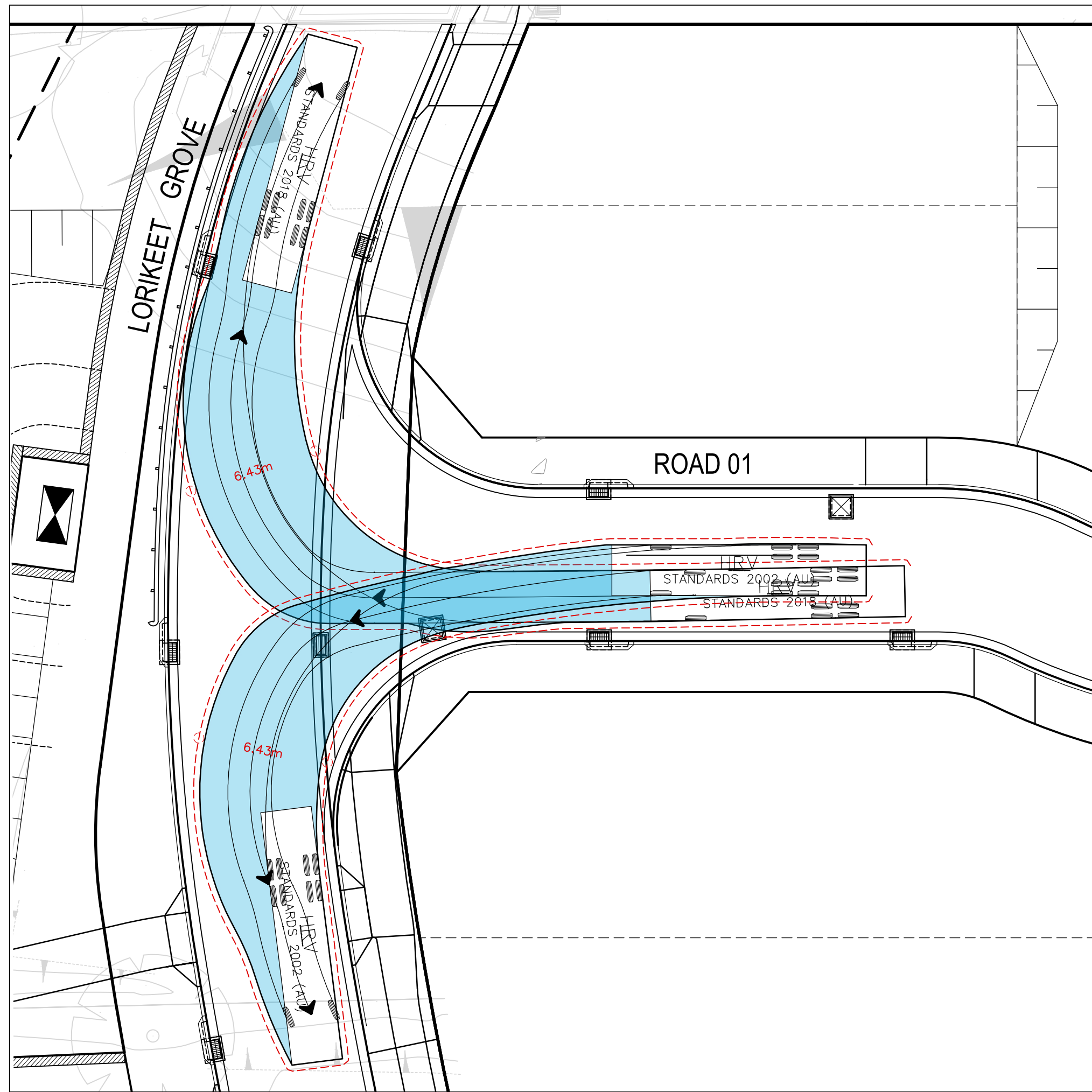
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TURNING PATH PLAN  
SHEET 01

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Date 01/07/2024		
Size A1		
Datum MGA2020	Project Number/Drawing Number <b>220122-00-DA-C22.01</b>	Revision <b>1</b>

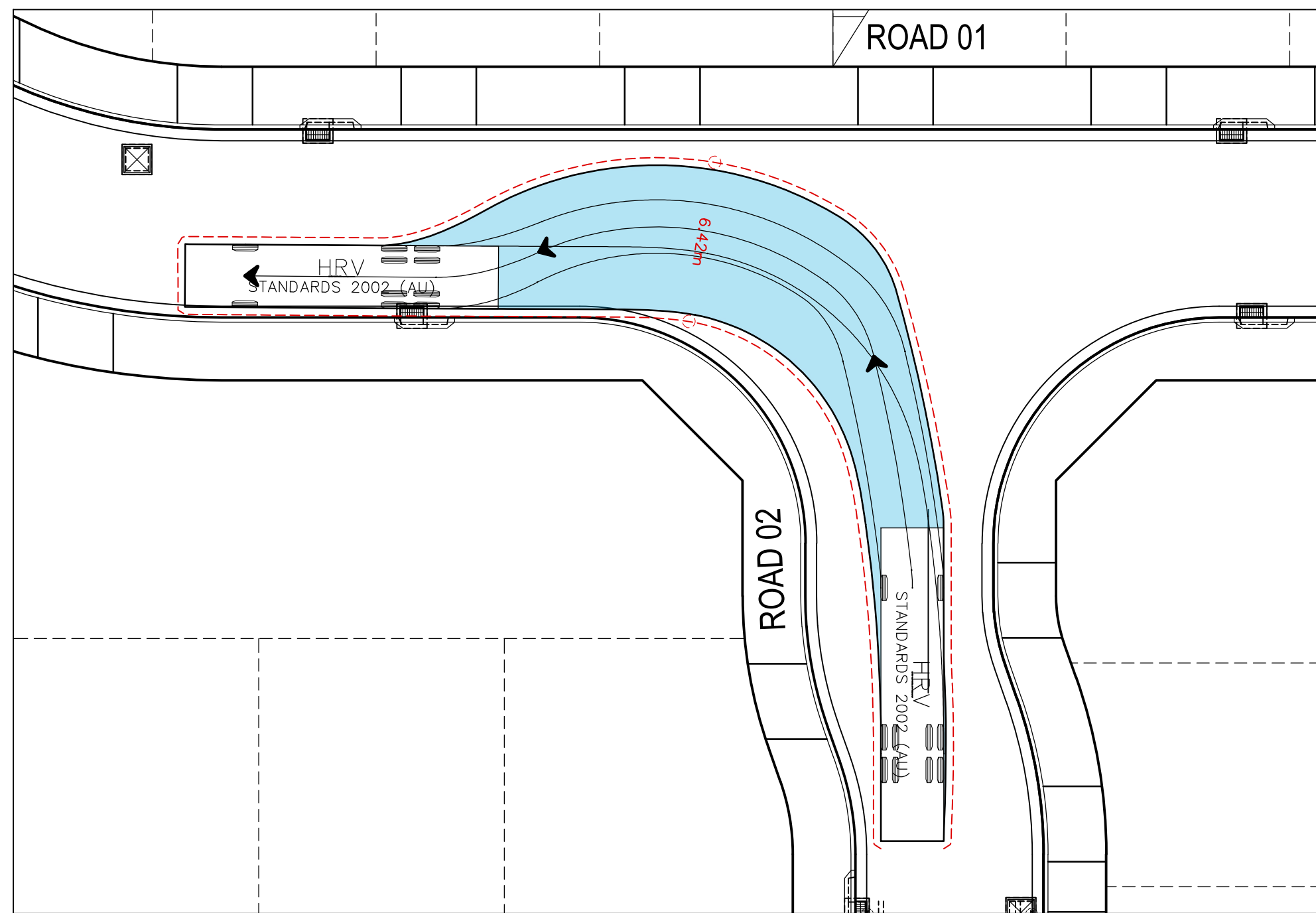




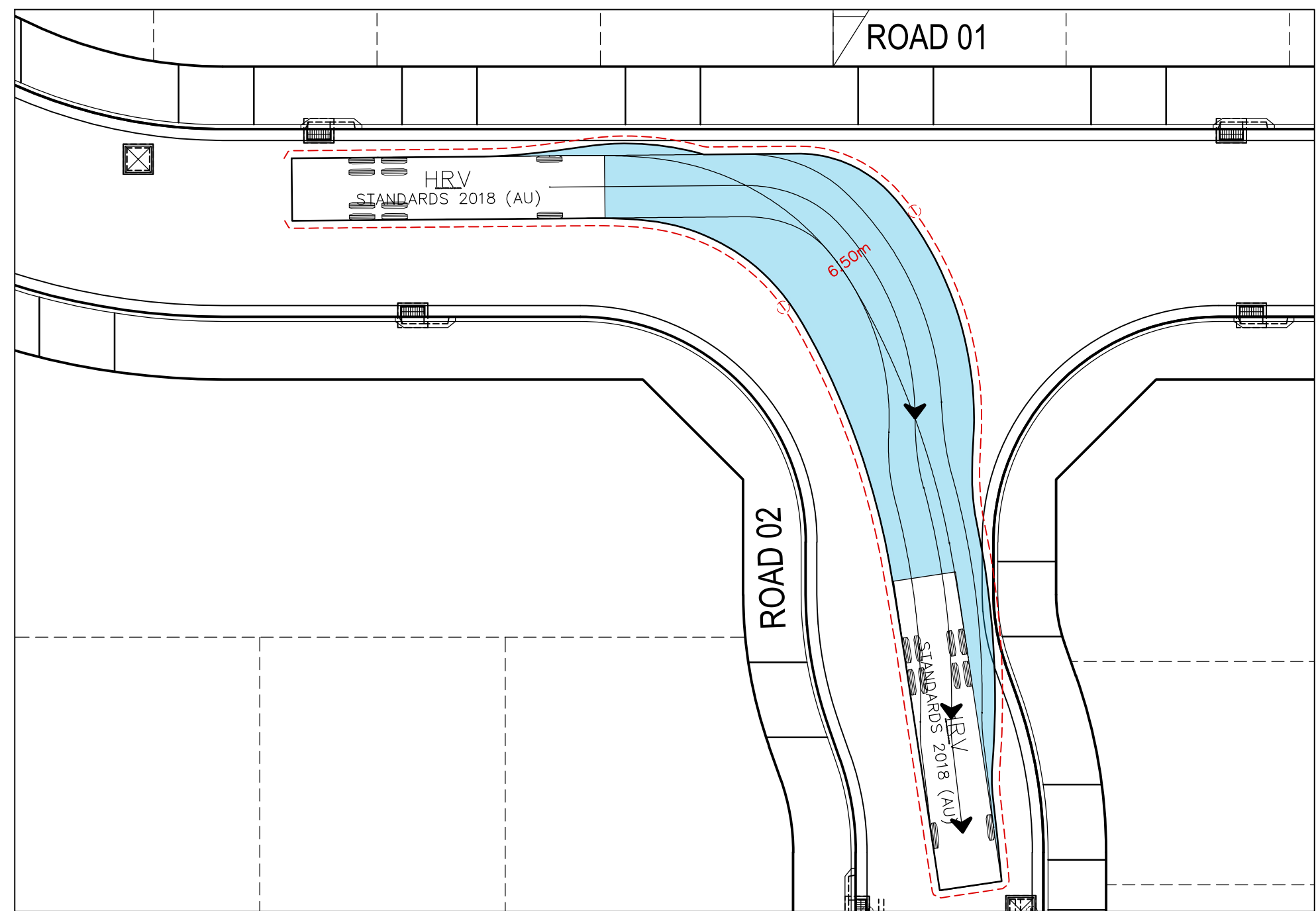
TURN PATH 01 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



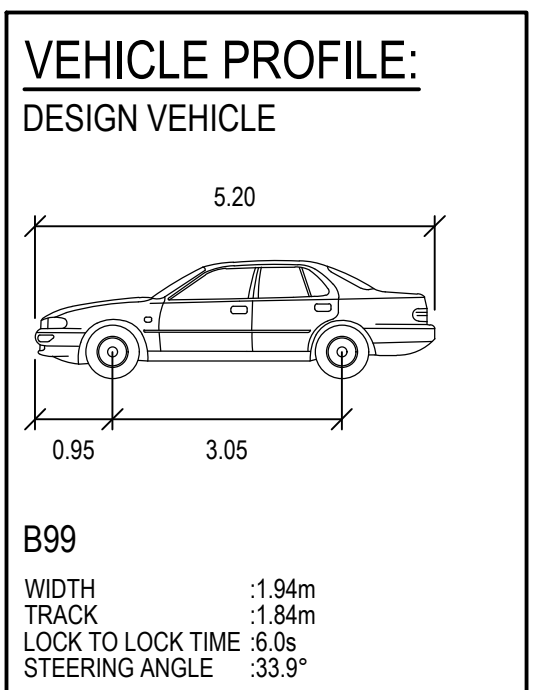
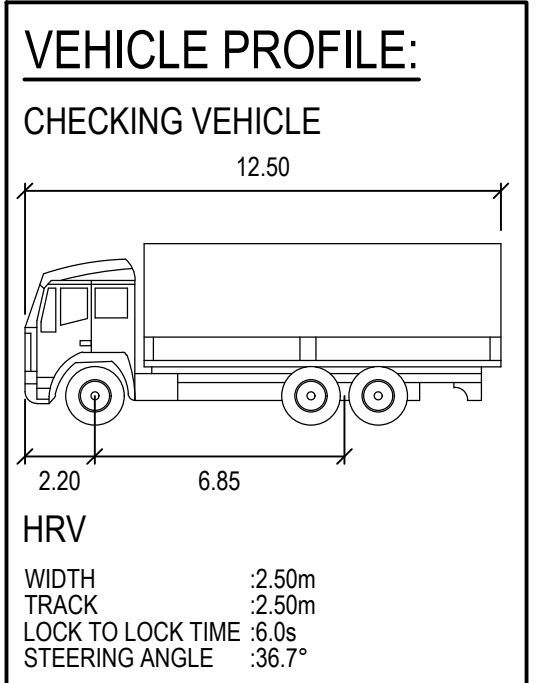
TURN PATH 01 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



TURN PATH 02 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



TURN PATH 02 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



REV	DATE	DESCRIPTION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC

Client

**SEKISUI HOUSE**

Scale

North

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Phone: 02 9922 6135

Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
TURNING PATH PLAN

SHEET 02

Scale  
1:200

Date  
01/07/2024

Size  
A1

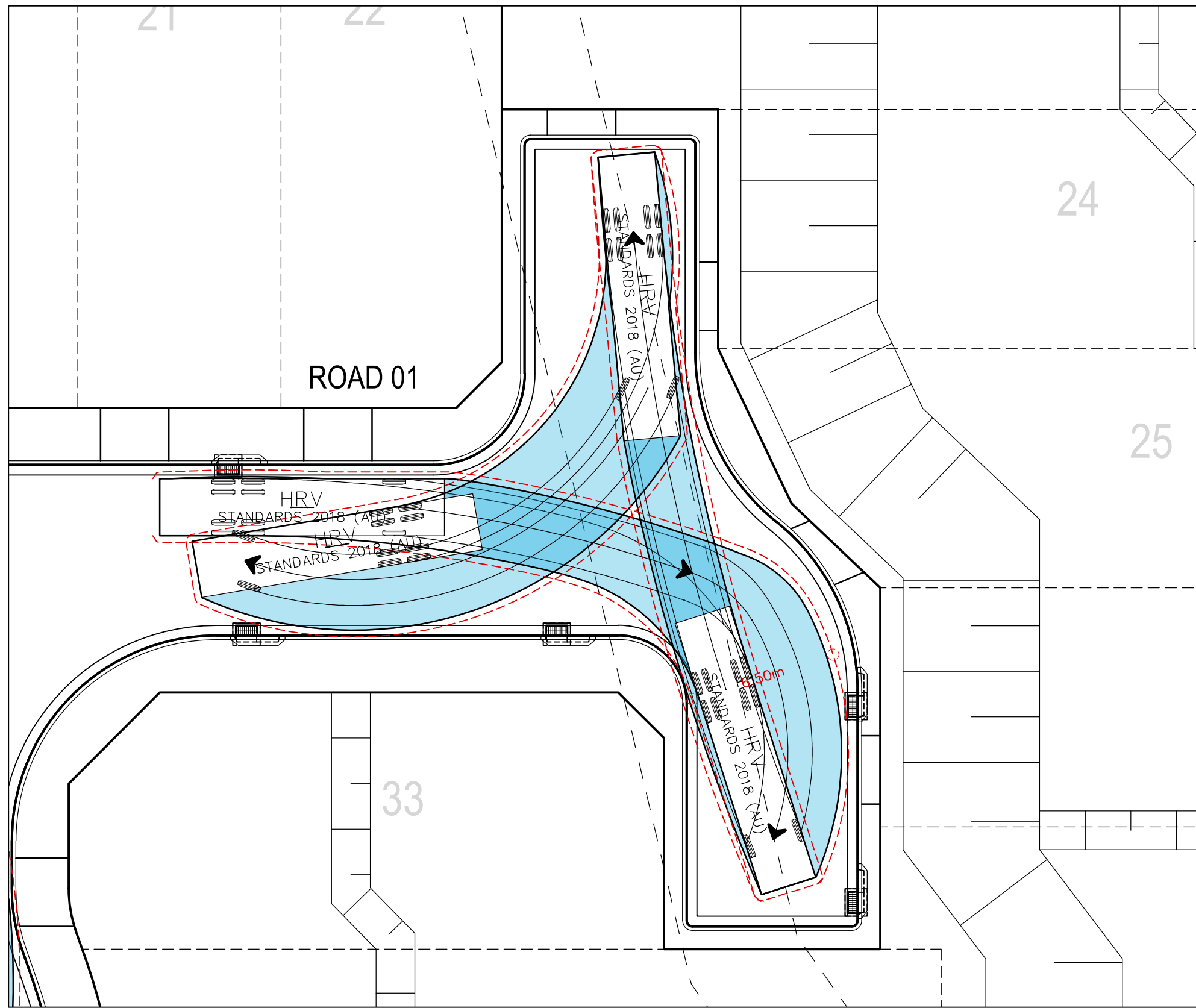
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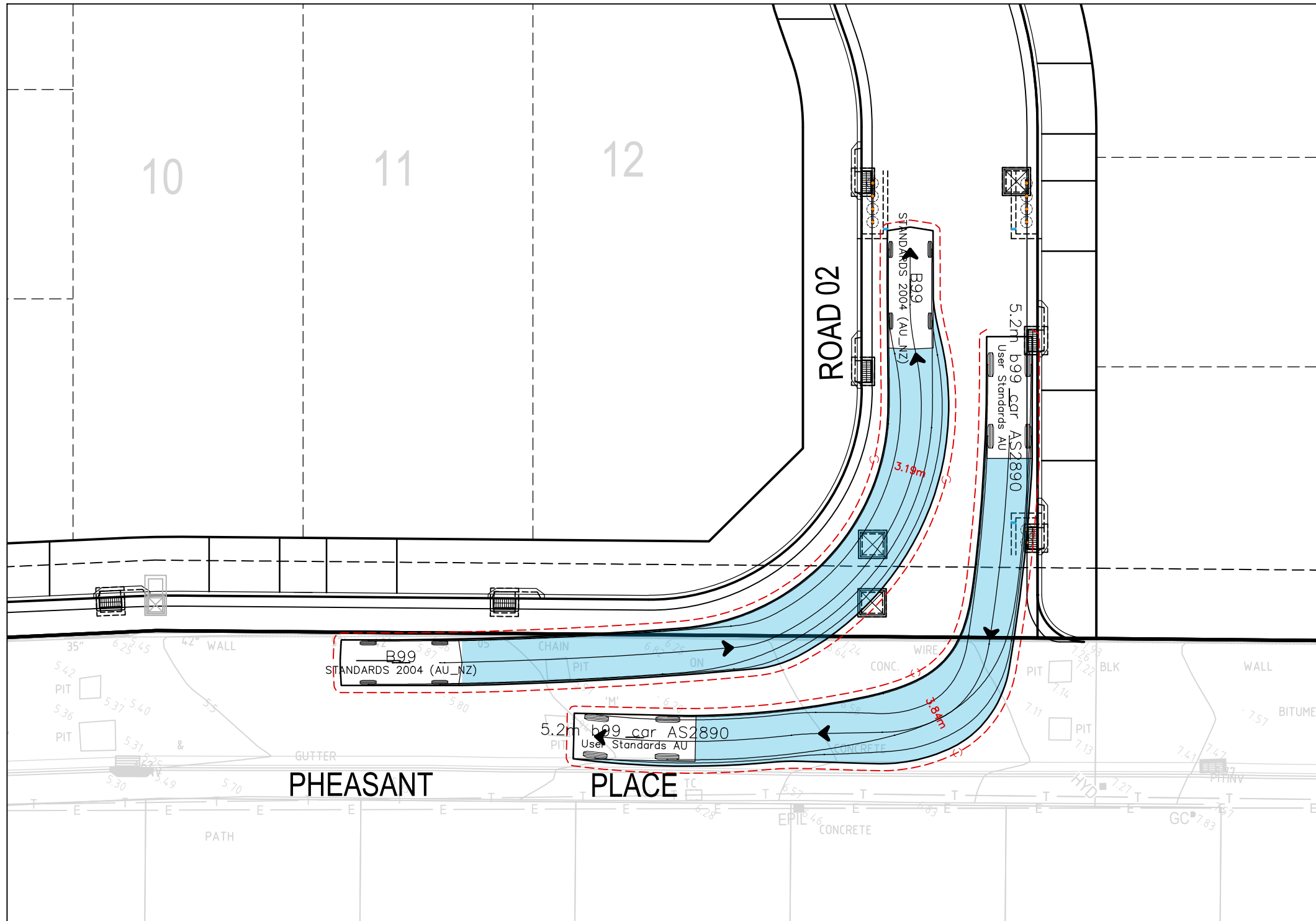
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**220122-00-DA-C22.02**

Revision  
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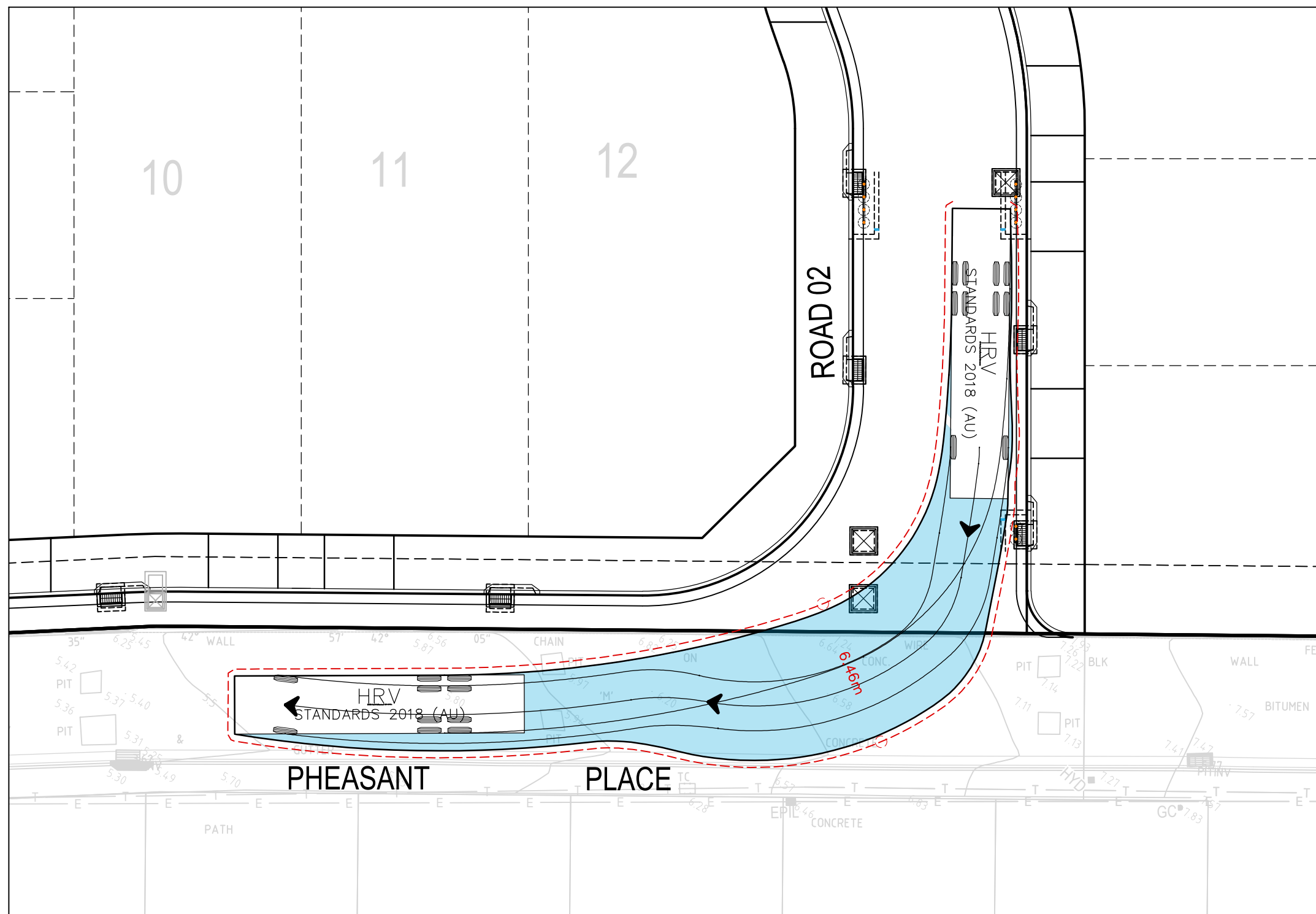




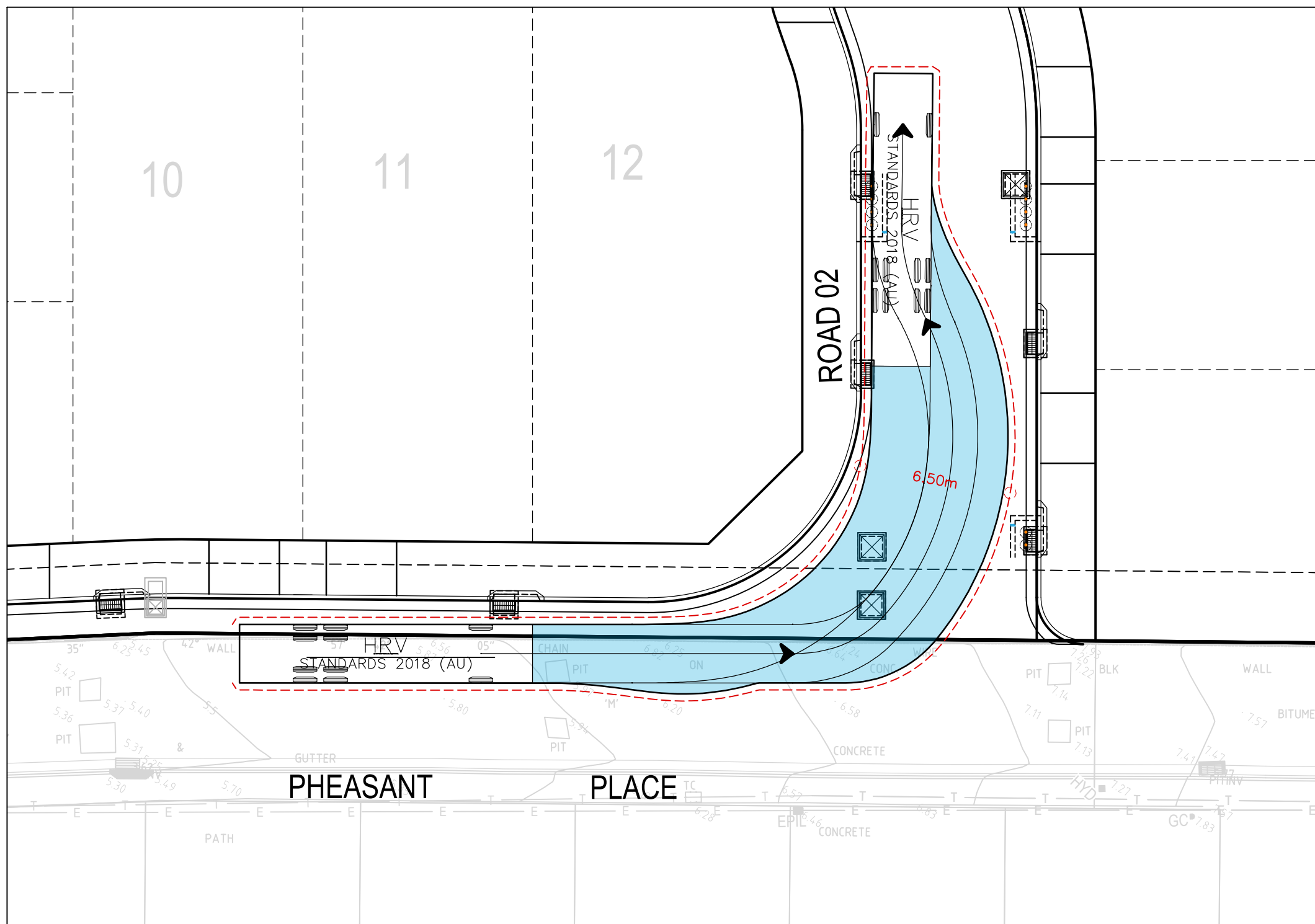
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SCALE 1:200



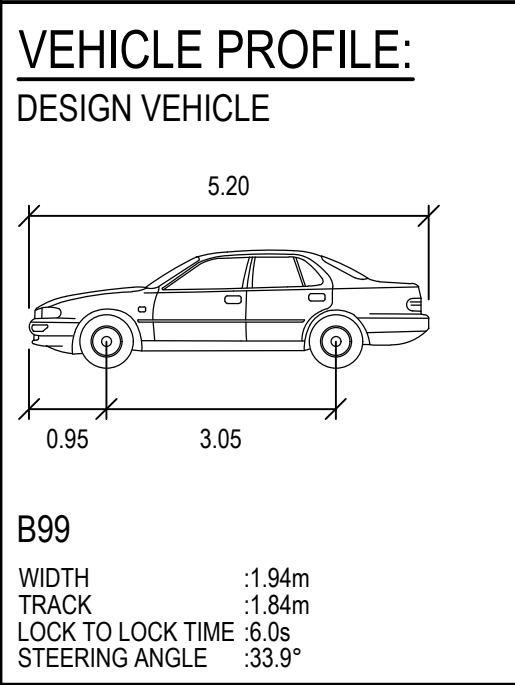
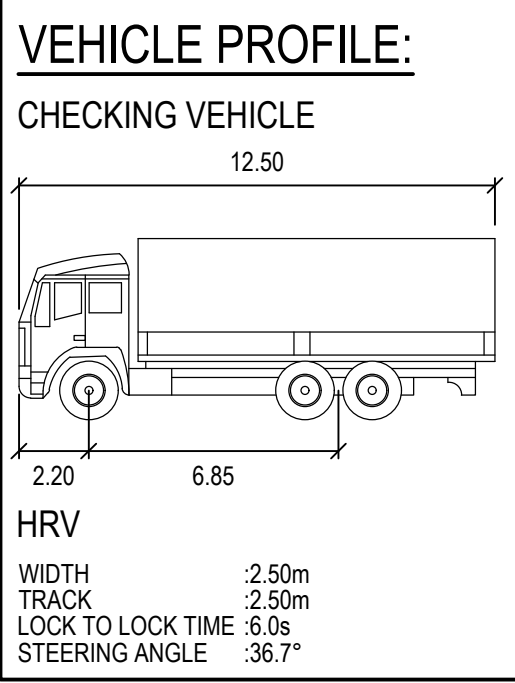
TURN PATH 04 -5.2m B99 CAR  
SCALE 1:200



TURN PATH 04 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



TURN PATH 04 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



REV.	DATE	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	RLE	MC

Client

**SEKISUI HOUSE**

Scale

North

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ABN: 71 624 801 690  
Phone: 02 9922 6135

Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
TURNING PATH PLAN

SHEET 03

Scale  
1:200

Date  
01/07/2024

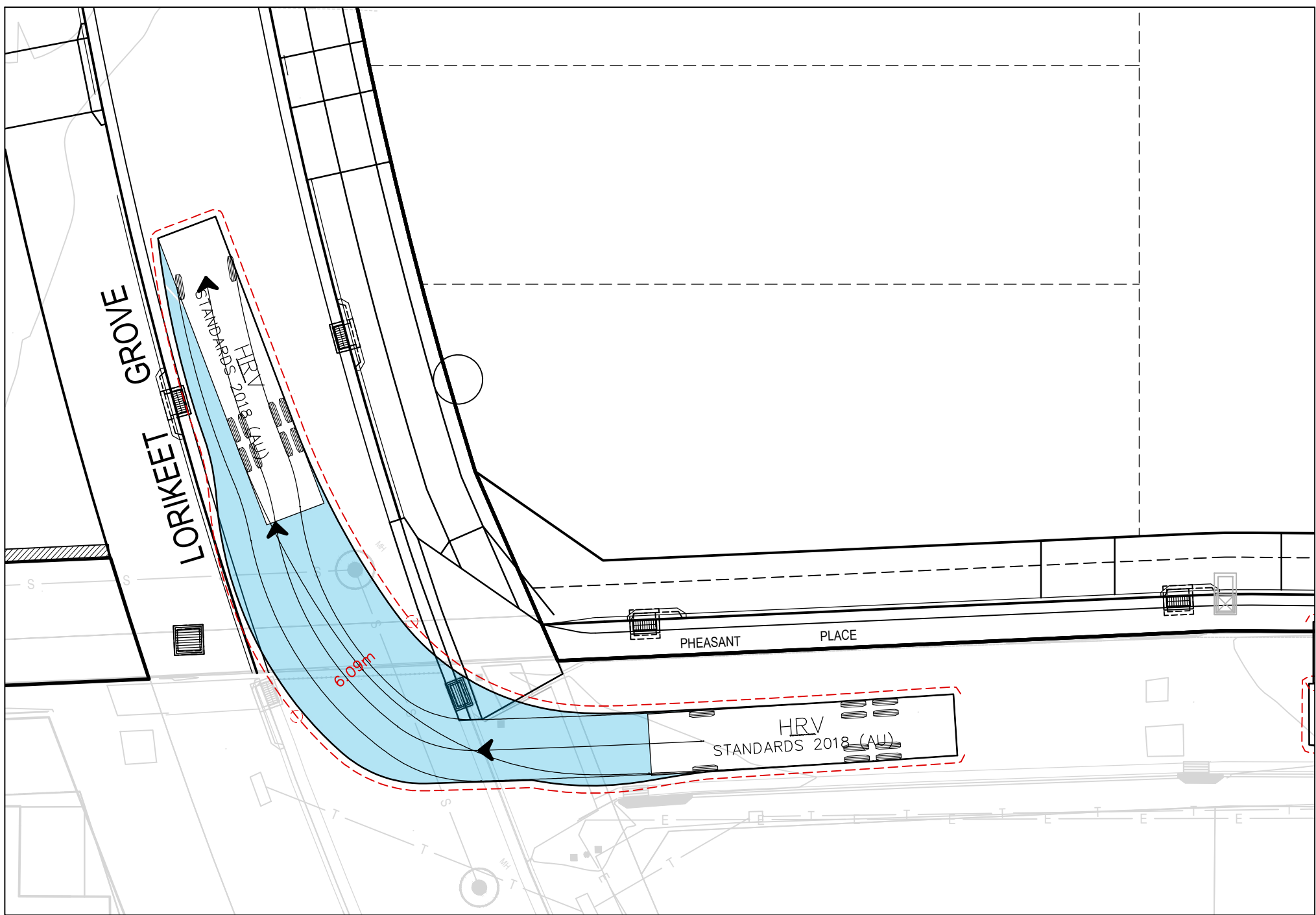
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Datum  
MGA2020

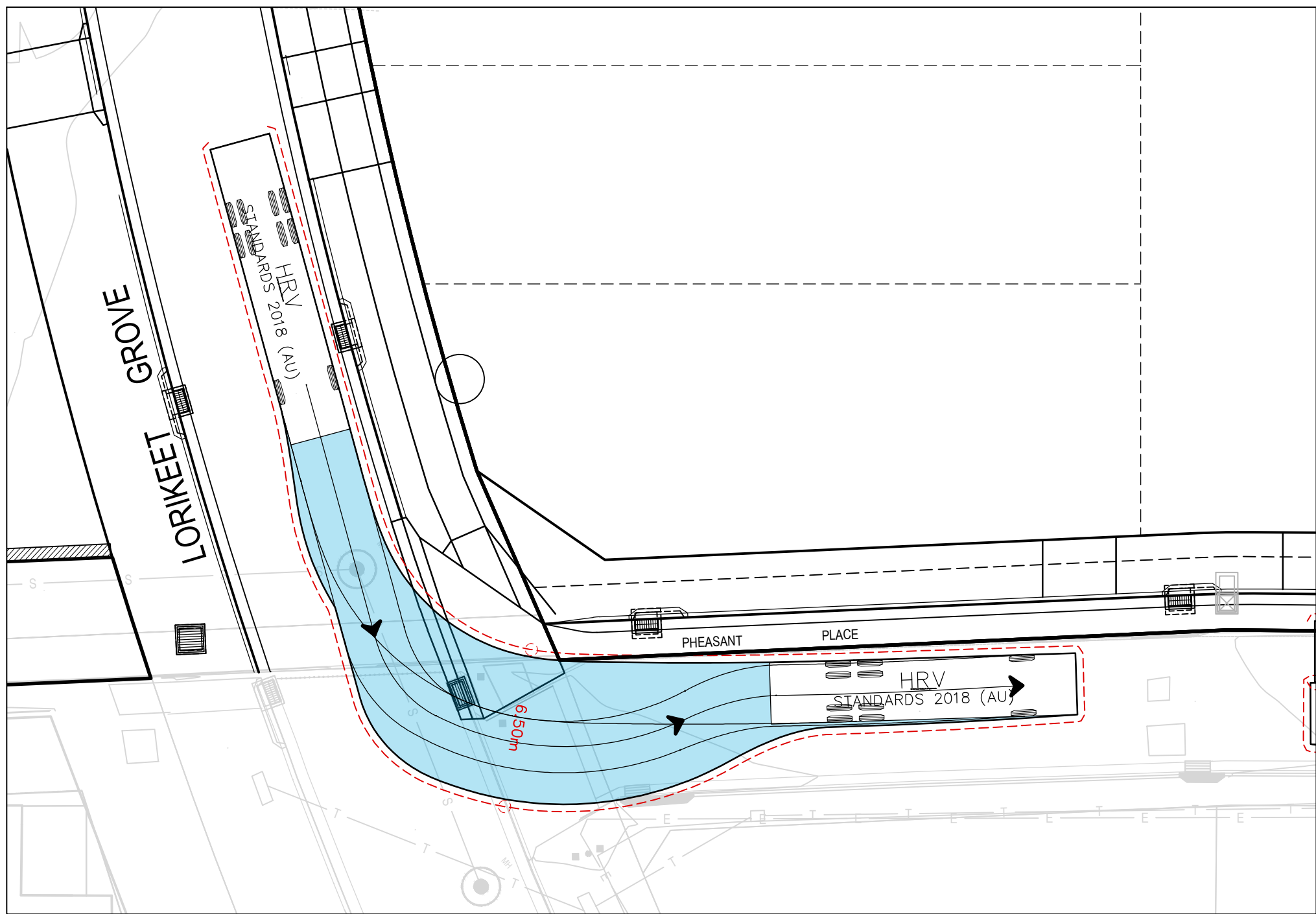
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NOT TO BE USED FOR CONSTRUCTION

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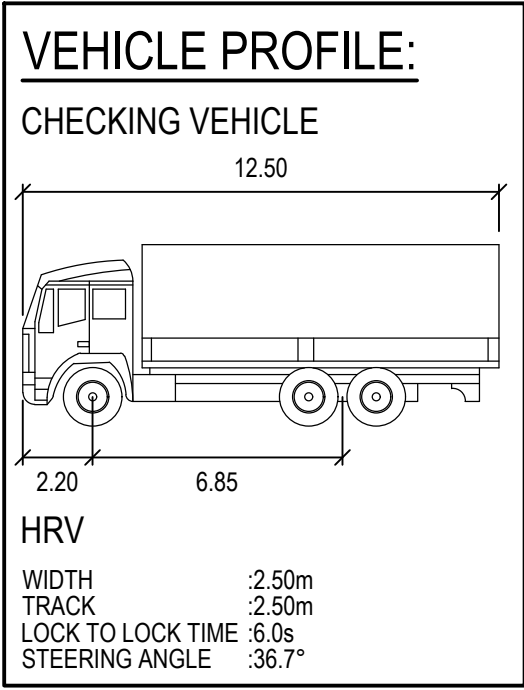
Revision  
**1**



TURN PATH 05 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



TURN PATH 05 -12.5m HEAVY RIGID VEHICLE  
SCALE 1:200



REV.	DATE	DESCRIPTION	SS	TPB	RLE	MC
1	1/07/2024	ISSUED FOR DEVELOPMENT APPLICATION				

Client

**SEKISUI HOUSE**

Scale

North

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Phone: 02 9922 6135

Project  
53A & 53B WARRIEWOOD ROAD  
WARRIEWOOD NSW 2102  
CIVIL ENGINEERING WORKS

Title  
TURNING PATH PLAN  
SHEET 04

Scale 1:200	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
Date 01/07/2024	
Size A1	Project Number/Drawing Number <b>220122-00-DA-C22.04</b>
Datum MGA2020	Revision <b>1</b>















# Pharmacokinetics

## APPROVED ETHICS AND CONSENT PLANS

**NOTE: THESE PLAYS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DONOR AGREEMENT.**

**Figure 8**  
SHEET 1 OF 2 SHEETS

## HOUSING DETAIL GROUND FLOOR

**LOT 105 LORIKEET GROVE**


DATE 2 SEPT 2010 PLAN NO 22441/HD 1

The bidder shall check and verify all dimensions and levels and verify all errors and omissions to the Architect. Do not scale the drawing. Drawings shall not be used for construction purposes until issued by the Architect for construction.

All works to be sent out by registered surveyors

**ILL New & Associates MBDA, NSW**  
BSC LICENCE No 203382

Unit 25 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone (02) 9671 6860  
Facsimile (02) 9671 4331

 Building  
Design  
Association  
of NSW Inc



**Building  
Dog Owners  
Association  
1 NOW Inc**

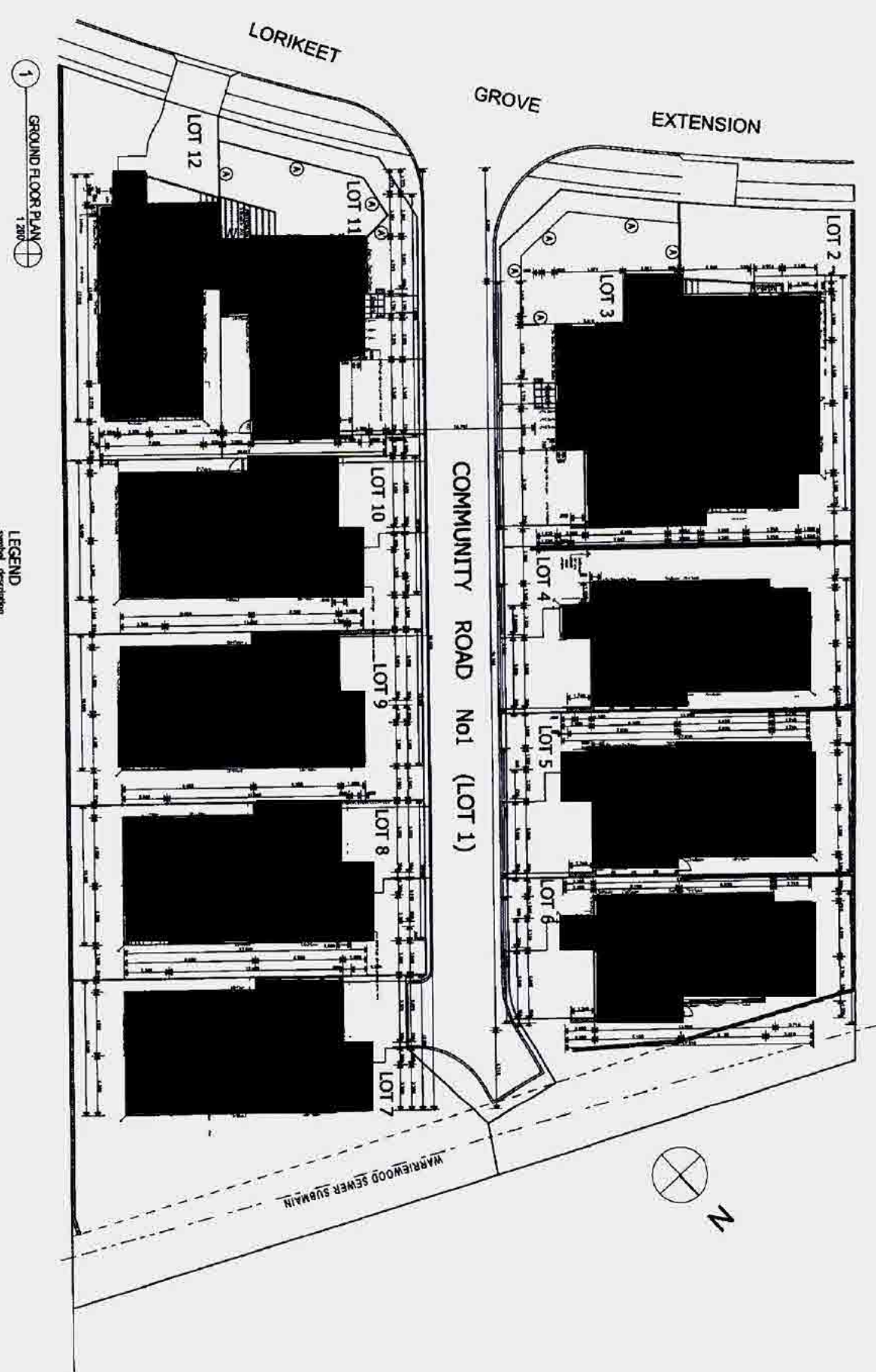
For  
**ABAX Contracting**  
Ground Maintenance

**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A  
SUBDIVISION OF LOT 1 DP 111587 WARRENWOOD ROAD  
WARRENWOOD

SUBDIVISION OF  
WARRENTWOOD

**Drawing Title**  
**GROUND FLOOR LAYOUT**  
**GROUND FLOOR PLAN**

Scale	As noted	Date
State	DA	Created by
Prep'd No		Typed No
2010 137		40f17A



PITMAN COUNCIL

APPROVED DEVELOPMENT CONSENT PLANS

NOTE: THESE PLANS MUST BE READ IN  
CONJUNCTION WITH THE CONDITIONS OF  
DEVELOPMENT CONSENT

**Figure 8**  
SHEET 2 OF 2 SHEETS

**HOUSING DETAIL  
FIRST FLOOR**

**LOT 105 LORIKEET GROVE**

DATE 2 SEPT 2010 PLAN NO 224/1/HD 2

The builder shall check and verify all dimensions and levels at every stage of construction to the satisfaction of the Surveyor. Any discrepancy shall be reported to the Surveyor immediately. The Surveyor shall be notified of any discrepancy before construction proceeds. The Surveyor shall be notified of any discrepancy before construction proceeds. The Surveyor shall be notified of any discrepancy before construction proceeds.

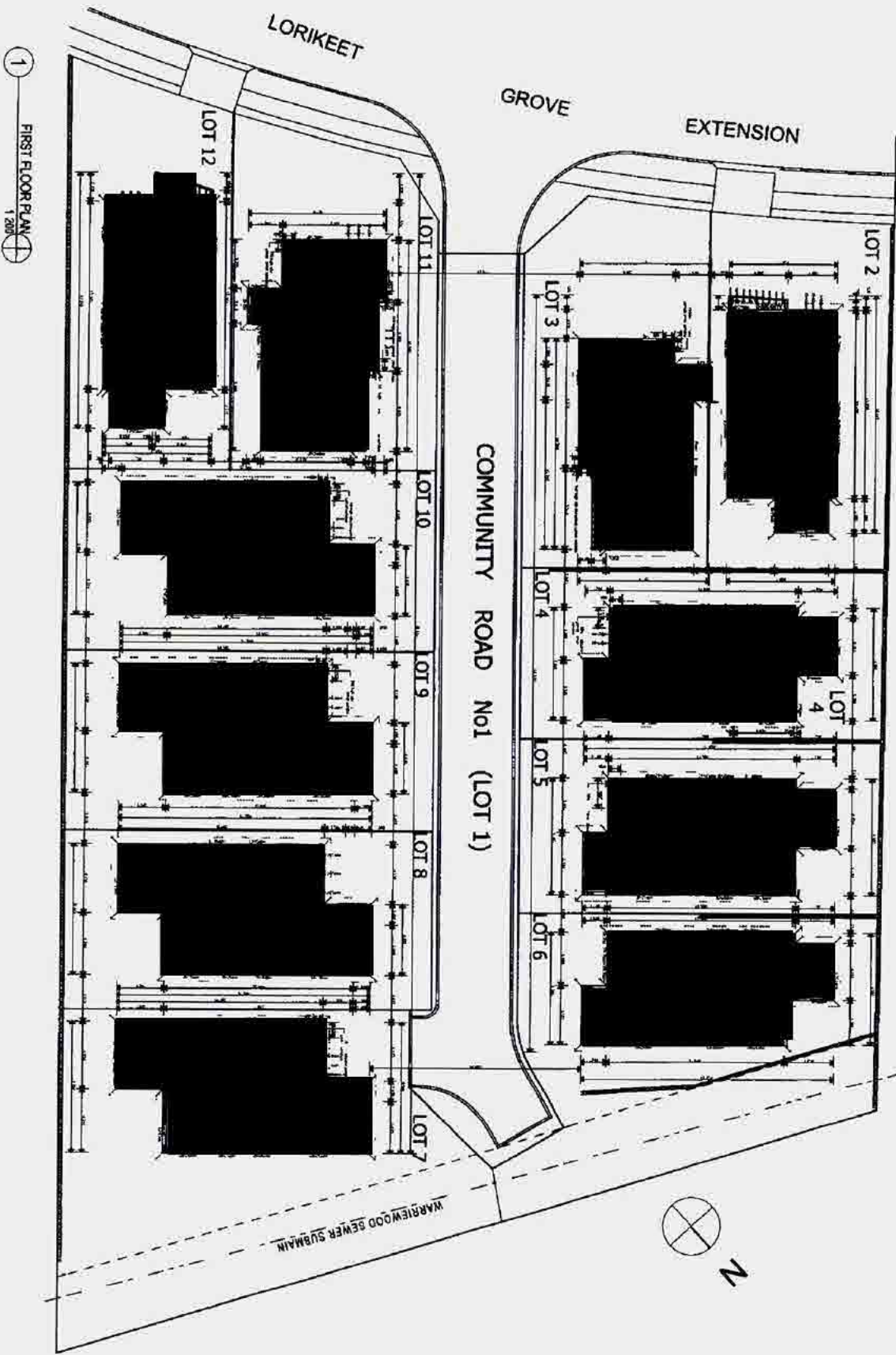
**I. L. New & Associates** MBDA, NSW  
BSC LICENCE No 20388  
Unit 25 No 11 Rowford Rd  
Kings Park, NSW 2148  
Telephone (02) 9671 5850  
Facsimile (02) 9671 4331



**ABAX Contracting**  
Project Name  
**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A  
SUBDIVISION OF LOT 1 DP 1115877 WARREWOOD ROAD  
WARREWOOD

**First Floor Layout**  
FIRST FLOOR PLAN

Scale	as noted	Date
Sheet DA	Or dated by	
Project No	Layout No	
2010 137	50f17A	





PITWATER COUNCIL  
APPROVED DEVELOPMENT CONSENT PLANS

NOTE: THESE PLANS MUST BE READ IN  
CONJUNCTION WITH THE CONDITIONS OF  
DEVELOPMENT CONSENT

Figure 9

STREETSCAPES  
LOT 105 LORIKEET GROVE

DATE 2 SEPT 2010 PLAN NO 22441/SS

This building shall check and verify all dimensions and  
levels and levels of all areas and structures to the  
Australian Standard AS/NZS 4586:2001 and shall  
be the responsibility of the contractor to ensure that  
the finished floor levels are correct.

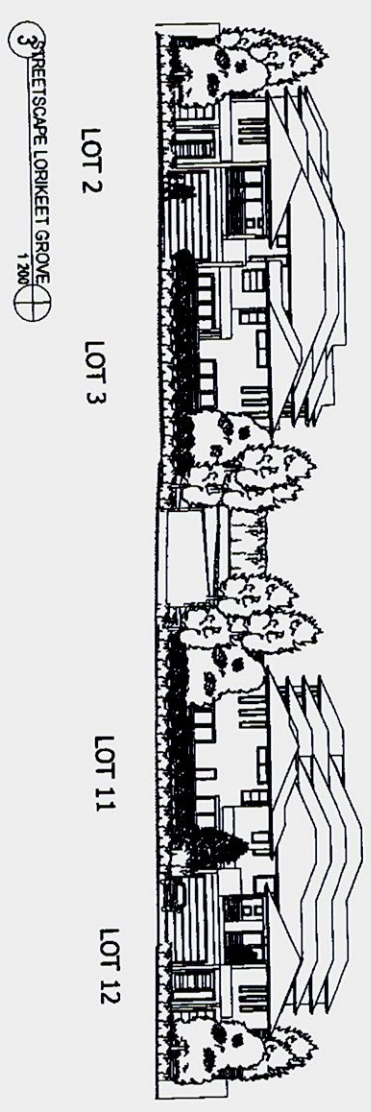
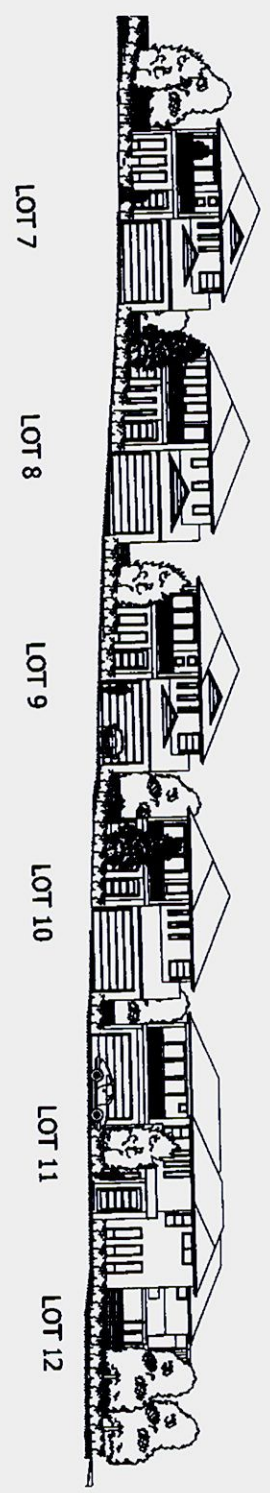
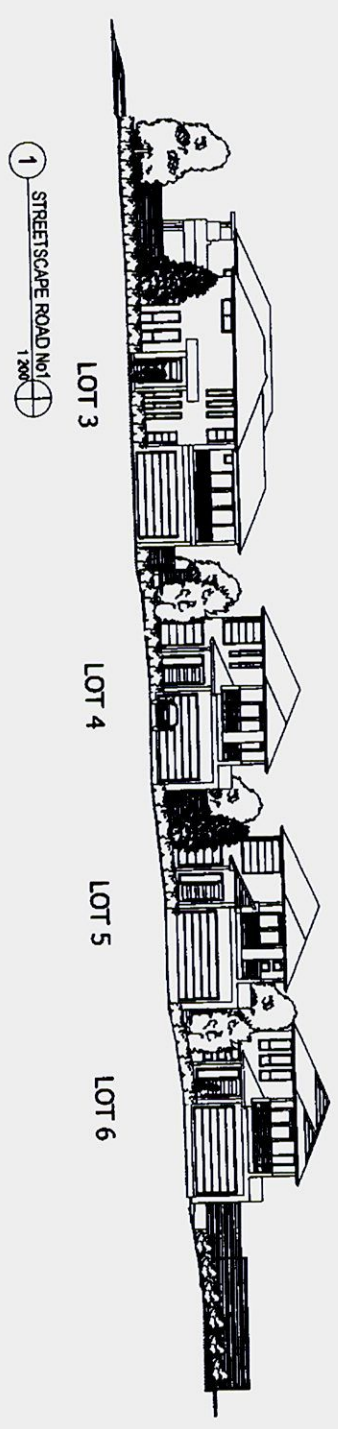
All works to be set out by registered surveyor

**I L New & Associates** NMDA NSW  
BSC LICENCE No 20388  
Unit 25 No 11 Bonford Rd  
Kings Park, NSW 2148  
Telephone (02) 9671 6860  
Facsimile (02) 9671 4331

Scale 1:500  
Designed  
Association  
of NSW Inc

For:  
**ABAX Contracting**  
Project Name  
**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A  
SUBDIVISION OF LOT 1 DP 1115977 WARRENWOOD ROAD  
WARRENWOOD

Drawing Title	
ELEVATIONS	
STREETSCAPE-ROAD No1 STREETSCAPE	
LORIKEET GROVE	
Scale as noted	Date
Scale DA	Checked By
Project No	Layout No
2010 137	60f17A
Plan Date	31/08/2010





REVISION : A 28/8/2010  
Provide rainwater tanks 3000litre

BASIX Commitments DW1

**CERTIFICATE NUMBER:** 315514M  
**SITE DETAILS:**  
Lot No: 7  
DP Number: 1115877  
Site Area: 620.10sq

**PROJECT DETAILS:**  
Conditioned Floor Area: 132.38sq  
Unconditioned Floor Area: 132.38sq  
Roof Area: 276.76sq  
Garden & Lawn Area: 132.38sq

**WATER TREATMENT:**  
Water Tank Volume: 3000L  
Rainwater Harvesting System: Yes  
Remainder of Roof Water to Basement: No  
Hydraulic Design System Required: Yes

**WATER FEATURES:**  
Showerheads Rating: 3 Star (Min.)  
Toilets Rating: 4 Star (Min.)  
Kitchen Tap Rating: 4 Star (Min.)  
Bath Tap Rating: 4 Star (Min.)

**THERMAL COMFORT:**  
External Wall & Floor Specifications:  
Roof & Ceiling Specifications: R1.5 (Foam) / R1.5 (Foam) + R1.5 (Bricks)  
Windows Glazed Doors & Skylights: W1.5 (14-16-22 Improved Aluminium Slips Close) (SHGC 0.27 U-Value: 6.35)  
W2.2 (18-20 Improved Aluminium Low e Slips Close) (SHGC 0.47 U-Value: 4.32)  
Cooling & Heating Systems: Gas (Instantaneous) 5 Star  
Furn Ducted to Packaged Roof (Manual Switch) (EER 2.5-3.0)  
Natural Ventilation Only: Yes  
Mechanical Ventilation Only: No  
Natural Lighting: Yes  
Mechanical Lighting in 3 Bedrooms/Toilets & Kitchen: Yes  
Outdoor Cooling: Yes  
Appliances: Gas Cooktop & Electric Oven: Yes

**THE BUILDER SHALL OBTAIN ALL NECESSARY APPROVALS AND PERMITS FROM THE RELEVANT AUTHORITIES AND SHALL BE RESPONSIBLE FOR OBTAINING THE SAME. THE BUILDER SHALL BE RESPONSIBLE FOR OBTAINING THE SAME. THE BUILDER SHALL BE RESPONSIBLE FOR OBTAINING THE SAME.**

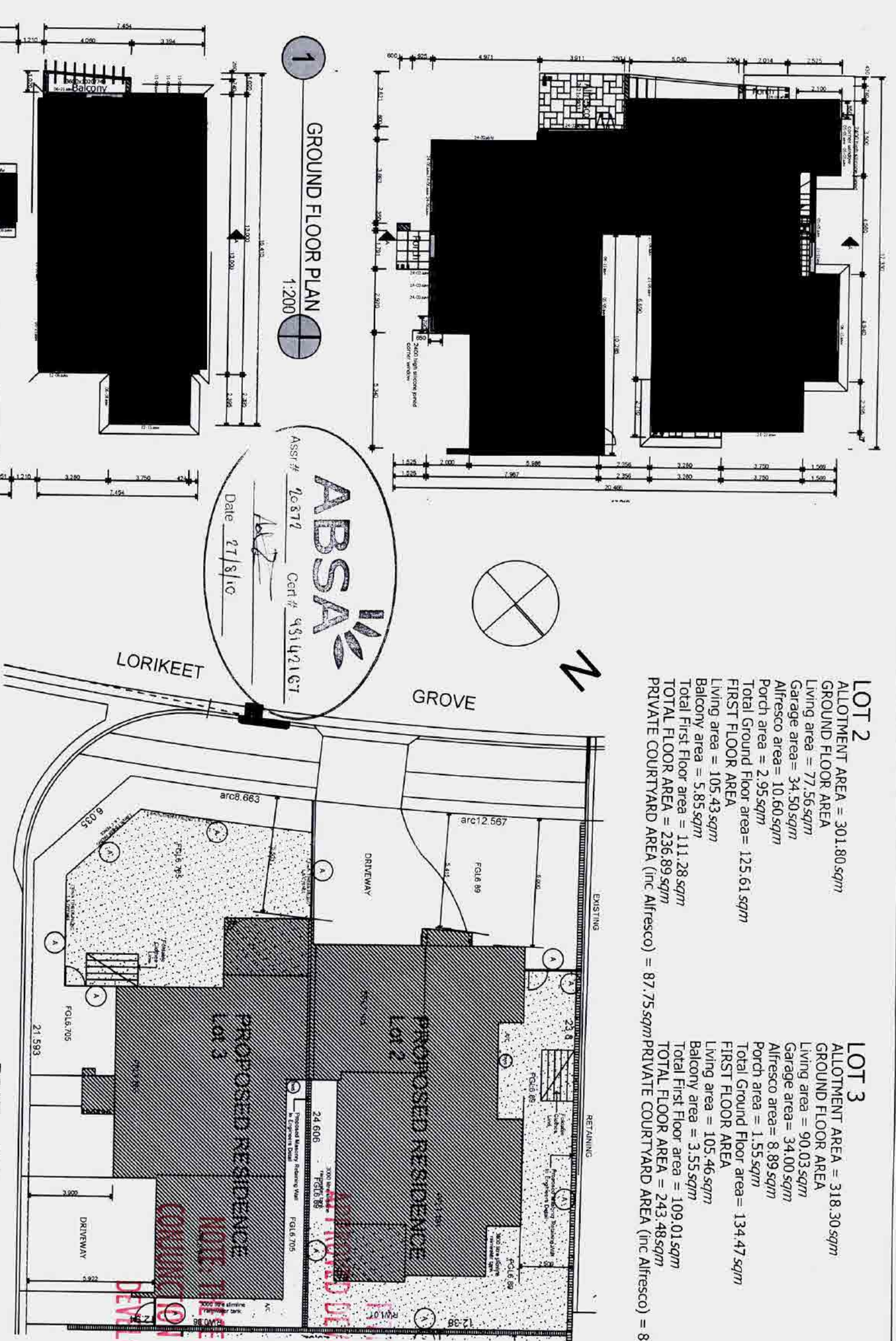
**ILL. New & Associates** MBDA, NSW  
BSC LICENCE No. 20388  
Unit 25 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone: (02) 9671 8860  
Facsimile: (02) 9671 4331

**ABAX Contracting**  
Integrated Housing Development  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A  
SUBDIVISION OF LOT 1 DP 1115877 WARREWOOD ROAD,  
WARREWOOD

**Drawing Title:**  
LOT 2 & 3  
GROUND FLOOR PLAN FIRST FLOOR PLAN  
SHEET DA  
Scale as noted  
Project No: 2010:137  
Drawing No: 70171A(a3)

**LOT 2**  
ALLOTMENT AREA = 301.80 sqm  
GROUND FLOOR AREA  
Living area = 77.56 sqm  
Garage area = 34.50 sqm  
Alfresco area = 10.60 sqm  
Porch area = 2.95 sqm  
Total Ground Floor area = 125.61 sqm  
FIRST FLOOR AREA  
Living area = 105.43 sqm  
Balcony area = 5.85 sqm  
Total First Floor area = 111.28 sqm  
TOTAL FLOOR AREA = 236.89 sqm  
PRIVATE COURTYARD AREA (inc Alfresco) = 87.75 sqm  
PRIVATE COURTYARD AREA (inc Alfresco) = 82.00 sqm

**LOT 3**  
ALLOTMENT AREA = 318.30 sqm  
GROUND FLOOR AREA  
Living area = 90.03 sqm  
Garage area = 34.00 sqm  
Alfresco area = 8.89 sqm  
Porch area = 1.55 sqm  
Total Ground Floor area = 134.47 sqm  
FIRST FLOOR AREA  
Living area = 105.46 sqm  
Balcony area = 3.55 sqm  
Total First Floor area = 109.01 sqm  
TOTAL FLOOR AREA = 243.48 sqm



**ABS SA**  
Assr # 26372  
Date 27/8/10  
Cert # 93142167

**LEGEND**  
symbol description  
A 1.8meters high Fencing  
Denotes Private Open Space (minimum dimension 2.0m)

**SITE PLAN**  
1:200

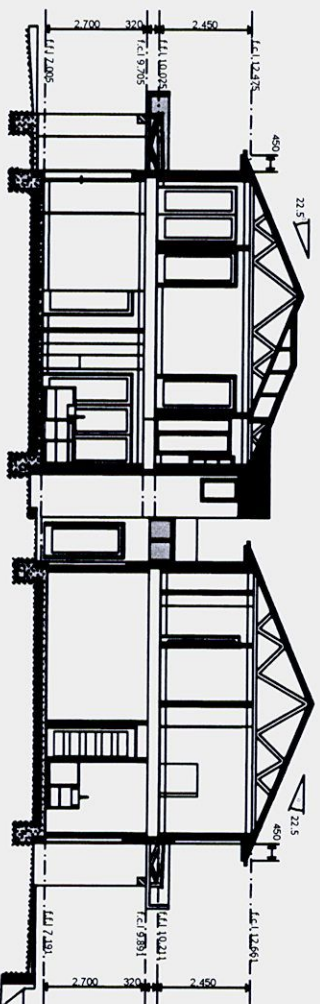
**FIRST FLOOR PLAN**  
1:200

**LEGEND**  
symbol description  
FGL Denotes Finished Ground Level (refer to Land Planning Plan prepared by Proust & Gardener)  
RW Denotes Proposed Retaining Wall  
Denotes Proposed Clothes Line

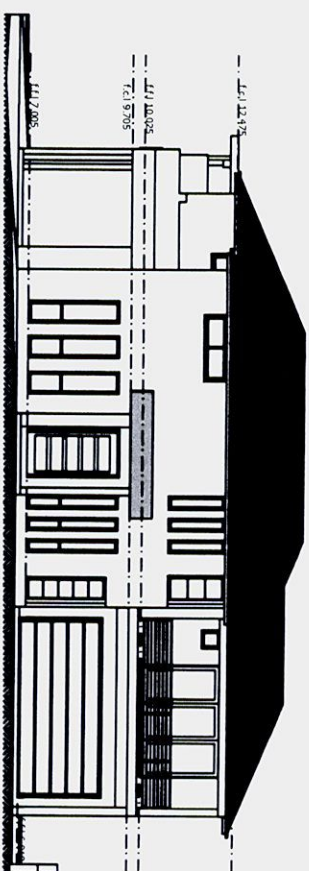


Table of Materials & Finishes

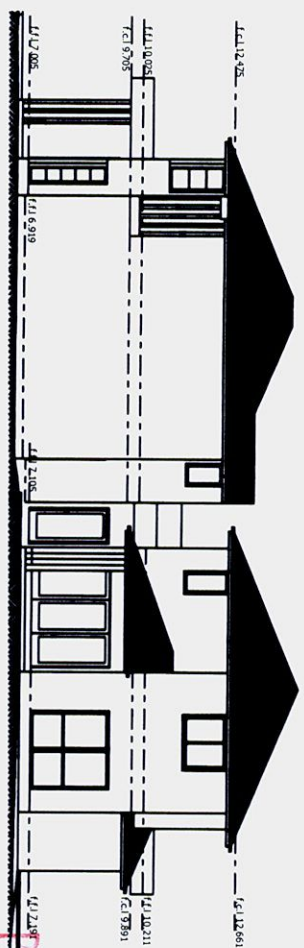
- cement rendered & painted brickwork
- concrete rppf tiles as selected
- aluminium framed windows as selected
- panel lift garage doors as selected
- stainless steel balustrade as selected to comply with BCA requirements
- aluminium framed sliding door as selected
- cement rendered & painted blueboard cladding
- colorbond capping
- aluminium framed silicone joined corner windows
- aluminium framed glazed swing door as selected
- metal deck roof sheeting as selected to manufacturers specifications
- timber framed roof trusses to manufacturers specifications
- sheet flooring on timber floor joists to manufacturers specifications
- plasterboard wall & ceiling lining
- selected timber entry door with glazed panels & aluminium framed highlight & sidelight
- reinforced concrete slab to engineers details
- blueboard lined timber awnings cement rendered & painted finish
- aluminium framed bi-fold doors as selected



SECTION A-A  
1:200



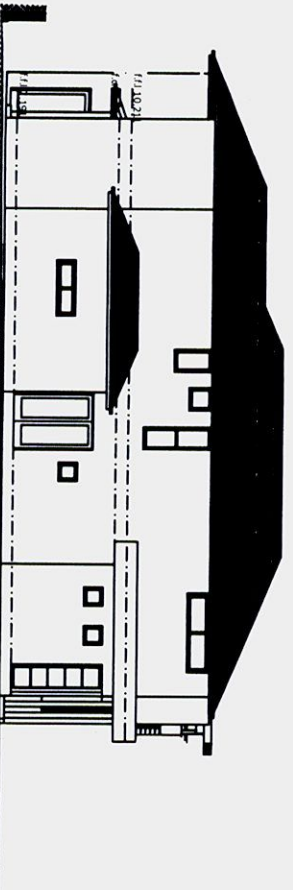
SOUTH EASTERN ELEVATION  
1:200



NORTH EASTERN ELEVATION LOTS 2 & 3  
1:200



SOUTH WESTERN ELEVATION LOTS 2 & 3  
1:200



NORTH WESTERN ELEVATION LOTS 2 & 3  
1:200

**Alexia Homes**  
NEW GENERATION

REVISION : A 28/8/2010  
Provide rainwater tanks 3000litre

BASIX Commitments DW2

<b>CERTIFICATE NUMBER:</b>	331814M
<b>SITE DETAILS:</b>	
Lot No:	3
DP Number:	1115877
Site Area:	620.10m <sup>2</sup>
<b>PROJECT DETAILS:</b>	
No. Bedrooms:	4
Conditioned Floor Area:	142.08m <sup>2</sup>
Unconditioned Floor Area:	15.23m <sup>2</sup>
Road Area:	279.19m <sup>2</sup>
Garden & Lawn Area:	165.05m <sup>2</sup>
<b>ALTERNATIVE WATER:</b>	
Rain Water Tank Volume:	3090L
Road Area Connected to Tank:	279.19m <sup>2</sup>
Rainwater Uses:	Toilets, One Outdoor Tap & Laundry
Remainder of Road Water to Exempt:	Yes
Hydraulic Design System Required:	Yes
<b>WATER FIXTURES:</b>	
Showerheads/Bath:	3 Star (Min)
Toilet Flushing System:	4 Star (Min)
Kitchen Tap Fittings:	4 Star (Min)
Basin Tap Fittings:	4 Star (Min)
<b>THERMAL COMFORT:</b>	
Roof & Ceiling Floor Specifications:	R1.5
*Roof & Ceiling Specifications:	R4.0 (Full/Sloping & R1.5 Full + Batts)
*Internal Walls:	R1.5 (Gypsum Wall Only)
*Windows Glazed Doors & Skylights:	*W9-20: 23.26 Improved Aluminium Single Glaz (SHGC: 0.77 U-Value: 6.35)
*W1-8: 21.42 Improved Aluminium Low E (SHGC: 0.47 U-Value: 4.32)	
<b>ENERGY:</b>	
Hot Water System:	Gas (Continuous) 5 Star
Cooling & Heating System:	3 Phase Air Conditioning (SQR 3.5-3.0)
Ventilation:	*Fan Ducted to Facade/Floor (Natural Vent)
*Natural Ventilation Only:	Natural Ventilation Only
Natural Lighting:	Minimum 10% in 3 Bedrooms/Toilets & Kitchen
Water Heating:	Water Heating in 3 Bedrooms/Toilets & Kitchen
Appliances:	Yes
Outdoor Climate:	Yes
Gas Cooking & Electric Oven:	Gas Cooking & Electric Oven

NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENTAL CONSENT

**I.L. New & Associates** MBDA, NSW  
BSC LICENCE No. 20388  
Unit 25 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone: (02) 9671 6860  
Facsimile: (02) 9671 4331

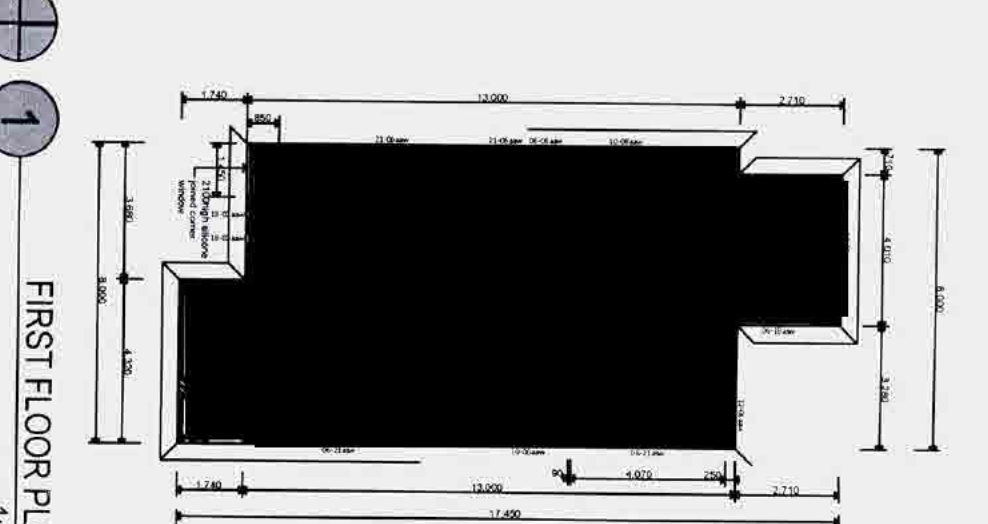
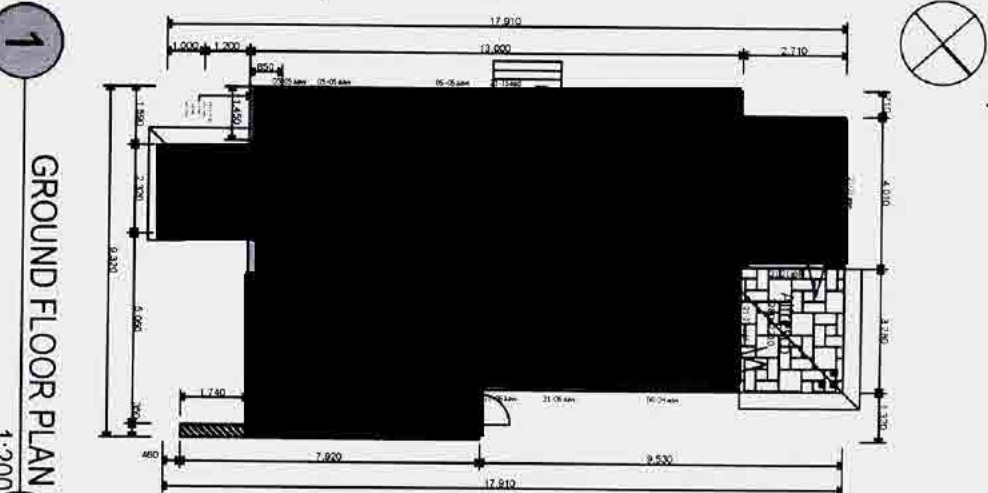
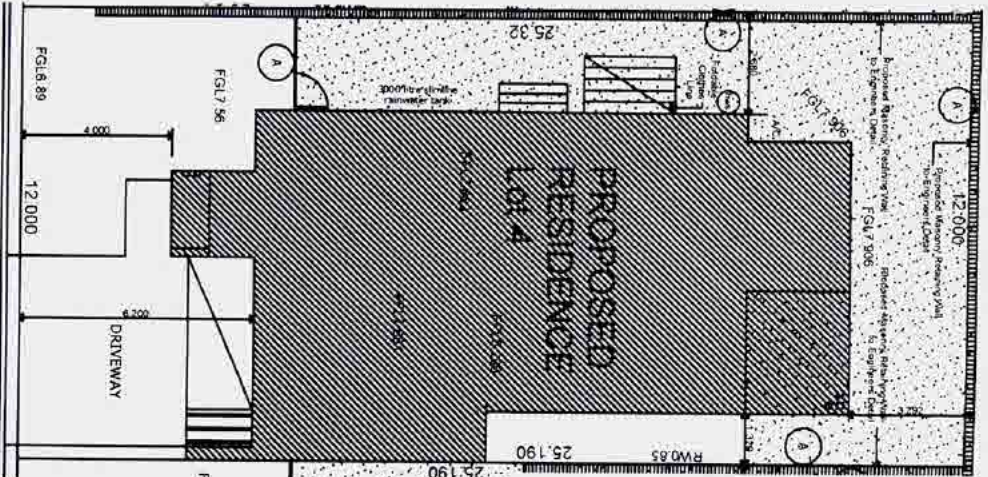


For:  
**ABAX Contracting**  
Project Name:  
**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 106 IN A  
SUBDIVISION OF LOT 1 DP 1115877 WARRIEWOOD ROAD,  
WARRIEWOOD

Drawing Title	- LOTS 2 & 3
Drawing No	80117A(a3)
Project No	2010:137
Revision	2010:137



N



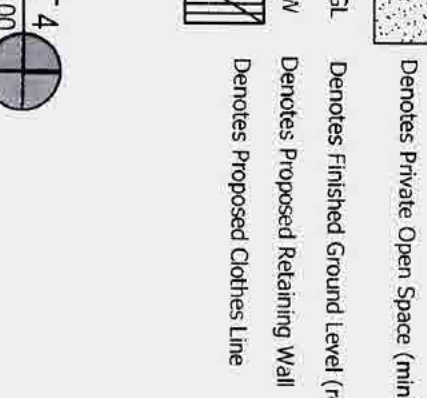
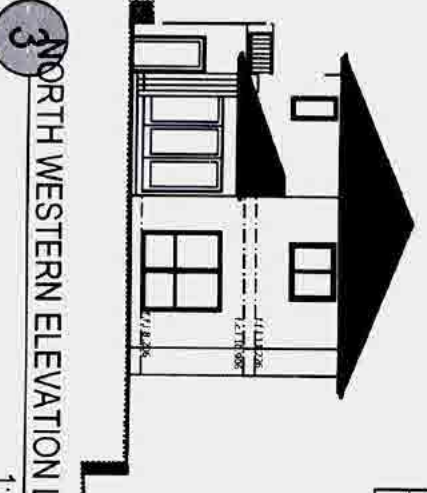
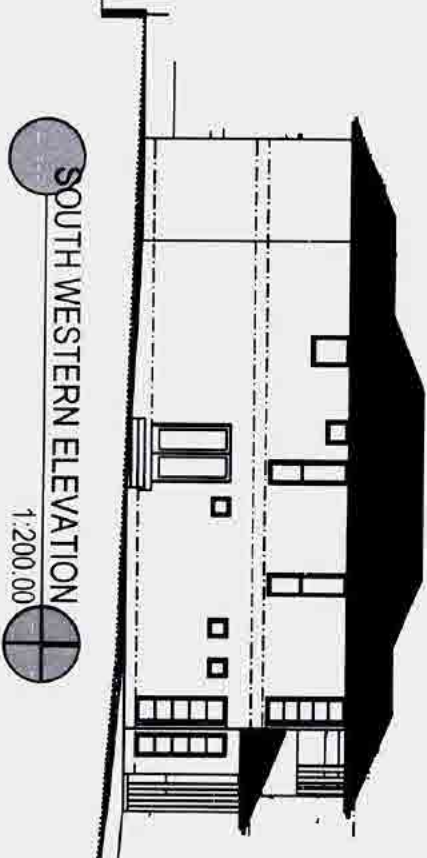
**Table of Materials & Finishes**

cement rendered & painted brickwork  
concrete rppf tiles as selected  
aluminium framed windows as selected  
panel lift garage doors as selected  
stainless steel balustrade as selected to comply with BCA requirements  
aluminium framed sliding door as selected  
cement rendered & painted blueboard cladding  
colorbond capping  
aluminium framed silicone joined corner windows  
aluminium framed glazed swing door as selected  
metal deck roof sheeting as selected installed to manufacturers specifications  
timber framed roof trusses to manufacturers specifications  
sheet flooring on timber floor joists to manufacturers specifications  
plasterboard wall & ceiling lining  
selected timber entry door with glazed panels & aluminium framed highlight & sidelight  
reinforced concrete slab to engineers details  
blueboard lined timber awnings cement rendered & painted finish  
aluminium framed bi-fold doors as selected

**LOT 4**  
ALLOTMENT AREA = 303.0 sqm  
GROUND FLOOR AREA  
Living area = 92.45 sqm  
Garage area = 33.97 sqm  
Alfresco area = 8.89 sqm  
Total Ground Floor area = 135.91 sqm  
FIRST FLOOR AREA  
Living area = 114.87 sqm  
Balcony area = 7.52 sqm  
Total First Floor area = 122.39 sqm  
TOTAL FLOOR AREA = 258.30 sqm  
PRIVATE COURTYARD AREA (inc Alfresco) = 93.91 sqm



**LEGEND**  
symbol description  
(A) 1.8meters high Fencing  
Denotes Private Open Space (minimum dimension 2.0m)  
FGL Denotes Finished Ground Level (refer to Land Planning Plan prepared by Priest & Gardner)  
RW Denotes Proposed Retaining Wall  
Denotes Proposed Clothes Line



**ABS A**  
Assr # 20879 Cert # 53927218  
Date 27/8/10

**NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**

**APPROVED DEVELOPMENT CONSENT**

**REVISION : A 28/8/2010**  
Provide rainwater tanks 3000litre

**BASIX Commitments DW3**

**CERTIFICATE NUMBER:** 3118205  
**SITE DETAILS:**  
Lot No: 4  
Site Area: 303.00m<sup>2</sup>

**PROJECT DETAILS:**  
No. Bedrooms: 4  
Conditioned Floor Area: 161.00m<sup>2</sup>  
Unconditioned Floor Area: 127.00m<sup>2</sup>  
Garden & Lawn Area: 143.00m<sup>2</sup>

**ALTERNATIVE WATER:**  
Rain Water Tank Volume: 3000 L  
Roof Area Connected to Tank: 142 sqm  
Rainwater Usage: 142 sqm  
Derivation of Roof Water to Basement: 142 sqm  
Hydronic Design System Required: Yes

**WATER EXPOSURE:**  
Showers/Baths: 3 Star (Min.)  
Toilet Flushing System: 4 Star (Min.)  
Kitchen Tap Fittings: 4 Star (Min.)  
Bath Tap Fittings: 4 Star (Min.)

**THERMAL COMFORT:**  
External Wall & Floor Specifications:  
\*Floor & Ceiling Specifications: R2.0 (Full Ceiling & R1.5 Full + Batts)  
\*Track Window: R2.0 (Garage Wall Only)  
\*Internal Walls: R2.0 (Full Ceiling & R1.5 Full + Batts)  
\*Roof & Ceiling Specifications: R2.0 (Full Ceiling & R1.5 Full + Batts)  
\*Attic: R2.0 (Full Ceiling & R1.5 Full + Batts)

**ENERGY:**  
Hot Water System: Gas (Instantaneous) 5 Star  
Cooling & Heating System: 3 Phase Air Conditioning (EER 2.5/3.0)  
\*Controlled Ventilation (Mechanical): Yes  
\*Manual Ventilation Only: No  
Windows/Skylight in 3 Bedrooms/Toilets & Kitchens: Yes  
Refrigerator Space: Yes  
Outdoor Cooktop: Yes  
Appliance: Gas Cooking & Electric Oven

The bidder shall check and verify all dimensions and levels and verify all areas and orientations to the site and the proposed development. The bidder shall be responsible for obtaining all necessary approvals from the relevant authorities. The bidder shall be responsible for obtaining all necessary approvals from the relevant authorities. The bidder shall be responsible for obtaining all necessary approvals from the relevant authorities.

**I.L. New & Associates** MBDA NSW  
BSC LICENCE NO. 20388  
Unit 25 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone: (02) 9671 6860  
Facsimile: (02) 9671 4331

**ABAX Contracting**  
Project Name: Integrated Housing Development  
At the proposed subdivision of proposed LOT 4 & 5 in A subdivision of LOT 1 OF 113577 WAREWOOD RD., WAREWOOD.

**2010:137**  
90f17A(a3)



**A** *Leira* **H** *omes*  
A      NEW      GENERATION

REVISION : A 28/8/2010  
Provide rainwater tanks 3000litres

BASIX Commitments DW4

**CERTIFICATE NUMBER:** 3310215  
**DETAILS:**

**DECEASED DETAILS:**  
and (more)

131.00m<sup>2</sup>

Toilets, One Outdoor Tap & Laundry  
YES

3 Star (Min.)  
4 Star (Min.)  
4 Star (Min.)  
4 Star (Min.)

**Wall & Floor Specifications:**  
R1.5

Windows Improved Aluminum Single Clear (SHGC: 0.77 U-Value: 6.35)

Bath & kitchen.

Does Cooktop & Electric Oven	Yes
------------------------------	-----

## Effect of noise on

## THE CONDITIONS OF

## CONSENT

For a complete list of the authors' publications, please refer to the references.

1. *Staphylococcus aureus* (100%)

**NEW & ASSOCIATES MBDA, NSW**  
LICENCE NO. 20388

phone: (02) 9671 6860  
mle: (02) 9671 4331

**ASSOCIATION  
of NSW Inc.**

### Contracting

THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A

Title
-------

B. PLAN, NORTH-EASTERN ELEVATION LOT 10

ERN ELEVATION LOT 5, SOUTHEASTERN  
Drawing No.

# Table of Materials & Finishes

cement rendered & painted brickwork  
concrete rpf tiles as selected  
aluminium framed windows as selected  
panel lift garage doors as selected  
stainless steel balustrade as selected to comply with BCA requirements  
aluminium framed sliding door as selected  
cement rendered & painted blueboard cladding  
colorbond capping  
aluminium framed silicone joined corner windows  
aluminium framed glazed swing door as selected  
metal deck roof sheeting as selected installed to manufacturers specifications  
timber framed roof trusses to manufacturers specifications  
sheet flooring on timber floor joists to manufacturers specifications  
plasterboard wall & ceiling lining  
selected timber entry door with glazed panels & aluminium framed highlight & sidelight  
reinforced concrete slab to engineers details  
blueboard lined timber awnings cement rendered & painted finish  
aluminium framed bi-fold doors as selected

## LOT 5

ALLOTMENT AREA = 301.40sqm  
GROUND FLOOR AREA  
Living area = 92.45sqm  
Garage area= 33.97 sqm  
Alfresco area= 8.89 sqm  
Total Ground Floor area= 135.91 sqm  
FIRST FLOOR AREA  
Living area = 114.87 sqm  
Balcony area = 7.52sqm  
Total First Floor area = 122.39sqm  
TOTAL FLOOR AREA = 258.30 sqm  
PRIVATE COURTYARD AREA (inc Alfresco) = 92.34 sqm

3 PLAN  
1:200

PITTSBURGH  
APPROVED DEVELOPMENT

**LEGEND**

 *hatched* description  
1.8meters high Fencing

 Denotes Private Open Space (minimum dimension 2.0m)

 Denotes Finished Ground Level (refer to Land Planning Plan prepared by *Rous & Carter*)

 Denotes Proposed Retaining Wall


 Denotes Proposed Clothes Line

 **ABSAR**  
ARCHITECTS & BUILDERS

Asst # 20872 Cont # 74485447  
*ADD*  
Date 21/8/10

 5  
100

 5  
100

 4

 SECTION C.C  
1:200



Avelira Homes		NEW GENERATION	
REVISION : A 28/8/2010 Provide rainwater tanks 3000litre			
BASIS Commitments DW4			
<b>CERTIFICATE NUMBER:</b> LOT DETAILS: Site No. DP Number Site Area		3318215 5 1115877 301.00m <sup>2</sup>	
<b>PROJECT DETAILS:</b> No. Bedrooms Conditioned Floor Area Unconditioned Floor Area Roof Area Garden & Lawn Area		4 161.00m <sup>2</sup> 172.00m <sup>2</sup> 143.00m <sup>2</sup> 131.00m <sup>2</sup>	
<b>ALTERNATIVE WATER:</b> Rain Water Tank Volume Roof Area Connected to Tank Rainwater Storage Remainder of Roof Water to Basement Hydraulic Design system Required		3090 L 142.92m <sup>2</sup> 100% Yes Yes	
<b>WATER FIXTURES:</b> Showerheads Spring Toilet Flushing System Kitchen Tap Fixings Bath Tap Fixings		3 Star (Min.) 4 Star (Min.) 4 Star (Min.) 4 Star (Min.)	
<b>THERMAL CONCEPT:</b> External Wall & Floor Specifications *Fixed Verandah Internal Walls Windows Glazed Roof & Skylights All Inclusive Improved Aluminium Single Glaze (SIFCC: 0.77 U-Value: 6.35)		RL5 RL5 (Full/Sarking & RL5 Full + Batts) RL5 (Garage Wall Only)	
<b>ENERGY:</b> Hot Water System Cooling & Heating System Ventilation Solar Domestic Hot Water (Manual Switch) Master Bedroom Master Bedroom Refrigerator/Freezer Refrigerator/Freezer Outdoor Climate		Gas (Instantaneous) 5 Star 3 Phase AC Conditioning (SEER 2.5,3.0) Bath & Kitchen Laundry Yes Yes Gas Cooktop & Electric Oven	
THIS DOCUMENT MUST BE READ IN THE CONDITIONS OF SALE AT THE TIME OF CONSENT			
This tender shall check and verify all dimensions and levels and verify all areas and easements to the satisfaction of the relevant authorities. This map shall not be used for construction purposes. All maps shall be the Architect's best available information.			
All works to be done by registered surveyor			
I.L. New & Associates MBQA NSW BSC LICENCE NO. 20388			
Unit 25 No. 11 Rymford Rd Kings Park NSW 2148 Telephone: (02) 9671 6860 Facsimile: (02) 9671 4331			
 Institute of Land and Surveyors Association of NSW Inc.			
For ABX Contracting Project Name Integrated Housing Development Sited on the PROPOSED SUBDIVISION OF PROPOSED LOT 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709,			



REVISION : A 28/8/2010  
Provide rainwater tanks 3000litre

## BASIX Commitments DW5

<b>CERTIFICATE NUMBER:</b>	3318275
<b>SHEET DETAILS:</b>	
Dr No:	6
DP Number:	1115577
Site Area:	420.00m <sup>2</sup>
<b>PROJECT DETAILS:</b>	
No. of Buildings:	4
Conditioned Floor Area:	113.00m <sup>2</sup>
Unconditioned Floor Area:	17.00m <sup>2</sup>
Roof Area:	143.00m <sup>2</sup>
Garden & Lawn Area:	267.00m <sup>2</sup>
<b>ALTERNATIVE WATER:</b>	
Is an Water Tank Required:	300.0 L
Roof Area Connected to Tank:	10.27m <sup>2</sup>
Reamer Size:	
Hydraulic Design system required:	Yes
<b>WATER FIXTURES:</b>	
Showerheads Rating:	3 Star (Max.)
Toilet Flushing System:	4 Star (Max.)
Kitchen Tap Fixings:	4 Star (Max.)
Bath Tap Fixings:	4 Star (Max.)
<b>Totals, One Outdoor Tap &amp; Landmark</b>	
Yes	
Yes	

THERMAL COMFORT:	
External Wall & Floor Specifications:	
• Brick Veneer	R-5
• Roof & Ceiling Specifications:	R-10 (Flat Ceiling) & R-15 (Flat + Batt)
Internal Wall:	R-5 (Gypsum Wall Only)
Windows: Glazed Doors & Sliding:	
All Windows: Improved Aluminum Single Glaze (SHGC: 0.71 U-Value: 6.35)	
ACCLIMATE:	
Control & Insulation:	
Control: In-Home Thermostat	Gas (Inductanceless) 5 Stage
Insulation: Vapor Barrier	3" Rigid Air Conditioning (R22 2.5/3.0)
• <del>Not</del> Insulated & Sealed (Attic) (Attic) (Attic)	Batt & Kitchen
Natural Ventilation Only	Barriers
Natural Lighting:	
Windows: View Port in 1 Bathroom, 1 Office & Kitchen	
Redefined Space:	
Other Climate:	
Appliances:	
Gas Cooking & Electric Oven	Yes
	No

with BCA requirements

**NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT**

manufacturers specifications  
diffusers  
specifications

aluminium framed highlight & spotlight  
& painted finish

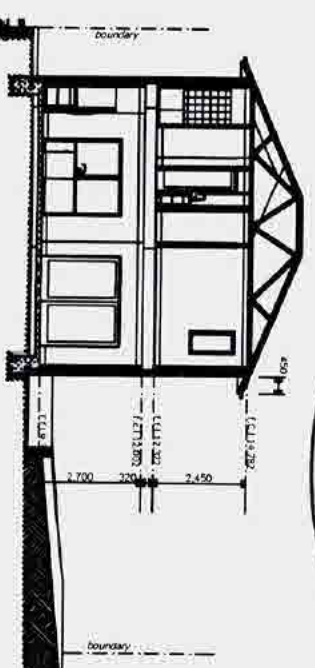
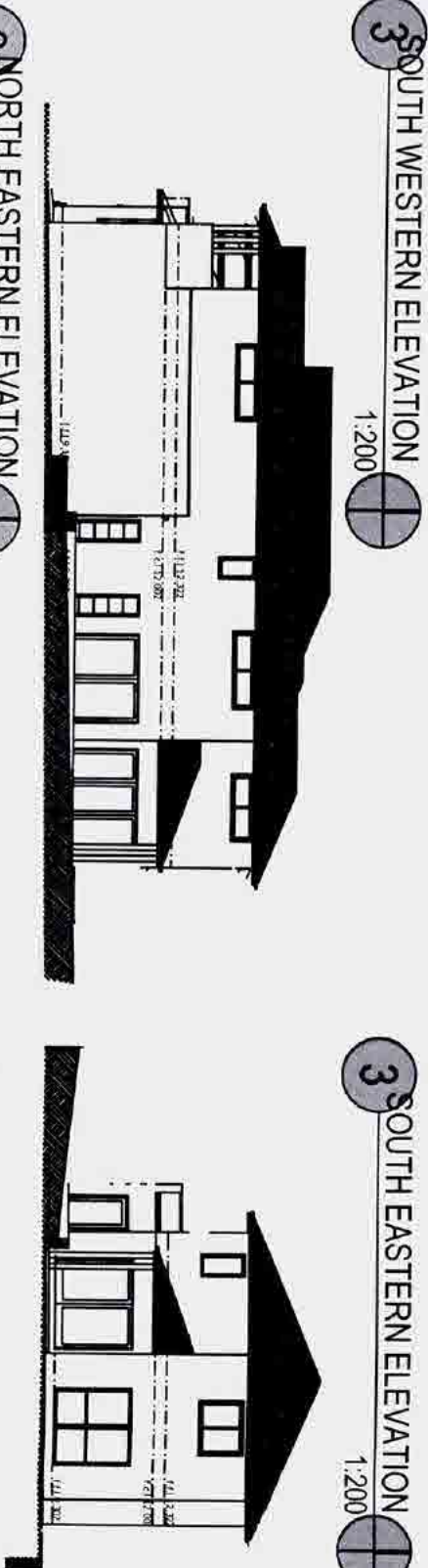
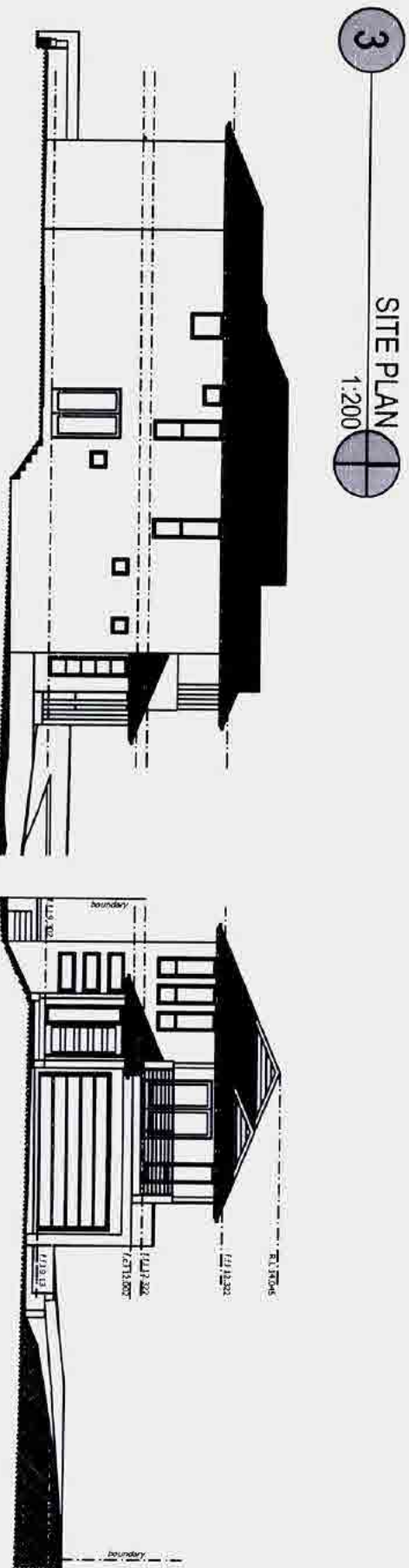
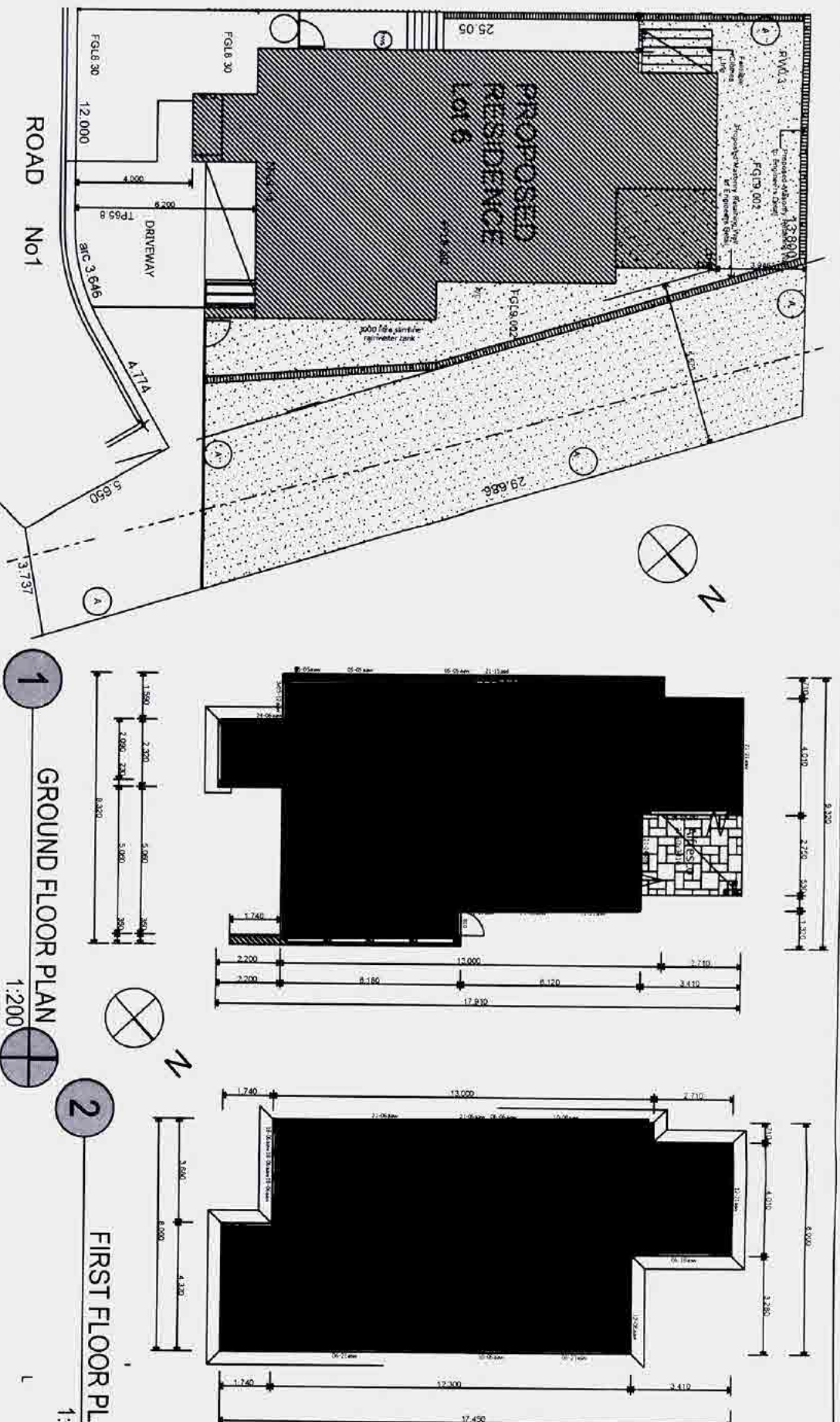
**I.L. New & Associates** MBDA, NSW  
BSC LICENCE NO. 20388  
Unit 25 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone: (02) 9671 8660  
Facsimile: (02) 9671 4331



Building  
Inspectors  
Associates  
of NSW INC.

**For:**  
**ABAX Contracting**  
Project Name  
**Integrated Housing Development**  
At the Proposed Subdivision of Proposed Lot 105 in A Subdivision of Lot 1 DP 1115877 WAREWOOD ROAD, WAREWOOD

Drawing Title	- LOT 6
NORTH WESTERN ELEVATION, NORTH	
EASTERN ELEVATION, SOUTH WESTERN	
ELEVATION OF SOUTH EASTERN ELEVATION SITE	
PERIMETER FLOOR PLAN FIRST FLOOR	
Drawn by	
Checked by	
Design No.	110 of 17A/a3
Room Section EE, Storey	2010.1.137



**LOT 6**  
 ALLOTMENT AREA = 430.00 *sqm*  
 GROUND FLOOR AREA  
 Living area = 92.45 *sqm*  
 Garage area = 33.97 *sqm*  
 Alfresco area = 8.89 *sqm*  
 Total Ground Floor area = 135.91 *sqm*  
**FIRST FLOOR AREA**  
 Living area = 114.87 *sqm*  
 Balcony area = 7.52 *sqm*  
 Total First Floor area = 122.39 *sqm*  
 TOTAL FLOOR AREA = 258.30 *sqm*  
 PRIVATE COURTYARD AREA (inc Alfresco) = 189.73 *sqm*






LEGEND	
	Symbol Association 1.1 meters high Fencing
	Denotes Private Open Space (minimum dimension 2.0m)
	Denotes Finished Ground Level (refer to Land Planning Plan prepared by Probst & Gardner)
	Denotes Proposed Retaining Wall
	Denotes Proposed Curb Line

Table of Materials & Finishes  
 cement rendered & painted brickwork  
 concrete roof tiles as selected  
 aluminium framed windows as selected  
 panel lift garage doors as selected  
 stainless steel balustrade as selected to comply with BCA requirements  
 aluminium framed sliding door as selected  
 cement rendered & painted blueboard cladding  
 colorbond cladding  
 aluminium framed silicone joined corner windows  
 aluminium framed glazed swing door as selected  
 metal deck roof sheeting as selected installed to manufacturers specifications  
 timber framed roof trusses to manufacturers specifications  
 street flooring on timber floor joists to manufacturers specifications  
 plasterboard wall & ceiling lining  
 selected timber entry door with glazed panels & aluminium framed  
 reinforced concrete slab to engineers details  
 blueboard lined timber awnings cement rendered & painted finish  
 aluminium framed bi-fold doors as selected

ASSN# 20372 Cert# 44508477  
Date 27/8/10



BASIC Commitments DW/6

CERTIFICATE NUMBER:	331873
<u>SITE DETAILS:</u>	
Lot No:	7
DP Number:	111587
Site Area:	535.00m

**PROJECT DETAILS:**  
No. Bedrooms: 4  
Conditioned Floor Area: 184.00m<sup>2</sup>  
Unconditioned Floor Area: 13.00m<sup>2</sup>  
Roof Area: 171.00m<sup>2</sup>  
Garden & Lawn Area: 356.00m<sup>2</sup>

<p><b>ALTERNATIVE WATER:</b>  Rain Water Tank Volume:  Roof Area Connected to Tank:  Rainwater Uses:  Recirculator of Roof Water to Cesspool:  Hydraulic Design System Required:</p>	<p>3090 L  170.6 m<sup>2</sup>  Toilets, One Outdoor Tap &amp; Laundry  Yes  Yes</p>
--	--

**THERMAL COMFORT:**  
External Wall & Floor Specifications:

• Speed & Chain Specifications: R3.0 (No Sinking)  
Internal Wrist: R1.5 (Garage Wall Only)  
Windows: Glazed Doors & Sprockets  
All Windows: Improved Aluminum Single Clear (SHCC: 0.77 U-Value: 6.35)

**ENERGY:**  
Hot Water System


Cooling & Heating System: 3 Phase Air Conditioning (FEER 2.5-3.0)  
 Ventilator: Fan Ducted to Outside/Room (Manual Switch)  
 Natural Ventilation: Natural Ventilation Only  
 Windows: Skylight in 2 Bathroom/doors of Kitchen  
 Refrigerated Space:

Appliances: Gas Cooktop & Electric Oven

NOTE: THESE PLANT MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT

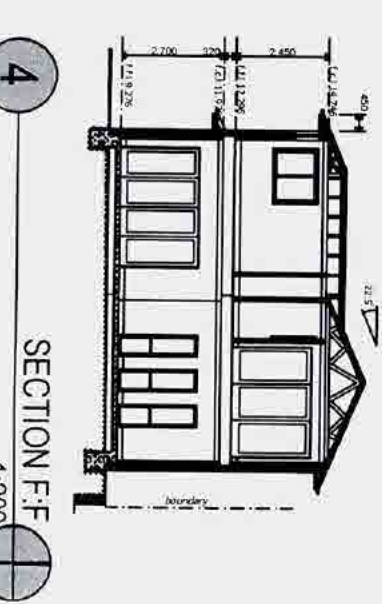
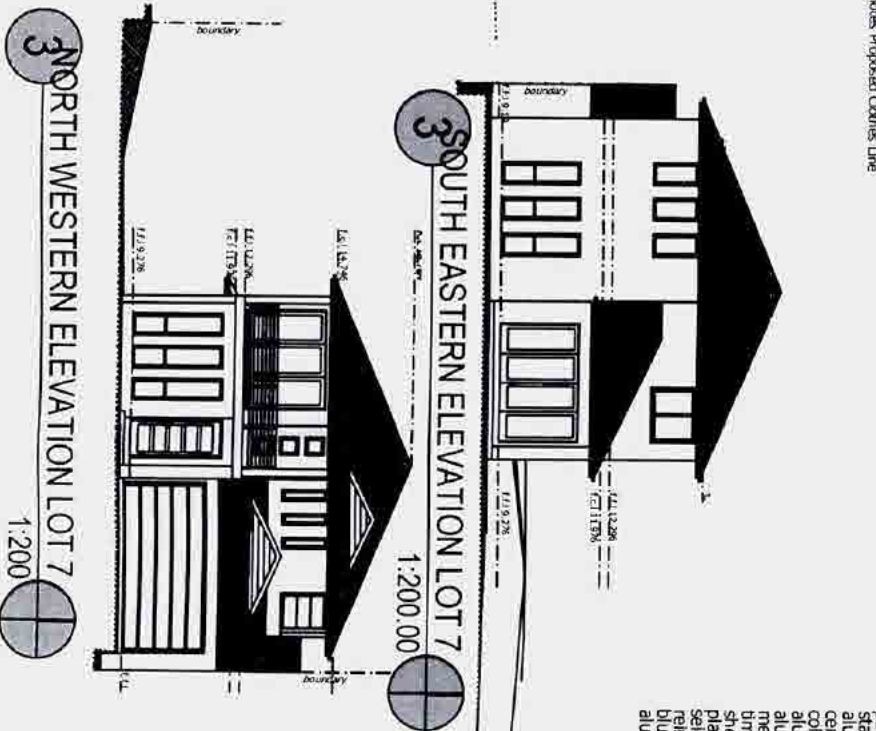
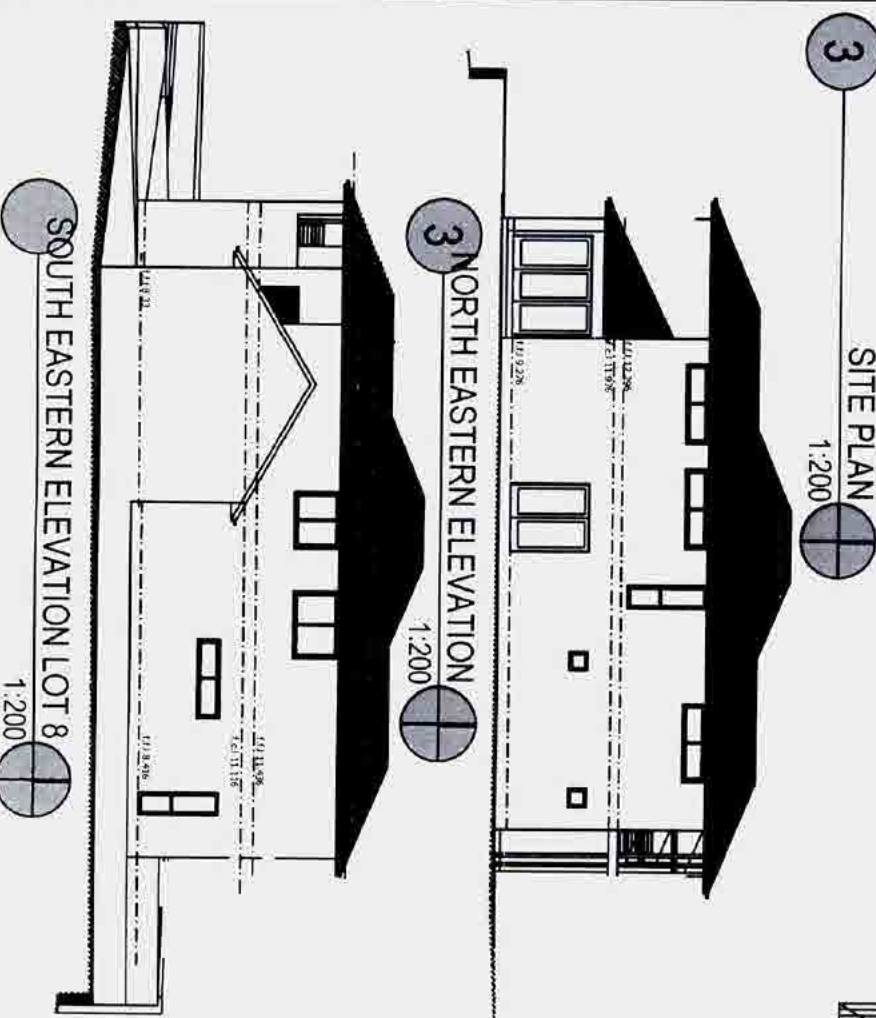
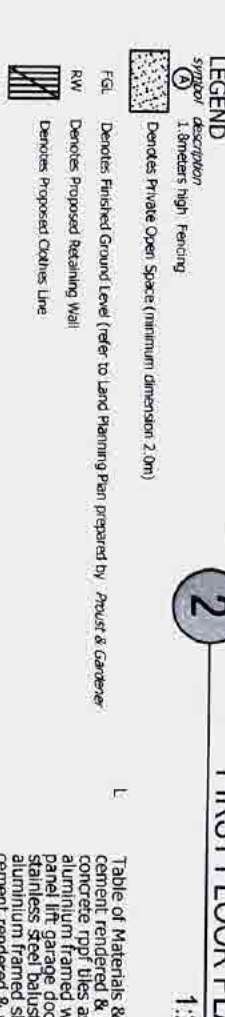
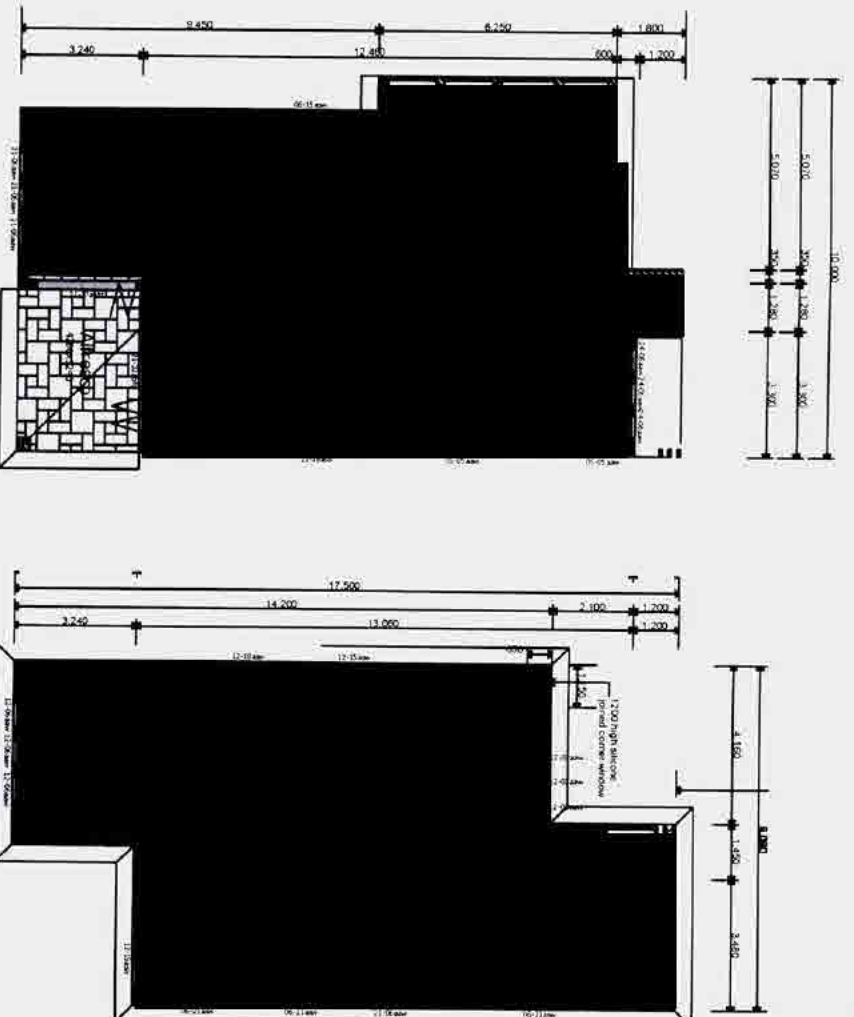
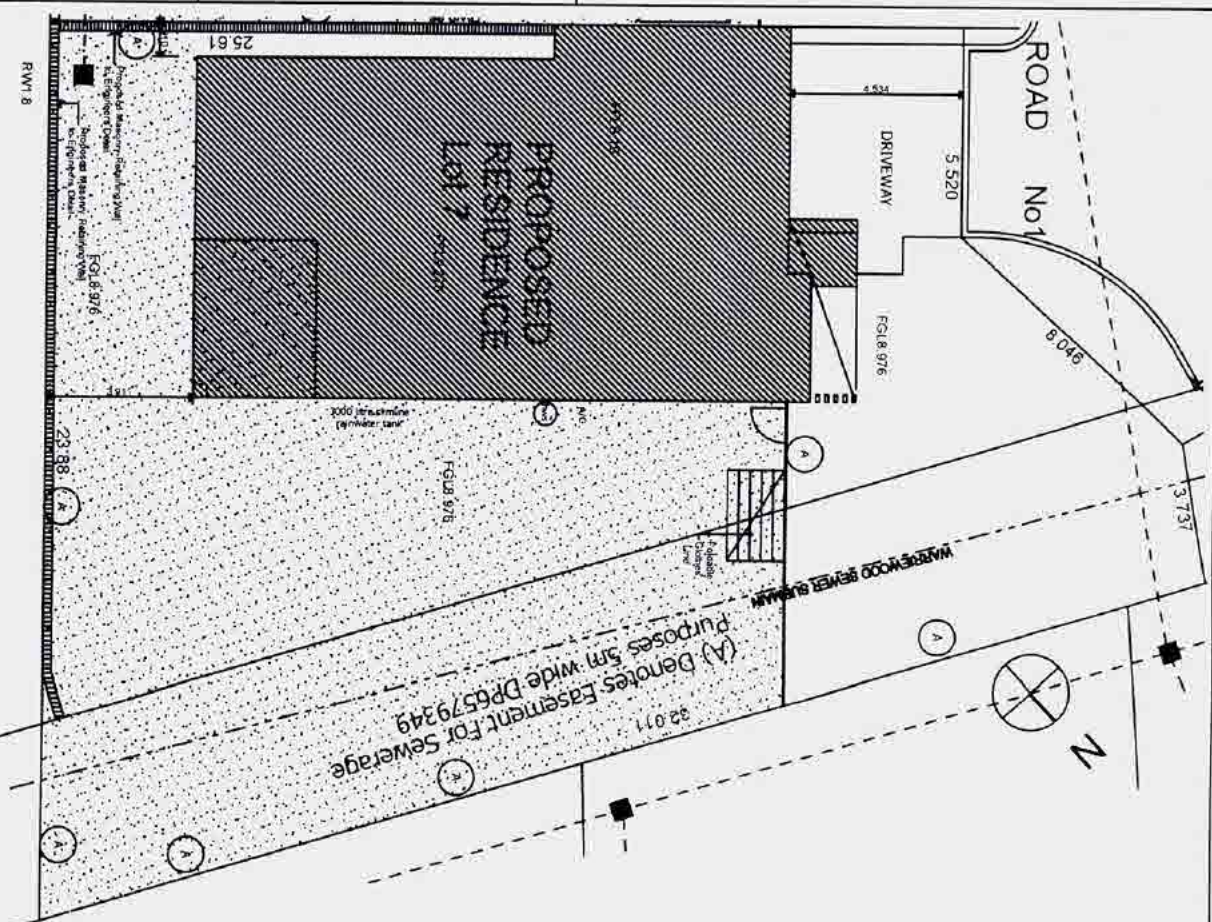
The builder shall check and verify all dimensions and details and certify all errors and omissions to the Architect. The Architect shall not be responsible for any errors or omissions in the drawings. Drawings shall not be used for construction of any project until tested by the Architect for construction.

**I.L. New & Associates** MBDA, NSW  
BSC LICENCE NO. 20388  
Unit 25 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone: (02) 9671 6860  
Facsimile: (02) 9671 4331

 Bollinger  
Distributors  
Association  
of NSW Inc.

**ABAX Contracting**  
Project Name  
**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A  
SUBDIVISION OF LOT 1 DP 1115677 WARRIEWOOD ROAD

Drawing No. 120ft17A/a3  
 EASTERN ELEVATION LOT 8 NORTH EASTERN  
 FLOOR PLAN SOUTH EASTERN ELEVATION LOT  
 SITE PLAN GROUND FLOOR PLAN FIRST  
 LOT 7  
 DRAWING 18  
 RABBITON SECTION F-F Store  
 2010-137



LOT 7  
 ALLOTMENT AREA = 534.80 sqm  
 GROUND FLOOR AREA  
 Living area = 103.29 sqm  
 Garage area = 33.29 sqm  
 Alfresco area = 13.80 sqm  
 Total Ground Floor area = 150.38 sqm  
 FIRST FLOOR AREA  
 Living area = 124.76 sqm  
 Balcony area = 6.79 sqm  
 Total First Floor area = 131.55 sqm  
 TOTAL FLOOR AREA = 285.13 sqm  
 PRIVATE COURTYARD AREA (inc Alfresco) = 267.88 sqm

ABS A  
Acct # 10871208  
Cert # 88517208  
Date 7/18/10  
APPROVED DEVELOP

Table of Materials & Finishes:

concrete rendered & painted brickwork
concrete rpi tiles as selected
aluminum framed windows as selected
panel lift garage doors as selected
stainless steel belustrade as selected to comply with BCA requirements
aluminum framed sliding door as selected
cerment, rendered & painted blueopal cladding
colorbond cladding
aluminum framed silicone joined corner windows
aluminum framed glazed swing door as selected
metal deck roof sheeting as selected installed to manufacturers specifications
timber framed roof trusses to manufacturers specifications
sheet flooring on timber floor joists to manufacturers specifications
glazed external wall & ceiling lining
selected timber entry door with glazed panels & aluminum framed highlight & sidelight
reinforced concrete slab to engineers details
blueopal lined timber awnings cement, rendered & painted finish
aluminum framed bi-fold doors as selected











**A** *Alcina* **H** *Ones*  
NEW GENERATION

REVISION : A 28/8/2010  
Provide rainwater tanks 3000litre

## BASIX Commitments DW9

<b>CERTIFICATE NUMBER:</b>	3312
<b>TEST DETAILS:</b>	
Lot No:	10
DP Number:	1115
Site Area:	310
<b>PROJECT DETAILS:</b>	
Conditioned Floor Area:	4
Unconditioned Floor Area:	164
Roof Area:	13.00
Garden & Lawn Area:	271
	121
<b>ALTERNATIVE WATER</b>	
Roof Water Tank:	3000
Roof area connected to tank:	170
Remainder of Roof Water to be Treated:	Yes
Hydraulic Design System Required:	Yes
<b>WATER FIXTURES:</b>	
Sanitised Toilets:	3
Toilet Flushing System:	4
Kitchen Tap Filtrage:	4
Bath Tap Filtrage:	4
	4
	4

**THERMAL COMFORT:**  
 External Wall & Floor Specifications:  
     • Brick Veneer                     R1.5  
     • Rod & Ceiling Specifications:   R3.0 (No Siding)  
 Internal Walls:                     R1.5 (Gypsum Wall Only)  
 Windows (Cand Doors & Sluggers):  
 All Windows: Impregiated Aluminum Single Glaz (SHGC = 0.77 U-Value: 6

Pro: Water-Spacing	Cons: Installation: 1.5 hr.
Coating & Heating System:	3 Phase Air Conditioning, IEEE 2, 3, 5, 3
Verdict:	Both a KOL
"I'm Ducted to be ducted" (Manual Switch)	Leakage
"Near a Vegetation Dry"	
Natural Lighting	
Windows/Skylight in 2 Bedrooms/2 Kitchens	
Refrigerator Space	
Outdoor: Chlorine	
Appliances:	
	Can Coating & Ducting: 0
	Yes
	Yes
	Yes

NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT

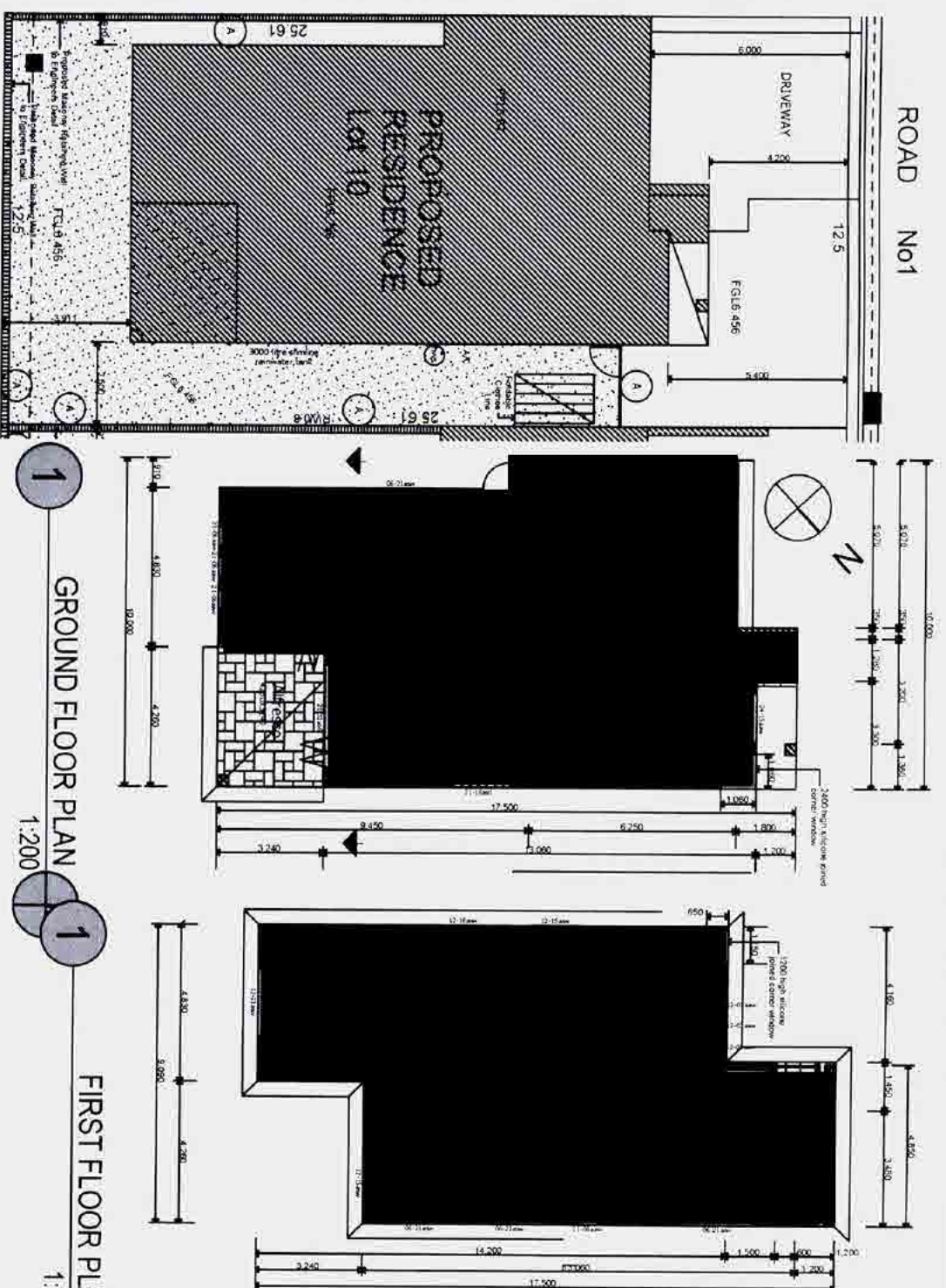
The Builder shall check and verify all dimensions and levels and verify all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.

**I.L. New & Associates** MBA, N  
BSC LICENCE No. 20388  
Unit 26 No. 11 Romford Rd  
Kings Park, NSW 2148  
Telephone: (02) 9671 6880  
Facsimile: (02) 9671 4331

  
Building  
Designers  
Associates  
of NSW

**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN  
SUBDIVISION OF LOT 1 DP 1115677 WARREWOOD ROAD,  
WARREWOOD

SITE PLAN, GROUND FLOOR PLAN, FIRST  
FLOOR PLAN, NORTH WEST ELEVATION  
EOT 12509084 EASTERN ELEVATION LOT 10  
REPT 12509084 EASTERN LOT 10, SOUTH ELEVATION  
MAGNETER ELEVATION, SECTION II, SOUTH  
2010:137  
15of17 Ala

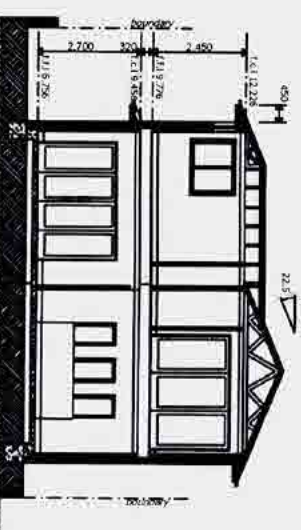
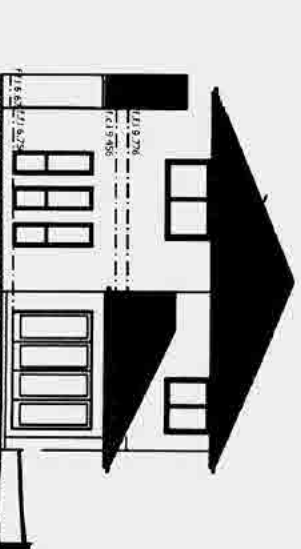
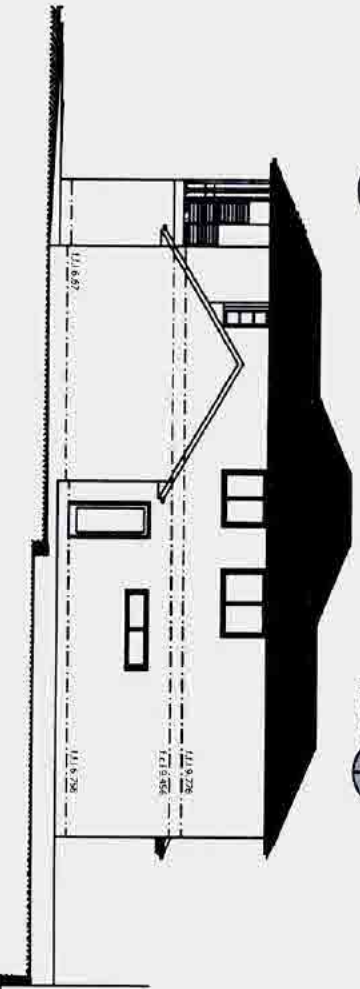
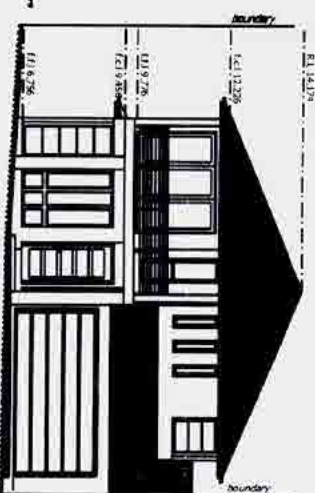
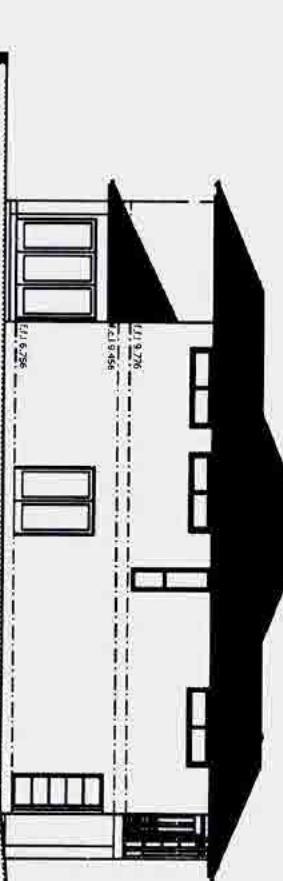


## Table of Materials & Finishes

Total First Floor area = 131.55 sqm  
 TOTAL FLOOR AREA = 285.13 sqm  
 PRIVATE COURTYARD AREA (inc Alfresco) = 99.91 sqm

## Table of Materials & Finishes






cement rendered & painted brickwork  
 concrete rppf tiles as selected  
 aluminium framed windows as selected  
 panel lift garage doors as selected  
 stainless steel balustrade as selected to comply with BCA requirements  
 aluminium framed sliding door as selected  
 cement rendered & painted blueboard cladding  
 colorbond capping  
 aluminium framed silicone joined corner windows  
 aluminium framed glazed swing door as selected  
 metal deck roof sheeting as selected  
 timber framed roof trusses to manufacturers specifications  
 sheet flooring on timber floor joists to manufacturers specifications  
 plasterboard wall & ceiling lining  
 selected timber entry door with glazed panels & aluminium framed high  
 reinforced concrete slab to engineers details  
 blueboard lined timber awnings cement rendered & painted finish  
 aluminium framed bi-fold doors as selected



ASSR # 20872      Car # 66681667

*AdZ*

Date 27/8/10

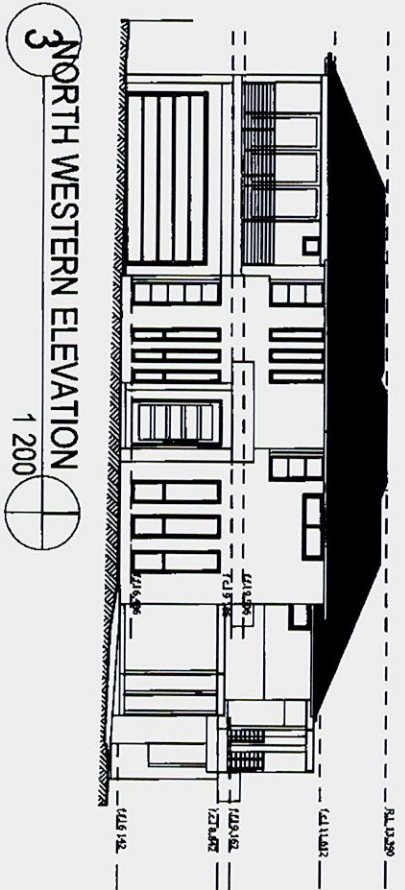
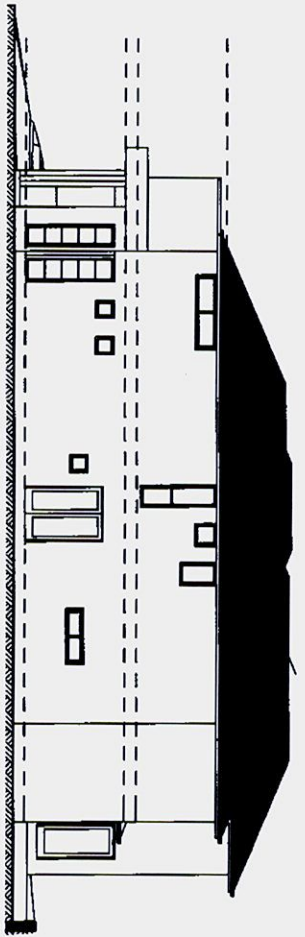
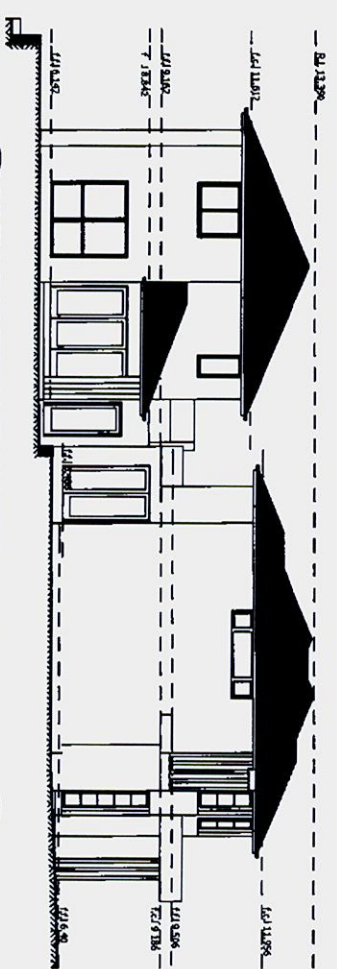
LEGEND	
symbol	description
	1.5 meters high Fencing
	Private Open Space (minimum dimension 2.0m)
	Finished Ground Level (refer to Land Planning Plan prepared by Pricer & Gardner)
	Proposed Retaining Wall
	Proposed Ordins Line

Prod Code:	300829
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PITTMAN COUNCIL  
APPROVED DEVELOPMENT CONSENT PLANS  
NOTE: THESE PLANS MUST BE READ IN CONJUNCTION WITH THE CONDITIONS OF DEVELOPMENT CONSENT

For  
ABAX Contracting  
Project Name  
Integrated Housing Development  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 106 IN A  
SUBDIVISION OF LOT 1 DP 115877 WAREWOOD ROAD  
WAREWOOD  
BSC LICENCE No 20388  
Unit 25 No 11 Romford Rd  
Kings Park, NSW 2148  
Telephone (02) 9671 6860  
Facsimile (02) 9671 4331  
BOL  
BOL  
BOL

Project No	2010 137	Drawing No	17of17A(a3)
Project Name	Integrated Housing Development		
Project Address	AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 106 IN A		
Project Suburb	WAREWOOD		
Project Date	28/8/2010		

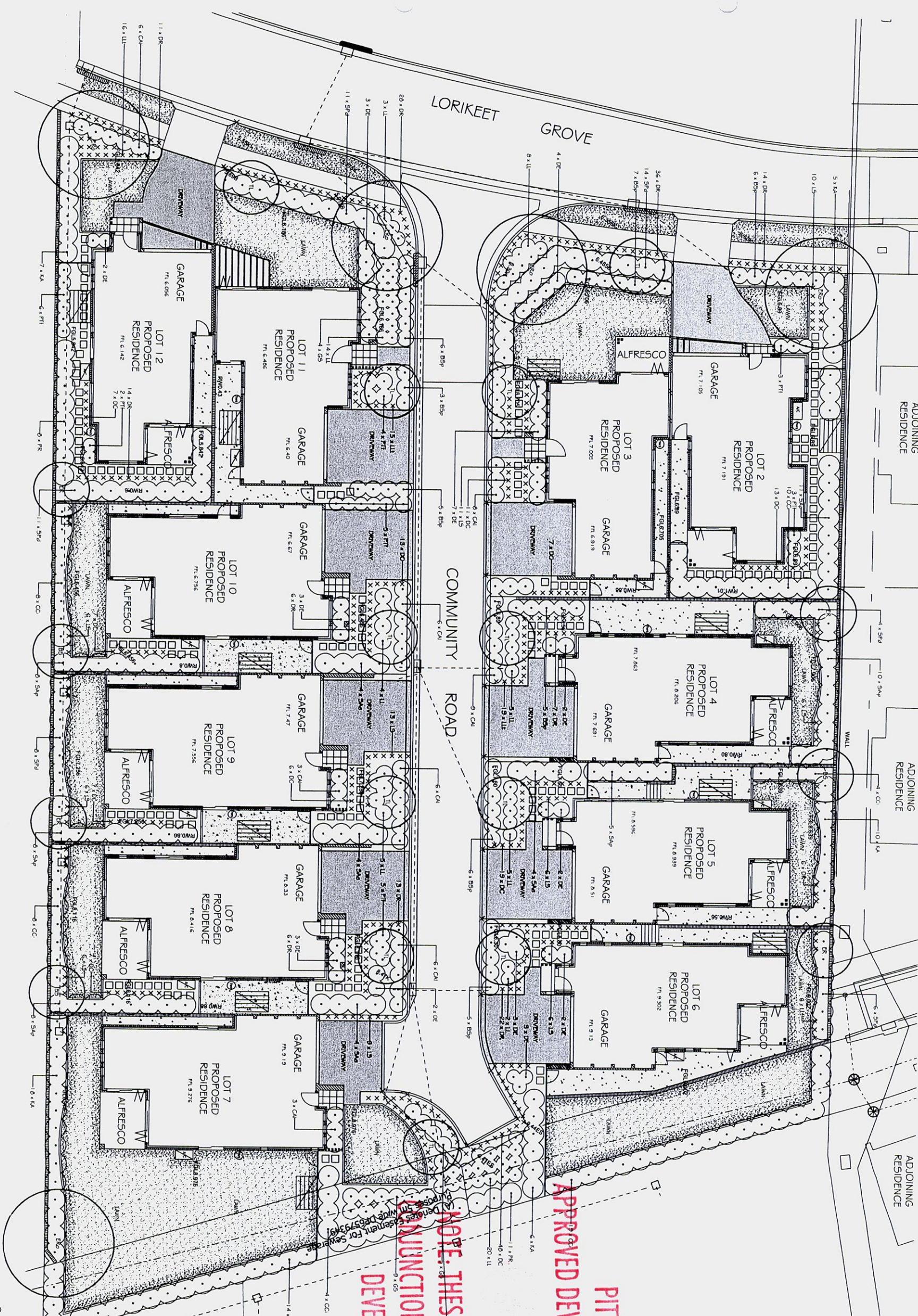
Table of Materials & Finishes
Cement rendered & painted brickwork
concrete rppf tiles as selected
aluminium framed windows as selected
Panel lift garage doors as selected
stainless steel balustrade as selected to comply with BCA requirements
aluminium framed sliding door as selected
Cement rendered & painted blueboard cladding
colorbond capping
aluminium framed silicone joined corner windows
aluminium framed glazed swing door as selected
metal deck roof sheeting as selected installed to manufacturers specifications
timber framed roof trusses to manufacturers specifications
sheet flooring on timber floor joists to manufacturers specifications
plasterboard wall & ceiling lining
selected timber entry door with glazed panels & aluminium framed highlight & sidelight
reinforced concrete slab to engineers details
blueboard lined timber awnings cement rendered & painted finish
aluminium framed bi-fold doors as selected



# SCHEDULE OF PLANT MATERIAL

CODE	BOTANICAL NAME	COMMON NAME	QUANTITY	MATURE HEIGHT	CONTAINER SIZE	STAKES
B5	Banksia serrata	White Banksia	3	1.5m	200mm	2
B5p	Banksia speciosa	White Banksia	47	1.5m	200mm	2
CA1	Cornus alba	White Cornus	47	1.5m	200mm	2
CA2	Cornus alternifolia	White Cornus	47	1.5m	200mm	2
CA3	Cornus canadensis	White Cornus	47	1.5m	200mm	2
CA4	Cornus florida	White Cornus	47	1.5m	200mm	2
CA5	Cornus rugosa	White Cornus	47	1.5m	200mm	2
CA6	Cornus stolonifera	White Cornus	47	1.5m	200mm	2
CA7	Cornus stricta	White Cornus	47	1.5m	200mm	2
CA8	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA9	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA10	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA11	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA12	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA13	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA14	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA15	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA16	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA17	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA18	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA19	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA20	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA21	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA22	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA23	Cornus xerophila	White Cornus	47	1.5m	200mm	2
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CA54	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA55	Cornus xerophila	White Cornus	47	1.5m	200mm	2
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CA61	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA62	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA63	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA64	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA65	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA66	Cornus xerophila	White Cornus	47	1.5m	200mm	2
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CA69	Cornus xerophila	White Cornus	47	1.5m	200mm	2
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CA71	Cornus xerophila	White Cornus	47	1.5m	200mm	2
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CA73	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA74	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA75	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA76	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA77	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA78	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA79	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA80	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA81	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA82	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA83	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA84	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA85	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA86	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA87	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA88	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA89	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA90	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA91	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA92	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA93	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA94	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA95	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA96	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA97	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA98	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA99	Cornus xerophila	White Cornus	47	1.5m	200mm	2
CA100	Cornus xerophila	White Cornus	47	1.5m	200mm	2

The majority of the plants in this schedule have been selected from a list of Plant Species for Landscape Development with the Waterwood Valley Urban Release Area Masterplan and Design Guidelines.



**NOTES**

This plan is to be read in conjunction with all documentation prepared by L.L. New & Associates.

**Integrated Housing Development**

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**client**  
ABAX Contracting

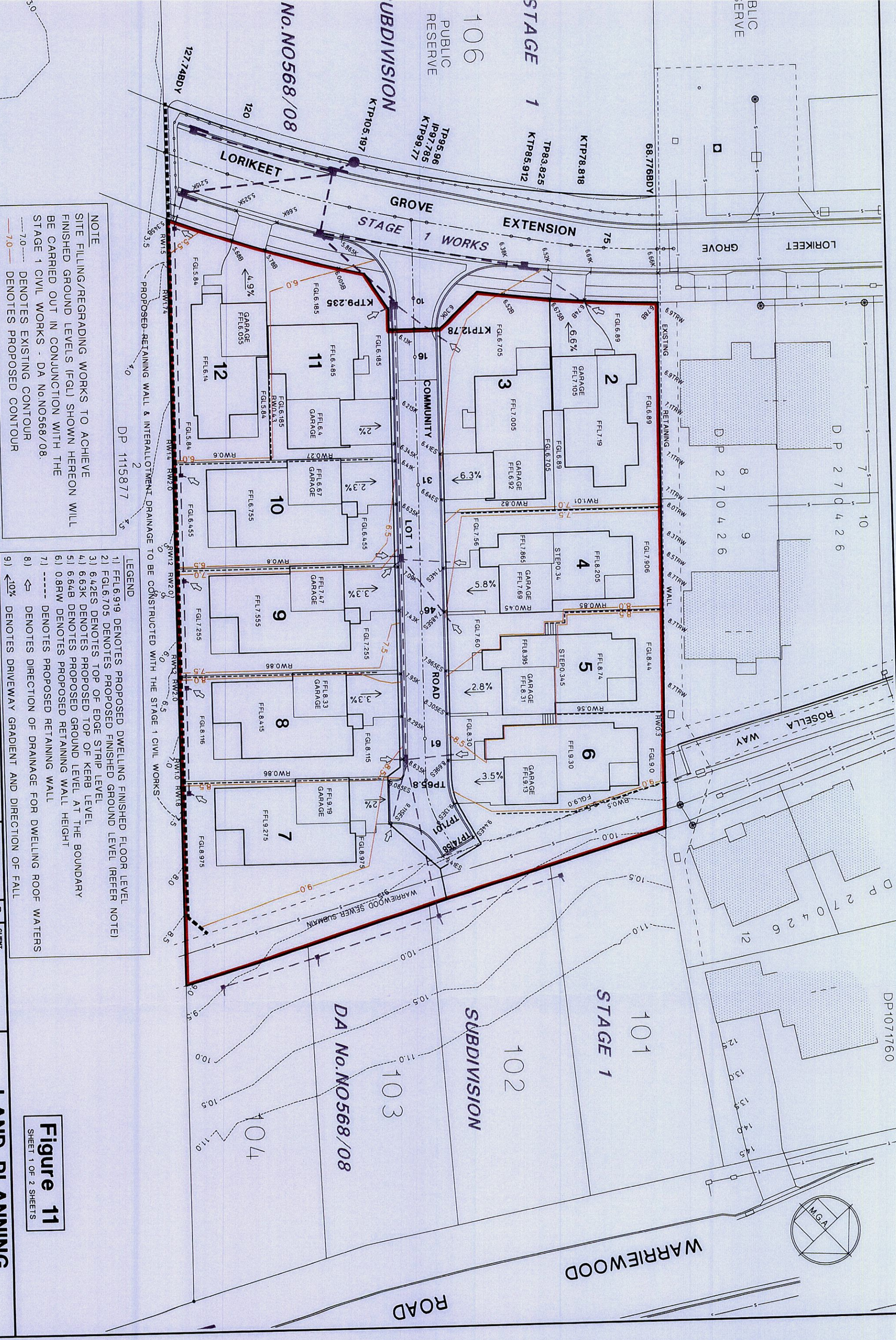
**date**  
August 2010

**scale**  
1:100 @ A2

**job no.**  
150.10252

**drawn by**  
AM





**NOTE**  
SITE FILLING/REGRAVING WORKS TO ACHIEVE FINISHED GROUND LEVELS (FGL) SHOWN HEREON WILL BE CARRIED OUT IN CONJUNCTION WITH THE STAGE 1 CIVIL WORKS - DA No.0568/08.  
7.0 --- DENOTES EXISTING CONTOUR  
7.0 --- DENOTES PROPOSED CONTOUR

- LEGEND**
- 1) FFL6.919 DENOTES PROPOSED DWELLING FINISHED FLOOR LEVEL
  - 2) FGL6.705 DENOTES PROPOSED FINISHED GROUND LEVEL (REFER NOTE)
  - 3) 6.42ES DENOTES TOP OF EDGE STRIP LEVEL
  - 4) 6.63K DENOTES PROPOSED TOP OF KERB LEVEL
  - 5) 6.64B DENOTES PROPOSED GROUND LEVEL AT THE BOUNDARY
  - 6) 0.8RW DENOTES PROPOSED RETAINING WALL HEIGHT
  - 7) --- DENOTES PROPOSED RETAINING WALL
  - 8) --- DENOTES DIRECTION OF DRAINAGE FOR DWELLING ROOF WATERS
  - 9) 10% --- DENOTES DRIVEWAY GRADIENT AND DIRECTION OF FALL

**Figure 11**  
SHEET 1 OF 2 SHEETS

DESIGNED SJP		DATE		SCALE		JOB No. 22441		CLIENT		LAND PLANNING	
DRAWN SJP		DATE		A1 - 1:200 A3 - 1:400		DATE 2 SEPT 2008		ABAX Contracting Pty Ltd.		LOT 105 LORIKEET GROVE	
APPROVED		DATE		AUG 2010		DATE 2 SEPT 2008		PROPERTY DESCRIPTION Lot 1 DP1115877 No. 105 Lorikeet Grove Warriewood		DA No. 0568/08	
AMENDMENT		DATE		AUG 2010		DATE 2 SEPT 2008		PROJECT NO. 22441-152-LP		DA No. 0568/08	
REVISIONS		DATE		AUG 2010		DATE 2 SEPT 2008		PROJECT NO. 22441-152-LP		DA No. 0568/08	
ORIGINAL ISSUE		DATE		AUG 2010		DATE 2 SEPT 2008		PROJECT NO. 22441-152-LP		DA No. 0568/08	







Drawing Title	
WASTE MANAGEMENT PLAN	
Scale: as noted	Date:
Status: DA	Checked By:
Project No: 2010:137	Layout No: 20f17A
Print Date: 31/08/2010	

Figure 15

**SOIL, WATER & WASTE  
MANAGEMENT PLAN**  
**LOT 105 LORIKEET GROVE**

DATE: 2 SEPT 2010 PLAN NO.22441/SWW

The holder shall check and verify all dimensions and levels and verify all work and construction to the plan and shall be responsible for any errors. Changes and additions shall be made by the holder and shall be signed by the holder for construction.

All works to be set out by registered surveyor.

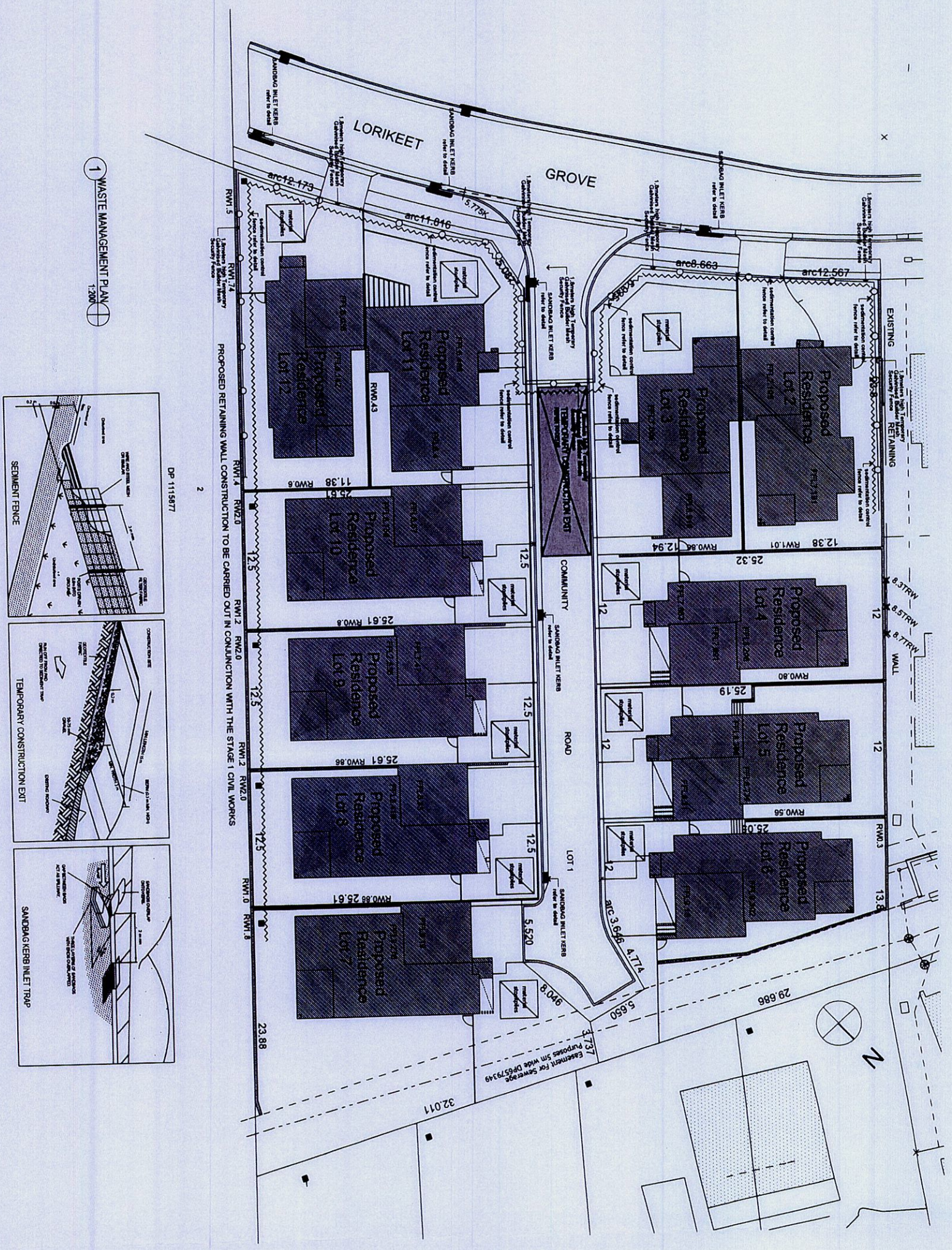
**I.L. New & Associates MBDA NSW**  
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Kings Park, NSW 2146  
Telephone: (02) 9671 6660  
Facsimile: (02) 9671 4331



For:  
**ABAX Contracting**  
Project Name:  
**Integrated Housing Development**  
AT THE PROPOSED SUBDIVISION OF PROPOSED LOT 105 IN A  
SUBDIVISION OF LOT 1 DP 1115877 WARRIEWOOD ROAD,  
WARRIEWOOD

Drawing Title:  
**WASTE MANAGEMENT PLAN**

Scale: as noted	Date:
Status: DA	Checked By:
Project No: 2010:137	Layout No: 20f17A
Print Date: 31/08/2010	



1 WASTE MANAGEMENT PLAN  
1:200









# SEKISUI HOUSE

## LOT 5, LORIKEET GROVE & LOTS 6-13, ROAD 01, WARRIEWOOD NSW 2102 INTEGRATED HOUSING STAGE 01

### DRAWING SCHEDULE

DRAWING NUMBER	DESCRIPTION
220122-01-DA-C01.01	COVER SHEET AND DRAWING SCHEDULE
220122-01-DA-C01.21	SPECIFICATION NOTES
220122-01-DA-C03.01	GENERAL ARRANGEMENT PLAN
220122-01-DA-C03.01	EROSION AND SEDIMENTATION CONTROL PLAN
220122-01-DA-C03.21	EROSION AND SEDIMENTATION CONTROL DETAILS
220122-01-DA-C04.01	BULK EARTHWORKS CUT AND FILL PLAN
220122-01-DA-C04.21	BULK EARTHWORKS CUT AND FILL SECTIONS
220122-01-DA-C05.01	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 1
220122-01-DA-C05.02	SITEWORKS AND STORMWATER MANAGEMENT PLAN - SHEET 2
220122-01-DA-C14.01	SITEWORKS DETAILS
220122-01-DA-C21.01	CATCHMENT PLAN

REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPD
1	19/12/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	MC	

Client


  
**SEKISUI HOUSE**

  
ISO 9001 QUALITY

  
ISO 14001 ENVIRONMENTAL

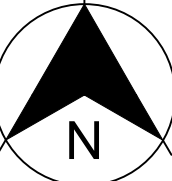
  
ISO 45001 SAFETY

Scale

  
SCALE 1:1500 @A1

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Scale 1:1500	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
First Issue Date 19/12/2024	Project Number/Drawing Number 220122-01-DA-C01.01
Size A1	Revision 1
Datum MGA2020	



1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL STANDARDS.
2. NORTHERN BEACHES COUNCIL STANDARDS DETAILS TO BE USED WHERE POSSIBLE.
3. UTILITY ADJUSTMENTS AT DEVELOPERS EXPENSE.
4. CONDUITS TO BE PLACED WHERE REQUIRED BY THE RELEVANT AUTHORITIES.

1. ORIGIN OF SURVEY

PROJECT:	53A WARRIEWOOD ROAD	DATE: 02/01/2021
CARRIED OUT BY:	COLLIERS	
SURVEY NAME:	434-20C T01 [02]	
REFERENCE NO:	434-20	
SSM/PM:	SSM 24840	
E:	342191.825	
N:	36271409.780	
RL:	13.902	
2. THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN SUPPLIED BY REGISTERED SURVEYORS TO PROVIDE A BASIS FOR DESIGN. THE USE OF THIS SURVEY BASE DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
3. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT THE SUPERINTENDENT.
4. THE RELATIONSHIP OF IMPROVEMENTS TO BOUNDARIES ARE DIAGRAMMATIC ONLY. WHERE DISTANCES TO BOUNDARIES ARE CRITICAL THEY SHOULD BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION BY FURTHER SURVEY.



## GENERAL INSTRUCTIONS

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONTROL OF EROSION AND SEDIMENTATION TO THE SATISFACTION OF COUNCIL, NSW OFFICE OF WATER, OFFICE OF ENVIRONMENT AND HERITAGE. THE EROSION AND SEDIMENTATION CONTROLS SHOWN ON THE DRAWINGS SHALL ONLY BE USED AS A GUIDE BY THE CONTRACTOR, AND SHALL REPRESENT THE MINIMUM REQUIREMENT ONLY.
2. THE CONTRACTOR SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED TO SUIT CONSTRUCTION STAGING AND WORK PRACTICES OR AS OTHERWISE DIRECTED BY THE SUPERINTENDENT.  
ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
  - a. LOCAL AUTHORITY REQUIREMENTS
  - b. EPA REQUIREMENTS
  - c. LANDCOM MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th edition, MARCH 2004.
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
5. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

6. WHERE PRACTICAL, THE SOIL RESURFACE HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:

- a. INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
- b. CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
- c. INSTALL SEDIMENT BASIN AS SHOWN ON PLAN, INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
- d. UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

9. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSTREAM WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.
13. ACCEPTOR RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH SECTION 4 OF AS4970 'PROTECTION OF TREES ON DEVELOPMENT SITES' AND COUNCIL CONSENT CONDITIONS.

1. AT THE COMMENCEMENT OF THE CUT AND FILLING OPERATIONS FOR BULK EARTHWORKS A GEOTECHNICAL ENGINEER IS TO VISIT THE SITE & CONFIRM THE SUITABILITY OF THE METHODOLOGY OF ACHIEVING THE REQUIRED BUILDING PLATFORMS AND COMPACTION REQUIREMENTS. SUBSEQUENTLY, THE HEAD CONTRACTOR IS TO CONFIRM, IN WRITING TO THE SUPERINTENDENT THAT THE METHODOLOGY APPROVED AT THE TIME OF THE GEOTECHNICAL ENGINEERS VISIT WAS MAINTAINED DURING ALL THE BULK EARTHWORKS PROCESS.
2. STRIP TOPSOIL, ORGANIC MATTER AND RUBBLE FROM CONSTRUCTION AREA TO EXPOSE NATURALLY OCCURRING MATERIAL AND STOCKPILE ON SITE AS DIRECTED BY THE SUPERINTENDENT.
3. WHERE FILLING, STRUCTURAL SLABS OR PAVEMENTS ARE REQUIRED, PROOF ROLL THE EXPOSED NATURAL SURFACE WITH A MINIMUM OF TEN PASSES OF A SMOOTH DRUM NON-VIBRATING ROLLER (MINIMUM STATIC WEIGHT OF 10 TONNES) TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER) IN THE PRESENCE OF THE SUPERINTENDENT. THE CONTRACTOR IS TO ALLOW TO REMOVE AND REPLACE A PROVISIONAL QUANTITY OF UNSUITABLE SUBGRADE MATTER.
4. ALL SOFT, WET OR UNSUITABLE MATERIAL IS TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.
5. EXCAVATED MATERIAL IS NOT TO BE USED AS STRUCTURAL FILL UNLESS APPROVED BY THE GEOTECHNICAL ENGINEER.
6. THE CONTRACTOR IS TO PROVIDE CERTIFICATES VERIFYING THE QUALITY OF IMPORTED MATERIAL FOR THE SUPERINTENDENTS APPROVAL.
7. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM LAYER THICKNESS TO COUNCIL SPECIFICATIONS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+/- 0.2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289 E3.1 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 E3.1.1.1:

<u>LOCATION</u>	<u>COMPACTION REQUIREMENT</u>
UNDER BUILDING SLABS	98% SMDD
LANDSCAPED AREAS	95% SMDD
ROADS & PAVED AREAS	100% SMDD

- FOR NON COHESIVE MATERIAL, COMPACT TO NOT LESS THAN  
UNDER ROAD 80% DENSITY  
OTHER AREA 75% DENSITY
9. THE CONTRACTOR IS TO ALLOW FOR COMPACTION TESTING BY NATA REGISTERED LABORATORY FOR PLATFORMS AND FILL LAYERS IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 - FOR TYPE 1 OPERATIONS (MINIMUM 3 TESTS PER LAYER);
10. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN:  
A. 1 TEST PER 200m<sup>2</sup> OF FILL PLACED PER LAYER OF FILL  
B. 3 TESTS PER VISIT  
C. 1 TEST PER 1000m<sup>2</sup> OF EXPOSED SUBGRADE
11. TESTING SHALL BE "LEVEL 1" UNDERTAKEN IN ACCORDANCE WITH AS3798.
12. WHERE TEST RESULTS ARE BELOW THE SPECIFIED COMPACTION, RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION STANDARD IS ACHIEVED.
13. ALLOW FOR EXCAVATION IN ALL MATERIALS AS FOUND U.N.O. NO ADDITIONAL PAYMENTS WILL BE MADE FOR EXCAVATION IN WET OR HARD GROUND.
14. WHERE THERE IS INSUFFICIENT EXCAVATED MATERIAL SUITABLE FOR FILLING OR SUBGRADE REPLACEMENT, THE CONTRACTOR IS TO ALLOW TO IMPORT FILL. IMPORTED FILL SHALL COMPLY WITH THE FOLLOWING:  
A. MAXIMUM SIZE 50mm. PASSING 75 MICRON SIEVE (<25%).  
B. PLASTICITY INDEX BETWEEN 2-15% AND CBR-8.  
C. FREE FROM ORGANIC AND PERISHABLE MATTER.
15. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED AT THEIR COST.
16. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE AND MAINTAIN THE INTEGRITY OF ALL SERVICES, CONDUITS AND PIPES DURING CONSTRUCTION, SPECIFICALLY DURING THE BACKFILLING AND COMPACTION PROCEDURE. ANY AND ALL DAMAGE TO NEW OR EXISTING SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST.
17. PROTECT FINAL SURFACE WITH EITHER A TEMPORARY LOOSE SOIL LAYER OR A GRANULAR SUB-BASE LAYER TO PREVENT DRYING OUT PRIOR TO ON-GROUND SLAB CONSTRUCTION.

1. ALL WORKS TO BE IN ACCORDANCE WITH LOCAL AUTHORITY REQUIREMENTS, SPECIFICATIONS AND AUSTRALIAN STANDARDS. CONFLICTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO THE SUPERINTENDENT.
3. THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH TNSW AND LOCAL AUTHORITY REGULATIONS AND REQUIREMENTS.
4. THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED.
5. RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION ON COMPLETION OF WORKS.
6. ON COMPLETION OF ANY TRENCHING WORKS, ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL, GRASSED AREAS AND ROAD PAVEMENTS.
7. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
8. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO LODGMENT OF TENDER AND ON SITE WORKS. THE PRICE AS TENDERED SHALL BE INCLUSIVE OF ALL WORKS SHOWN ON THE TENDER PROJECT DRAWINGS. ADDITIONAL PAYMENTS FOR WORKS SHOWN ON THE TENDER PROJECT DRAWINGS WILL NOT BE APPROVED.
9. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS AND SPECIFICATIONS, AND ANY OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT OF THE SUBJECT SITE.
10. THESE PLANS SHALL BE READ IN CONJUNCTION WITH ALL APPROVED DRAWINGS AND SPECIFICATIONS PREPARED BY OTHER PROJECT CONSULTANTS.
11. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETERS (mm) AND ALL LEVELS ARE IN METRES (m). UNO. ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM (AHD).
12. IN CASE OF DOUBT OR DISCREPANCY REFER TO THE SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. OTHERWISE THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REMEDIATION WORKS.
13. WHERE NEW WORKS ABOUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
14. THE CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.
15. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO ALL BUILDINGS ADJACENT THE WORKS IS NOT DISRUPTED.
16. WHERE NECESSARY THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.
17. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.
18. ALL VARIATIONS TO SPECIFIED PRODUCTS OR DESIGNS SHALL BE REFERRED TO THE DESIGN ENGINEER IN WRITING FOR APPROVAL.
19. EPA AND COUNCIL REQUIREMENTS MUST BE ADHERED TO REGARDING THE LEVEL OF NOISE AND WORKING HOURS, TO ENSURE THAT RESIDENTS AND OTHER APPLICABLE NEIGHBOURS TO THE SITE ARE NOT DISTURBED UNREASONABLY. THE GENERATION OF NOISE MUST BE MINIMISED.

1. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 AND AS/NZS 3500 3.2.
2. SUBSOIL DRAINAGE LINES SHALL BE INSTALLED BEHIND ALL KERBS EXCEPT WHERE STORMWATER DRAINAGE IS LOCATED ALONG THE KERBLINE.
3. A MINIMUM OF 3m OF SUBSOIL LINE SHALL BE LAID INTO UPSTREAM SIDE OF ALL DRAINAGE PITS.
4. FLUSHING POINTS SHALL BE INSTALLED TO COUNCIL SPECIFICATION
5. PIPES UP TO 300 DIA SHALL BE SEWER GRADE uPVC (CLASS SN4) WITH SOLVENT WELDED JOINTS.
6. PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE MIN CLASS 2" APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.
7. ALL PIPES ARE TO BE LAID AT (min) 1.0% GRADE (UNO)
8. ALL PIPES ARE TO BE UNIFORMLY SUPPORTED ALONG THE LENGTH OF THE BARREL BY SUITABLE FILL MATERIAL. REFER TO BEDDING SUPPORT TYPE.
9. PIPES WITH SOCKETS SHALL BE LAID IN BEDDING WHERE SUITABLE RECESSES HAVE BEEN PROVIDED TO ENSURE PIPES DO NOT BEAR ON THEIR SOCKETS.
10. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
11. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE
12. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT.
13. WHERE WORKING METHODS REQUIRE HIGHER CLASS PIPE, THE CONTRACTOR SHALL REFER TO AS 3725 TO DETERMINE THE APPROPRIATE PIPE CLASS. ANY CHANGES IN PROPOSED PIPE CLASS SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO INSTALLATION.
14. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
15. PRECAST PITS MAY BE USED SUBJECT TO WRITTEN APPROVAL BY THE SUPERINTENDENT.
16. ALL PIPE PENETRATIONS (EXISTING, IN-SITU AND PRECAST) ARE TO BE FINISHED FLUSH WITH THE INTERNAL PIT WALL AND PROPERLY SEALED WITH CEMENT RENDER. MASS CONCRETE BENCHING IS TO BE INSTALLED TO MATCH THE OUTLET PIPE INVERT LEVEL AND A LOCKABLE HINGED GRATE AND FRAME WITH CONCRETE SURROUND INSTALLED U.N.O.

**7. COVERS**

- A. USE HOT DIPPED GALVANISED GRATES AND CONCRETE FILLED COVERS WITH HINGES AND HOLD DOWN BOLTS COMPLYING WITH AS3996 AND OTHER RELEVANT AUSTRALIAN AND COUNCIL STANDARDS.
- B. ALL COVERS AND GRATES TO BE POSITIONED IN A FRAME AND MANUFACTURED AS A UNIT.
- C. ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS.
- D. OBTAIN SUPERINTENDENTS APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPEMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.
- E. UNLESS DETAILED OR SPECIFIED OTHERWISE COVERS AND GRATES TO BE CLASS "D" IN VEHICULAR PAVEMENTS AND CLASS "B" ELSEWHERE.

18. NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH IS 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER.

19. Ø100mm SUB-SOIL DRAINAGE LINES SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT AND PROVIDED IN THE FOLLOWING LOCATIONS:

- A. ADJACENT ALL TRAFFICKED AND CARPARK PAVEMENT AREAS (BEHIND KERB);
- B. ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS;
- C. BEHIND RETAINING WALLS (IN ACCORDANCE WITH DRAWINGS);
- D. BELOW ALL TRAFFICABLE DISH DRAINS;
- E. ALL OTHER AREAS SHOWN ON THE DRAWINGS.

20. THE CONTRACTOR SHALL INSTALL FLUSHING POINTS TO ALL SUBSOIL DRAINAGE LINES AND DOWNPIPE LINES AS SPECIFIED ON DRAWINGS, AT MAXIMUM CENTRES TO COUNCIL SPECIFICATION AND AT ALL UPSTREAM ENDPNTS.



21. PROVIDE 3.0m LENGTH OF Ø100 SUBSOIL DRAINAGE PIPE WRAPPED IN A NON-WOVEN GEOTEXTILE FABRIC, TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO THE DRAINAGE PIT.

22. SUBSOIL TRENCHES SHALL BE BACKFILLED WITH SINGLE SIZED 10mm AGGREGATE WRAPPED IN NON-WOVEN GEOTEXTILE FABRIC. SUBSOIL TRENCHES BELOW TRAFFICABLE PAVEMENTS SHALL BE BACKFILLED WITH NO FINES CONCRETE WRAPPED IN NON-WOVEN GEOTEXTILE FABRIC, U.N.O.

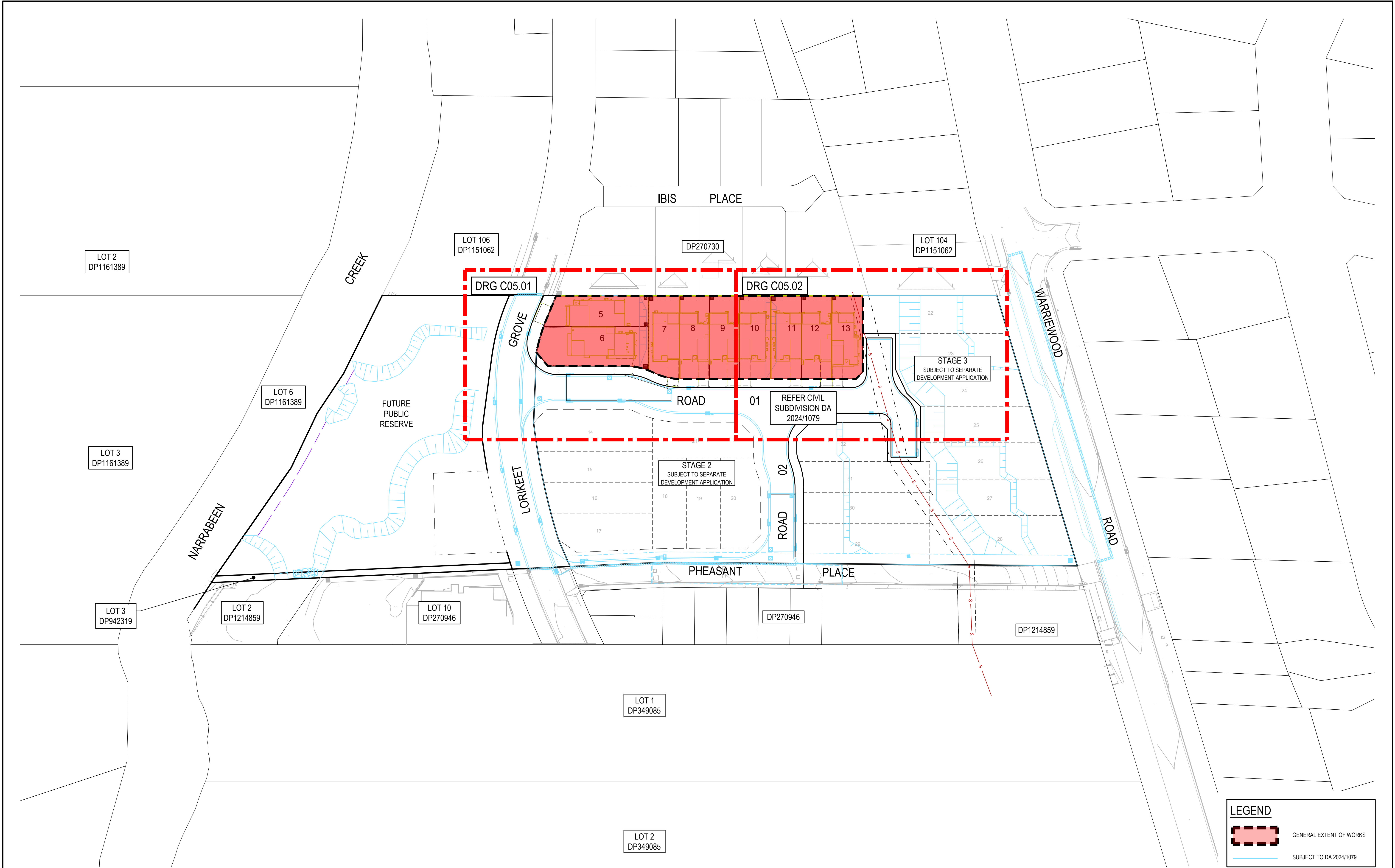
23. ALL RECTANGULAR HOLLOW SECTIONS (RHS) SPECIFIED AS STORMWATER CONDUITS TO BE HOT DIPPED GALVANISED AND HAVE (MINIMUM) 5mm WALL THICKNESS.

24. ALL BOX CULVERTS SHALL BE STRUCTURALLY DESIGNED BY THE MANUFACTURER AND DELIVERED TO SITE AS FIT FOR PURPOSE.
25. ELECTRICAL PITS ARE TO DRAIN TO THE NEAREST STORMWATER PIT WITH VERMIN PROOF NON-RETURN FLAP VALVES AS REQUIRED. THE CONTRACTOR IS TO CONFORM WITH THE ELECTRICAL DESIGNER AS PART OF THE TENDER.
26. THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.
27. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
28. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED DURING THIS PROCESS. ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.
29. ANY VARIATION TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE SUPERINTENDENT FOR APPROVAL.


1. ALL PAVEMENT MATERIALS SHALL COMPLY WITH CURRENT TNSW SPECIFICATIONS. PROVIDE MECHANICAL ANALYSIS FOR EACH BATCH OF PAVEMENT MATERIAL TO ENSURE CONFORMITY.
2. COMPACTION STANDARDS:
  - A) BASE: 98% MODIFIED MAXIMUM DRY DENSITY
  - B) SUBBASE: 98% MODIFIED MAXIMUM DRY DENSITY
3. THE CONTRACTOR SHALL CONFIRM THE DESIGN CBR WITH A MINIMUM OF 3 TESTS TAKEN AT SUBGRADE LEVEL, WHERE DISCREPANCY IS FOUND, CONTACT THE SUPERINTENDENT.
4. ALLOW FOR COMPACTION TESTING BY NATA REGISTERED LABORATORY FOR: BASE LAYER, SUBGRADE LAYER, SUBGRADE IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 FOR PAVEMENTS. ALLOW FOR AT LEAST TWO SUCCESSFUL COMPACTION TESTS IN EACH LAYER.
5. MATCH NEW PAVEMENT LAYERS NEATLY AND FLUSH WITH EXISTING WHERE REQUIRED.
6. KEY NEW BASE AND SUBBASE LAYERS INTO EXISTING WITH 150mm WIDE STEPS. ASPHALTIC CONCRETE WEARING COURSE IS TO EXTEND 150mm (MIN) PAST BASECOURSE INTERFACE.
7. TRENCHES DURING EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.
8. ALL ASPHALTIC CONCRETE (AC) WORK TO BE PREPARED AND CARRIED OUT IN ACCORDANCE WITH GOOD ASPHALTIC PAVING PRACTICE AS DESCRIBED IN AS2734 "ASPHALT (HOT-MIXED) PAVING - GUIDE TO GOOD PRACTICE" AND CURRENT TNSW SPECIFICATIONS (R16).
9. WHERE NOMINATED, THE CONTRACTOR SHALL ALLOW FOR ALL COMPONENTS OF PROPRIETARY JOINTING SYSTEMS INCLUDING FIXING, TEMPLATES & PEGGING TO ENSURE THAT ALL DOWEL BARS REMAIN IN THE CORRECT ALIGNMENT AND POSITION.
10. ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH TNSW. SPECIFICATION 3051, COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m<sup>2</sup> OF BASECOURSE MATERIAL PLACED.
11. ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH TNSW. SPECIFICATION 3051, AND COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m<sup>2</sup> OF SUB-BASE COURSE MATERIAL PLACED.
12. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL IN (11) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH TNSW. SPECIFICATION 3051 WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF THE COUNCIL ENGINEER.
13. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.


										<div><div></div><div>SEKISUI HOUSE</div></div>										<div><div>Project</div><div>Scale</div><div>North</div></div>										<div><div></div><div>Enspire Solutions Pty Ltd Level 4, 153 Walker Street, North Sydney NSW 2060 ABN: 71 624 801 690 Phone: 02 9922 6135</div></div>										<div><div>Project</div><div>Date</div><div>Size</div><div>Datum</div></div>										<div><div>Status</div><div>Project Number/Drawing Number</div><div>Revision</div></div>									
																				53A & 53B WARRIEWOOD ROAD WARRIEWOOD NSW 2102 INTEGRATED HOUSING STAGE 01										N.T.S 19/12/2024 A1 MGA2020										FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION 220122-01-DA-C01.21 1																			
1 19/12/2024 ISSUED FOR DEVELOPMENT APPLICATION																				The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.																																							
REV. DATE DESCRIPTION										DRN. DES. VERIF. APPD.																																																	





**LEGEND**

 GENERAL EXTENT OF WORKS

 SUBJECT TO DA 2024/1079

REV	DATE	DESCRIPTION	SS	TPB	MC
1	19/12/2024	ISSUED FOR DEVELOPMENT APPLICATION			

Client



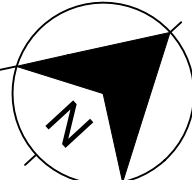
**SEKISUI HOUSE**

Scale

0 10 20 30 40 50m

SCALE 1:500 @A1

North



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Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
INTEGRATED HOUSING STAGE 01

Title  
GENERAL ARRANGEMENT PLAN

Scale  
1:500

Date  
19/12/2024

Size  
A1

Datum  
MGA2020

Status  
**FOR INFORMATION ONLY**  
NOT TO BE USED FOR CONSTRUCTION

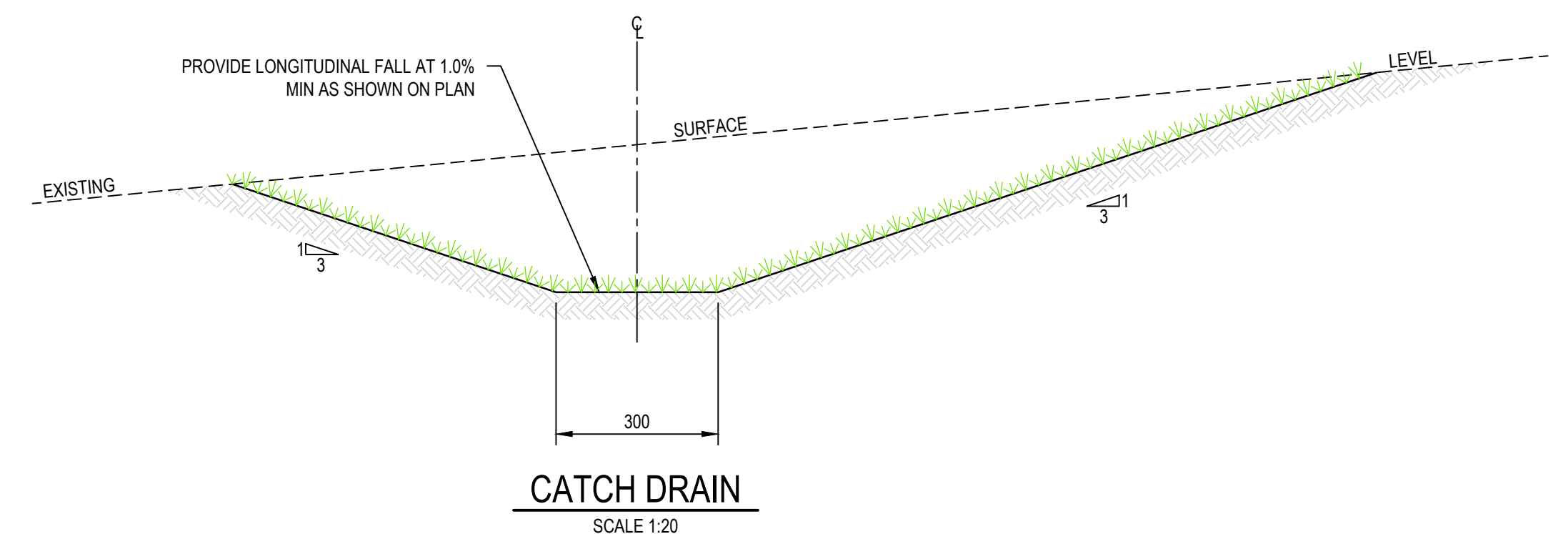
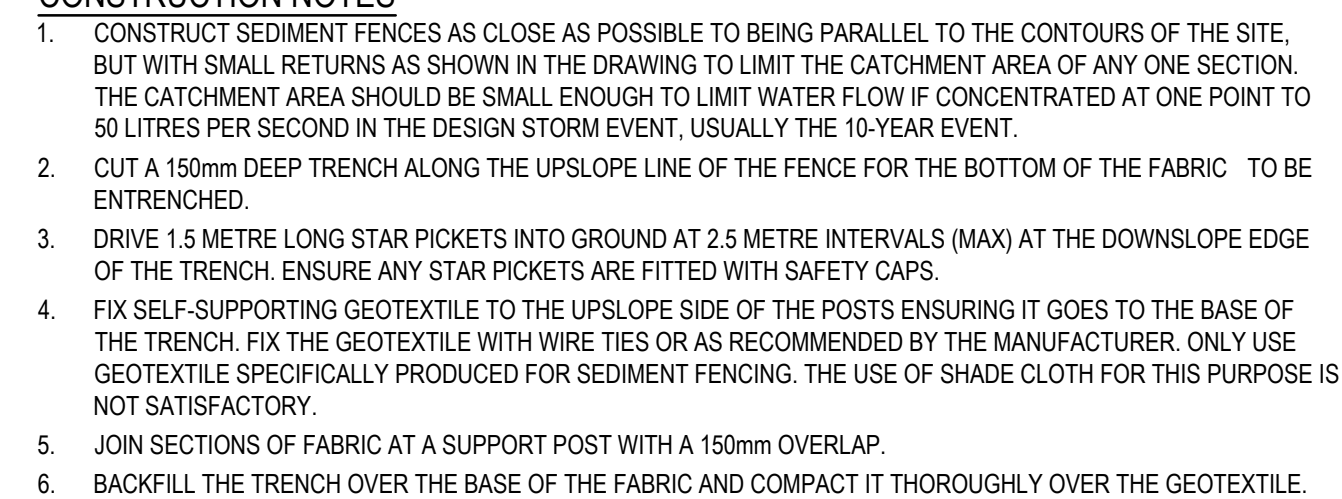
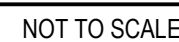
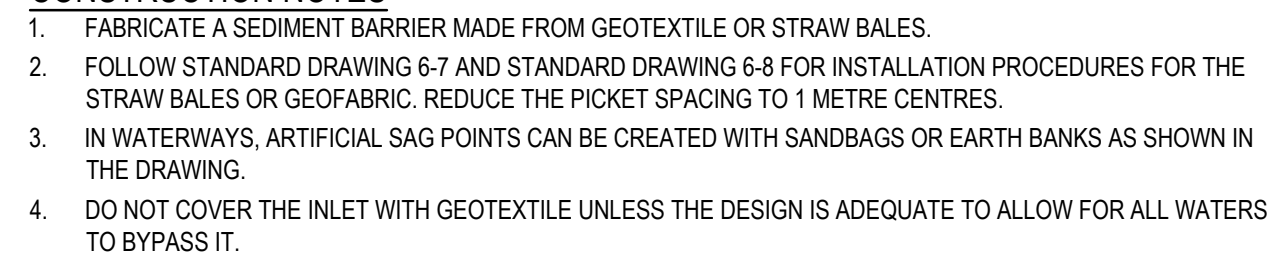
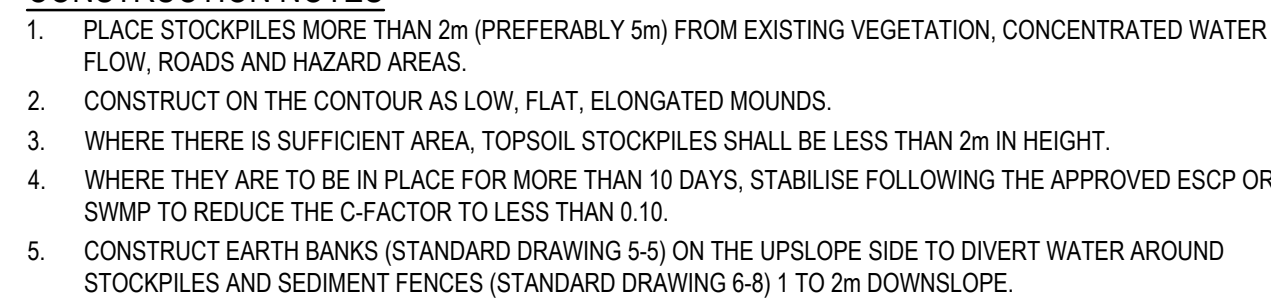
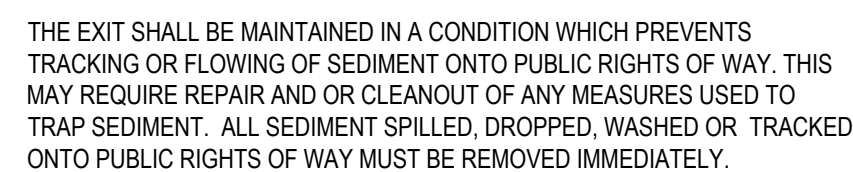
Project Number/Drawing Number  
**220122-01-DA-C01.41**

Revision  
**1**









Status	
FOR INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION	
Project Number/Drawing Number	Revision
220122-01-DA-C03.21	1





**LEGEND**

[Orange]	1.5m TO 2.0m CUT
[Dark Orange]	1.0m TO 1.5m CUT
[Red]	0.5m TO 1.0m CUT
[Light Orange]	0.0m TO 0.5m CUT
[Yellow]	0.0m TO 0.5m FILL
[Light Green]	0.5m TO 1.0m FILL
[Green]	1.0m TO 1.5m FILL
[Dark Green]	1.5m TO 2.0m FILL
[Blue]	2.0m TO 2.5m FILL
[Dark Blue]	GREATER THAN 2.5m FILL

**NOTES**

- NO ALLOWANCE HAS BEEN MADE FOR BULKING FACTORS. NOTE ALL VOLUMES DEPICTED ARE SOLID VOLUMES ONLY AND MAY NOT REFLECT DETAILED EARTHWORKS.
- NO ALLOWANCE HAS BEEN MADE FOR DETAILED EARTHWORKS, ie SERVICE TRENCHING, DETAILED EXCAVATION AND THE LIKE.
- APPROXIMATE BULK EARTHWORKS VALUES AS FOLLOWS:  
CUT 380m³  
FILL 66m³  
BALANCE 314m³ (EXPORT)
- VOLUMES BASED ON:  
i. DESIGN SURFACE UNDER DA 2024/1079.  
ii. PRELIMINARY BULK EARTHWORKS SURFACE  
iii. PADS: 435mm BELOW FFL.  
iv. EXTERNAL AREAS: 150mm TOP SOIL
- EXCAVATED MATERIAL TO BE ASSESSED DURING DETAILED DESIGN TO CONFIRM SUITABILITY FOR REUSE ON SITE.

REV.	DATE	DESCRIPTION	SS	TPB	MC
1	19/12/2024	ISSUED FOR DEVELOPMENT APPLICATION			

Client

SEKISUI HOUSE

Scale

SCALE 1:200 @A1

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Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
INTEGRATED HOUSING STAGE 01

Title  
BULK EARTHWORKS  
CUT AND FILL PLAN

Scale  
1:200  
First Issue Date  
19/12/2024

Size  
A1  
Datum  
MGA2020

Status  
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NOT TO BE USED FOR CONSTRUCTION

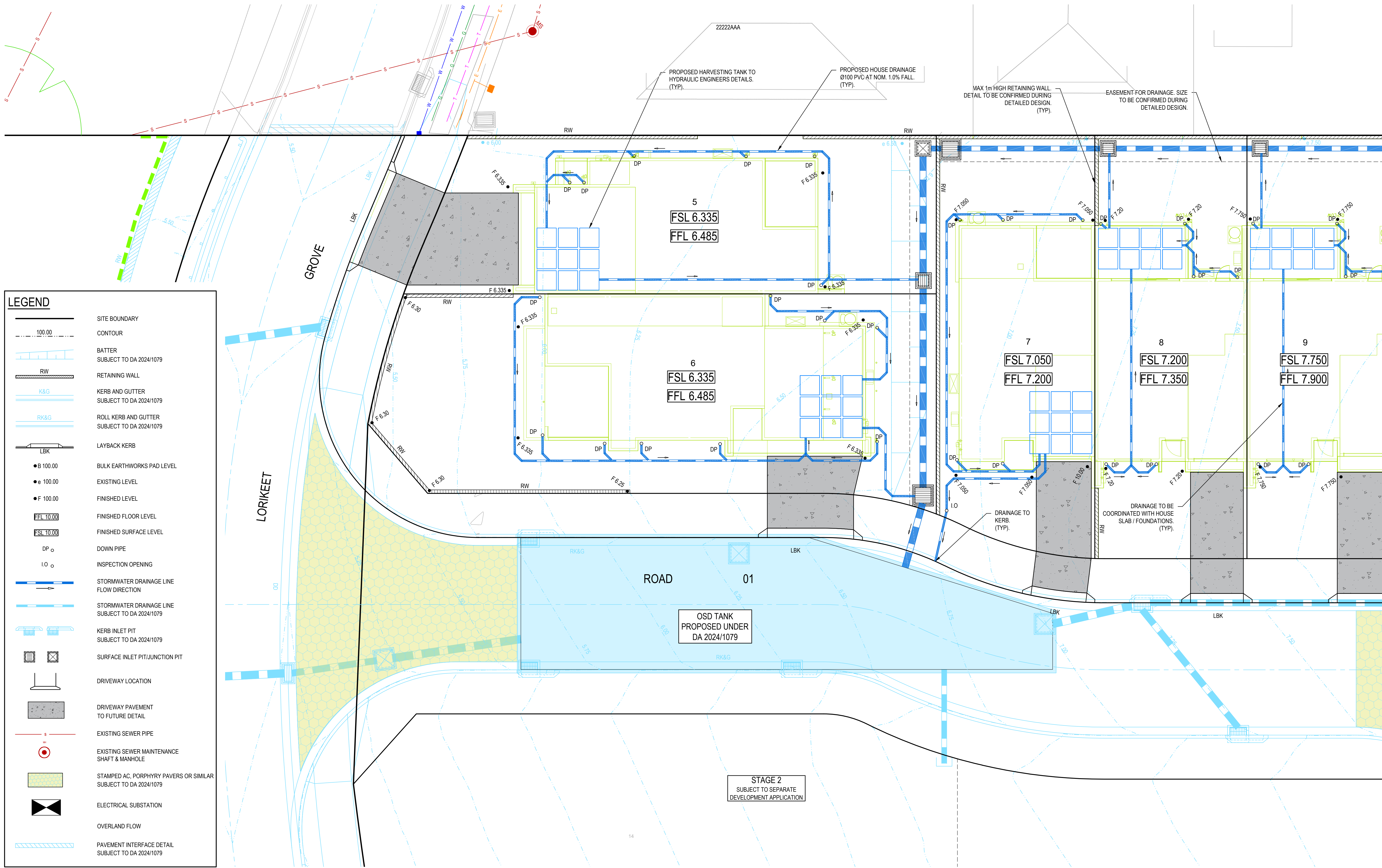
Project Number/Drawing Number  
**220122-01-DA-C04.01**

Revision  
**1**









**LEGEND**

	SITE BOUNDARY
	CONTOUR
	BATTER SUBJECT TO DA 2024/1079
	RETAINING WALL
	KERB AND GUTTER SUBJECT TO DA 2024/1079
	ROLL KERB AND GUTTER SUBJECT TO DA 2024/1079
	LAYBACK KERB
	BULK EARTHWORKS PAD LEVEL
	EXISTING LEVEL
	FINISHED LEVEL
	FINISHED FLOOR LEVEL
	FINISHED SURFACE LEVEL
	DOWN PIPE
	INSPECTION OPENING
	STORMWATER DRAINAGE LINE FLOW DIRECTION
	STORMWATER DRAINAGE LINE SUBJECT TO DA 2024/1079
	KERB INLET PIT SUBJECT TO DA 2024/1079
	SURFACE INLET PIT/JUNCTION PIT
	DRIVEWAY LOCATION
	DRIVEWAY PAVEMENT TO FUTURE DETAIL
	EXISTING SEWER PIPE
	EXISTING SEWER MAINTENANCE SHAFT & MANHOLE
	STAMPED AC, PORPHYRY PAVERS OR SIMILAR SUBJECT TO DA 2024/1079
	ELECTRICAL SUBSTATION
	OVERLAND FLOW
	PAVEMENT INTERFACE DETAIL SUBJECT TO DA 2024/1079

1	19/12/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	MC
REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF./APPD.

Client

**SEKISUI HOUSE**

Scale

SCALE 1:100 @A1

North

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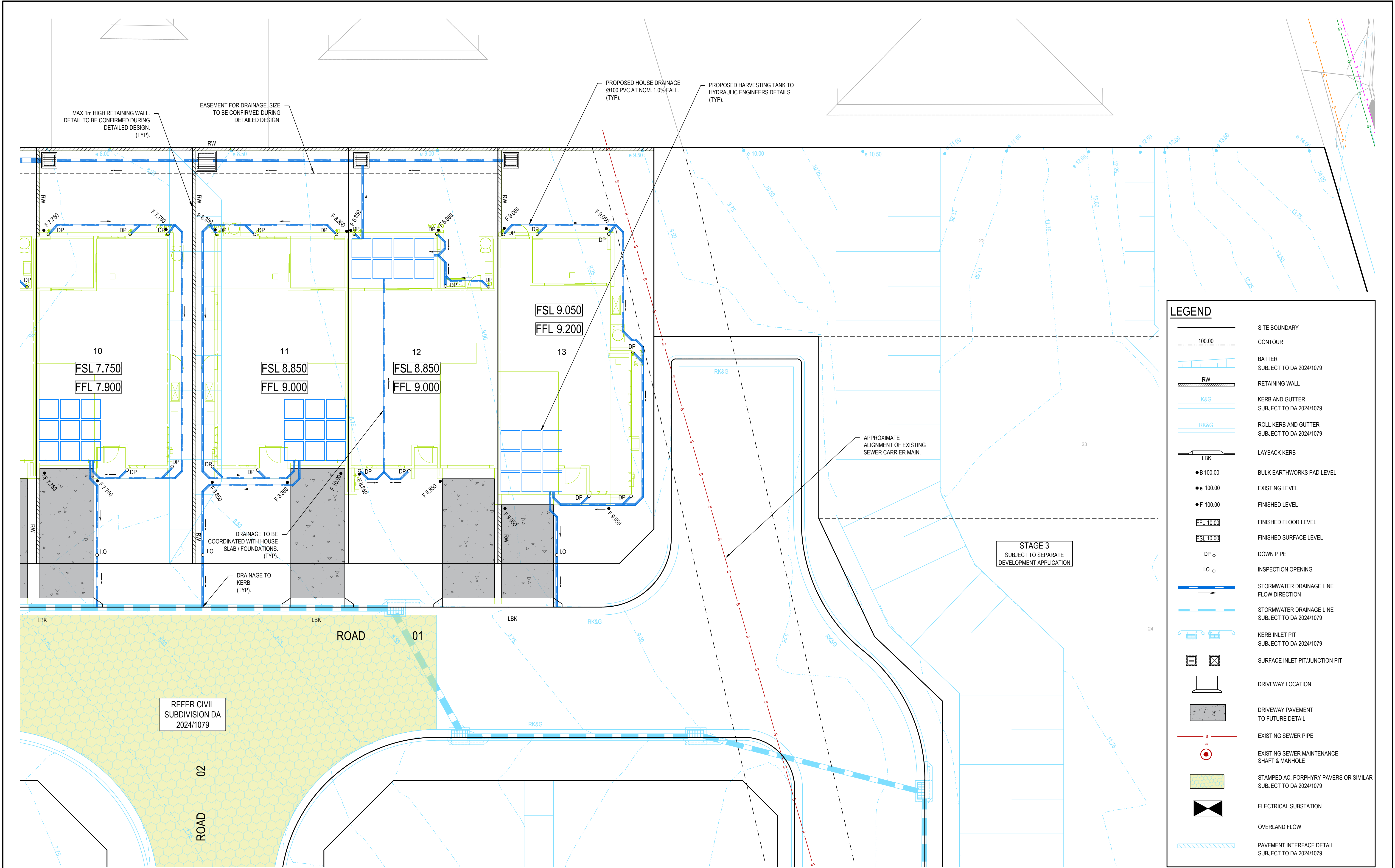
Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
INTEGRATED HOUSING STAGE 01

Title  
SITWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 1

Scale 1:100	Status <b>FOR INFORMATION ONLY</b> NOT TO BE USED FOR CONSTRUCTION
First Issue Date 19/12/2024	Project Number/Drawing Number <b>220122-01-DA-C05.01</b>
Size A1	Revision <b>1</b>
Datum MGA2020	





**LEGEND**

SITE BOUNDARY

CONTOUR

BATTER  
SUBJECT TO DA 2024/1079

RETAINING WALL

KERB AND GUTTER  
SUBJECT TO DA 2024/1079

ROLL KERB AND GUTTER  
SUBJECT TO DA 2024/1079

LAYBACK KERB

BULK EARTHWORKS PAD LEVEL

EXISTING LEVEL

FINISHED LEVEL

FINISHED FLOOR LEVEL

FINISHED SURFACE LEVEL

DOWN PIPE

INSPECTION OPENING

STORMWATER DRAINAGE LINE  
FLOW DIRECTION

STORMWATER DRAINAGE LINE  
SUBJECT TO DA 2024/1079

KERB INLET PIT  
SUBJECT TO DA 2024/1079

SURFACE INLET PIT/JUNCTION PIT

DRIVEWAY LOCATION

DRIVEWAY PAVEMENT  
TO FUTURE DETAIL

EXISTING SEWER PIPE

EXISTING SEWER MAINTENANCE  
SHAFT & MANHOLE

STAMPED AC, PORPHYRY PAVERS OR SIMILAR  
SUBJECT TO DA 2024/1079

ELECTRICAL SUBSTATION

OVERLAND FLOW

PAVEMENT INTERFACE DETAIL  
SUBJECT TO DA 2024/1079

1	19/12/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB	MC
REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF./APPD.

Client

SEKISUI HOUSE

Scale

SCALE 1:100 @A1

North

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Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
INTEGRATED HOUSING STAGE 01

Title  
SITEWORKS AND STORMWATER MANAGEMENT PLAN

SHEET 2

Scale  
1:100

First Issue Date  
19/12/2024

Size  
A1

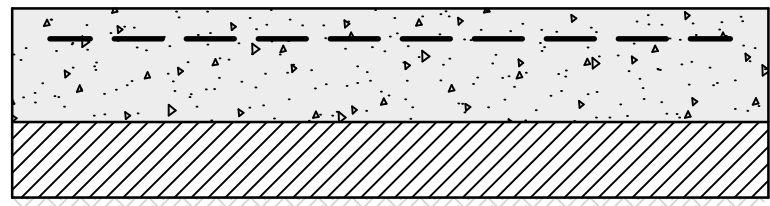
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Project Number/Drawing Number  
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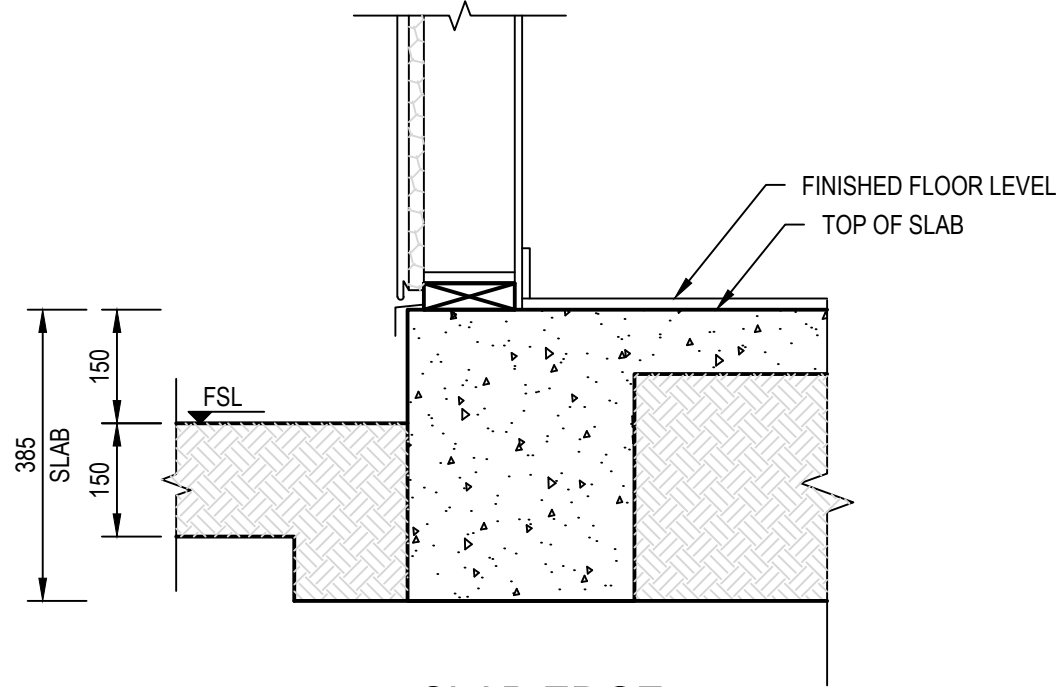
Revision  
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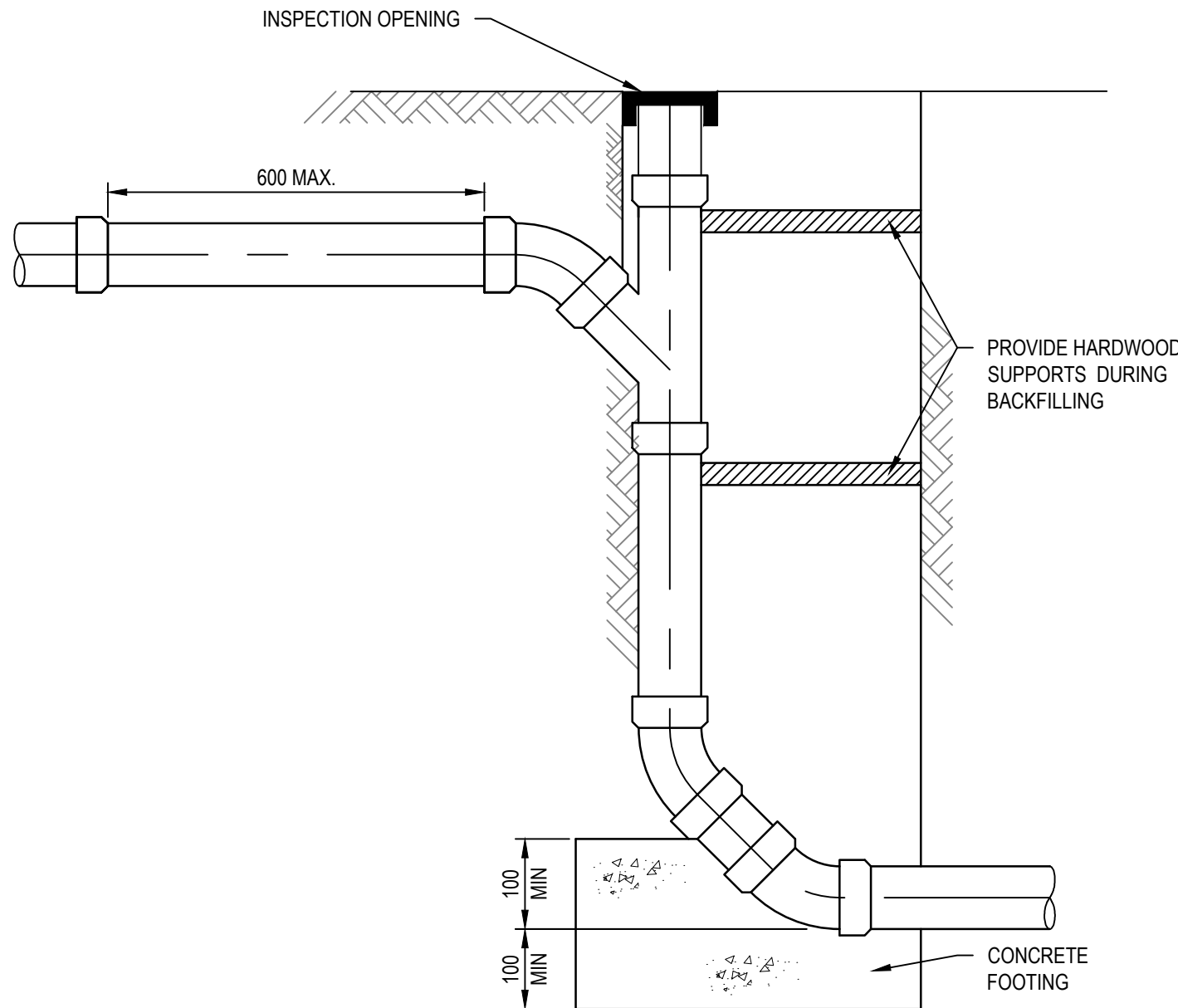


150mm THICKNESS CONCRETE (SL72 MESH - 40 TOP COVER)  
100mm THICKNESS COMPACTED DGB 20

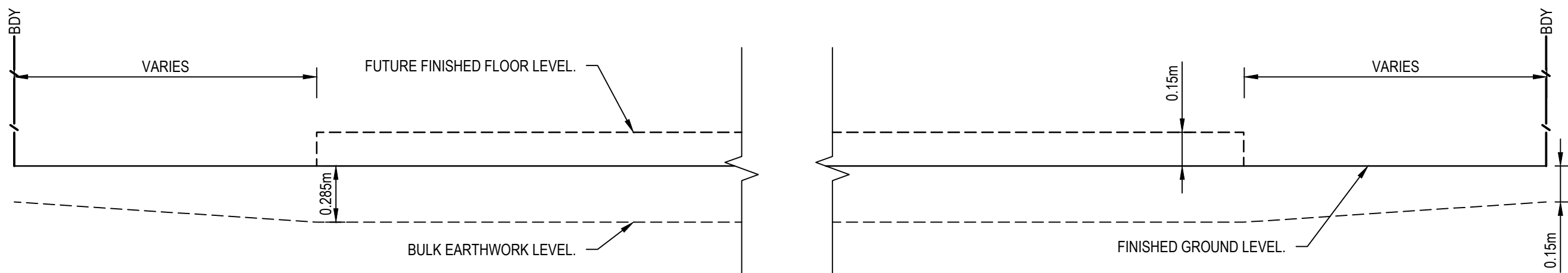
DRIVEWAY PAVEMENT  
SCALE 1:10



SLAB EDGE  
NOT TO SCALE  
NOTE: NO BULK FILL OR CUT AS PART OF HOUSE CONSTRUCTION  
HATCHED AREA DENOTES TOPSOIL PLACEMENT



INSPECTION OPENING (IO)  
SCALE 1:10



TYPICAL LOT EARTHWORKS SECTION  
SCALE 1:20

REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.
1	19/12/2024	ISSUED FOR DEVELOPMENT APPLICATION	SS	TPB		MC

Client



**SEKISUI HOUSE**

Scale 0 1 2 3 4 5m  
SCALE 1:50 @A1  
0 1 2 4 6 8 10m  
SCALE 1:100 @A1

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Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
INTEGRATED HOUSING STAGE 01

Title  
SITEWORKS DETAILS

Scale  
AS SHOWN  
Date  
19/12/2024

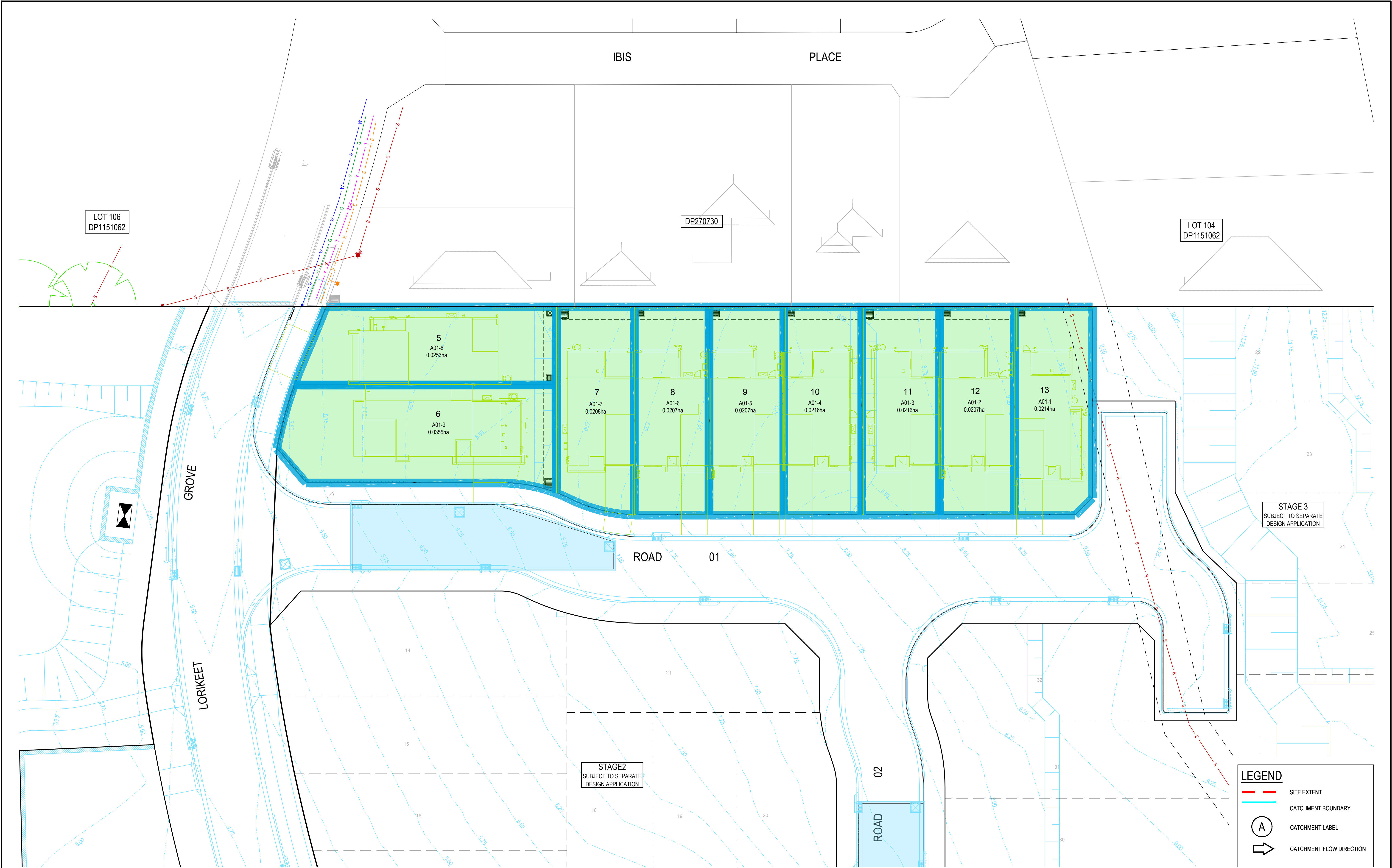
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Datum  
MGA2020

Status  
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Project Number/Drawing Number  
**220122-01-DA-C14.01**

Revision  
**1**





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REV.	DATE	DESCRIPTION	DRN	DES.	VERIF. APPD.

Client



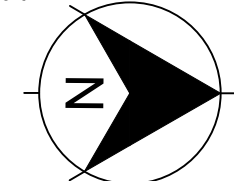
**SEKISUI HOUSE**

Scale

0 5 10 15 20m

SCALE 1:200 @A1

North



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Project  
53A & 53B WARRIWOOD ROAD  
WARRIWOOD NSW 2102  
INTEGRATED HOUSING STAGE 01

Title  
CATCHMENT PLAN

Scale  
1:200

First Issue Date  
19/12/2024

Size  
A1

Datum  
MGA2020

Status  
**FOR INFORMATION ONLY**  
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Project Number/Drawing Number  
**220122-01-DA-C21.01**

Revision  
**1**