

## ACTIVITY DETERMINATION

Project No. BGX6Q

### Conflict of Interest<sup>1</sup>

In this matter:

1. I have declared any possible conflict of interests (real, potential or perceived) to the Chief Executive Officer, Land & Housing Corporation.
2. I do not consider I have any personal interests that would affect my professional judgement.
3. I will inform the Chief Executive Officer, Land & Housing Corporation as soon as I become aware of a possible conflict of interest.

Signed.....

Name..... Emma Nicholson

Dated 20/2/2023

Having regard to the Determination Recommendation Report, the Statement of Compliance and the Review of Environmental Factors for this project addressing matters under Part 5 of the *Environmental Planning and Assessment Act 1979*, I determine that the activity proceed as described below and subject to the identified requirements set out in **Schedule 1**.

### SITE IDENTIFICATION

#### STREET ADDRESS

Unit/Street No

2-8

Street or property name

Glenn Avenue

Suburb, town or locality

Northmead NSW

Postcode

2152

Local Government Area(s)

Parramatta City Council

Real property description (Lot and DP)

Lots 73-76 in DP35845

### ACTIVITY DESCRIPTION

Provide a description of the activity

Demolition of 4 existing dwellings and associated structures, removal of trees, and the construction of a 16 dwelling **seniors housing development** comprising 8 x 1-bedroom and 8 x 2-bedroom independent living units, with associated landscaping and fencing, surface parking for 8 cars, and consolidation into a single lot.

1. Conflict of interest includes actual and potential. A conflict of interest includes pecuniary i.e. financial interests to you or a related party or non-pecuniary i.e. benefits to relatives, friends, business associates and personal causes, etc. This includes "related persons" as defined in the Property, Stock and Business Agency Act 2002.



Signed.....

Dated..... 20/2/2023

Emma Nicholson  
Acting Head of Policy and Innovation  
Land and Housing Corporation

## SCHEDULE 1

### Recommended Identified Requirements

#### PART A – Standard identified requirements

##### THE DEVELOPMENT

*The following identified requirements have been imposed to ensure that the development activity is carried out in accordance with the plans / documents and any amendments approved under Part 5 of the Environmental Planning & Assessment Act 1979.*

1. The development must be carried out substantially in accordance with the following plans / documents as modified below and by any of the undermentioned identified requirements:

Title / Name:	Drawing No / Document Ref	Revision / Issue:	Date [dd.mm.yyyy]:	Prepared by:
Cover Sheet	A01	A	12.04.2022	Barry Rush and Associates Pty Ltd
Site Analysis Plan	A02	A	12.04.2022	Barry Rush and Associates Pty Ltd
Demolition Plan	A03	A	12.04.2022	Barry Rush and Associates Pty Ltd
Site and Ground Floor Plan	A04	B	11.10.2022	Barry Rush and Associates Pty Ltd
First Floor Plan	A05	A	12.04.2022	Barry Rush and Associates Pty Ltd
Roof Plan	A06	A	12.04.2022	Barry Rush and Associates Pty Ltd
Elevations	A07	B	11.10.2022	Barry Rush and Associates Pty Ltd
Sections	A08	B	11.10.2022	Barry Rush and Associates Pty Ltd
Areas of Excavation and Fill	A09	A	12.04.2022	Barry Rush and Associates Pty Ltd
Finishes Schedule	A10	A	12.04.2022	Barry Rush and Associates Pty Ltd
Shadow Diagrams Mid-Winter	A11	A	12.04.2022	Barry Rush and Associates Pty Ltd
Views from Sun Diagram	A12	A	12.04.2022	Barry Rush and Associates Pty Ltd
Street Perspective	A13	A	12.04.2022	Barry Rush and Associates Pty Ltd
Block Analysis Plan	A14	A	12.04.2022	Barry Rush and Associates Pty Ltd
Landscape Plan	LA 1 of 2	H	12.10.2022	Greenland Design Pty Ltd
Landscape Details and Specifications	LA 2 of 2	H	12.10.2022	Greenland Design Pty Ltd
Cover Sheet & Notes	C1	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
On Site Detention Catchment Plan	C2	D	09.10.2022	ACOR Consultants (CC) Pty Ltd



<b>Title / Name:</b>	<b>Drawing No / Document Ref</b>	<b>Revision / Issue:</b>	<b>Date [dd.mm.yyyy]:</b>	<b>Prepared by:</b>
Stormwater Management Plan – Part 1	C3	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Stormwater Management Plan – Part 2	C4	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Stormwater Management Plan Details Sheet No. 1	C5	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Stormwater Management Plan Details Sheet No. 2	C6	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Erosion & Sediment Control Plan	C7	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Erosion & Sediment Control Notes & Details	C8	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
OSD Calculation Sheet & Maintenance Schedule	C9	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
On Site Detention Checklist Sheet 1 of 2	C10	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
On Site Detention Checklist Sheet 2 of 2	C11	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Pipe Long Section	C12	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Stormwater Quality Report Sheet 1 of 2	C13	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Stormwater Quality Report Sheet 2 of 2	C14	D	09.10.2022	ACOR Consultants (CC) Pty Ltd
Site Detail Survey (2 Glenn Avenue)	Sheet 1 of 4	B	23.09.2020	Indiya Geospatial Survey Consultants Pty Ltd
Site Detail Survey (4 Glenn Avenue)	Sheet 2 of 4	B	23.09.2020	Indiya Geospatial Survey Consultants Pty Ltd
Site Detail Survey (6 Glenn Avenue)	Sheet 3 of 4	B	23.09.2020	Indiya Geospatial Survey Consultants Pty Ltd
Site Detail Survey (8 Glenn Avenue)	Sheet 4 of 4	B	23.09.2020	Indiya Geospatial Survey Consultants Pty Ltd
Long Section	Sheet 1 of 1	A	22.10.2020	Indiya Geospatial Survey Consultants Pty Ltd
BASIX Certificate	1230456M_02	-	22.04.2022	Building Sustainability Assessments
NatHERS Certificate	0007598450	-	22.04.2022	Building Sustainability Assessments
Geotechnical Investigation Report	20/3472	-	October 2020	STS Geotechnics Pty Ltd
Traffic Impact Assessment	-	-	June 2022	Apex Engineers
Arboricultural Impact Assessment	6705.2	-	19.05.2022	Redgum Horticultural
Access Assessment Report	113916-Access-r3	3	15.05.2022	BCA Access
BCA Design Compliance Report	P210110 (5)	-	27.04.2022	BCA Vision Pty Ltd
Site Waste Minimisation and Management Plan	-	-	25.10.2021	Barry Rush and Associates Pty Ltd

2. All building work is to be undertaken in accordance with the National Construction Code and referenced Australian Standards.
3. All commitments listed in the BASIX certificate and stamped plans shall be complied with.
4. All construction documentation and building work is to be certified in accordance with Section 6.28 of the *Environmental Planning and Assessment Act 1979*.



5. The land the subject of this approval must be consolidated into a single lot. The plan of consolidation must be lodged at the NSW Land Registry Services and be registered prior to occupation of the development. A copy of the registered plan is to be provided to the Land & Housing Corporation.

## **OPERATIONAL MATTERS**

*These identified requirements pertain to the use of the site and have been imposed to ensure that the development and its operation do not interfere with the amenity of the surrounding area.*

### **Stormwater Run-off**

6. Stormwater is to be collected within the site, and conveyed in a pipeline to the appropriate gutter or drain under the control of the council for the area substantially in accordance with the approved concept stormwater drainage plans.
7. Alterations to the natural surface contours or surface absorption characteristics must not impede, increase or divert natural surface water runoff, so as to cause a nuisance to adjoining property owners.
8. All driveways are to be graded in such a manner as to provide continuous surface drainage flow paths to appropriate points of discharge.
9. To prevent water from entering buildings surface waters shall be collected and diverted clear of the buildings by a sub-surface / surface drainage system.

### **Vehicular Access & Parking**

10. A concrete vehicular crossing(s) and layback(s) must be provided at the entrance(s) / exit(s) to the property. The crossing(s) and layback(s) must be constructed in accordance with the council for the area's standard requirements for residential crossings. Council shall be provided with plans for the crossing(s) and layback(s) together with the payment of any council inspection fees.
11. Particular care should be taken in the location of vehicular crossings and/or laybacks to avoid poles, pits etc. The cost of any necessary adjustments to utility mains and services associated with the construction of the layback / driveway is to be borne by the Land & Housing Corporation. Obsolete gutter laybacks are to be constructed as kerb in accordance with the respective council's standards.

*Note: It is recommended that discussion be held with the relevant authorities before construction works commence.*

12. Car parking spaces and driveways must be constructed of concrete or other approved hard surfaced materials. The spaces must be clear of obstructions and columns, permanently line marked and provided with adequate manoeuvring facilities. The design of these spaces must comply with AS 2890.1.

### **Site Works**

13. All soil erosion and sediment control measures required to be put in place prior to the commencement of demolition / construction works are to be maintained during the entire period of the works until disturbed areas are restored by turfing, paving or revegetation. Soil erosion and sediment control measures shall be designed in accordance with the



guidelines set-out in the Blue Book *Managing Urban Stormwater: Soils and Construction* (4th edition, Landcom, 2004).

14. An appropriately qualified person shall design retaining walls or other methods necessary to prevent the movement of excavated or filled ground, including associated stormwater drainage measures.

### **Building Siting**

15. All buildings to be sited well clear of any easements affecting the allotment. The builder shall ascertain if any easements do exist and if so, obtain full details of such prior to construction commencing.

### **Smoke Detection System(s)**

16. Smoke detection systems shall be installed throughout the building(s) in accordance with requirements of Clause E2.2a of the Building Code of Australia. Detectors and alarms shall comply with AS 3786 and AS 1670 and must:
  - i. be connected to a permanent 240V power supply; and
  - ii. be provided with a battery backup to activate the alarm unit in the event of failure of the permanent power supply.

### **Site Soil Contamination**

17. If the site is identified as being potentially affected by soil contamination, it is to be inspected by a suitably qualified person to identify any contaminated or hazardous material present. A proposal for remediation is to be prepared, which may include preparation of a Remedial Action Plan, and remediation is to be carried out in accordance with the proposal. A Validation Report, prepared in accordance with Environment Protection Authority requirements, is to be obtained from a qualified expert on completion of the remediation work to verify that the site is suitable for the intended residential use. A copy of the Validation Report is to be provided to the Land & Housing Corporation on completion of the remediation works.

### **Landscaping**

18. Landscaping is to be carried out substantially in accordance with the approved landscape plan(s) and maintained for a period of 12 months by the building contractor. The council for the area is to be consulted in relation to the planting of any street trees along the site frontage.
19. All scheduled plant stock shall be pre-ordered, prior to commencement of construction or 3 months prior to the commencement of landscape construction works, whichever occurs sooner, for the supply to the site on time for installation. The builder shall provide written confirmation of the order to Council and provide a copy to the Land & Housing Corporation.

### **Tree Removal**

20. Removal of trees within the boundaries of the site is to be carried out in accordance with the trees shown for removal on the approved landscape plan and Arborist report and no other trees are to be removed without further approval. Trees identified for retention on the approved landscape plan and Arborist report are to be retained.

### **Fencing**



21. All front fencing and gates are to be constructed wholly within the boundaries of the site. All gates associated with the fencing are to swing inwards towards the site.

#### **Provision of Letterbox Facilities**

22. Suitable letterbox facilities shall be provided in accordance with Australia Post specifications.

#### **Public Liability Insurance**

23. A valid public liability insurance policy of at least \$10M shall be maintained throughout the demolition / construction works by the contractor.

#### **PRIOR TO ANY BUILDING WORK COMMENCING ON THE SITE**

##### **Long Service Levy**

- ~~24. The long service levy shall be paid by the Land & Housing Corporation to the Long Service Payments Corporation in accordance with the Building & Construction Industry Long Service Payments Act 1986 prior to the commencement of any building and construction works.~~

*Note:*

~~Where approval has been granted for development by a Crown body other than a council, the amount payable is 0.35% of the contract inclusive of GST.~~

(Deleted)

##### **Service Authority Clearances**

25. A compliance certificate, or other evidence, shall be obtained from the relevant water utility provider (e.g. the local council for the area, Hunter Water or Sydney Water), confirming service availability prior to work commencing.

*Note: Payment of water and/or sewer service charges and/or a notice of requirements for works to be carried out during construction / prior to occupation may be applicable prior to issue of the compliance certificate.*

26. A written clearance from the electricity supply authority stating that electrical services have been made available to the development or that arrangements have been entered into for the provision of services to the development is to be obtained prior to work commencing.
27. A certificate from an approved telecommunications carrier to certify that satisfactory arrangements have been made to ensure the provision of underground telephone services to each dwelling in the development is to be obtained prior to work commencing.
28. Where the site is to be connected to reticulated gas, a certificate from an approved gas carrier certifying that satisfactory arrangements have been made for the provision of underground gas services, to the site and to each dwelling, shall be obtained prior to work commencing.

##### **Stormwater Disposal**

29. A detailed stormwater drainage plan(s), substantially in accordance with the approved concept stormwater drainage plan(s), is to be prepared and submitted to the Land &



Housing Corporation. Any on-site detention system shall be designed in accordance with any catchment authority requirements (eg the Upper Parramatta River Catchment Trust On-site Detention Handbook) and/or the council for the area's drainage code.

30. Where a drainage easement is required, proof of lodgement of the plan of the drainage easement at the NSW Land Registry Services must be submitted to the Land & Housing Corporation prior to commencement of works. Registration of the plan of easement must be completed prior to occupation of the development and a copy of the registered plan is to be provided to the Land & Housing Corporation.

#### **Utilities Service Provider Notification**

31. The construction plans must be submitted to the appropriate local / major water utility's office (eg Sydney Water office) to determine whether the development will affect the utility's sewer and water mains, stormwater drains and/or easements.

**Note:**

*If the development complies with water utility's requirements, the plans will be stamped indicating that no further requirements are necessary.*

#### **PRIOR TO ANY WORK COMMENCING ON THE SITE**

*The following identified requirements are to be complied with prior to any work commencing on the site.*

#### **Disconnection of Services**

32. All services that are required to be disconnected shall be appropriately disconnected and made safe prior to commencement of the demolition / construction works. The various service authorities shall be consulted regarding their requirements for the disconnection of services.
33. All existing services within the boundary to remain live must be identified, pegged and made safe.

#### **Demolition**

34. The builder is to notify the occupants of premises on either side, opposite and at the rear of the development site a minimum of five days prior to demolition. Such notification is to be clearly written on A4 size paper giving the date demolition will commence and be placed in the letterbox of every premise (including every unit of a multi-unit residential building or mixed use building if applicable). The demolition must not commence prior to the date which has been stated in the notice letter.
35. Prior to the demolition, a Work Plan shall be prepared by a competent person(s) in accordance with AS 2601 and shall be submitted to the Land & Housing Corporation. The Work Plan shall outline the identification of any hazardous materials, including surfaces coated with lead paint, method of demolition, the precautions to be employed to minimise any dust nuisance and the disposal methods for hazardous materials.
36. On demolition sites where buildings to be demolished contain asbestos cement, a standard commercially manufactured sign containing the words 'DANGER ASBESTOS REMOVAL IN PROGRESS' measuring not less than 400mm x 300mm is to be erected in a prominent visible position on the site.

**Note:**



*Any buildings constructed before 1987 is assumed to contain asbestos.*

### **Council Notification**

37. The council for the area shall be advised in writing, of the date it is intended to commence work, including demolition. A minimum period of five (5) working days notification shall be given.

### **Landfill**

38. Where site filling is required, a minimum of 95% standard compacting shall be achieved and certified by a NATA registered Soils Laboratory.
39. Land fill materials must satisfy the following requirements:
- i. Shall be Virgin Excavated Natural Matter (VENM);
  - ii. Shall be free of slag and hazardous, contaminated, putrescible, toxic or radio-active matter; and
  - iii. Shall be free of industrial waste and building debris.

### **Site Facilities**

40. The following facilities shall be installed on the site:
- (a) Toilet facilities shall be provided at the rate of 1 toilet for every 20 persons or part thereof employed at the site. Each toilet provided shall be a standard flushing toilet and shall be connected to a public sewer or if connection to a public sewer is not practicable, to an accredited sewerage management facility provided by the council for the area or if this is not practicable to some other council approved management facility.
  - (b) Adequate refuse disposal methods and builders storage facilities. Builders' wastes, materials or sheds are not to be placed on any property other than that which this approval relates to.
41. Access to the site is to be provided only via an all weather driveway on the property and is not to be provided from any other site.

### **Site Safety**

42. A sign must be erected in a prominent position on any site on which demolition or building work is being carried out:
- (a) showing the name, address and telephone number of the responsible Land & Housing Corporation officer for the work, and
  - (b) showing the name of the principal contractor (if any) and a telephone number on which that person may be contacted outside working hours, and
  - (c) stating that unauthorised entry to the work site is prohibited.

Any such sign is to be maintained while the work is being carried out, but must be removed when the work has been completed.

*Note:*

*This requirement does not apply in relation to building work that is carried out inside an existing building that does not affect the external walls of the building.*



43. A Class A (minimum 1.8m high security fence) or Class B (overhead) hoarding must be erected between the work site and any public place prior to demolition / construction. Access to the site shall be restricted to authorised persons only and the site shall be secured against unauthorised entry when demolition / construction work is not in progress or the site is otherwise unoccupied.

*Note:*

*Approval from the relevant roads authority will be required under Section 138 of the Roads Act 1993 where a Class A or B hoarding encroaches onto the footpath of / or a public thoroughfare within a classified road.*

44. Building materials are not to be stored on the council for the area's footpath or roadway.

### **Protection of Trees**

45. Trees and other vegetation that is to be retained on site are to be protected prior to the commencement of works and for the duration of the construction period in accordance with the details provided in the submitted arborist report.

### **Waste Management**

46. A final Waste Management Plan is to be prepared and submitted to the Land & Housing Corporation prior to the commencement of demolition / construction. The plan shall detail the amount of waste material and the destination of all materials, recyclable and non-recyclable.

### **DURING DEMOLITION / CONSTRUCTION**

*The following identified requirements are to be complied with whilst works are occurring on the site.*

### **Heritage**

47. Historic and indigenous archaeological sites and relics are protected under the *Heritage Act 1977* and *National Parks and Wildlife Act 1974* respectively. Should any relics be uncovered during the course of the approved works, work must cease in the affected area. Subsequently in cases where historical items have been uncovered, the Department of Planning and Environment must be contacted or if indigenous items have been uncovered the Department of Environment, Energy and Science must be contacted.
48. All workers / contractors must be informed of their obligations under the *National Parks and Wildlife Act 1974*, namely that it is illegal to disturb, damage or destroy a relic without the prior approval of the Coordinator-General of the Department of Environment, Energy and Science.

### **Demolition**

49. Any existing structures are to be demolished prior to commencement of construction of the approved development.
50. Demolition is to be carried out in accordance with the appropriate provisions of AS 2601.
51. Where materials containing asbestos are to be removed, demolition is to be carried out by a licensed contractor(s) who have current SafeWork NSW accreditation in asbestos removal.
52. Removal of asbestos-based thermal or acoustic insulation, such as sprayed asbestos and asbestos-based lagging, including friable asbestos boards, shall be carried out in



accordance with the National Occupational Health and Safety Commission's Code of Practice for the Safe Removal of Asbestos, 2<sup>nd</sup> Edition [NOHSC:2002 (2005)].

53. Hazardous or intractable wastes, including all asbestos laden waste, arising from the demolition process shall be removed and disposed of in accordance with the requirements of SafeWork NSW and the Department of Environment, Energy and Science.
54. Documentary evidence in the form of tip receipts from an approved Waste Management Facility shall be obtained by the demolition contractor and submitted to the Land & Housing Corporation demonstrating the appropriate disposal of the asbestos waste.
55. Demolition procedures shall maximise the reuse and recycling of demolished materials in order to reduce the environmental impacts of waste disposal.
56. During demolition, the public footway and public road shall be kept clear at all times and shall not be obstructed by any demolished material or vehicles. The public road and footway shall be swept (not hosed) clean of any material, including clay, soil and sand.
57. All vehicles leaving the site with demolition materials shall have their loads covered and vehicles shall not track soil and other material onto the public roads and footways and the footway shall be suitably protected against damage when plant and vehicles access the site. All loading of vehicles with demolished materials shall occur on site.
58. Care shall be taken during demolition to ensure that existing services on the site (ie sewer, electricity, gas, and telecommunications) are not damaged.

### **Survey Reports**

59. Survey reports are to be submitted to the Land & Housing Corporation prior to the placement of the footings / slab and on completion of the dwellings to verify the correct position of the structures in relation to the boundary allotments in accordance with this approval.

### **Hours of Demolition / Construction / Civil Work**

60. Demolition / construction / civil work is only permitted on the site between the hours of 7.00am to 5.00pm Monday to Saturday with no work permitted on Sundays or public holidays.

### **Excavation & Backfilling**

61. All excavations and backfilling associated with the demolition or erection of a building must be executed safely and in accordance with appropriate professional standards. All such work is to be guarded and protected to prevent it from being dangerous to life or property.

### **Pollution Control**

62. Any noise generated during the construction of the development shall not exceed the limits specified in the July 2009 Interim Construction Noise Guidelines, published by the Department of Environment and Climate Change (now Department of Environment, Energy and Science).
63. No fires are to be lit or waste materials burnt on the site.
64. No washing of concrete forms or trucks is to occur on the site.



65. Any contamination / spills on the site during construction works must be actively managed and reported immediately to appropriate regulatory authorities to minimise any potential damage to the environment.
66. Dust generation during demolition / construction shall be controlled using regular control measures such as on site watering or damp cloth fences.
67. All vehicles transporting loose materials and travelling on public roads must be secured (ie closed tail gate and covered) to minimise dust generation.
68. Spraying of paint and other materials with the potential to become air borne particulates must only be undertaken in light wind conditions.
69. Non-recyclable waste and containers must be regularly collected and disposed of at a licensed landfill or other disposal site in the area in accordance with details set out in the Waste Management Plan to be prepared and submitted to the Land & Housing Corporation prior to the commencement of demolition / construction.

### **Impact of Construction Works**

70. The Land & Housing Corporation shall bear the cost of any necessary adjustments to utility mains and services.
71. Care shall be taken to prevent any damage to adjoining properties. The building contractor may be liable to pay compensation to any adjoining owner if, due to construction works, damage is caused to such adjoining property.

### **PRIOR TO OCCUPATION OF THE DEVELOPMENT**

*The following identified requirements are to be complied with prior to the occupation of the development.*

#### **General**

72. The use or occupation of the development shall not commence until all the identified requirements of this determination have been complied with.

#### **Termite Protection**

73. To protect buildings from subterranean termite, termite barriers installed in accordance with AS 3660.1 are required on the underside and penetrations of the concrete slab floor.

In addition, a durable notice must be permanently fixed inside the meter box indicating:

- (a) The method of protection.
- (b) The date of installation of the system.
- (c) Where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label.
- (d) The need to maintain and inspect the system on a regular basis.

#### **Road Damage**



74. The cost of repairing any damage caused to the council for the area's assets in the vicinity of the subject site as a result of demolition / construction works associated with the approved development is to be met in full by the building contractor.

### **Stormwater Drainage**

75. Prior to occupation of the development, a Work As Executed Plan must be prepared clearly showing all aspects of the constructed stormwater drainage system, including any on-site detention system. The plan should demonstrate general compliance with the approved concept stormwater drainage plan(s) and must include:

- Sufficient levels and dimensions to verify the constructed storage volume.
- Location and surface levels of all pits.
- Invert levels of the internal drainage line, orifice plates fitted and levels within the outlet control pit.
- Finished floor levels of all structures.
- Verification that any required trash screens have been installed.
- Locations and levels of any overland flow paths.
- Verification that any drainage lines are located wholly within easements.

The Work-As-Executed Plan information should be shown on a copy of the final civil works drawings.

A positive covenant and restriction-as-to-user must be placed over the onsite detention system in accordance with the council for the area's on-site detention policy to ensure that system will be adequately maintained. The positive covenant and restriction-as-to-user must be registered at NSW Land Registry Services prior to occupation of the development. A copy of the registered restriction-as-to-user is to be provided to the Land & Housing Corporation and the council for the area.

## **PART B – Additional identified requirements**

### **Requirements for Seniors Housing**

76. The independent living units in the approved development must comply with the accessibility and useability standards for independent living units referenced in Clause 85 and set out in Schedule 4 of State Environmental Planning Policy (Housing) 2021. The requirements of this condition do not apply to the provisions set out under Clauses 2, 7, 8, 9, 10, 11, 12, 13 and 15-20 of Schedule 4 for an independent living unit, or part of such a unit, that is located above the ground floor.
77. Only the following kinds of people can be accommodated in the approved development:
- (a) seniors or people who have a disability,
  - (b) people who live within the same household with seniors or people who have a disability,
  - (c) staff employed to assist in the administration of and provision of services to housing subject of this approval.

It should be noted that 'seniors', as defined in the Housing SEPP are any of the following:

- (a) people aged 60 or more years,
- (b) people who are resident at a facility at which residential care (within the meaning of the Aged Care Act 1997 of the Commonwealth) is provided, and
- (c) people who have been assessed as being eligible to occupy housing for aged persons provided by a social housing provider.



A restriction as to user must be registered against the title of the property on which development is to be carried out prior to occupation, in accordance with Section 88E of the Conveyancing Act 1919 limiting the use of any accommodation to the kinds of people referred to above.

- 78. Pathway lighting is to be designed and located to avoid glare for pedestrians and adjacent dwellings and to provide minimum 20 lux at ground level.
- 79. Access must be provided in accordance with AS 1428.1 so that a person using a wheelchair can use common areas and common facilities associated with the development.
- 80. The footpath from the site to the nearest bus stops on Glenn Avenue is to be upgraded to provide a continuous accessible path of travel in accordance with the recommendations of the Access Report. Details to be provided to a suitably qualified Access Consultant to ensure compliance with the relevant standards.
- 81. Entry doors to dwellings are to be provided with door viewers to enable residents to view approaches to their dwelling without the need to open the door.

#### **Site Specific Requirements**

- 82. Nil requirements

#### **Requirements resulting from consideration of the council for the area's notification response in the REF**

- 83. **Driveway/ carparking area convex mirror** – to be provided in a suitable location determined in consultation with the Traffic Consultant.
- 84. **1.5m wide pathway** – to be constructed in accordance with Council's requirements is to be provided at the frontage of the site.
- 85. **Public domain works** – detailed drawings of landscaping works adjacent to the public domain and prepared in accordance with the Parramatta Public Domain Guidelines, to be submitted to LAHC and a copy provided to Council.

#### **Requirements as requested by public authorities other than councils**

- 86. **Specialist Engineering Assessment** – in accordance with the requirements set out in the Feasibility Letter, prepared by Sydney Water and dated 4 November 2021.

#### **Requirements resulting from consideration of adjoining occupier responses to notification in the REF / consideration of other public submissions received**

- 87. Nil requirements

#### **Specific service / utility agency requirements**

- 88. Nil requirements

#### **ADVISORY NOTES**



- i. Approval of this development activity does not imply or infer compliance with Section 23 of the Disability Discrimination Act 1992. Refer to AS 1428.1 and the Building Code of Australia for detailed guidance.
- ii. Information regarding the location of underground services may be obtained from Dial Before You Dig at [www.1100.com.au](http://www.1100.com.au) or by dialling 1100.



20/2/2023

2023 *Heck*

# SENIORS HOUSING DEVELOPMENT

2-8 GLENN AVE, NORTHMEAD  
Lots 73, 74, 75 & 76 in DP 35845

## LEGEND

AB	ADJUSTABLE BENCH
B	BROOM CUPBOARD
BSN	BASIN
BCH	BENCH
BOE	BRICK ON EDGE
BR	BROOM CUPBOARD
CL	CLOTHES LINE
CMR	COLORBOND METAL ROOFING
CPB	CUPBOARD
D	DESK
DP	DOWNPIPE
F	REFRIGERATOR LOCATION
F1	FENCE 1000mm HIGH METAL PICKET
F2	FENCE 1800mm HIGH LAPPED & CAPPED PAILING FENCE
F3	1800 HIGH SLATTED METAL FENCE
FB1	FACE BRICK WORK TYPE 1
FB2	FACE BRICK WORK TYPE 2
FC	PAINTED FLUSH FINISH FIBRE CEMENT SHEET
FCL	FINISHED CEILING LEVEL
FFL	FINISHED FLOOR LEVEL
G	GATE
HWU	HOT WATER UNIT GAS RECESSED IN WALL
LB	LETTERBOXES - RECESSED INTO WALL
L	LINEN CUPBOARD
MO	COLORBOND MINI ORB SHEETING
P	PANTRY
POS	PRIVATE OPEN SPACE
PS	PRIVACY SCREEN 1500mm HIGH METAL SLATS
RL	RELATIVE LEVEL
R	WARDROBE
RWT	RAINWATER TANK
SWP	STORMWATER PIT
T	LAUNDRY TUB
TOW	TOP OF WALL
V	VANITY
WC	TOILET SUITE
WM	WASHING MACHINE
WO	WALL OVEN



### LOCATION DIAGRAM



## DRAWING SCHEDULE

**ARCHITECTURAL**  
COVER PAGE  
SITE ANALYSIS PLAN  
DEMOLITION PLAN  
SITE & GROUND FLOOR PLAN  
FIRST FLOOR PLAN  
ROOF PLAN  
ELEVATIONS  
SECTIONS  
AREAS OF EXCAVATION & FILL  
FINISHES SCHEDULE  
SHADOW DIAGRAMS MID WINTER  
VIEWS FROM SUN DIAGRAM  
STREET PERSPECTIVE  
BLOCK ANALYSIS PLAN

**CIVIL**  
COVER SHEET & NOTES  
ON SITE DETENTION CATCHMENT PLAN  
STORMWATER MANAGEMENT PLAN - PART 1  
STORMWATER MANAGEMENT PLAN - PART 2  
STORMWATER MANAGEMENT DETAILS SHEET No.1  
STORMWATER MANAGEMENT DETAILS SHEET No.2  
EROSION AND SEDIMENT CONTROL PLAN  
EROSION & SEDIMENT CONTROL NOTES & DETAILS  
OSD CALCULATION SHEET & MAINTENANCE SCHEDULE  
ON SITE DETENTION CHECKLIST SHEET 1 OF 2  
ON SITE DETENTION CHECKLIST SHEET 2 OF 2

REFERENCE No				
A01	A	<b>HYDRAULIC</b>		
A02	A	COVER SHEET	HY-000	2
A03	A	SITE SERVICES	HY-100	2
A04	A			
A05	A	<b>ELECTRICAL</b>		
A06	A	COVER SHEET	EL-000	2
A07	A	SITE SERVICES	EL-100	2
A08	A			
A09	A	<b>LANDSCAPE</b>		
A10	A	LANDSCAPE PLAN	LA 1 OF 2	E
A11	A	LANDSCAPE DETAILS & SPECIFICATION	LA 2 OF 2	E
A12	A			
A13	A	<b>SURVEY</b>		
A14	A	BY: INDIYA GEOSPATIAL SURVEYCONSULTANT		
		SITE DETAIL SURVEY ( 2 GLENN AVENUE)	S 1 OF 4	B
		SITE DETAIL SURVEY ( 4 GLENN AVENUE)	S 2 OF 4	B
C1	C	SITE DETAIL SURVEY ( 6 GLENN AVENUE)	S 3 OF 4	B
C2	C	SITE DETAIL SURVEY ( 8 GLENN AVENUE)	S 4 OF 4	B
C3	C	LONG SECTION	S 1 OF 1	A
C4	C	SITE DETAIL SURVEY ( 2-8 GLENN AVENUE)	S 1 OF 1	A
C5	C			
C6	C			
C7	C	DATE OF SURVEY: 23/09/2020		
C8	C			
C9	C			
C10	C			
C11	C			

## DEVELOPMENT DATA

Job Reference	BGX6Q
Locality / Suburb	Northmead
Street Address	2-8 Glenn Avenue
Lot & DP	Lots 73,74,75 & 76 in DP 35845
Site Area	2813.7 m² By Title; 2811.5 m² By Calculation
Existing Lots	4
Proposed GFA	1181.5 m²
No. of Dwellings	8 x 1 Bed + 8 x 2 Bed = 16 Dwellings

SOLAR ACCESS							
DWELLINGS	Number	Type*	Beds	Area* (m²)	POS*	LIVING	POS
	1	Ground	2	74	29	6 hr	5 hr
	2	First	2	74	15	6 hr	6 hr
	3	Ground	1	56	47.5	3 hr	5 hr
	4	First	1	56	18	3 hr	5 hr
	5	Ground	1	56	46.5	1 hr	5 hr
	6	First	1	56	18	1 hr	5 hr
	7	Ground	2	78	49	3 hr	5 hr
	8	First	2	76	19	3 hr	5 hr
	9	Ground	2	74	86	3hr	3 hr
	10	First	2	74	15	5 hr	6 hr
	11	Ground	2	76	59	5 hr	5 hr
	12	First	2	76	10	6 hr	6 hr
	13	Ground	1	55	43	3 hr	5 hr
	14	Ground	1	55	42	2 hr	5 hr
	15	Ground	1	55	34	2 hr	5 hr
	16	Ground	1	55	84	5 hr	5 hr

	Control		Requirement	Proposed
HEIGHT	Parramatta Council-LEP Housing SEPP		9m 9.5m	7.8m to top of roof
FSR	Parramatta Council-LEP		0.5:1	0.42:1
	Housing SEPP		0.5:1	0.42:1 (1181.5m²)
	SEPP SL		0.5:1	0.46:1 (1294.97m²)
PARKING	Accessible Site		(0.4 x 8) + (0.5 x 8) = 8	4 accessible 4 standard
SETBACK	Parramatta Council DCP	Street	5-7m Consistent with prevailing setback on the street.	8.0-9.0m average
		Side	3m Except where dwellings primarily address side boundary then 4.5m	3m
		Rear	15% site length = 6.81m	4.0 - 5.9m
LANDSCAPING	Housing SEPP	Seniors	35 m² per Dwelling = 560 m²	1034 m²
DEEP SOIL	Housing SEPP	Seniors	15% = 422 m² 65% at rear = 274m²	454.8 m² 260.5 m²
SOLAR ACCESS	Housing SEPP	Seniors	70% for 2hrs in Mid-Winter = 11.2	87.5% = 14

LAHC\* - development data for LAHC new housing supply. For details refer to Current version of LAHC Design Requirements.

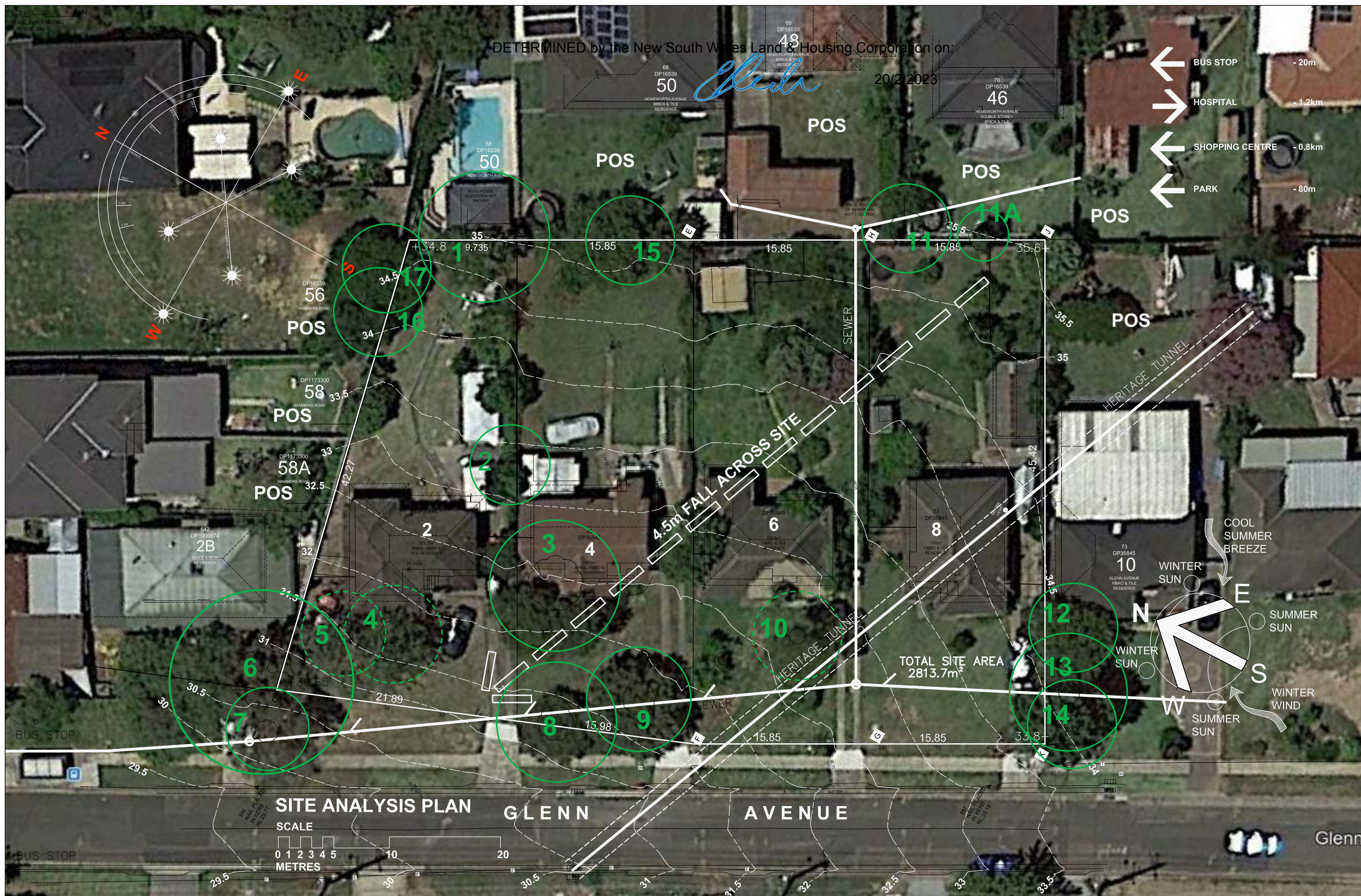
GFA\* - gross floor area calculated as per relevant Planning Instrument

AREA\* - dwelling floor area includes internal walls but excludes external walls

POS\* - private open space



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[www.barryrush.com.au](http://www.barryrush.com.au)

A	12.04.22	DA PLAN ISSUE
REV	DATE	NOTATION/AMENDMENT

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ARCHITECT	
<b>BARRY RUSH &amp; ASSOCIATES</b>	PTY LTD
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<b>LAND &amp; HOUSING CORPORATION</b>	
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<b>GREENLAND DESIGN</b>	PTY LTD
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CIVIL CONSULTANT	
<b>ACOR CONSULTANTS</b> PTY LTD	
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HYDRAULIC CONSULTANT	
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ELECTRICAL CONSULTANT	
<b>MARLINE NEWCASTLE</b> PTY LTD	
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	BUSINESS PARTNER

1

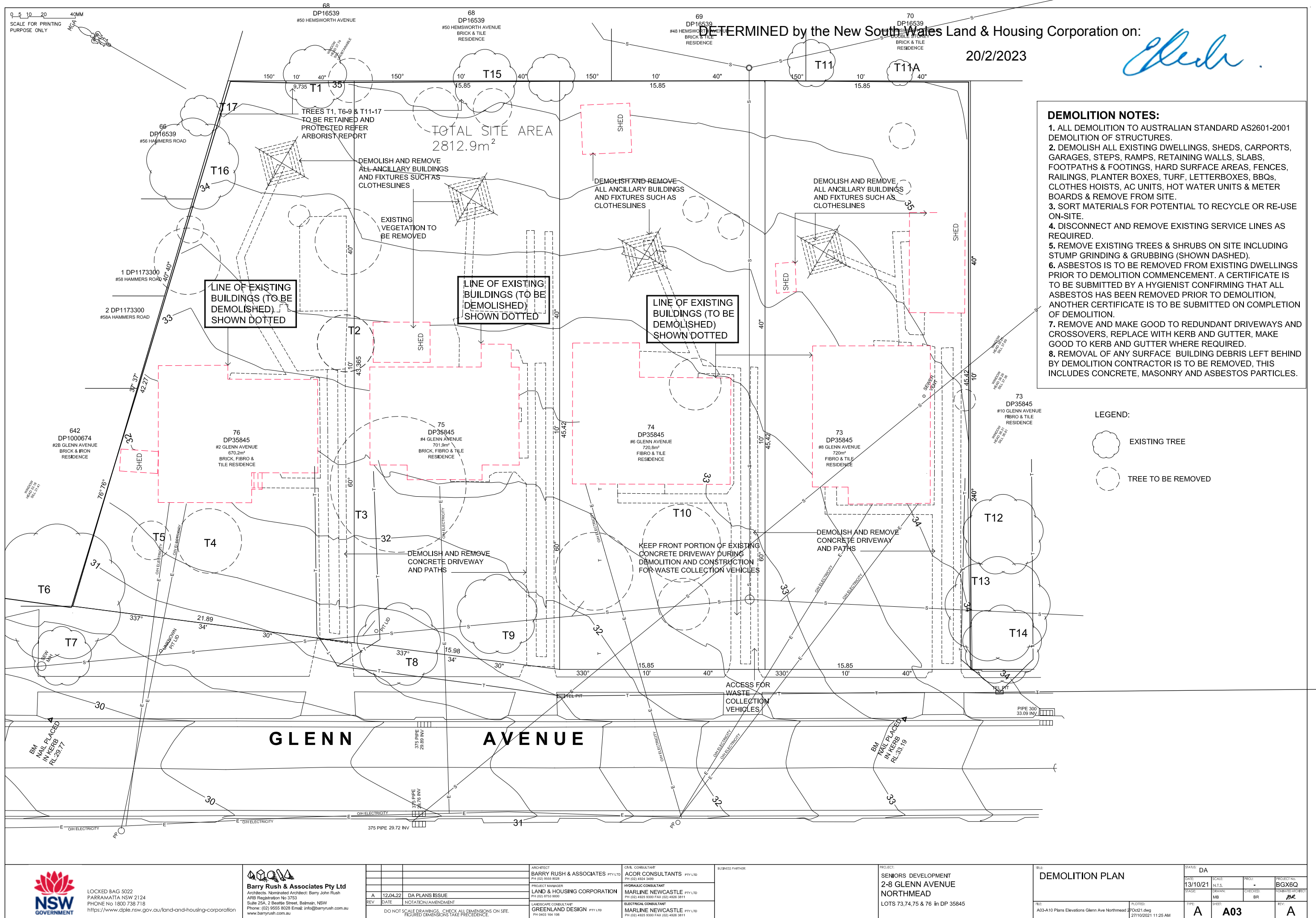
PROJECT:  
SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD  
LOTS 73,74,75 & 76 in DP 35845

TITLE: <b>SITE ANALYSIS PLAN</b>
-------------------------------------

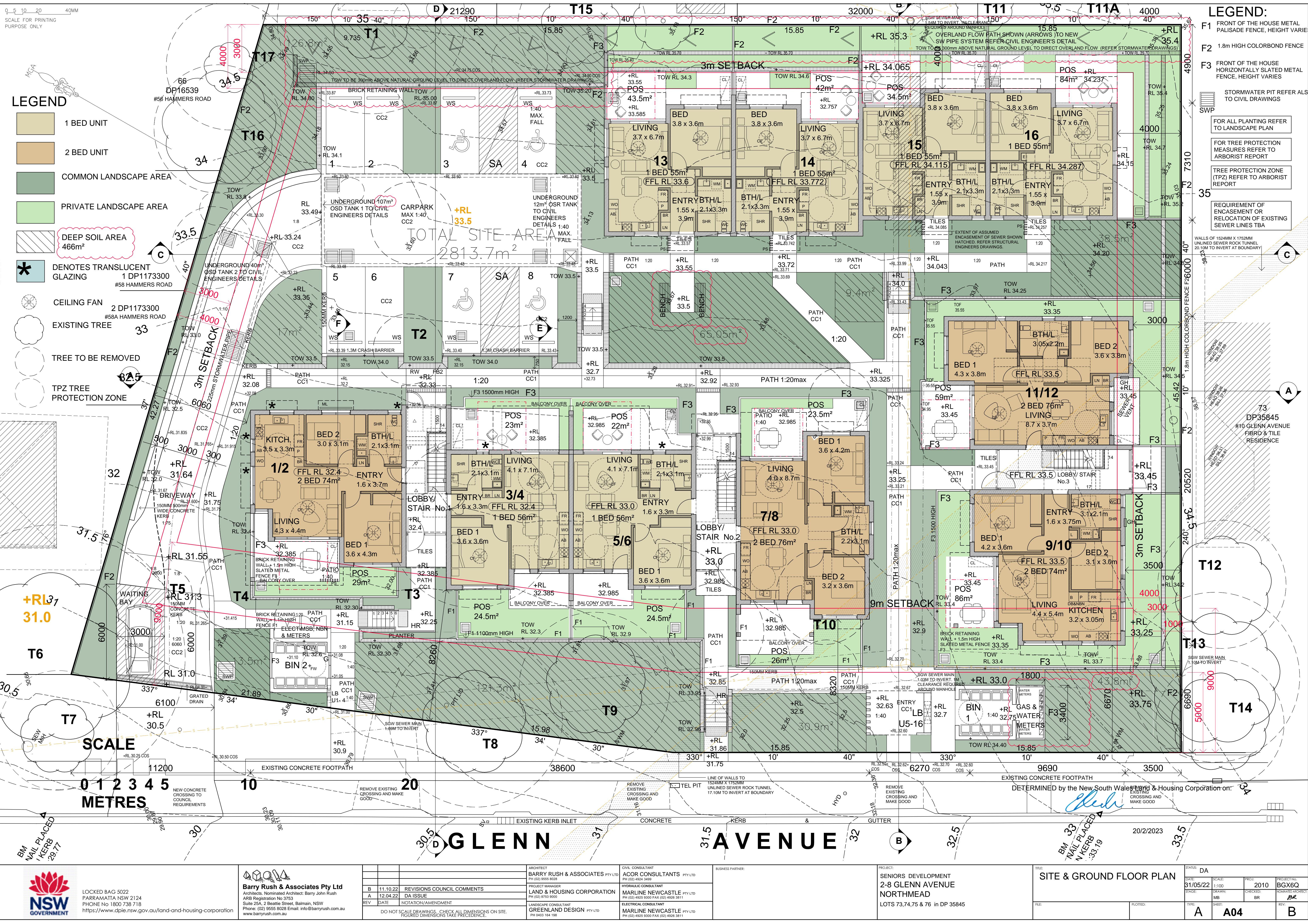
FILE:  
A01 Glenn Ave Northmead

STATUS: DA			
DATE: 13/10/21	SCALE: 1:100	PROJ.: -	PROJECT No. BGX6Q
STAGE:	DRAWN: MB	CHECKED: BR	NOMINATED ARCHITECT <i>BR</i>
TYPE: A	SHEET: A02		REV: A









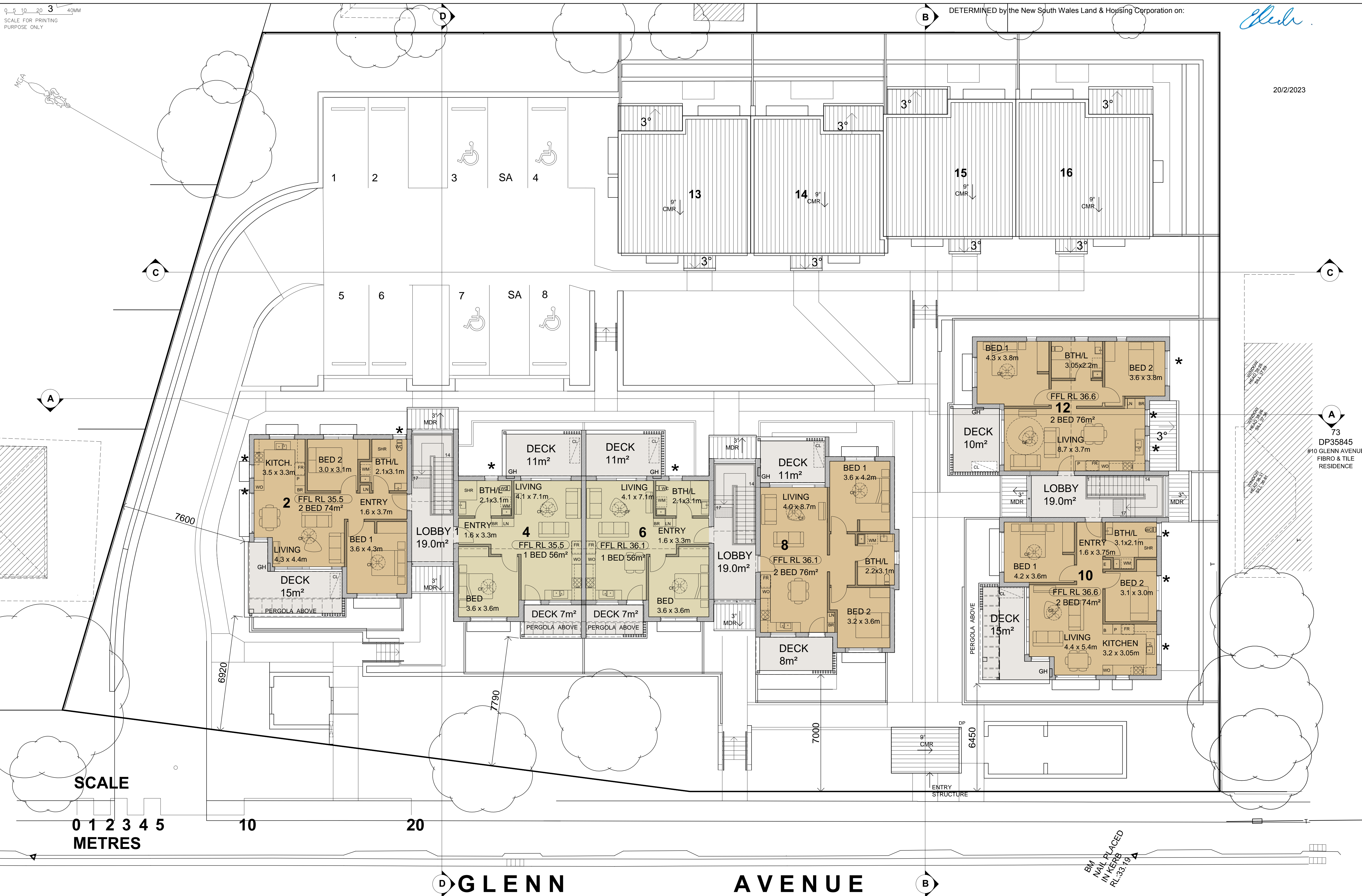


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SCALE FOR PRINTING  
PURPOSE ONLY

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Phone: (02) 9555 8028 Email: info@barryrush.com.au  
[www.barryrush.com.au](http://www.barryrush.com.au)

REV	DATE	NOTATION/AMENDMENT
A	12.04.22	DA ISSUE
B	13.10.21	DA ISSUE

ARCHITECT <b>BARRY RUSH &amp; ASSOCIATES PTY LTD</b> PH (02) 9555 8028	PROJECT MANAGER <b>LAND &amp; HOUSING CORPORATION</b> PH (02) 8753 9500	LANDSCAPE CONSULTANT <b>GREENLAND DESIGN PTY LTD</b> PH 0403 164 198
--	---	--

CIVIL CONSULTANT <b>ACOR CONSULTANTS PTY LTD</b> PH (02) 4924 3499	HYDRAULIC CONSULTANT <b>MARLINE NEWCASTLE PTY LTD</b> PH (02) 4925 9300 FAX (02) 4926 3811	ELECTRICAL CONSULTANT <b>MARLINE NEWCASTLE PTY LTD</b> PH (02) 4925 9300 FAX (02) 4926 3811
--	--	---

BUSINESS PARTNER:

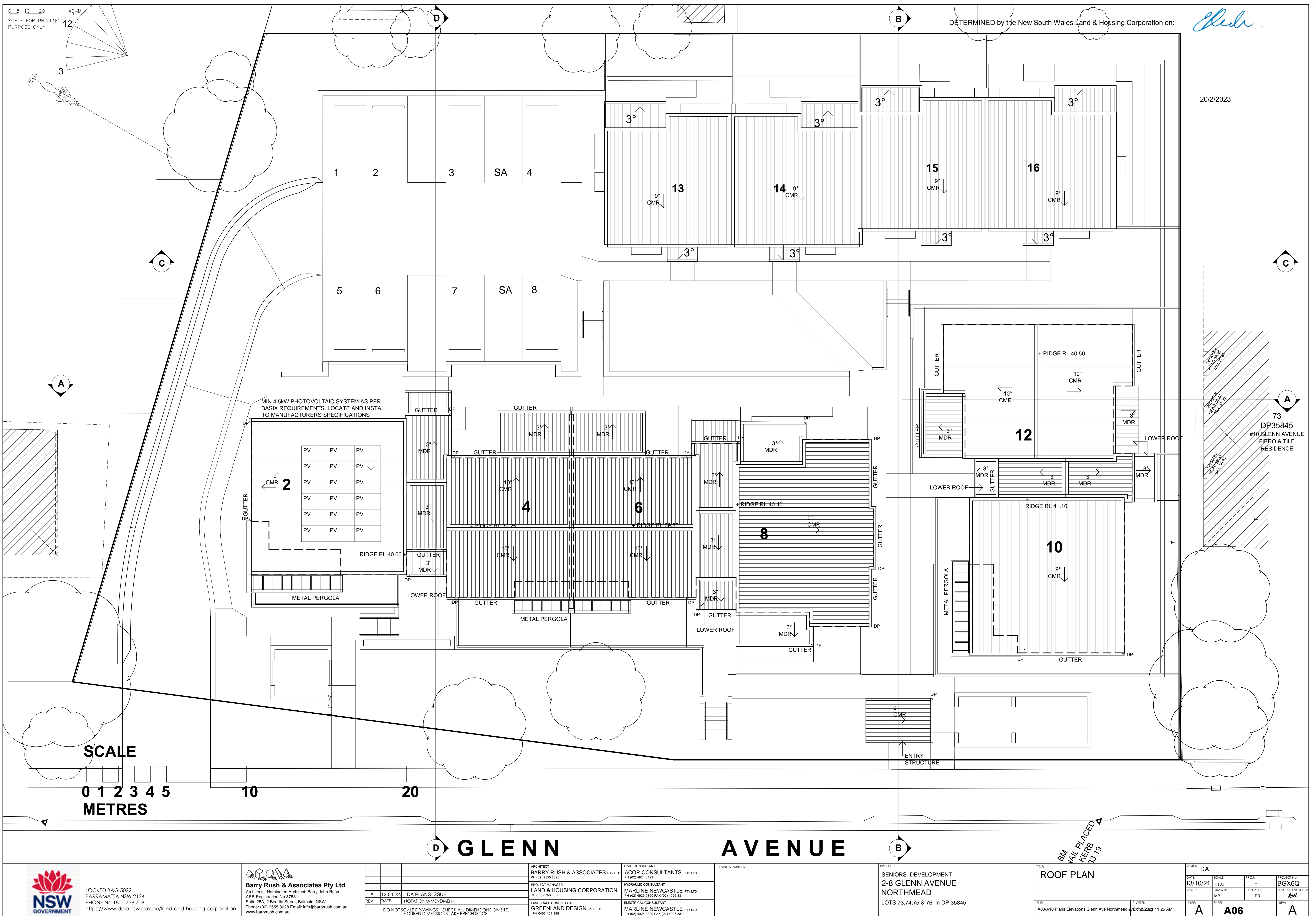
PROJECT:  
**SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD**  
LOTS 73,74,75 & 76 in DP 35845

TITLE:  
**FIRST FLOOR PLAN**

FILE:  
A03-A10 Plans Elevations Glenn Ave Northmead 27/02/2023 11:25 AM

STATUS: DA	DATE: 13/10/21	SCALE: 1:100	PROJ: -	PROJECT NO: BGX6Q
TYPE: A	SHEET: A05	DRAWN: MB	CHECKED: BR	REV: A

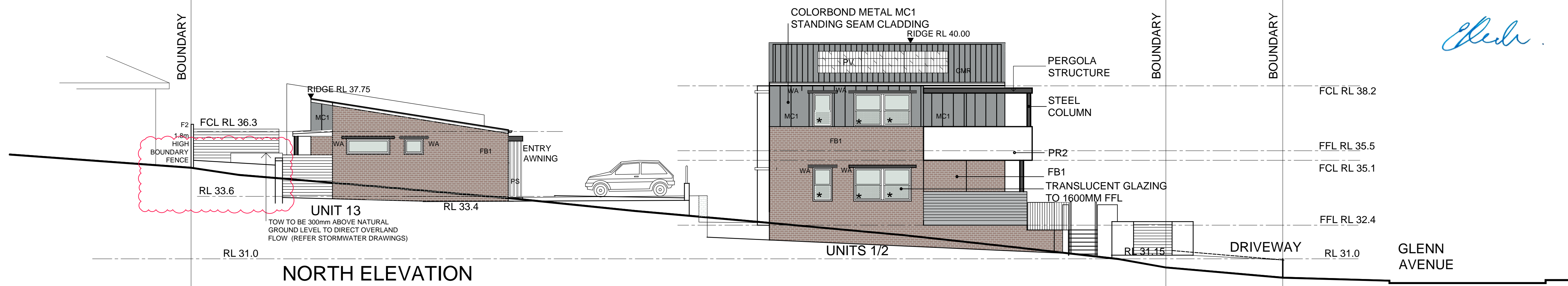




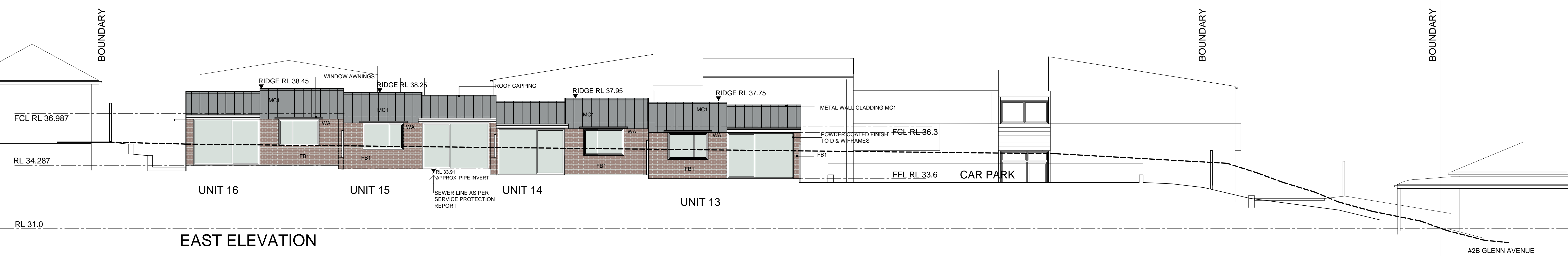




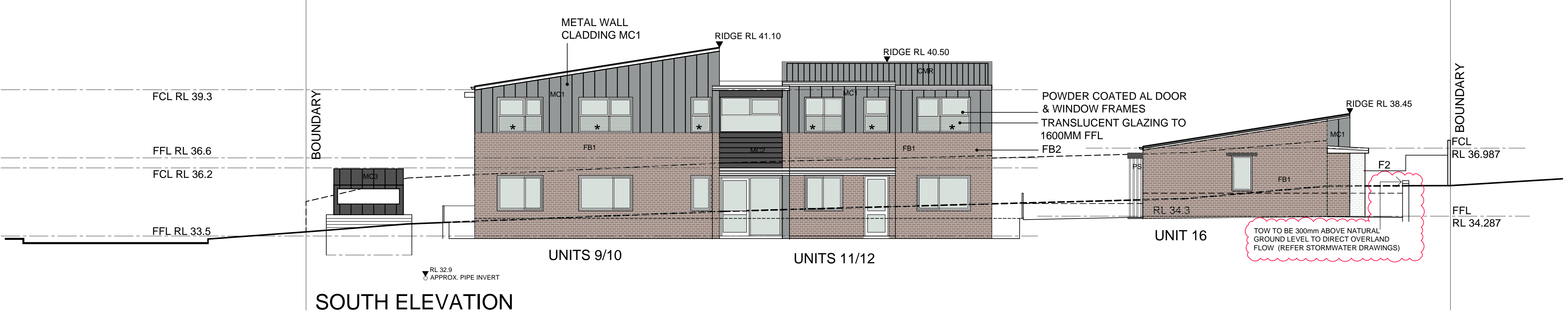
## WEST ELEVATION (FACING GLENN AVENUE)



NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION





March 2022  
Building Sustainability Assessments  
enquiries@buildingsustainability.net.au

BSA Reference: 17099  
Ph: (02) 4962 3439  
www.buildingsustainability.net.au

**Important Note**  
The following specification was used to achieve the thermal performance values indicated on the Assessor Certificate. If the proposed construction varies to those detailed below than the Assessor and NatHERS certificates will no longer be valid. Assessments assume that the BCA provisions for building sealing & ventilation are complied with at construction.  
In NSW both BASIX & the BCA variations must be complied with, in particular the following:  
- Thermal construction in accordance with Vol 1 Section J1.2 or Vol 2 Part 3.12.1.1  
- Thermal breaks for Class 1 dwellings in accordance with Part 3.12.1.2(c) & 3.12.1.4(d)  
- Floor insulation for Class 1 dwellings as per Part 3.12.1.5(a)(ii), (iii) & (e) or (c), (d) & (e)  
- Building sealing in accordance with Section J3 or Part 3.12.3.1 to 3.12.3.6.

Thermal Performance Specifications (does not apply to garage)		
<b>External Wall Construction</b>		
Cavity Brick	Added Insulation	
Reverse Brick		R1.0
<b>Internal Wall Construction</b>		
Brick	Added Insulation	
Cavity Brick (party walls)		None
<b>Ceiling Construction</b>		
Plasterboard	Added Insulation	
<b>Roof Construction</b>		
Colour (Solar Absorptance)	Added Insulation	
Metal	Any	Foil + R1.0 blanket

Floor Construction	Covering	Added Insulation
Concrete	As drawn (if not noted default values used)	None

Windows	Glass and frame type	U value	SHGC Range	Area sq m
ALM-001-01 A	Aluminium Type A Single clear	6.70	0.51 - 0.63	As drawn
ALM-002-01 A	Aluminium Type B Single clear	6.70	0.63 - 0.77	As drawn

Type A windows are awning windows, bifolds, casements, tilt 'n' turn' windows, entry doors, french doors  
Type B windows are double hung windows, sliding windows & doors, fixed windows, stacker doors, louvres

Skylights	Glass and frame type	U	SHGC	Area sq m	Detail
-----------	----------------------	---	------	-----------	--------

U and SHGC values are according to AFRC. Alternate products may be used if the U value is lower & the SHGC is within the range specified

**Shade elements** (eaves, verandahs, awnings etc)  
All shade elements modelled as drawn

**Ceiling Penetrations** (downlights, exhaust fans, flues etc)  
Modelled as drawn and/or to comply with the ventilation and sealing requirements of the BCA  
Ducting is modelled at 150mm. No insulation losses from downlighting have been modelled.

**Ceiling fans used in the Modelling and to be installed in the following areas:**  
All bedrooms and at least one living area = 900mm ceiling fans



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Architects. Nominated Architect: Barry John Rush  
ARB Registration No 3753  
Suite 25A, 2 Beattie Street, Balmain, NSW  
Phone: (02) 9555 9028 Email: info@barryrush.com.au  
www.barryrush.com.au

REV	DATE	NOTATION/AMENDMENT
B	11.10.22	REVISIONS COUNCIL COMMENTS
A	12.04.22	DA PLANS ISSUE

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ARCHITECT  
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ELECTRICAL CONSULTANT  
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BUSINESS PARTNER:

PROJECT:  
SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD  
LOTS 73,74,75 & 76 in DP 35845

TITLE:  
**SECTIONS**

DATE: 13/10/21	SCALE: 1:100	PROJ: -	PROJECT No: BGX6Q
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TYPE: A	SHEET: A08	REV: B	

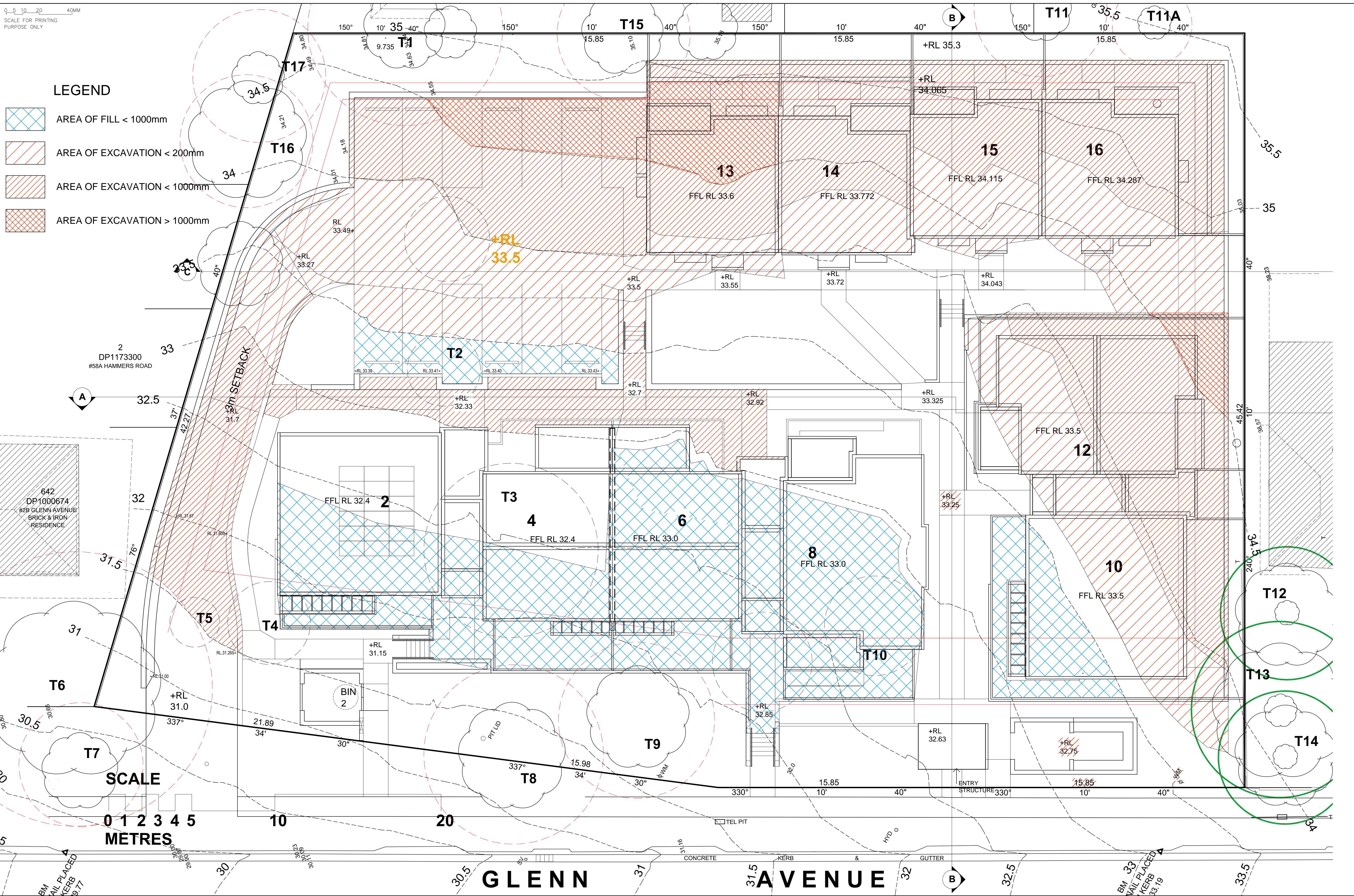


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SCALE FOR PRINTING  
PURPOSE ONLY

LEGEND

- AREA OF FILL < 1000mm
- AREA OF EXCAVATION < 200mm
- AREA OF EXCAVATION < 1000mm
- AREA OF EXCAVATION > 1000mm



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REV	DATE	NOTATION/AMENDMENT
A	12.04.22	DA PLANS ISSUE
REV	DATE	NOTATION/AMENDMENT

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**MARLINE NEWCASTLE PTY LTD**  
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BUSINESS PARTNER:

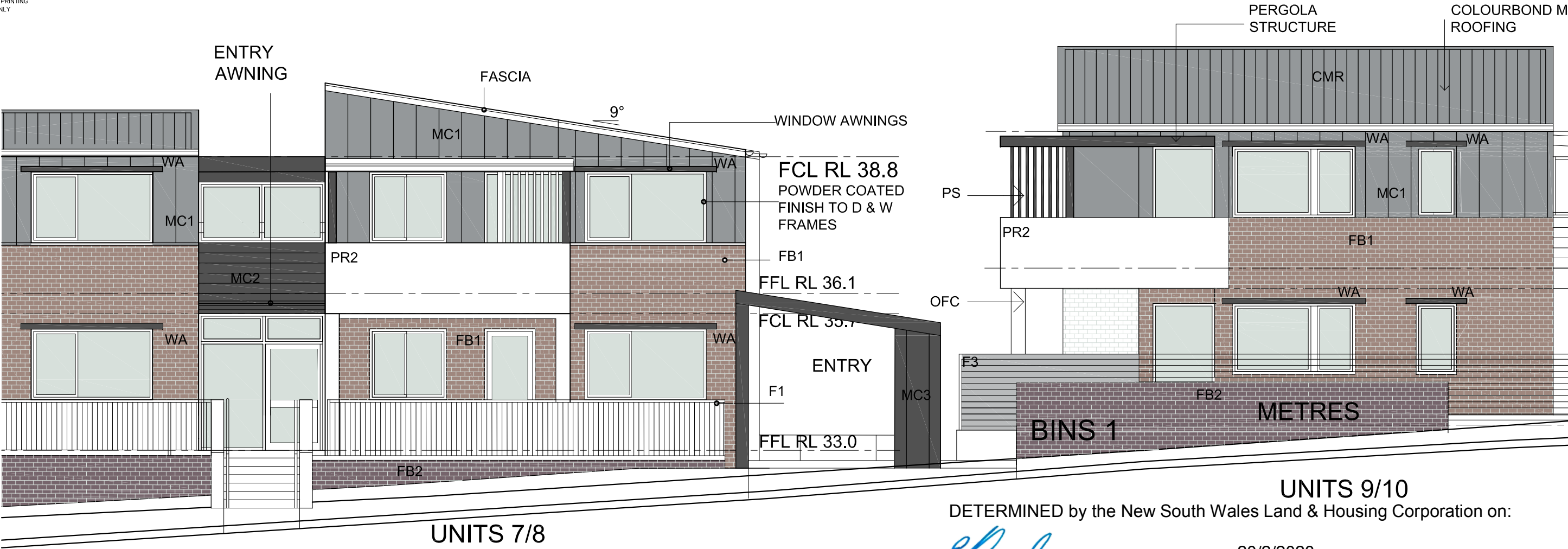
PROJECT:  
**SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD**  
LOTS 73,74,75 & 76 in DP 35845

TITLE:  
**AREAS OF EXCAVATION & FILL**

DATE:  
**13/10/21**  
SCALE:  
**1:100**  
DRAWN:  
**MB**  
CHECKED:  
**BR**  
SHEET:  
**A09**  
REV:  
**A**

STATUS:  
**DA**  
PROJECT NO:  
**BGX6Q**  
DRAWING NO:  
**BR**  
SHEET:  
**A**





UNITS 9/10  
DETERMINED by the New South Wales Land & Housing Corporation on:

20/2/2023

FINISHES SCHEDULE

CODE	LOCATION		DESCRIPTION	COLOUR
CMR	ROOFING/ GUTTER/ DOWNPIPE/		COLRBOND METAL ROOFING	BASALT
	FASCIA & BARGE		METAL	MONUMENT
FB1	WALLS		FACE BRICK	BOWRAL MURRAY GREY
FB2	LOW SITE WALLS		FACE BRICK	BORAL ESCURA VELOUR VOLCANIC
MC1	WALLS		METAL WALL CLADDING STANDING SEAM	BASALT
MC2	WALLS ABOVE ENTRIES		METAL WALL CLADDING	MONUMENT
MC3	WALLS TO ENTRY STRUCTIURES		METAL WALL CLADDING STANDING SEAM	MONUMENT
WA	WINDOW AWNINGS		METAL POWDERCOATED	MONUMENT

CODE	LOCATION		DESCRIPTION	COLOUR
PR1	DIVIDING WALLS		OFF-FORM CONCRETE SKIM COAT RENDER + GRANOSITE SMOOTH PAINT	MONUMENT
PR2	BALCONY'S & SITE WALLS		OFF-FORM CONCRETE SKIM COAT RENDER + GRANOSITE SMOOTH PAINT	WATTYL ASTOR WHITE
AL	WINDOWS & DOORS		METAL POWDERCOATED	SATIN MONUMENT
SS	HANDRAILS		STAINLESS STEEL	SS MATT
AWNING/ WA	AWNINGS		COLORBOND	MONUMENT
FC1	BALCONY LINING & SOFFIT		PAINTED FIBER CEMENT SHEETING	WATTYL ASTOR WHITE
F1	METAL FENCE 1200 HIGH		METAL FENCING TO DETAIL	DULUX MONUMENT
F2 F3	FENCE		COLORBOND FENCE SLATTED METAL FENCE	DULUX SHALE GREY



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[www.barryrush.com.au](http://www.barryrush.com.au)

REV	DATE	NOTATION/AMENDMENT
A	12.04.22	DA PLANS ISSUE
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ARCHITECT <b>BARRY RUSH &amp; ASSOCIATES</b> PTY LTD PH (02) 9555 8028
PROJECT MANAGER <b>LAND &amp; HOUSING CORPORATION</b> PH (02) 8753 9000
LANDSCAPE CONSULTANT <b>GREENLAND DESIGN</b> PTY LTD PH 0403 164 198

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ELECTRICAL CONSULTANT <b>MARLINE NEWCASTLE</b> PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811

BUSINESS PARTNER:

PROJECT:  
**SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD**  
LOTS 73,74,75 & 76 in DP 35845

TITLE:

**FINISHES SCHEDULE**

STATUS: **DA**

DATE:  
**13/10/21**

SCALE:  
**A**

PROJ:  
**-**

SHEET:  
**A10**

PROJECT NO:  
**BGX60**

REVISIONS:  
**BR**

DATE:  
**13/10/21**

SCALE:  
**A**

PROJ:  
**-**

SHEET:  
**A**

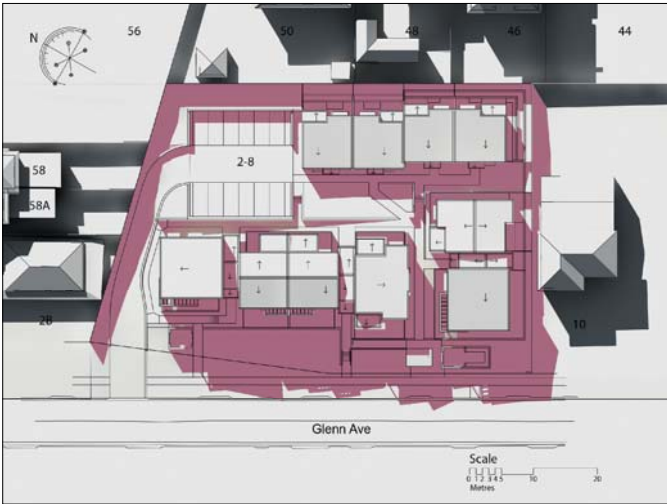
PROJECT NO:  
**BGX60**

REVISIONS:  
**BR**

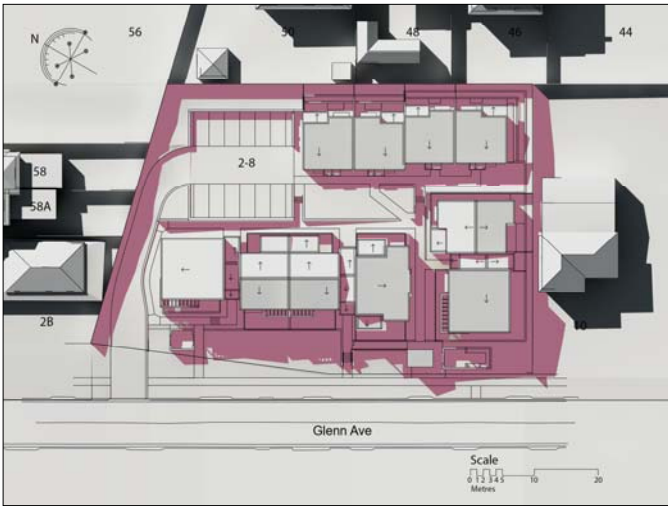




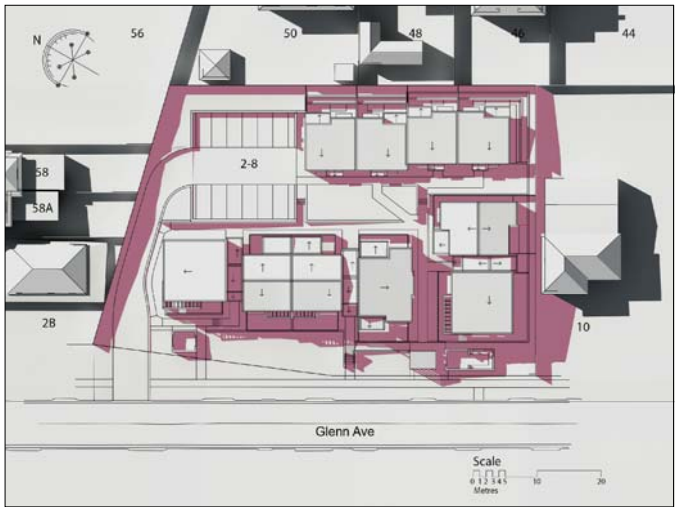
9AM 21ST JUNE



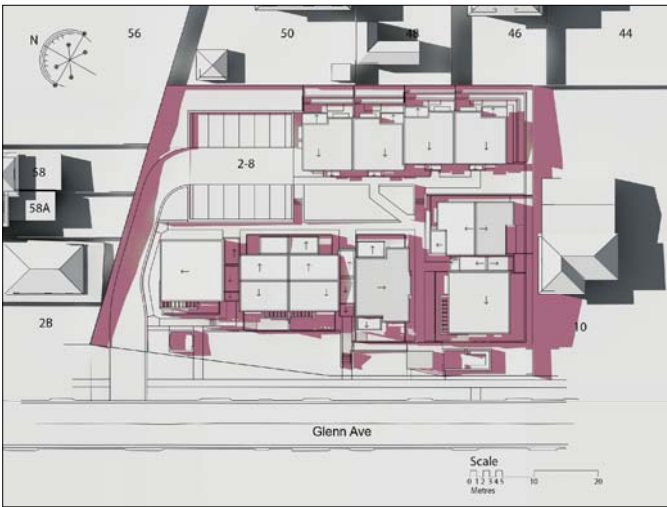
10AM 21ST JUNE



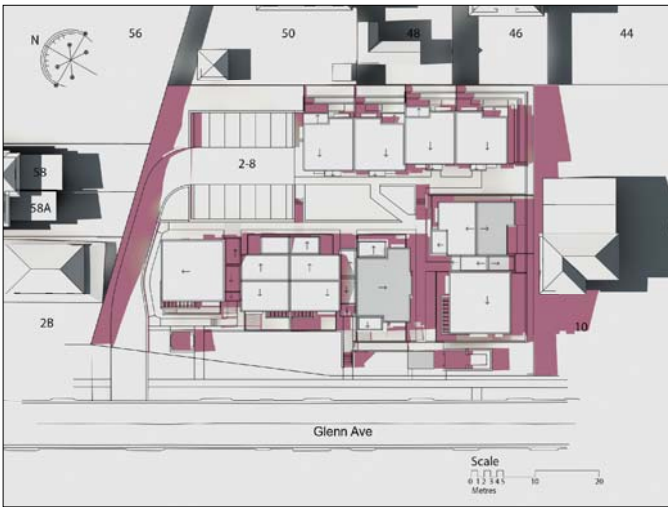
11AM 21ST JUNE



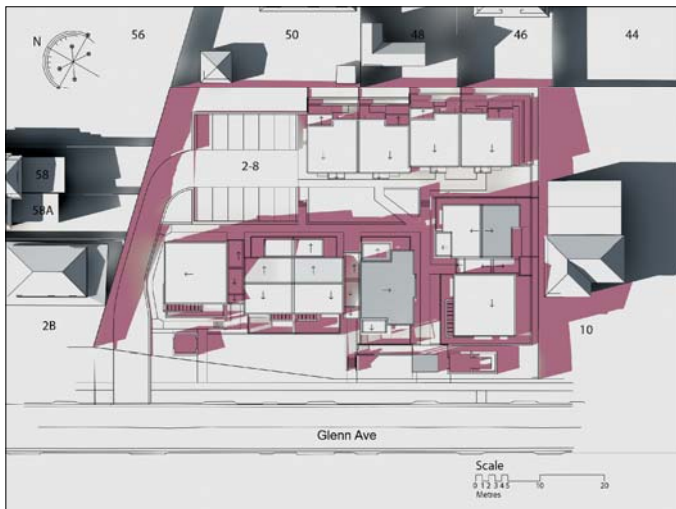
12NOON 21ST JUNE



1PM 21ST JUNE



2PM 21ST JUNE



3PM 21ST JUNE

- LEGEND:
- Grey area indicates existing shadows cast by neighboring properties
  - Pink area indicates shadows cast by proposed development

DETERMINED by the New South Wales Land & Housing Corporation on:

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20/2/2023



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PHONE No 1800 738 718  
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**Barry Rush & Associates Pty Ltd**  
Architects, Nominated Architect: Barry John Rush  
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ARCHITECT	BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028
PROJECT MANAGER	LAND & HOUSING CORPORATION PH (02) 8753 9000
LANDSCAPE CONSULTANT	GREENLAND DESIGN PTY LTD PH 0403 184 198
DATE	12.04.22
REV	DA ISSUE
NOTATION/AMENDMENT	
DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.	

CIVIL CONSULTANT	ACOR CONSULTANTS PTY LTD PH (02) 4924 3409
HYDRAULIC CONSULTANT	MARLINE NEWCASTLE PTY LTD PH (02) 4955 9300 FAX: (02) 4928 3811
ELECTRICAL CONSULTANT	MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX: (02) 4928 3811

BUSINESS PARTNER	
------------------	--

PROJECT:  
SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD  
LOTS 73,74,75 & 76 in DP 35845

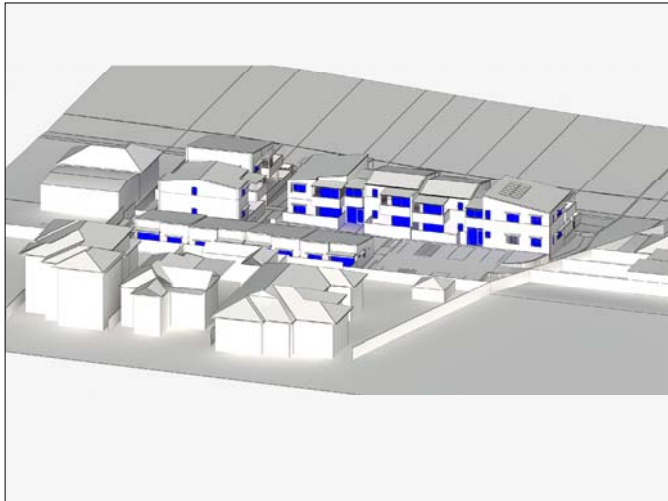
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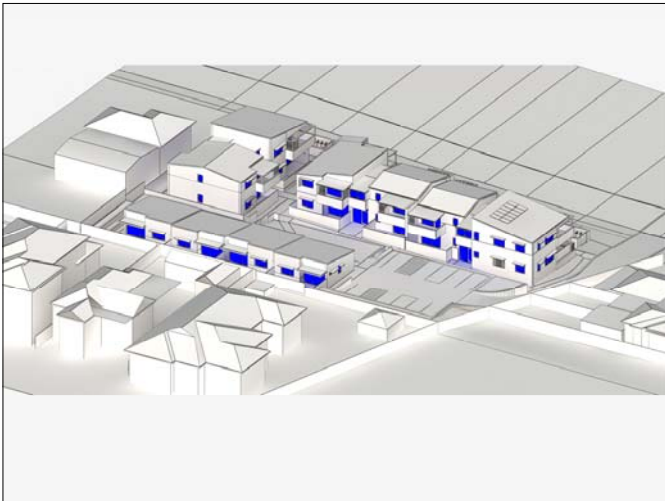
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DRAWN:	MB
CHECKED:	BR
DATE:	20/2/2023
TYPE:	A
SHEET:	A11
REV.:	A

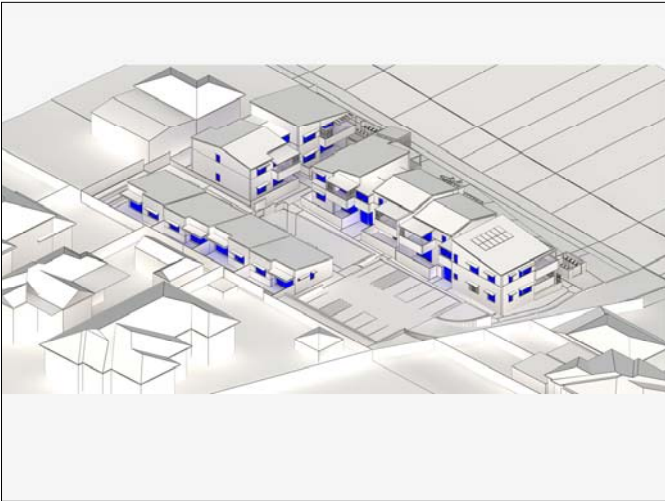




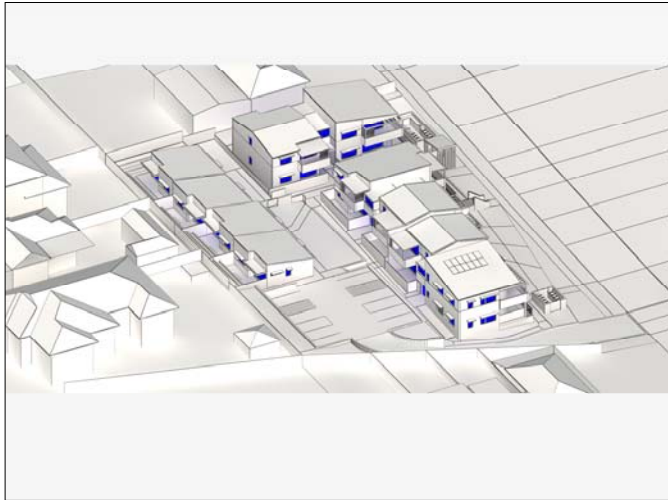
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10AM 21ST JUNE



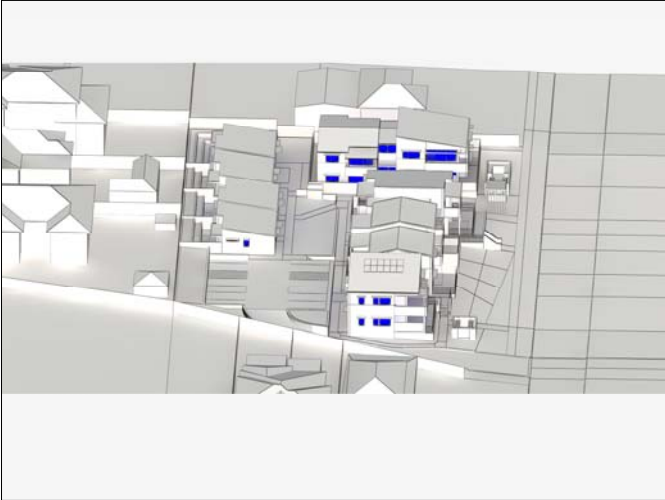
11AM 21ST JUNE



12NOON 21ST JUNE



1PM 21ST JUNE



2PM 21ST JUNE

DETERMINED by the New South Wales Land & Housing Corporation on:

20/2/2023



3PM 21ST JUNE



LOCKED BAG 5022  
PARRAMATTA NSW 2124  
PHONE No 1800 738 718  
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REV	DATE	NOTATION/AMENDMENT
A	12.04.22	DA ISSUE
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ARCHITECT <b>BARRY RUSH &amp; ASSOCIATES PTY LTD</b> PH (02) 9555 8028
PROJECT MANAGER <b>LAND &amp; HOUSING CORPORATION</b> PH (02) 8753 9000
LANDSCAPE CONSULTANT <b>GREENLAND DESIGN PTY LTD</b> PH 0403 164 198

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BUSINESS PARTNER:

PROJECT:  
**SENIORS DEVELOPMENT  
2-8 GLENN AVENUE  
NORTHMEAD  
LOTS 73,74,75 & 76 in DP 35845**

TITLE:  
**VIEWS FROM SUN DIAGRAM**

FILE: A03-A10 Plans Elevations Glenn Ave Northmead	DATE: 27/Oct/2021 11:25 AM
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DATE: <b>13.10.21</b>	DRAWN: MB	CHECKED: BR	APPROVED: <i>BR</i>
TITLE: <b>A</b>	SHEET: <b>A12</b>	REV: <b>A</b>	

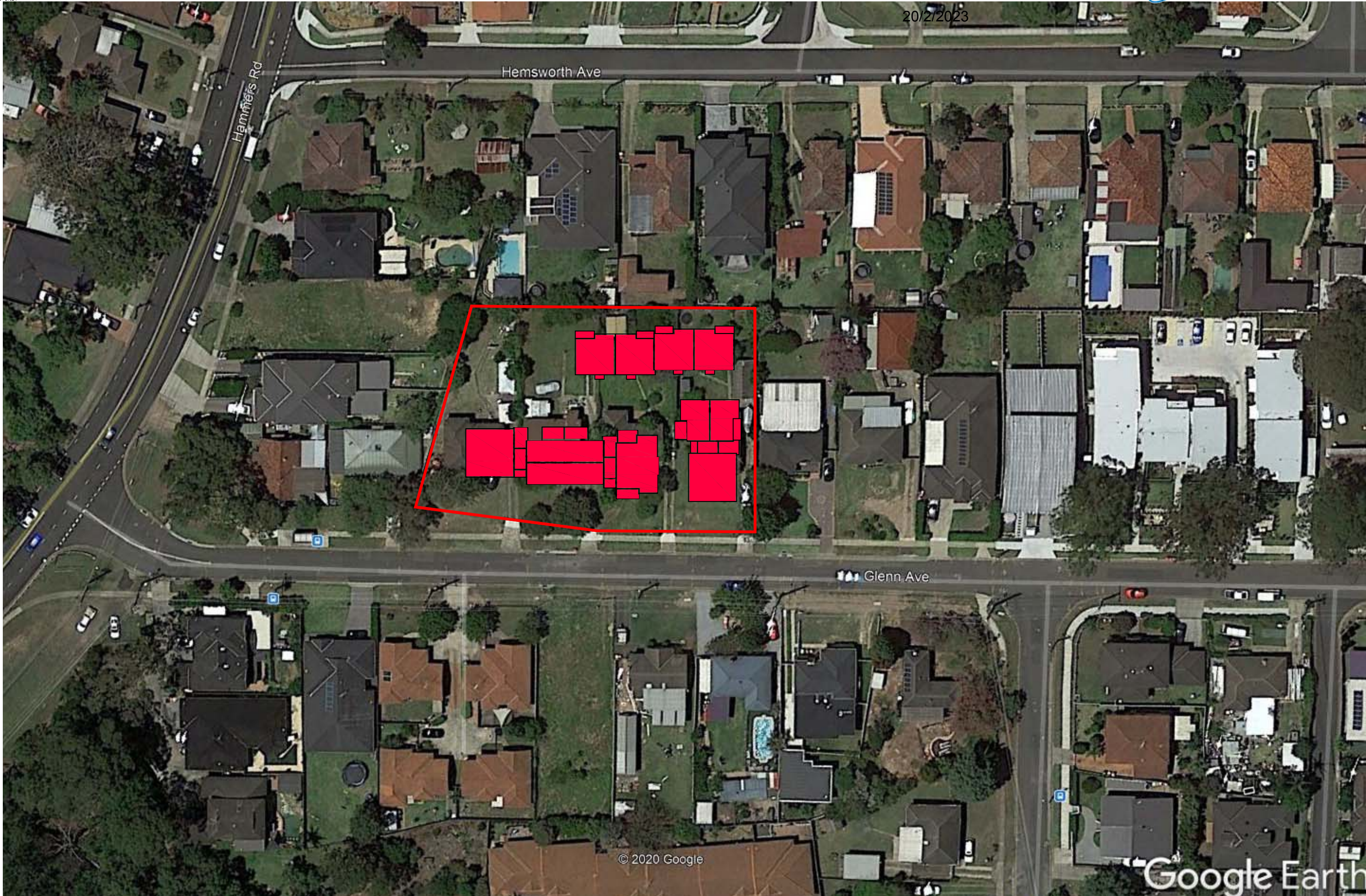






*John*

20/2/2023



REV	DATE	NOTATION/AMENDMENT
A	12.04.22	DA PLAN ISSUE
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ARCHITECT BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028
PROJECT MANAGER LAND & HOUSING CORPORATION PH (02) 8753 9000
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CIVIL CONSULTANT ACOR CONSULTANTS PTY LTD PH (02) 4924 3499
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ELECTRICAL CONSULTANT MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300 FAX (02) 4926 3811

BUSINESS PARTNER:
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PROJECT: SENIORS DEVELOPMENT 2-8 GLENN AVENUE NORTHMEAD LOTS 73,74,75 & 76 in DP 35845
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TITLE: BLOCK ANALYSIS PLAN
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



















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DATE: 13/10/21	DRAWN: MB	CHECKED: BR	DESIGNED BY: BR
TYPE: A	SHEET: A14	REV: A	



DETERMINED by the New South Wales Land & Housing Corporation on: 20/2/2023

# PROPOSED DEVELOPMENT (No.2 - 8) GLENN AVENUE, NORTHMEAD STORMWATER MANAGEMENT PLANS

LEGEND	
	DENOTES ON-SITE DETENTION TANK
	DENOTES ON-SITE RETENTION TANK
	DENOTES DWELLING FOOTPRINT
	DENOTES 100mm DIA. STORMWATER/SURFACE WATER SYSTEM PIPE AT 1% MIN. GRADE U.N.O.
	DENOTES 100mm DIA. FULLY SEALED RAINWATER SYSTEM PIPE U.N.O.
	DENOTES RAINWATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
	DENOTES STORMWATER/SURFACE WATER PIPE AND DIA. WHEN PIPE EXCEEDS 100mm DIA.
	DENOTES RISING MAIN AND PIPE DIA. U.N.O.
	DENOTES SUBSOIL DRAINAGE LINE AND DIA. WRAPPED IN GEOFABRIC U.N.O.
	DENOTES DOWNPIPE
	DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL
	DENOTES INSPECTION OPENING WITH SCREW DOWN LID AT FINISHED SURFACE LEVEL FOR SYSTEM FLUSHING PURPOSES
	STORMWATER PIT - SOLID COVER
	STORMWATER PIT - GRATED INLET
	DENOTES GRATED DRAIN
	DENOTES ABSORPTION TRENCH
	NON RETURN VALVE
	PUMP
	STOP VALVE (ISOLATION VALVE)
	240v REQUIRED
	DENOTES LEVEL OF INLET /OUTLET OF STORMWATER PIPE. NOTE: UNLESS NOTED OTHERWISE, THE BASE OF THE PIT IS THE SAME AS THE PIPE INLET/OUTLET.

DIAL BEFORE YOU DIG



IMPORTANT: THE CONTRACTOR IS TO MAINTAIN A CURRENT SET OF "DIAL BEFORE YOU DIG" DRAWINGS ON SITE AT ALL TIMES.

GENERAL NOTES	
1.	THESE PLANS SHALL BE READ IN CONJUNCTION WITH OTHER RELEVANT CONSULTANTS' PLANS, SPECIFICATIONS, CONDITIONS OF DEVELOPMENT CONSENT AND CONSTRUCTION CERTIFICATE REQUIREMENTS. WHERE DISCREPANCIES ARE FOUND ACOR CONSULTANTS (CC) MUST BE CONTACTED IMMEDIATELY FOR VERIFICATION
2.	WHERE THESE PLANS ARE NOTED FOR DEVELOPMENT APPLICATION PURPOSES ONLY, THEY SHALL NOT BE USED FOR OBTAINING A CONSTRUCTION CERTIFICATE NOR USED FOR CONSTRUCTION PURPOSES
3.	SUBSOIL DRAINAGE SHALL BE DESIGNED AND DETAILED BY THE STRUCTURAL ENGINEER. SUBSOIL DRAINAGE SHALL NOT BE CONNECTED INTO THE STORMWATER SYSTEM IDENTIFIED ON THESE PLANS UNLESS APPROVED BY ACOR CONSULTANTS (CC)

STORMWATER CONSTRUCTION NOTES	
1.	ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AS/NZS 3500 (CURRENT EDITION) AND THE REQUIREMENTS OF THE LOCAL COUNCIL'S POLICIES AND CODES
2.	THE MINIMUM SIZES OF THE STORMWATER DRAINS SHALL NOT BE LESS THAN DN90 FOR CLASS 1 BUILDINGS AND DN100 FOR OTHER CLASSES OF BUILDING OR AS REQUIRED BY THE REGULATORY AUTHORITY
3.	THE MINIMUM GRADIENT OF STORMWATER DRAINS SHALL BE 1%, UNLESS NOTED OTHERWISE
4.	COUNCIL'S TREE PRESERVATION ORDER IS TO BE STRICTLY ADHERED TO. NO TREES SHALL BE REMOVED UNTIL PERMIT IS OBTAINED
5.	PUBLIC UTILITY SERVICES ARE TO BE ADJUSTED AS NECESSARY AT THE CLIENT'S EXPENSE
6.	ALL PITS TO BE BENCHED AND STREAMLINED. PROVIDE STEP IRONS FOR ALL PITS OVER 1.2m DEEP
7.	MAKE SMOOTH JUNCTION WITH ALL EXISTING WORK
8.	VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION
9.	SERVICES SHOWN ON THESE PLANS HAVE BEEN LOCATED FROM INFORMATION SUPPLIED BY THE RELEVANT AUTHORITIES AND FIELD INVESTIGATIONS AND ARE NOT GUARANTEED COMPLETE NOR CORRECT. IT IS THE CLIENT & CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL PRIOR TO CONSTRUCTION
10.	ANY VARIATION TO THE WORKS AS SHOWN ON THE APPROVED DRAWINGS ARE TO BE CONFIRMED BY ACOR CONSULTANTS (CC) PRIOR TO THEIR COMMENCEMENT

RAINWATER RE-USE SYSTEM NOTES	
1.	RAINWATER SUPPLY PLUMBING TO BE CONNECTED TO OUTLETS WHERE REQUIRED BY BASIX CERTIFICATE (BY OTHERS)
2.	TOWN WATER CONNECTION TO RAINWATER TANK TO BE TO THE SATISFACTION OF THE REGULATORY AUTHORITY. THIS MAY REQUIRE PROVISION OF: 2.1. PERMANENT AIR GAP 2.2. BACKFLOW PREVENTION DEVICE
3.	NO DIRECT CONNECTION BETWEEN TOWN WATER SUPPLY AND THE RAIN WATER SUPPLY
4.	AN APPROVED STOP VALVE AND/OR PRESSURE LIMITING VALVE AT THE RAINWATER TANK
5.	PROVIDE APPROPRIATE FLOAT VALVES AND/OR SOLENOID VALVES TO CONTROL TOWN WATER SUPPLY INLET TO TANK IN ORDER TO ACHIEVE THE TOP-UP INDICATED ON THE TYPICAL DETAIL
6.	ALL PLUMBING WORKS ARE TO BE CARRIED OUT BY LICENSED PLUMBERS IN ACCORDANCE WITH AS/NZS3500.1 NATIONAL PLUMBING AND DRAINAGE CODE
7.	PRESSURE PUMP ELECTRICAL CONNECTION TO BE CARRIED OUT BY A LICENSED ELECTRICIAN
8.	ONLY ROOF RUN-OFF IS TO BE DIRECTED TO THE RAINWATER TANK. SURFACE WATER INLETS ARE NOT TO BE CONNECTED
9.	PIPE MATERIALS FOR RAINWATER SUPPLY PLUMBING ARE TO BE APPROVED MATERIALS TO AS/NZS3500 PART 1 SECTION 2 AND TO BE CLEARLY AND PERMANENTLY IDENTIFIED AS 'RAINWATER'. THIS MAY BE ACHIEVED FOR BELOW GROUND PIPES USING IDENTIFICATION TAPE (MADE IN ACCORDANCE WITH AS2648) OR FOR ABOVE GROUND PIPES BY USING ADHESIVE PIPE MARKERS (MADE IN ACCORDANCE WITH AS1345)
10.	EVERY RAINWATER SUPPLY OUTLET POINT AND THE RAINWATER TANK ARE TO BE LABELED 'RAINWATER' ON A METALLIC SIGN IN ACCORDANCE WITH AS1319
11.	ALL INLETS AND OUTLETS TO THE RAINWATER TANK ARE TO HAVE SUITABLE MEASURES PROVIDED TO PREVENT MOSQUITO AND VERMIN ENTRY

PARRAMATTA COUNCIL REQUIREMENTS	
1.	SITE AREA (m²) ..... 2812.9
2.	ON-SITE DETENTION REFER TO SHEET C9 FOR THE UPPER PARRAMATTA RIVER CATCHMENT TRUST ON-SITE DETENTION DRAINAGE CALCULATIONS
3.	RAINWATER REUSE PROVIDE RAINWATER REUSE TANK AS REQUIRED BY BASIX. BASIX REQUIREMENT = 10m³.
4.	SITE DISCHARGE TO PROPOSED KERB INLET PIT IN GLENN AVENUE. REFER TO SHEET C4.
5.	DESIGN HAS BEEN PREPARED IN ACCORDANCE WITH PARRAMATTA COUNCIL DESIGN & DEVELOPMENT GUIDELINES, UPPER PARRAMATTA RIVER CATCHMENT TRUST, AR&R AND AS/ANZS 3500

SHEET INDEX	
COVER SHEET & NOTES	SHEET C1
ON SITE DETENTION CATCHMENT PLAN	SHEET C2
STORMWATER MANAGEMENT PLAN - PART 1	SHEET C3
STORMWATER MANAGEMENT PLAN - PART 2	SHEET C4
STORMWATER MANAGEMENT DETAILS SHEET No.1	SHEET C5
STORMWATER MANAGEMENT DETAILS SHEET No.2	SHEET C6
EROSION & SEDIMENT CONTROL PLAN	SHEET C7
EROSION & SEDIMENT CONTROL NOTES & DETAILS	SHEET C8
OSD CALCULATION SHEET & MAINTENANCE SCHEDULE	SHEET C9
ON-SITE DETENTION CHECKLIST SHEET 1 OF 2	SHEET C10
ON-SITE DETENTION CHECKLIST SHEET 2 OF 2	SHEET C11
PIPE LONG SECTION PIT P1 - PIT P4	SHEET C12
STORMWATER QUALITY REPORT SHEET 1 OF 2	SHEET C13
STORMWATER QUALITY REPORT SHEET 2 OF 2	SHEET C14

DEVELOPMENT APPLICATION ISSUE  
NOT FOR CONSTRUCTION

DRAWINGS MUST BE PRINTED IN COLOUR

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


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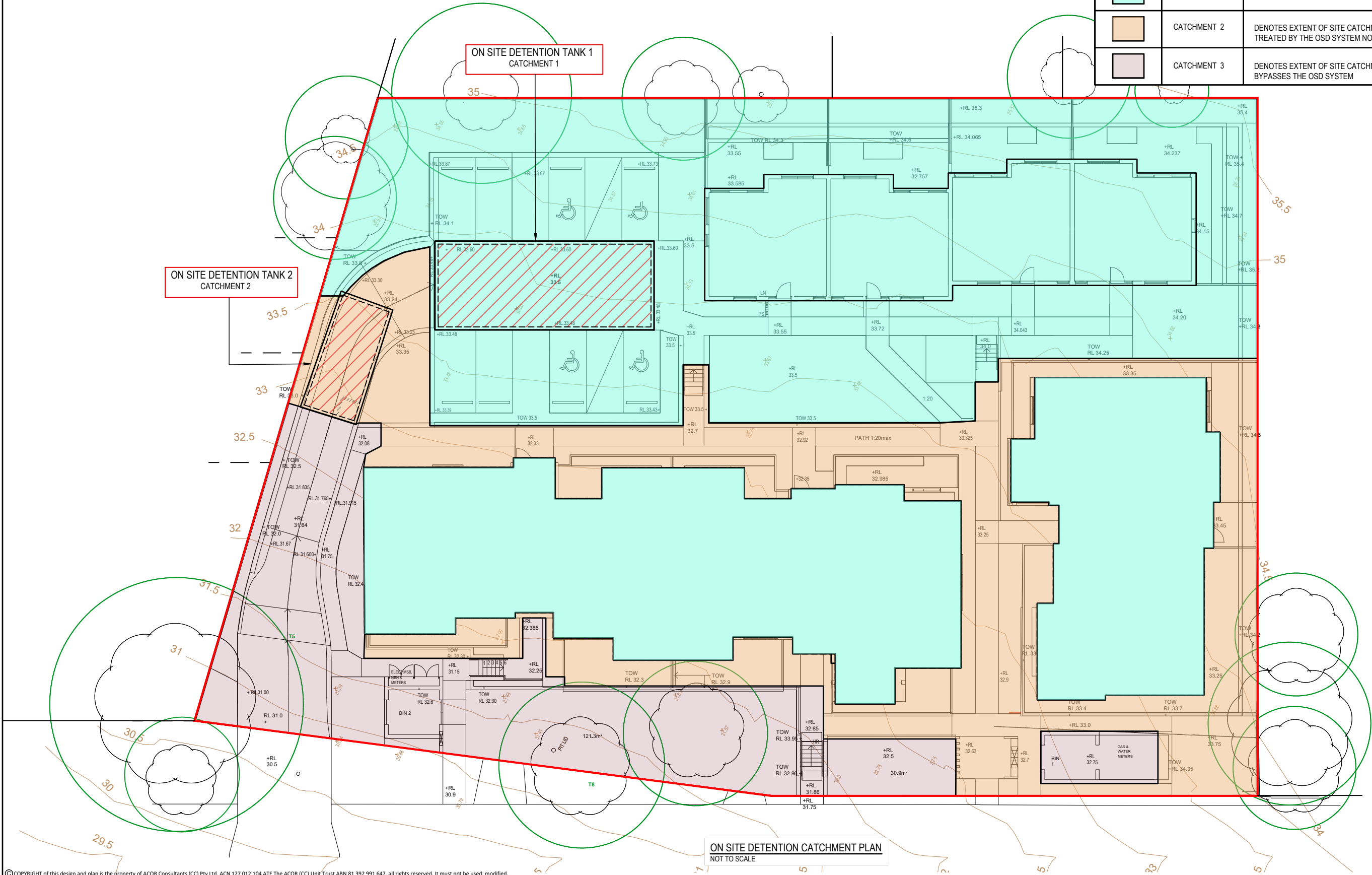


Check.

20/2/2023

DETERMINED by the New South Wales Land & Housing Corporation on:

CATCHMENT SUMMARY			
SITE AREA 2812.9m <sup>2</sup>			
		COMMENT	AREA (m <sup>2</sup> )
	CATCHMENT 1	DENOTES EXTENT OF SITE CATCHMENT THAT IS TREATED BY THE OSD SYSTEM NO. 1	1785 (63%)
	CATCHMENT 2	DENOTES EXTENT OF SITE CATCHMENT THAT IS TREATED BY THE OSD SYSTEM NO. 2	605 (22%)
	CATCHMENT 3	DENOTES EXTENT OF SITE CATCHMENT THAT BYPASSES THE OSD SYSTEM	423 (15%)



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D REISSUED TO SUIT COUNCIL COMMENTS				09.10.22	RH	BK		Client <b>BARRY RUSH &amp; ASSOCIATES</b> PTY LTD	Architect  <b>ACOR CONSULTANTS (CC) Pty Ltd</b> Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499  ENGINEERS   MANAGERS   INFRASTRUCTURE PLANNERS   DEVELOPMENT CONSULTANTS	Project <b>PROPOSED RESIDENTIAL DEVELOPMENT</b> LOTS 73, 74, 75 & 76 No. 2 - 8 GLENN AVENUE, NORTHMEAD	Drawing Title <b>ON SITE DETENTION CATCHMENT PLAN</b>									
C RE-ISSUED FOR DEVELOPMENT APPROVAL				21.04.22	RH	BK					Drawn RH					Date MAY 21	Scale AS NOTED	A1 BAK	Q.A. Check BAK	Date 20.04.22
B ISSUED FOR DEVELOPMENT APPROVAL				21.10.21	RH	BK					Designed BK					Project No. <b>CC210151</b>		Dwg. No. <b>C2</b>		Issue <b>D</b>
A ISSUED FOR REVIEW & COMMENT				02.09.21	RH	BK														
Issue Description				Date	Drawn	Approved														
																				



## NOTES:

1. TOP OF GRATE LEVELS HAVE BEEN DETERMINED FROM THE SURVEY DETAIL PROVIDED. FOLLOWING EARTHWORKS AND BENCHING, VALIDITY OF GRATE LEVELS SHOULD BE ASSESSED AND ADJUSTED AS REQUIRED TO MEET THE INTENT OF THE DESIGN. WHERE IN DOUBT CONTACT THE DESIGN ENGINEER.
2. FOR CHARGED/SEALED LINES PROVIDE APPROPRIATE CLEAN OUT FACILITY AT LOW POINTS OF SYSTEM, TYP.
3. ALL PLANTER BEDS TO HAVE ATLANTIS DRAINAGE CELL COMPLETE WITH PLANTER DRAIN OUTLET.
4. STORMWATER PIPES WITHIN CEILING SPACES OVER HABITABLE AREAS AND THE ADJACENT VERTICAL STACK TO BE ACOUSTICALLY LAGGED. REFER TO ACOUSTIC ENGINEERS REPORT FOR FURTHER DETAIL.

DETERMINED by the New South Wales Land &amp; Housing Corporation on:

20/2/2023

## OVERFLAND FLOW PATH

DEPICTED ON THIS SHEET AND SHOWN THUS:

OVERLAND FLOW PATH TO BE GRADED AT A MIN. 1% FALL TO PIT P1. LOCALLY TAIL INTO PIT P1 AND PROVIDE BARRIER AS SHOWN. OVERLAND FLOW BASED ON 2300m<sup>2</sup> OF UPSTREAM CATCHMENT. REFER TO SHEET C12 FOR DRAINS ASSESSMENT AND LONG SECTION.

WARNING  
LOCATION AND DEPTH OF ALL UNDERGROUND SERVICES TO BE INVESTIGATED WITH THE RELEVANT AUTHORITIES PRIOR TO COMMENCING WORK

## ON-SITE DETENTION (OSD) TANK 1

REFER OSD CALCULATIONS TABLE ON SHEET C9 AND DETAIL ON SHEET C5  
BELOW GROUND STORAGE TANK  
INTERNAL FOOTPRINT - 74m<sup>2</sup>  
TOP STORED WSL = RL 32.95  
INVERT OF OUTLET IL 31.20  
VOLUME OF TANK = 107m<sup>3</sup>  
ACCESS COVERS TO TANK MUST BE CHILDPROOF WITH NON CORROSIVE LOCKING DEVICES

## ON-SITE RETENTION (OSR)

REFER TO DETAIL ON SHEET C6  
BELOW GROUND STORAGE TANK  
INTERNAL FOOTPRINT - 9.2m<sup>2</sup>  
TOP STORED WSL = RL 32.95  
VOLUME OF TANK REQUIRED = 10m<sup>3</sup> MIN.  
VOLUME OF TANK PROVIDED = 12m<sup>3</sup>  
ACCESS COVERS TO TANK MUST BE CHILDPROOF WITH NON CORROSIVE LOCKING DEVICES

ROOF WATER ONLY DRAINAGE SYSTEM.  
ALLOW TO CONVEY 400m<sup>2</sup> MIN. OF ROOF WATER TO THE ON SITE RETENTION TANK (OSR) SHOWN SHADED GREEN.  
CONNECT ROOF WATER DOWNPIPES FROM UNITS 09 - 16 TO RAINWATER TANK AS REQUIRED BY THE BASIX. DOWNPIPE & DISCHARGE NETWORK TO BE DETERMINED AT CC STAGE DOCUMENTATION

NOTE: PIPE ALIGNMENTS SHOWN ON THESE PLANS ARE INDICATIVE ONLY. FINAL ALIGNMENT TO BE DETERMINED AT CC STAGE. TYP UNO

CONSTRUCT BARRIER AS SHOWN SHADED BROWN TO DIRECT OVERLAND SURFACE FLOWS TO PIT P1. TOP OF WALL TO BE MINIMUM 300mm HIGH ABOVE NATURAL SURFACE LEVEL TYP UNO.

SURFACE WATER DRAINAGE SYSTEM. PIPE & PIT NETWORK TO BE DETERMINED AT CC STAGE DOCUMENTATION TYP UNO

PIT P1  
900 SQUARE PIT WITH LIGHT DUTY GRATED INLET  
TOP OF GRATE - RL 34.50nom  
INVERT OF OUTLET - IL 33.975nom

CONSTRUCT BARRIER AS SHOWN SHADED BROWN TO DIRECT OVERLAND SURFACE FLOWS TO PIT P1. TOP OF KERB TO BE MINIMUM 300mm HIGH ABOVE NATURAL SURFACE LEVEL TYP UNO.

WATER QUALITY CHAMBER  
PROVIDE 4 x FULL HEIGHT SPEL FILTERS FOR WATER QUALITY MEASURES.

TOTAL SITE AREA  
2812.9m<sup>2</sup>

WATER QUALITY CHAMBER  
PROVIDE 4 x FULL HEIGHT SPEL FILTERS FOR WATER QUALITY MEASURES.

PIT P2 - 600 SQUARE PIT WITH LIGHT DUTY GRATED INLET  
TOP OF GRATE - RL 33.35nom  
INVERT OF OUTLET - IL 32.80nom

ON-SITE DETENTION (OSD) TANK 2  
REFER OSD CALCULATIONS TABLE ON SHEET C9 AND DETAIL ON SHEET C6  
BELOW GROUND STORAGE TANK  
INTERNAL FOOTPRINT - 24m<sup>2</sup>  
TOP STORED WSL = RL 31.79  
INVERT OF OUTLET IL 30.12  
VOLUME OF TANK = 40m<sup>3</sup>  
ACCESS COVERS TO TANK MUST BE CHILDPROOF WITH NON CORROSIVE LOCKING DEVICES

ALLOW TO CONVEY ROOF WATER AND ASSOCIATED DOWNPIPES FOR UNITS 01 - 08 TO ON SITE DETENTION TANK 1

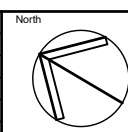
100mm WIDE x 100mm DEEP LINEAR GRATED DRAIN WITH HEELPROOF GRATE TO ARCHITECTS SPECIFICATION. GRATED DRAINS SHOWN INDICATIVELY. EXACT LOCATION TO BE COORDINATED AT CC STAGE TYP UNO

STORMWATER MANAGEMENT PLAN  
SCALE - 1:100/A1, 1:200/A3

0 1 2 4 6 8 10m

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D	REISSUED TO SUIT COUNCIL COMMENTS	09.10.22	RH	BK	North
C	RE-ISSUED FOR DEVELOPMENT APPROVAL	21.04.22	RH	BK	
B	ISSUED FOR DEVELOPMENT APPROVAL	21.10.21	RH	BK	
A	ISSUED FOR REVIEW & COMMENT	02.09.21	RH	BK	
Issue	Description	Date	Drawn	Approved	



Client  
**BARRY RUSH & ASSOCIATES**  
PTY LTD

Architect



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Project

**PROPOSED RESIDENTIAL DEVELOPMENT**  
LOTS 73, 74, 75 & 76  
No. 2 - 8  
GLENN AVENUE, NORTHMEAD

Drawing Title

**STORMWATER MANAGEMENT PLAN - PART 1**

Drawn	Date	Scale	A1	C.A. Check	Date
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Designed	Project No.	Dwg. No.	Issue		
BK	CC210151	C3	D		

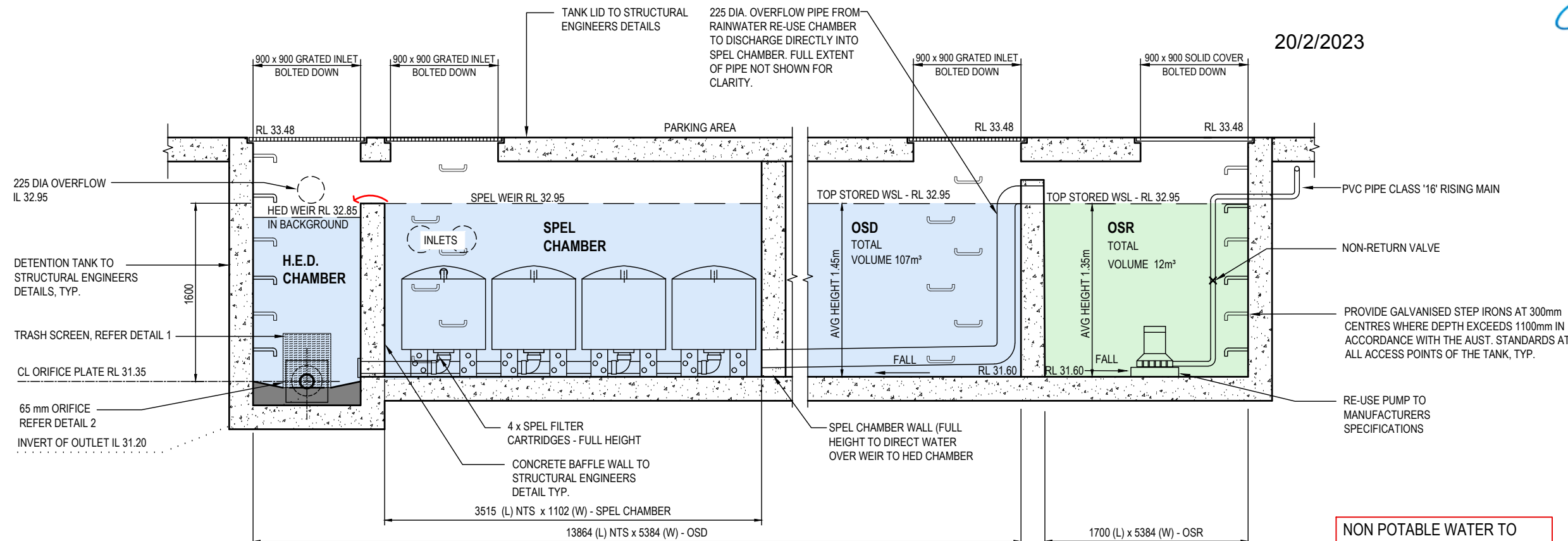






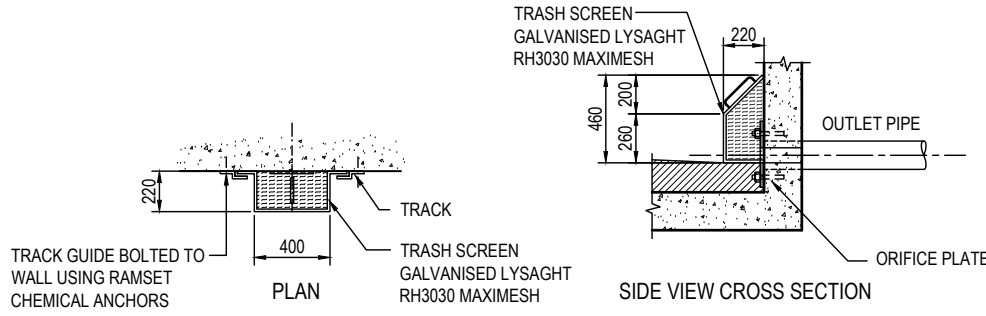
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20/2/2023

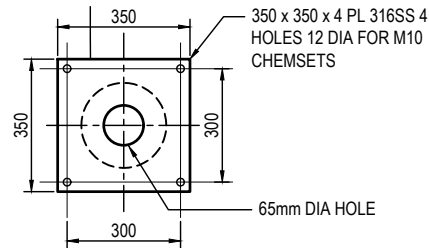


OSD TANK 1 / OSR TANK SECTION A  
SCALE 1:20@A1

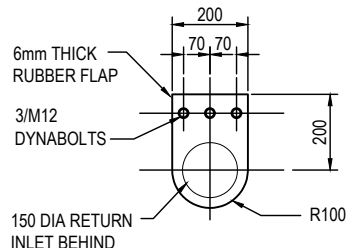
NON POTABLE WATER TO  
BE REUSED FOR LANDSCAPE  
IRRIGATION



DETAIL 1 - TRASH SCREEN  
NTS



DETAIL 2 - ORIFICE PLATE  
NTS



DETAIL 3 - REFLUX FLAP  
NTS



PROVIDE CONFINED SPACE SIGNAGE  
AT ENTRY POINTS INTO TANK.

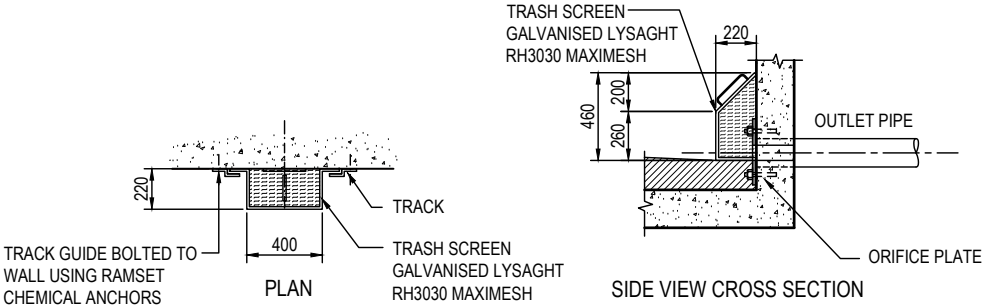
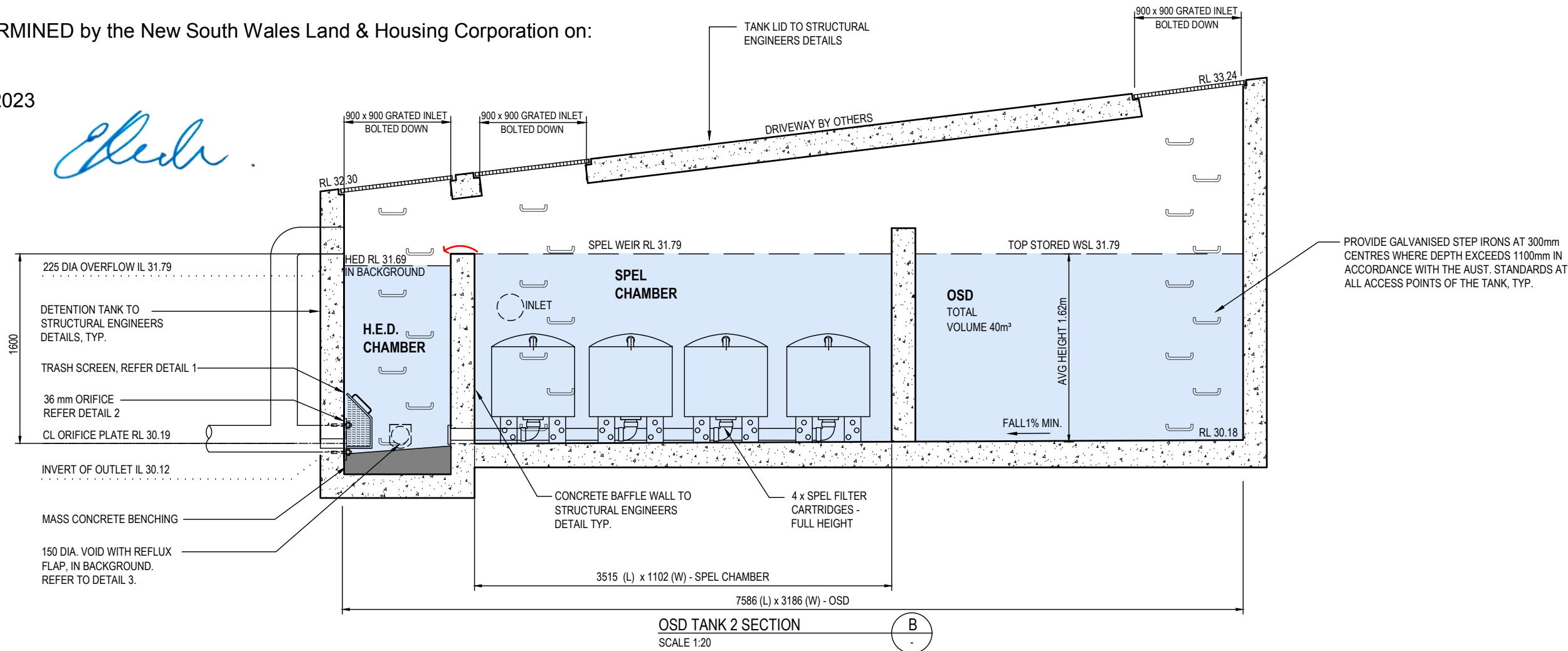
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<table><tr><td>D</td><td>REISSUED TO SUIT COUNCIL COMMENTS</td><td>09.10.22</td><td>RH</td><td>BK</td><td rowspan="4">North</td></tr><tr><td>C</td><td>RE-ISSUED FOR DEVELOPMENT APPROVAL</td><td>21.04.22</td><td>RH</td><td>BK</td></tr><tr><td>B</td><td>ISSUED FOR DEVELOPMENT APPROVAL</td><td>21.10.21</td><td>RH</td><td>BK</td></tr><tr><td>A</td><td>NIL ISSUE</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Issue</td><td>Description</td><td>Date</td><td>Drawn</td><td>Approved</td><td></td></tr><tr><td>1B</td><td>ISSUED FOR DEVELOPMENT APPROVAL</td><td>21.10.21</td><td>RH</td><td>BK</td><td></td></tr></table>					D	REISSUED TO SUIT COUNCIL COMMENTS	09.10.22	RH	BK	North	C	RE-ISSUED FOR DEVELOPMENT APPROVAL	21.04.22	RH	BK	B	ISSUED FOR DEVELOPMENT APPROVAL	21.10.21	RH	BK	A	NIL ISSUE	-	-	-	Issue	Description	Date	Drawn	Approved		1B	ISSUED FOR DEVELOPMENT APPROVAL	21.10.21	RH	BK		Client <b>BARRY RUSH &amp; ASSOCIATES</b> PTY LTD		Architect <b>ACOR Consultants (CC) Pty Ltd</b> Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499		<div><b>AcOR</b> CONSULTANTS</div> <div>ENGINEERS   MANAGERS   INFRASTRUCTURE PLANNERS   DEVELOPMENT CONSULTANTS</div>		Project <b>PROPOSED RESIDENTIAL DEVELOPMENT</b> LOTS 73, 74, 75 & 76 No. 2 - 8 GLENN AVENUE, NORTHMEAD		<div></div> <div><b>STORMWATER MANAGEMENT DETAILS SHEET No.1</b></div> <table><tr><td>Drawn</td><td>Date</td><td>Scale</td><td>A1</td><td>Q.A. Check</td><td>Date</td></tr><tr><td>RH</td><td>OCT 21</td><td>AS NOTED</td><td></td><td>BAK</td><td>20.04.22</td></tr><tr><td>Designed</td><td>Project No.</td><td>Dwg. No.</td><td></td><td>Issue</td><td></td></tr><tr><td>BK</td><td>CC210151</td><td>C5</td><td></td><td>D</td><td></td></tr></table>				Drawn	Date	Scale	A1	Q.A. Check	Date	RH	OCT 21	AS NOTED		BAK	20.04.22	Designed	Project No.	Dwg. No.		Issue		BK	CC210151	C5		D	
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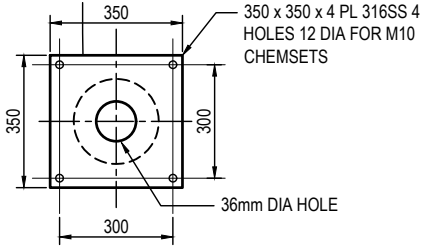


DETERMINED by the New South Wales Land & Housing Corporation on:

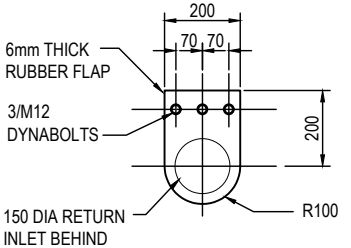
20/2/2023



DETAIL 1 - TRASH SCREEN  
NTS



DETAIL 2 - ORIFICE PLATE  
NTS



DETAIL 3 - REFLUX FLAP  
NTS



PROVIDE CONFINED SPACE SIGNAGE  
AT ENTRY POINTS INTO TANK.



*Chen*

20/2/2023

EROSION & SEDIMENT LEGEND

1

INSTALL SEDIMENT FENCING REFER DETAIL SD 6-8, SHEET C8. WHERE UNDER CANOPY AREAS OF TREES TO BE RETAINED, FENCING NOT TO BE DUG INTO THE GROUND BUT INSTEAD ATTACHED TO GROUND BY TIGHTLY PACKED SANDBAGS.

2

THE EXISTING CROSSOVER & LAYBACK ARE TO BE RETAINED FOR SITE ACCESS UNTIL REASONABLE COMPLETION OF CONSTRUCTION WORKS

3

STOCKPILE IN ACCORDANCE WITH DETAIL SD 4-1, REFER TO SHEET C8

4

WASTE STORAGE AREA PROVIDE SOLID AND LIQUID WASTE RECEPTACLE BINS

5

BARRIER FENCING OR UTILISE EXISTING BOUNDARY FENCE

6

PROPOSED BASEMENT AREA

7

SITE ACCESS PROVIDE LARGE COARSE DIA AGGREGATE OR RECYCLED CONCRETE. IN ACCORDANCE WITH DETAIL SD 6-14, SHEET C8

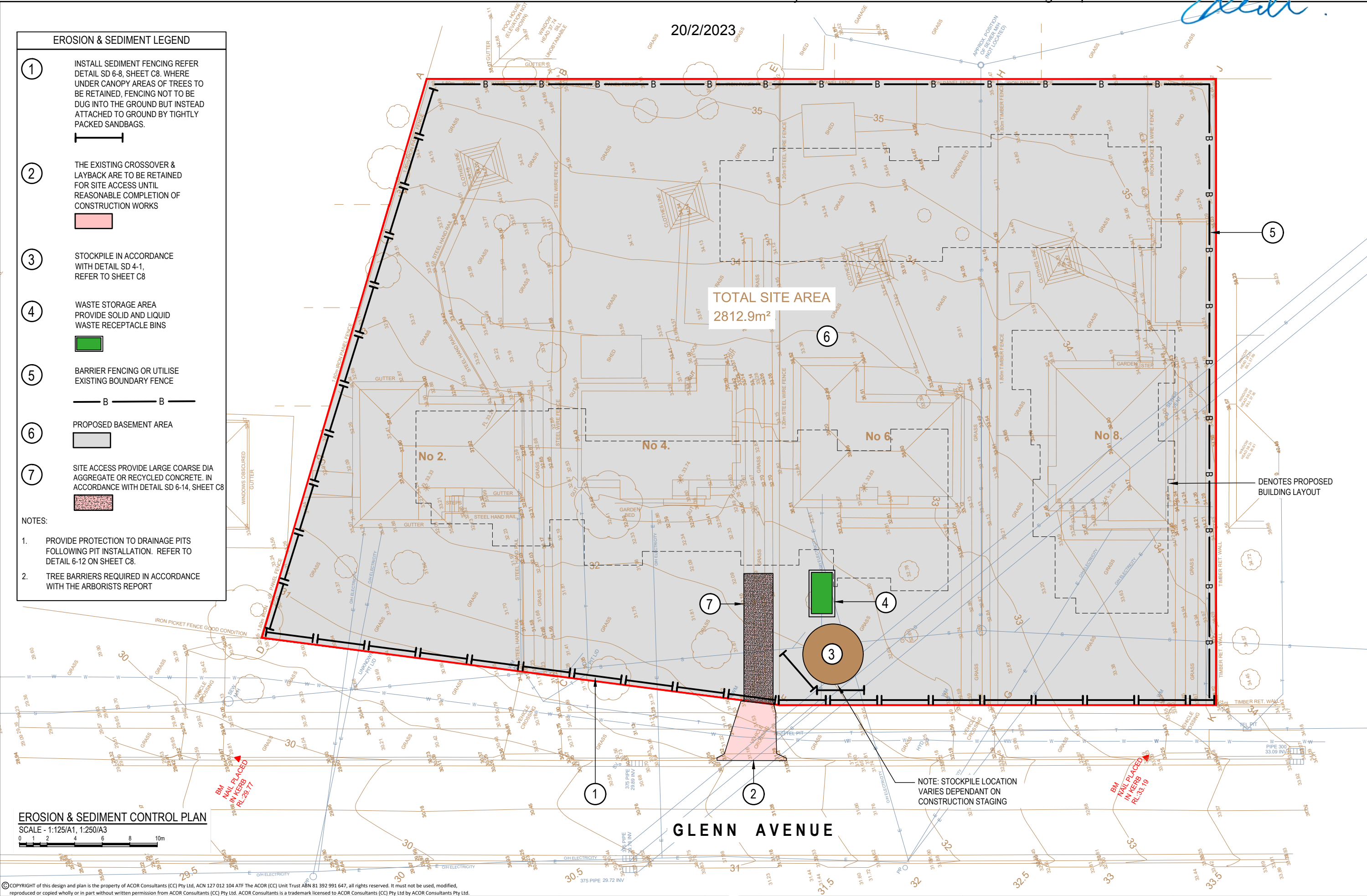
NOTES:

1.

PROVIDE PROTECTION TO DRAINAGE PITS FOLLOWING PIT INSTALLATION. REFER TO DETAIL 6-12 ON SHEET C8.

2.

TREE BARRIERS REQUIRED IN ACCORDANCE WITH THE ARBORISTS REPORT



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Issue	Description	Date	Drawn	Approved	

Client

BARRY RUSH & ASSOCIATES  
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ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project

PROPOSED RESIDENTIAL DEVELOPMENT

LOTS 73, 74, 75 & 76  
No. 2 - 8  
GLENN AVENUE, NORTHMEAD

Drawing Title EROSION & SEDIMENT CONTROL PLAN				
Drawn RH	Date OCT 21	Scale AS NOTED	A1 Q.A. Check BAK	Date 20.04.22
Designed BK	Project No. CC210151	Dwg. No. C7	Issue D	



## EROSION AND SEDIMENT CONTROL NOTES

## GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).
3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

## LAND DISTURBANCE INSTRUCTIONS

4. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
5. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
6. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
7. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
  - A) INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
  - B) CONSTRUCT THE STABILISED SITE ACCESS.
  - C) CONSTRUCT DIVERSION DRAINS AS REQUIRED.
  - D) INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
  - E) INSTALL GEOTEXTILE INLET FILTERS AROUND ANY ON-SITE DROP INLET PITS.
  - F) CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
  - G) UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
  - H) GRADE LOT AREAS TO FINAL GRADES AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
  - I) REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
5. ENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING.
6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

## SITE MAINTENANCE INSTRUCTIONS

7. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
    - A) ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
    - B) REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
    - C) REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
    - D) ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
    - E) CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
    - F) MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
  8. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
    - A) THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
    - B) THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
    - C) THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
    - D) THE NEED FOR DUST PREVENTION STRATEGIES.
    - E) ANY REMEDIAL WORKS TO BE UNDERTAKEN.
- THE LOGBOOK WILL BE KEPT ON-SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

## SEDIMENT CONTROL INSTRUCTIONS

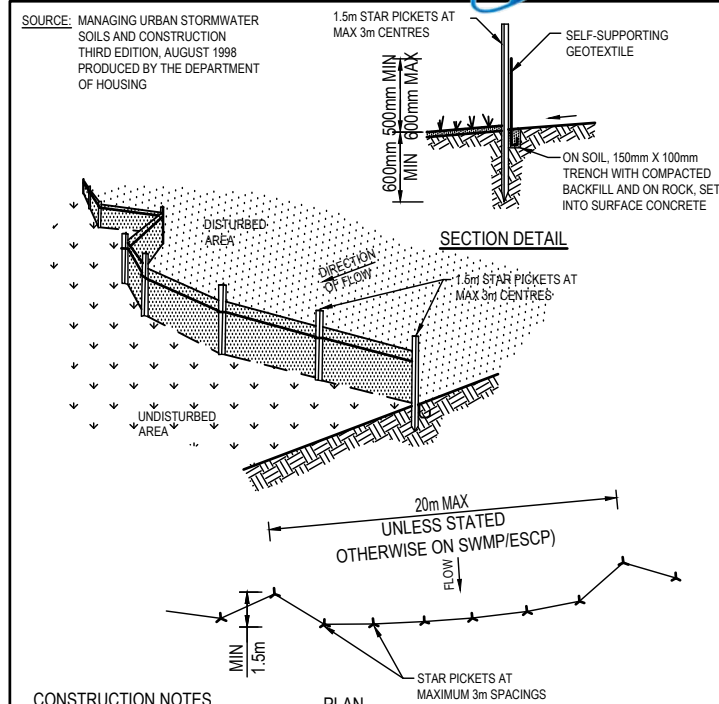
9. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL AS NEAR AS POSSIBLE TO THEIR SOURCE.
10. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
11. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
12. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
13. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE.
14. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
15. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

## SOIL EROSION CONTROL INSTRUCTIONS

16. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
  - 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
  - 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
  - 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
  - 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
17. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
18. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
19. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.1 (60% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
20. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
21. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
22. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
23. REVEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

## WASTE CONTROL INSTRUCTIONS

24. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
25. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
26. ALL SITE STAFF AND SUB-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
27. ANY DE-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
28. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

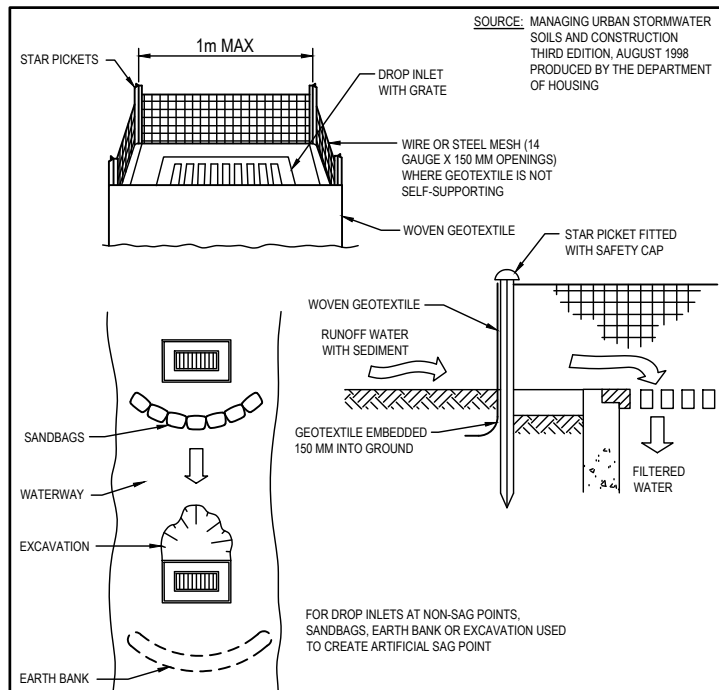


### CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT BARRAGE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
2. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND, 3 METRES APART.
3. DIG A 150 MM DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
4. BACKFILL TRENCH OVER BASE OF FABRIC.
5. FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
6. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150 MM OVERLAP.

## SEDIMENT FENCE

SD 6-8

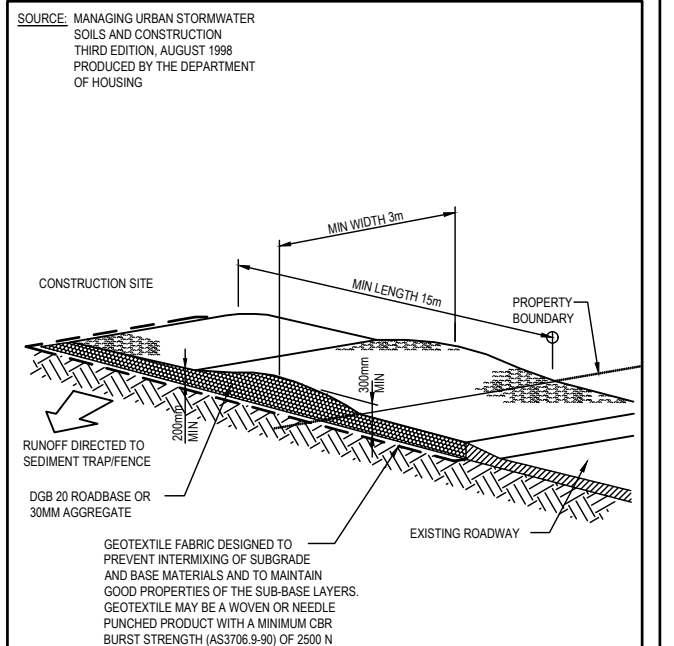


CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER FROM GEOTEXTILE OR STRAW BALES.
2. SUPPORT GEOTEXTILE WITH MESH TIED TO POSTS AT 1 METRE CENTRES.
3. DO NOT COVER INLET WITH GEOTEXTILE.
4. CONSTRUCTION DETAILS ARE SIMILAR TO TYPICAL SEDIMENT FENCING DETAIL.

GEOTEXTILE INLET FILTER

SD 6-12

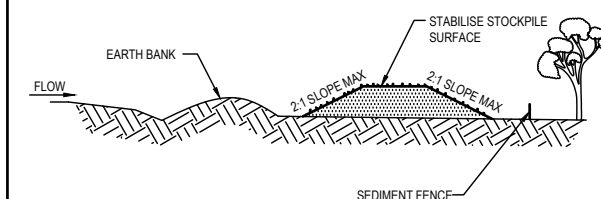


CONSTRUCTION NOTES:

1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGGREGATE. MINIMUM LENGTH 15M OR TO BUILDING ALIGNMENT. MINIMUM WIDTH 3 METRES.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP.

## STABILISED SITE ACCESS

SD 6-14



CONSTRUCTION NOTES:

1. LOCATE STOCKPILE AT LEAST 5 METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOWS, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS A LOW, FLAT, ELONGATED MOUND.
3. WHERE THERE IS SUFFICIENT AREA TOPSOIL STOCKPILES SHOULD BE LESS THAN 2 METERS IN HEIGHT.
4. REHABILITATE IN ACCORDANCE WITH THE SWM/PISCP.
5. CONSTRUCT EARTH BANK (STANDARD DRAWING 5-2) ON THE UPSLOPE SIDE TO DIVERT RUN OFF AROUND THE STOCKPILE AND A SEDIMENT FENCE (STANDARD DRAWING 6-7) 1 TO 2 METRES DOWNSLOPE OF STOCKPILE.

## STOCKPILES

SD 4-1

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B	ISSUED FOR DEVELOPMENT APPROVAL	21.10.21	RH	BK	
A	NIL ISSUE	-	-	-	
Issue	Description	Date	Drawn	Approved	

Client  
**BARRY RUSH &  
ASSOCIATES**  
PTY LTD

Architect



**ACOR Consultants (CC) Pty Ltd**  
Platinum Building, Suite 2.01, 4 Ilya Avenue  
ERINA NSW 2250, Australia  
T +61 2 4324 3499



ENGINEERS | MANAGERS | INFRASTRUCTURE PLANNERS | DEVELOPMENT CONSULTANTS

Project

**PROPOSED RESIDENTIAL  
DEVELOPMENT**

LOTS 73, 74, 75 & 76  
No. 2 - 8  
GLENN AVENUE, NORTHMEAD

Drawing Title				
EROSION & SEDIMENT CONTROL				
NOTES & DETAILS				
Drawn	Date	Scale	A1	G.A. Check
RH	OCT 21	AS NOTED		BAK
Designed	Project No.		Dwg. No.	Iss
BK	CC210151		C8	



20/2/2023

DETERMINED by the New South Wales Land & Housing Corporation on:

This page last updated June 2004

B.1-1

On-Site Stormwater Detention Handbook

Form B1<sup>1</sup> DRAINAGE DESIGN SUMMARY SUB/DA

No.

Project: CC210151 Location: 2-8 GLENN AVENUE NORTHMEAD  
Designed By: BK Company: ACOR CONSULTANTS (CC) Pty. Ltd Phone: (02) 4324 3499

SITE AREA 0.2813 ha \*See Section 3.4.3 for dual occupancy [A]  
Upstream catchment draining through site = 0 ha [AA]  
See Section 4.1.3 for assessment of external flows.  
Basic storage volume 470 x [A] 0.2813 = 132.21 m<sup>3</sup> [B]  
Basic Discharge = 0.08 x [A] 0.2813 = 0.0225 m<sup>3</sup>/s [C]  
Area of site drained to storage = 0.239 ha [D]  
(Must be as much as possible and not be less than 85% of the total site without written Council approval).  
[D]/[A] + [ 0.239 ]/[ 0.2813 ] x 100 = 85 % [E]  
Storage per ha. Of contributing area = [B]/[D] = 553.18 [F]  
Enter volume/PSD adjustment chart (Fig 5.1) using [F], and  
Read new PSD in litres/second/ha (l/s/ha). \* OSD 1 = 75% x 64.59 = 48 l/s/ha  
OSD 2 = 25% x 64.59 = 16.5 l/s/ha  
Determine PSD = [G] x [D] 64.59 x 0.239 = 15.44 \*\* l/s [H]  
Maximum head to orifice center \*\* OSD 1 = 75% x 15.44 = 11.6 l/s  
OSD 2 = 25% x 15.44 = 3.86 l/s/ha = 1.6 m [K]  
Weir flow to storage  $Q_{Weir} = C_L(H_{Weir})^{1.5}$  ∴  $H_{Weir}$  = 0.19 m [I]  
Select orifice diameter:  $d = (0.464 \times Q / \sqrt{h})^{0.5} = (0.464 \times [H] / \sqrt{[K]})^{0.5}$  = 0.075 \*\*\* m [J]  
Maximum discharge \*\*\* OSD 1 ORIFICE = Ø65  
OSD 2 ORIFICE = Ø36 = 15.44 l/s [L]  
Head for high early discharge = 1.5 m [M]  
High early discharge  $\{[L] \times \sqrt{[M]/[K]}\}$  (min 75% of [L]) = 14.95 l/s [N]  
Approximate mean discharge = ([L] + [N])/2 = 15.19 l/s [P]  
Average discharge/ha = [P]/[D] = 15.19 / 0.239 = 63.56 l/s/ha [Q]  
Enter volume/PSD adjustment chart (Fig 5.1) using [Q]  
And read off final storage volume per hectare = 559.69 m<sup>3</sup>/ha [R]  
Determine final SSR = [R] x [D] = 559.69 x 0.239 = 133.77 \*\*\*\* m<sup>3</sup> [S]  
Primary storage proportion = [S] x % m<sup>3</sup> [T]  
Secondary storage proportion = [S] x % m<sup>3</sup> [U]  
Tertiary storage proportion = [S] x % m<sup>3</sup> [V]  
Check [T] + [U] + [V] = [S] m<sup>3</sup>

<sup>1</sup> Revised for third edition to include flow from upstream and revised by pass flows

\*\*\*\* TOTAL STORAGE REQUIRED = 134m<sup>3</sup>  
TOTAL STORAGE PROVIDED = 147m<sup>3</sup>  
- OSD TANK 1 = 107m<sup>3</sup>  
- OSD TANK 2 = 40m<sup>3</sup>

Upper Parramatta River Catchment Trust

*Check*

OSD STORMWATER MAINTENANCE SCHEDULE

MAINTENANCE ACTION	FREQUENCY	RESPONSIBILITY	PROCEDURE
<b>Drainage Control Pit (DCP)</b>			
Inspect and remove any blockage of orifice	Six monthly	Owner	Remove grate and screen to inspect orifice. See plan for location of DCP
Check attachment of orifice plate to wall of pit (gaps less than 5mm)	Annually	Maintenance Contractor	Remove grate and screen. Ensure plate mounted securely, tighten fixings if required. Seal gaps as required.
Check orifice diameter correct and retains sharp edge	Five yearly	Maintenance Contractor	Compare diameter to design (see Work-As-Executed) and ensure edge is not pitted or damaged
Inspect screen and clean	Six monthly	Owner	Remove grate and screen if required to clean it.
Check attachment of screen to wall of pit	Annually	Maintenance Contractor	Remove grate and screen. Ensure screen fixings secure. Repair as required
Check screen for corrosion	Annually	Maintenance Contractor	Remove grate and examine screen for rust or corrosion, especially at corners or welds.
Inspect flap valve and remove any blockage	Six monthly	Owner	Remove grate. Ensure flap valve moves freely and remove any blockages or debris.
Check attachment of flap valve to wall of pit	Annually	Maintenance Contractor	Remove grate. Ensure fixings of valve are secure
Check flap valve seals against wall of pit	Annually	Maintenance Contractor	Remove grate. Fill pit with water and check that flap seals against side of pit with minimal leakage.
Inspect overflow weir and remove any blockage	Six monthly	Maintenance Contractor	Remove grate and open cover to ventilate underground storage if present. Ensure weir clear of blockages.
Inspect DCP walls (internal and external, if appropriate) for cracks or spalling	Annually	Maintenance Contractor	Remove grate to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.
Inspect DCP sump and remove any sediment / sludge	Six monthly	Owner	Remove grate and screen. Remove sediment / sludge build-up and check orifice and flap valve clear.
Inspect grate for damage or blockage	Six monthly	Owner	Check both sides of grate for corrosion (especially corners and welds) damage or blockage.
Inspect return pipe from storage and remove any blockage	Six monthly	Maintenance Contractor	Remove grate and screen. Ventilate underground storage if present. Check orifice and remove any blockages in outlet pipe. Flush outlet pipe to confirm it drains freely. Check for sludge / debris on upstream side of return line.
<b>Storage</b>			
Inspect pit and remove any sediment / sludge in pit	Six monthly	Maintenance Contractor	Remove grate and screen. Remove sediment / sludge build-up.
Inspect internal tank walls (and external, if appropriate) for cracks or spalling	Annually	Maintenance Contractor	Remove grate to inspect internal walls. Repair as required. Clear vegetation from external walls if necessary and repair as required.
Inspect and remove any debris / litter / mulch etc. blocking grates	Six monthly	After storm event	Remove blockages from grate and check if pit blocked.
Inspect tank storage are and remove debris / mulch / litter etc. likely to block screens / grates.	Six monthly	Maintenance Contractor	Remove debris and floatable material likely to be carried to grates.
Compare storage volume to volume approved (Rectify if loss > 5%)	Annually	Maintenance Contractor	Compare actual storage available with Work-as-Executed plans. If volume loss is greater than 5%, arrange for reconstruction to replace the volume lost. Council to be notified of the proposal.
Inspect storages for subsidence near pits.	Annually	Maintenance Contractor	Check along drainage lines and at pits for subsidence likely to indicate leakages.

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D REISSUED TO SUIT COUNCIL COMMENTS09.10.22RHBKNorth										Client	Architect	<div><div>ACOR</div><div>CONSULTANTS</div></div> <div>ENGINEERS   MANAGERS   INFRASTRUCTURE PLANNERS   DEVELOPMENT CONSULTANTS</div>	ACOR Consultants (CC) Pty Ltd	Project	Drawing Title	Drawing Title				
C RE-ISSUED FOR DEVELOPMENT APPROVAL21.04.22RHBK										BARRY RUSH & ASSOCIATES PTY LTD	Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499		PROPOSED RESIDENTIAL DEVELOPMENT	LOTS 73, 74, 75 & 76 No. 2 - 8 GLENN AVENUE, NORTHMEAD	OSD CALCULATION SHEET & MAINTENANCE SCHEDULE					
B ISSUED FOR DEVELOPMENT APPROVAL21.10.21RHBK															Drawn	Date	Scale	A1	Q.A. Check	Date
A NIL ISSUE- - -															RH	OCT 21	AS NOTED	BAK	20.04.22	
Issue DescriptionDate Drawn Approved															Designed	Project No.	Dwg. No.	Issue		
11cm at full size										BK	CC210151	C9	D							



20/2/2023

DETERMINED by the New South Wales Land & Housing Corporation on:

*[Handwritten signature]*

## ON-SITE DETENTION CHECKLIST - SHEET 1 OF 2

This page last updated December 1999

B.9-1

On-site Stormwater Detention Handbook

### B9. OSD DETAILED DESIGN SUBMISSION

This form is to be completed by the stormwater designer and submitted to Council together with the design plan/s and any necessary attachments.

PROJECT ADDRESS: \_\_\_\_\_

PROJECT APPLICANT: \_\_\_\_\_

OSD DESIGNER DETAILS:

Company Name: **ACOR CONSULTANTS (CC) PTY LTD**

Address: **SUITE 2.01, 4 ILYA AVENUE, ERINA NSW 2250**

Telephone No.: **(02) 43243499**

Fax No: \_\_\_\_\_

Accreditation organisation: \_\_\_\_\_

Accreditation Reference: \_\_\_\_\_

Name and signature of designer: **BRUCE KENNY**

(Print Name)

Date: **21.10.21**

(Signature)

Items submitted: \*\*

- |   |          |
|---|----------|
| • OSD Design Plan/s                                     | Yes / No |
| • OSD Detailed Design Checklist                         | Yes / No |
| - Attachment A: Flood Affection Information             | Yes / No |
| - Attachment B: External Catchment Assessment           | Yes / No |
| - Attachment C: On-line System Calculations             | Yes / No |
| - Attachment D: Overflow and Surge Pathway Calculations | Yes / No |
| - Attachment E: Site Drainage Calculations              | Yes / No |
| - Attachment F: Outlet Hydraulic Assessment             | Yes / No |
| - Attachment G: Site Storage Details                    | Yes / No |
| - Attachment H: Drainage Design Summary Sheet           | Yes / No |

COUNCIL REVIEW DETAILS:

Council Review Officer's Name: \_\_\_\_\_

Review officer's comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature of Review Officer: \_\_\_\_\_ Date: \_\_\_\_\_

\*\* The above items are to be submitted in a single bound form — a 'loose leaf' format is unacceptable.

Upper Parramatta River Catchment Trust

This page last updated December 1999

B.9-2

On-site Stormwater Detention Handbook

### OSD DETAILED DESIGN CHECKLIST

ITEM	DESIGNER		COUNCIL REVIEW	
	YES	NO	YES	NO
1. A Stormwater Concept Plan (SCP) has been approved previously (refer Section 4.1)		✓		
2. The site (whole or partly) is defined as floodprone in a 100 year event		✓		
If YES, see Plan No. .... in Attachment A				
2(a) Has any floodplain storage been lost?	N/A			
If YES, see Plan No. .... in Attachment A				
2(b) Has the floodprone area been excluded from the OSD calculations?	N/A			
2(c) Is the OSD system performance adversely affected by the 100 year flood level?	N/A			
3. Is there an external catchment draining into the site?		✓		
If YES, see Plan No. .... and calculations of 100 year ARI flow in Attachment B				
4. The location and extent of any floodway/flowpath has been determined, (refer Sections 4.1.3 & 4.2.2)	N/A			
If YES, see Plan No. .... and accompanying 100 year event hydraulic calculations in Attachment B. Buildings are not inundated (and have the required freeboard) nor are flows concentrated on an adjoining property (refer Sections 4.1.3, 4.2.7 & 4.2.9)				
5. The detailed design submission is consistent with the approved SCP	✓			
6. Are there any conditions on the development approval that may affect the drainage design (for example, trees to be retained)?				
7. The detailed design submission addresses the drainage-related conditions of the development approval				
8. A site layout plan with accompanying ground levels/contours which extend into adjoining properties is submitted	✓			
If YES, see Plan No. ....				
9. Have other constraints, e.g. easements, services, been defined?				
If YES, see Plan No. ....				
10. How many OSD storage systems are there? ...TWO...				
11. Are the storage system/s off-line (refer Section 4.2.6)?	✓			
If NO, see alternative calculations included in Attachment C				
12. State the type of discharge control device (i.e. orifice or ...)? Where the device is not an orifice, has specific Trust approval been obtained?				
13. The area of the site to be drained by each OSD storage has been determined, (refer Section 4.2.2)	✓			
If YES, see Plan No. ....				
If YES, the uncommanded site percentage is ...15% (to be less than 25%, refer Section 4.1.4 unless specific approval has been granted).				
14. The plan/s identify the maximum water levels, and the levels and locations of each storage's discharge point (refer Section 4.2.2)	✓			
If YES, see Plan No. ....				
15. The location of overflow structures and surcharge pathways have been determined, (refer Sections 4.2.2 & 4.2.9)	✓			
If YES, see Plan No. .... and calculations in Attachment D				
Buildings are not inundated nor are flows concentrated on an adjoining property (refer Sections 4.2.7 & 4.2.9)	✓			
16. The drainage plans have been checked for consistency against the Architectural and landscaping plans	✓			
17. A maintenance schedule has been prepared (ref Section 4.2.10)	✓			

Upper Parramatta River Catchment Trust

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D	REISSUED TO SUIT COUNCIL COMMENTS	09.10.22	RH	BK	North
C	RE-ISSUED FOR DEVELOPMENT APPROVAL	21.04.22	RH	BK	
B	ISSUED FOR DEVELOPMENT APPROVAL	21.10.21	RH	BK	
A	NIL ISSUE	-	-	-	
Issue	Description	Date	Drawn	Approved	

Client  
**BARRY RUSH & ASSOCIATES**  
PTY LTD

Architect



**ACOR Consultants (CC) Pty Ltd**  
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ERINA NSW 2250, Australia  
T +61 2 4324 3499



Project

**PROPOSED RESIDENTIAL DEVELOPMENT**  
LOTS 73, 74, 75 & 76  
No. 2 - 8  
GLENN AVENUE, NORTHMEAD

Drawing Title

**ON SITE DETENTION CHECKLIST SHEET 1 OF 2**

Drawn	Date	Scale	A1	C.A. Check	Date
RH	OCT 21	AS NOTED	BAK		20.04.22
Designed	Project No.	Dwg. No.	Issue		
BK	CC210151	C10	D		



ON-SITE DETENTION CHECKLIST - SHEET 2 OF 2

*[Handwritten signature]*

This page last updated December 1999 B.9-3 On-site Stormwater Detention Handbook

Where there is more than one OSD system, Questions 18 to 26 are to be answered separately for each OSD storage system.

OSD Storage system identifier.....

ITEM	DESIGNER		COUNCIL REVIEW	
	YES	NO	YES	NO
18. The design explicitly shows how all the drained area grades to the storage, including roof gutter overflows (refer Section 6.2) If YES, see Plan No. .... If NO, see calculations in Attachment E showing how all drainage system components (including all roof gutters, downpipes, collecting pits and pipe systems, etc) have 100 year ARI capacities with 50% blockage factor				
19. The invert level of storage is not less than ground level (or top of kerb) at point of connection to external stormwater system If YES, see Plan No. .... If NO, see explanatory notes in Attachment F				
20. The discharge control pit design is consistent with the principles shown in Figures 4.3, 7.10 and/or 7.11				
20(a) The DCP has an open grating type lid (for ease of inspection)				
20(b) The DCP minimum dimensions are consistent with Section 4.2.3				
20(c) The floor of the DCP has a localised sump adjacent to the orifice with level at least 150 mm below the return pipe, (refer Section 4.2.8)				
20(d) The return pipe from the storage is at least 150 mm in diameter (refer Section 4.2.8)				
20(e) The return pipe flap valve is consistent with Figure 4.3				
20(f) If an orifice control is specified, is it consistent with the requirements set out in Section 4.2.3? If YES, see: Plan No. .... for stainless steel plate specification, thickness and fixing to pit wall				
20(g) The overflow weir is fitted with a basket (refer Section 6.3). There is a surface grate above the basket to facilitate inspection and maintenance				
20(h) The high early discharge (HED) characteristics are consistent with the requirements set out in Section 4.2.3 If YES, see: Plan No. .... for height of discharge to storage relative to permissible site discharge (PSD) Accompanying weir calculations in Attachment E Plan No. .... showing majority of site drainage system connecting to the DCP & the volume of the DCP is small compared to the volume of the storage				
20(i) The screen design is consistent with Section 4.2.5 If YES, see: Plan No. .... for screen type, area and orientation Plan No. .... for fabrication note re aperture orientation Plan No. .... for fixing and handle details Plan No. .... showing how all inflows to the DCP are on the upstream side of the screen protecting the orifice				
20(j) The outlet pipe from the DCP has a capacity at least twice the PSD (refer Section 4.2.4) If YES, see calculations in Attachment E				

Upper Parramatta River Catchment Trust

This page last updated December 1999 B.9-4 On-site Stormwater Detention Handbook

ITEM	DESIGNER		COUNCIL REVIEW	
	YES	NO	YES	NO
21. If an above ground/landscaped storage is specified, answer Q21(a) to Q21(g), otherwise move to Q22.				
21(a) The first 10%-20% of storage is provided in an area able to tolerate frequent inundation(refer Section 4.2.7)				
21(b) Where the depth of ponding exceeds 600 mm, consideration has been given to whether there are steep drops, and/or a need for steps or 'walk-in' 'walk-out' batters, etc. when deciding if fencing and/or warning signs are required (Refer Sections 4.2.7 & 6.2)				
21(c) The landscaping treatment within the storage area is such that it does not limit storage volumes or provide a significant source of debris loading				
21(d) The minimum surface slope is consistent with Section 4.2.7				
21(e) Subsoil drainage is provided in areas subject to frequent ponding and around the outlet (refer Section 4.2.7)				
21(f) If the design includes a retaining wall, has it been structurally checked?				
21(g) Does the system have the correct storage? If YES, see stage-storage calculations in Attachment G				
22. If a driveway/car-park storage is specified, answer Q22(a) to Q22(c), otherwise move to Q23				
22(a) The maximum depth is less than or equal to 200mm (refer Section 4.2.7)				
22(b) The minimum transverse slope is 0.7% (refer Section 4.2.7)				
22(c) The system has the correct storage If YES, see stage-storage calculations in Attachment G				
23. If a structural/underground storage is specified, answer Q 23(a) to Q 23(f), otherwise move to Q24				
23(a) The dimensions of openings are consistent with Section 4.2.8	✓			
23(b) The storage floor has a minimum slope of 0.7% (refer Section 4.2.8)	✓			
23(c) There are sufficient access points for flushing purposes (refer Section 4.2.8)				
23(d) There are sufficient grated openings for ventilation purposes (refer Section 4.2.8)				
23(e) All access points have light weight covers	✓			
23(f) The system has the correct storage If YES, see stage-storage calculations in Attachment G	✓			
24. The distribution of storage minimises inconvenience (refer Section 5.1.4)	✓			
25. The Drainage Design Summary sheet has been completed (refer Appendix B1) If YES, see completed sheet in Attachment H	✓			
26. The Drainage Design Summary sheet details are consistent with the design plans	✓			

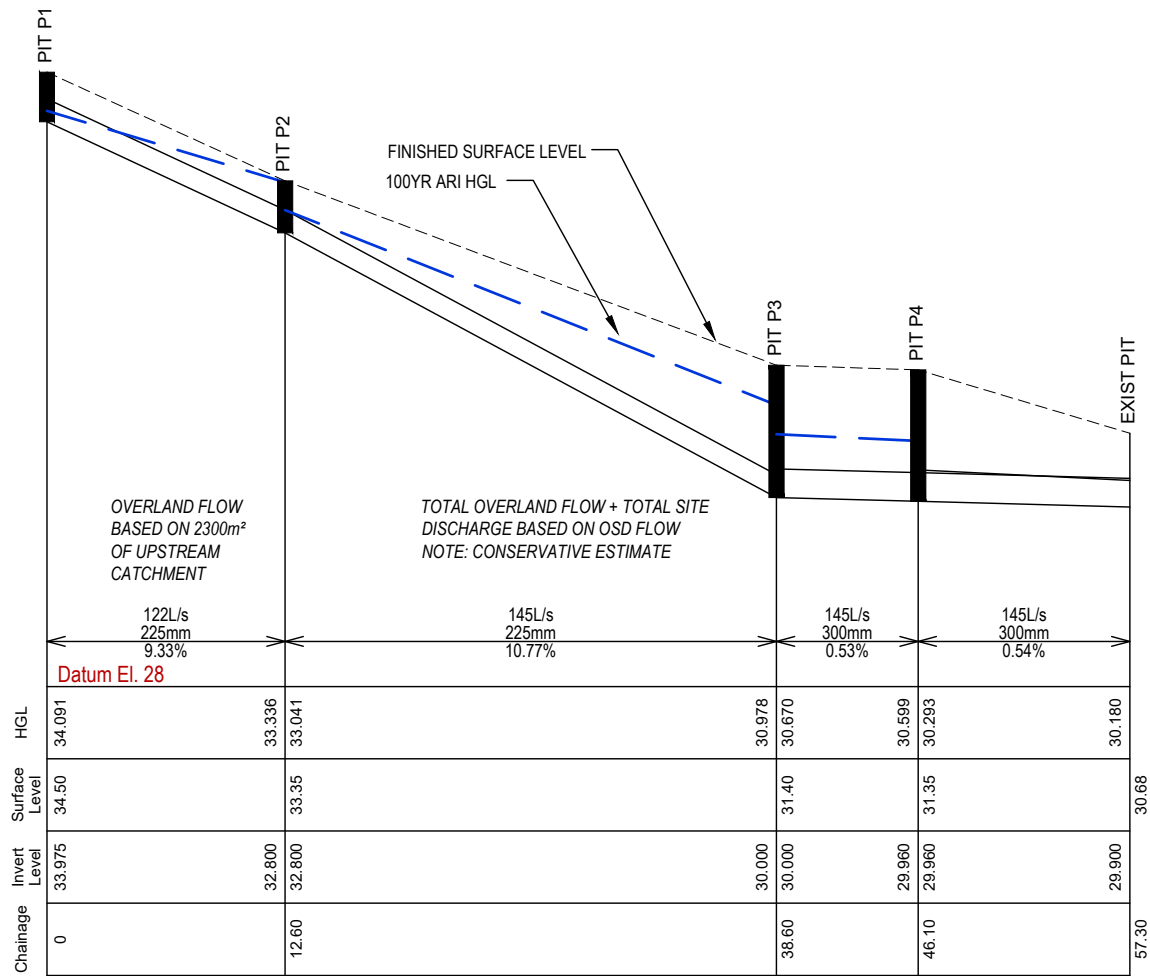
Upper Parramatta River Catchment Trust



DETERMINED by the New South Wales Land & Housing Corporation on:

*Chad*

20/2/2023



PIPE LONG SECTION PIT P1 - P4 & EXISTING KIP  
HORIZONTAL SCALE - 1:200/A1, 1:400/A3  
VERTICAL SCALE - 1:40/A1, 1:80/A3

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Issue					Client		Architect		ACOR Consultants (CC) Pty Ltd		Project		Drawing Title			
D	REISSUED TO SUIT COUNCIL COMMENTS	09.10.22	RH	BK	BARRY RUSH & ASSOCIATES PTY LTD				Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499		PROPOSED RESIDENTIAL DEVELOPMENT LOTS 73, 74, 75 & 76 No. 2 - 8 GLENN AVENUE, NORTHMEAD		PIPE LONG SECTION			
C	NIL ISSUE	-	-	-									Drawn	Date	Scale	A1
B	NIL ISSUE	-	-	-									RH	OCT 21	AS NOTED	BAK
A	NIL ISSUE	-	-	-									Designed	Project No.	Dwg. No.	Issue
													CC210151			
													C12			
													D			



# STORMWATER QUALITY REPORT

20/2/2023

## 1 INTRODUCTION

A CATCHMENT BASED WATER QUALITY MODEL WAS DEVELOPED TO ASSESS THE STORMWATER RUNOFF QUALITY IN ACCORDANCE WITH THE WATER SENSITIVE URBAN DESIGN (WSUD) REQUIREMENTS OF PARRAMATTA DEVELOPMENT CONTROL PLAN PART 3.3.6 AND APPENDIX 7. IN THIS REGARD WE REFER TO THE PRESCRIBED TARGETS TABLED FOLLOWING:

TABLE 1 - STORMWATER POLLUTANT REDUCTION TARGETS

STORMWATER POLLUTANT	REDUCTION TARGETS
GROSS POLLUTANT	90%
TOTAL SUSPENDED SOLIDS (TSS)	85%
TOTAL PHOSPHORUS (TP)	60%
TOTAL NITROGEN (TN)	45%

## 2 STUDY METHODOLOGY

THE OBJECTIVES OF THIS REPORT ARE TO:

- ASSESS THE RUNOFF QUALITY FOR THE UNTREATED POST DEVELOPED SCENARIO AND IDENTIFY STORMWATER QUALITY CONTROLS LIKELY TO IMPACT ON RUNOFF QUALITY.
- ASSESS THE STORMWATER QUALITY FOR THE POST DEVELOPED SCENARIO INCLUDING THE MEASURES PROPOSED TO MEET THE POLLUTANT REMOVAL TARGETS .

THE REPORT IS BASED ON THE APPLICATION OF MUSIC SOFTWARE (MODEL FOR URBAN STORMWATER IMPROVEMENT CONCEPTUALISATION). IN THIS REGARD THE MODEL IS DEFINED AS FOLLOWS:

- A STORMWATER QUALITY MODEL TO CONVERT RAINFALL AND EVAPOTRANSPIRATION INTO RUNOFF.
- ESTIMATION OF STORMWATER FLOW AND POLLUTION GENERATION BY SIMULATING THE PERFORMANCE OF STORMWATER TREATMENT DEVICES INDIVIDUALLY AND AS PART OF A TREATMENT TRAIN.

THE MODEL DEFINES WATER QUALITY PROFILES FOR BOTH TREATED AND UNTREATED POST DEVELOPED SCENARIOS. THE TREATED POST DEVELOPED MODEL INCLUDES PARAMETERS WHICH REPRESENT THE WATER QUALITY MEASURES.

## 3 STORMWATER QUALITY MODELLING

### 3.1 GENERAL

THE FOLLOWING PARAMETERS WERE ASSESSED FOR THE HYDROLOGICAL MODELLING ASSOCIATED WITH THE CATCHMENT.

- RAINFALL/RUNOFF AND EVAPOTRANSPIRATION.
- SUB CATCHMENT DIVERSIONS.
- LAND USE (PERVIOUS AND IMPERVIOUS)

### 3.2 RAINFALL/RUNOFF AND EVAPOTRANSPIRATION

THE MUSIC MODEL WAS FORCED WITH 6 MINUTE RAINFALL DATA FROM THE PARRAMATTA NORTH (MASONS DRIVE) GAUGE (ID 066124) FOR THE PERIOD 25 DECEMBER 1984 TO 30 DECEMBER 2007.

DAILY AVERAGE PET VALUES WERE NOT AVAILABLE FOR STATION ID 066124 AND WERE SOURCED FROM THE BUREAU OF METEOROLOGY FOR THE NEIGHBOURING PROSPECT RESERVOIR GAUGE (ID 067019).

THE DETAILS ARE SUMMARISED IN TABLE 3.1 AND 3.2

TABLE 3.1 - DETAILS OF DAILY RAINFALL DATA			
STATION	NAME	PERIOD	TIMESTEP
066124	PARRAMATTA NORTH (MASONS DRIVE)	25/12/1984-30/12/2007	6 min

TABLE 3.2 - SUMMARY OF POTENTIAL EVAPOTRANSPIRATION (PET)					
JAN	FEB	MAR	APR	MAY	JUN
170.5	131.6	120.9	87	62	48
JUL	AUG	SEP	OCT	NOV	DEC
51	77.5	108	136.4	155	173.6

DETERMINED by the New South Wales Land & Housing Corporation on:

### 3.3 CATCHMENT DEFINITION

THE POST DEVELOPED CATCHMENT CHARACTERISTICS ARE IDENTIFIED IN TABLE 3.3.

TABLE 3.3 - POST DEVELOPMENT SUB CATCHMENT DETAILS			
SUB CATCHMENT ID	SUB CATCHMENT AREA (ha)	% IMPERVIOUS AREA	% PERVIOUS AREA
ROOF TO RWT	0.055	100	0
ROOF TO OSD 1	0.039	100	0
AREA TO OSD 1	0.084	70	30
OSD CATCHMENT 2	0.061	100	0
OSD BYPASS	0.042	60	40

## 4 MUSIC MODEL

THE MUSIC MODEL IS BASED ON A 6 min RAINFALL-RUNOFF MODEL IN CONJUNCTION WITH REPRESENTATIVE BASEFLOW AND STORMFLOW EVENT MEAN CONCENTRATIONS (EMCs).

### 4.1 WATER QUALITY PARAMETERS

THE ADOPTED VALUES OF VARIOUS MUSIC RAINFALL AND RUNOFF PARAMETERS IN ACCORDANCE WITH NSW MUSIC MODELLING GUIDELINES 2015 FOR MEDIUM CLAY ARE SUMMARISED IN TABLE 4.1.

TABLE 4.1 - ADOPTED MUSIC RAINFALL/RUNOFF PARAMETERS	
PARAMETER	VALUE
IMPERVIOUS AREA PROPERTIES	
RAINFALL THRESHOLD (mm/DAY)	1.5 (0.3 ROOFS)
PERVIOUS AREA PROPERTIES	
SOIL STORAGE CAPACITY (mm)	94
SOIL INITIAL STORAGE (% OF CAPACITY)	25
FIELD CAPACITY (mm)	70
INFILTRATION CAPACITY COEFFICIENT - a	135
INFILTRATION CAPACITY EXPONENT - b	4
GROUNDWATER PROPERTIES	
INITIAL DEPTH (mm)	10
DAILY RECHARGE RATE (%)	10
DAILY BASEFLOW RATE (%)	10
DAILY DEEP SEEPAGE RATE (%)	0

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<table><tr><td>D</td><td>REISSUED TO SUIT COUNCIL COMMENTS</td><td>09.10.22</td><td>RH</td><td>BK</td></tr><tr><td>C</td><td>NIL ISSUE</td><td>-</td><td>-</td><td>-</td></tr><tr><td>B</td><td>NIL ISSUE</td><td>-</td><td>-</td><td>-</td></tr><tr><td>A</td><td>NIL ISSUE</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Issue</td><td>Description</td><td>Date</td><td>Drawn</td><td>Approved</td></tr></table>					D	REISSUED TO SUIT COUNCIL COMMENTS	09.10.22	RH	BK	C	NIL ISSUE	-	-	-	B	NIL ISSUE	-	-	-	A	NIL ISSUE	-	-	-	Issue	Description	Date	Drawn	Approved	North	Client  <b>BARRY RUSH &amp; ASSOCIATES</b>  PTY LTD	Architect	 <b>ACOR CONSULTANTS (CC) Pty Ltd</b> Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499    ENGINEERS   MANAGERS   INFRASTRUCTURE PLANNERS   DEVELOPMENT CONSULTANTS	Project  <b>PROPOSED RESIDENTIAL DEVELOPMENT</b> LOTS 73, 74, 75 & 76 No. 2 - 8 GLENN AVENUE, NORTHMEAD	Drawing Title  <b>STORMWATER QUALITY REPORT SHEET 1 OF 2</b> <table><tr><td>Drawn</td><td>Date</td><td>Scale</td><td>A1</td><td>G.A. Check</td><td>Date</td></tr><tr><td>RH</td><td>OCT 21</td><td>AS NOTED</td><td></td><td>BAK</td><td>20.04.22</td></tr><tr><td>Designed</td><td>Project No.</td><td>Dwg. No.</td><td colspan="3">Issue</td></tr><tr><td>BK</td><td><b>CC210151</b></td><td>C13</td><td colspan="3">D</td></tr></table>	Drawn	Date	Scale	A1	G.A. Check	Date	RH	OCT 21	AS NOTED		BAK	20.04.22	Designed	Project No.	Dwg. No.	Issue			BK	<b>CC210151</b>	C13	D		
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DETERMINED by the New South Wales Land & Housing Corporation on:

4.1 WATER QUALITY PARAMETERS CONT.

STORMWATER QUALITY IS CHARACTERISED USING EVENT MEAN CONCENTRATION (EMCs) UNDER STORM AND BASE FLOW CONDITIONS. THE VALUE OF WATER QUALITY PARAMETERS ADOPTED IN THIS STUDY IS SUMMARISED IN TABLE 4.2

TABLE 4.2 - ADOPTED MUSIC WATER QUALITY PARAMETERS							
LAND-USE CATEGORY		Log <sub>10</sub> TSS (mg/L)		Log <sub>10</sub> TP (mg/L)		Log <sub>10</sub> TN (mg/L)	
		STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW	STORM FLOW	BASE FLOW
RESIDENTIAL	MEAN	2.15	1.20	-0.60	-0.85	0.30	0.11
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12
GENERAL URBAN	MEAN	2.20	1.10	-0.45	-0.82	0.42	0.32
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12
ROOFS	MEAN	1.30	1.10	-0.89	-0.82	0.30	0.32
	STD DEV	0.32	0.17	0.25	0.19	0.19	0.12

4.2 STORMWATER TREATMENT MEASURES

THE PROPOSED STORMWATER TREATMENT MEASURES INCLUDED IN THE POST DEVELOPED MODEL ARE AS FOLLOWS:

- 12,000 LITRE RAINWATER TANK (REUSE FOR IRRIGATION)
- 4 x SPELFILTERS (FULL HEIGHT) IN EACH OSD TANK
- 2 x STORMSACKS

THE SCHEMATIC LAYOUT FOR THE POST DEVELOPED MUSIC MODEL IS DEPICTED IN FOLLOWING FIGURE 1

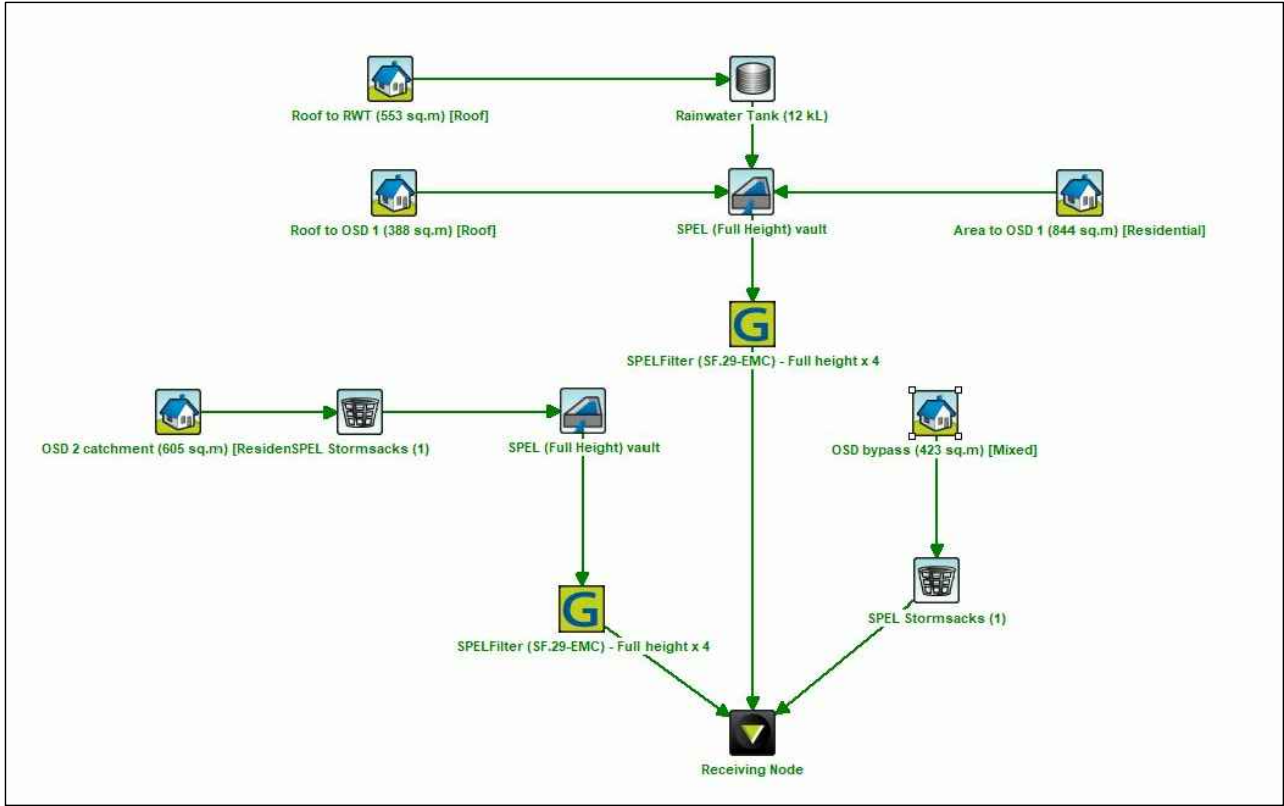


FIGURE 1 - MUSIC MODEL SCHEMATIC

5 RESULTS & CONCLUSION

BASED ON THE FOREGOING AND THE RESULTS DEPICTED IN TABLE 5.1, THE PROPOSED STORMWATER QUALITY TREATMENT MEASURES MEET THE REQUIRED TARGETS OF THE CITY OF PARRAMATTA. REFER TO CC210151\_20221008.SQZ AS PREPARED BY ACOR CONSULTANTS (CC) PTY LTD FOR FURTHER INFORMATION.

TABLE 5.1 - TREATMENT TRAIN EFFECTIVENESS

Treatment Train Effectiveness - Receiving Node			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.96	1.69	13.9
Total Suspended Solids (kg/yr)	244	36.3	85.1
Total Phosphorus (kg/yr)	0.494	0.159	67.8
Total Nitrogen (kg/yr)	4.45	2.05	54.1
Gross Pollutants (kg/yr)	52.9	0.259	99.5

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D REISSUED TO SUIT COUNCIL COMMENTS					09.10.22	RH	BK	North	Client  <b>BARRY RUSH &amp; ASSOCIATES</b>  PTY LTD	Architect   <b>ACOR CONSULTANTS (CC) Pty Ltd</b> Platinum Building, Suite 2.01, 4 Ilya Avenue ERINA NSW 2250, Australia T +61 2 4324 3499  ENGINEERS   MANAGERS   INFRASTRUCTURE PLANNERS   DEVELOPMENT CONSULTANTS	Project  <b>PROPOSED RESIDENTIAL DEVELOPMENT</b> LOTS 73, 74, 75 & 76 No. 2 - 8 GLENN AVENUE, NORTHMEAD	Drawing Title <b>STORMWATER QUALITY REPORT</b> <b>SHEET 2 OF 2</b>									
C NIL ISSUE					-	-	-					Drawn RH					Date OCT 21	Scale AS NOTED	A1	Q.A. Check BAK	Date 20.04.22
B NIL ISSUE					-	-	-					Designed BK					Project No. <b>CC210151</b>	Dwg. No. C14	Issue D		
A NIL ISSUE					-	-	-														
Issue Description					Date	Drawn	Approved														
																					



# HYDRAULIC SERVICES

FOR

LAHC SENIORS LIVING DEVELOPMENT  
2-8 GLENN AVENUE, NORTHMEAD NSW 2152

DRAWING SCHEDULE:

HY-DA-000    COVERSHEET  
HY-DA-100    SITE SERVICES

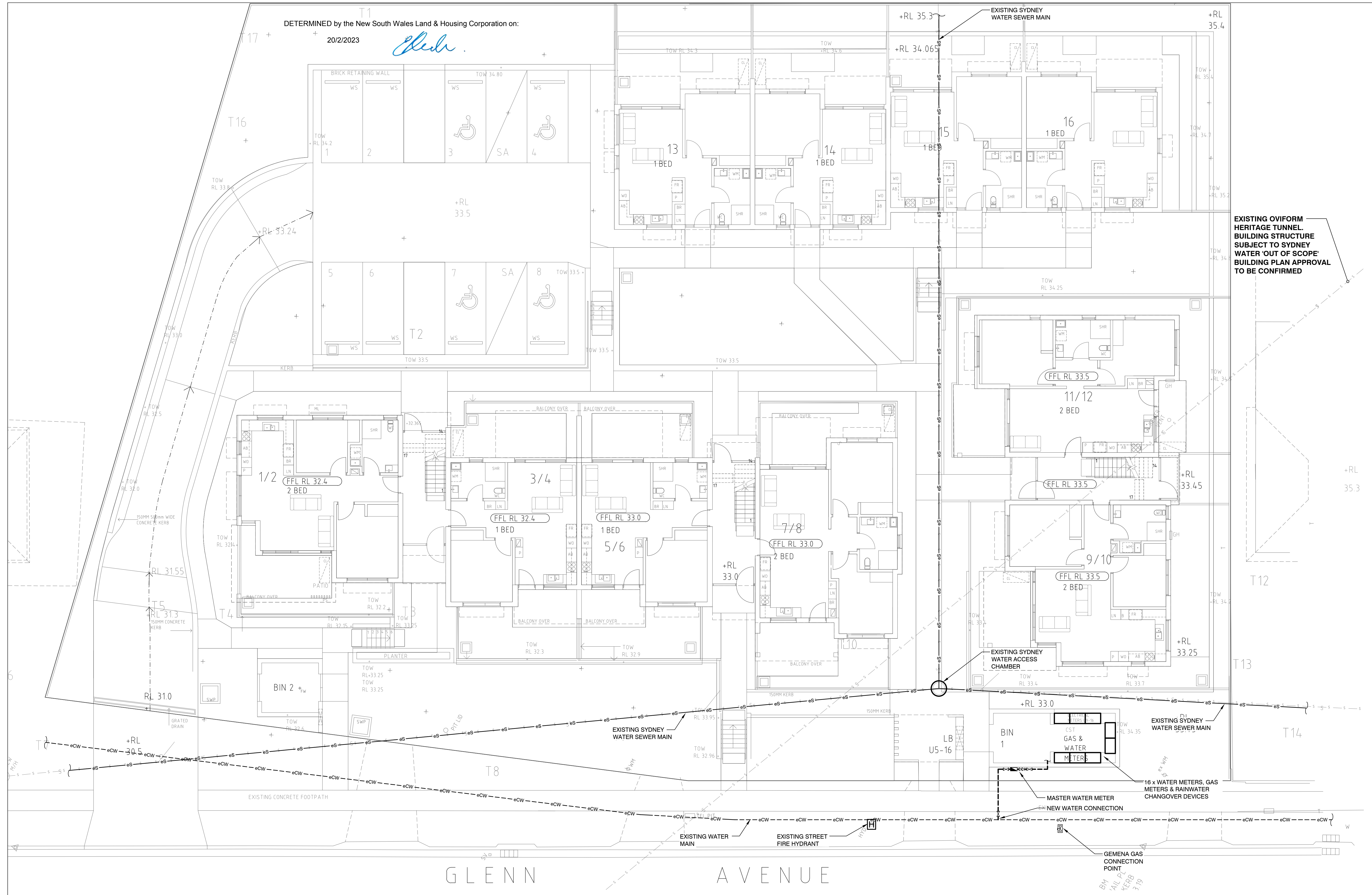
*[Signature]*



20/2/2023

DETERMINED by the New South Wales Land & Housing Corporation on:

<div> <b>Barry Rush &amp; Associates Pty Ltd</b> Architects Suite 25A, 2 Beattie Street, Balmain, NSW, Australia, 2041 Phone: (012) 9555 6028 Email: info@barryrush.com.au www.barryrush.com.au</div>				ARCHITECT <b>BARRY RUSH &amp; ASSOCIATES PTY LTD</b> PH (02) 9555 6028	STRUCTURAL CONSULTANT	<div> <b>marline</b> BUILDING SERVICES ENGINEERS MECHANICAL . ELECTRICAL . HYDRAULIC . FIRE . ENERGY</div>	PROJECT: <b>SENIORS DEVELOPMENT</b> <b>2-8 GLENN AVENUE NORTHMEAD</b> <b>LOTS 73, 74, 75 &amp; 76 IN DP35845</b>	TITLE: <b>COVERSHEET</b>	STATUS: <b>DA ISSUE</b>				
	2	26.11.21	REVISED DA ISSUE	PROJECT MANAGER <b>LAND &amp; HOUSING CORPORATION</b> PH (02) 8763 9090	HYDRAULIC CONSULTANT <b>MARLINE NEWCASTLE PTY LTD</b> PH (02) 4925 9300 <b>MN12049</b>				DATE: <b>NOV 2021</b>	SCALE: 1:100	PROJ: -	PROJECT NO: <b>BGX6Q</b>	
	1	03.11.21	DA ISSUE						STAGE: -	DRAWN: <b>IB</b>	CHECKED: <b>BM</b>	APPROVED PROJECT:	
	REV	DATE	NOTATION/AMENDMENT	LANDSCAPE CONSULTANT <b>GREENLAND DESIGN PTY LTD</b> PH (02) 0403 164 198	ELECTRICAL CONSULTANT <b>MARLINE NEWCASTLE PTY LTD</b> PH (02) 4925 9300 <b>MN12049</b>				FILE: BGX6Q_HY-DA-000.dwg	PLOTTED: 03/11/2021 2:00 PM	TYPE: <b>H</b>	SHEET: <b>HY-DA-000</b>	REV: <b>2</b>
	DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.												



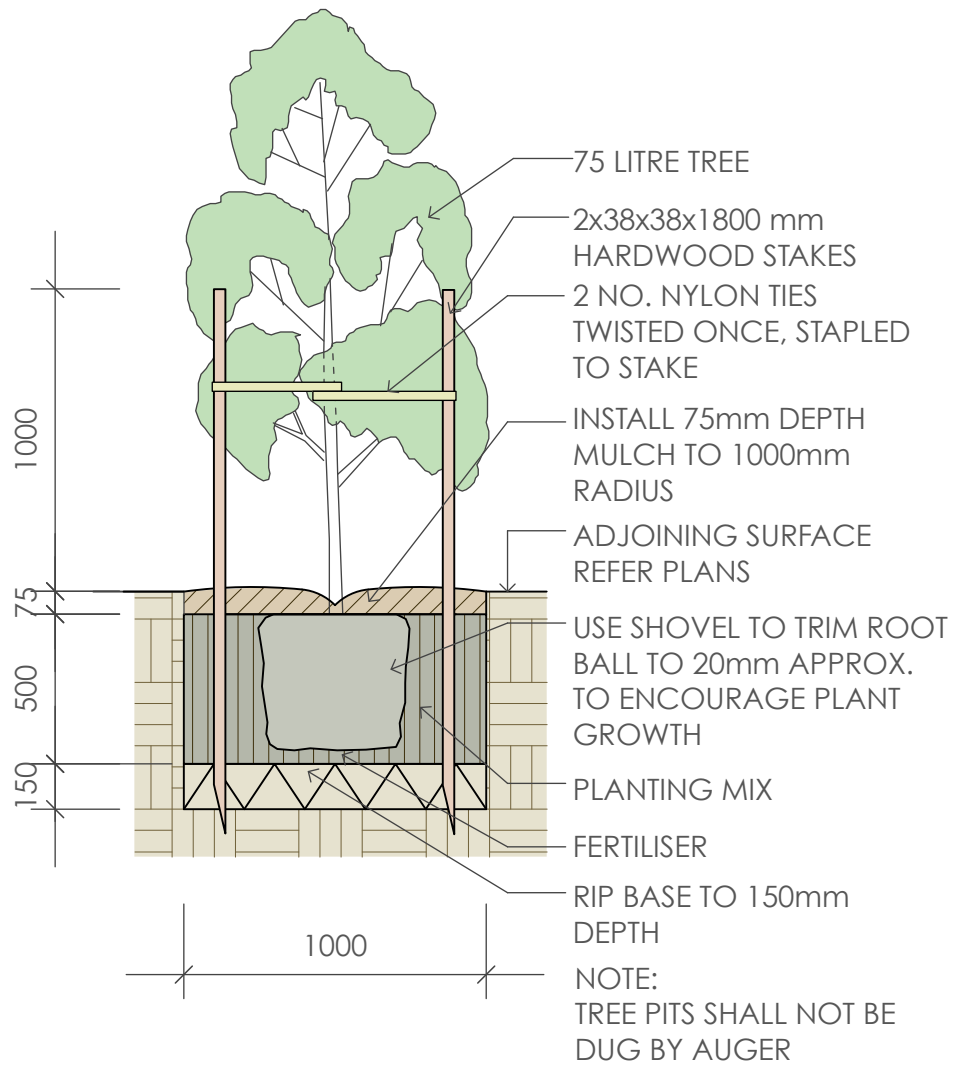


<div> <b>Barry Rush &amp; Associates Pty Ltd</b> Architects Suite 25A, 2 Beattie Street, Balmain, NSW, Australia, 2041 Phone: (012) 9555 8028 Email: info@barryrush.com.au www.barryrush.com.au</div>			<table><tr><td></td><td></td><td></td></tr><tr><td>2</td><td>26.11.21</td><td>REVISED DA ISSUE</td></tr><tr><td>1</td><td>03.11.21</td><td>DA ISSUE</td></tr><tr><td>REV</td><td>DATE</td><td>NOTATION/AMENDMENT</td></tr><tr><td colspan="3">DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.</td></tr></table>						2	26.11.21	REVISED DA ISSUE	1	03.11.21	DA ISSUE	REV	DATE	NOTATION/AMENDMENT	DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.			<table><tr><td>ARCHITECT</td><td colspan="2">BARRY RUSH &amp; ASSOCIATES PTY LTD PH (02) 9555 8028</td></tr><tr><td>PROJECT MANAGER</td><td colspan="2">LAND &amp; HOUSING CORPORATION PH (02) 8763 9000</td></tr><tr><td>LANDSCAPE CONSULTANT</td><td>GREENLAND DESIGN PTY LTD PH (02) 0403 164 198</td><td>MN12049</td></tr></table>			ARCHITECT	BARRY RUSH & ASSOCIATES PTY LTD PH (02) 9555 8028		PROJECT MANAGER	LAND & HOUSING CORPORATION PH (02) 8763 9000		LANDSCAPE CONSULTANT	GREENLAND DESIGN PTY LTD PH (02) 0403 164 198	MN12049	<table><tr><td>STRUCTURAL CONSULTANT</td><td colspan="2">MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300</td></tr><tr><td>ELECTRICAL CONSULTANT</td><td>MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300</td><td>MN12049</td></tr></table>			STRUCTURAL CONSULTANT	MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300		ELECTRICAL CONSULTANT	MARLINE NEWCASTLE PTY LTD PH (02) 4925 9300	MN12049	<div> MECHANICAL . ELECTRICAL . HYDRAULIC . FIRE . ENERGY</div>			PROJECT: SENIORS DEVELOPMENT 2-8 GLENN AVENUE NORTHMEAD LOTS 73, 74, 75 & 76 IN DP35845			TITLE: SITE SERVICES			STATUS: DA ISSUE		
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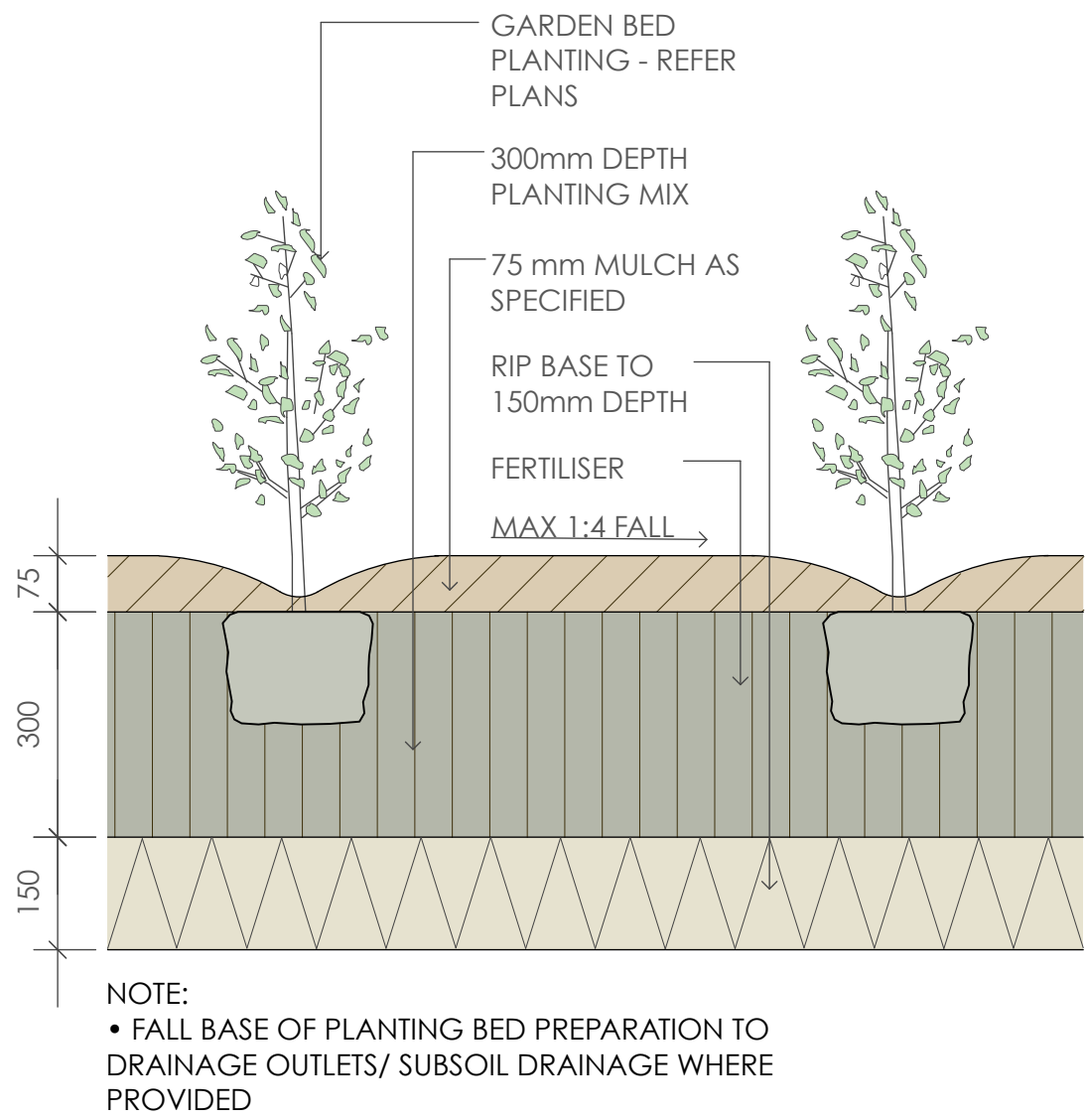




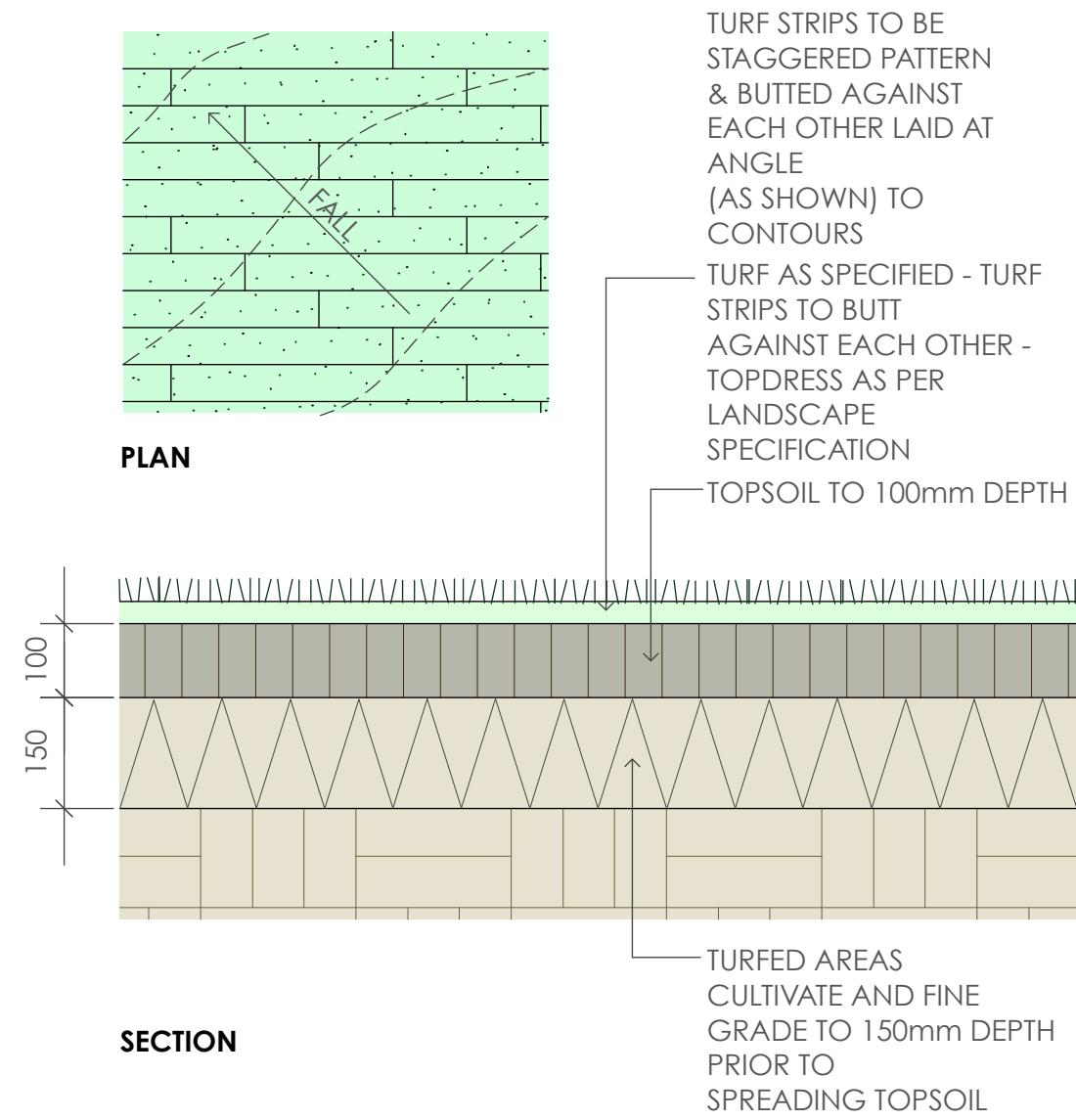




1 75 Litre Tree Planting  
scale 1:25

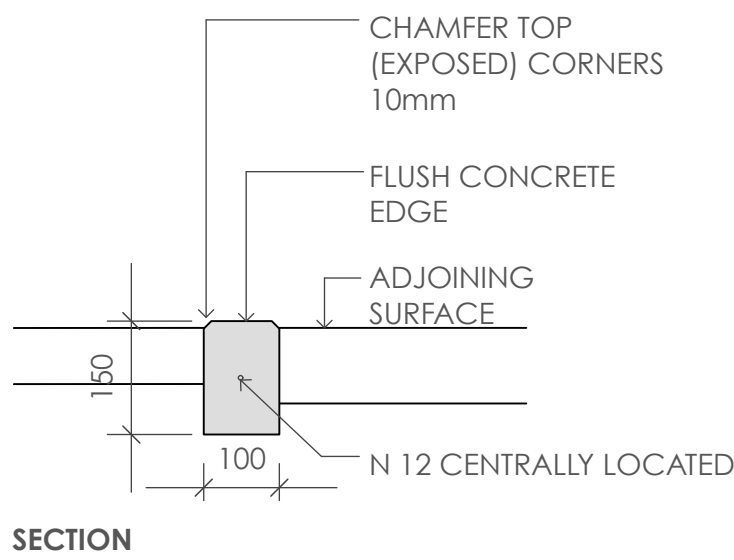


2 Planting Bed Detail  
scale 1:10



3 Turfing  
scale as shown

20/2/2023



4 Concrete Edge  
scale 1:10

Indicative Plant Schedule						
ID	Common Name	Botanical Name	Size	Mature Height	Mature Spread	Native (N)
<b>Trees</b>						
AcmRed	Red Head Lilly Pilly	Acmena smithii 'Red Head'	45Litre	5 - 6m	1.5 - 2.0m	N
CupAna	Tuckeroo	Cupaniopsis anacardioides	45Litre	6 - 9m	3.5 - 6m	N
ElaRet	Blueberry Ash	Elaeocarpus reticulatus	45Litre	8 - 10m	3 - 4m	N
HymFla	Native Frangipani	Hymenosporum flavum	45Litre	8 - 12m	5 - 6m	N
SyzPin	Pinnacle Lilly Pilly	Syzygium 'Pinnacle'	45Litre	6 - 10m	1.4 - 1.6m	N
TriLus	Water Gum	Tristaniaopsis laurina 'Luscious'	45Litre	6 - 8m	3.5 - 6m	N
<b>Shrubs</b>						
AlpCae	Native Ginger	Alpinia caerulea	200mm	0.9 - 1.5m	0.9 - 1.2m	N
BanSpi	Hairpin Banksia	Banksia spinulosa	200mm	2.0 - 3.0m	1.5 - 2.0m	N
CalAnz	White Bottle Brush	Callistemon citrinus 'White Anzac'	200mm	0.9 - 1.1m	2.0 - 3.0m	N
CalEnd	Scarlet Bottlebrush	Callistemon citrinus 'Endavour'	200mm	3 - 5m	2.0 - 3.5m	N
CalLit	Little John	Callistemon 'Little John'	200mm	0.9 - 1.5m	0.9 - 1.2m	N
CalRed	Red Alert Bottle Brush	Callistemon 'Red Alert'	200mm	1.0 - 1.5m	2.0 - 3.0m	N
CopEve	Evening Glow Mirror Plant	Coprosma 'Evening Glow'	200mm	0.9 - 1.5m	0.9 - 1.2m	N
CorCon	Narrow Palm Lily	Cordyline stricta congesta	200mm	1 - 2m	0.8 - 1.0m	N
DorExc	Gymea Lily	Doryanthes excelsa	200mm	1.5 - 2m	1.2 - 2.0m	N
GreHon	Honey Gem Grevillea	Grevillea 'Honey Gem'	200mm	3.0 - 4.0m	2.0 - 3.0m	N
GreMoo	Moonlight Grevillea	Grevillea 'Moonlight'	200mm	4.0 - 5.0m	2.0 - 4.0m	N
GreSup	Superb Grevillea	Grevillea x 'Superb'	200mm	1.5 - 3m	1.2 - 2.0m	N
SyzCas	Cascade Lilly Pilly	Syzygium 'Cascade'	200mm	2 - 3m	1.5 - 2.0m	N
WesFru	Jervis Gem	Westringia fruticosa 'Jervis Gem'	200mm	0.8 - 1.2m	0.8 - 1.2m	N
<b>Ground Covers</b>						
GrePoo	Royal Mantle Grevillea	Grevillea 'Poorinda Royal Mantle'	150mm	0 - 0.2m	2.0 - 3.0m	N
LomTan	Spiny-headed mat rush	Lomandra longifolia 'Tanika'	150mm	0.45 - 0.6m	0.6 - 0.9m	N
LomKat	Spiny-headed Mat-Rush	Lomandra longifolia 'Katrinus'	150mm	0.75 - 0.9m	0.9 - 1.2m	N
HarMee	Meema	Hardenbergia violacea 'Meema'	150mm	0.4 - 0.6m	1.5 - 2.0m	N
MyoYar	Carpet Spreading Myoporum	Myoporum parvifolium 'Yareena'	150mm	0.05 - 0.1m	0.8 - 1.0m	N
CasCou	Cousin It	Casuarina 'Cousin It'	150mm	0.10 - 0.15m	0.8 - 1.0m	N
LomDel	Katrinus Deluxe Mat-Rush	Lomandra longifolia 'Katrinus Deluxe'	150mm	0.75 - 0.9m	0.9 - 1.2m	N
DiaTas	Flax Lily	Dianella tasmanica 'Tasred'	150mm	0.4 - 0.5m	0.4 - 0.5m	N
PenRub	Purple Fountain Grass	Pennisetum 'Rubrum'	150mm	1 - 1.5m	0.5 - 0.9m	N
CarGla	Pigface	Carpobrotus glaucescens	150mm	0.2 - 0.3m	1.5 - 2.0m	N
SenTri	Trident Blue	Senecio Trident Blue	150mm	0.2 - 0.3m	0.5 - 1.0m	N
DicEme	Emerald Falls Dichondra	Dichondra 'Emerald Falls'	150mm	0.0 - 0.3m	0.9 - 1.2m	N
AniGol	Kangaroo Paw 'Gold Velvet'	Anigozanthos 'Gold Velvet'	150mm	0.5 - 0.6m	0.3 - 0.5m	N
WesMun	Mundi	Westringia fruticosa 'Mundi'	150mm	0.45 - 0.6m	0.9 - 1.2m	N

#### SPECIFICATION NOTES

##### PLANTING MATERIALS

###### Planting Mix:

Planting mix for tree pit backfill shall be "Organic Garden Mix" consisting of  
50% Black Soil  
20% Coarse Sand  
30% Organic Material

as available from Australian Native Landscapes, Phone: [02] 9450 1444, or approved equivalent. Samples shall be provided to the Superintendent prior to ordering or delivery to site. Any material delivered to site, that is rejected by the Superintendent, shall be removed by the contractor at his own expense. Minimum depths of mix to all planting bed areas is as specified on details.

###### Mulch:

Mulch to garden bed:

Mulch shall mean hardwood mulch (25mm grade), free from material derived from Privet, Willow, Poplar, Coral trees, or other noxious weeds. Any mulch exceeding the 25mm grade shall be rejected / removed from the site. Graded hardwood mulch to be supplied by Australian Native Landscapes Pty Ltd Phone (02) 9450 1444, or approved equivalent.

Spread mulch so that after settling, it is:

- smooth and evenly graded between design surface levels;
- flush with adjacent finished levels;
- of the required depths (75mm); and
- sloped towards the base of plant stems in plantation beds, but not in contact with the stem (not closer than 50mm in the case of gravel mulches).

Place after the preparation of the planting bed, planting and all other work.

###### Plant Material:

All plant material must be true to the species. No substitutes will be allowed. All plants shall be free of fungus and insect damage. All plants shall be healthy, well shaped, not soft or force grown and not root bound.

Plants are available from **Andreasens Green** wholesale nursery, contact Darren (02) 8777 4713, email darren@andreasensgreen.com.au or approved equivalent.

###### Turfed areas:

All new turfed areas are to be selected weed free Soft Leaf Buffalo. Turf shall be laid neatly butted with staggered joints, flush with adjacent surfaces and have even running falls to all drainage points.

All new turfed area shall have a minimum 150mm depth of weed free top soil, placed and levelled prior to turfing.

#### PREPARATION AND HARDWORKS

##### Excavating for Spot Planting

To planting areas, excavate a hole for each plant large enough to provide not less than twice the depth and twice the diameter than the root ball of species to be planted.

##### Staking

Use durable hardwood, straight, free from knots or twists, pointed at one end. Drive stakes into the ground a minimum one third of their length, avoiding damage to the root system.

- 75 Litre trees in 2 x 38x38x1800mm Hardwood Stake with double Nylon tie
- TIES: Provide a 50mm wide Nylon webbing tie per stake, fixed securely to the stakes, one tie at half the height of the main stem and the other as necessary to stabilise the plant.

##### Concrete Edge

MATERIALS: Concrete to be off white colour.

INSTALLATION: Supply and install 150 x 100mm (width) reinforced flush concrete kerb to locations as approved on site by the Superintendent. Provide flexible joints at maximum 3 metre intervals in colour to match concrete. Lightly expose aggregate through rinsing / sponging. Tool finish exposed edges with 10mm pencil round to prevent chipping.

#### MAINTENANCE / PLANT ESTABLISHMENT

Maintenance shall apply to all hard and soft landscape materials installed prior to the "handover" and acceptance by Principles Representative and the Site Superintendent. The maintenance period shall convenience at the granting of practical completion and shall extend for 12 months.

Maintenance shall consist of the following works:

- Follow a daily watering programme to be approved by Superintendent. Water all plants individually, twice per week or when necessary to ensure constant plant growth. Water all turf and native grassed areas, twice per week.
- Apply appropriate weed control sprays and hand weed as required to maintain planting areas, native grassing bed areas, turfed areas, paved areas, and free pits in turf free of weed or rogue grass growth.
- Regularly tidy and top up mulch and trim edges to prevent spill over onto paved / grassed areas.
- Spray to control pests and diseases.
- Replace plants, which fail with plants of a similar size and quality as originally specified to approval of Superintendent. Costs of replacement shall be the responsibility of the Contractor. Replacement planting will be undertaken within 2 weeks of identification of dead material or instruction be the Superintendent.
- Report any incidence of plants stolen or destroyed by vandalism.
- Adjust stakes and ties to plants as necessary. Ensure that strangulation of plants does not occur.
- Prune and shape plants as directed or where necessary.
- Make good any defects or faults arising out of defective workmanship or materials.
- Fertilise lawn areas to maintain healthy growth.
- Make good any erosion or soil subsidence, which may occur including soft areas in pathways.
- Mow lawn to maintain neat healthy growth.
- A final inspection shall be made by the Superintendent before handover. Any items requiring rectification shall be repaired before the works are finally approved, and retention moneys released.

#### NOTE:

- All finished levels are to be verified by Contractor on site.
- All landscape works be in strict accordance with Council's landscape code and guidelines
- This plan to be used in conjunction with all other submitted architectural, hydraulics and engineering drawing where applicable.

GREENLAND DESIGN	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>TWELVE MONTHS MAINTENANCE SCHEDULE</b>												
<b>Plant Care</b>												
Monitoring												
Pruning as required												
Deadhead /tip pruning												
Slow release fertilise												
Rapid soluble fertilise as required												
Cut back perennials and grasses												
Watering as required												
<b>Garden Bed</b>												
Edging												
Remove weeds and herbicide spraying as required												
Top up mulch as required												
Dead foliage removal												
<b>Pest Management</b>												
Monitoring and herbicide spraying as required												
<b>Turfed Area</b>												
Fertilise												
Make good turf as required												
<b>Winter clean up</b>												
Remove dead foliage and pruning as required												



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PARRAMATTA NSW 2124  
PHONE No 1800 738 718  
https://www.dpie.nsw.gov.au/land-and-housing-corporation



**Barry Rush & Associates Pty Ltd**  
Architects. Nominated Architect: Barry John Rush  
ARB Registration No 3753  
Suite 25A, 2 Beattie Street, Balmain, NSW  
Phone: (02) 9555 8028 Email: info@barryrush.com.au  
www.barryrush.com.au

H	12/10/2022	DA REVISION
G	04/08/2022	FOR REVIEW
F	01/06/2022	FOR DA
E	07/04/2022	FOR DA
D	26/10/2021	FOR DA
REV	DATE	NOTATION/AMENDMENT
DO NOT SCALE DRAWINGS. CHECK ALL DIMENSIONS ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE.		


ARCHITECT	BARRY RUSH & ASSOCIATES PTY LTD
PH (02) 9555 8028	
PROJECT MANAGER	LAND & HOUSING CORPORATION
PH (02) 8753 9050	
LANDSCAPE CONSULTANT	GREENLAND DESIGN PTY LTD
PH 0403 164 198	

BUSINESS PARTNER:

PROJECT:  
**SENIORS DEVELOPMENT**  
2-8 GLENN AVENUE  
NORTHMEAD  
LOTS 73,74,75 & 76 IN DP35845

TITLE:  
**LANDSCAPE DETAILS AND SPECIFICATION**

FILE: 2350  
PLOTTED:

STATUS:	DA
DATE:	12/10/2022
SCALE:	1:100
STAGE:	CL
DRAWN:	CL
CHECKED:	GD
PROJECT NO:	BGX6Q
HOUSING ARCHITECT:	
REV:	H