ACTIVITY DETERMINATION

Determined by the New South Wales Land and Housing Corporation

Project No. BGZLN

Conflict of Interest[1]

In this matter:

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

Signed..... Dated.....31/03/2025

Lisa Marigliano
Executive Director, Portfolio Development
Housing Portfolio
Homes NSW

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, *as a delegate of the New South Wales Land and Housing Corporation,* 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	Street or property name
17-27	Hardwicke Street

Suburb, town or locality	Postcode
Riverwood	2210

Local Government Area(s)	Real property description (Lot and DP)
Georges River	Lots 11 to 16 DP 36368

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 "close relative of a person" as defined in section 49(6) of the Property and Stock Agents Act 2002.*

ACTIVITY DESCRIPTION

Provide a description of the activity

Demolition of 6 existing dwellings and associated structures, tree removal, and the construction of a 29 dwellings seniors housing development comprising 17 x 1-bedroom and 12 x 2-bedroom independent living units, associated landscaping and fencing, surface parking for 14 vehicles, and consolidation into a single lot.

Signed..... Dated.31/03/2025

Lisa Marigliano
Executive Director, Portfolio Development
Housing Portfolio
Homes NSW

SCHEDULE 1

IDENTIFIED REQUIREMENTS

PART A – Standard Identified Requirements

THE DEVELOPMENT

The following Identified Requirements are to ensure that the residential activity is carried out in accordance with the plans / documents and any amendments arising from the Review of Environmental Factors under Part 5 of the Environmental Planning & Assessment Act 1979, Section 171 of the Environmental Planning and Assessment Regulation 2021 and the requirements of State Environmental Planning Policy (Housing) 2021.

1. The development shall 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:
Architectural Plans – Appendix A				
Cover Page	DA-001	6	19.09.2024	Custance
Site Analysis Plan	DA-002	3	19.09.2024	Custance
Demolition Plan	DA-003	3	06.09.2024	Custance
Development data	DA-004	3	06.09.2024	Custance
Site Plan	DA-005	3	06.09.2024	Custance
GA Plan – Ground floor & Level 1	DA-006	7	19.09.2024	Custance
GA Plan – Level 2 & Roof Plan	DA-007	6	06.09.2024	Custance
Detail – Ground Floor Plan	DA-008	3	06.09.2024	Custance

Detail – Level 1 Plan	DA-009	3	06.09.2024	Custance
Detail – Level 2 Plan	DA-010	3	06.09.2024	Custance
External Elevations	DA-011	6	19.09.2024	Custance
Building Sections	DA-012	5	06.09.2024	Custance
Building Sections	DA-013	2	06.09.2024	Custance
Solar access study	DA-014	2	06.09.2024	Custance
Shadow Diagrams	DA-015	3	06.09.2024	Custance
Solar Study	DA-016	2	06.09.2024	Custance
Solar Study	DA-017	2	06.09.2024	Custance
Overall height plane	DA-020	2	06.09.2024	Custance
Materials	DA-025	2	06.09.2024	Custance
Details Sections	DA-026	3	06.09.2024	Custance
Wall Types	DA-030	1	03.07.2024	Custance
Balcony Screen & Balustrade details with rear wall PFC detail	DA-031	1	06.09.2024	Custance
Landscape Plan – Appendix B				
Cover sheet	000	C	22.08.2024	Site Image Landscape Architects
Existing Tree Management Plan	001	A	27.06.2024	Site Image Landscape Architects
Landscape Colour Plan	100	D	22.08.2024	Site Image Landscape Architects
General arrangement Plan 01	101	D	22.08.2024	Site Image Landscape Architects
General Arrangement Plan 02	102	D	22.08.2024	Site Image Landscape Architects
Planting Plan 01	201	D	22.08.2024	Site Image Landscape Architects
Planting Plan 02	202	D	22.08.2024	Site Image Landscape Architects
Specification notes & plant schedule	500	D	22.08.2024	Site Image Landscape Architects
Landscape details	501	B	27.06.2024	Site Image Landscape Architects
Civils Plans – Appendix C				
Cover Sheet, Drawings Schedule & Locality Sketch	22T46_DA_C000	3	06.06.2024	Henry & Hymas Engineers
Notes	22T46_DA_C010	3	06.06.2024	Henry & Hymas Engineers
General Arrangement Plan	22T46_DA_C100	3	30.05.2024	Henry & Hymas Engineers
Detail Plan – Sheet 1 of 2	22T46_DA_C101	4	06.06.2024	Henry & Hymas Engineers
Detail Plan – Sheet 2 of 2	22T46_DA_C102	4	06.06.2024	Henry & Hymas Engineers
Typical Kerb and Concrete Details	22T46_DA_C110	1	23.02.2024	Henry & Hymas Engineers
Standard drawings – Crossover, Footpath	22T46_DA_C160	3	06.06.2024	Henry & Hymas Engineers
Stormwater miscellaneous details & pit lid schedule	22T46_DA_C200	2	23.02.2024	Henry & Hymas Engineers
Stormwater miscellaneous details	22T46_DA_C201	2	23.02.2024	Henry & Hymas Engineers
OSD tank plan details and sections	22T46_DA_C202	2	06.06.2024	Henry & Hymas Engineers
Pre-development stormwater catchment plan	22T46_DA_C250	2	06.06.2024	Henry & Hymas Engineers
Post-development stormwater catchment plan	22T46_DA_C251	2	06.06.2024	Henry & Hymas Engineers
Retaining wall details	22T46_DA_C310	1	23.02.2024	Henry & Hymas Engineers
Sediment and Erosion controls plan	22T46_DA_SE01	4	06.06.2024	Henry & Hymas Engineers

Sediment and Erosion control details	22T46_DA_SE02	4	06.06.2024	Henry & Hymas Engineers
External Works plan – Sheet 1 of 4	22T46_DA_EX01	1	06.06.2024	Henry & Hymas Engineers
External Works plan – Sheet 2 of 4	22T46_DA_EX02	1	06.06.2024	Henry & Hymas Engineers
External Works plan – Sheet 3 of 4	22T46_DA_EX03	1	06.06.2024	Henry & Hymas Engineers
External Works plan – Sheet 4 of 4	22T46_DA_EX04	1	06.06.2024	Henry & Hymas Engineers
Bulk earthworks cut & fill plan	22T46_DA_BE01	1	06.06.2024	Henry & Hymas Engineers
Bulk and Earthworks Cut & Fill depth plan	22T46_DA_BE02	1	06.06.2024	Henry & Hymas Engineers
External footpath long section	22T46_DA_EX10	1	06.06.2024	Henry & Hymas Engineers
External footpath cross sections	22T46_DA_EX11	2	06.06.2024	Henry & Hymas Engineers
External footpath ramp sections	22T46_DA_EX12	2	06.06.2024	Henry & Hymas Engineers
Detail and Contour Survey – Appendix D				
Detail and level survey Sheet 1	Sheet 1 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 2	Sheet 2 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 3	Sheet 3 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 4	Sheet 4 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 5	Sheet 5 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 6	Sheet 6 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 7	Sheet 7 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 8	Sheet 8 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 9	Sheet 9 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 10	Sheet 10 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 11	Sheet 11of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 12	Sheet 12 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 13	Sheet 13 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 14	Sheet 14 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 15	Sheet 15 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 16	Sheet 16 of 17	-	08.03.2024	Northern Survey Partners
Detail and level survey Sheet 17	Sheet 17 of 17	-	08.03.2024	Northern Survey Partners
Notification Plans – Appendix E				
Cover Page	N-01	4	19.09.2024	Custance
Site / Landscape Plan	N-02	3	06.09.2024	Custance
External Elevations	N-03	3	06.09.2024	Custance
Materials	N-04	2	06.09.2024	Custance
Shadow Diagrams	N-05	3	06.09.2024	Custance
Access Report – Appendix H				
Access Compliance Report	S231104	C	15.08.2024	Formiga 1
AHIMS – Appendix I				
AHIMS Search Result, 21 Charles Street, Riverwood – 50m search buffer	1	-	01.10.2024	AHIMS Web Services
Arborist Report – Appendix J				
Arboricultural Impact Assessment Report	D5011	-	July 2024	Allied Tree Consultancy
BASIX Report – Appendix K				
BASIX Certificate	Cert Number: 1758935M	-	07.08.2024	Efficient living Pty Ltd
BCA Report – Appendix L				

BCA Final Report	23-219689	R04	22.08.2024	Philip Chun Building Compliance
NatHERS Certificate – Appendix N				
Nationwide House Energy Rating Scheme – Class 2 summary	Cert Number: #HR-9TJLCY-01	-	07.08.2024	Efficient living Pty Ltd
Geotechnical Investigation - Appendix P				
Geotechnical Investigation	32062/7123D-G	-	February 2023	STS Geotechnics Pty Ltd
Traffic and Parking Impact Assessment - Appendix S				
Traffic and Parking Impact Assessment	230826	G	09.01.2025	Greenview Consulting
Waste Management Plan – Appendix T				
Waste Management Plan	-	3	25.09.2024	Universal Foodservice designs

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 implemented.

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 determination shall be consolidated into a single lot. The plan of consolidation shall be lodged at the NSW Land Registry Services and shall be registered prior to the occupation of the development. A copy of the registered plan shall be provided to the Land & Housing Corporation.

OPERATIONAL MATTERS

The following Identified Requirements relate to the use of the site and are to ensure that the activity and its operation do not interfere with the amenity of the surrounding area.

Stormwater Run-off

6. Stormwater shall be collected within the site and conveyed in a pipeline to the appropriate gutter or drain under the control of Georges River Council substantially in accordance with the approved concept stormwater drainage plans.

7. Alterations to the natural surface contours or surface absorption characteristics of the site shall not impede, increase or divert natural surface water runoff so as to cause a nuisance to adjoining property owners.

8. All driveways shall be graded in such a manner as to provide continuous surface drainage flow paths to the 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 and Parking

10. Concrete vehicular crossings and laybacks shall be provided at the entrance/exit to the property. The crossing and layback shall be constructed in accordance with Georges River Council's standard requirements for residential crossings. Council shall

be provided with plans for the crossings and laybacks together with the payment of any council inspection fees.

11. Particular care shall be taken in the location of vehicular crossings and/or laybacks to avoid poles, and pits. The cost of any necessary adjustments to utility mains and services associated with the construction of the laybacks / driveways shall be borne by the Land & Housing Corporation. Obsolete gutter laybacks shall be constructed as kerb in accordance with Georges River 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 shall 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 shall be maintained during the entire period of the works until all the 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 shall be sited well clear of any easements affecting the site. The builder shall ascertain if any easements do exist and, if they do, 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 shall be inspected by a suitably qualified person to identify any contaminated or hazardous material present. A proposal for remediation shall be prepared, which may include preparation of a Remedial Action Plan, and remediation shall be carried out in accordance with the proposal. A Validation Report, prepared in accordance with Environment Protection Authority requirements, shall 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 shall be provided to the Land and Housing Corporation on completion of the remediation works.

Landscaping

18. Landscaping shall be carried out substantially in accordance with the approved landscape plans and maintained for a period of 12 months by the building contractor. Georges River Council shall be consulted in relation to the planting of any street trees.

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 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 Arboricultural impact Assessment Report and no other trees shall be removed without further approval(s).

Fencing

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

Provision of Letterbox Facilities

22. Suitable letterbox facilities are to 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 WORK COMMENCING ON THE SITE

The following Identified Requirements are to be complied with prior to any work commencing on the site, including demolition.

Disconnection of Services

24. 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.

25. All existing services within the boundary to remain live shall be identified, pegged and made safe.

Demolition

26. The builder shall notify the occupants of premises on either side, opposite and at the rear of the site a minimum of 5 working days prior to demolition. Such notification shall be clearly written on an A4 size paper giving the date demolition will commence and be placed in the letterbox of every premise (including every unit in a multi-unit residential building or mixed-use building. The demolition shall not commence prior to the date that is stated in the notice letter.

27. 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.

28. If buildings to be demolished are determined as, or suspected of, containing asbestos cement, a standard commercially manufactured sign containing the words 'DANGER ASBESTOS REMOVAL IN PROGRESS', and measuring not less than 400mm x 300mm, shall be erected in a prominent visible position on the site for the duration of the demolition works.

Note:
Any buildings constructed before 1987 is assumed to contain asbestos.

Utilities Service Provider Notification

29. The demolition / construction plans shall be submitted to the appropriate water utility's office (e.g. Sydney Water office) to determine whether or not the development will affect the utility's sewer and water mains, stormwater drains and any easements.

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

Council Notification

30. Georges River Council shall be advised in writing, of the date it is intended to commence work, including demolition. A minimum period of **5** working days notification shall be given.

Neighbour Notification

31. The builder shall notify the occupants of the premises on either side, opposite and at the rear of the site a minimum of **5** working days prior to commencement of construction. Such notification shall be clearly written on an A4 size paper giving the date construction will commence and be placed in the letterbox of every premise (including every unit in a multi-unit residential building or mixed use building). Construction shall not commence prior to the date that is stated in the notice letter.

Site Safety

32. A sign shall 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.

The sign shall be maintained while the work is being carried out but shall 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.

33. A minimum 1.8m high security fence or Class A / 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.

34. No building or demolition materials are to be stored on the footpath or roadway.

Site Facilities

35. 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 Georges River Council 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 shall not to be placed on any property other than that which this approval relates to.

36. Access to the site shall only be provided via an all-weather driveway on the property and is not to be provided from any other site.

Protection of Trees

37. Trees and other vegetation that are to be retained within site, neighboring properties, and street verge shall be protected prior to the commencement of works and for the duration of the construction period in accordance with the details provided in the Arboricultural Impact Assessment Report.

Waste Management

38. A final Waste Management Plan shall be prepared and submitted to the Land & Housing Corporation by the building contractor 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.

PRIOR TO ANY CONSTRUCTION WORK COMMENCING ON SITE

The following Identified Requirements are to be complied with prior to any construction works occurring on the site, excluding demolition.

Service Authority Clearances

39. A compliance certificate, or other evidence, shall be obtained from 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.

40. A written clearance from an electricity supply authority stating that electrical services are available to the site, or that arrangements have been entered into for the provision of services to the site, shall be obtained prior to work commencing.

41. A certificate from an approved telecommunications carrier certifying that satisfactory arrangements have been made for the provision of underground telephone services, to the site and to each dwelling, shall be obtained prior to work commencing.

42. Where the site is to be connected to reticulated gas, a certificate from an approved gas carrier to certify that satisfactory arrangements have been made to ensure the provision of underground gas services to each dwelling in the development shall be obtained prior to work commencing.

Stormwater Disposal

43. Detailed stormwater drainage plans, substantially in accordance with the approved concept stormwater drainage plans, shall be prepared and submitted to the Land & Housing Corporation. Any on-site detention system shall be designed in accordance with the relevant catchment authority's requirements (e.g. the Upper Parramatta River Catchment Trust On-site Detention Handbook) and/or Georges River Council's drainage code.

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

DURING DEMOLITION AND CONSTRUCTION WORKS

The following Identified Requirements are to be complied with whilst demolition and construction works are occurring on the site.

Landfill

45. Where site filling is necessary, a minimum of 95% standard compacting shall be achieved and certified by a NATA registered Soils Lab.

46. Land fill materials must satisfy the following requirements:

i. be Virgin Excavated Natural Matter (VENM);
ii. be free of slag, hazardous, contaminated, putrescible, toxic or radio-active matter; and
iii. be free of industrial waste and building debris.

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 immediately in the affected area. Subsequently, in cases where historical or indigenous items have been uncovered, the Department of Climate Change, Energy, the Environment and Water must be contacted.

48. All workers / contractors on the site shall be informed of their obligations, under the Heritage Act and *National Parks and Wildlife Act 1974,* that it is illegal to disturb, damage or destroy a relic without the prior approval of the Department of Climate Change, Energy, the Environment and Water.

Demolition

49. Any existing structures identified for demolition shall be demolished prior to commencement of the construction of the activity.

50. Demolition shall be carried out in accordance with the appropriate provisions of AS 2601.

51. Where materials containing asbestos are to be removed, demolition shall 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, 2nd 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 Planning, Housing and Infrastructure.

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 footpath and the public road shall not be obstructed by any vehicles. The public road and footpath 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 footpaths. The footpath shall be suitably protected against damage when plant and vehicles access the site. All loading of vehicles with demolished materials shall occur on site.

Survey Reports

58. Survey reports shall be submitted by the building contractor 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 allotment boundaries.

Hours of Demolition / Construction / Civil Work

59. Demolition / construction / civil work shall only occur on the site between the hours of 7am to 5pm Monday to Saturday with no work permitted on Sundays or public holidays.

Excavation & Backfilling

60. All excavations and backfilling associated with the demolition or erection of building(s) shall be executed safely and in accordance with appropriate professional standards. All such work shall be guarded and protected to prevent it from being dangerous to life or property.

Pollution Control

61. 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 former Department of Environment and Climate Change.

62. No fires shall be lit or waste materials burnt on the site.

63. No washing of concrete forms or trucks shall occur on the site.

64. Any contamination / spills on the site during construction works shall be actively managed and reported immediately to appropriate regulatory authorities to minimise any potential damage to the environment.

65. Dust generation during demolition / construction shall be controlled using regular control measures such as on site watering or damp cloth fences.

66. All vehicles transporting loose materials and travelling on public roads shall be secured (i.e. closed tail gate and covered) to minimise dust generation.

67. Non-recyclable waste and containers shall be regularly collected and disposed of at a licensed landfill or other disposal site in accordance with details set out in the final Waste Management Plan.

Impact of Construction Works

68. The Land & Housing Corporation shall bear the cost of any necessary adjustments to utility mains and services.

69. Care shall be taken to prevent any damage to adjoining properties. The building contractor shall be liable to pay compensation to any adjoining owner if, due to demolition/construction works, damage is caused to such adjoining property.

Termite Protection

70. To protect buildings from subterranean termite, termite barriers installed in accordance with AS 3660.1, shall be placed on the underside and in 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.

PRIOR TO OCCUPATION OF THE DEVELOPMENT

The following Identified Requirements are to be complied with prior to the occupation of the development.

General

71. The use or occupation of the development shall not commence until all the Identified Requirements of this determination have been complied with.

Council Infrastructure Damage

72. The cost of repairing any damage caused to Georges River Council's assets in the vicinity of the site as a result of demolition / construction works shall be met in full by the building contractor.

Stormwater Drainage

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

    - sufficient levels and dimensions to verify the constructed storage volumes; and
    - location and surface levels of all pits; and

- invert levels of the internal drainage lines, orifice plates fitted and levels within the outlet control pits; and
- finished floor levels of all structures; and
- verification that any required trash screens have been installed; and
- locations and levels of any overland flow paths; and
- verification that any drainage lines are located wholly within easements, where applicable.

The Work-As-Executed Plan information shall be shown on the final civil works drawings.

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

PART B – Additional Identified Requirements

74. Air Conditioning

Design and Installation

Air conditioning units are to be installed to each unit and must be designed, specified and installed to ensure that they comply with the requirements of the Protection of the Environment Operations (Noise Control) Regulations 2017 and must not emit a noise that exceeds 5dB(A) above the ambient background noise level measured at any property boundary. Acoustic treatment may be required to ensure this is achieved.

Certification, from an appropriately qualified acoustic consultant, shall be provided at construction documentation stage that the air conditioning units can comply with this requirement.

Further certification, from an appropriately qualified acoustic consultant, shall be provided prior to occupation that the installed air conditioning units comply with this requirement.

On-Going

The use of any air-conditioning unit must comply with the requirements of the *Protection of the Environment Operations (Noise Control) Regulations 2017* and must not:

(a) emit a noise that is audible within a habitable room in any adjoining residence (regardless of whether any door or window to that room is open):
  (i) before 8.00 am and after 10.00 pm on any Saturday, Sunday or Public Holiday; or
  (ii) before 7.00 am or after 10.00 pm on any other day; and

(b) emit a noise that exceeds 5dB(A) above the ambient background noise level measured at any property boundary.

75. Solar (Photovoltaic Electricity Generating) Energy System

Where a solar energy system is proposed it must satisfy the following requirements:

(a) the system is installed in accordance with the manufacturer's specifications or by a person who is accredited by the Clean Energy Council for the installation of photovoltaic electricity generating systems, and

(b) the solar energy system must not reduce the structural integrity of any building to which the system is attached, and

(c) the system must not involve mirrors or lenses to reflect or concentrate sunlight, and
(d) the system must not protrude more than 0.3m from the wall or roof (as measured from the point of attachment), and
(e) the system is installed no less than 3m from any adjoining property boundary.

Certification from an appropriately person shall be provided at construction documentation stage that the solar energy system/s are capable of complying with this requirement.

Further certification, from an appropriately qualified person shall be provided prior to occupation that the installed solar energy system/s comply with this requirement.

Specific Requirements for Seniors Housing

76. The independent living units shall comply with the accessibility and useability standards referenced in section 85 and set out in Schedule 4 of *State Environmental Planning Policy (Housing) 2021*.

Note:
This requirement does not apply to the provisions set out under sections 2, 5-13 and 15-21 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 shall be accommodated in the approved development:

(a) seniors or people who have a disability; or
(b) people who live within the same household with seniors or people who have a disability; or
(c) staff employed to assist in the administration and provision of services to the seniors housing development.

Note:
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 shall be registered against the title of the property, 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 and that the dwellings cannot be subdivided.

78. Pathway lighting shall be designed to provide a minimum of 20 lux at ground level and be located to avoid glare for pedestrians and adjacent dwellings.

79. Entry doors to units shall be provided with door viewers to enable residents to view approaches to their units without the need to open the door.

80. Access to, and within, the site shall 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 activity.

81. The existing footpath between the site frontage and bus stops ID (ID2210286) and (ID:221059) on Belmore Road shall comply with the access and gradient requirements under clause 93(4) in *State Environmental Planning Policy (Housing) 2021*. Required upgrades shall be constructed generally in accordance with external works plan sheets 1 to 4 of Civil Plans dated June 2024, prepared by H&H Consulting Engineers Pty Ltd and must be constructed in accordance with Georges River Council specifications to provide an accessible pathway from the site to the nearest bus stops. The footpath must be a minimum of 1.2m in width.

Note:
The responsible officer at the Georges River Council shall be contacted regarding Council's specifications and any necessary approvals.
The upgrade works shall be undertaken in accordance with advice and under supervision of the Project Arborist, where any works are located in proximity to street trees, or trees within adjoining private properties.

82. The required upgrade works to the footpath shall be in accordance with the recommendations provided in the Arboricultural Impact Assessment report, prepared by Allied Tree Consultancy dated July 2024 , including the following:

- The grade of the footpath should be elevated as much as allowable to reduce any disturbance/conflict with roots. Excavation shall be limited to no deeper than 50mm within the area of the TPZ, not including the SRZ.
- Any root greater than 50mm in diameter should be retained. If potential root severance is required, the project arborist must be contacted to assess the root first to determine its viability.
- Any excavation work required within the SRZ must be conducted with hand tools, not machines.
- The surface of the footpath that extends along the length of Hardwick Street must be acceptable to the Project Arborist and Council.

83. Subsurface utilities can extend through the TPZs and SRZs across the site, however, are subject to limited trenching as stipulated by the Project Arborist.

Requirements Resulting from Council Comments

84. Street Trees

Existing street trees are to be retained as this forms part of an avenue planting. Tree protection measures are to be installed prior to any works commencing in accordance with Australia Standards AS4970 and recommendations provided in the Arboricultural Impact Assessment report dated July 2024.

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 or by dialing 1100.

Decision Statement
NSW Land and Housing Corporation

Project No. BGZLN

SITE IDENTIFICATION	
STREET ADDRESS	
Unit/Street No	Street or property name
17-27	Hardwicke Street
Suburb, town or locality	Postcode
Riverwood	2210
Local Government Area(s)	Real property description (Lot and DP)
Georges River	Lots 14 & 15 DP35818 and Lot 10 DP1080361

ACTIVITY DESCRIPTION
Provide a description of the activity
Demolition of 6 existing dwellings and associated structures, tree removal, and the construction of a 29 dwellings seniors housing development comprising 17 x 1-bedroom and 12 x 2-bedroom independent living units, associated landscaping and fencing, surface parking for 14 vehicles, and consolidation into a single lot.

NSW Land & Housing Corporation (LAHC) has proposed the above activity under the provisions of *State Environmental Planning Policy (Housing) 2021* (Housing SEPP) which requires determination under Part 5 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). This Decision Statement relates to the Review of Environmental Factors (REF) for the above activity prepared under Part 5 of the EP&A Act and the *Environmental Planning and Assessment Regulation 2021*.

Based on the REF document and supporting documentation, including advice from Georges River Council a decision to proceed with the proposed activity has been made. This decision included consideration of the following:

Significant Impact on the Environment

- The proposed activity is not likely to have a significant impact on the environment and therefore an EIS is not required.

- The proposed activity will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats or impact biodiversity values, meaning a SIS and/or BDAR is not required.

Reasons for the Decision

- Following an assessment of the proposed activity and associated environmental impacts within the REF document it was decided that the proposed development will have economic and social benefits and any minor short-term impacts on the environment or surrounding properties can be appropriately mitigated.

- The proposed development will assist in the provision of much needed social and affordable housing and assist in addressing the existing and growing demand for housing in the Georges River local government area.

Mitigation Measures

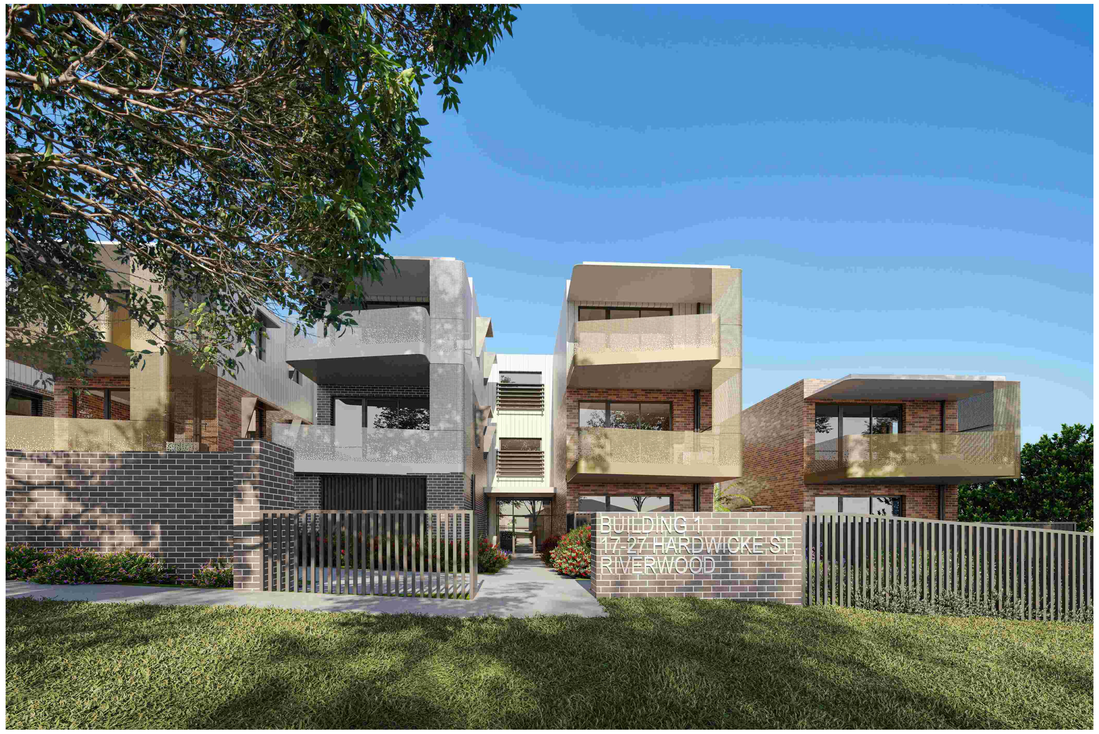
- Mitigation measures are required to minimise or manage environmental impacts and are detailed throughout the REF and specifically within Section 8. All mitigation measures are detailed as Identified Requirements within the Activity Determination. Additional mitigation measures, detailed in the Activity Determination have been imposed to minimise the impact on the surrounding environment, ensure appropriate site safety and to ensure legislative compliance.

Signed..... **Dated... 31/03/2025 .....**

Lisa Marigliano
Executive Director, Portfolio Development
Housing Portfolio, Homes NSW

HARDWICKE ST SENIOR HOUSING
LOT 11, 12, 13, 14, 15, 16 DP 36368
17-27 HARDWICKE STREET, RIVERWOOD, NSW, 2210

Revision	Description	Date
1	AM2 ISSUE	15.12.2023
2	Preliminary Issue For Coordination	30.01.2024
3	AM2 ISSUE	03.07.2024
4	NatHERS Thermal Comfort Inclusions Added	06.08.2024
5	PART 5 ISSUE	06.09.2024
6	PART 5 ISSUE	19.09.2024



PHOTOMONTAGE

DEVELOPMENT DATA - SENIORS HOUSING	
JOB REFERENCE	LAHC 2022/526 (BGZLN)
LOCALITY / SUBURB	RIVERWOOD (GEORGES RIVER COUNCIL CITY OF CANTERBURY-BANKSTOWN)
STREET ADDRESS	17-27 HARDWICKE STREET, RIVERWOOD
LOT NO. & DP	11, 12, 13, 14, 15, 16 DP 36368
ZONING	R3 ZONE - SENIORS HOUSING PERMITTED WITH CONSENT (HOUSING SEPP CL.108A SATISFIED.

SITE AREA	3658.2m²
GFA MAXIMUM	1829.1m²
GFA PROVIDED	2527.5m²

TOTAL 1 BED UNITS	17	59%
TOTAL 2 BED UNITS	12	41%
TOTAL UNITS	29	100%

APARTMENT DETAILS	REFER TO DRAWING DA-004

	CONTROL	REQUIRED	PROPOSED	COMPLIES
SETBACK(S)				
FRONT	GRCC DCP 2021	7.5m AVG. NEIGHBOURING BUILDINGS	6832mm(TO CLOSEST BL)	NO
SIDE	GRCC DCP 2021	4M (EAST)	6973mm(TO CLOSEST BL)	YES
SIDE	GRCC DCP 2021	4M (WEST)	4000mm(TO CLOSEST BL)	YES
REAR	ADG	6M (REAR)	9697mm(TO CLOSEST BL)	YES
BUILDING HEIGHT	HSEPP (2021)	9.5m (MAXIMUM OF 11.5 FOR SERVICING EQUIPMENT)	< 9.5m BUILDING HEIGHT (EXC. LIFT OVERRUN)	YES
FLOOR SPACE RATIO	HSEPP (2021)	0.5 : 1	0.69 : 1	NO
LANDSCAPING	HSEPP (2021)	35 SQM PER DWELLING = **1015m²**	1360m²	YES
DEEP SOIL	ADG	15% OF SITE = 548.73m²	797m²	YES
SITE COVERAGE		40% OF SITE AREA = 1463.28m²		YES
SITE AREA		1000 SQM MINIMUM		YES
PRIVATE OPEN SPACE	HSEPP (2021)	GROUND FLOOR UNITS 15m² >3X3. LEVEL 1 UNITS 6m² FOR 1 BED UNITS, 10m² FOR 2 BED UNIT (MIN DEPTH 2M)		YES
SOLAR ORIENTATION	ADG	70% OF DWELLINGS HAVE 3 HOURS OF SUNLIGHT BETWEEN 9AM AND 3PM 21 JUNE	100%	YES
NATURAL VENTILATION (& CROSS VENTILATION)	ADG	60% OF DWELLINGS TO ACHIEVE NATURAL CROSS VENTILATION	100%	YES
ACCESSIBLE DWELLINGS	HSEPP (2021)	GROUND FLOOR ALL ACCESSIBLE AND TO BE COMPLIANT WITH HOUSING SEPP SCHEDULE 4		YES
PARKING	HSEPP (2021)	0.4 X (NO. 1 BEDS) 17 = 6.8 0.5 X (NO. 2BEDS) 12 = 6.0 TOTAL REQ. = 12.8 = **13 SPACES**	14	YES
ACCESSIBLE PARKING	HSEPP (2021) (PART 5)	1 PER 5 DWELLINGS (6 REQ)	6	YES

DA DRAWING LIST

SHEET NO	SHEET NAME	CURRENT REVISION	REVISION DATE
DA-001	COVER PAGE	6	19.09.2024
DA-002	SITE ANALYSIS PLAN	3	19.09.2024
DA-003	DEMOLITION PLAN	3	06.09.2024
DA-004	DEVELOPMENT DATA	3	06.09.2024
DA-005	SITE PLAN	3	06.09.2024
DA-006	GA PLAN - GROUND FLOOR & LEVEL 1	7	19.09.2024
DA-007	GA PLAN - LEVEL 2 & ROOF PLAN	6	06.09.2024
DA-008	DETAIL - GROUND FLOOR PLAN	3	06.09.2024
DA-009	DETAIL - LEVEL 1 PLAN	3	06.09.2024
DA-010	DETAIL - LEVEL 2 PLAN	3	06.09.2024
DA-011	EXTERNAL ELEVATIONS	6	19.09.2024
DA-012	BUILDING SECTIONS	5	06.09.2024
DA-013	BUILDING SECTIONS	2	06.09.2024
DA-014	SOLAR ACCESS STUDY	2	06.09.2024
DA-015	SHADOW DIAGRAMS	3	06.09.2024
DA-016	SOLAR STUDY	2	06.09.2024
DA-017	SOLAR STUDY	2	06.09.2024
DA-020	OVERALL HEIGHT PLANE	2	06.09.2024
DA-025	MATERIALS	2	06.09.2024
DA-026	DETAIL SECTIONS	3	06.09.2024
DA-030	WALL TYPES	1	03.07.2024
DA-031	BALCONY SCREEN & BALUSTRADE DETAIL WITH REAR WALL PFC DETAIL	1	06.09.2024

LOCATION PLAN

NATHERS THERMAL COMFORT INCLUSIONS – 17-27 HARDWICKE STREET, RIVERWOOD NSW 2210

Glazing Doors/Windows
Glazed windows and doors:
Group A – awning
U-value: 6.70 (equal to or lower than) SHGC: 0.57 (±5%)
Group B – sliding doors and fixed glazing
U-value: 6.70 (equal to or lower than) SHGC: 0.70 (±5%)
Upgrade to Unit 25:
Glazed windows and doors:
Group A – awning
U-value: 4.50 (equal to or lower than) SHGC: 0.50 (±5%)
Group B – sliding doors and fixed glazing
U-value: 4.50 (equal to or lower than) SHGC: 0.61 (±5%)
Given values are AFRC total window system values (glass and frame)
Note: BASIX Thermal Comfort Protocol Table 3 SHGC value of the unit should be within +/-10% of the value specified for the default window selection on the certificate.
Window frame Colour - Default colour modelled
Window restrictors
Window restrictors are modelled to all windows with a sill height under 1.7m and a fall height over 2m from the floor level of the room.

Roof and ceiling
Minimum 150mm Concrete roof, no insulation above
Plasterboard ceiling **with R4.0 insulation** (insulation only value) to soffit of concrete where roof is over.
Plasterboard ceiling, no insulation where neighbouring units are above.
External Colour - Medium (0.475 < SA < 0.7)

Ceiling Penetrations
No downlights accounted for in NatHERS modelling.
Sealed exhaust fan to Kitchen and bathroom.

Ceiling Fans
900mm ceiling fans to living and bedrooms.

External Wall
Brick veneer 110mm Brick – 109 air gap – 92mm metal stud framed wall **with R2.0 insulation (insulation only value)** – 38mm Furring channel – 26mm Plasterboard
Lightweight framed wall 25mm Metal cladding- 54mm furring channel – 26mm plasterboard – 92mm metal stud **with R2.0 insulation (insulation only value)** – 45mm air gap - 92mm metal stud **with R2.0 insulation (insulation only value)** – 28mm furring channel – 13mm plasterboard
No insulation to concrete columns within the external wall envelope
External Colour
Brick wall - Medium (0.475 < SA < 0.7)
Metal cladding wall – Surfmist SA 0.33

Inter-tenancy walls
Hebel wall – 13mm plasterboard - 75mm Hebel wall - 76mm metal stud - 13mm plasterboard to walls between neighbouring dwellings, no insulation required.
Framed wall – 13mm plasterboard - 76mm metal stud **with minimum R1.2 insulation (insulation only valuer)** - 13mm plasterboard to walls between dwelling and common corridor, no insulation required.
Minimum 150mm concrete with furring channel and plasterboard lining to all walls adjacent to lift shafts and fire stairs, no insulation required.
No insulation to concrete columns between habitable areas and common areas

Walls within dwellings
Plasterboard on studs – no insulation

Floors
Minimum 200mm Concrete slab on ground, no insulation required.
Minimum 200mm Suspended Concrete slab between levels, no insulation required.
Dwelling 12 and 17:
Minimum 200mm Suspended Concrete slab with R1.0 insulation (insulation only value) between dwelling and waste/pump room.

Floor coverings
Carpet to bedrooms, tiles elsewhere

External Shading
Shading as per stamped documentation
Fixed exterior vertical screens as per plans and elevations which provide 25% shading
450mm overhang window hood as per plans and elevations.

BASIX – Water requirements

Landscape
755m² (100% of common garden beds)

Central rainwater storage
Tank size: 5,000L
Collecting from 1000m² roof area
Connected to outdoor tap for irrigation of common area landscaping.

BASIX – Energy requirements

Hot water system
Individual electric instantaneous

Alternative Energy
Photovoltaic system minimum 20 kW peak

DA ISSUE

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3. EXISTING STRUCTURES AND SERVICES
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THIS DRAWING IS TO BE PRINTED IN COLOUR

Consultants
Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

CUSTANCE
Strategy
Urban Design
Architecture
Interior Design

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Project
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LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title
COVER PAGE

Drawn	Checked	Scale
JL	RW	1 : 2 @ A1

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Nominated Architect: Craig Shelsher 6259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-001	6

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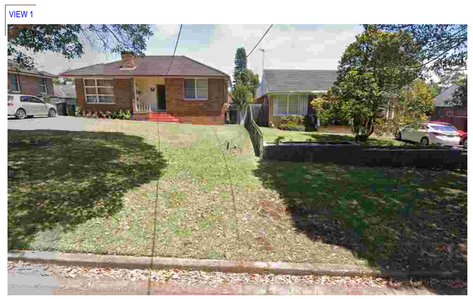
VIEW 1



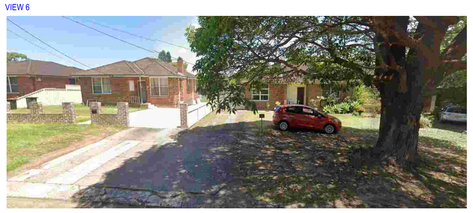
VIEW 2

VIEW 3

VIEW 4

VIEW 5

VIEW 6

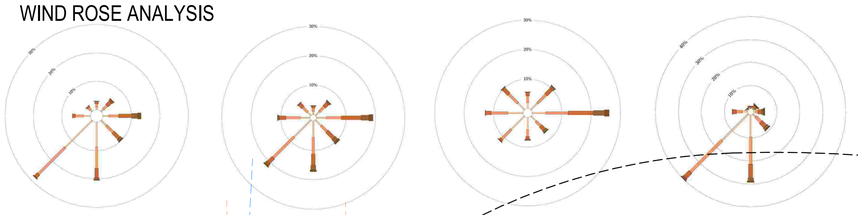


VIEW 7

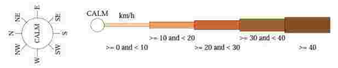
BLOCK PLAN - NEIGHBOURHOOD & SURROUNDING AREAS

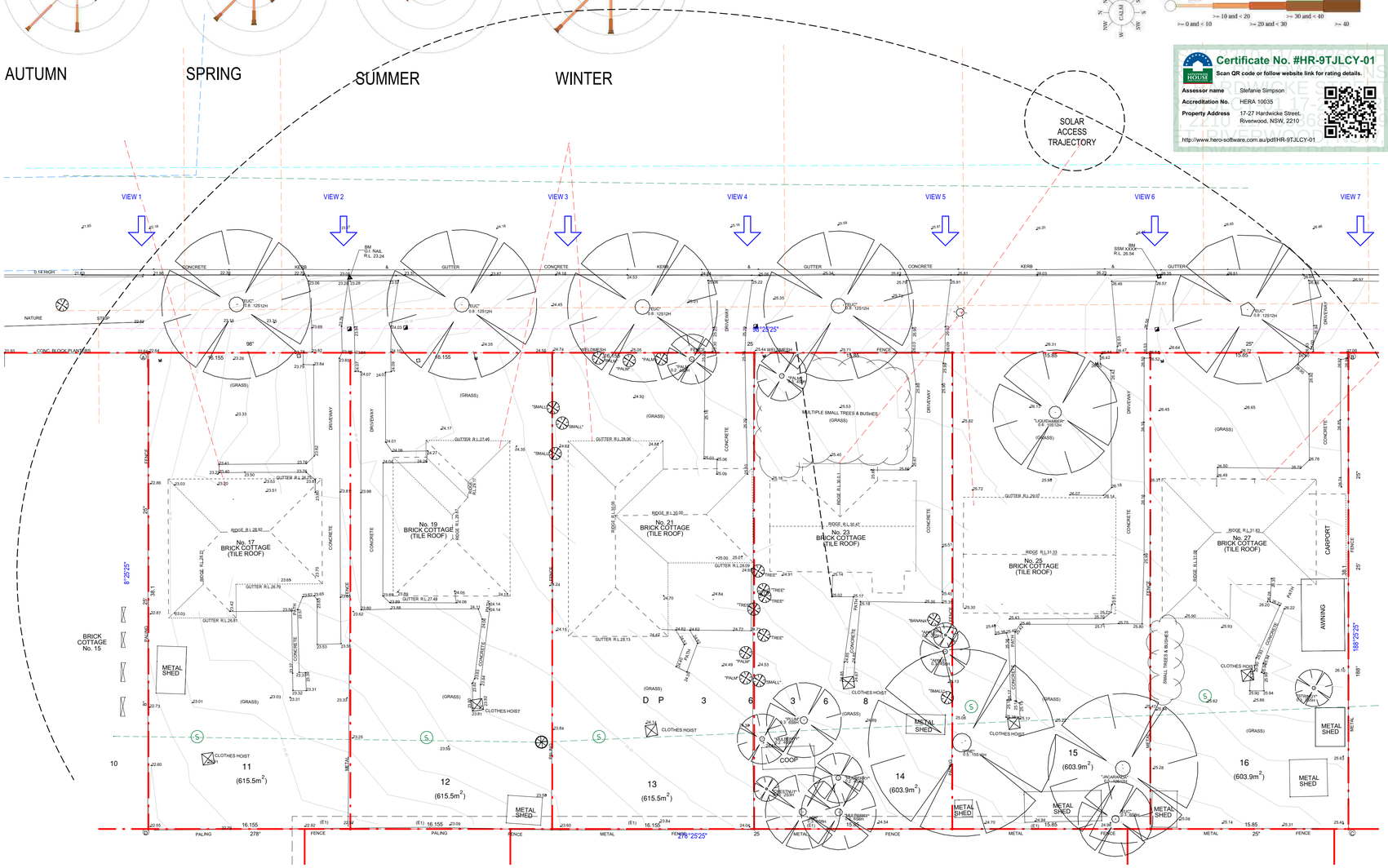
NEIGHBOURING PRIVATE OPEN SPACE (P.O.S)

WIND ROSE ANALYSIS



AUTUMN SPRING SUMMER WINTER





Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.
Assessor name: Stefanie Simpson
Accreditation No.: HERA 10035
Property Address: 17-27 Hardwicke Street, Rivetwood, NSW, 2210
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SERVICES LEGAND

- SEWER LINES
- STORMWATER LINES
- TELEPHONE LINES
- WATER LINES
- GAS LINES
- OVERHEAD ELECTRICAL LINES

OTHER LEGAND

- BOUNDARY LINES

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024
3	PART 5 ISSUE	19.09.2024

DA ISSUE

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Sheet Title
SITE ANALYSIS PLAN

NORTH

SCALE @ A1
1:500
0 12.5 25M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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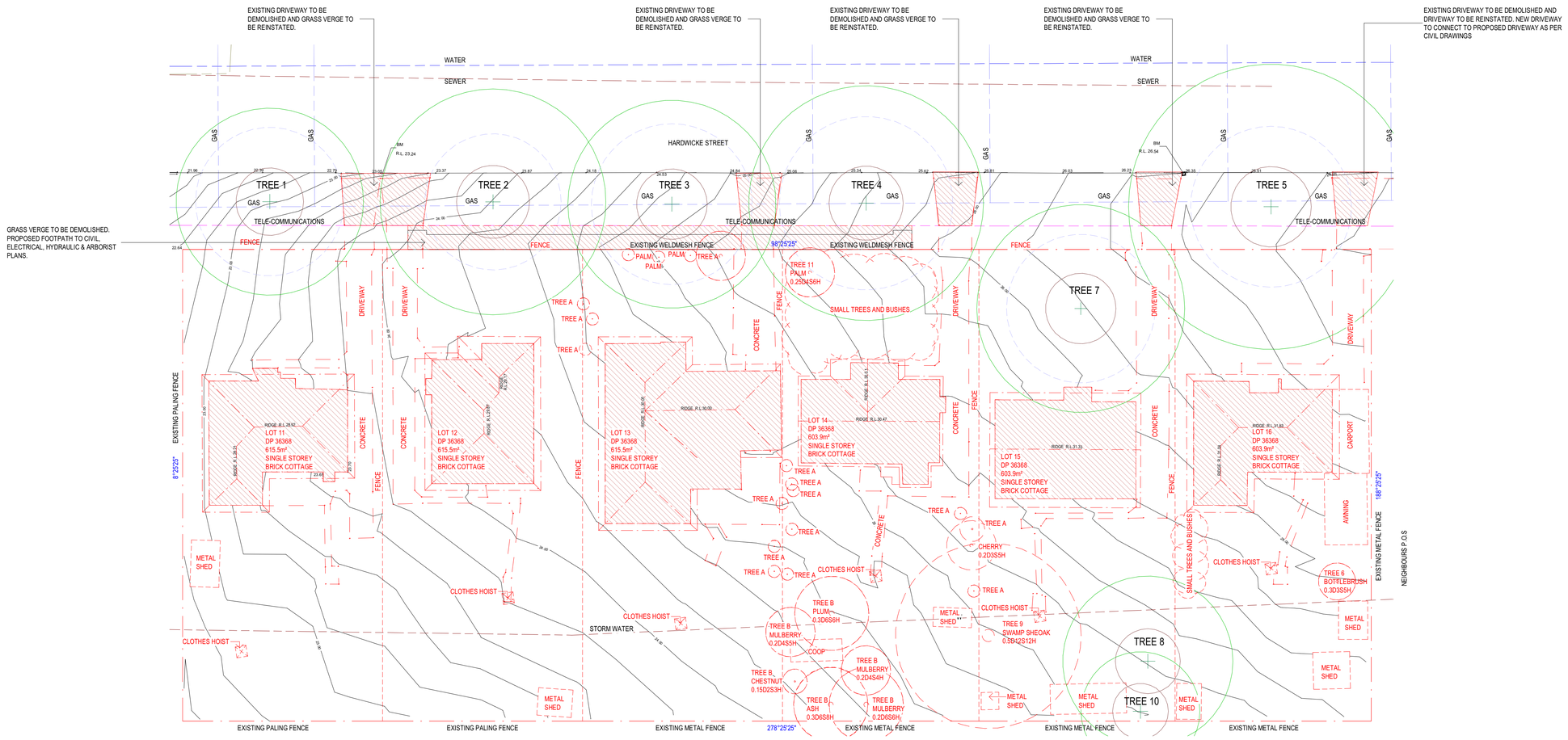
Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-002	3

16/09/2024 3:24:28 PM

Revision	Description	Date
1	AM2 ISSUE	15.12.2023
2	AM2 ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024



CONSTRUCTION HORDINGS NOTE:
CONTRACTOR TO PROVIDE DETAILS OF THE PROPOSED HOARDINGS, FENCING, OVERHEAD PROTECTION AND SCAFFOLDING.

CONSTRUCTION SEQUENCE NOTE:
CONTRACTOR TO PROVIDE DESCRIPTION OF THE PROPOSED SEQUENCE OF CARRYING OUT THE DEMOLITION WORKS AND AN ESTIMATE OF THE TIME, IN DAYS, THAT IT IS LIKELY TO TAKE TO COMPLETE ALL OR EACH OF THE STAGES OF THE WORK.

HAZARDOUS MATERIALS NOTE:
CONTRACTOR TO PROVIDE PROCEDURES FOR HANDLING OF ANY HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION PROCESS IN ACCORDANCE WITH STATUTORY REQUIREMENTS

NOTES:

PERFORM ALL THE DEMOLITION AS SHOWN ON THE DRAWING AND/OR AS NECESSARY REQUIRED CARRYING OUT THE WORKS UNDER THE CONTRACT.

CARE MUST BE TAKEN WHILE CARRYING OUT THE WORKS.

PROTECT EXISTING PROPERTY FROM DAMAGE BY APPROPRIATE MEANS INCLUDING SHORING, STRUTTING, PROTECTIVE SCREENS, SHEETING AND THE LIKE.

REPAIR & REINSTATE ANY SUCH DAMAGE TO MATCH EXISTING

EXISTING SERVICES: DEAL AS APPROPRIATE WITH EXISTING SERVICES INCLUDED IN OR ENCOUNTERED DURING THE COURSE OF THE DEMOLITIONS.

BEFORE DEMOLISHING AND REMOVING PARTS OF BUILDING HAVING ELECTRICAL WIRING, GAS, SEWER AND WATER PIPES, CONDUIT OR SIMILAR ITENS EMBEDDED IN THEM, NOTIFY THE PROJECT MANAGE/ SUPERINTENDENT, AUTHORITIES HAVING JURISDICTION, AND MAKE SURE THAT THESE ITEMS ARE OUT OF SERVICE SO THAT THEY CAN BE REMOVED WITHOUT DANGER.

LEGEND - DEMOLITION PLAN.

- EXISITING BUILDINGS TO BE DEMOLISHED
- EXISITING SITE WORKS & TREES TO BE DEMOLISHED
- TREES TO BE RETAINED
- GAS
- WATER
- SEWER
- TELECOMMUNICATIONS
- STORMWATER
- CANOPY
- TREE PROTECTION ZONE (TPZ)
- STRUCTURAL ROOT ZONE (SRZ)

LEGEND - SITE ANALYSIS

- BUILDING TO BE DEMOLISHED
- 24.00 EXISITING CONTOURS

Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.

Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

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DA ISSUE

NOTES : DEVELOPMENT APPLICATION

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Consultants

Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation.

Client
HOMES NSW

NSW GOVERNMENT

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Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title
DEMOLITION PLAN

NORTH
SCALE @ A1
1:200
0 5 10M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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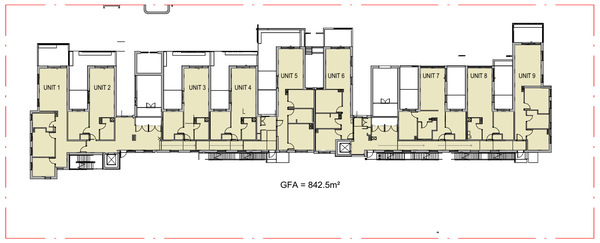
Nominated Architect: Craig Shelsher 8259 (NSW), 5812 (QLD)

Project No.	Sheet No.	Revision
3420	DA-003	3

6/09/2024 4:56:12 PM

Revision	Description	Date
1	Requesting Client Sign Off & Consultant Coordination	27.10.2023
2	AMZ ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024



FSR - GROUND FLOOR
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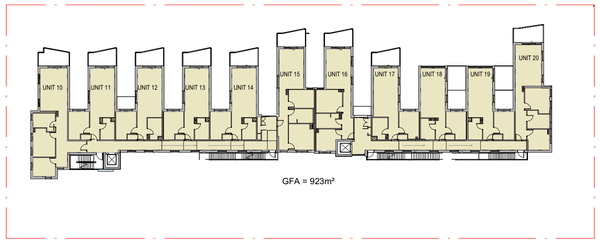

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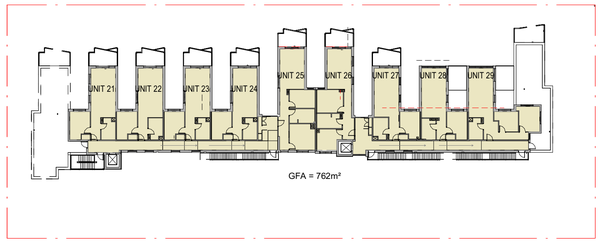

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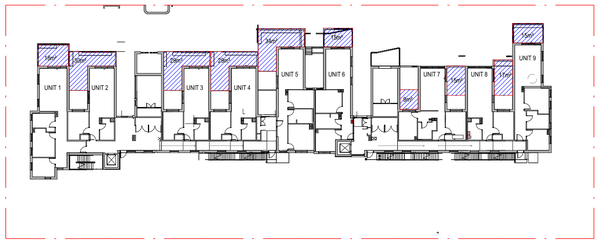
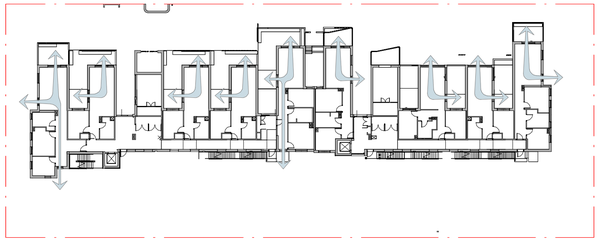


POS - GROUND FLOOR
1 : 500

POS- FIRST FLOOR
1 : 500

POS - SECOND FLOOR
1 : 500



CROSS VENT - GROUND FLOOR
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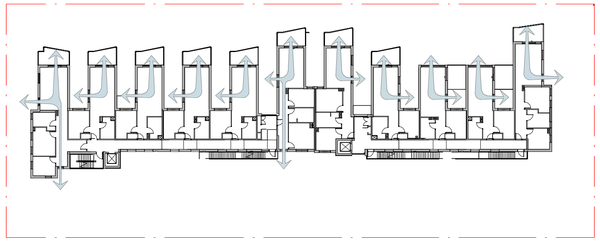

CROSS VENT - FIRST FLOOR
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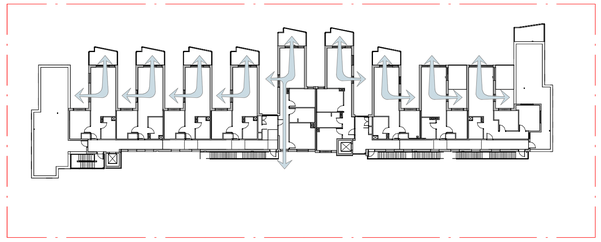
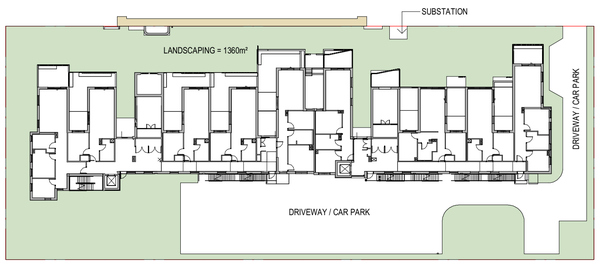


CROSS VENT - SECOND FLOOR
1 : 500



LANDSCAPING
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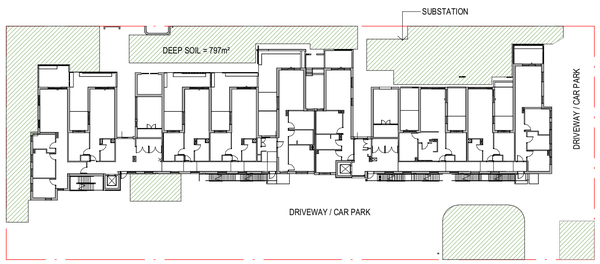

DEEP SOIL
1 : 500

DEVELOPMENT DATA TABLE		
UNIT No.	AREA	POS
UNIT 1	93.4m²	18m²
UNIT 2	62.25m²	30m²
UNIT 3	62.25m²	29m²
UNIT 4	62.25m²	29m²
UNIT 5	83.65m²	34m²
UNIT 6	79.7m²	15m²
UNIT 7	78.75m²	23m²
UNIT 8	63m²	17m²
UNIT 9	83.25m²	15m²
UNIT 10	93.4m²	12m²
UNIT 11	62.25m²	12m²
UNIT 12	62.25m²	12m²
UNIT 13	62.25m²	12m²
UNIT 14	62.25m²	12m²
UNIT 15	83.65m²	12m²
UNIT 16	79.7m²	12m²
UNIT 17	63m²	12m²
UNIT 18	62.25m²	12m²
UNIT 19	63m²	12m²
UNIT 20	83.25m²	12m²
UNIT 21	62.25m²	12m²
UNIT 22	62.25m²	12m²
UNIT 23	62.25m²	12m²
UNIT 24	62.25m²	12m²
UNIT 25	83.65m²	12m²
UNIT 26	79.7m²	12m²
UNIT 27	63m²	12m²
UNIT 28	62.25m²	12m²
UNIT 29	82.35m²	12m²

GROSS FLOOR AREA	
GROUND FLOOR	842.5m²
FIRST FLOOR	923m²
SECOND FLOOR	762m²
TOTAL	2527.5m²
SITE AREA	3658.2m²
FSR	0.69 : 1

CROSS VENTILATION	
NO. UNITS ACHIEVE	29
% UNITS ACHIEVE	100%
CROSS VENT REQUIREMENT	60%
COMPLIES	YES

GFA - DEFINITION

Definitions

(1) In this Part—

gross floor area means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from another building, measured at a height of 1.4m above the floor—

(a) excluding the following—

(i) columns, fin walls, sun control devices and elements, projections or works outside the general lines of the internal face of an external wall,

(ii) cooling towers, machinery and plant rooms, ancillary storage space and vertical air conditioning ducts,

(iii) car parking and internal access to the car parking,

(iv) space for the loading and unloading of goods, including access to the space,

(v) areas for common vertical circulation, including lifts and stairs,

(vi) storage, vehicular access, garbage and services within the basement,

(vii) for a residential care facility—floor space used for service activities provided by the facility within the basement,

(viii) terraces and balconies with outer walls less than 1.4m high,

(ix) voids above a floor at the level of a storey or storey above, and

DEEP SOIL - DEFINITION

18 Non-discretionary development standards—the Act, s 4.15

(1) The object of this section is to identify development standards for particular matters relating to development for the purposes of in-fill affordable housing that, if complied with, prevent the consent authority from requiring more onerous standards for the matters.

(2) The following are non-discretionary development standards in relation to the carrying out of development to which this Division applies—

(a) a minimum site area of 450m²,

(b) for a development application made by a social housing provider—at least 35m² of landscaped area per dwelling,

(c) if paragraph (b) does not apply—at least 30% of the site area is landscaped area,

(d) a **deep soil** zone on at least 15% of the site area, where—

(i) each **deep soil** zone has minimum dimensions of 3m, and

(ii) if practicable, at least 65% of the **deep soil** zone is located at the rear of the site,

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Assessor name Stefanie Simpson

Accreditation No. HERA 10035

Property Address 17-27 Hardwicke Street, Riverwood, NSW, 2210

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Sheet Title

DEVELOPMENT DATA

NORTH

SCALE @ A1
1:500
0 12.5 25M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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Nominated Architect: Craig Shelsher 5259 (NSW), 5612 (QLD)

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3420	DA-004	3

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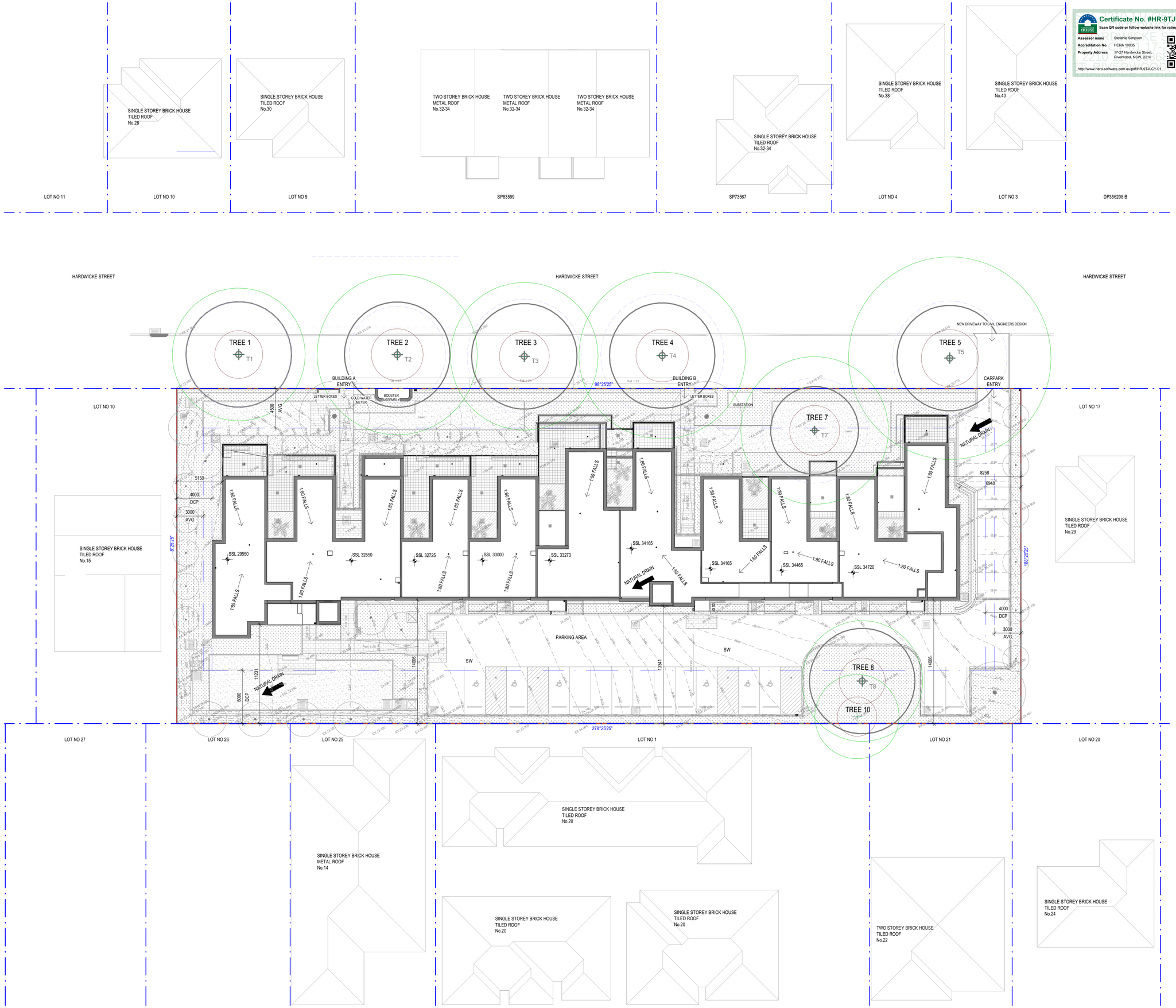

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Revision	Description	Date
1	AM2 ISSUE	15.12.2023
2	AM2 ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024

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Homes NSW

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Sheet Title

SITE PLAN

NORTH

SCALE @ A1
1:200
0 5 10M

Drawn	Checked	Scale
JL	RW	1 : 200 @ A1

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Project No.	Sheet No.	Revision
3420	DA-005	3

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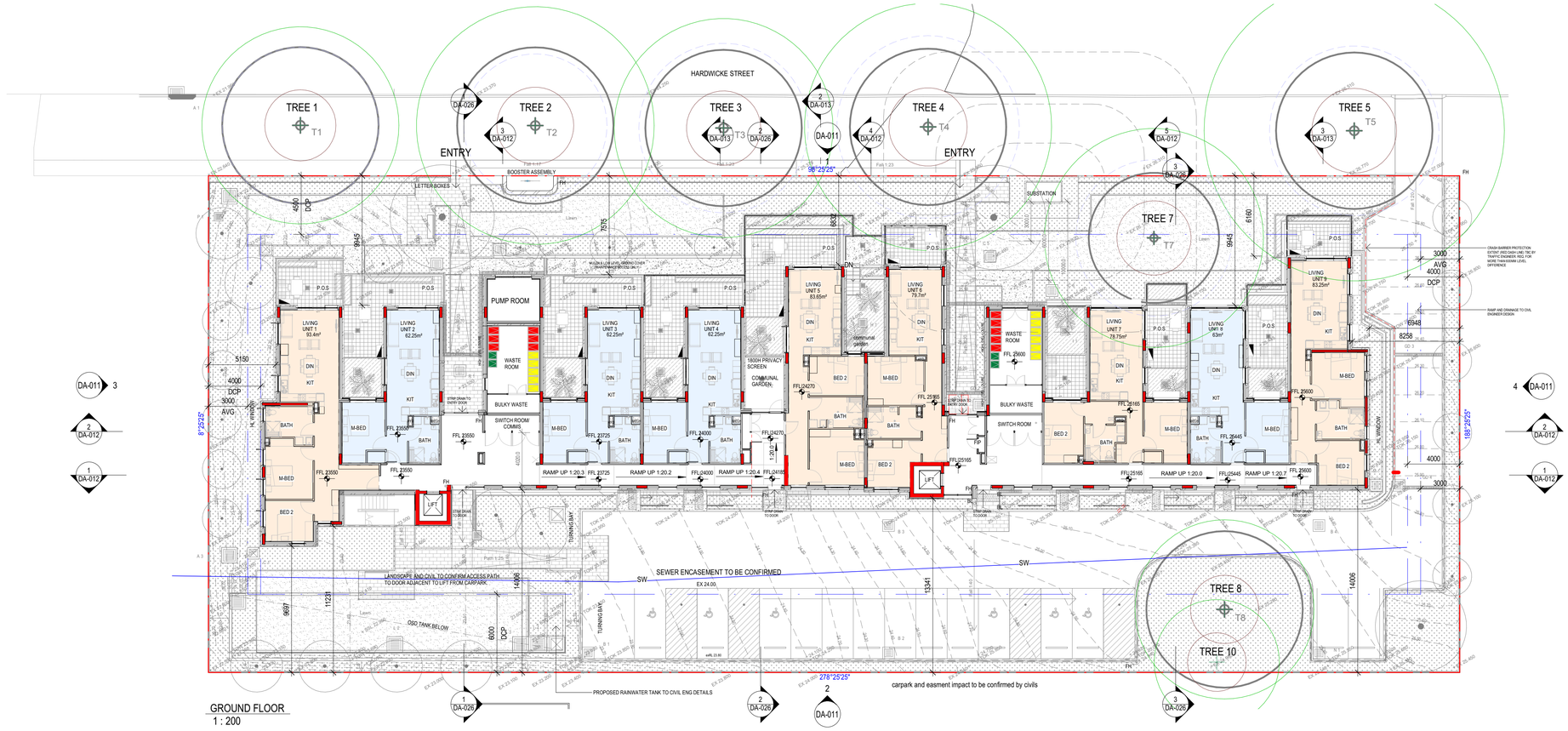
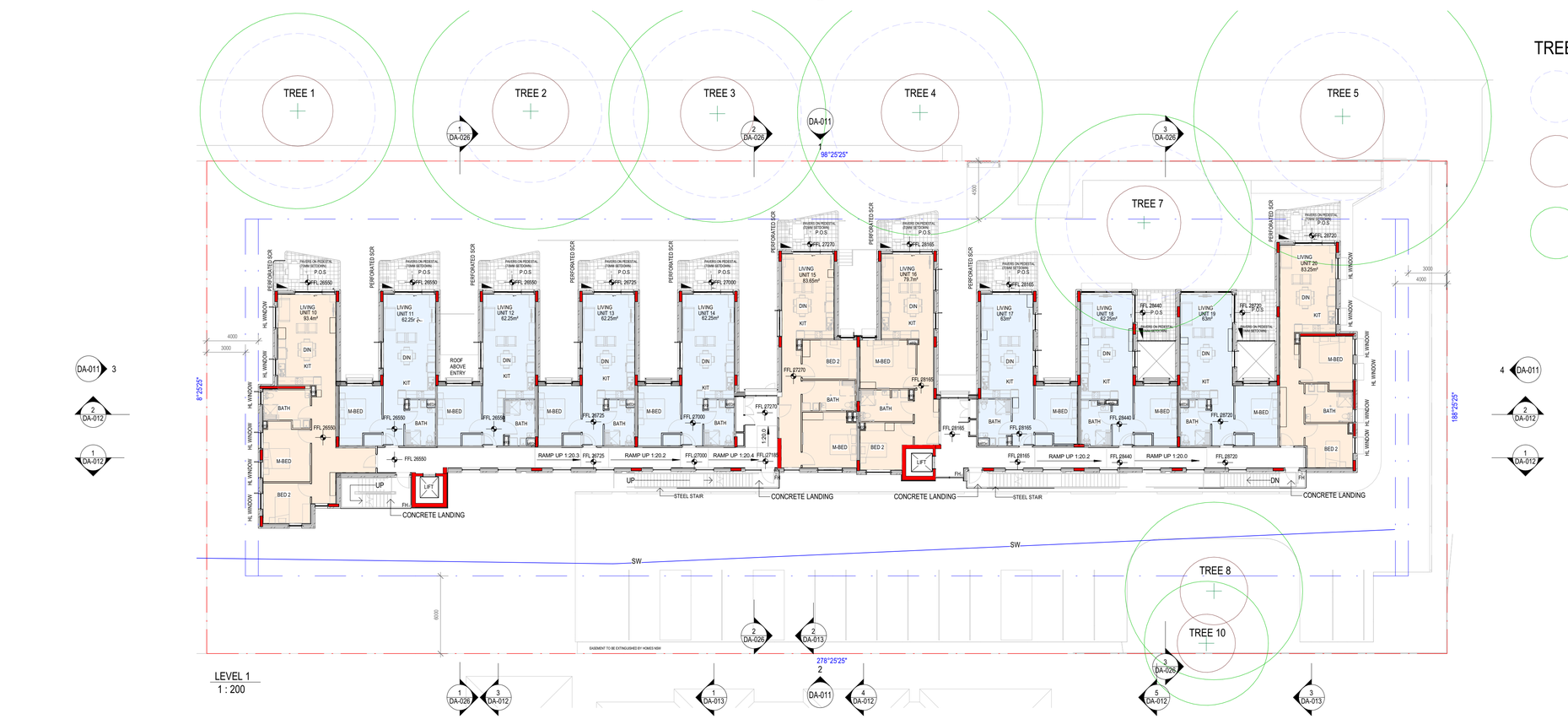


GROUND FLOOR
1 : 200



LEVEL 1
1 : 200

TREE LEGEND

- CANOPY
- SRZ - STRUCTURAL ROOT ZONE
- TPZ - TREE PROTECTION ZONE

NOTE:
PAVERS ON PEDESTALS LOCATIONS TO BE:
- ALL TERRACES
- ALL BALCONIES
- ALL BUILDING ENTRIES OR EGRESSES

SERVICES GENERAL NOTES
- INDUCTION COOK TOPS
- NO GAS REQUIREMENTS
- PHOTO VOLTAICS ON THE ROOF FOR COMMON AREAS ONLY
- CEILING FANS IN LIVING AND BEDROOMS
- STRUCTURAL COLUMNS TO BE COORINDATED WITH DESIGN
- CIVIL ENGINEER TO CONFIRM GROUND FLOOR SETDOWN REQUIREMENTS
- CIVIL ENGINEER TO APPROVE 70MM SETDOWN ON UPPER LEVEL BALCONIES TO ENSURE ADEQUATE WATER STOP IN 1:100 YEAR FLOOR.

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- EXTERNAL SCREENS;
- PLANTER BOXES.
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1	Requesting Client Sign Off & Consultant Coordination	27.10.2023
2	AM2 ISSUE	15.12.2023
3	Preliminary Issue For Coordination	30.01.2024
4	Preliminary Issue For Coordination	09.02.2024
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7	PART 5 ISSUE	19.09.2024

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Sheet Title
GA PLAN - GROUND FLOOR & LEVEL 1

NORTH
SCALE @ A1
1:200
0 5 10M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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Project No.	Sheet No.	Revision
3420	DA-006	7

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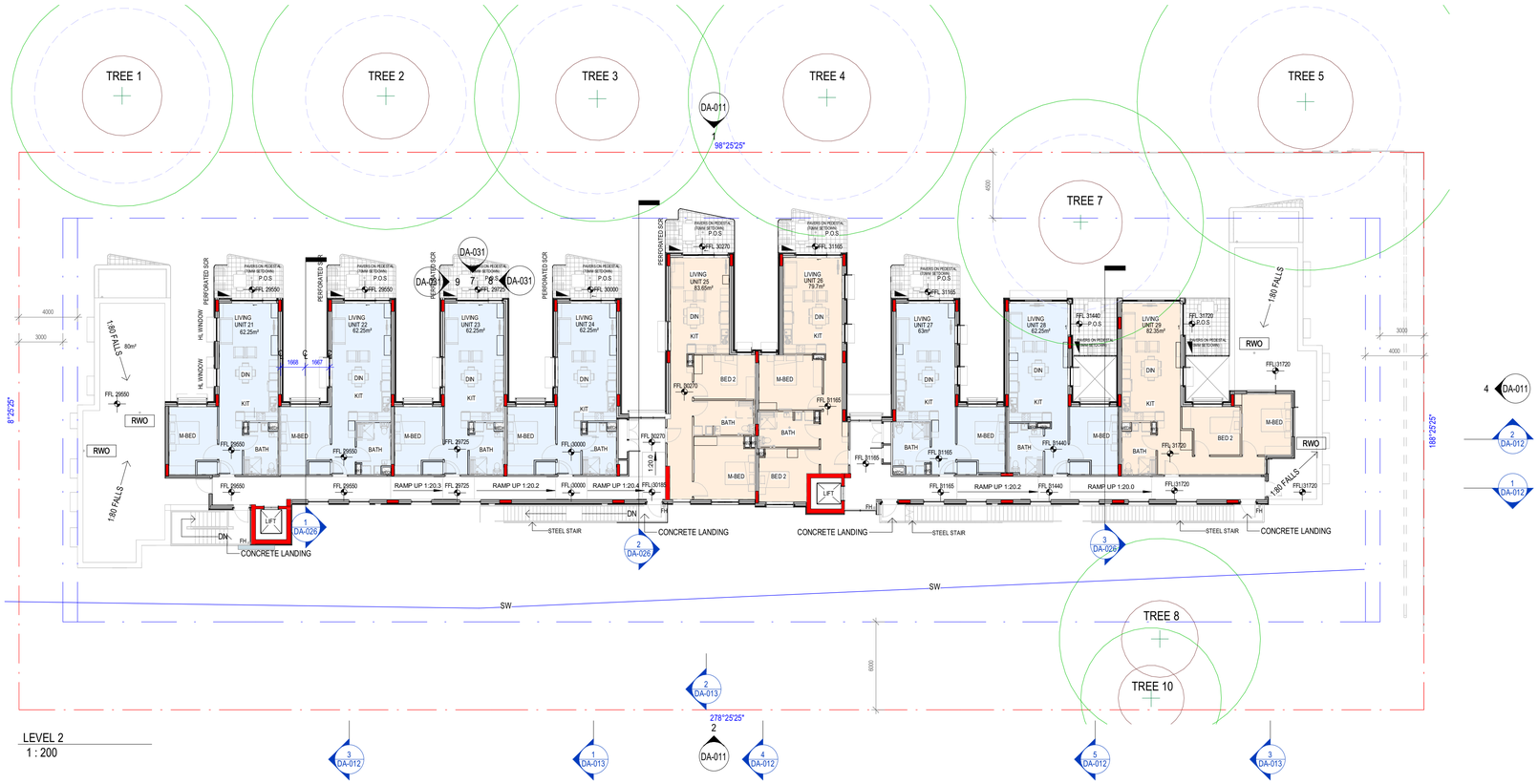

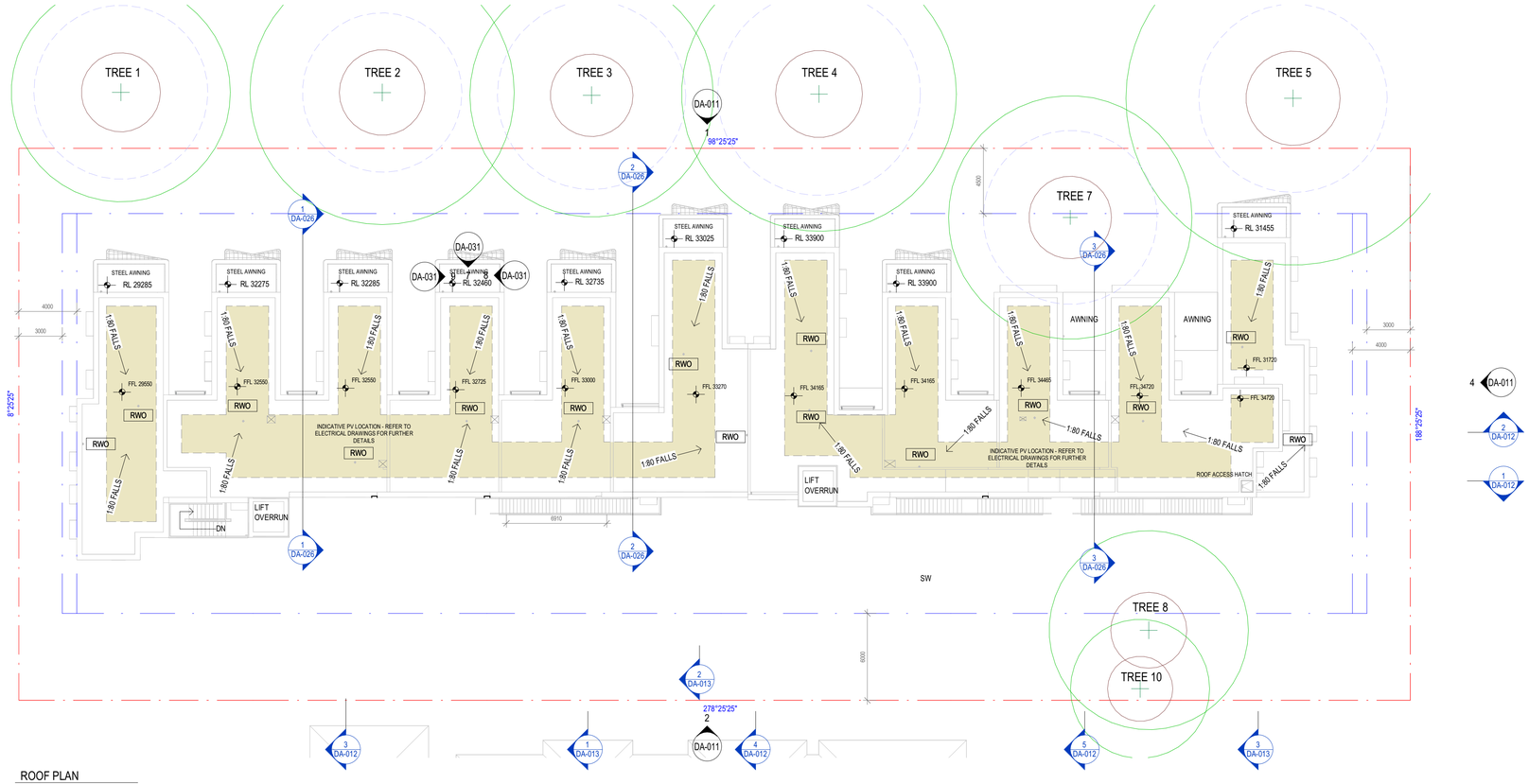

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TREE LEGEND

CANOPY

SRZ - STRUCTURAL ROOT ZONE

TPZ - TREE PROTECTION ZONE

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Sheet Title

GA PLAN - LEVEL 2 & ROOF PLAN

NORTH

SCALE @ A1
1:200
0 5 10M

Drawn	Checked	Scale
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- PLANTER BOXES.
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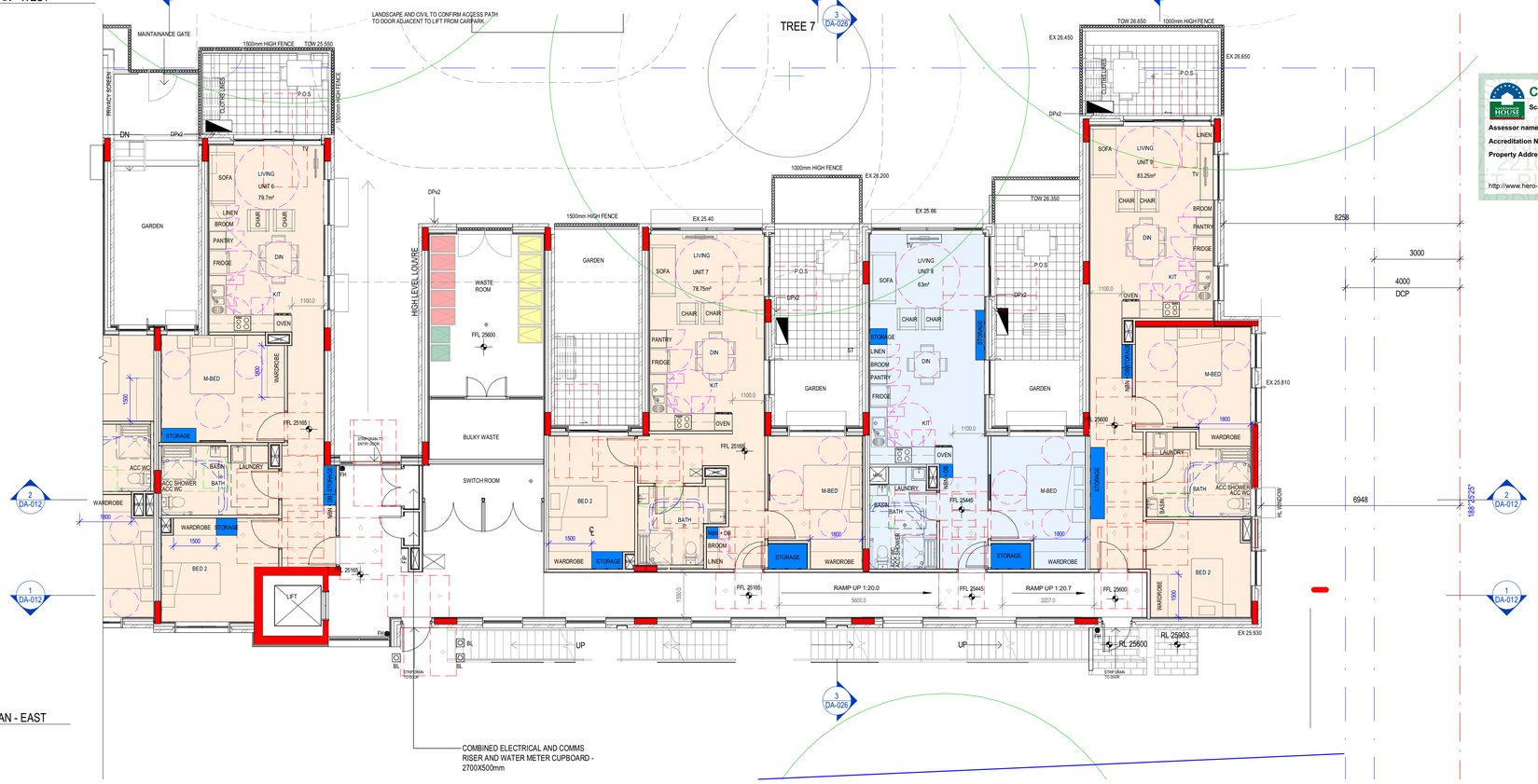
Nominated Architect: Craig Sheibner 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-007	6

6/09/2024 4:59:34 PM

GROUND FLOOR PLAN - WEST
1 : 100



GROUND FLOOR PLAN - EAST
1 : 100

2 BED STORAGE - UNIT - 9,20	
STORAGE	0.79 m³
STORAGE	3.38 m³
STORAGE	0.28 m³
TOTAL	4.45 m³

2 BED STORAGE - UNIT - 10	
STORAGE	1.46 m³
STORAGE	1.39 m³
STORAGE	2.19 m³
STORAGE	0.57 m³
STORAGE	0.31 m³
TOTAL	5.92 m³

1 BED STORAGE - UNIT - 11, 21	
STORAGE	1.65 m³
STORAGE	1.22 m³
STORAGE	3.22 m³
STORAGE	0.46 m³
STORAGE	0.46 m³
TOTAL	7.01 m³

1 BED STORAGE - UNIT - 12, 22	
STORAGE	1.65 m³
STORAGE	3.47 m³
STORAGE	0.81 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
STORAGE	0.46 m³
TOTAL	8.07 m³

1 BED STORAGE - UNIT - 13, 23	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.21 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 14, 24	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

2 BED STORAGE - UNIT -15, 25	
STORAGE	0.73 m³
STORAGE	2.60 m³
STORAGE	2.02 m³
STORAGE	0.30 m³
TOTAL	5.65 m³

1 BED STORAGE - UNIT - 18, 19, 28	
STORAGE	3.22 m³
STORAGE	0.74 m³
STORAGE	1.10 m³
STORAGE	0.38 m³
TOTAL	5.44 m³

2 BED STORAGE - UNIT - 1	
STORAGE	1.39 m³
STORAGE	1.52 m³
STORAGE	0.57 m³
STORAGE	2.51 m³
STORAGE	0.31 m³
TOTAL	6.30 m³

1 BED STORAGE - UNIT - 2	
STORAGE	1.65 m³
STORAGE	1.22 m³
STORAGE	3.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 3	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.21 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 4	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

2 BED STORAGE - UNIT - 5	
STORAGE	0.65 m³
STORAGE	2.31 m³
STORAGE	1.82 m³
STORAGE	0.30 m³
TOTAL	5.07 m³

2 BED STORAGE - UNIT - 6, 16, 26	
STORAGE	1.60 m³
STORAGE	1.14 m³
STORAGE	1.16 m³
STORAGE	0.35 m³
TOTAL	4.26 m³

1 BED STORAGE - UNIT - 17,27	
STORAGE	3.16 m³
STORAGE	1.05 m³
STORAGE	0.86 m³
STORAGE	1.22 m³
STORAGE	0.39 m³
TOTAL	6.67 m³

2 BED STORAGE - UNIT - 7	
STORAGE	2.87 m³
STORAGE	1.76 m³
STORAGE	0.34 m³
TOTAL	4.97 m³

1 BED STORAGE - UNIT - 8	
STORAGE	3.23 m³
STORAGE	0.90 m³
STORAGE	1.41 m³
STORAGE	0.46 m³
TOTAL	6.01 m³

2 BED STORAGE - UNIT - 29	
STORAGE	0.86 m³
STORAGE	1.26 m³
STORAGE	2.60 m³
STORAGE	0.46 m³
TOTAL	5.18 m³

Certificate No. #HR-9TJLCY-01

Scan QR code or follow website link for rating details.

Assessor name Stefanie Simpson
Accreditation No. HERA 10035
Property Address 17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

ALL UNITS ACHIEVE THE 50% STORAGE REQUIREMENT UNDER THE ADG.

- 1 BED = 3 M³
- 2 BED = 4 M³

NOTE:
PAVERS ON PEDESTALS LOCATIONS TO BE:

- ALL TERRACES
- ALL BALCONIES
- ALL BUILDING ENTRIES OR EGRESSES

CIRCULATION LEGAND

- DOOR CIRCULATION
- FURNITURE CIRCULATION
- BASIN CIRCULATION
- WC CIRCULATION
- SHOWER CIRCULATION
- LAUNDRY CIRCULATION

STORAGE LEGAND

- ADDITIONAL STORAGE

Revision	Description	Date
1	Updated Drawings	30.05.2024
2	AMZ ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024

DA ISSUE

NOTES : DEVELOPMENT APPLICATION

1. DESIGN RESOLUTION
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   - The size and position of privacy screens, louvres is indicative and shown in open and closed positions.
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2. GRAPHIC PRESENTATION
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3. EXISTING STRUCTURES AND SERVICES
Extent and location of existing and proposed neighbouring structures and services is according to the available survey information and will need to be verified on site at later stage.

THIS DRAWING IS TO BE PRINTED IN COLOUR

Consultants

Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

NSW GOVERNMENT

CUSTANCE
Strategy
Urban Design
Architecture
Interior Design

SYDNEY
Level 3, 14 Martin Place
Sydney NSW 2000
Australia
PH (02) 9051 0177
www.custance.com.au

Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title
DETAIL - GROUND FLOOR PLAN

NORTH
SCALE @ A1
1:100
0 2.5 5M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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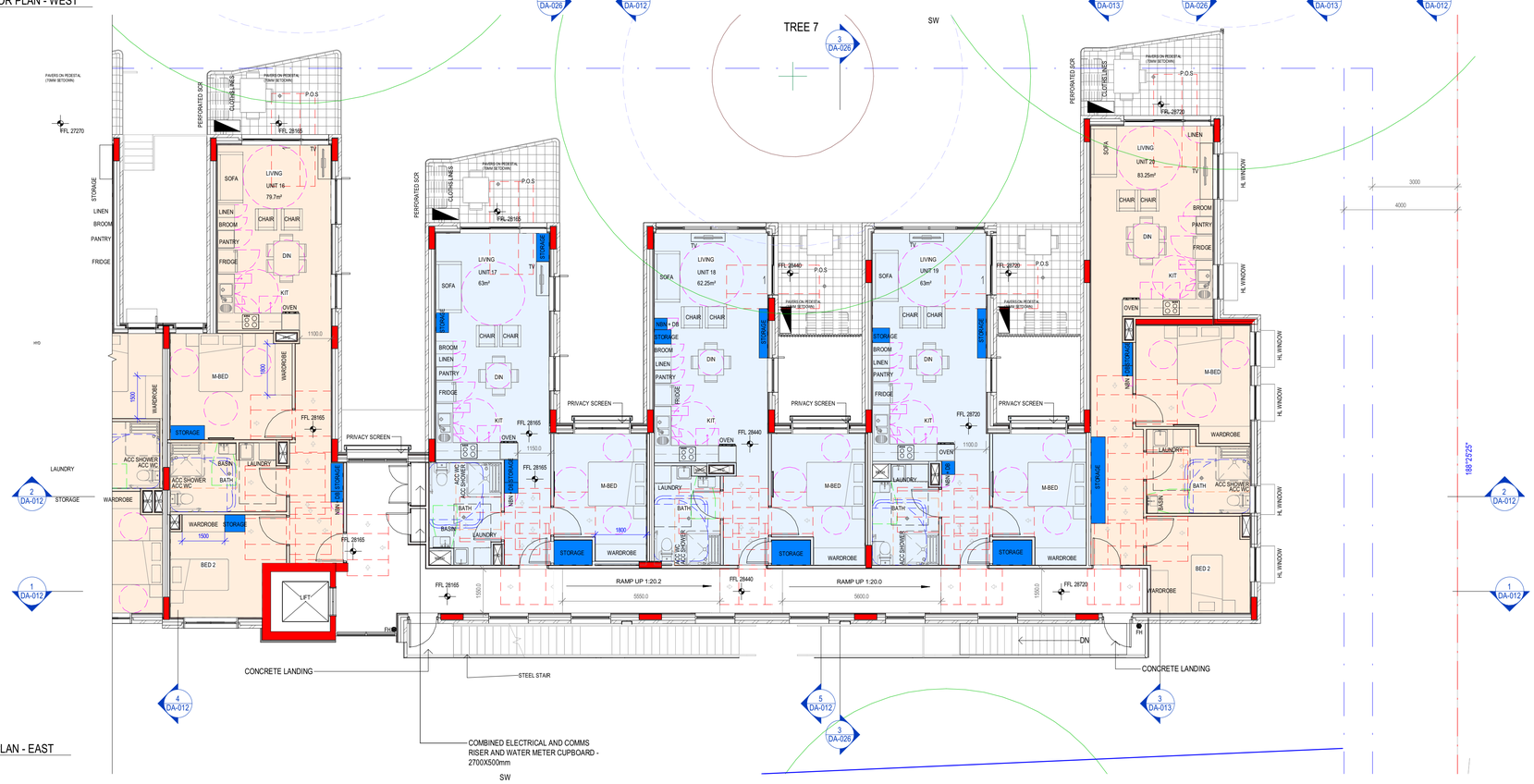
Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-008	3

6/09/2024 5:00:14 PM

LEVEL 1 FLOOR PLAN - WEST
1 : 100



LEVEL 1 FLOOR PLAN - EAST
1 : 100

2 BED STORAGE - UNIT - 9,20	
STORAGE	0.79 m³
STORAGE	3.38 m³
STORAGE	0.28 m³
TOTAL	4.45 m³

2 BED STORAGE - UNIT - 10	
STORAGE	1.46 m³
STORAGE	1.39 m³
STORAGE	2.19 m³
STORAGE	0.57 m³
STORAGE	0.31 m³
TOTAL	5.92 m³

1 BED STORAGE - UNIT - 11, 21	
STORAGE	1.65 m³
STORAGE	1.22 m³
STORAGE	3.22 m³
STORAGE	0.46 m³
STORAGE	0.46 m³
TOTAL	7.01 m³

1 BED STORAGE - UNIT - 12, 22	
STORAGE	1.65 m³
STORAGE	3.47 m³
STORAGE	0.81 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
STORAGE	0.46 m³
TOTAL	8.07 m³

1 BED STORAGE - UNIT - 13, 23	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.21 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 14, 24	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

2 BED STORAGE - UNIT -15, 25	
STORAGE	0.73 m³
STORAGE	2.60 m³
STORAGE	2.02 m³
STORAGE	0.30 m³
TOTAL	5.65 m³

1 BED STORAGE - UNIT - 18, 19, 28	
STORAGE	3.22 m³
STORAGE	0.74 m³
STORAGE	1.10 m³
STORAGE	0.38 m³
TOTAL	5.44 m³

2 BED STORAGE - UNIT - 1	
STORAGE	1.39 m³
STORAGE	1.52 m³
STORAGE	0.57 m³
STORAGE	2.51 m³
STORAGE	0.31 m³
TOTAL	6.30 m³

1 BED STORAGE - UNIT - 2	
STORAGE	1.65 m³
STORAGE	1.22 m³
STORAGE	3.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 3	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.21 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 4	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

2 BED STORAGE - UNIT - 5	
STORAGE	0.65 m³
STORAGE	2.31 m³
STORAGE	1.82 m³
STORAGE	0.30 m³
TOTAL	5.07 m³

2 BED STORAGE - UNIT - 6, 16, 26	
STORAGE	1.60 m³
STORAGE	1.14 m³
STORAGE	1.16 m³
STORAGE	0.35 m³
TOTAL	4.26 m³

1 BED STORAGE - UNIT - 17,27	
STORAGE	3.16 m³
STORAGE	1.05 m³
STORAGE	0.86 m³
STORAGE	1.22 m³
STORAGE	0.39 m³
TOTAL	6.67 m³

2 BED STORAGE - UNIT - 7	
STORAGE	2.87 m³
STORAGE	1.76 m³
STORAGE	0.34 m³
TOTAL	4.97 m³

1 BED STORAGE - UNIT - 8	
STORAGE	3.23 m³
STORAGE	0.90 m³
STORAGE	1.41 m³
STORAGE	0.46 m³
TOTAL	6.01 m³

2 BED STORAGE - UNIT - 29	
STORAGE	0.86 m³
STORAGE	1.26 m³
STORAGE	2.60 m³
STORAGE	0.46 m³
TOTAL	5.18 m³

ALL UNITS ACHIEVE THE 50% STORAGE REQUIREMENT UNDER THE ADG.

- 1 BED = 3 M³
- 2 BED = 4 M³

Certificate No. #HR-9TJLCY-01

Scan QR code or follow website link for rating details.

Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

CIRCULATION LEGAND

- DOOR CIRCULATION
- FURNITURE CIRCULATION
- BASIN CIRCULATION
- WC CIRCULATION
- SHOWER CIRCULATION
- LAUNDRY CIRCULATION

STORAGE LEGAND

- ADDITIONAL STORAGE

Revision	Description	Date
1	Updated Drawings	30.05.2024
2	AMZ ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024

DA ISSUE

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Consultants

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

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HOMES NSW

NSW GOVERNMENT

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17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

DETAIL - LEVEL 1 PLAN

NORTH

SCALE @ A1
1:100
0 2.5 5M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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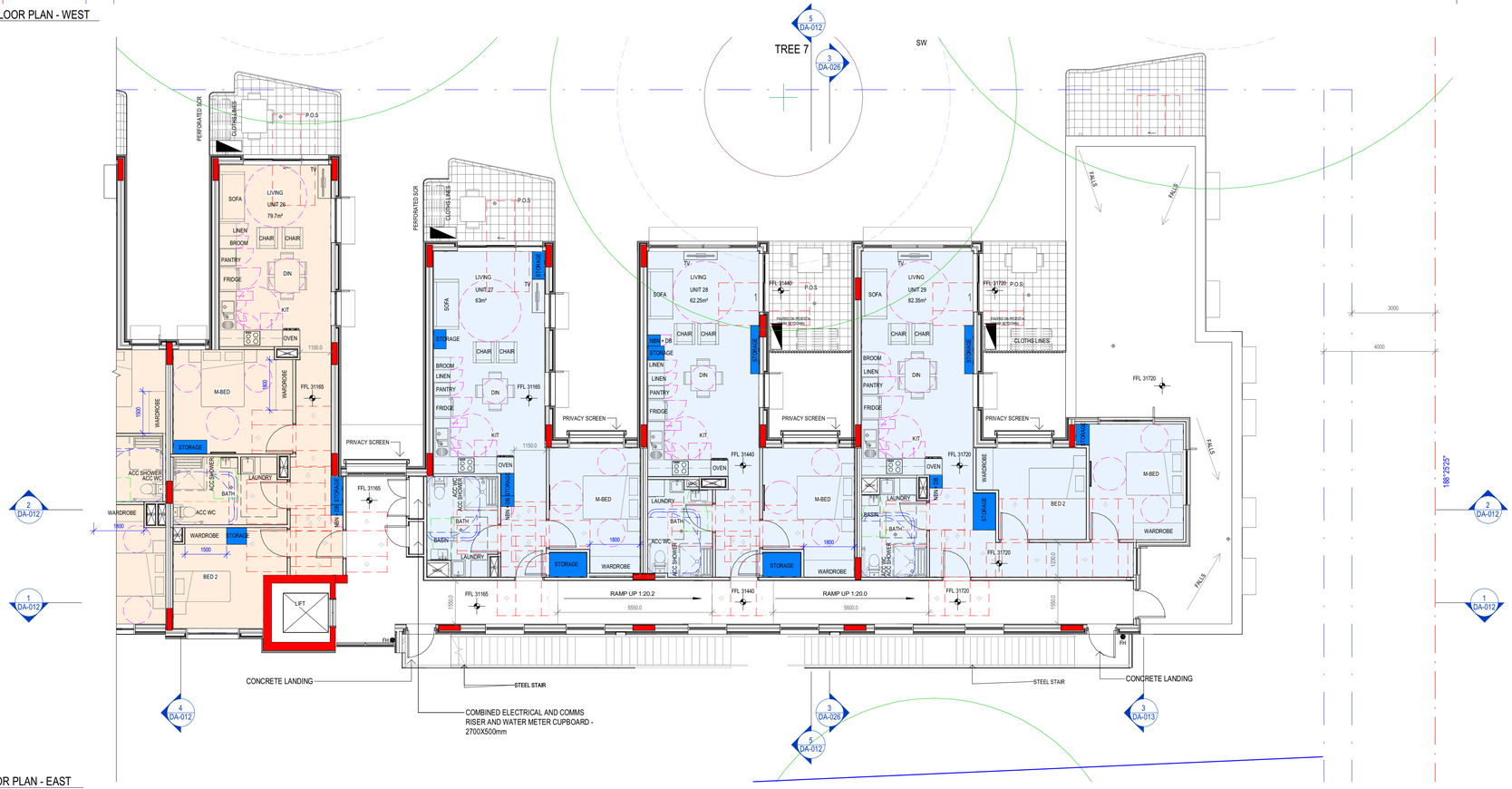
Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-009	3

6/09/2024 5:05:24 PM

LEVEL 2 FLOOR PLAN - WEST
1 : 100



LEVEL 2 FLOOR PLAN - EAST
1 : 100

2 BED STORAGE - UNIT - 9,20	
STORAGE	0.79 m³
STORAGE	3.38 m³
STORAGE	0.28 m³
TOTAL	4.45 m³

2 BED STORAGE - UNIT - 10	
STORAGE	1.46 m³
STORAGE	1.39 m³
STORAGE	2.19 m³
STORAGE	0.57 m³
STORAGE	0.31 m³
TOTAL	5.92 m³

1 BED STORAGE - UNIT - 11, 21	
STORAGE	1.65 m³
STORAGE	1.22 m³
STORAGE	3.22 m³
STORAGE	0.46 m³
STORAGE	0.46 m³
TOTAL	7.01 m³

1 BED STORAGE - UNIT - 12, 22	
STORAGE	1.65 m³
STORAGE	3.47 m³
STORAGE	0.81 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
STORAGE	0.46 m³
TOTAL	8.07 m³

1 BED STORAGE - UNIT - 13, 23	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.21 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 14, 24	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

2 BED STORAGE - UNIT -15, 25	
STORAGE	0.73 m³
STORAGE	2.60 m³
STORAGE	2.02 m³
STORAGE	0.30 m³
TOTAL	5.65 m³

1 BED STORAGE - UNIT - 18, 19, 28	
STORAGE	3.22 m³
STORAGE	0.74 m³
STORAGE	1.10 m³
STORAGE	0.38 m³
TOTAL	5.44 m³

2 BED STORAGE - UNIT - 1	
STORAGE	1.39 m³
STORAGE	1.52 m³
STORAGE	0.57 m³
STORAGE	2.51 m³
STORAGE	0.31 m³
TOTAL	6.30 m³

1 BED STORAGE - UNIT - 2	
STORAGE	1.65 m³
STORAGE	1.22 m³
STORAGE	3.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 3	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.21 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

1 BED STORAGE - UNIT - 4	
STORAGE	1.65 m³
STORAGE	3.22 m³
STORAGE	1.22 m³
STORAGE	0.46 m³
TOTAL	6.55 m³

2 BED STORAGE - UNIT - 5	
STORAGE	0.65 m³
STORAGE	2.31 m³
STORAGE	1.82 m³
STORAGE	0.30 m³
TOTAL	5.07 m³

2 BED STORAGE - UNIT - 6, 16, 26	
STORAGE	1.60 m³
STORAGE	1.14 m³
STORAGE	1.16 m³
STORAGE	0.35 m³
TOTAL	4.26 m³

1 BED STORAGE - UNIT - 17,27	
STORAGE	3.16 m³
STORAGE	1.05 m³
STORAGE	0.86 m³
STORAGE	1.22 m³
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TOTAL	6.67 m³

2 BED STORAGE - UNIT - 7	
STORAGE	2.87 m³
STORAGE	1.76 m³
STORAGE	0.34 m³
TOTAL	4.97 m³

1 BED STORAGE - UNIT - 8	
STORAGE	3.23 m³
STORAGE	0.90 m³
STORAGE	1.41 m³
STORAGE	0.46 m³
TOTAL	6.01 m³

2 BED STORAGE - UNIT - 29	
STORAGE	0.86 m³
STORAGE	1.26 m³
STORAGE	2.60 m³
STORAGE	0.46 m³
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CIRCULATION LEGAND

- DOOR CIRCULATION
- FURNITURE CIRCULATION
- BASIN CIRCULATION
- WC CIRCULATION
- SHOWER CIRCULATION
- LAUNDRY CIRCULATION

STORAGE LEGAND

- ADDITIONAL STORAGE

Revision	Description	Date
1	Updated Drawings	30.05.2024
2	AMZ ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024

DA ISSUE

NOTES : DEVELOPMENT APPLICATION

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Consultants

Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

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Sydney NSW 2000
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Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title
DETAIL - LEVEL 2 PLAN

NORTH
SCALE @ A1
1:100
0 2.5 5M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-010	3

6/09/2024 5:01:32 PM

NORTH ELEVATION
1 : 150

SOUTH ELEVATION
1 : 150

WEST ELEVATION
1 : 150

EAST ELEVATION
1 : 150

Revision	Description	Date
1	AM2 ISSUE	15.12.2023
2	Preliminary Issue For Coordination	30.01.2024
3	Preliminary Issue For Coordination	09.02.2024
4	Updated Drawings	30.05.2024
5	PART 5 ISSUE	06.09.2024
6	PART 5 ISSUE	19.09.2024

DA ISSUE

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Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

EXTERNAL ELEVATIONS

Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.

Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

SERVICES GENERAL NOTES
- INDUCTION COOK TOPS
- NO GAS REQUIREMENTS
- PHOTO VOLTIACS ON THE ROOF FOR COMMON AREAS ONLY
- CEILING FANS IN LIVING AND BEDROOMS
- STRUCTURAL COLUMNS TO BE COORINDATED WITH DESIGN
- CIVIL ENGINEER TO CONFIRM GROUND FLOOR SETDOWN REQUIREMENTS
- CIVIL ENGINEER TO APPROVE 70MM SETDOWN ON UPPER LEVEL BALCONIES TO ENSURE ADEQUATE WATER STOP IN 1:100 YEAR FLOOR.

MAINTENANCE ACCESS
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- EXTERNAL SCREENS;
- PLANTER BOXES.
ACCESS & MAINTENANCE STRATEGIES ARE TO BE IN ACCORDANCE WITH HOMES NSW GUIDELINES

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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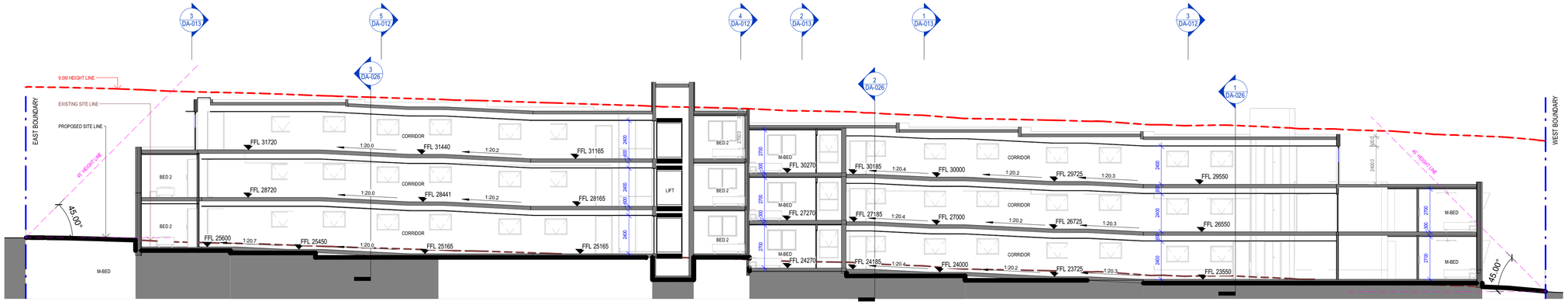
Nominated Architect: Craig Sheibner 6259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-011	6

19/09/2024 4:26:51 PM



1 A2-10 LONGITUDINAL SECTION 1
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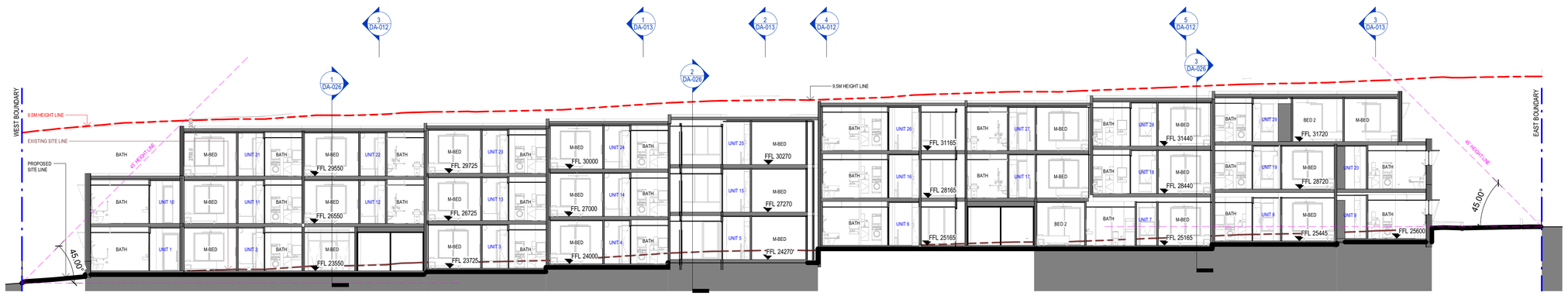

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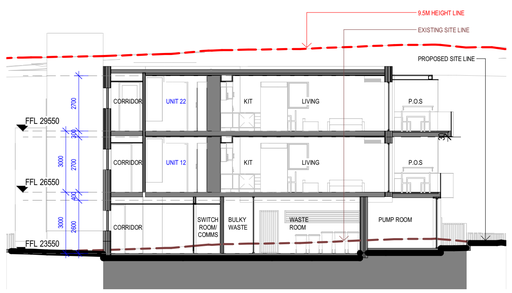

3 A2-10 CROSS SECTION 1
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4 A2-10 CROSS SECTION 2
1 : 150

5 A2-10 CROSS SECTION 3
1 : 150

Revision	Description	Date
1	AM2 ISSUE	15.12.2023
2	Preliminary Issue For Coordination	30.01.2024
3	Preliminary Issue For Coordination	09.02.2024
4	AM2 ISSUE	03.07.2024
5	PART 5 ISSUE	06.09.2024

DA ISSUE

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Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

NSW GOVERNMENT

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Sheet Title
BUILDING SECTIONS

Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.

Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

CIRCULATION LEGAND
- 9.5M HEIGHT LINE
- EXISTING SITE LINE
- PROPOSED SITE LINE
- 45' HEIGHT LINE

SERVICES GENERAL NOTES
- INDUCTION COOK TOPS
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JL	RW	As indicated @ A1

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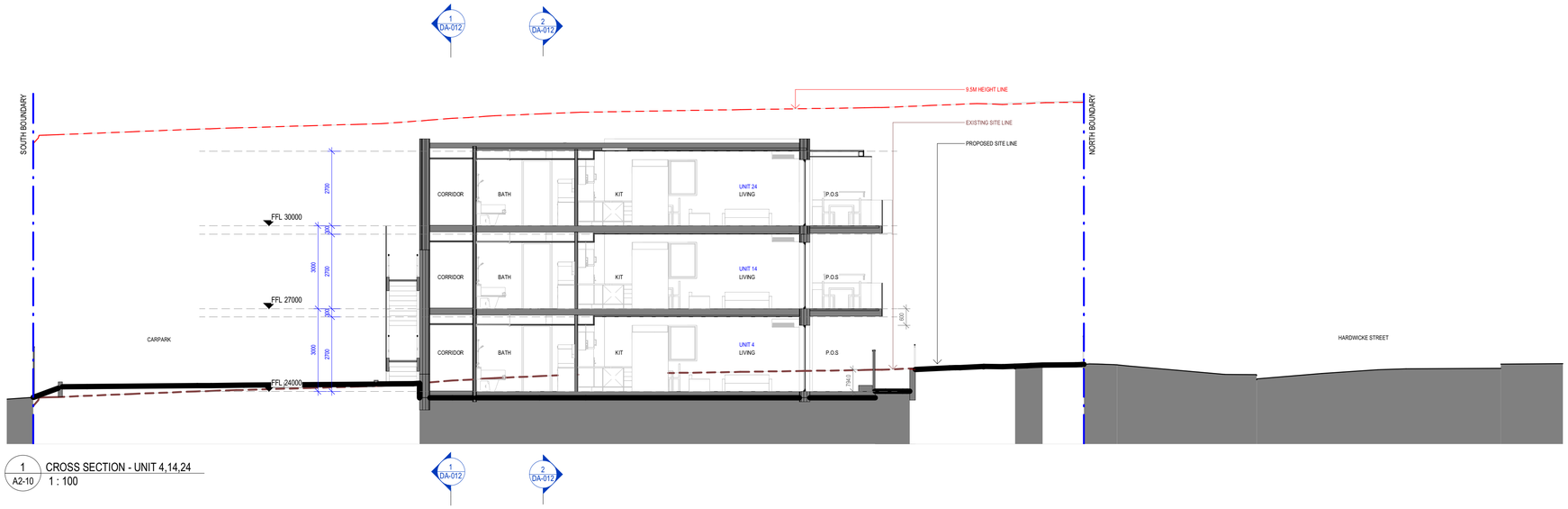
Nominated Architect: Craig Sheisher 6259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-012	5

6/09/2024 5:03:34 PM



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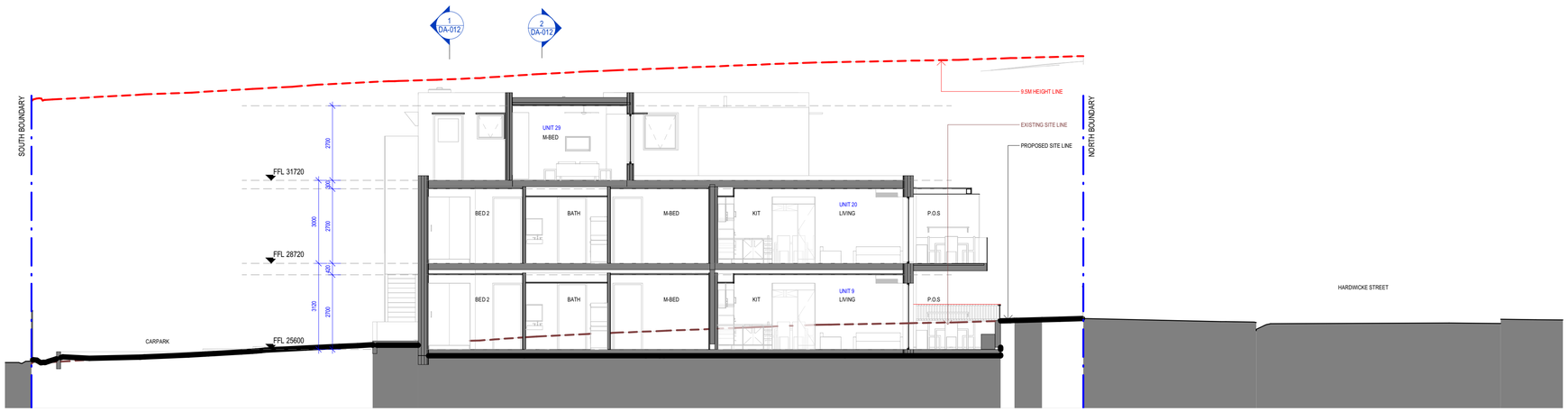
2 A2-10 CROSS SECTION - UNIT 5,15,25
1 : 100



3 A2-10 CROSS SECTION - UNIT 9,20,29
1 : 100

CIRCULATION LEGAND

- 9.5M HEIGHT LINE
- EXISTING SITE LINE
- PROPOSED SITE LINE
- 45° HEIGHT LINE

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Assessor name: Stefanie Simpson
Accreditation No.: HERA 10035
Property Address: 17-27 Hardwicke Street, Riverwood, NSW, 2210
http://www.hero-software.com.au/pdf/HR-9TJLCY-01

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024

DA ISSUE

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Homes NSW
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PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
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BUILDING SECTIONS

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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Nominated Architect: Craig Sheisher 6259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-013	2

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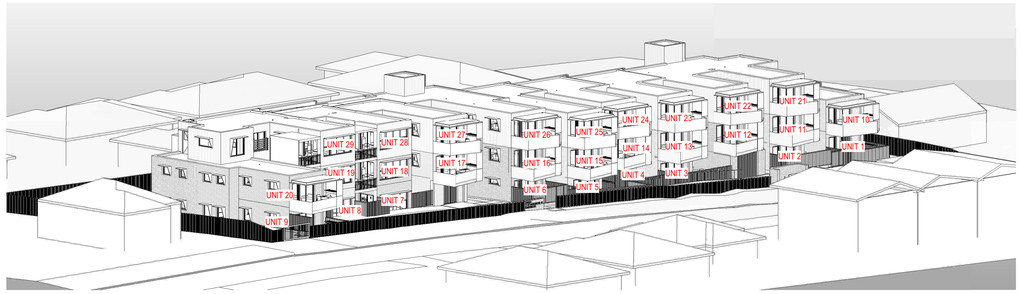
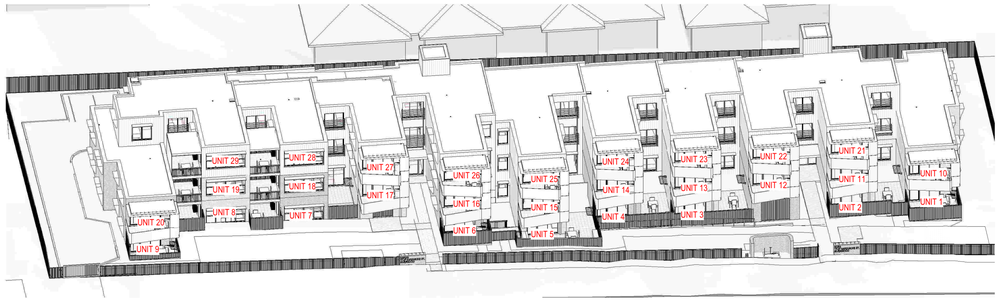


VIEW FROM THE SUN - 9AM

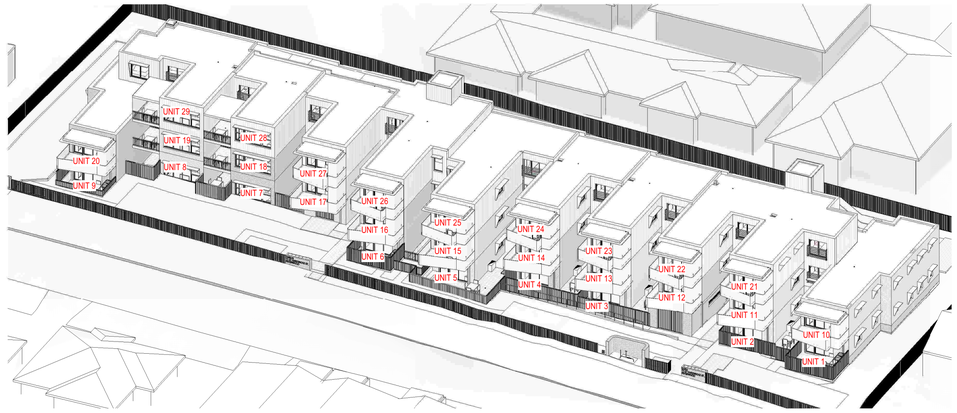
VIEW FROM THE SUN - 10AM

VIEW FROM THE SUN - 11AM

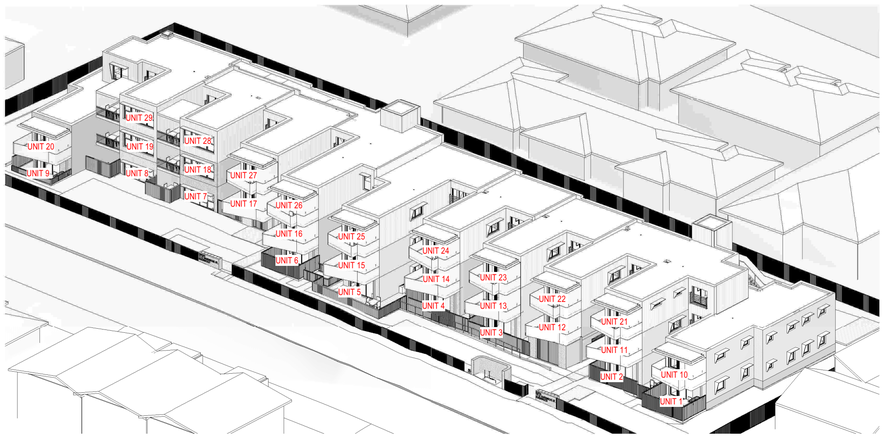


VIEW FROM THE SUN - 12PM

VIEW FROM THE SUN - 1PM



VIEW FROM THE SUN - 2PM



VIEW FROM THE SUN - 3PM

SOLAR ACCESS TABLE

UNIT No.	LOUNGE	SOLAR ACCESS	POS	SOLAR ACCESS
UNIT 1	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 2	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 3	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 4	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 5	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 6	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 7	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 8	9am - 3pm	6 hours, Complies with SEPP	11am - 3pm	4 hours, Complies with SEPP
UNIT 9	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 10	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 11	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 12	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 13	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 14	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 15	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 16	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 17	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 18	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 19	9am - 3pm	6 hours, Complies with SEPP	11am - 3pm	4 hours, Complies with SEPP
UNIT 20	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 21	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 22	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 23	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 24	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 25	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 26	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 27	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 28	9am - 3pm	6 hours, Complies with SEPP	9am - 3pm	6 hours, Complies with SEPP
UNIT 29	9am - 3pm	6 hours, Complies with SEPP	11am - 3pm	4 hours, Complies with SEPP

30 of 30 units achieve SEPP requirements for Solar Access, or 100% of total development. SEPP requires min 70%.
Note: SEPP Requires: Min 2 hours solar access between 9am and 3pm mid-winter.

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024

DA ISSUE

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SOLAR ACCESS STUDY

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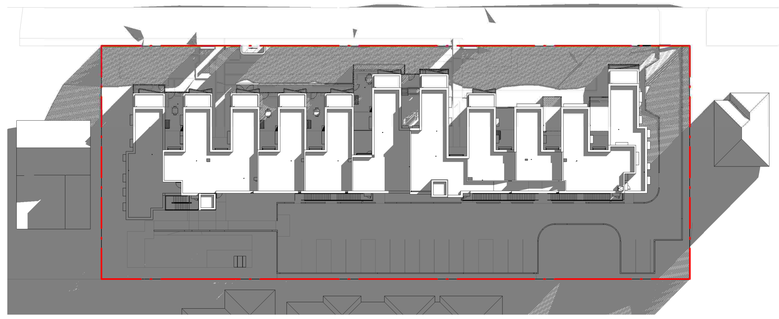
3420	DA-014	2

6/09/2024 5:06:21 PM



SHADOW DIAGRAM 9AM
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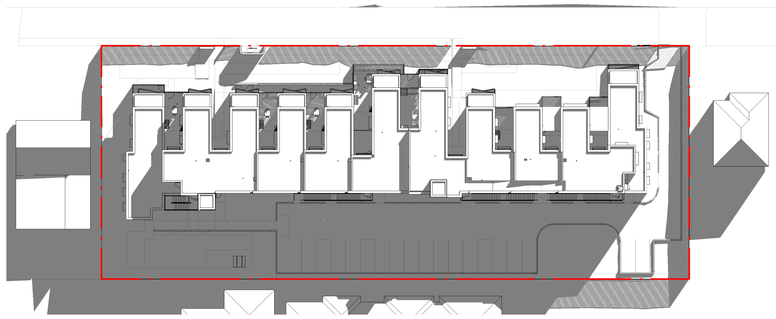

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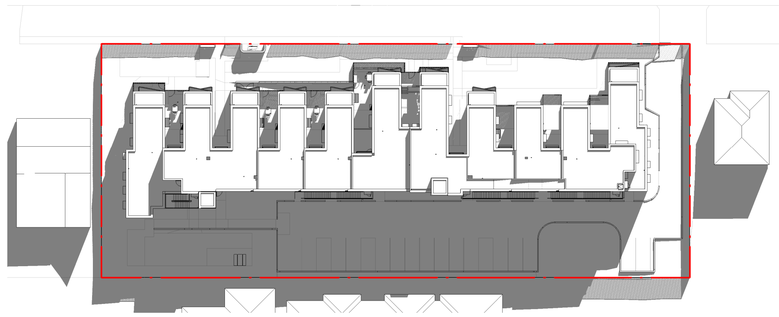

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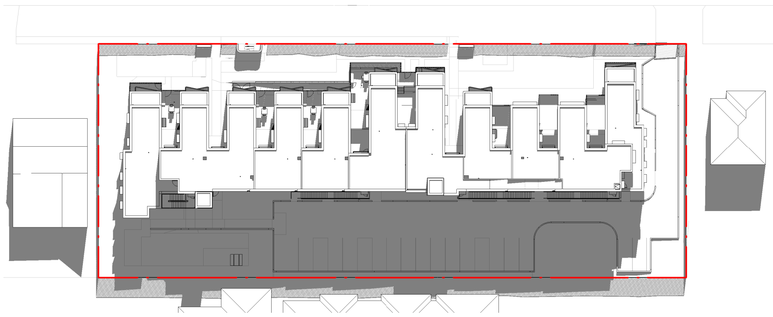

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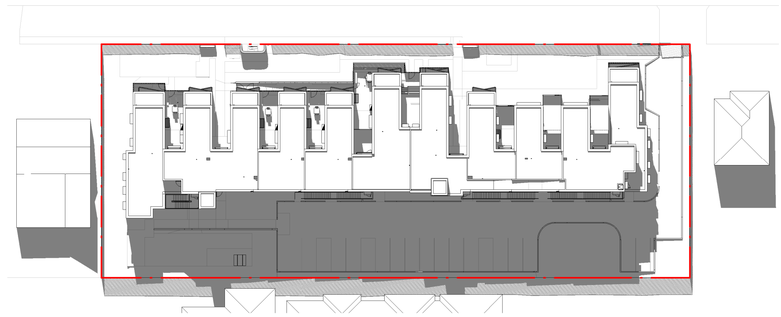

SHADOW DIAGRAM 1PM
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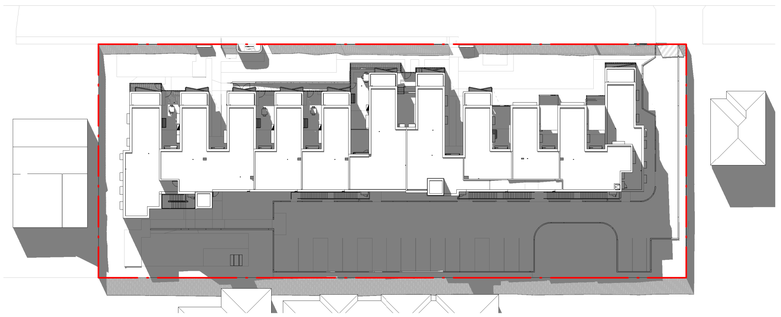
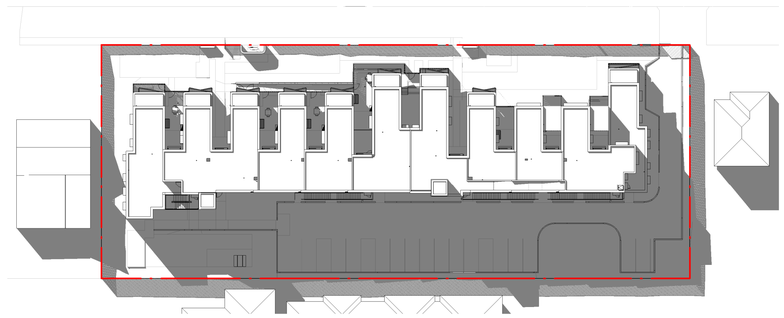


SHADOW DIAGRAM 2PM
1 : 500



SHADOW DIAGRAM 3PM
1 : 500

Revision	Description	Date
1	AM2 ISSUE	15.12.2023
2	AM2 ISSUE	03.07.2024
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Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

SHADOW DIAGRAMS

NORTH

SCALE @ A1
1:500
0 12.5 25M

Drawn	Checked	Scale
JL	RW	1 : 500 @ A1

Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.

Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

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Nominated Architect: Craig Sheisher 8259 (NSW), 5812 (QLD)

Project No.	Sheet No.	Revision
3420	DA-015	3

6/09/2024 5:07:19 PM

3D Solar View (F1-3) - 11.30am

3D Solar View (F1-3) - 12.30pm

3D Solar View (F1-3) - 1.30pm

3D Solar View (F3-5) - 11.30am

3D Solar View (F3-5) - 12.30pm

3D Solar View (F3-5) - 1.30pm

3D Solar View (F5-7) - 11.30am

3D Solar View (F5-7) - 12.30pm

3D Solar View (F5-7) - 1.30pm

6/09/2024 5:05:53 PM

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024

DA ISSUE

NOTES : DEVELOPMENT APPLICATION

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THIS DRAWING IS TO BE PRINTED IN COLOUR

Consultants

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Client

HOMES NSW

NSW GOVERNMENT

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Project

HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

SOLAR STUDY

Drawn	Checked	Scale
JL	RW	@ A1

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Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

Certificate No. #HR-9TJLCY-01

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Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

Project No.	Sheet No.	Revision
3420	DA-016	2

3D Solar View (F7-9) - 11.30am

3D Solar View (F7-9) - 12.30pm

3D Solar View (F7-9) - 1.30pm

3D Solar View (F9-11) - 11.30am

3D Solar View (F9-11) - 12.30pm

3D Solar View (F9-11) -1.30pm

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024

DA ISSUE

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Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

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Homes NSW

Client
HOMES NSW

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Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

SOLAR STUDY

Certificate No. #HR-9TJLCY-01

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Assessor name Stefanie Simpson
Accreditation No. HERA 10035
Property Address 17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

Drawn	Checked	Scale
JL	RW	@ A1

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Nominated Architect: Craig Shelsher 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-017	2

6/09/2024 5:10:14 PM

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024

DA ISSUE

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Project
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17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

OVERALL HEIGHT PLANE

Certificate No. #HR-9TJLCY-01

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Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

http://www.hero-software.com.au/pdf/HR-9TJLCY-01

Drawn	Checked	Scale
JL	RW	@ A1

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Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

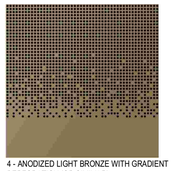
Project No.	Sheet No.	Revision
3420	DA-020	2

6/09/2024 5:12:14 PM

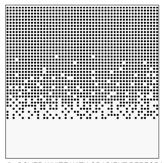
1 - PGH - OPAL LINE TIGER EYE

2 - PGH - DARK AND STORM THUNDER

3 - SURFMIST (OR SIMILIAR)



4 - ANODIZED LIGHT BRONZE WITH GRADIENT PERFORATION (OR SIMILIAR)

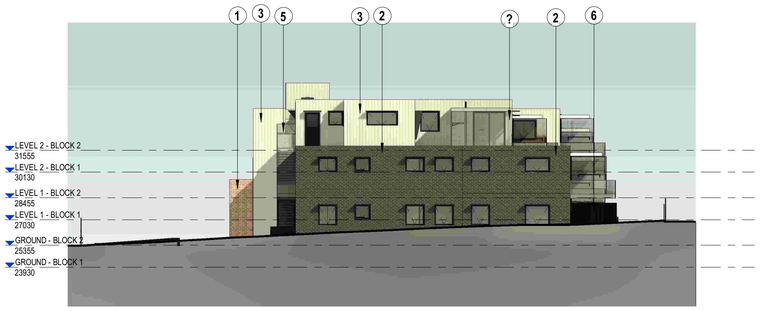


5 - DOVER WHITE WITH GRADIENT PERFORATION (OR SIMILIAR)

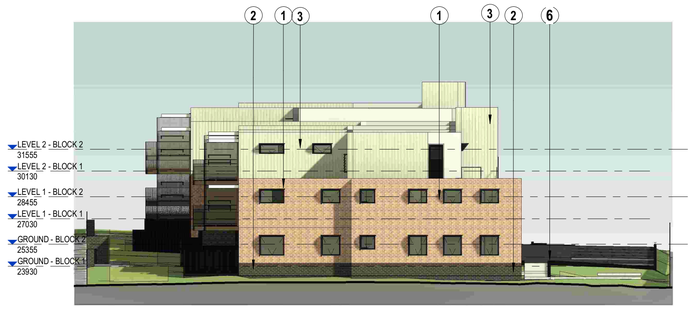
6 - MONUMENT (OR SIMILIAR)
FRAMES, WINDOW HOODS, AWNINGS, FENCES, DOWNPIPES, INC. ALL RETAINING WALLS (SPLIT FACE BLOCK)

NORTH ELEVATION
1 : 200

SOUTH ELEVATION
1 : 200



EAST ELEVATION
1 : 200



WEST ELEVATION
1 : 200

Revision	Description	Date
1	AM2 ISSUE	03.07.2024
2	PART 5 ISSUE	06.09.2024

DA ISSUE

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Consultants

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

NSW GOVERNMENT

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LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title

MATERIALS

SCALE @ A1
1:200
0 5 10M

Drawn	Checked	Scale
JL	RW	1 : 200 @ A1

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Nominated Architect: Craig Shelsher 8259 (NSW), 5612 (QLD)

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Assessor name	Stefanie Simpson
Accreditation No.	HERA 10035
Property Address	17-27 Hardwicke Street, Riverwood, NSW, 2210

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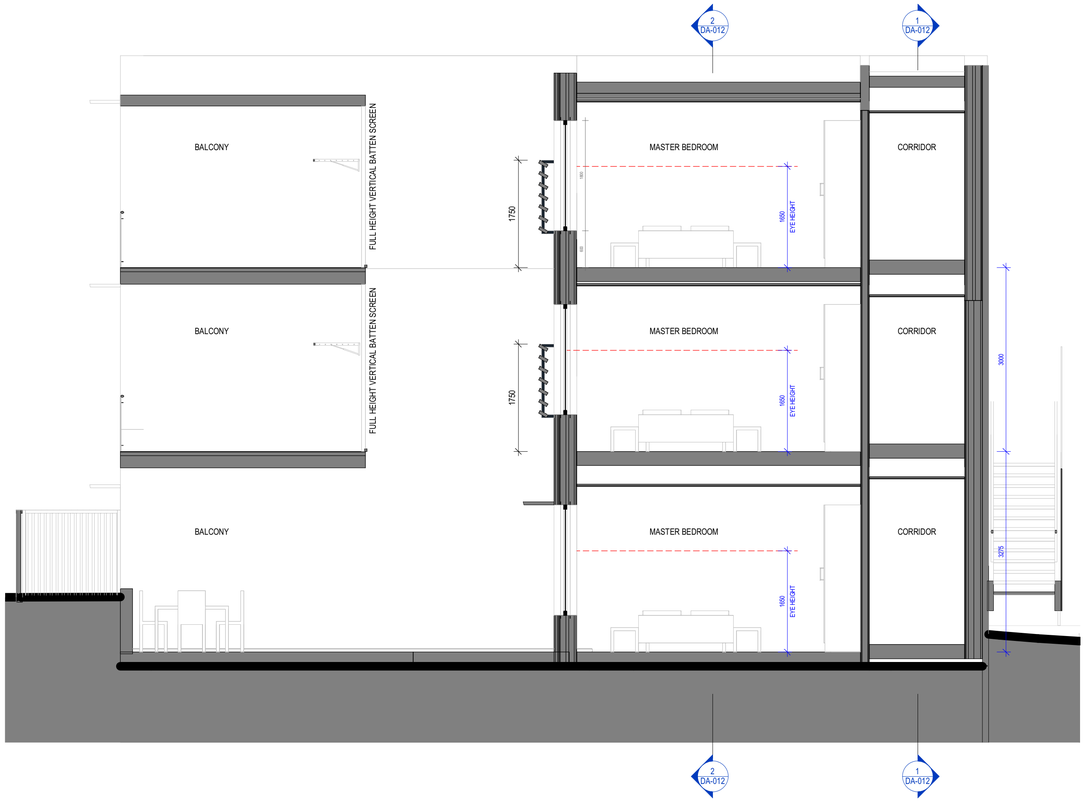
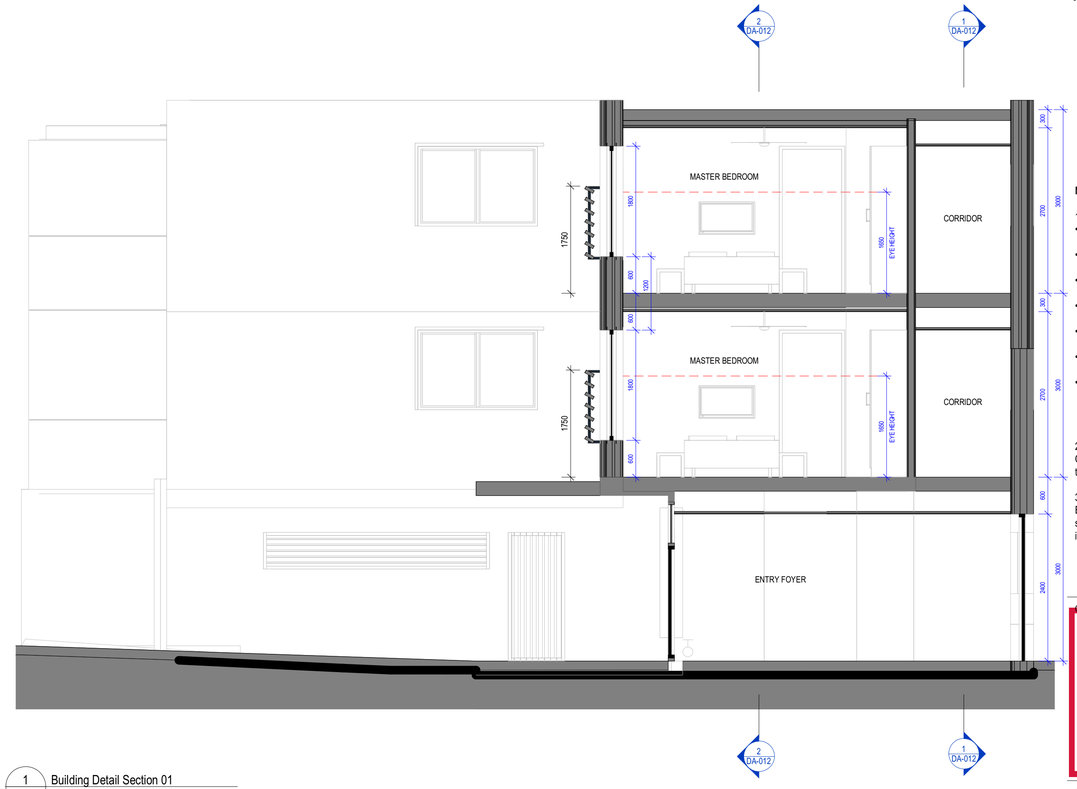
Project No.	Sheet No.	Revision
3420	DA-025	2

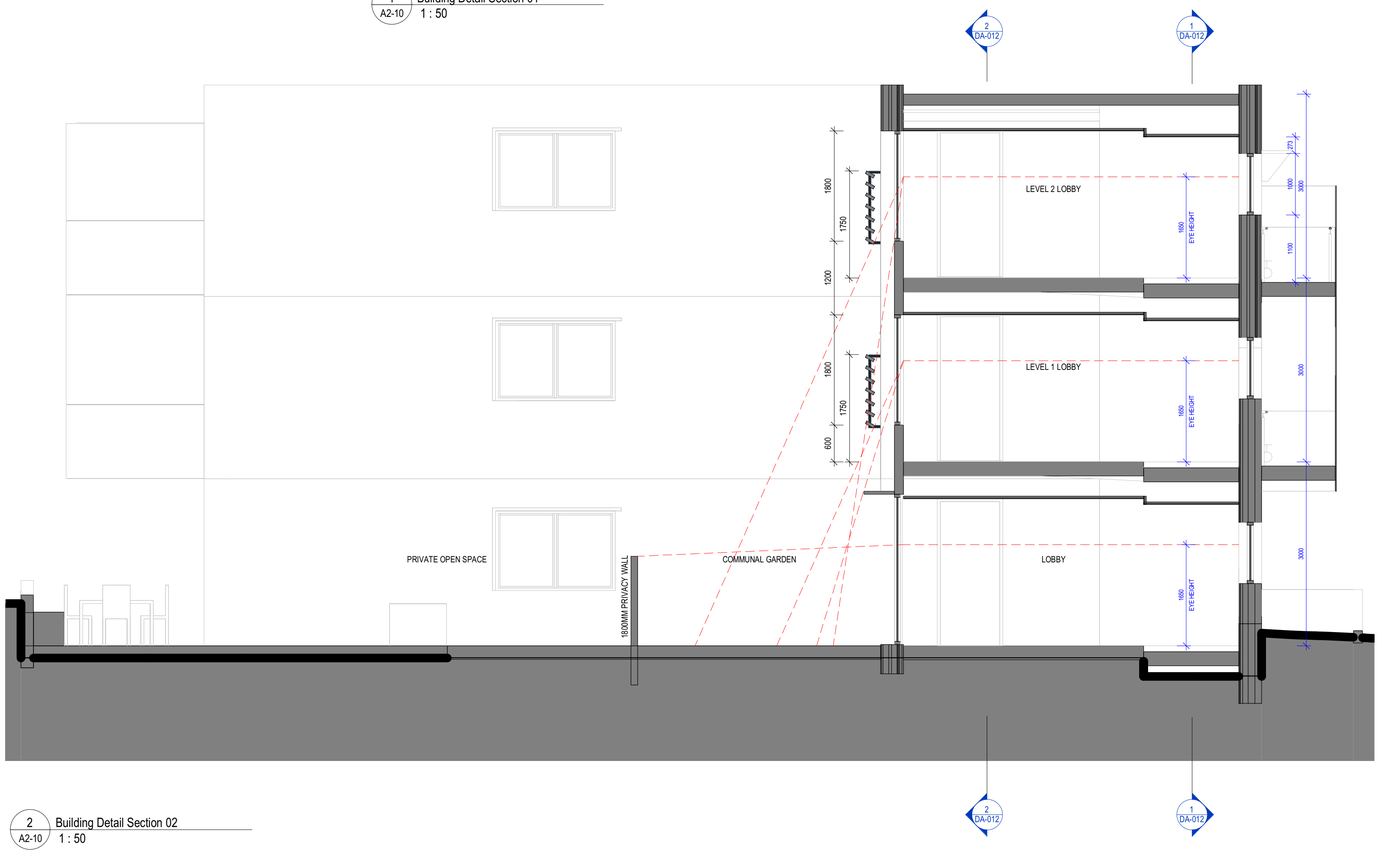
6/09/2025 5:13:17 PM



3 A2-10 Building Detail Section 03
1 : 50



1 A2-10 Building Detail Section 01
1 : 50



2 A2-10 Building Detail Section 02
1 : 50

Revision	Description	Date
1	Updated Drawings	30.05.2024
2	AMZ ISSUE	03.07.2024
3	PART 5 ISSUE	06.09.2024

DA ISSUE

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Homes NSW

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Sheet Title

DETAIL SECTIONS

SCALE @ A1
1:50
0 1.25 2.5M

Drawn	Checked	Scale
JL	RW	1 : 50 @ A1

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Project No.	Sheet No.	Revision
3420	DA-026	3

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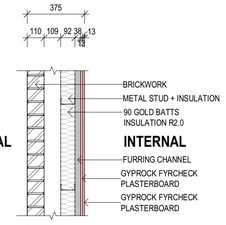
http://www.hero-software.com.au/pdf/HR-9TJLCY-01
6/09/2024 5:15:44 PM

EXTERNAL WALLS

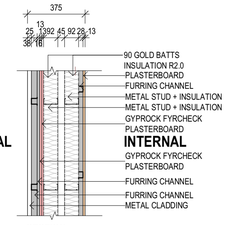
WALL TYPE - WT01



SECTION

NAME	WT01
WALL TYPE	EXTERNAL WALL
ACOUSTIC RATING	Rw63
FIRE RATING	90/90/90

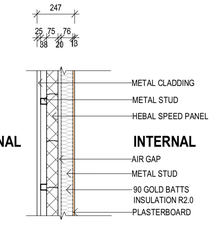
WALL TYPE - WT02



SECTION

NAME	WT02
WALL TYPE	EXTERNAL WALL
ACOUSTIC RATING	Rw48
FIRE RATING	90/90/90

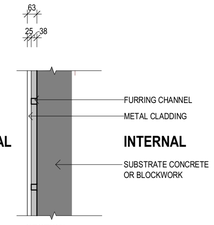
WALL TYPE - WT03



SECTION

NAME	WT03
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw50
FIRE RATING	-/90/90

WALL TYPE - WT04

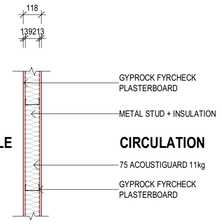


SECTION

NAME	WT04
WALL TYPE	EXTERNAL WALL
ACOUSTIC RATING	Nil
FIRE RATING	-/ - / -

INTERNAL WALLS

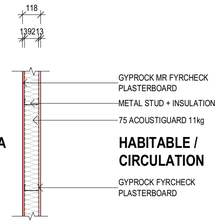
WALL TYPE - PT01



SECTION

NAME	PT01
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw47
FIRE RATING	-/60/60

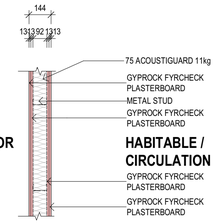
WALL TYPE - PT02



SECTION

NAME	PT02
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw47
FIRE RATING	-/60/60

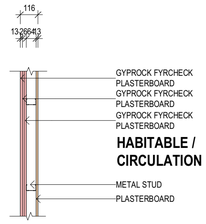
WALL TYPE - PT03



SECTION

NAME	PT03
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw54
FIRE RATING	-/120/120

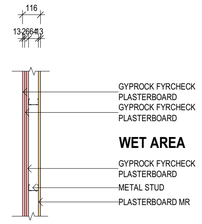
WALL TYPE - PT04



SECTION

NAME	PT04
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw45
FIRE RATING	-/90/90

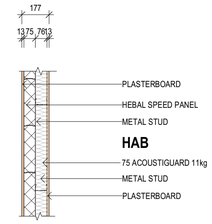
WALL TYPE - PT04W



SECTION

NAME	PT04W
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw45
FIRE RATING	-/90/90

WALL TYPE - PT05

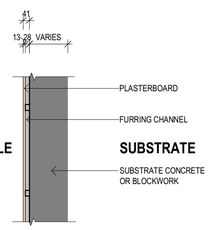


SECTION

NAME	PT05
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw50
FIRE RATING	-/90/90

INTERNAL WALL LINING

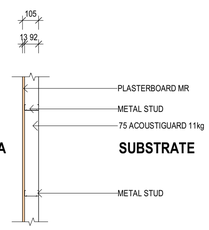
WALL TYPE - PT11



SECTION

NAME	PT11
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw27
FIRE RATING	-/ - / -

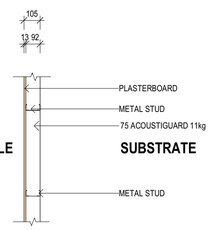
WALL TYPE - PT12



SECTION

NAME	PT12
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw27
FIRE RATING	-/ - / -

WALL TYPE - PT13



SECTION

NAME	PT13
WALL TYPE	INTERNAL PARTITION
ACOUSTIC RATING	Rw27
FIRE RATING	-/ - / -

Revision	Description	Date
1	AM2 ISSUE	03.07.2024

DA ISSUE

NOTES : DEVELOPMENT APPLICATION

1. DESIGN RESOLUTION
- The drawings represent general architectural intent for the purpose of this development application only.
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- The size and position of privacy screens, louvres is indicative and shown in open and closed positions.
- Please refer to Landscape drawings for Landscape component (shown indicatively only in this set)
- Location & sizes of plant, equipment, service areas and service risers on drawings is general and indicative only, and does not include minor elements, such as vent pipes, flues, aerials, etc.

2. GRAPHIC PRESENTATION
Colours presented on drawings are generic only and indicative of the architectural design intent.

3. EXISTING STRUCTURES AND SERVICES
Extent and location of existing and proposed neighbouring structures and services is according to the available survey information and will need to be verified on site at later stage.

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Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

NSW GOVERNMENT

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Interior Design

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Sydney NSW 2000
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Project
HARDWICKE ST SENIOR HOUSING
17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title
WALL TYPES

SCALE @ A1
1:20
0 .5 1M

Drawn	Checked	Scale
JL	RW	1 : 20 @ A1

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Nominated Architect: Craig Sheisher 8259 (NSW), 5612 (QLD)

Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.
Assessor name Stefanie Simpson
Accreditation No. HERA 10035
Property Address 17-27 Hardwicke Street, Riverwood, NSW, 2210
http://www.hero-software.com.au/pdf/HR-9TJLCY-01

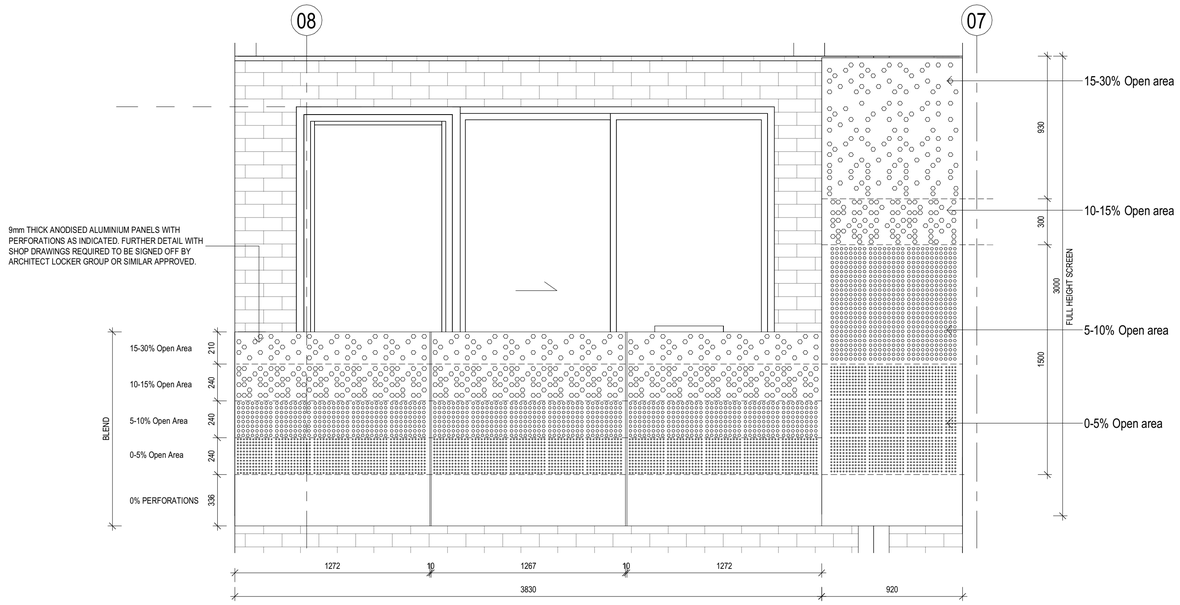
Project No.	Sheet No.	Revision
3420	DA-030	1

6/09/2024 5:15:53 PM

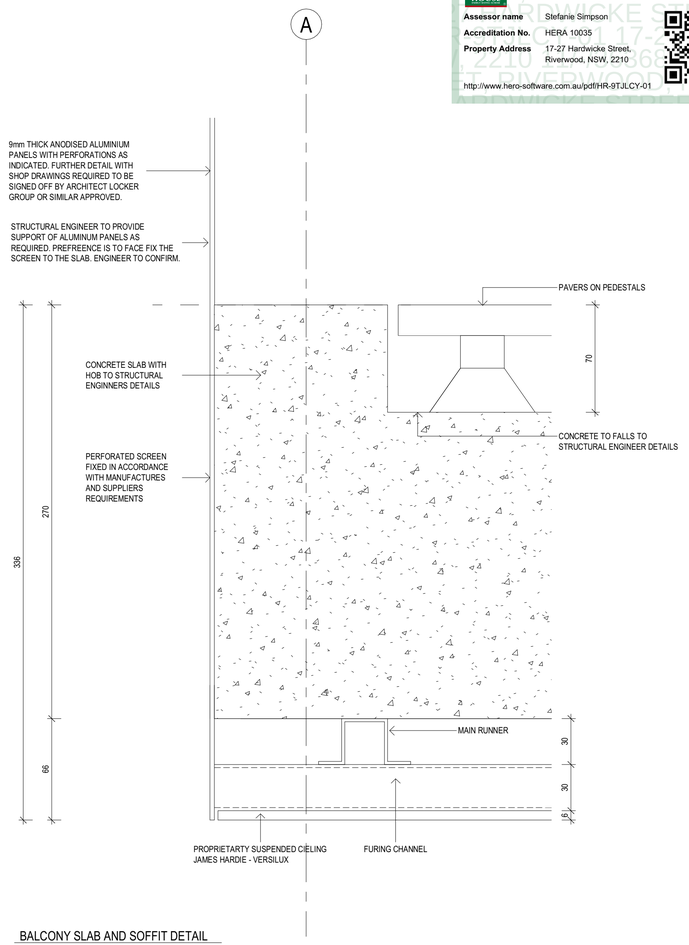
KEY:

— — — IMAGINARY/INDICATIVE TRANSITION LINE

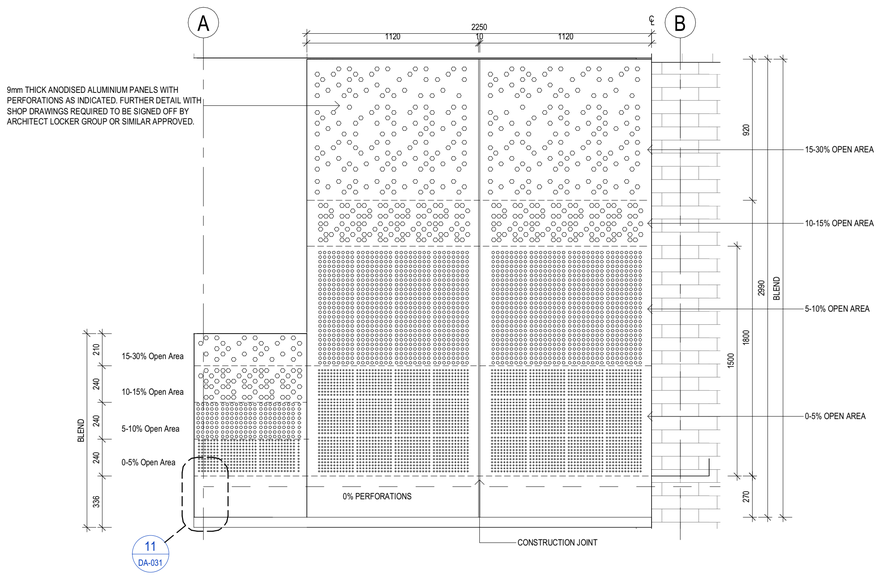
NOTE: HOLES AND INDICATIVE TRANSITION LINES SHOW ARCHITECTURAL INTENT. BALUSTRADE TO BE AND COORDINATED WITH MANUFACTURER SPECIFICATIONS AND APPROVED BY DESIGN ARCHITECT.



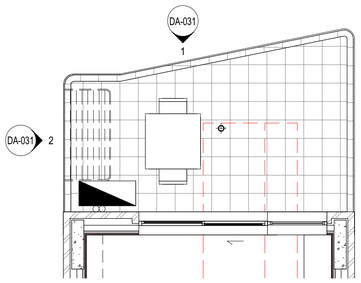
1 DA-031 DETAILED ELEVATION - SCREEN DETAIL (FRONT)
1 : 20



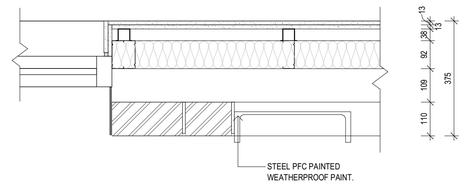
BALCONY SLAB AND SOFFIT DETAIL
1 : 2



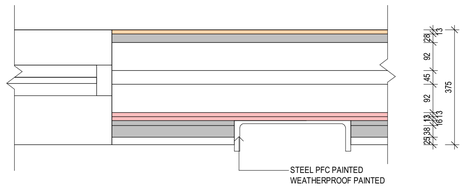
2 DA-031 DETAILED ELEVATION - SCREEN DETAIL (SIDE 2)
1 : 20



DETAIL PLAN - SCREEN DETAIL
1 : 50



LEVEL 1 - PFC AT BRICKWORK DETAIL
1 : 10



LEVEL 2 - PFC AT LIGHT WEIGHT WALL DETAIL
1 : 10

Certificate No. #HR-9TJLCY-01
Scan QR code or follow website link for rating details.
Assessor name Stefanie Simpson
Accreditation No. HERA 10035
Property Address 17-27 Hardwicke Street, Riverwood, NSW, 2210
http://www.hero-software.com.au/pdf/HR-9TJLCY-01

Revision	Description	Date
1	PART 5 ISSUE	06.09.2024

DA ISSUE

NOTES : DEVELOPMENT APPLICATION

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Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

Client
HOMES NSW

NSW GOVERNMENT

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17-27 HARDWICKE STREET,
RIVERWOOD, NSW, 2210
LOT 11, 12, 13, 14, 15, 16 DP 36368

Sheet Title
BALCONY SCREEN & BALUSTRADE DETAIL WITH REAR WALL PFC DETAIL

SCALE @ A1
1:50
0 1.25 2.5M

Drawn	Checked	Scale
JL	RW	As indicated @ A1

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Nominated Architect: Craig Shelsher 8259 (NSW), 5612 (QLD)

Project No.	Sheet No.	Revision
3420	DA-031	1

10/09/2024 1:35:14 PM

Hardwicke St Senior Housing

17-27 Hardwicke Street, Riverwood

Landscape Development Application

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DRAWING SCHEDULE

Dwg No.	Drawing Title	Scale
000	Coversheet	As Shown @ A1
001	Existing Tree Management Plan	1:150 @ A1
100	Landscape Colour Plan	1:150 @ A1
101	General Arrangement Plan 01	1:100 @ A1
102	General Arrangement Plan 02	1:100 @ A1
201	Planting Plan 01	1:100 @ A1
202	Planting Plan 02	1:100 @ A1
500	Specification Notes & Plant Schedule	N/A
501	Landscape Details	As Shown @ A1

Issue	Revision Description	Drawn	Check	Date
C	Issue for Development Application	BS	RS	22.08.2024
B	Issue for Development Application	BS	RS	27.06.2024
A	Issue for Information	JW/HT	RS	23.01.2024

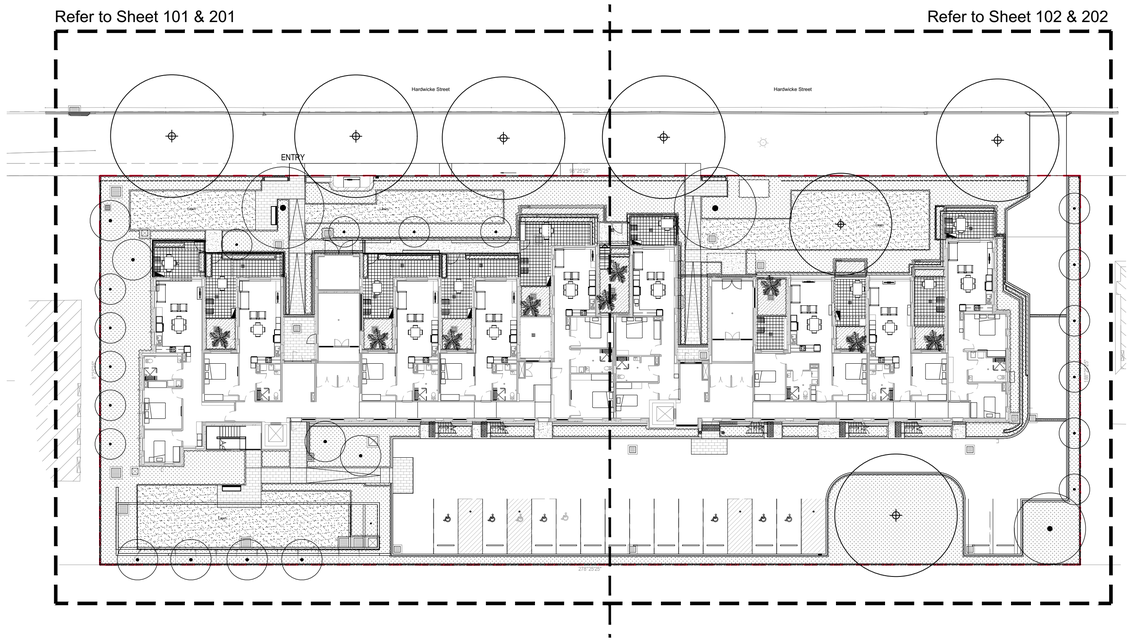
Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Local Context



Site Plan | Scale 1:300

Client
Land and Housing Corporation (LAHC)

Project
Hardwicke St Senior Housing
17-27 Hardwicke Street, Riverwood

SITE IMAGE

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DEVELOPMENT APPLICATION

Drawing Name
Landscape Coversheet

Scale as shown @ A1

Job Number	Drawing Number	Issue
SS23-5152	000	C

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A1

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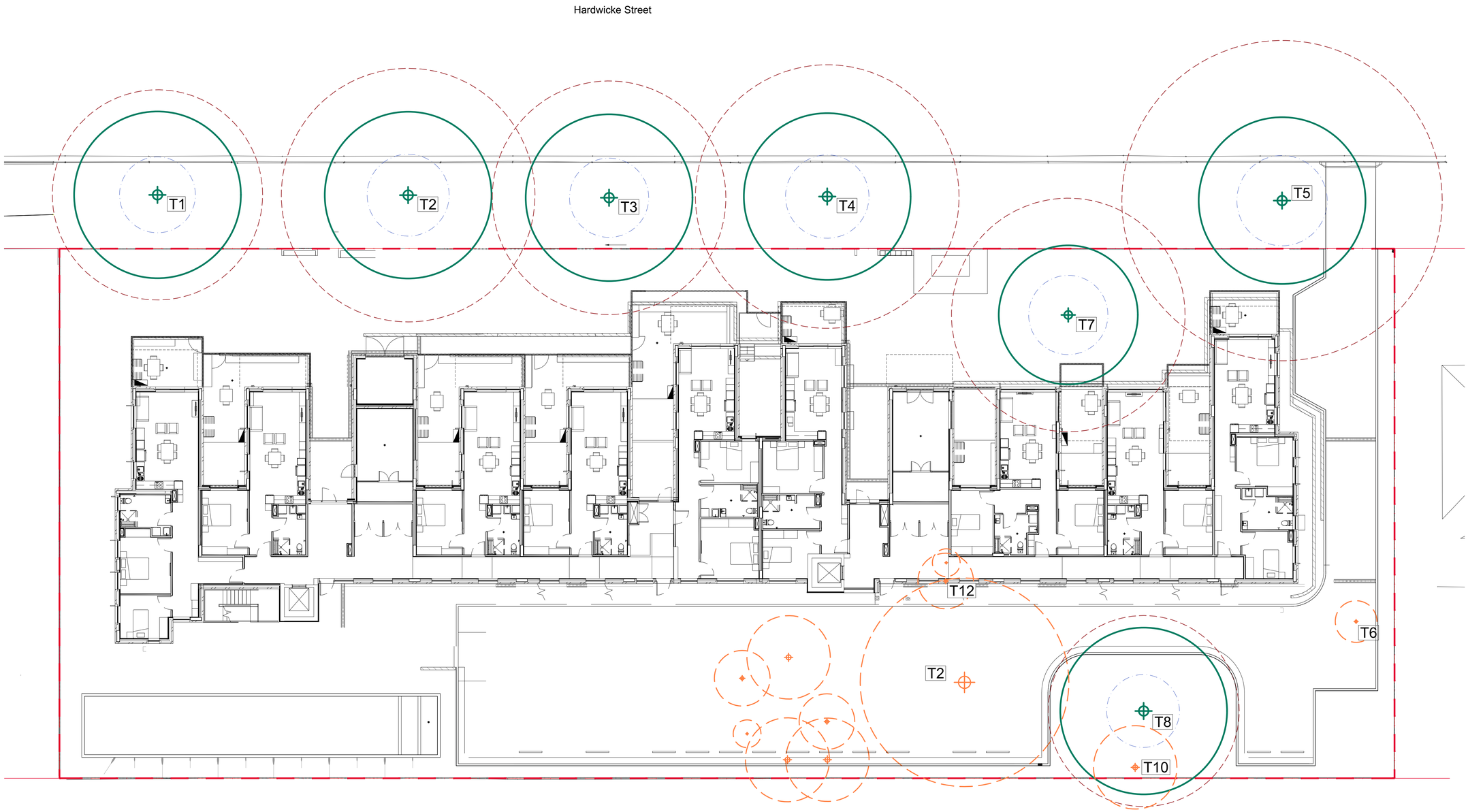

Issue	Revision Description	Drawn	Check	Date
C	Issue for Development Application	BS	RS	27.06.2024
B	Issue for Information	JW/HT	RS	23.01.2024
A	Issue for Information	JW	RS	13.12.2023

Property boundary

Existing trees to be retained and protected. Numbers correlate with Arborists Report

Tree protection zone (TPZ). Refer to Arborists report

Structural root zone (SRZ). Refer to Arborists report

Existing trees to be removed. Numbers correlate with Arborists Report

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Client
Land and Housing Corporation (LAHC)

Project
Hardwicke St Senior Housing
17-27 Hardwicke Street, Riverwood

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DEVELOPMENT APPLICATION

Drawing Name
Existing Tree Management Plan

Scale 1:150 @ A1 (0 1 2 3 4 5m)

Job Number	Drawing Number	Issue
SS23-5152	001	A

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A1

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Issue	Revision Description	Drawn	Check	Date
D	Issue for Development Application	BS	RS	22.08.2024
C	Issue for Development Application	BS	RS	27.06.2024
B	Issue for Information	JW/HT	RS	23.01.2024
A	Issue for Information	JW	RS	13.12.2023

Legend

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Key Plan

LEGEND

- Property boundary
- Existing trees to be retained and protected. Refer to the tree management plan
- Proposed trees and fern planting
- Paving
- Private open space paving
- Concrete footpath
- Stepping stones
- Lawn
- Planting to communal areas
- Planting to private open spaces
- Seat
- Washing lines
- Retaining walls

Client
Land and Housing Corporation (LAHC)

Project
Hardwicke St Senior Housing
17-27 Hardwicke Street, Riverwood

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DEVELOPMENT APPLICATION

Drawing Name
Landscape Colour Plan

Scale 1:150 @ A1 (0 1 2 3 4 5m)

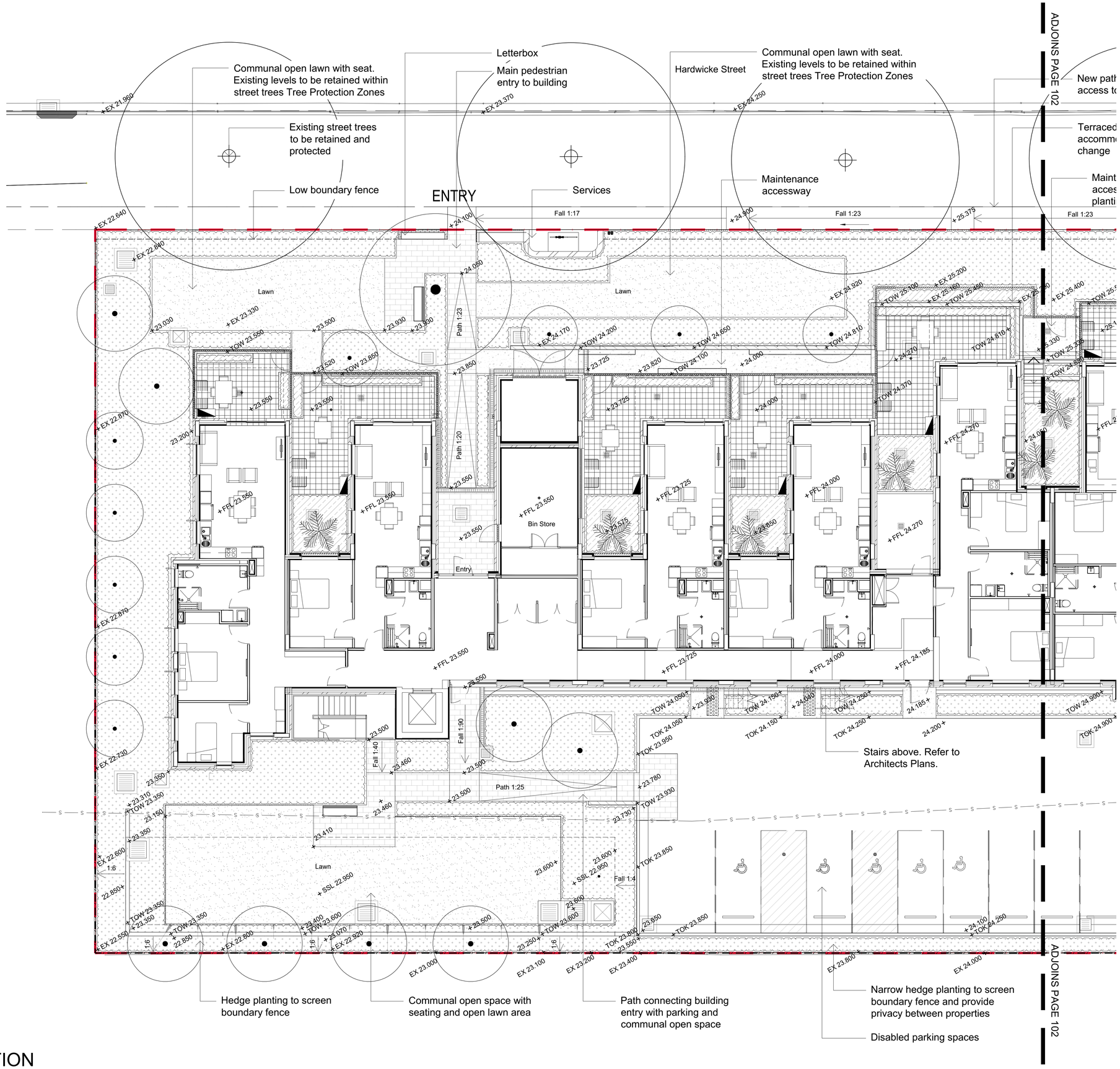
Job Number	Drawing Number	Issue
SS23-5152	100	D

NOT FOR CONSTRUCTION

A1

LEGEND

- Property boundary
- Existing sewer line
- +4.600 Levels
  EX - Existing level
  FFL - Finished floor level
  TOW - Top of wall level
  TOK - Top of Kerb
- Existing trees to be retained and protected. Refer to the tree management plan
- Proposed trees and fern planting
- Paving
- Private open space paving
- Concrete footpath
- Stepping stones
- Lawn
- Planting to communal areas
- Planting to private open spaces
- Tables and chairs
- BBQ
- Seat
- Washing lines
- Retaining walls
- 1200mm high front fence
- 1800mm high colourbond boundary fence
- 1800mm high palisade private open space fences



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A1

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Issue	Revision Description	Drawn	Check	Date
D	Issue for Development Application	BS	RS	22.08.2024
C	Issue for Development Application	BS	RS	27.06.2024
B	Issue for Information	JW/HT	RS	23.01.2024
A	Issue for Information	JW	RS	13.12.2023

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
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Land and Housing Corporation (LAHC)

Project
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DEVELOPMENT APPLICATION

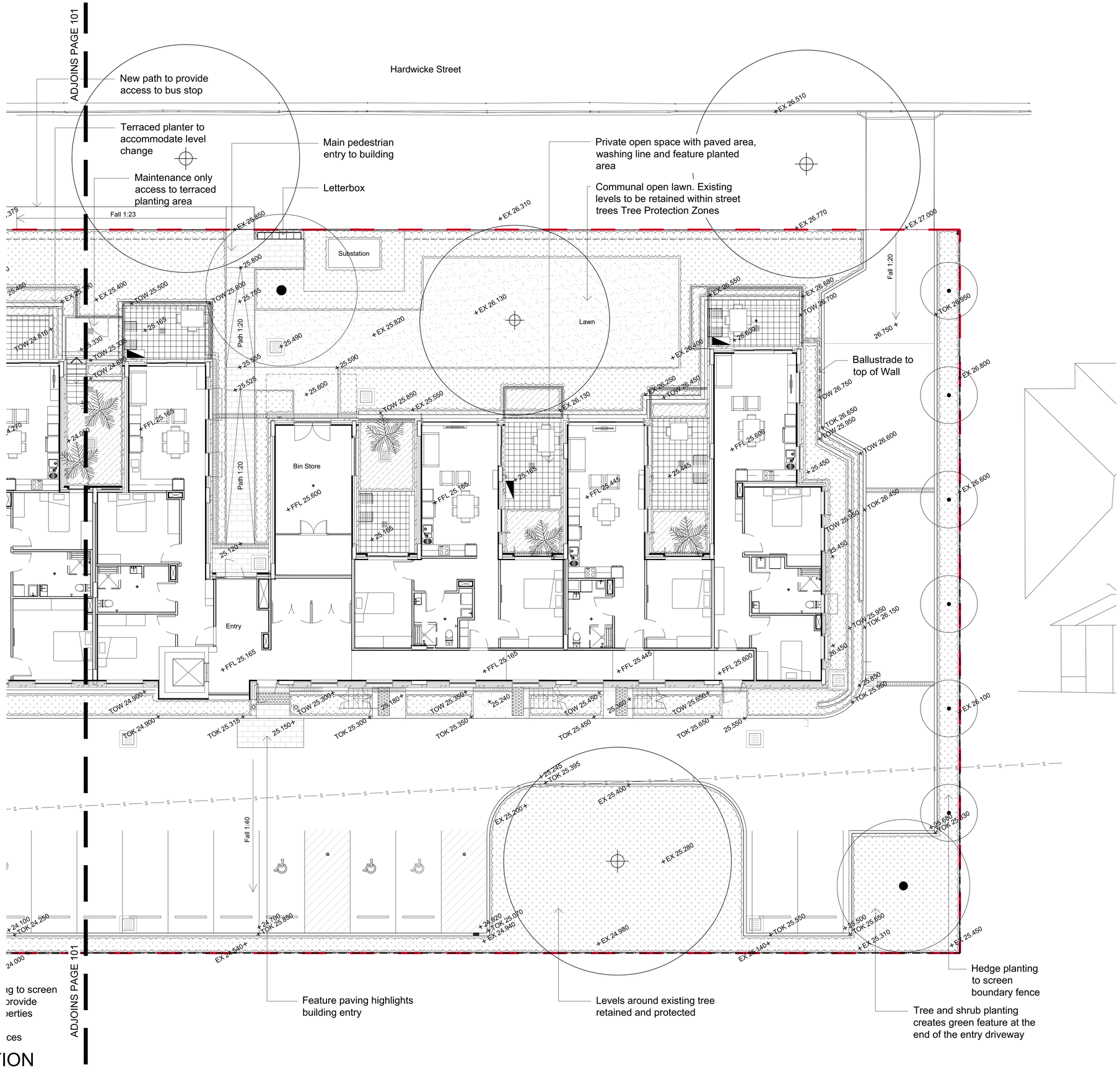
Drawing Name
General Arrangement Plan 01

Scale 1:100 @ A1

Job Number	Drawing Number	Issue
SS23-5152	101	D

LEGEND

- Property boundary
- Existing sewer line
- +4.600 Levels
  EX - Existing level
  FFL - Finished floor level
  TOW - Top of wall level
  TOK - Top of Kerb
- Existing trees to be retained and protected. Refer to the tree management plan
- Proposed trees and fern planting
- Paving
- Private open space paving
- Concrete footpath
- Stepping stones
- Lawn
- Planting to communal areas
- Planting to private open spaces
- Tables and chairs
- BBQ
- Seat
- Washing lines
- Retaining walls
- 1200mm high front fence
- 1800mm high colourbond boundary fence
- 1800mm high palisade private open space fences



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D	Issue for Development Application	BS	RS	22.08.2024
C	Issue for Development Application	BS	RS	27.06.2024
B	Issue for Information	JW/HT	RS	23.01.2024
A	Issue for Information	JW	RS	13.12.2023

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

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Client
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Hardwicke St Senior Housing
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DEVELOPMENT APPLICATION

Drawing Name
General Arrangement Plan 02

Scale 1:100 @ A1

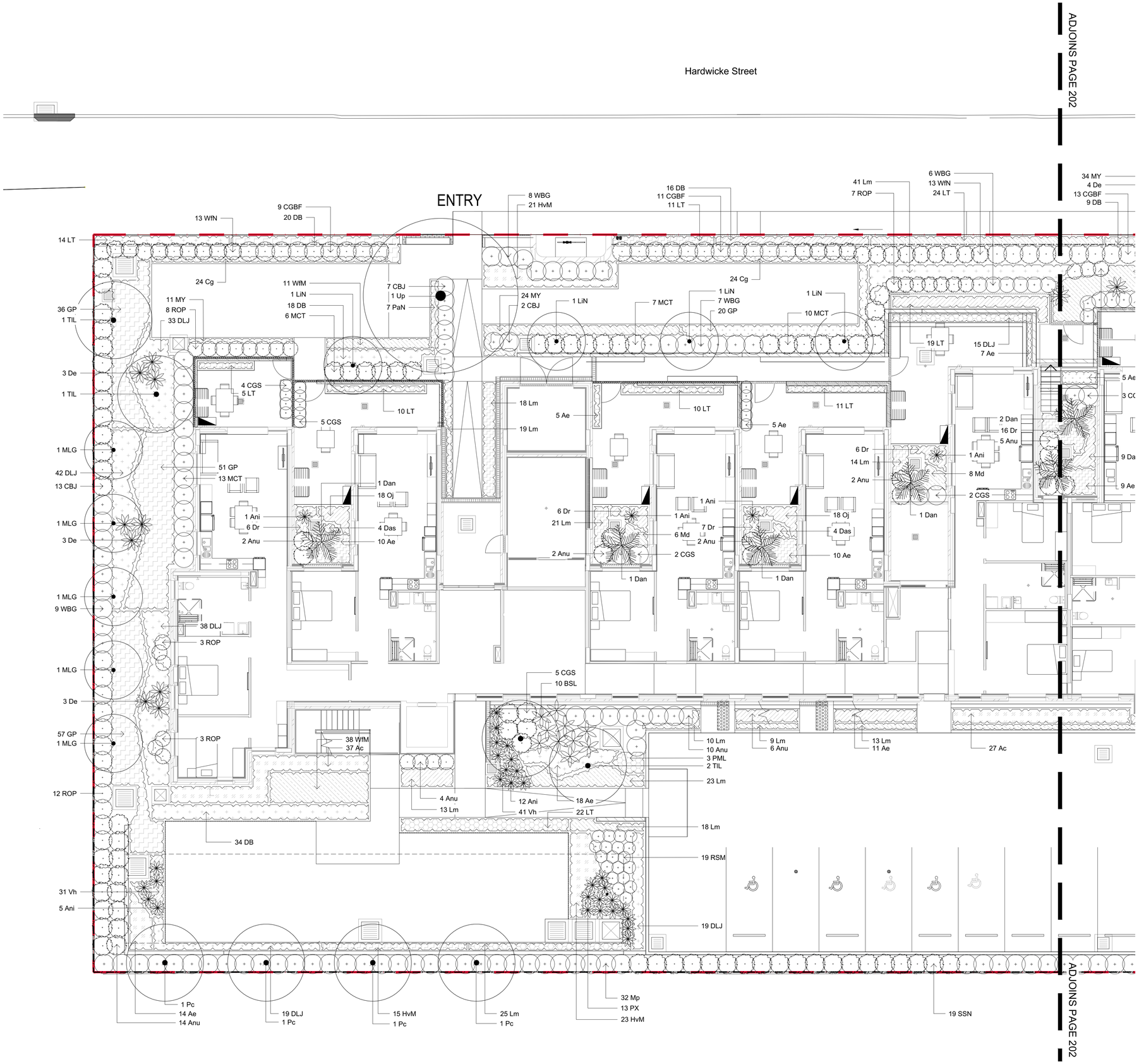
Job Number	Drawing Number	Issue
SS23-5152	102	D

NOT FOR CONSTRUCTION

A1

LEGEND

- Property boundary
- Building overhang / canopy / awning
- Existing trees to be retained and protected. Refer to the tree management plan
- Proposed trees and fern planting; Refer to Plant Schedule
- Proposed Shrubs and Accent planting; Refer to Plant Schedule
- Proposed Grasses, Groundcover planting; Refer to Plant Schedule



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Homes NSW

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Landscape Architects

DEVELOPMENT APPLICATION

Drawing Name
Planting Plan 01

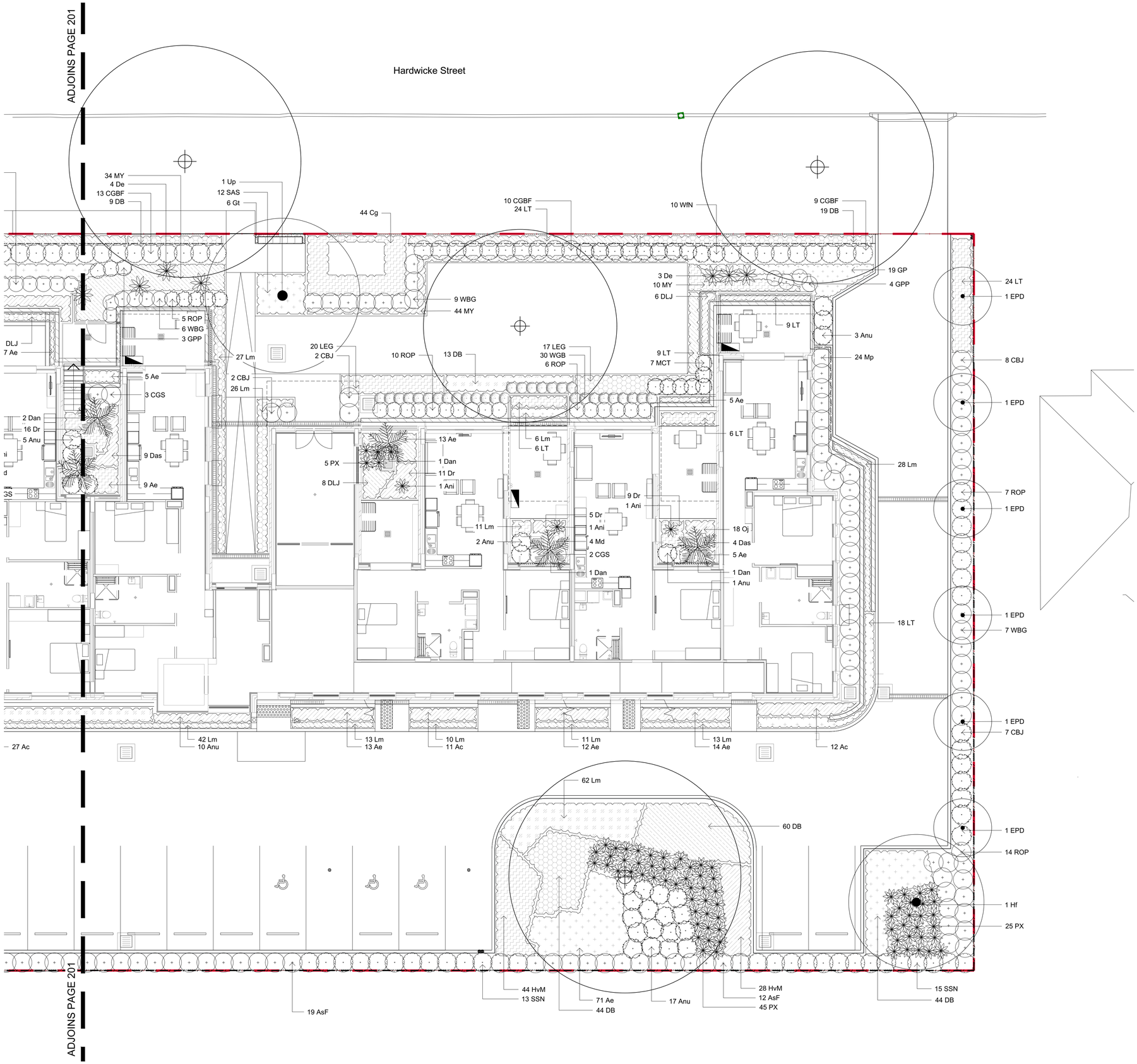
Scale 1:100 @ A1

0 1 2 3 4 5m

Job Number	Drawing Number	Issue
SS23-5152	201	D

LEGEND

- Property boundary
- Building overhang / canopy / awning
- Existing trees to be retained and protected. Refer to the tree management plan
- Proposed trees and fern planting; Refer to Plant Schedule
- Proposed Shrubs and Accent planting; Refer to Plant Schedule
- Proposed Grasses, Groundcover planting; Refer to Plant Schedule



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C	Issue for Development Application	BS	RS	27.06.2024
B	Issue for Information	JW/HT	RS	31.01.2024
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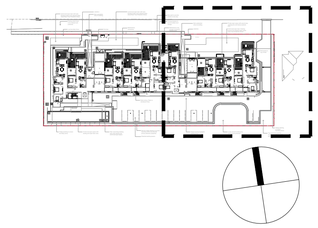
Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation



Client
Land and Housing Corporation (LAHC)

Project
Hardwicke St Senior Housing
17-27 Hardwicke Street, Riverwood

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Landscape Architects

DEVELOPMENT APPLICATION

Drawing Name
Planting Plan 02

Scale 1:100 @ A1

0 1 2 3 4 5m

Job Number	Drawing Number	Issue
SS23-5152	202	D

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SPECIFICATION

GENERAL NOTES

References
All plans and details included in the project documents shall be read in conjunction with this specification. All structural and civil works components of the landscape design shall be referenced to engineers' details and specifications. Read this specification in conjunction with the plant and materials schedules on the drawings. If in doubt about any detail or if conflicts are found in the documents, seek advice.

Workmanship and Materials
The whole of the landscape works shall be carried out by a competent, trained and qualified landscape contractor who is experienced in horticultural practices, landscape construction and planting techniques. The landscape contractor shall hold a current Building Contractors License and/or be a financial member of LNA Landscape Association NSW & ACT or equivalent organisations in other states.

EXISTING TREES AND SHRUBS

Trees and Shrubs to be Retained and Protected
Identify and mark trees and shrubs to be retained using a suitable non-injurious, easily visible and removable means of identification. Protect from damage the trees and shrubs to be retained, including those beyond the site area, both above and below the ground. If a tree becomes damaged during the works or it is proposed to perform work on a tree, give written notice immediately and obtain instructions.

Work Near Trees and Shrubs
Keep the area of the drip-line free from construction material and debris. Do not place bulk materials and harmful materials under foliage canopies or near trees. Do not place spoil from excavations against tree trunks. Prevent wind-blown building materials, such as cement, from covering trees and other plants. Do not remove topsoil from, or add topsoil to, the area within the drip-line of trees.

EARTHWORKS

Excavation, Trimming and Filling
Except as otherwise noted in the contract, bulk excavation is excluded from the landscape works. After the completion of bulk excavation by others, trim and fill the excavated ground surfaces to achieve design levels to accommodate finish materials as detailed. Prepare the sub-grade surface as required for the various finished ground treatments.

Site Drainage
Keep the excavated works drained and free of standing water. Allow to supply and install sub-soil drainage pipes as required for the new works to ensure that all gardens are well drained. Connect the sub-soil drainage pipes to the nearest downstream stormwater pits. Include pipe filter socks and course sharp aggregate backfilling of trenches.

HARDWORKS

Furniture, Handrails, Balustrades
Supply and install the scheduled items in accordance with the manufacturer's recommendations, as detailed and in the locations shown on plan. Provide all footings and fixings required for the items to be stable and in accordance with applicable codes and standards.

Garden Walls, Fences, Steps, TGSI and Edging
Construct garden walls, fences, steps, TGSI and edging as shown on plan, as detailed and of the material scheduled. Provide footings, step nosings, tactile surfaces to comply with Australian Standards and applicable legislation. Refer to engineer's details for structural retaining walls, concrete stairs, concrete strength, reinforcing and joint placement.

Continuous, Unit and Loose Pavement
Install the scheduled material pavement to the locations shown on plan. Ensure that all subgrade/subsurface works are complete prior to commencing paving. Confer with the engineer to ensure the structural integrity of the subgrade. Ensure that the base course under paved surfaces is a continuous plane offering a constant depth of bedding material not exceeding 50mm. If laying unit pavers in a cement mortar bed on a concrete sub-base ensure that joints in paving match the location of joints in the concrete. Refer to engineer's details for heavy duty slabs, concrete stairs, concrete strength, reinforcing, and joint type and placement.

Landscape Structures
All landscape structures shall have a common appearance in detail and material content while providing for the functional design requirements. The structure of all elements shall consist of a base frame of structural grade hardwood timber of sizes that sustain spans and maintain stability. Refer to drawn details for further information.

SOFTWORKS

Site Soil Testing
Where site soil is to be retrieved from site and stored on site for reuse, undertake at least two (2) soil tests in locations as advised by the Project Manager or as shown on the plans. Provide results and recommendations regarding soil additives for the benefit of healthy plant growth and to adjust the soil components to achieve an appropriate planting medium for successful plant development. Where topsoil is imported to site no testing of the imported soil is necessary but ensure that imported soil can b e supplied with test data to verify that it suits the design plants.

Subsoil
Excavate and/or fill all garden beds to bring the top of subsoil to at least 300mm below finished design soil levels. Excavate all turf areas to bring the subsoil to at least 100mm below finished design levels. In all areas shape the subsoil to fall to subsoil drains where applicable. Do not excavate within the drip line of trees and shrubs to be retained. Cultivate or rip the subsoil to a further depth of 100mm before placing top soil. Remove stones of size exceeding 25mm, clods of earth exceeding 50mm, and weeds, rubbish or other deleterious material brought to the surface during cultivation. Do not disturb services or existing tree roots. If necessary, cultivate these areas by hand. During cultivation, thoroughly mix in materials required to be incorporated into the subsoil, as recommended in the soil testing results and to manufacturer's recommendations. Trim the surface to design levels again after cultivation.

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Subsoil Drainage
Provide and install subsoil drainage equal to Vinidex 65mm (min) Draincoil with filter sock at the base of slopes, on the high side of paths, at the base behind retaining walls and where water is likely to accumulate at depth in the soil. Connect all subsoil drainage to the nearest downstream stormwater pit to ensure that subsoil water is managed and channelled to a stormwater drainage system. On sites with cross fall of less than 1:50 install subsoil drains to remove excess water from the subsoil in areas where water is likely to accumulate and may not penetrate lower strata naturally. Rip the sub-base surface 150mm deep before placing any soil. Install drainage pipes in subsoil trenches backfilled with 10mm blue metal (basalt) equal to ANL Blue Metal.

Coordinate the connection of subsoil drains to stormwater pits with the Civil or Hydraulic contractor.

Topsoil
Import topsoil for the garden and turf areas, unless the topsoil can be provided from material recovered from the site, as recommended in the soil testing results. Spread the topsoil on the prepared subsoil and grade evenly, compact lightly and uniformly in 150mm layers. Avoid differential subsidence and excess compaction and produce a finished topsoil surface which has the following characteristics:
- Finished to design levels, allowing for mulch or turf, which is to finish flush with adjoining hard surfaces such as paths and edges;
- Smooth and free from inorganic matter, stones or clods of soil;
- Graded to drain freely, without ponding, to catchment and/or sub-soil drains;
- Graded evenly to adjoining surfaces; and
- Ready for planting.

Compost
Provide, in accordance with AS 4454, well rotted vegetative material or animal manure, free from harmful chemicals, inorganic matter, grass, weeds and the reproductive parts of unwanted plants.

Fertiliser
Provide proprietary fertilisers, delivered to the site in sealed containers marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses, application rates and safety procedures. Apply appropriate fertiliser suited to the provenance of plants (indigenous or exotic) included in the design.

Plants
Supply plants in accordance with the landscape design drawings and schedules, which have the following characteristics:
- Large healthy root systems, with no evidence of root curl, restriction or damage;
- Vigorous, well established, free from disease and pests, of good form consistent with the species/variety;
- Hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site in full sun, partial shade or full shade conditions;
- Grown in final containers for not less than twelve weeks;
- Trees, unless required to be multi-stemmed, shall have a single leading shoot; and
- Containers shall be free from weeds and of appropriate size in relation to the specified plant size.

Plant Installation
Following excavation of the planting hole, place and spread 15gms of wetting agent pre-mixed with one (1) litre of water. Place the plant correctly orientated to north or for best presentation. Backfill the planting holes with specified topsoil mixture. Lightly tamp and water to eliminate air pockets. Ensure that the backfill soil is not placed over the top of the root ball and that the root ball is not higher than the soil in which it is planted. Apply fertiliser, as specified around the plants in the soil at the time of planting.

Root Barrier
Supply and install root control barriers to all new tree plantings adjacent to walls, paths, kerbs and all service trenches, where their proximity poses a threat to the stability of the built infrastructure. Install in accordance with manufacturer's recommendations.

Mulch
Unless noted otherwise, mulch shall be approved proprietary recycled wood fibre or pine bark material. Place mulch in all garden beds to a depth of 75mm after all specified plants are installed. Keep mulch clear of all plant stems and rake to an even plane, flush with the surrounding surfaces evenly graded between design surface levels. Over fill to allow mulch to settle to the specified depth.

Stakes and Ties
Stakes shall be durable hardwood, straight, free of knots and twists, pointed at one end, in the following quantities and sizes for each of the various plant pot sizes:
- Plants >25 lt: 1 off 38 x 38 x 1200mm;
- Semi-advanced plants >75 lt: 2 off 50x50x 1800mm;
- Advanced plants >100 lt: 3 off 50 x 50 x 2400mm.

Turf
Turf shall be delivered to site as 25mm minimum thick cut rolls. Obtain turf from a specialist grower of cultivated turf. Turf shall have an even thickness, free from weeds and other foreign matter. Deliver turf to the site within 24 hours of being cut and lay it within 24 hours of delivery. Prevent it form drying out between cutting and laying. Lay the turf in the following manner:
- In stretcher pattern, joints staggered and close butted;
- Parallel long sides of level areas, with contours on slopes; and
- To finish flush, after lightly tamping, with adjacent finished surfaces and design levels.

Species: *Stenotaphrum secundatum* Sir Walter Soft-leaf Buffalo.

LANDSCAPE MAINTENANCE

The Landscape Contractor shall rectify defects during installation and that become apparent in the works under normal use for the duration of the contract Defects Liability Period. Unless contracted otherwise, the Landscape Contractor shall maintain the contract areas by the implementation of industry accepted horticultural practices for 52 weeks from Practical Completion of the works. The landscape maintenance works shall include, but not be limited to:
- Replacing failed plants;
- Pruning;
- Insect and pest control;
- Fertilising;
- Maintaining and removing stakes and ties;
- Maintaining mulch;
- Mowing and top dressing;
- Irrigation and watering;
- Erosion control; and
- Weeding and rubbish removal.

Maintenance Log Book
Implement and keep a maintenance log book recording when and what maintenance work has been undertaken and what materials, actions and decisions have been used, implemented and concluded to keep the landscape always looking its best. Enter data daily and review information every 2 weeks. Observe trends and develop a maintenance regime around seasonal and observed event occurrences.

Maintenance Activities
During the defect maintenance period schedule the following activities to occur on a timely basis.

Plant replacement - Replace plants that have failed to mature, die or are damaged. Replacement plants shall be in a similar size and quality and identical species or variety to the plant that has failed. Replacement of plants shall be at the cost of the landscape contractor unless advised otherwise. If the cause of the failure is due to a controllable situation then correct the situation prior to replacing plants. Observe and replace failed plants within 2 weeks of observation.

Pruning - Prune dead wood, broken limbs, dead or infected foliage and as needed to develop strong, healthy plants to achieve the shape and form expected of the plant type. Observe daily and prune plants as necessary to maintain acceptable growth habit.

Insect, disease and pest control - Avoid spraying:
- if ever possible;
- in wet weather or if wet weather is imminent;
- if target plants are still wet after rain;
- in windy weather; and
- if non-target species are too close.

Immediately report to the Project Manager any evidence of intensive weed infestation, insect attack or disease amongst plant material. Submit all proposals to apply chemicals and obtain approval before starting this work. When approved, spray with herbicide, insecticide, fungicide as appropriate in accordance with the manufacturers' recommendations. Observe daily and act as necessary to control any infestation or disease. Record in the logbook all relevant details of spraying activities including:
- Product brand / manufacturer's name,
- Chemical / product name,
- Chemical contents,
- Application quantity and rate,
- Date of application and location,
- Results of application, and
- Use approval authority.

Fertilising
Fertilise gardens with a proprietary slow release fertiliser applied in accordance with the manufacturer's directions and recommendations. Apply 6-12 monthly. Record in the logbook all relevant details of fertilising including:
- Product brand / manufacturer's name,
- Fertiliser / product name,
- Application quantity and rate, and
- Date of application and location.

Stakes and ties - Adjust and replace as required to ensure plants remain correctly staked. Remove those not required at the end of the planting establishment period (Defects Liability Period). Inspect and act at least every 2 weeks.

Maintaining mulch - Maintain the surface in a clean, tidy and weed free condition and reinstate the mulch as necessary to ensure correct depth as specified. Observe weekly and replenish mulch as required.

Mowing and top dressing - Mow the turf to maintain a grass height of between 30-50mm. Do not remove more than one third of the grass height at any one time. Remove grass clippings from the site after each mowing. Top dress to a maximum of 10mm to fill depressions and hollows in the surface. Mow weekly/fortnightly in warmer months. Mow monthly or as required in cooler months. Top dress at approximately 6 monthly intervals.

Irrigation and watering - Maintain the irrigation system to sure that each individual plant receives the required amount of water to maintain healthy and vigorous growth. Adjust and calibrate as required. Provide additional watering, if necessary but inspect irrigation weekly and make repairs as necessary.

Weeding and rubbish removal - During the plant establishment period remove by hand, rubbish and weed growth that may occur or re-occur throughout all planted, mulched and paved areas. The contractor shall target weeds that are capable of producing a major infestation of unwanted plants by seed distribution. Whenever possible, time weed removal to precede flowering and seed set. Constant observation and removal of weeds is essential.

17-27 Hardwicke Street, Riverwood - Indicative Plant Schedule

Symbol	Botanic Name	Common Name	Mature H x W (m)	QTY
TREES				
Dan	*Dicksonia antarctica*	Soft Tree Fern	2.0 x 2.0	9
EPD	*Elaeocarpus reticulatus* 'Prima Donna'	Blueberry Ash	7.0 x 3.0	6
Hf	*Hymenosporum flavum*	Native Frangipani	15.0 x 7.0	1
LiN	*Lagerstroemia indica* 'Natchez'	Crepe Myrtle	6.0 x 3.0	4
MLG	*Magnolia grandiflora* 'Little Gem'	Magnolia Little Gem	6.0 x 3.0	5
Pc	*Pistachia chinensis*	Chinese Pistachio	8.0 x 4.0	4
TIL	*Tristaniopsis laurina* 'Luscious'	Water Gum	8.0 x 4.0	4
Up	*Ulmus parvifolia*	Chinese Elm	10.0 x 8.0	2
ACCENTS / SHRUBS				
AsF	*Acmena smithii* 'Firescreen'	Firescreen Lilly Pilly	4.0 x 4.0	31
Ae	*Aspidistra elatior*	Cast Iron Plant	0.6 x 1.2	227
Ani	*Asplenium nidus*	Birds Nest Fern	0.8 x 0.8	24
Anu	*Alpinia nutans*	Dwarf Cardamom	1.0 x 1.0	80
BSL	*Blechnum* 'Silver Lady'	Gristle Fern	1.5 x 1.5	10
CBJ	*Callistemon* 'Better John'	Bottlebrush	1.0 x 1.0	41
CGBF	*Callistemon* 'Great Balls of Fire'	Bottlebrush	1.5 x 1.5	52
CGS	*Ctenanthe setosa* 'Grey Star'	Grey Star Ctenanthe	1.0 x 1.0	23
De	*Doryanthes exselsa*	Gymea Lily	2.0 x 2.0	16
GPP	*Grevillea* 'Pink Pearl'	Pink Pearl Grevillea	1.0 x 1.0	7
MCT	*Melaleuca* 'Claret Tops'	Dwarf Honey Myrtle	0.8 x 1.0	43
Mp	*Murraya paniculata*	Orange Jasmine	3.0 x 2.0	56
PX	*Philodendron* 'Xanadu'	Dwarf Philodendron	0.6 x 0.6	88
ROP	*Rhaphiolepis indica* 'Oriental Pearl'	Indian Hawthorn	1.0 x 1.0	75
RSM	*Rhaphiolepis indica* 'Snow Maiden'	Indian Hawthorn	0.8 x 0.8	19
SSN	*Syzygium australe* 'Straight and Narrow'	Straight & Narrow Lilly Pilly	5.0 x 1.5	47
WBG	*Westringia fruticosa* 'Blue Gem'	Coastal Rosemary	0.8 x 0.8	52
WfN	*Westringia fruticosa* 'Naringa'	Coastal Rosemary	1.0 x 1.6	36
WGB	*Westringia fruticosa* 'Grey Box'	Coastal Rosemary	0.5 x 0.5	30
GRASSES / GROUNDCOVERS / TRAILERS				
Ac	*Arthopodium cirratum*	Renga Lily	0.6 x 0.6	87
Cg	*Carpobrotus glaucescens*	Pig Face	0.2 x 1.0	92
Das	*Doodia aspera*	Rasp Fern	0.3 x 0.4	21
DB	*Dianella* 'Breeze'	Breeze Flax Lily	0.7 x 0.6	277
DLJ	*Dianella* 'Little Jess'	Flax Lily	0.4 x 0.4	180
Dr	*Dichondra repens*	Kidney Weed	0.1 x 1.0	66
GP	*Grevillea* 'Poorinda Royal Mantle'	Grevillea	0.1 x 3.0	183
Gt	*Gazania tormentosa*	Silver Gazania	0.2 x 0.5	6
HvM	*Hardenbergia violacea* 'Meema'	Hardenbergia Meema	0.4 x 2.0	131
LEG	*Liriope* 'Evergreen Giant'	Giant Liriope	0.6 x 0.6	37
Lm	*Liriope muscari*	Liriope	0.4 x 0.4	473
LT	*Lomandra* 'Tanika'	Lomandra Tanika	0.5 x 0.5	222
Md	*Microsorum diversifolium*	Kangaroo Fern	0.3 x 0.6	18
MY	*Myoporum parvifolium* 'Yareena'	Creeping boobialla	0.1 x 1.0	123
Oj	*Ophiopogon japonicus*	Dwarf Lilyturf	0.2 x 0.3	54
PaN	*Pennisetum alopercuroides* 'Nafray'	Nafray Pennisetum	0.6 x 0.6	7
PML	*Plectranthus hybrida* 'Mona Lavender'	Mona Lavender	0.7 x 0.7	3
SAS	*Scaevola aemula* 'Aussie Salute'	Fan Flower	0.5 x 2.0	12
Vh	*Viola hederacea*	Native Violet	0.1 x 0.3	72
WfM	*Westringia fruticosa* 'Mundi'	Coastal Rosemary	0.5 x 1.5	49

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Homes NSW

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Homes NSW

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Landscape Architects

DEVELOPMENT APPLICATION

Drawing Name
Specification Notes &
Plant Schedule

Scale n/a

Job Number	Drawing Number	Issue
SS23-5152	500	D

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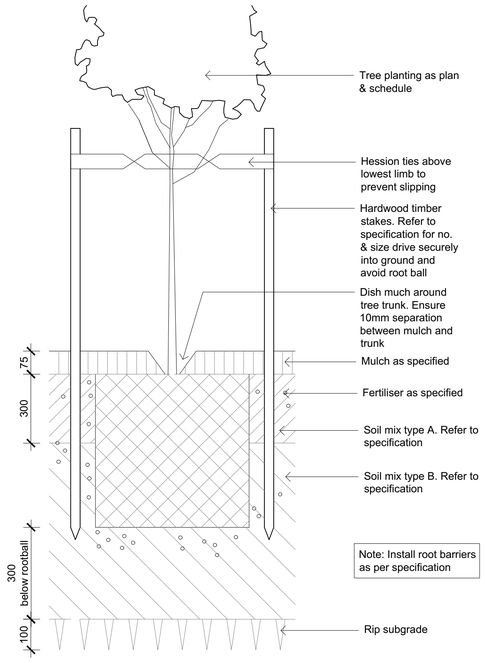
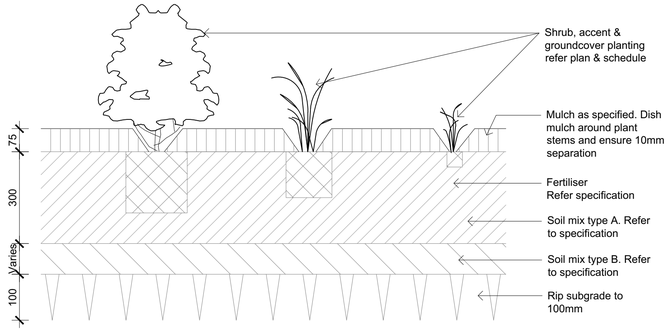


01 / 501 Tree Planting on Grade
1:10



02 / 501 Shrub, Accent & Groundcover Planting on Grade
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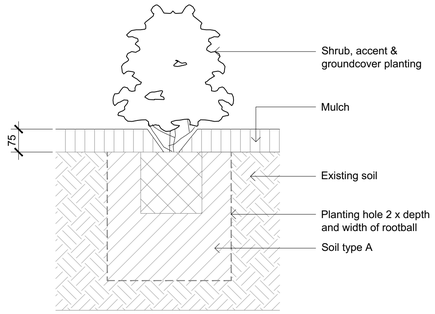

03 / 501 Pocket Planting in existing trees TPZ
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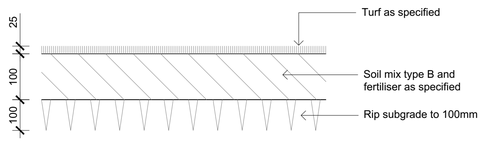

04 / 501 Turf on Grade
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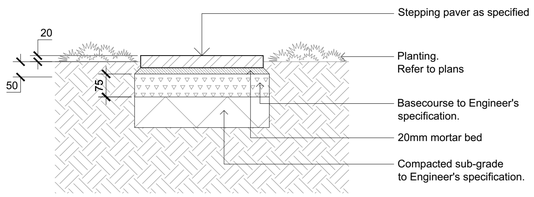
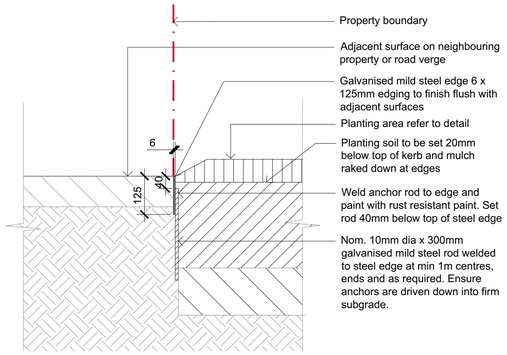


05 / 501 Stepping Paver
1:10



06 / 501 Steel Edge
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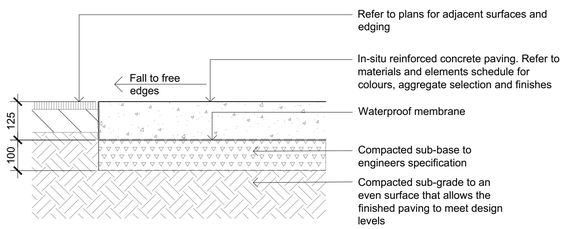

07 / 501 Concrete Paving
1:10

NOT FOR CONSTRUCTION

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Homes NSW

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Landscape Architects

DEVELOPMENT APPLICATION

Drawing Name
Landscape Details

Scale as shown @ A1

Job Number	Drawing Number	Issue
SS23-5152	501	B

H&H Consulting Engineers Pty Ltd *(trading as Henry & Hymas)*
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Homes NSW

CIVIL ENGINEERING REPORT

RESIDENTIAL UNIT DEVELOPMENT

17-27 HARDWICKE STREET, RIVERWOOD NSW

Revision 2.0

JUNE 2024

Our Ref No. 22T46

henry&hymas

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Project verification

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Preface

Henry & Hymas has been engaged by NSW Government Land & Housing Corporation to prepare this Civil Engineering Report (The Report) to satisfy civil engineering matters in support of the Development Approval for the proposed Residential Development at 17-27 Hardwicke Street, Riverwood.

The existing site comprises of six residential lots. It is proposed to demolish all the existing residential buildings and develop into a new three-level apartment building with on-site parking, pedestrian footpaths, and landscaped areas.

This Report aims to provide a summary of key civil engineering design elements of the proposed Development Application:

- General site locality, topography and existing characteristics;
- The proposed site works – earthworks and site stability;
- Stormwater management;
- Sediment and Erosion.

This Report has been prepared in conjunction with a set of Civil Engineering Drawings which show the general proposed civil and stormwater design for the development. The drawings are available for review in Appendix A of this Report.

The following principles have been adopted as part of the design process:

- Consideration of design intent in relation to functionality, expectations and requirements of the end user.
- Compliance with relevant Council and authority standards and policies.
- Design coordination with the project team.
- A design philosophy sympathetic to the site constraints, environment, terrain, and landform.
- Retention of existing infrastructure where suitable.

The civil and stormwater engineering component of the aforementioned project has been designed in accordance with the following Council codes and policies:

- Georges River Development Control Plan (DCP) 2021.
- Georges River Council – Stormwater Management Policy, April 2021.

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1. Site overview and Proposed Development

The subject development site is located at 17-27 Hardwicke Street, Riverwood in the Georges River Council Local Government Area (LGA) and covers an area of approximately 3658m^2. The site is enclosed by Hardwicke Street to the north, and surrounded by existing dwelling houses along the western, eastern and southern boundary lines and further bounded by Hedley Street to the south. Vehicular access to the on-site car park can be achieved via the vehicle crossing and driveway off Hardwicke Street along the eastern site boundary. Pedestrians can access the building via the footpaths and ramps off Hardwicke Street. Refer to Figure 1 below for the locality plan.

Figure 1: Locality plan (Google Maps)

A review of the survey prepared for the subject site shows the site generally falls in an south-westerly direction towards the existing residential lot adjacent to the south-western corner of the site at an average grade of 4.4%. A copy of the feature survey for the development is included in Appendix B of this report. A reduced size image is included below in Figure 2.

The proposed development comprises a three-story residential apartment building with on-grade parking spaces, pedestrian footpaths, and landscaped areas.

An architectural concept has been prepared for the development by Custance Associates Australia. Architectural concept drawings can be found in Appendix C of this report, and excerpt of the site plan is shown below in Figure 3.

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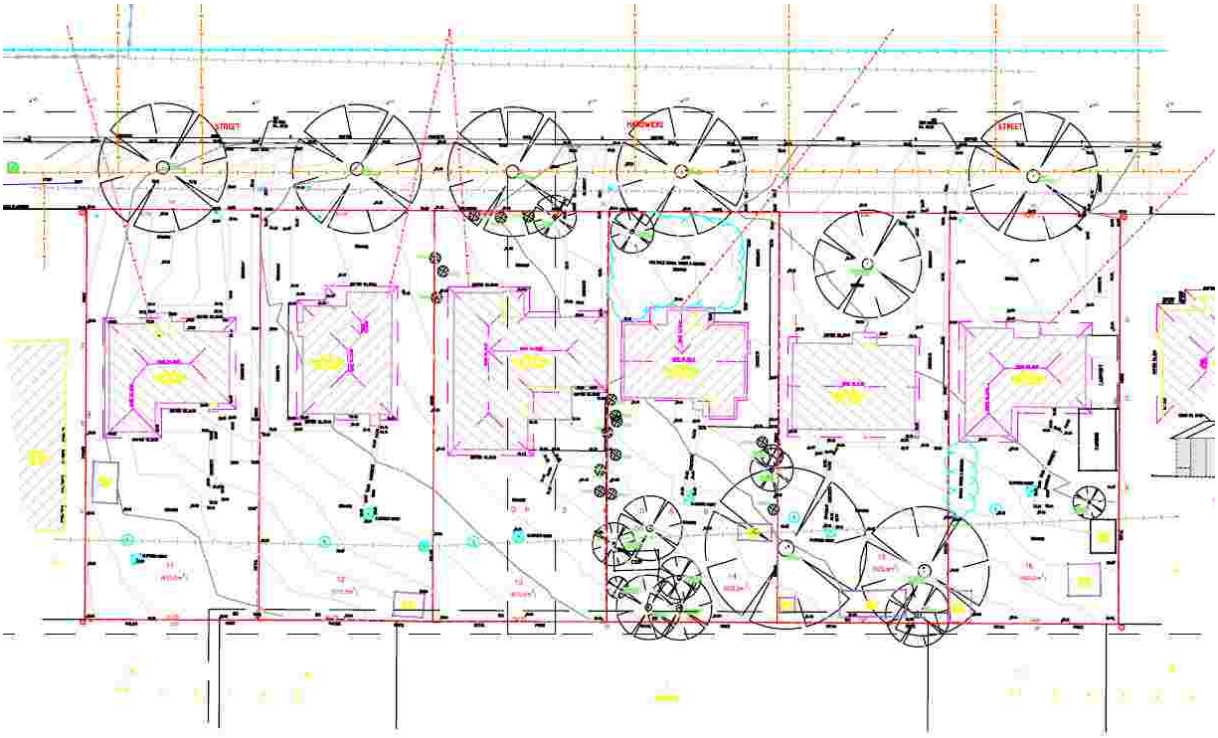

Figure 2: Feature Survey – Northon Survey Partners

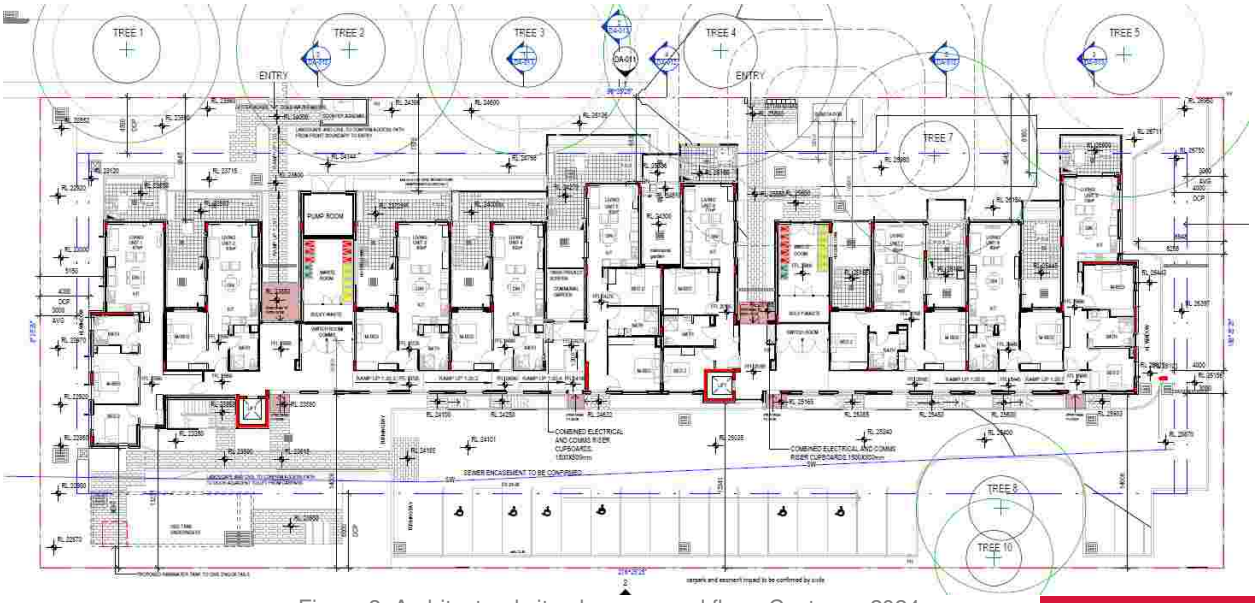

Figure 3: Architectural site plan – ground floor. Custance 2024

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2. Site Works

2.1 Bulk Earthworks

Cut and fill earthworks are required to achieve the grades and levels required to construct the proposed apartment building and the associated pedestrian access paths, driveway and car park. The cut and fill earthworks calculations have been undertaken for the overall site. The cut and fill quantities for the site result in a site spoil of material in the order of 969m^3. The distribution of cut and fill throughout the site is shown on civil engineering drawings 22T46_DA_BE01, Appendix A. A smaller-scale figure is shown below, Figure 4. Green represents filling and red represents cutting.

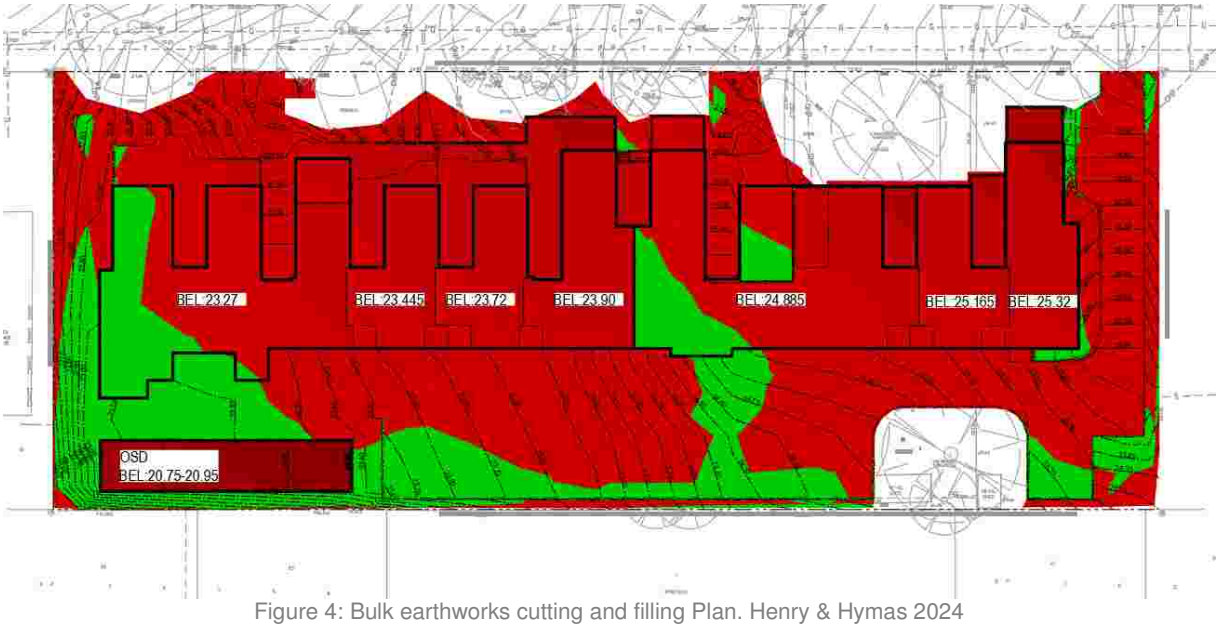

Figure 4: Bulk earthworks cutting and filling Plan. Henry & Hymas 2024

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2.2 Site Stability and Retaining Walls

Earthworks batters are provided wherever possible as part of the grading scheme for the development. Earthworks batters will be provided at maximum slopes of 1 in 2 as per geotechnical advice by Section 5.2 of the Geotechnical Report prepared STS Geotechnics dated February 2023, and where short-term construction batters at maximum slopes of 1 in 1 are implemented, these will be protected from erosion by appropriately installed sediment and erosion control measures.

Whilst earthworks batters will be provided wherever possible, retaining walls will be required in some instances where there are significant level changes typically narrow interfaces between existing and proposed levels or fixed site constraints such as Tree Protection Zones (TPZs). The locations and heights of these retaining walls are shown on the engineering drawings located in Appendix A. Retaining walls are required to form compliant grading for the proposed access road, reinforced core-filled blockwork walls are proposed to provide a 'maintenance free' retaining solution for all retaining elements.

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3. Stormwater Management

3.1 Existing System

The site generally falls in a south-westerly direction towards the southern site boundary, with the exception of a portion of the site near the north-western corner of the site which fall towards the north-western corner of the site. Based on the existing topography of the site, the stormwater catchment plan under the pre-development scenario can be summarised in Figure 4 below. The red hatch represents the area naturally draining to Hardwicke Street and in the order of 475m^2. The area shown in green hatch (3183m^2) drains to the neighboring sites to the south of the subject development site.

Figure 4: Pre-development stormwater catchment plan. Henry and Hymas 2024

It should be noted that an existing easement for drainage is located along the southern site boundary and extends further towards the south (towards Hedley Street). However, there is no stormwater pipe located within this easement. It is understood under the current scenario that stormwater collected by roof drainage systems is discharged to absorption pits or at ground. Run-off generated by smaller structure or impervious surfaces drains overland towards the southern boundary.

3.2 Proposed Stormwater System

The proposed stormwater management system has been designed to reduce the overall impact of the development on the existing onsite and surrounding stormwater systems and flow regime. The proposed stormwater management system responds to the architectural layout and incorporates the natural topography and site constraints to produce a layout that meets best industry practices and water quality and quantity objectives.

The stormwater management system for the proposed development has been designed to collect all concentrated flows from the proposed impervious areas as well as stormwater runoff generated by pervious areas such as landscaping and earthworks batters. In the event of a total system blockage/failure, site grading is such that overland flow will be directed away from buildings with no impact on habitable areas.

The proposed stormwater system for the development has been designed in accordance and in consideration of the following:

- Institution of Engineers, Australia publication "Australian Rainfall and Runoff" (1987 Edition), Volumes 1 and 2 (AR&R).
- AS 3500.3: National Plumbing and Drainage Code Part 3 – Stormwater Drainage.
- Georges River Council Stormwater Management Policy 2021

Another aspect of the stormwater system is to ensure that the design considers water sensitive urban design (WSUD) objectives. The stormwater network has been designed such that it incorporates proprietary Stormwater Quality Improvement Devices (SQIDs) such as Ocean Protect Ocean Guards and Stormfilters as a means of treating stormwater before it leaves the site to ensure there is no adverse impact on the downstream drainage system, Refer Chapter 3.4 and 3.4 for additional details.

As previously noted, the existing drainage easement to the rear (southern boundary) does not contain a stormwater pipe. It should also be noted that Hedley Street itself does not contain in-ground stormwater system so providing a new pipe in the existing easement would be of no benefit. In ground drainage is located within Hardwicke Street. The location of the existing in-ground stormwater system in Hardwicke Street is noted on the feature survey and civil engineering drawings included in Appendix B and A respectively. The post developed site catchment is proposed to be discharged to the existing in-ground stormwater system in Hardwick Street. To facilitate the connection a short section of inground stormwater is proposed to be constructed from the property boundary to the nearest pit On-site Stormwater Detention (OSD) system is proposed to be provided to maintain the flow rate of the stormwater discharging to Hardwicke Street in the pre-development scenario. Further details of the OSD system will be discussed in Section 3.2 below. Refer to Figure 5 below for the stormwater catchment plan under the post-development scenario.

It is understood through discussions with Council Engineers that existing residences in Hardwicke Street (number 7 and 9) are currently affected by overland flow/flooding. As such, it is critical to ensure post-developed flow directed to Hardwick Street are equal or less to pre-developed flows. It should be noted that the additional of the piped connection (and new kerb inlet pit in Hardwicke Street) would be of benefit by increasing the inlet capacity of the inground system (reduction in kerb gutter flows) in Hardwicke Street).

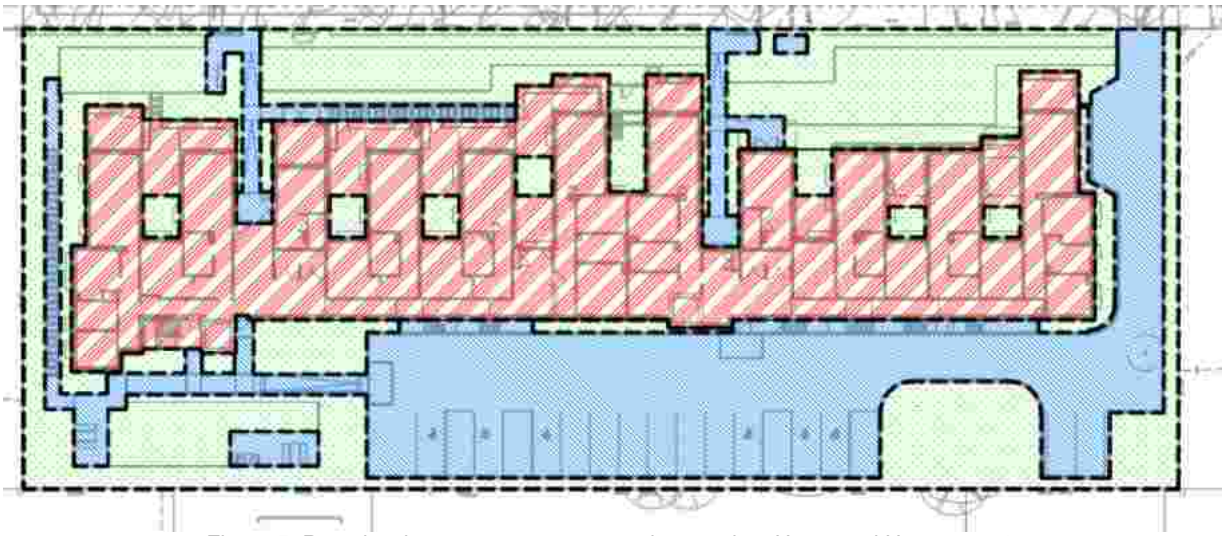

Figure 5: Post-development stormwater catchment plan. Henry and Hymas 2024

3.3 Proposed Stormwater System - On-site Stormwater Detention (OSD)

On-site Stormwater Detention (OSD) will be provided to control the peak stormwater flows from the site by temporarily detaining stormwater from major storms in an underground tank which is then discharged to the downstream drainage system at a controlled rate. In accordance with Georges River Council Stormwater Policy, OSD will be provided to control stormwater runoff from the subject development site such that, for 5-to-100-year ARI events, peak stormwater discharges from the site do not exceed pre-development stormwater discharges.

As mentioned above, the majority of the existing site currently discharges to the southern neighboring sites, only a small portion of the site that is near the north-western corner discharges to Hardwicke Street in the predeveloped scenario.

As per Council Stormwater Management Policy 2021, On-site Stormwater Detention (OSD) system will be required for the site. The required OSD storage requirements and permissible discharge are to be calculated in accordance with the following table.

Site's Impervious Area Percentage upon completion of development (as calculated in accordance with Appendix A7) **	**Maximum Permissible Discharge (PSD) L/s/ha**	**Minimum Site Storage Requirements (SSR) m^3/ha**
Less than 55%	OSD not required	
55% to less than 65%	182	206
65% to less than 75%	166	240
75% to less than 85%	152	270
85% or higher	136	295

Table 1: Maximum Permissible Discharge (PSD) and Minimum Site Storage Requirements (SSR)

The site's total impervious area percentage is approximately 65.1% which corresponds to a maximum PSD of 166L/s/ha and minimum SSR of 240m^3/ha. The total site area of 3,658m^2 (0.3658ha) results in a site-specific maximum PSD of 60.72L/s and minimum SSR of 87.79m^3.

However, given that the site area discharging to Hardwicke Street increases under the post-development scenario, the OSD is designed to ensure that the post-developed flow to Hardwicke Street are reduced to the pre-developed flow to the street for the 100, 20, 10 and 5 year ARI storm events. The flows discharging to the southern neighboring sites are expected to be significantly reduced post development as it is proposed to drain the entire site towards the north, with the exception of a small portion which is in the order of 65m^2 and is located at the south-western corner. This small area bypasses the OSD system because it consists of batter down to the boundary levels and is impractical to be drained to the OSD at a higher level. Since this area is significantly smaller than the area draining to the southern neighboring properties under the existing condition, it is expected that the stormwater runoff from this area will infiltrate into the ground without adversely affecting the neighboring properties and is a significant improvement (decrease in run-off) that the current scenario.

The OSD system was designed and the site discharge flows were modelled by using DRAINS modelling software. Refer to the Table 2 below for a summary of the pre and post developed flows for the relevant storm events.

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Detailed drawings and specifications of the proposed below ground OSD tank can be found on the civil engineering drawings 22T4617_DA_C202 included in Appendix A.

The OSD was designed using DRAINS modelling software under design and analysis methods recommend by 2019 edition of Australian Rainfall and Runoff and Council Stormwter policy. Based on the modelling results, the required storage volume for the OSD was calculated to be 160m^3. Table 2 below summarises the site discharge flow rates under the pre and post-development conditions for 5 to 100 year ARI events.

ARI	Pre-Development (L/s) North	Pre-Development (L/s) South	Pre-Development (L/s) Total	Post-Development (L/s) From OSD Directed North	Post-Development (L/s) Bypass OSD Overland South	Post-Development (L/s) Total
5	13	59	72	12	0	12
10	16	73	89	13	0	13
20	17	85	102	14	0	14
100	20	115	135	16	0	16

Table 2: Site discharge flow rates for OSD sizing - Pre and post-development conditions

By providing OSD, and from review of Table 1 above summarising the OSD sizing, it is evident that:

- The post-development flows directed to the northwestern corner of the site are less than pre-development flow for 5-to-100-year ARI storm events.
- The post-development flows directed to the southwestern corner of the site are less than pre-development flow for 5-to-100-year ARI storm events.
- The overall post-development flows discharging from the site are less than pre-development flow for 5-to-100-year ARI storm events.

The OSD will be provided in the form of a proposed below ground tank under the Communal Open Space (COS) near the south-western corner of the site with a volume of 160m^3 and a 77mm orifice. The post-developed flow to Hardwicke Street has been restricted to 15L/S (1 in 100 Year ARI storm event) to matches the pre-developed flow to the street by incorporating the OSD system.

It is noted that the proposed design:

1. Exceeds Council's SSR requirements for OSD.
2. Reduced total site discharge rate in the post developed scenario.
3. Matches post developed flows in the 5-year ARI storm event and reduced post developed flows in all other storms directed to Hardwicke Street. It is understood a reduction in post developed flows in the 10-, 20- and 100-Year flow rates would contribute in reducing overland flow in Hardwicke Street to the west of the development.
4. Significantly reduces total post developed flow rates. Similarly with point 3, it is understood this would reduce downstream overland flow/flooding.
5. Significantly reduces total post developed flow rates for the southern catchments. Similarly with point 3, it is understood this would reduce downstream overland flow/flooding.

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3.4 Stormwater Quality

Pollution and contamination dislodged or inherent to and in stormwater and stormwater run-off from urban developments have the potential to damage the ecology and health of local creeks and waterways. As such stormwater quality improvement devices (SQIDs) that aim to minimise pollution during construction and operation of the development have been incorporated into the overall stormwater management design. Further details of the SQIDs that have been proposed for the subject development can be found in Section 3.5: Stormwater Quality Improvement Devices.

Stormwater quality improvement devices (SQIDs) have been sized and measured according to the following guidelines:

- Georges River Council Stormwater Management Policy 2021

The performance of the stormwater quality improvement devices (SQIDs) in mitigating pollution from urban development can be assessed by simulating a post developed pollutant reduction rate for the stormwater system. In order to satisfy the water quality treatment targets in Council's policy, development subject to water quality requirements must achieve a minimum percentage reduction of the post developed average annual loads of pollutants in accordance with the Table e below:

Pollutant	% Post development pollutant reduction targets
Gross Pollutants (GP)	90
Total Suspended Solids (TSS)	80
Total Phosphorous (TP)	40
Total Nitrogen (TN)	40

Table e: Post development pollutant reduction targets

To better determine the conceptual design of the water quality treatment trains and to ensure the treatment trains satisfy the reduction parameters outlined in Table 3, a Model for Urban Stormwater Improvement Conceptualisation (MUSIC) was developed. A schematic of the MUSIC model can be viewed below in Figure 6

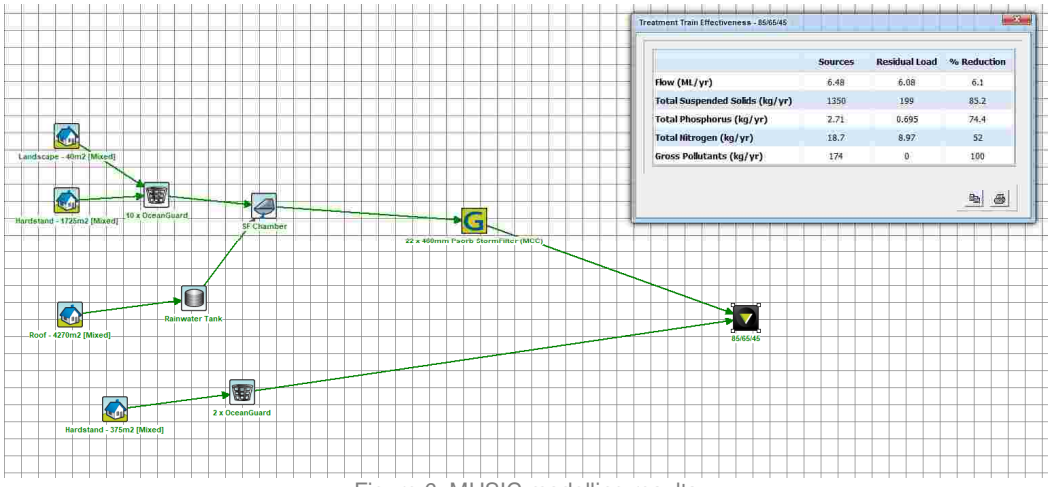

Figure 6: MUSIC modelling results

The resultant reduction in post developed pollutants calculated by the simulation is presented in Table 4 below. With the implementation of the following stormwater quality improvement (SQIDs) devices, the resultant post developed pollutant loads have been reduced below the reduction target for all targeted pollutants.

Pollutant	% Post Development Reduction Target	Resultant % Post Development
Litter / Gross pollutants	90	100
Total Suspended Solids	80	85.2
Total Phosphorous	40	74.4
Total Nitrogen	40	52.0

Table 4: Post development pollutant reduction targets

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3.5 Stormwater quality improvement devices (SQIDs)

Primary Treatment - Pit Baskets

As part of an effective treatment train for the site system, selected areas of the development or targeted removal zones (TRZs), will be pre-treated via passive screening pit baskets. To form a site-wide primary treatment system the TRZ for the development encompasses all external areas not beneath roofs and exposed to surface run-off. Target zones, mostly comprising of highly trafficked and hardstand areas that have suitable hydraulics to drain through the basket, are subject to higher instances of pollution and litter and stand most to benefit from effective pre-treatment and have been modelled in MUSIC.

The pit basket proposed to be used is the “200-micron mesh Oceanguard” pit basket filter by Ocean Protect. Pit baskets to be fitted with the “Oceanguard” bit basket are noted on drawing 22T46_DA_C200. A detailed of the pit baskets is provide on civil engineering drawings 22T46_DA_C201.

The maintenance of the pit baskets is important to ensure the effective removal of pollutants. As such, a maintenance schedule will be required to be detailed at the Construction Certificate stage. For this submission we have provided the generic maintenance schedule as prepared by Ocean Protect, refer to Appendix D.

Secondary treatment – Filter cartridges

To meet the water quality requirements, and to achieve a successful implement a treatment train approach, a media filtration chamber is located at the end of the major stormwater drainage line. The media filtration (PSorb Stormfilter cartridges by Ocean Protect) targets the removal of gross pollutants, suspended solids, targeted nutrients and hydrocarbons within the stormwater run-off generated by the developed site areas and is proposed to be used in this development.

Media filtration will be incorporated into the stormwater system by the addition of an offline Stormfilter chamber housed with the OSD tank. The Stormfilter chamber is proposed to house three (3) x 690mm PSorb filter cartridges. Internal site stormwater will be directed to the filter chamber as shown on the civil engineering plan 22T46_DA_C202.

The maintenance of the filter cartridges is important to ensure the effective removal of pollutants. As such, a maintenance schedule will be required to be detailed at the Construction Certificate stage. For this submission we have provided the generic maintenance schedule as prepared by Ocean Protect, refer Appendix D.

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4. Sediment and Erosion Controls

During construction, appropriate sediment and erosion control measures need to be implemented to ensure that downstream receiving waters are not adversely impacted as a result of construction activities. The engineering drawings 22T46_DA_SE01-SE02 by Henry & Hymas outline appropriately designed and detailed measures to mitigate against this risk. These measures have been designed in accordance with the requirements of the publication "Landcom – Managing Urban Stormwater - Soils and Construction, Volume 1, 4th Edition March 2004" and Georges River Council's requirements.

The below table is provided to indicate all factors accounted for in the design of the sediment basin.

Constraint	Value	(Source)*
Rainfall Erosivity (R-factor)	2800	Appendix B - Map 10
Length/Slope Gradient Factor, LS	0.97	Appendix A - Table A1
Soil Erodibility (K-factor)	0.038	Appendix C –Table 19
Erosion Control Practice Factor (P-Factor)	1.3	Appendix A - Table A2
Cover Factor (C-Factor)	1.0 (During earthworks)	Appendix A - Figure A5
Calculated Soil Loss, A (RUSLE equation)	134.2	A = R K LS P C
Soil Hydrologic Group	C	Appendix C Table 19
75th Percentile 5-day Rainfall Event	19.4mm (Bankstown)	Table 6.3a
Volumetric Runoff Coefficient, Cv	0.39	(App. F Table F2)
Catchment Area, A	0.3658 ha	

3. *Table 3.1: Sediment Basin design parameters*

Settling Zone volumes and Sediment Zone volumes were calculated using the below calculations

Volume	Formula
Settling Zone Volume	10 Cv A R
Sediment Zone Volume	0.17A(R K LS P C)/1.3 (if <50% of settling zone, nominate 50% of settling zone)
Total Sediment Basin Volume Required :	Settling Zone + Sediment Zone

4. *Table 3.2: Sediment Basin calculations*

5.

Below is a table indicating the total sediment basin volumes required for the site.

	Area (ha)	Settling zone (m^3)	Sediment zone (m^3)	Total Sediment Basin Vol. (m^3)
Subject Site	0.3658	27.7	17.5	45.2

6. Table 3.3: Sediment Basin volumes

5. Conclusion

In general, the engineering objectives of civil design and stormwater management elements mentioned above are to create a system that is based on the architectural layout and incorporates the natural topography and site constraints to produce a cost-effective and appropriate drainage system that meets best industry practices and governing water quality and quantity objectives.

We trust the information provided in this report satisfies matters relating to bulk earthworks, site stability and stormwater matters such as surrounding drainage, On-site Stormwater Detention, and water quality.

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6. Appendices

Appendix A: Civil Engineering Drawings by Henry & Hymas Engineers

Appendix B: Site Survey

Appendix C: Architectural concept drawings – Site plan

Appendix D: Maintenance Manual

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PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW
CIVIL WORKS

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LOCALITY SKETCH

SCALE: N.T.S.

DRAWING SCHEDULE	
22T46_DA_C000	COVER SHEET, DRAWINGS SCHEDULE AND LOCALITY SKETCH
22T46_DA_C010	NOTES
22T46_DA_C100	GENERAL ARRANGEMENT PLAN
22T46_DA_C101	DETAIL PLAN - SHEET 1 OF 2
22T46_DA_C102	DETAIL PLAN - SHEET 2 OF 2
22T46_DA_C110	TYPICAL KERB AND CONCRETE DETAILS
22T46_DA_C160	STANDARD DRAWINGS - CROSSOVER, FOOTPATH
22T46_DA_C200	STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE
22T46_DA_C201	STORMWATER MISCELLANEOUS DETAILS
22T46_DA_C202	OSD TANK PLAN DETAILS AND SECTIONS
22T46_DA_C250	PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN
22T46_DA_C251	POST-DEVELOPMENT STORMWATER CATCHMENT PLAN
22T46_DA_C310	RETAINING WALL DETAILS
22T46_DA_SE01	SEDIMENT AND EROSION CONTROL PLAN
22T46_DA_SE02	SEDIMENT AND EROSION CONTROL DETAILS
22T46_DA_EX01	EXTERNAL WORKS PLAN - SHEET 1 OF 4
22T46_DA_EX02	EXTERNAL WORKS PLAN - SHEET 2 OF 4
22T46_DA_EX03	EXTERNAL WORKS PLAN - SHEET 3 OF 4
22T46_DA_EX04	EXTERNAL WORKS PLAN - SHEET 4 OF 4
22T46_DA_BE01	BULK EARTHWORKS CUT AND FILL PLAN
22T46_DA_BE02	BULK EARTHWORKS CUTAND FILL DEPTH PLAN
22T46_DA_EX10	EXTERNAL FOOTPATH LONG SECTION
22T46_DA_EX11	EXTERNAL FOOTPATH CROSS SECTIONS
22T46_DA_EX12	EXTERNAL FOOTPATH RAMP SECTIONS

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NW	06.06.2024
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024
01	ISSUED AS CONCEPT	SC	NW	15.12.2023

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
COVER SHEET, DRAWING SCHEDULE AND LOCALITY SKETCH

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	N.T.S.

Drawing number: 22T46_DA_C000
Revision: 03

GENERAL NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH GEORGES RIVER COUNCIL SPECIFICATION. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING THE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS AND MARRY IN A 'WORKMANLIKE' MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SERVICE DIAGRAMS. H & H CONSULTING ENGINEERS PTY. LTD CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSES TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1:200) FALL TO OUTLETS.
8. ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, EROSION AND SEDIMENTATION CONTROL PLAN AND CAMDEN COUNCIL'S REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

SURVEY NOTES

1. THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE SURVEYOR SPECIFIED IN THE TITLE BLOCK.
2. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. HENRY AND HYMAS PTY. LTD. DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
3. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT HENRY AND HYMAS PTY. LTD. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM ORIGINAL SURVEY DOCUMENTS.

EXISTING SERVICES & FEATURES

- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA OR AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
- THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF HIS PROGRAM FOR THE RELOCATION/ CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN SUPPLY TO EXISTING BUILDING REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED, THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- EXISTING SERVICES, BUILDINGS, EXTERNAL STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE EXISTING FEATURES PRIOR TO ANY DEMOLITION WORKS.
- EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE A 'DIAL BEFORE YOU DIG' SEARCH AND TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

SITEWORKS NOTES

1. DATUM : A.H.D.
2. ORIGIN OF LEVELS : REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
3. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.
5. EXISTING SERVICES UNLESS SHOWN ON THE SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
6. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS ACHIEVED.
7. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
8. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION IS TO BE UNDERTAKEN OVER TELSTRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
9. CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.
10. MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
11. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS
12. OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING
13. TO DEVELOPMENT AT THE SITE.
14. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
15. ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.
16. GRADES TO PAVEMENTS TO BE AS IMPLIED BY RL'S ON PLAN . GRADE EVENLY BETWEEN NOMINATED RL'S. AREAS EXHIBITING PONDING GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED UNLESS IN A DESIGNATED SAG POINT.
17. ALL COVERS AND GRATES ETC TO EXISTING SERVICE UTILITIES ARE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE.

COMPACTION REQUIREMENTS

1. PREPARATION FOR PAVEMENT: CLEAR SITE, STRIP TOP-SOIL, CUT AND FILL AND PREPARATIONS OF SUB-GRADE SHALL BE AS DESCRIBED IN "SUBGRADE PREPARATION - SITEWORKS".
2. SUB-GRADE SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1., TOP 300MM TO 100% SDD.
3. FOR A SAND SUBGRADE, COMPACTION SHALL BE TO MIN.90% DENSITY INDEX AS PER AS1289 E6.1
4. LOWER BASE COURSE SHALL BE CONSTRUCTED FROM CRUSHED ROCK COMPACTED TO 98% MODIFIED MAXIMUM DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1. OF THICKNESS NOTED ON DRAWINGS.
5. BASE COURSE SHALL BE CONSTRUCTED FROM FINE CRUSHED ROCK COMPACTED TO 98% MODIFIED MAXIMUM DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1 OF THICKNESS NOTED ON DRAWINGS.
6. WEARING SURFACE SHALL BE ASPHALTIC CONCRETE TO STANDARD SPECIFICATION
7. TESTING OF THE SUBGRADE AND PAVEMENT LAYERS SHALL BE CARRIED OUT BY APPROVED N.A.T.A. REGISTERED LABORATORY

BULK EARTHWORKS/ SUBGRADE PREPARATION - SITEWORKS.

1. REFER TO GEOTECHNICAL INVESTIGATION REPORT OR INFORMATION RELATING TO EXISTING GROUND CONDITIONS, SITE TREATMENT AND SUPERVISION. REPORT BY STS GEOTECHNICS REFERENCE 23/0234.
2. THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM SURVEY AND AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.
3. HENRY AND HYMAS PTY LTD CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS, ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN ARISING FROM ANY CAUSE WHATSOEVER.
CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION.
FOR COMMENCEMENT OF WORKS ON SITE, SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.
4. ALL SERVICES ARE TO BE LOCATED AND CUT OFF PRIOR TO THE COMMENCEMENT OF EXCAVATION AND FILLING OPERATIONS.
5. ALL TOP SOIL, ORGANIC MATTER AND FILL MATERIAL SHALL BE REMOVED FROM ALL AREAS UNDER BUILDING AND CARPARK LOCATIONS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER. AREAS TO BE FULLY STRIPPED OF EXISTING FILL AND DARK BROWN BLACK UPPER ORGANIC ALLUVIUM, OR OBVIOUS UNSUITABLE MATERIAL.
6. EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.
7. THE EXPOSED SUBGRADE AFTER STRIPPING AND/ OR EXCAVATION IS TO BE PROOF ROLLED TO GEOTECHNICAL ENGINEERS SPECIFICATIONS UNDER THE SUPERVISION OF AN EXPERIENCED GEOTECHNICAL ENGINEER OR AN EXPERIENCED CIVIL ENGINEER. ANY AREAS ON THE SUBGRADE EXHIBITING EXCESSIVE DEFLECTION / MOVEMENT UNDER ROLLER TO BE EXCAVATED TO A MIN. DEPTH OF 0.5m AND REPLACED WITH APPROVED GRANULAR MATERIAL COMPACTED IN 250mm LOOSE LAYERS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
8. ENGINEERED FILL FOR REPLACEMENT OF SOFT OR HEAVING AREAS OR FOR BULK FILLING TO COMPRISE ESSENTIALLY OF GRANULAR MATERIALS (EG. EXCAVATED SHALE), WITH A PARTICLE SIZE NOT GREATER THAN 75mm DIAMETER. ENGINEERED FILL TO BE PLACED IN LAYERS NOT EXCEEDING 250mm LOOSE THICKNESS AND COMPACTED TO 100% OF STANDARD MAXIMUM DRY DENSITY (SMDD) WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT (OMC).
9. IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
10. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING.
FREE FORM ORGANIC AND PERISHABLE MATTER
MAXIMUM PARTICLE SIZE = 75mm
MAXIMUM PLASTICITY INDEX = 15%
MIN CBR 5%

ALL IMPORTED FILL MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FROM GEOTECH REPORT.
11. ALL EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECH REPORT.
12. IN-SITU DENSITY TESTING AND SUPERVISION MUST BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINTED WITHIN GEOTECH REPORT.

SUBGRADE PREPARATION - SITEWORKS.

1. THE EXISTING SURFACE IS TO BE STRIPPED OF ANY PAVEMENTS, TOPSOIL OR OBVIOUS UNSUITABLE MATERIAL.
2. EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.
3. THE EXPOSED SUBGRADE AFTER STRIPPING AND/ OR EXCAVATION IS TO BE PROOF ROLLED USING NOT FEWER THAN 5 PASSES OF A MINIMUM 8 TONNE DEAD WEIGHT STEEL SMOOTH-DRUM ROLLER UNDER THE SUPERVISION OF AN EXPERIENCED GEOTECHNICAL ENGINEER OR AN EXPERIENCED CIVIL ENGINEER. ANY AREAS ON THE SUBGRADE EXHIBITING EXCESSIVE DEFLECTION / MOVEMENT UNDER ROLLER TO BE EXCAVATED TO A MIN. DEPTH OF 0.5m AND REPLACED WITH APPROVED GRANULAR MATERIAL COMPACTED IN 250mm LOOSE LAYERS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
4. ENGINEERED FILL FOR REPLACEMENT OF SOFT OR HEAVING AREAS OR FOR BULK FILLING TO COMPRISE ESSENTIALLY OF GRANULAR MATERIALS (EG. EXCAVATED SHALE), WITH A PARTICLE SIZE NOT GREATER THAN 75mm DIAMETER. ENGINEEERED FILL TO BE PLACED IN LAYERS NOT EXCEEDING 250mm LOOSE THICKNESS AND COMPACTED TO BETWEEN 98% AND 102% OF STANDARD MAXIMUM DRY DENSITY (SMDD) WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT (OMC).
5. IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
6. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING.
FREE FORM ORGANIC AND PERISHABLE MATTER
MAXIMUM PARTICLE SIZE = 75mm
MAXIMUM PLASTICITY INDEX = 15%

FLEXIBLE PAVEMENT NOTES:

BASE, SUB BASE AND SELECT MATERIAL

1. GENERAL:
PAVEMENT "BASE" (I.E. THE HIGHEST COURSE OF THE PAVEMENT BELOW THE SURFACING) SHALL BE CONSTRUCTED OF FINE CRUSHED ROCK (EXCEPT CONCRETE PAVEMENT. WHERE THE CONCRETE IS THE BASE).
PAVEMENT "SUB-BASE" (I.E. THE INTERMEDIATE OR LOWER COURSE OF THE PAVEMENT BELOW THE BASE) SHALL BE CONSTRUCTED OF CRUSHED ROCK OR NATURAL GRAVELS.
PAVEMENT "SELECT MATERIAL LAYER" (I.E. THE LOWER COURSE OF THE PAVEMENT BELOW THE SUB-BASE) SHALL BE CONSTRUCTED OF CRUSHED ROCK, NATURAL GRAVELS OR SUITABLE SOILS. THE SUBGRADE SURFACE SHALL BE THE SURFACE THAT UNDERLIES EITHER:
- THE SELECT MATERIAL LAYER WHEN SELECT MATERIAL LAYER IS PRESENT, OR
- THE SUB-BASE WHEN SELECT MATERIAL LAYER IS ABSENT FROM THE PAVEMENT CONSTRUCTION, OR
- THE BASE WHEN BOTH SELECT MATERIAL LAYER AND SUB-BASE ARE ABSENT FROM THE PAVEMENT CONSTRUCTION

2. MATERIALS:
PRIOR TO THE DELIVERY OF ANY MATERIAL TO THE SITE, THE SOURCE OF ALL MATERIALS AND CERTIFICATES THAT THE MATERIAL SATISFIES THE SPECIFIED REQUIREMENTS SHALL BE PROVIDED FOR APPROVAL. ADDITIONALLY FOR EACH MATERIAL SOURCE, COMPLIANCE WITH THE APPROVED QUALITY ASSURANCE PROGRAM FOR INDIVIDUAL MATERIALS SHALL BE PROVIDED TO THE SUPERINTENDENT AS REQUIRED IN THE QUALITY SYSTEM REQUIREMENTS. TESTING OF PAVEMENT MATERIALS WILL NORMALLY BE PERFORMED ON SAMPLES TAKEN AT THE SOURCE PRIOR TO DELIVERY TO THE SITE AND IN THEIR FINAL CONDITIONS AFTER PLACEMENT AND COMPACTION IN THE PAVEMENT. HOWEVER, THE PROPERTIES SPECIFIED AND FINAL ACCEPTANCE ARE APPLICABLE TO THE MATERIALS IN THEIR FINAL CONDITION IN THE PAVEMENT. FINAL ACCEPTANCE WILL BE CONDITIONAL ON NO SIGNIFICANT CHANGE IN PROPERTIES DUE TO SEGREGATION OR CONTAMINATION DURING SUBSEQUENT PAVEMENT WORKS.

FINE CRUSHED ROCK BASE MATERIAL

FINE CRUSHED ROCK SHALL CONFORM TO THE REQUIREMENTS OF CLASS DGB20 MATERIAL AS SPECIFIED IN RMS SPECIFICATION 3051 AND SHALL BE HARD, DURABLE STONE FREE OF CLAY LUMPS, ORGANIC MATTER AND OBJECTIONABLE QUANTITIES OF DELETERIOUS SUBSTANCES. THE MATERIAL MAY BE CRUSHER RUN OR SCREENED AND RECOMBINED. ALL THE MATERIAL REQUIREMENTS APPLY BOTH PRIOR TO AND AFTER PLACEMENT IN THE PAVEMENT.

SUB-BASE MATERIALS

SUB-BASE MATERIALS SHALL BE CRUSHED ROCK SUB-BASE OR SUITABLE NATURAL GRAVELS AND CONFORM TO THE REQUIREMENTS OF CLASS DGS40 OR DGS20 OF RMS SPECIFICATION 3051. STONE SHALL BE HARD, DURABLE AND THE MATERIALS SHALL BE FREE OF CLAY LUMPS, ORGANIC MATTER AND OBJECTIONABLE QUANTITIES OF DELETERIOUS SUBSTANCES. ALL MATERIAL REQUIREMENTS WILL APPLY BOTH PRIOR TO AND AFTER PLACEMENT IN THE PAVEMENT.

KERBING NOTES:

INCLUDES ALL KERBS, GUTTERS, DISH DRAINS, CROSSING AND EDGES.

1. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSING TO BE CONSTRUCTED ON MINIMUM 75mm GRANULAR BASE COURSE COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
2. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILTER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATION IN KERBS.
3. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
4. BROAMED FINISHED TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
5. IN THE REPLACEMENT OF KERBS
EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASE COURSE AND SURFACE IS TO BE LAID 900mm WIDE TO MATCH EXISTING MATERIALS AND THICKNESS.
EXISTING ALLOTMENT DRAINAGE PIPE ARE TO BE BUILT INTO NEW KERB WITH A 100mm DIA HOLE.
EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

RIGID CONCRETE PAVEMENT NOTES

GENERAL:

1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600-2018 AND THE SPECIFICATION. KEEP A COPY OF THESE DOCUMENTS ON SITE.
2. VERIFY ALL SETTING OUT DIMENSIONS WITH THE ARCHITECT AND OR THE SURVEYOR.
3. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS.
4. IN CASE OF DOUBT - ASK.

CONCRETE:

1. PLACE CONCRETE OF THE FOLLOWING CHARACTERISTIC COMPRESSIVE STRENGTH F'C AS DEFINED IN AS3600-2018 OR RTA FORM 609. ADD WATER REDUCING ADMIXTURE EQUAL TO WRDA.

	AS3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
ALL KERBS, PITS ETC.	25	80	20
VEHICULAR PAVING	REFER TO CONCRETE PAVEMENT NOTES BELOW		

2. USE TYPE GP CEMENT IN ACCORDANCE WITH AS3972.
3. ALL CONCRETE SHALL BE SUBJECT TO PROJECT CONTROL SAMPLE AND TESTING TO AS3600-2018.
4. CONSOLIDATE BY VIBRATION. CURE SURFACES BY COVERING WITH PLASTIC AND KEEPING SURFACE MOIST FOR MIN 7 DAYS.

REINFORCEMENT:

1. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW.
- N. HOT ROLLED DEFORMED BAR. GRADE 500
- R. PLAIN ROUND BAR. GRADE 250
- SL OR RL HARD DRAWN WIRE FABRIC SQUARE OR RECTANGULAR

2. PROVIDE BAR SUPPORTS OR SPACERS TO GIVE THE FOLLOWING CONCRETE COVER TO ALL REINFORCEMENT UNLESS NOTED OTHERWISE.
- FOOTINGS: 75 BOTTOM. 65 TOP AND SIDES 40
- SLABS: 40 WHEN EXPOSED TO WEATHER.
- DRAINAGE STRUCTURES: 30 WHEN CAST IN FORMS BUT LATER EXPOSED TO WEATHER OR GROUND. 65 WHEN CAST DIRECTLY IN CONTACT WITH GROUND.

3. FOR ALL PITS LOCATED IN CONCRETE PROVIDE 2N16 TRIMMER BARS AROUND 1200mm LONG AROUND ALL CORNERS OF PITS UNLESS SHOWN OTHERWISE.

CONCRETE VEHICULAR PAVEMENT NOTES:

1. CONCRETE MIX PARAMETERS:
- MAXIMUM AGGREGATE SIZE 20mm
- FLEXURAL STRENGTH AT 28 DAYS = 3.5 MPa (F'c=32MPa)
- FLEXURAL STRENGTH AT 90 DAYS = 3.85 MPa
- MAXIMUM WATER / CEMENT RATIO =0.45
- MAXIMUM SHRINKAGE LIMIT = 600 MICROSTRAINS (AS1012.13) AFTER 8 WEEKS OF DRYING
- MINIMUM CEMENT CONTENT = 300kg/m3
- CEMENT TO BE TYPE GP (NORMAL CEMENT) TO AS 3972
- SLUMP = 50mm

2. SAWN JOINTS ARE TO BE CUT BETWEEN 2-4 HOURS AFTER CONCRETE POUR USING SOFF CUT SAW TO AVOID DAMAGING THE SURFACE DURING SAWCUT.
3. FOR EXPANSION JOINTS, PRIOR TO THE PLACEMENT OF CONCRETE IN THE ADJACENT SLAB, SELF EXPANDING CORK FILLER SHALL BE ADHERED TO THE ALREADY CAST AND CLEANED CONCRETE FACE USING AN APPROVED WATERPROOF ADHESIVE. ADHESIVE SHALL BE LIBERALLY APPLIED TO THE FULL FACE OF THE CONCRETE SLAB TO BE COVERED BY THE FILLER. AND ON THE FULL FACE OF THE FILLER TO BE ADHERED. THE BUILDER SHALL PROVIDE CONSTANT SUPERVISION OF CONCRETE POURS EXECUTED BY SUB-CONTRACTORS TO ENSURE:
- REINFORCEMENT DISPLACED OFF CHAIRS ARE REPLACED PRIOR TO CONCRETE PLACEMENT.
- NO SITE WATER IS ADDED TO CONCRETE OR CONCRETE IN WAITING TRUCKS. (REQUIRED SLUMP FOR PLACEMENT SHALL BE ACHIEVED USING SUPER PLASTICISER).
- ALL CONCRETE IS FULLY COMPACTED USING A POKER VIBRATOR.
- NO POURS ARE EXECUTED WHEN THE AMBIENT TEMPERATURE EQUALS OR EXCEEDS 35°C.
- POURS ARE PROTECTED FROM ANY HOT DRYING WINDS.

4. REFER TO COMPACTION NOTES FOR PREPARATION OF SUB-BASE AND SUB-GRADE.
5. CURING: THE FINISHED CONCRETE SHALL BE CURED FOR A MINIMUM OF SEVEN DAYS USING AT LEAST ONE OF THE FOLLOWING METHODS:
- PONDING OR CONTINUOUS SPRINKLING WITH WATER.
- THE USE OF AN ABSORBENT COVER KEPT CONSTANTLY WET. (WHEN THE AMBIENT TEMPERATURE EXCEEDS 32°C CURING MAY ONLY BE ACHIEVED USING THE ABOVE 2 METHODS.
- THE USE OF AN IMPERMEABLE SHEET MEMBRANE OVER A MOISTENED SURFACE. (THE MEMBRANE SHALL BE FIXED AND LAPPED SO THAT NO AIR CIRCULATION CAN OCCUR AT THE CONCRETE SURFACE).
- THE USE OF A CURING COMPOUND COMPLYING WITH AS3799, APPLIED UNIFORMLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, AND WHEN DRY THE COAT SHOULD BE CONTINUOUS, FLEXIBLE AND WITHOUT VISIBLE BREAKS OR PIN HOLES FOR SEVEN DAYS.

6. BROOM CONCRETE FINISH UNLESS SPECIFIED OTHERWISE TO ARCHITECTS REQUIREMENTS.

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

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Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

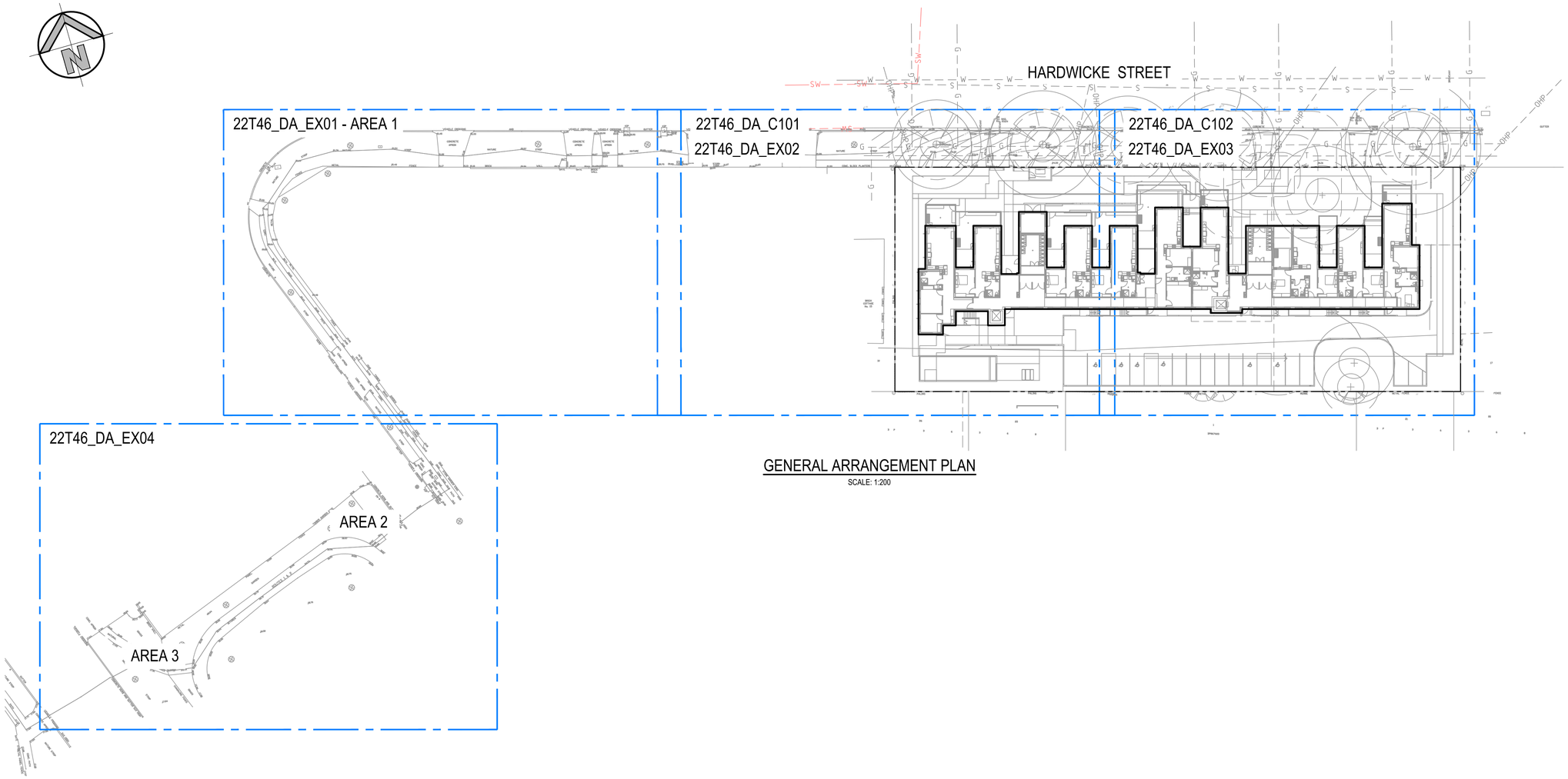
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
NOTES

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	N.T.S.

Drawing number: 22T46_DA_C010
Revision: 03



GENERAL ARRANGEMENT PLAN

SCALE: 1:200

LEGEND

- PROPERTY LEASE LINE
- BUILDING OUTLINE
- PROPOSED SURFACE INLET PITS
- PROPOSED JUNCTION PITS
- PROPOSED LINTEL ONGRADE & SAG PITS
- PROPOSED GRATED DRAIN
- PROPOSED STORMWATER PIPE
- PROPOSED ALLOWANCE FOR CONNECTION OF ROOF WATER INTO INGROUND SYSTEM
- SS — PROPOSED SUBSOIL LINE
- RW — PROPOSED RETAINING WALL
- RL24.27 — PROPOSED SPOT LEVEL
- EX24.90 — EXISTING SPOT LEVEL
- 23.58 — EXISTING SPOT LEVEL
- 23.70 — PROPOSED CONTOURS
- 23.00 — EXISTING CONTOURS
- E — EXISTING ELECTRICAL MAINS LINE
- G — EXISTING GAS LINE
- S — EXISTING SEWER LINE
- T — EXISTING TELSTRA LINES
- W — EXISTING WATER LINE
- SW — EXISTING STORMWATER LINE
- IL11.11 — STORMWATER UPSTREAM INVERT RL.
- Ø300 — STORMWATER PIPE DIAMETER & CLASS
- 30m — STORMWATER PIPE LENGTH
- 1% — STORMWATER PIPE GRADE
- IL10.96 — STORMWATER DOWNSTREAM INVERT RL.
- A-1 — LINE LETTER, PIT NUMBER — PROPOSED PIT TAG
- DP — PROPOSED DOWNPIPE
- FP — PROPOSED FLUSHING POINT
- IR — PROPOSED INTERMEDIATE RISER
- SD — PROPOSED SPOON DRAIN
- PROPOSED BATTER LINE
- K&G — PROPOSED KERB & GUTTER
- KO — PROPOSED KERB ONLY
- IK — PROPOSED INTEGRAL KERB
- IK&G — PROPOSED INTEGRAL KERB & GUTTER
- UK — PROPOSED UPSTAND KERB

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NW	30.05.2024					
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024					
01	ISSUED AS CONCEPT	SC	NW	15.12.2023					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

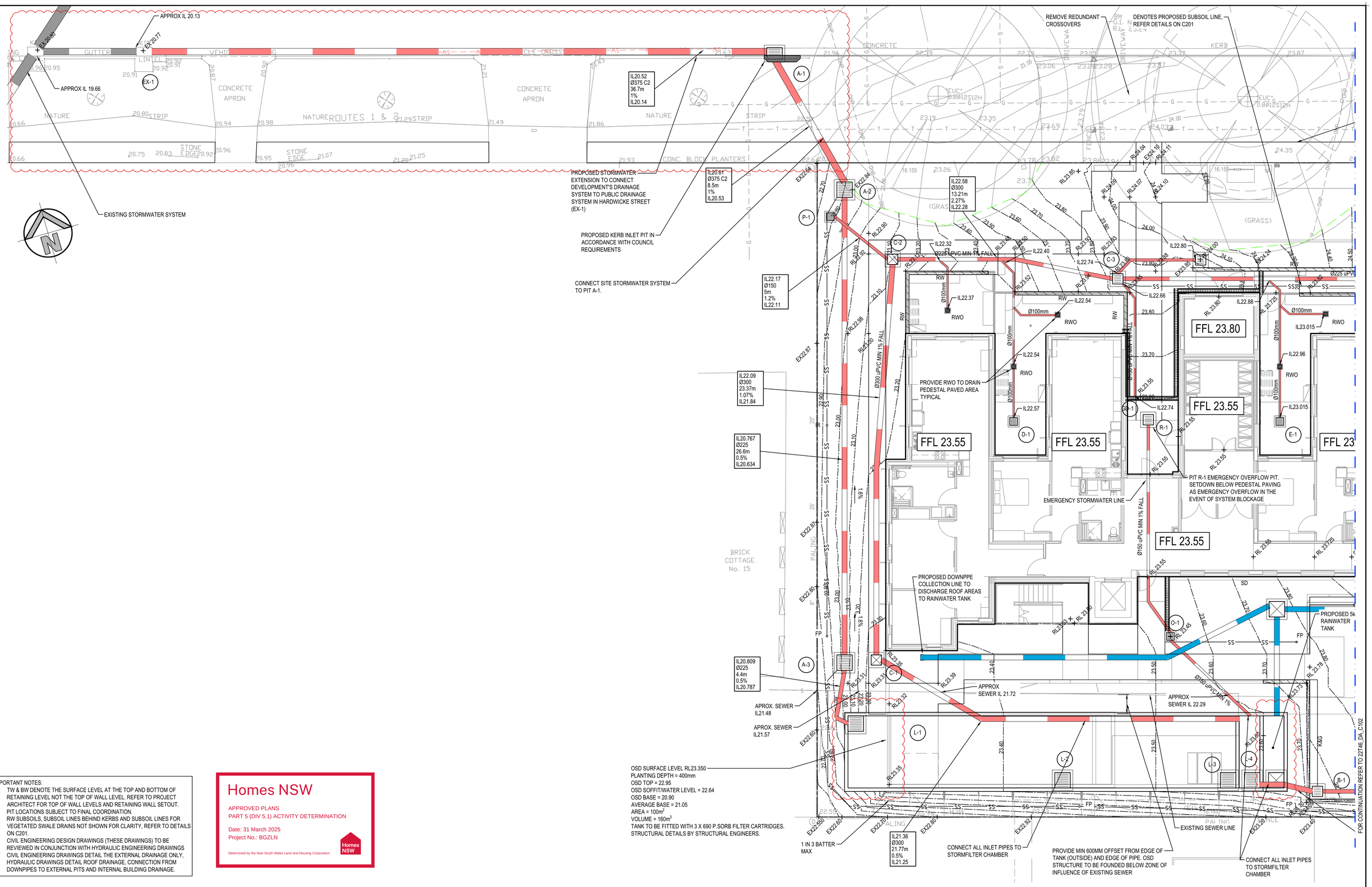
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
GENERAL ARRANGEMENT PLAN

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:500

Drawing number: 22T46_DA_C100
Revision: 03



IMPORTANT NOTES:

- TW & BW DENOTE THE SURFACE LEVEL AT THE TOP AND BOTTOM OF RETAINING LEVEL NOT THE TOP OF WALL LEVEL. REFER TO PROJECT ARCHITECT FOR TOP OF WALL LEVELS AND RETAINING WALL SETOUT.
- PIT LOCATIONS SUBJECT TO FINAL COORDINATION.
- RW SUBSOILS, SUBSOIL LINES BEHIND KERBS AND SUBSOIL LINES FOR VEGETATED SWALE DRAINS NOT SHOWN FOR CLARITY, REFER TO DETAILS ON C201.
- CIVIL ENGINEERING DESIGN DRAWINGS (THESE DRAWINGS) TO BE REVIEWED IN CONJUNCTION WITH HYDRAULIC ENGINEERING DRAWINGS CIVIL ENGINEERING DRAWINGS DETAIL THE EXTERNAL DRAINAGE ONLY, HYDRAULIC DRAWINGS DETAIL ROOF DRAINAGE, CONNECTION FROM DOWNPIPES TO EXTERNAL PITS AND INTERNAL BUILDING DRAINAGE.

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

DETAIL PLAN

SCALE: 1:100

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	PS	NW	06.06.2024					
03	ISSUED FOR DA ONLY	NH	NW	27.05.2024					
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024					
01	ISSUED AS CONCEPT	SC	NW	15.12.2023					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

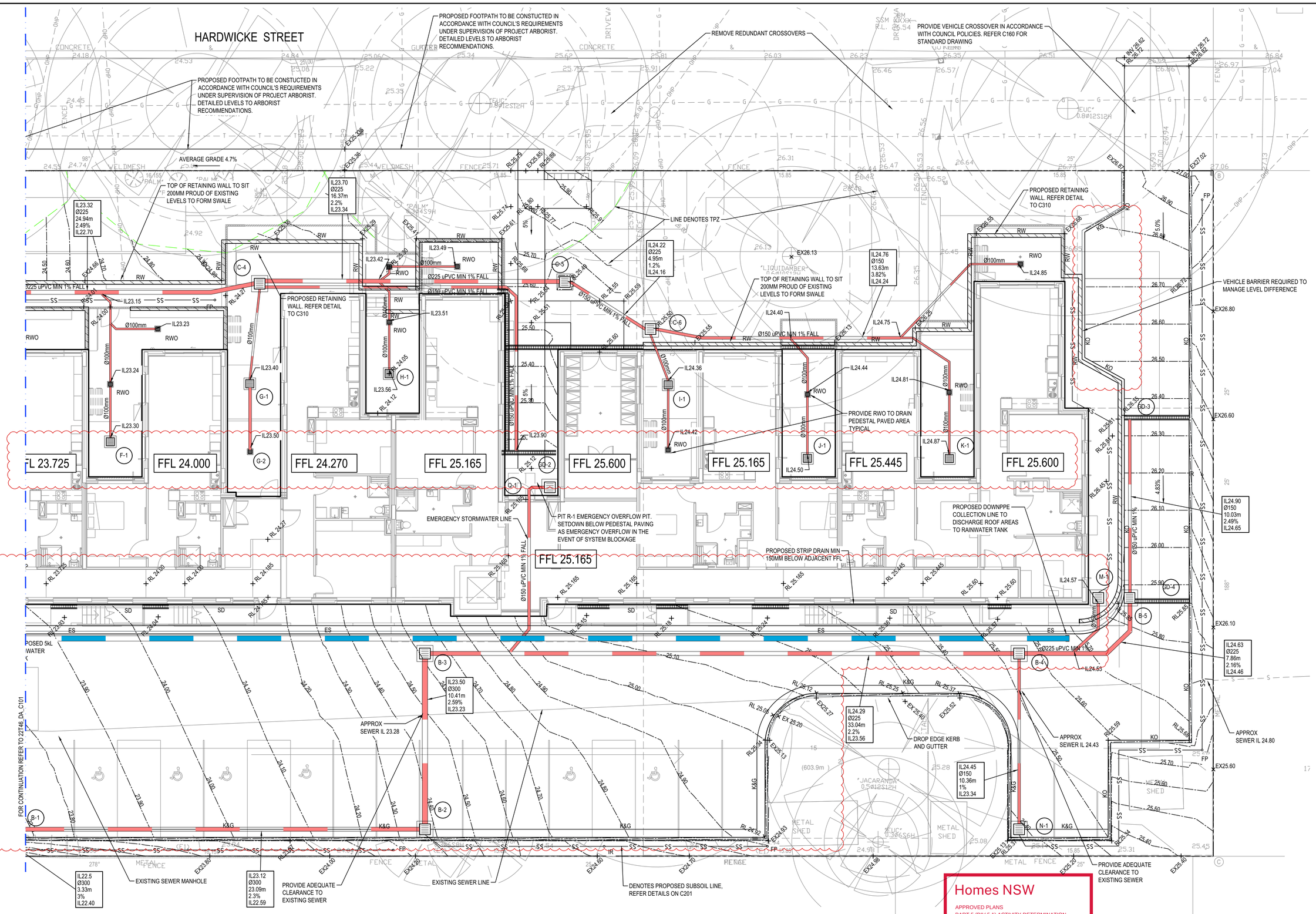
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
DETAIL PLAN
SHEET 1 OF 2

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

Drawing number 22T46_DA_C101
Revision 04



DETAIL PLAN

SCALE: 1:100

SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA ONLY	PS	NW	06.06.2024
03	ISSUED FOR DA ONLY	AFe	NW	27.05.2024
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024
01	ISSUED AS CONCEPT	SC	NW	15.12.2023

Client: NSW GOVERMENT LAND & HOUSING CORPORATION

Architect: CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

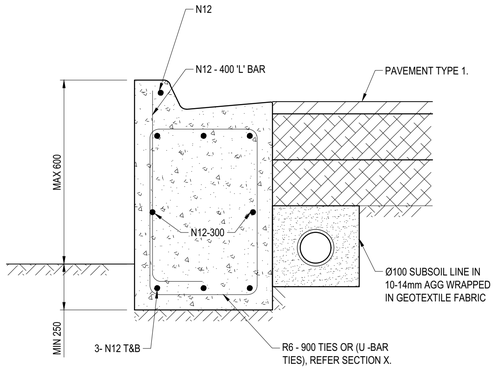
Project: PROPOSED RESIDENTIAL DEVELOPMENT 17-27 HARDWICKE ST, RIVERWOOD, NSW

Title: DETAIL PLAN SHEET 2 OF 2

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

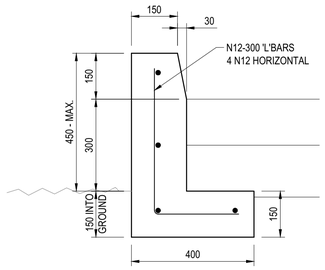
Drawing number: 22T46_DA_C102

Revision: 04



DROP EDGE KERB & GUTTER (DEK&G)

N.T.S.

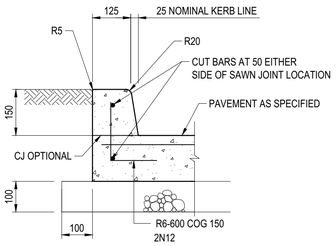


UPSTAND KERB (UK)

SCALE 1:10

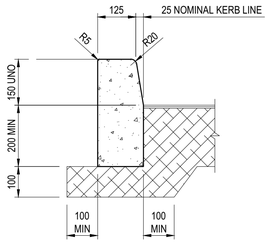
NOTED HK ON PLAN

(EXTENT TO BE CONFIRMED ON SITE)



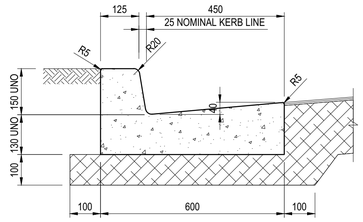
INTEGRAL KERB (IK)

SCALE 1:10



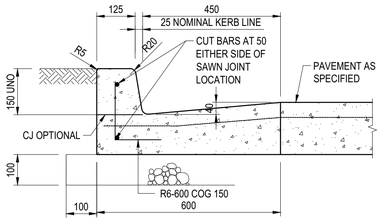
KERB ONLY (KO)

SCALE 1:10



KERB & GUTTER (K&G)

SCALE 1:10



INTEGRAL KERB & GUTTER (IK&G)

SCALE 1:10

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

KERBING NOTES:

INCLUDES ALL KERBS, GUTTERS, DISH DRAINS, CROSSING AND EDGES.

1. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSING TO BE CONSTRUCTED ON MINIMUM 75mm GRANULAR BASE COURSE COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
2. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILTER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATION IN KERBS.
3. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
4. BROAMED FINISHED TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
5. IN THE REPLACEMENT OF KERBS
   EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASE COURSE AND SURFACE IS TO BE LAID 900mm WIDE TO MATCH EXISTING MATERIALS AND THICKNESS.
   EXISTING ALLOTMENT DRAINAGE PIPE ARE TO BE BUILT INTO NEW KERB WITH A 100mm DIA HOLE.
   EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

0 200 400 600 800 1000mm
200 100
SCALE 1:10

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

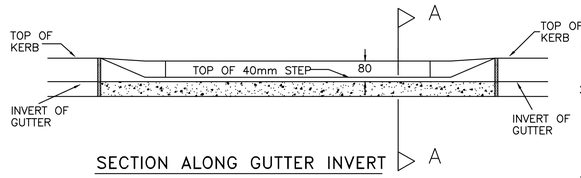
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

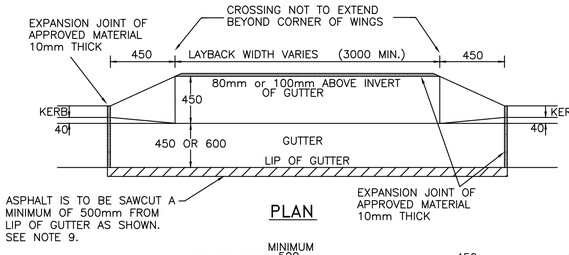
Title
TYPICAL KERB AND CONCRETE DETAILS

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 22T46_DA_C110
Revision: 01



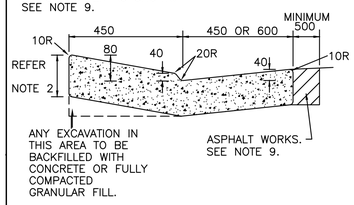
SECTION ALONG GUTTER INVERT



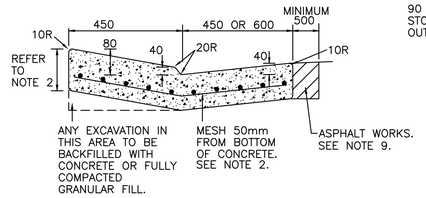
PLAN

NOTES:

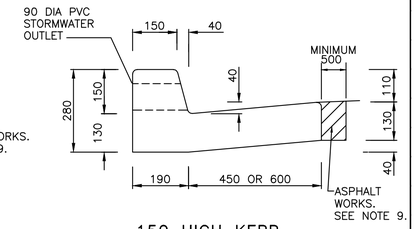
1. LAYBACK HEIGHT: –
   - STANDARD HEIGHT IS 80mm or 100mm. VARIATIONS FROM THIS HEIGHT OCCUR ONLY WHEN INDICATED ON CONSTRUCTION DRAWINGS.
2. MINIMUM LAYBACK THICKNESS: –
   - STANDARD (SINGLE RESIDENTIAL DWELLING) – 130mm THICK 25MPa CONCRETE WITH SL62 MESH 40mm COVER (TOP)
   - HEAVY DUTY (MEDIUM DENSITY/UNITS/COMMERCIAL) – 150mm THICK, 25MPa CONCRETE WITH SL82 MESH 40mm COVER (TOP)
   - INDUSTRIAL – 200mm THICK, 25MPa CONCRETE WITH SL82 MESH 50mm COVER (TOP)
3. MINIMUM CROSSING THICKNESS: –
   - STANDARD (SINGLE RESIDENTIAL DWELLING) – 130mm THICK 25MPa CONCRETE WITH SL62 MESH 40mm COVER (BOTTOM)
   - HEAVY DUTY (MEDIUM DENSITY/UNITS/COMMERCIAL) – 150mm THICK, 25MPa CONCRETE WITH SL62 MESH 50mm COVER (BOTTOM)
   - INDUSTRIAL – 200mm THICK, 25MPa CONCRETE AND SL82 MESH 50mm COVER (BOTTOM)
4. TURF AND TIDY SITE TO ENGINEERS SATISFACTION.
5. FOOTPATH DUMMY JOINTS ARE TO BE PLACED ACROSS PATHS AND SPACED AT 1000mm
6. FOOTPATH 80mm THICK, 20MPa CONCRETE.
7. EXPANSION (MASTIC) JOINT MAX. SPACING 6m IN FOOTPATHS, EXPANSION JOINTS ARE TO BE PLACED AT PROPERTY BOUNDARY, BACK AND ENDS OF LAYBACK AND JOINTS WITH CONCRETE PATHS.
8. DUMMY JOINTS ON DRIVEWAYS TO BE PLACED ACROSS DRIVEWAY AND TO ALIGN WITH FRONT AND BACK OF PATH.
9. ROAD PAVEMENT TO BE SAWCUT A MINIMUM OF 500mm FROM THE LIP OF GUTTER AND REMOVED. APPLICANT IS TO LAY ROADBASE AND COMPACT TO 40mm BELOW FINISHED SURFACE LEVEL FOR COUNCIL TO PROVIDE ASPHALT RENIT
10. SAWCUT EXISTING KERB AND GUTTER WHERE MATCHING TO EXISTING KERB AND GUTTER.



SECTION A – A
STANDARD



SECTION A – A
HEAVY DUTY & INDUSTRIAL

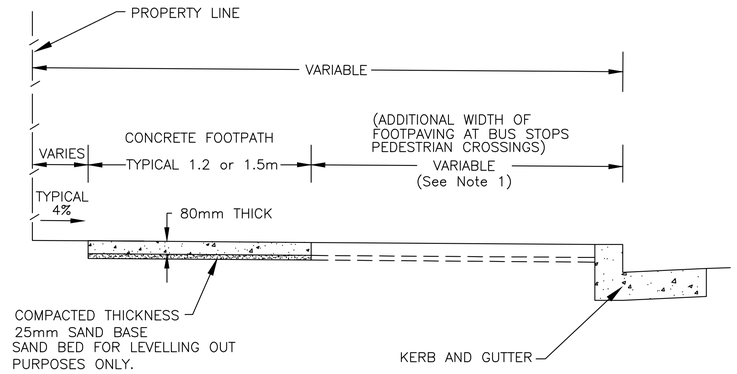


150 HIGH KERB

SCALE AT A3	SURVEYED	DESIGNED	CHECKED	APPROVED
AS SHOWN		DB		
SURV REF.		MAR 20		

GEORGES RIVER COUNCIL
LAYBACK AND ACCESS DETAILS
FOR DRIVEWAY APPLIVATIONS

REV. A
SHEET 1 OF 1
PLAN No.



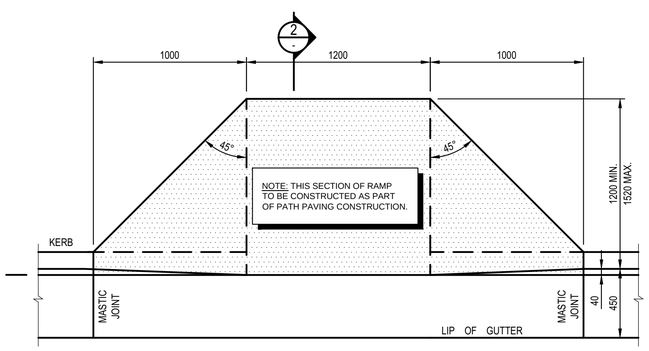
CONCRETE FOOTPATH CONSTRUCTION

NOTES:
1. AS DIRECTED BY ENGINEER.
2. DUMMY JOINTS EVERY 1.0m WITH EXPANSION JOINTS EVERY 6.0m
3. FOOTPATH CROSSFALL 2.5% (MAX) OR AS DIRECTED BY ENGINEER.
4. ALL WORKMANSHIP TO A.S.3600 CONCRETE STRUCTURES
5. CONCRETE TO BE 25 mPa COMPRESSIVE STRENGTH (fc) @ 28 DAYS

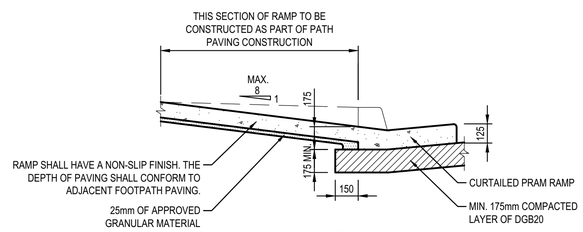
O	REVISION DETAILS	APPROVED	DATE	SURVEYED	
				DESIGNED	JUL 16
				CHECKED	
ENGINEERS REF.	SURVEYORS REF.	DATUM	SCALE AT A4	APPROVED	
		NA	NTS		

GEORGES RIVER COUNCIL
FOOTPATH CONSTRUCTION
FOR DRIVEWAY APPLICATIONS

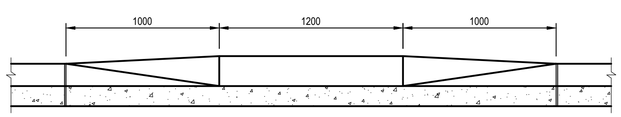
FILE No. SD047 | DRG. No. SD047 | SHT 1 OF 1 | REV.



PRAM RAMP DETAIL
SCALE 1:20



SECTION 2 / -
1:20



SECTION 1 / -
1:20

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR DA ONLY	AFe	NW	06.06.2024
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024
01	ISSUED AS CONCEPT	SC	NW	15.12.2023

Client: NSW GOVERMENT LAND & HOUSING CORPORATION
Architect: CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

Project: PROPOSED RESIDENTIAL DEVELOPMENT 17-27 HARDWICKE ST, RIVERWOOD, NSW
Title: STANDARD DRAWINGS CROSSOVER, FOOTPATH

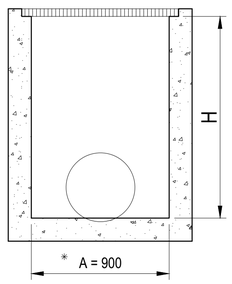
Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 22T46_DA_C160
Revision: 03

TYPICAL PIT CHAMBER SIZES

IT IS THE CONTRACTORS RESPONSIBILITY TO SELECT PIT CHAMBER SIZE WITH REGARDS TO PIPE SIZE, DEPTH TO INVERT AND SKEW ANGLE. REFER SKETCHES BELOW.

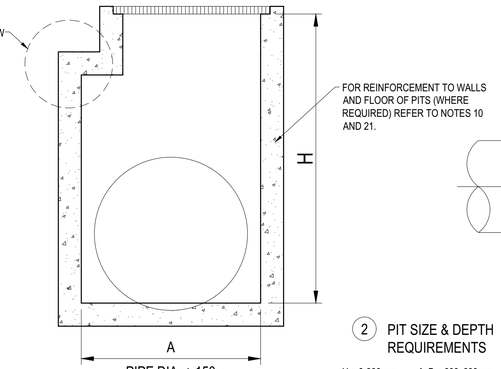
1. SELECT PIT CHAMBER USING THE STEPS BELOW:
2. SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.
3. CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.
   CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE.



SECTION
NTS

*A = 600 FOR PIPES UP TO 375 DIA.

1 PIT CHAMBER DIMENSIONS FOR PIPES UP TO 600 DIA.



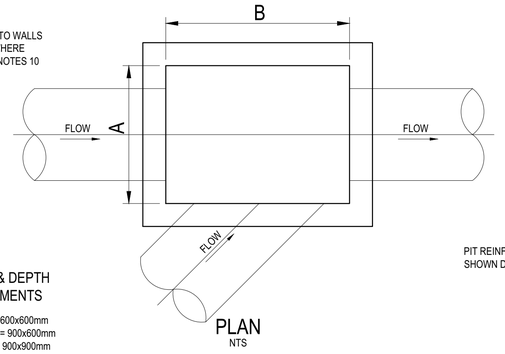
SECTION
NTS

1 PIT CHAMBER FOR PIPES GREATER THAN 600 DIA.

2 PIT SIZE & DEPTH REQUIREMENTS

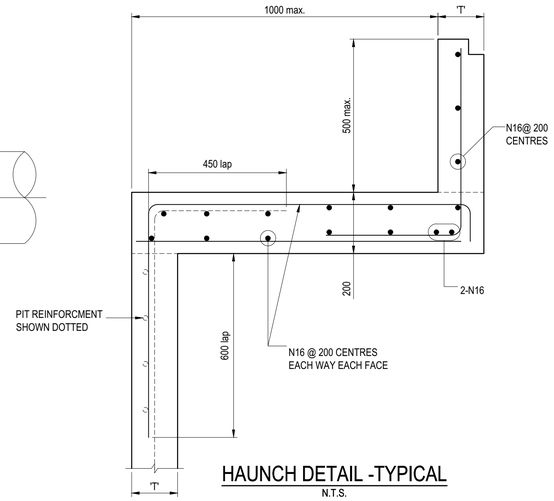
H = 0-900mm - AxB = 600x600mm
H = 900-1200mm - AxB = 900x600mm
H = >1200mm - AxB = 900x900mm

FOR B = 600mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 225mm
FOR B = 900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 375mm
FOR B = 1200mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 600mm
FOR B = 1500mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 825mm
FOR B = 1900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 1050mm



PLAN
NTS

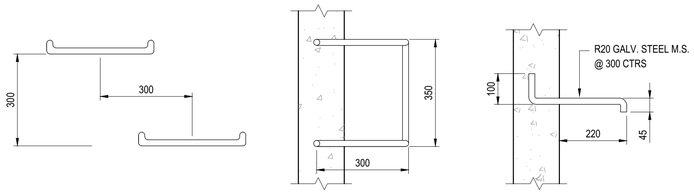
3 PIT CHAMBER FOR SIDE ENTRY ON SKEW



HAUNCH DETAIL -TYPICAL
N.T.S.

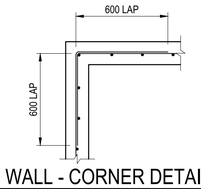
PIT LID AND HEADWALL SCHEDULE

PIT/STRUCTURE NUMBER	DESCRIPTION
A-2, A-3	PROPOSED 900x900 SURFACE INLET PIT WITH HINGED GRATED LID LIGHT DUTY CLASS "B" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
D-1, E-1, F-1, G-1, I-1, H-1, J-1, K-1, C-1, O-1, P-1, M-1	PROPOSED 450x450 SURFACE INLET PIT WITH HINGED GRATED LID LIGHT DUTY CLASS "B" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
C-3, C-4, C-5, C-6, Q-1, R-1	PROPOSED 600x600 SURFACE INLET PIT WITH HINGED GRATED LID LIGHT DUTY CLASS "B" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
B-1, B-2, L-1, L-2, L-3, L-4	PROPOSED 900x900 SURFACE INLET PIT WITH HINGED GRATED LID MEDIUM DUTY CLASS "C" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
B-3, B-5, N-1, N-4	PROPOSED 600x600 SURFACE INLET PIT WITH HINGED GRATED LID MEDIUM DUTY CLASS "C" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
C-2, C-1	PROPOSED JUNCTION PIT WITH 900x900 MEDIUM DUTY SEALED LID CLASS "C" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
A-1	PROPOSED 1.2m KERB INLET PIT WITH 900x450 INLET GRATE HEAVY DUTY CLASS 'D' IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS.
GD-3, GD-4	200mm WIDE HEAVY DUTY GRATED DRAIN AND FRAME CLASS "D" IN ACCORDANCE WITH CAMDEN COUNCIL'S REQUIREMENTS
GD-1, GD-2	150mm WIDE LIGHT DUTY GRATED DRAIN TO ARCHITECTS SPECIFICATIONS
EX-1	EXISTING PIT TO BE MODIFIED, REFER NOTES ON PLAN

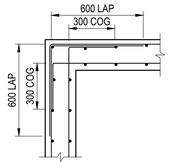


ELEVATION PLAN SECTION

TYPICAL STEP IRON DETAIL
SCALE 1:10



150 WALL - CORNER DETAIL
SCALE 1:20



200 WALL - CORNER DETAIL
SCALE 1:20

TABLE 1

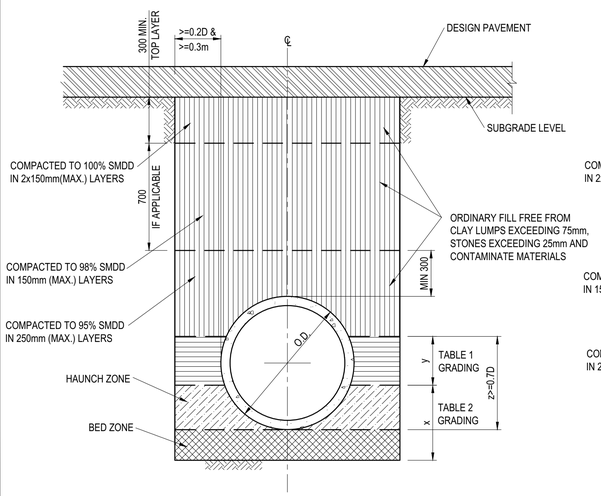
SIEVE SIZE (MM)	WEIGHT PASISNG (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

TABLE 2

SIEVE SIZE (MM)	WEIGHT PASISNG (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

NOTES:

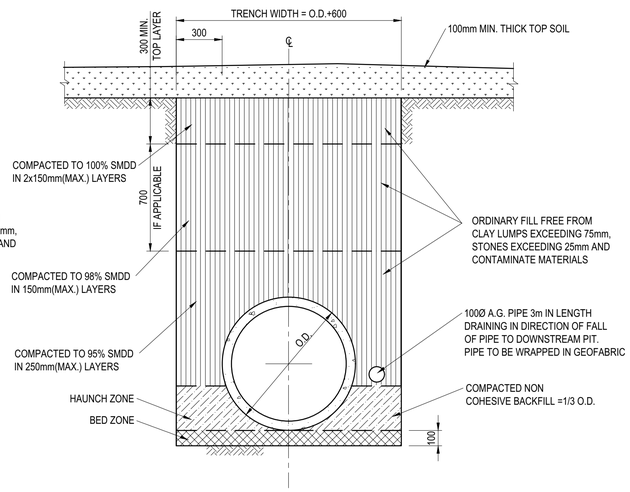
- ALL GRATED INLET PITS TO CONTAIN OCEAN PROTECT 200 MICRON PIT BASKETS OR APPROVED EQUIVALENT UNLESS NOTED ON PLAN. REFER DRAWING C201 FOR DETAILS.
- REFER C201 FOR DRAINAGE AND SUBSOIL NOTES.
- ALL PITS IN FOOTPATH, OR ADJACENT TO FOOTPATHS, TO BE FITTED WITH SLIP RESISTANT HEELGUARD LID.
- PIT SCHEDULE ABOVE DOES NOT INCLUDE PIT LIDS FOR WATER QUALITY DEVICES OR BELOW GROUND OSD TANKS
- ALL RAINWATER OUTLETS (RWO) TO BE MIN 200MM IN DIAMETER. ALL RAINWATER OUTLETS TO BE HEELPROOF FINISH AND TO ARCHITECTS SPECIFICATIONS UNLESS NOTED ON PLAN.



PIPE TRENCH INSTALLATION BENEATH PAVEMENT

(HS SUPPORT TO BE USED UNDER ROADWAY)
SCALE 1:20

NOTE:
TYPE HS2 TO BE USED AS A TYPICAL SUPPORT FOR TRENCHES UNDER ROADWAY UNLESS SPECIFIED SEPERATELY



PIPE TRENCH INSTALLATION IN LANDSCAPE AREAS

(H1 & H2 SUPPORT)
SCALE 1:20

TABLE 3

SUPPORT TYPE	BED ZONE X	HAUNCH ZONE Y	BED AND HAUNCH ZONES COMPACTION	MAX BEDDING FACTOR
HS1	100 IF D<=1500, OR 150 IF D>=1500	0.1D	50	2.0
HS2		0.3D	60	2.5
HS3		0.3D	70	4.0

Homes NSW
APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION
Date: 31 March 2025
Project No.: BGZLN
Determined by the New South Wales Land and Housing Corporation

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

0 200 400 600 800 1000mm
200 100
SCALE 1:10

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024					
01	ISSUED AS CONCEPT	SC	NW	15.12.2023					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION
Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

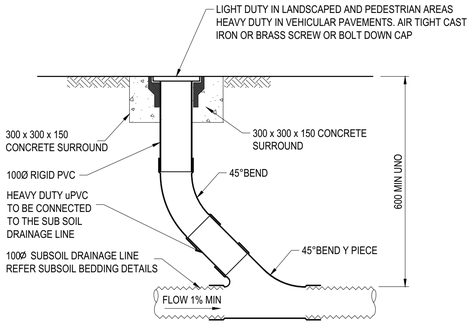
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

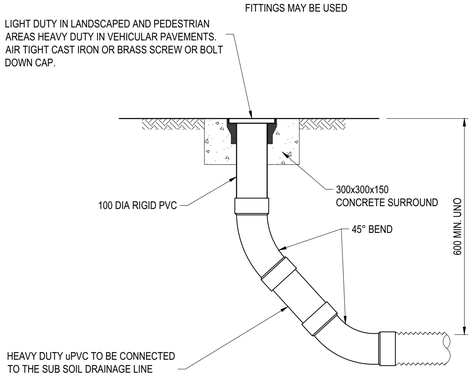
Drawing number: 22T46_DA_C200
Revision: 02



INTERMEDIATE RISER (IR)

SCALE 1:10

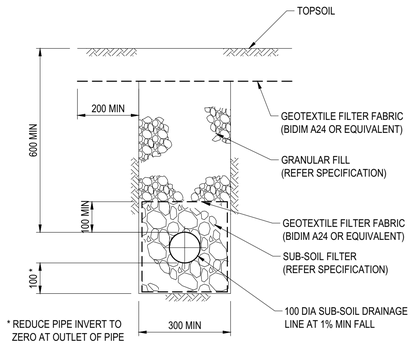
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



FLUSHING POINT (FP)

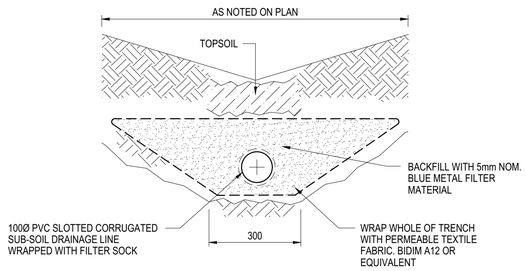
SCALE 1:10

NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



SUB-SOIL IN LANDSCAPED AREAS

SCALE 1:10



SUBSOIL DRAIN DETAIL IN SWALES

SCALE 1:10

SWALE SUBSOIL NOT SHOWN ON PLAN FOR CLARITY.

SUBSOIL DRAINAGE NOTES

1. GENERALY PROVIDE SUBSOIL DRAINS TO INTERCEPT GROUNDWATER SEEPAGE AND PREVENT WATER BUILD-UP BEHIND WALLS AND UNDER FLOORS AND PAVEMENTS. CONNECT SUBSOIL TO SURFACE DRAINS OR TO THE STORMWATER DRAINAGE SYSTEM AS APPLICABLE.

2. PIPE DEPTH:
PROVIDE THE FOLLOWING MINIMUM CLEAR DEPTH, MEASURED TO THE CROWN OF THE PIPE, WHERE THE PIPE PASSES BELOW THE FOLLOWING ELEMENTS:

- 100mm BELOW FORMATION LEVEL OF THE PAVEMENT, KERB OR CHANNEL.
- 100mm BELOW THE AVERAGE GRADIENT OF THE BOTTOM OF FOOTINGS.

3. JOINTING:
AT JUNCTIONS OF SUBSOIL PIPES PROVIDE TEES, COUPLINGS OR ADAPTORS TO AS2439.1.

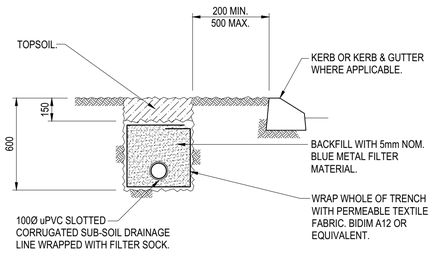
4. TRENCH WIDTH MINIMUM 300mm.

5. PIPE UNDERLAY
GENERAL: GRADE THE TRENCH FLOOR EVENLY TO THE GRADIENT OF THE PIPELINE. IF THE TRENCH FLOOR IS ROCK, CORRECT ANY IRREGULARITIES WITH COMPACTED BEDDING MATERIAL. BED PIPING ON A CONTINUOUS UNDERLAY OF BEDDING MATERIAL, AT LEAST 75mm THICK AFTER COMPACTION. LAY THE PIPE WITH ONE LINE OF PERFORATIONS AT THE BOTTOM.

CHASES: IF NECESSARY TO PREVENT PROJECTIONS SUCH AS SOCKETS AND FLANGES FROM BEARING ON THE TRENCH BOTTOM OR UNDERLAY.

6. PIPE SURROUNDS:
GENERAL: PLACE THE MATERIAL IN THE PIPE SURROUND IN LAYERS SMALLER THAN OR EQUAL TO 200mm LOOSE THICKNESS, AND COMPACT WITHOUT DAMAGING OR DISPLACING PIPING.
DEPTH OF OVERLAY: TO THE UNDERSIDE OF THE BASE OF OVERLYING STRUCTURES SUCH AS PAVEMENTS, SLABS AND CHANNELS TO WITHIN 150mm OF THE FINISHED SURFACE OF UNPAVED OR LANDSCAPED AREAS.

7. FILTER SOCKS:
PROVIDE POLYESTER PERMEABLE SOCKS CAPABLE OF RETAINING PARTICLES OF 0.25mm SIZES. SECURELY FIT OR JOIN THE SOCK AT EACH JOINT.



SUB-SOIL DRAIN DETAIL

SCALE 1:20

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

0 200 400 600 800 1000mm
200 100
SCALE 1:10

DRAINAGE NOTES:

1. ALL STORMWATER WORK TO COMPLY WITH AS 3500 PART 3.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES.

3. PROTECTION OF PIPES DUE TO LOADS EXCEEDING W7 WHEEL LOAD SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

4. BEDDING TYPE SHALL BE TYPE H2 FOR RCP. WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.

5. MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 800mm.

6. NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.

7. FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLAN DRGS TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.

8. ALL PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS SH PIPE TO AS1260. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. HARDIES FRC PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN GROUND. ALL AERIAL PIPES TO BE PVC CLASS SH.

9. ALL PITS IN NON TRAFFICABLE AREAS TO BE PREFABRICATED POLYESTER CONCRETE "POLYCRETE" WITH "LIGHT DUTY" CLASS B GALV. MILD STEEL GRATING AND FRAME.
ALL PITS IN TRAFFICABLE AREAS (CLASS "D" LOADING MAX) TO HAVE 150mm THICK CONCRETE WALLS AND BASE CAST IN-SITU f'c=32 MPa, REINFORCED WITH N12-200 BOTH LOADING WAYS CENTRALLY PLACE .U.N.O. ON SEPARATE DESIGN DRAWINGS IN THIS SET. GALV.MILD STEEL GRATING AND FRAME TO SUIT DESIGN LOADING. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.

10. ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH AS3500.3 AND AS3996.

11. PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
- PIPE SIZE
- DEPTH TO INVERT
- SKEW ANGLE
REFER TYPICAL PIT CHAMBER DETAILS BELOW
IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED, IS TO BE THE SAME SIZE AS THE PIT CHAMBER.

12. FOR PIPE SIZES GREATER THAN Ø300mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.

13. GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTS FOR PITS HAVING A DEPTH EXCEEDING 1200mm. SUBSOIL DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES. (MINIMUM LENGTH 3m).

14. ALL SUBSOIL PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH 3m INSTALLED UPSTREAM OF ALL PITS.

15. ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.

16. MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.

17. ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE VIA PURPOSE MADE FITTINGS.

18. ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3500, PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.

19. LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWN ON LONG SECTIONS CHAINAGES ARE INDICATIVE ONLY.

20. PITS IN EXCESS OF 1.5 m DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm. REINFORCED WITH N12@200 CTS CENTRALLY PLACED BOTH WAYS THROUGHOUT U.N.O.ON SEPARATE DESIGN DRAWINGS IN THIS SET. IF DEPTH EXCEEDS 5m CONTACT ENGINEER.

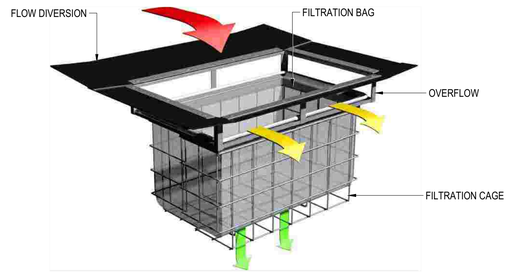
21. SUBSOIL DRAINAGE LINES FOR LANDSCAPE AREA NOT SHOWN ON THESE DRAWINGS. REFER TO LANDSCAPING PLANS FOR DETAILS.

22. ALL STORMWATER PITS TO HAVE Ø100 uPVC SLOTTED SUBSOIL PIPES CONNECTED TO THEM. THESE SUBSOILS TO EXTEND 3m UPSTREAM OF THE PIT AT A MINIMUM GRADE.

PLAN ID	MAXIMUM PIT PLAN DIMENSIONS
S	450mm x 450mm
M	600mm x 600mm
L	900mm x 900mm
XL	1200mm x 1200mm

DEPTH ID	BAG DEPTH	OVERALL DEPTH
1	170	270
2	300	450
3	600	700

		DEPTH ID		
		1	2	3
PLAN ID	S	■		
	M	■	■	
	L	■	■	■
	XL	■	■	■



GENERAL NOTES

1. THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
2. CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.
3. OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES:- 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.
4. DRAWINGS NOT TO SCALE.

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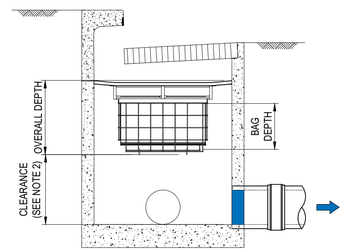
SPECIFICATION DRAWING



SURFACE FLOW CONFIGURATION

SCALE: 1:20

PIPE FLOW CONFIGURATION

SCALE: 1:20

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	MP	NW	23.02.2024					
01	ISSUED AS CONCEPT	SC	NW	15.12.2023					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

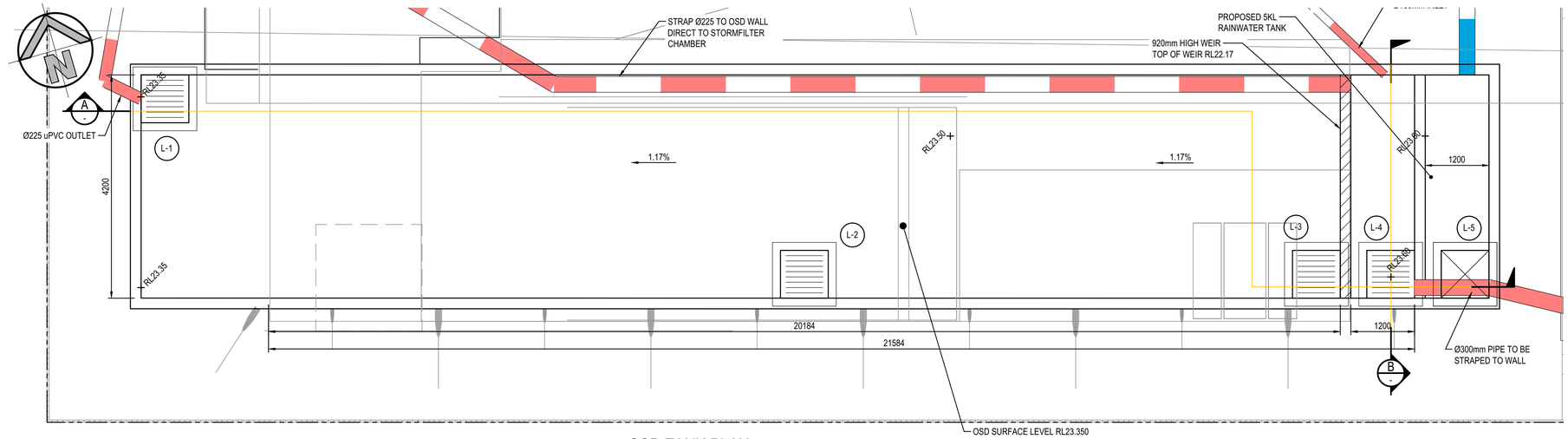
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
STORMWATER MISCELLANEOUS DETAILS

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

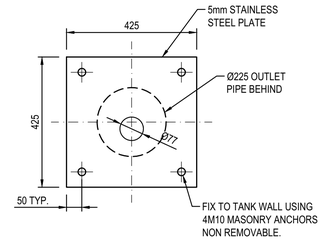
Drawing number: 22T46_DA_C201
Revision: 02



OSD TANK PLAN

SCALE: 1:50

OSD SURFACE LEVEL RL23.350
PLANTING DEPTH = 400mm
OSD TOP = 22.95
OSD SOFFIT/WATER LEVEL = 22.75
OSD BASE = 20.90
AVERAGE BASE = 21.05
AREA = 90m^2
VOLUME = 160m^3
TANK TO BE FITTED WITH 3 X 690 P.SORB FILTER CARTRIDGES.
STRUCTURAL DETAILS BY STRUCTURAL ENGINEERS.



ORIFICE PLATE DETAIL

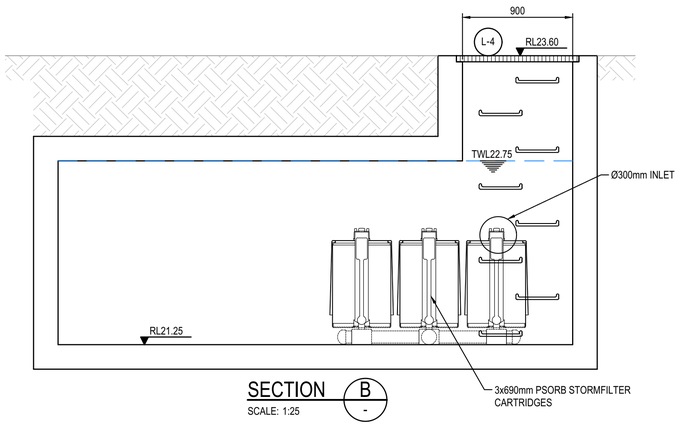
SCALE 1:10

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

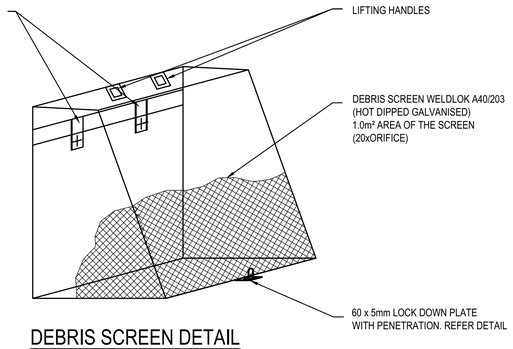


SECTION B

SCALE: 1:25

100 x 16 MOUNTING BAR WITH BRACKETS, SCREEN TO BE ATTACHED (GENERALLY ON A SLIDING MECHANISM) TO THE WALL, BUT SHOULD BE REMOVABLE (WITHOUT THE USE OF TOOLS) TO PERMIT CLEANSING AND EASY INSPECTION OF THE OUTLET CONTROL. ALL STEEL TO BE HOT DIPPED GALVANISED.

MAXIMESH RH3030 IS RECOMMENDED FOR ORIFICES LESS THAN 150mm IN DIAMETER AND SCREEN AREA 50xTHE ORIFICE AREA



DEBRIS SCREEN DETAIL

NOT TO SCALE
ALL STEEL TO BE HOT DIPPED GALVANISED

DANGER

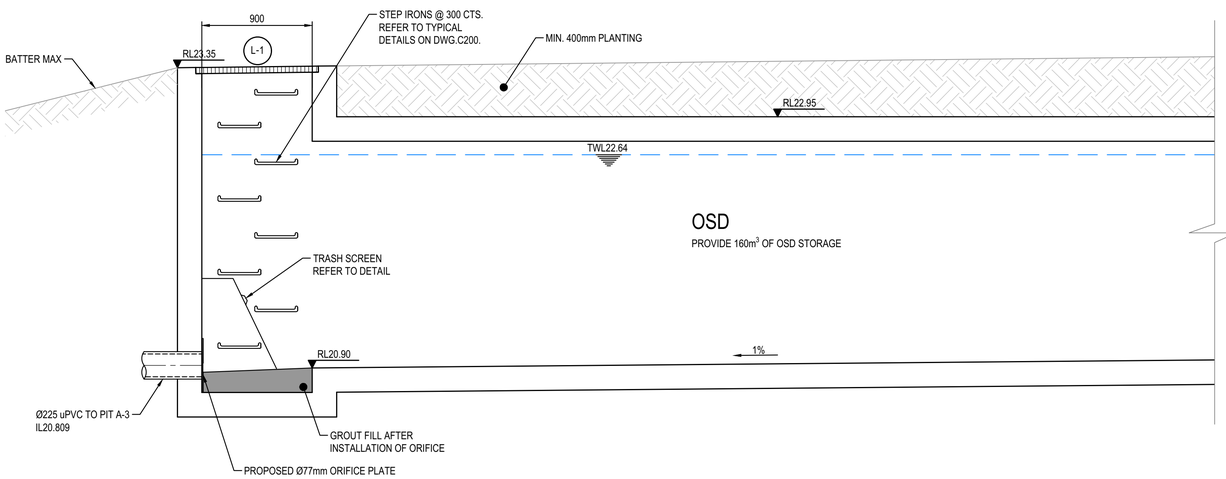
CONFINED SPACE
NO ENTRY WITHOUT CONFINED SPACE TRAINING

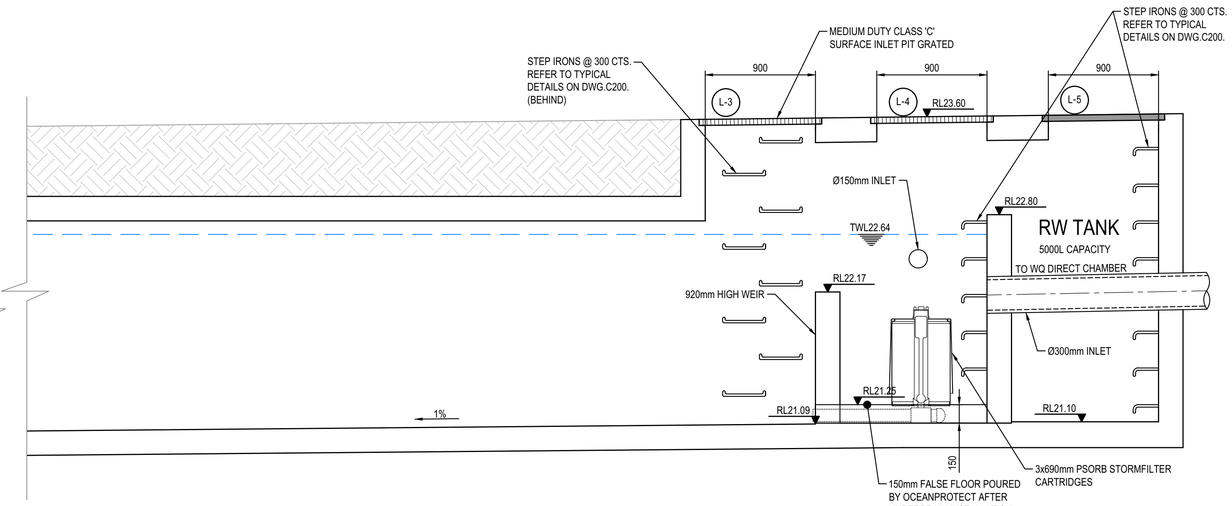
A) A CONFINED SPACE DANGER SIGN SHALL BE POSITIONED IN A LOCATION SUCH THAT IT IS CLEARLY VISIBLE TO PERSONS PROPOSING TO ENTER THE BELOW GROUND TANKS/ CONFINED SPACE AT ALL ACCESS POINTS OF THE TANK/ CONFINED SPACE.

B) SIGN TO BE MINIMUM DIMENSIONS: 250mm x 180mm ENTRIES I.E.. GRATES, MANHOLES

C) SIGN SHALL BE MANUFACTURED FROM COLOUR BONDED METAL OR POLYPROPYLENE

D) SIGN SHALL BE AFFIXED TO A SURFACE WITH SCREWS AT EACH CORNER.





0 2 4 6 8 10m — 2 1 — SCALE 1:100

0 500 1000 1500 2000 2500mm — 500 300 100 — SCALE 1:25

0 200 400 600 800 1000mm — 200 100 — SCALE 1:10

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	AFe	NW	06.06.2024
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024

Client: NSW GOVERMENT LAND & HOUSING CORPORATION

Architect: CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

Project: PROPOSED RESIDENTIAL DEVELOPMENT 17-27 HARDWICKE ST, RIVERWOOD, NSW

Title: OSD TANK PLAN DETAILS AND SECTIONS

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

Drawing number: 22T46_DA_C202

Revision: 02

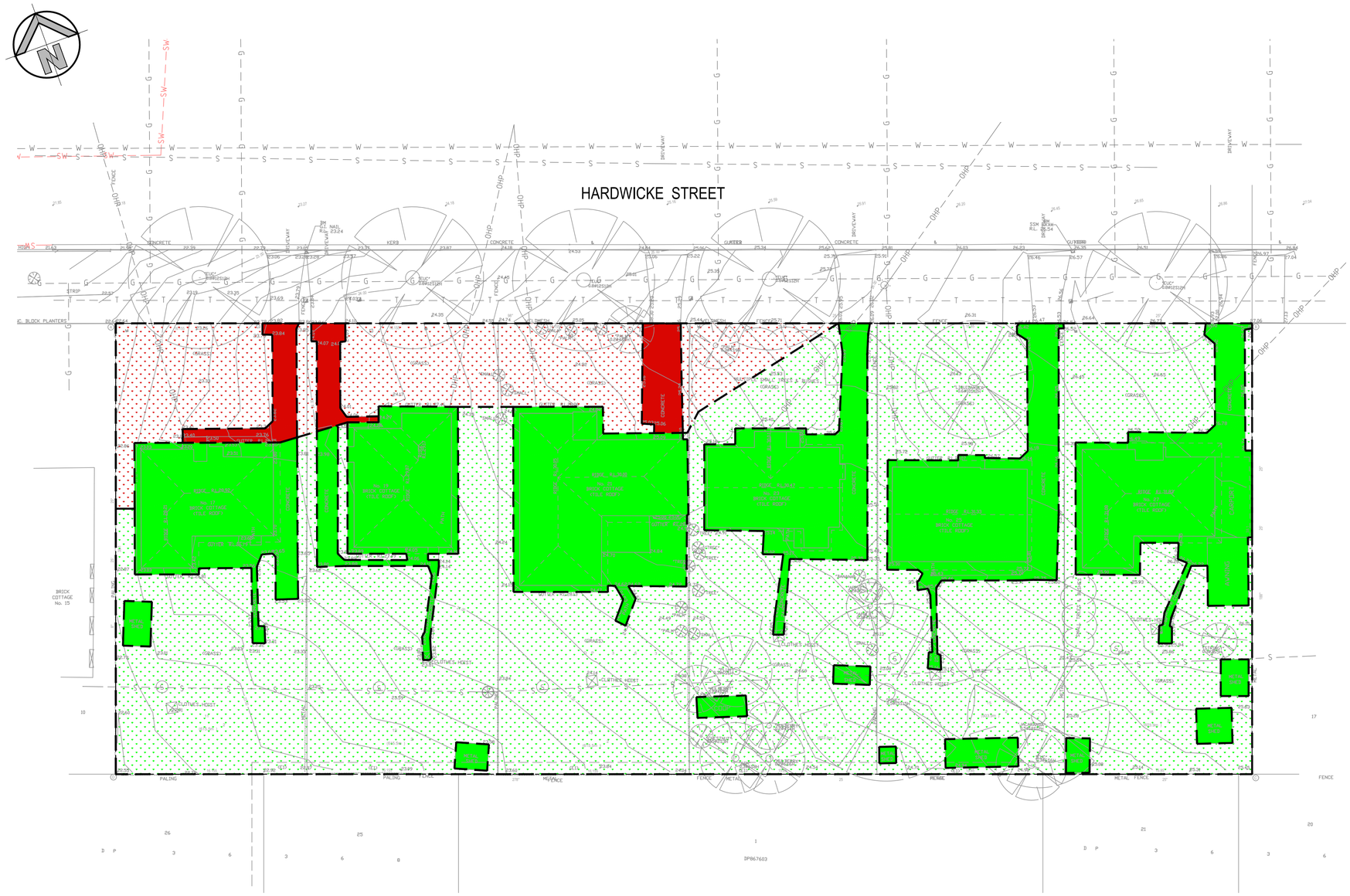
TOTAL SITE =3658m²

NORTH CATCHMENT
AREA = 81m² (100% IMPERVIOUS)

NORTH CATCHMENT
AREA = 394m² (100% PERVIOUS)

SOUTH CATCHMENT
AREA = 1124m² (100% IMPERVIOUS)

SOUTH CATCHMENT
AREA = 2059m² (100% PERVIOUS)



PRE-DEVELOPMENT FLOW RATES

ARI (YEAR)	CATCHMENT	
	FLOW RATE NORTH (L/s)	FLOW RATE SOUTH (L/s)
5	13	59
10	16	73
20	17	85
100	20	115

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN

SCALE: 1:200

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	PS	NW	06.06.2024					
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

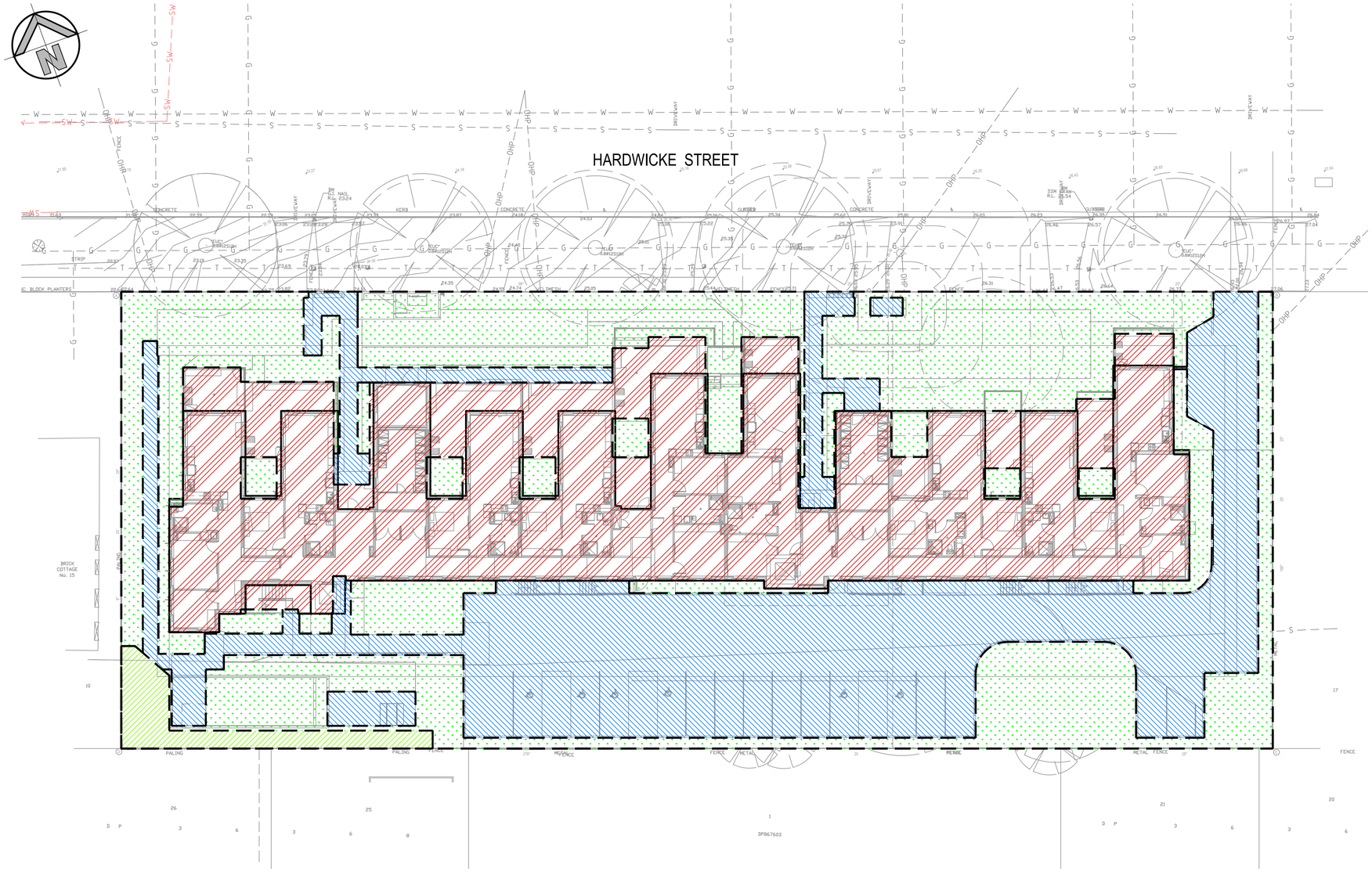
Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	APRIL 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

Drawing number: 22T46_DA_C250

Revision: 02



TOTAL SITE =3658m²

HARDSTAND CATCHMENT
AREA = 1064m²

ROOF CATCHMENT
AREA = 1308m²

LANDSCAPE CATCHMENT
AREA = 1222m²

AREA DRAINING SOUTH
AREA = 63.5m²

POST-DEVELOPMENT FLOW RATES

ARI (YEAR)	CATCHMENT	
	FLOW RATE NORTH (DETAINED) (L/s)	FLOW RATE SOUTH (UNDETAINED) (L/s)
5	12	0
10	13	0
20	14	0
100	17	0

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

POST-DEVELOPMENT STORMWATER CATCHMENT PLAN

SCALE: 1:200

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	PS	NW	06.06.2024					
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024					

Client
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Architect
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DRAWING TO BE PRINTED IN COLOUR

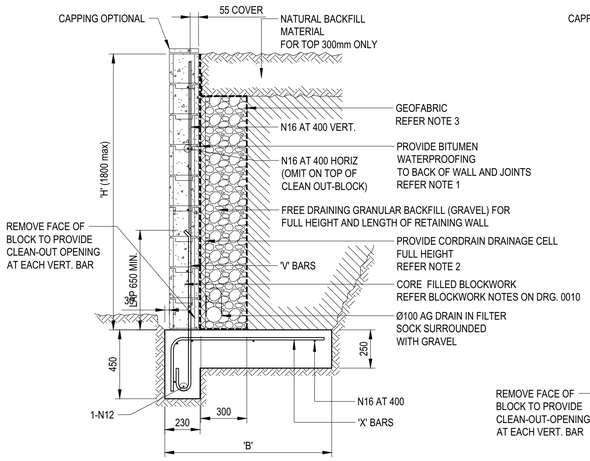
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

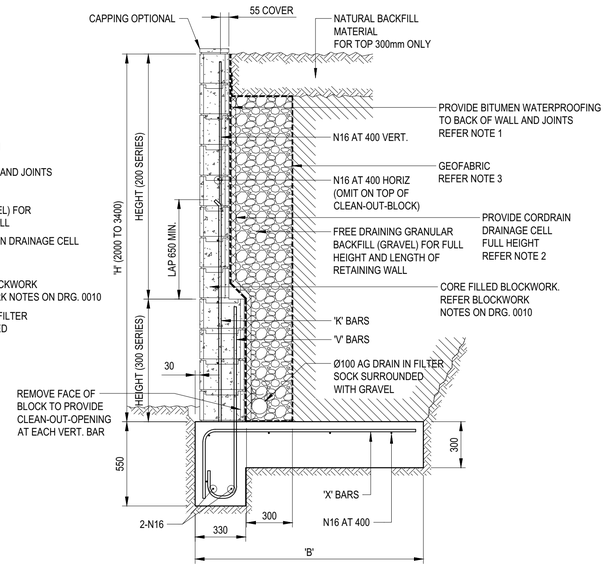
Title
POST-DEVELOPMENT STORMWATER CATCHMENT PLAN

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	APRIL 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

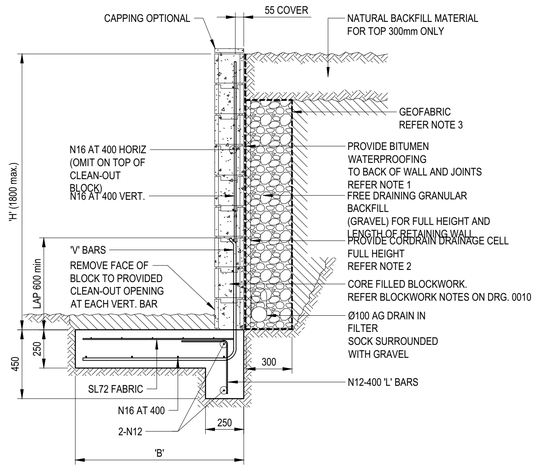
Drawing number: 22T46_DA_C251
Revision: 02



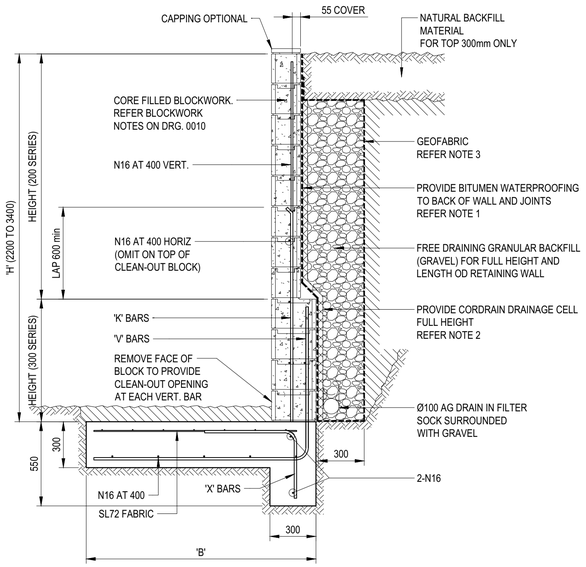
150 AND 200 SERIES BLOCK WALL - TYPE A



200 AND 300 SERIES BLOCK WALL



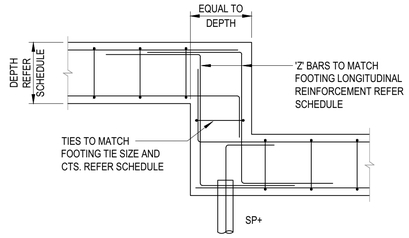
150 OR 200 SERIES BLOCK WALL - TYPE B



200 OR 300 SERIES BLOCK WALL

RETAINING WALL SCHEDULE - TYPE A

TOTAL HEIGHT 'H' (mm)	HEIGHT OF BLOCK TYPE		'B' (mm)	'V' & 'X' BARS	'K' BARS
	200 SERIES	300 SERIES			
800	800	-	900	N16 AT 400	-
1000	1000	-	1000	N16 AT 400	-
1200	1200	-	1100	N16 AT 400	-
1400	1400	-	1200	N16 AT 400	-
1600	1600	-	1300	N16 AT 400	-
1800	1800	-	1400	N20 AT 400	-

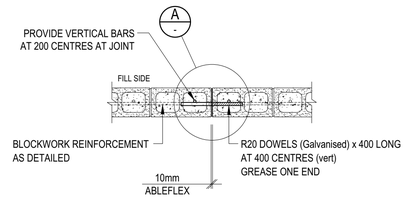


TYPICAL FOOTING STEP DETAIL

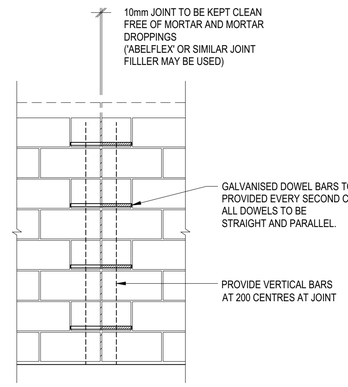
SCALE 1:20

RETAINING WALL SCHEDULE - TYPE B

TOTAL HEIGHT 'H' (mm)	HEIGHT OF BLOCK TYPE		'B' (mm)	'V' & 'X' BARS	'K' BARS
	200 SERIES	300 SERIES			
800	800	-	800	N16 AT 400	-
1000	1000	-	1200	N16 AT 400	-
1200	1200	-	1500	N16 AT 400	-
1400	1400	-	1700	N16 AT 400	-
1600	1600	-	1900	N16 AT 400	-
1800	1800	-	2200	N20 AT 400	-



PLAN



ELEVATION

TYPICAL BLOCKWORK VERTICAL EXPANSION JOINT

NOTES:

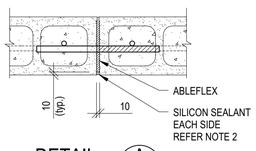
1. ENSURE REAR FACE OF RETAINING WALL IS FULLY WATERPROOFED. USE EMER-PROOF ECOFLEX OR APPROVED EQUIVALENT IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION. EG: 2 COATS min. APPLIED IN OPPOSITE DIRECTIONS AND ALLOWED TO CURE FOR 7 DAYS. (TO BE CONIRMED BY THE ARCHITECT)
2. INSTALL FULL HEIGHT DRAINAGE CELL TO REAR OF WALL, USE NYLEX CORDRAIN/18 OR APPROVED EQUIVALENT, AT 1500 CENTRES.
3. PROVIDE GEOFABRIC MATERIAL AS SEPARATION BETWEEN GRANULAR BACKFILL (GRAVEL) AND NATURAL BACKFILL MATERIAL. USE BIDIM A24 OR APPROVED EQUIVALENT.
4. MINIMUM ALLOWABLE BEARING PRESSURE AT BASE = 150 kPa

NOTES:

1. ENSURE REAR FACE OF RETAINING WALL IS FULLY WATERPROOFED. USE EMER-PROOF ECOFLEX OE APPROVE EQUIVALENT IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. EG: 2 COATS min. APPLIED IN OPPOSITE DIRECTIONS AND ALLOWED TO CURE FOR 7 DAYS.
2. INSTALL FULL HEIGHT DRAINAGE CELL TO REAR OF WALL, USE NYLEX CORDRAIN/18 OR APPROVED EQUIVALENTS.
3. PROVIDE GEOFABRIC MATERIAL AS SEPARATION BETWEEN GRANULAR BACKFILL (GRAVEL) AND NATURAL BACKFILL MATERIAL. USE BIDIM A24 OR APPROVED EQUIVALENT.
4. MINIMUM ALLOWABLE BEARING PRESSURE AT BASE = 150 kPa

NOTES:

1. UNLESS OTHERWISE NOTED ON PLAN JOINTS SHALL BE LOCATED AT 8000 CENTRES max. AND 4000 FROM CORNERS.
2. PROVIDE SILICON SEALANT BOTH FACES IN ALL JOINTS, USE PARCHEM EMER-SEAL CR OR AN APPROVED EQUIVALENT.



DETAIL A

EXPANSION JOINT - PLAN & ELEVATION

SCALE 1:20

MASONRY CONSTRUCTION:

B1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700 AND AS NOTED ON THE DRAWINGS.

B2 BRICK AND BLOCK COMPRESSIVE STRENGTH (f'uc) SHALL BE 15 MPa MINIMUM UNO. STRENGTH GRADE SHALL BE CLEARLY INDICATED ON THE DELIVERY DOCKETS.

B3 JOINT MORTAR SHALL BE OF CLASS M3 WITH 1:1:6 (CEMENT: LIME: SAND) PROPORTIONS BY VOLUME AND COMPLY WITH AS3700. MORTAR JOINTS SHALL BE 10 mm THICK AND HAVE A MAXIMUM TOOLED DEPTH OF 3 mm UNO.

B4 NON-LOAD BEARING WALLS SHALL BE SEPARATED FROM THE LOAD-BEARING ELEMENTS BY 15 mm THICK 'CANEITE' OR EXPANDED POLYSTYRENE UNO AT BOTH HORIZONTAL AND VERTICAL FACES.

NON-LOAD BEARING WALLS SHALL BE TIED TO THE SOFFITS OF BEAMS OR SLABS OVER BY USING 'MET 4-1' TIES (OR APPROVED EQUIVALENT), AT 800 mm MAX. CENTRES, UNO ON THE DRAWINGS, TO MANUFACTURER'S SPECIFICATIONS

B5 WHERE CONCRETE SLABS BEAR ON UNREINFORCED MASONRY, INCLUDING CLAY BRICKS, RENDER THE BEARING SURFACE OF THE MASONRY WALL WITH 1:3 (CEMENT : SAND) MORTAR TO ACHIEVE A LEVEL SURFACE AND PLACE A PRE-GREASED METAL SLIP JOINT PROTECTED BY 0.2 mm POLYETHYLENE SHEET TAPED TO THE FORMWORK BEFORE PLACING CONCRETE. SPECIAL DETAILS SUCH AS WATER-PROOFING MAY APPLY FOR ROOF SLABS OR SIMILARLY EXPOSED ELEMENTS.

B6 CONTROL JOINTS

1. CONTROL JOINTS SHALL BE PROVIDED IN MASONRY WALLS AS PER THE TABLE BELOW UNLESS CLOSER SPACINGS ARE SPECIFIED ELSEWHERE IN THE DOCUMENTATION.

MASONRY TYPE	LOCATION	JOINT SIZE (mm)	SPACING (m)
CONCRETE MASONRY	- EXTERNAL	10	7.0
	- EXTERNAL (WITH OPENINGS > 900mm IN HEIGHT)	10	5.0
	- INTERNAL (FACE FINISHED)	10	6.0
	- INTERNAL (RENDERED)	10	5.0
LIGHT-WEIGHT MASONRY	- INTERNAL / EXTERNAL	10	6.0
CLAY MASONRY	- INTERNAL / EXTERNAL	15	6.0 *
	- PARAPET WALLS	15	4.0

* - FOR REACTIVE ' CLASS M' SITES ONLY. REFER TABLE 4.3 OF AS3700.2011 FOR ARTICULATION JOINTS IN CLAY MASONRY.

2. CONTROL JOINTS SHALL BE PLACED AT HALF THE SPECIFIED SPACING FROM A CORNER. PROVIDE JOINTS TO MATCH JOINTS IN THE SUPPORTING STRUCTURE.
3. CONTROL JOINTS MUST BE KEPT FREE OF MORTAR AND SEALED WITH A POLYETHYLENE FOAM BACKING ROD SQUEEZED INTO THE GAP AND A GUNNED-IN MASTIC SEALANT. IF THE WALL IS TO BE FIRE-RATED, A FIRE-RATED SEALING SYSTEM WILL BE REQUIRED INSTEAD.

B7 BLOCKWORK

1. IN CORE-FILLED BLOCKWORK, EXCESS MORTAR PROTRUDING INTO THE CORES SHALL BE REMOVED BY RODDING AFTER EACH COURSE IS LAID. EVERY CORE FILLED WITH GROUT SHALL HAVE A CLEANOUT BLOCK IN THE BOTTOM COURSE.
2. REINFORCEMENT SHALL BE PLACED AND SECURELY TIED IN POSITION AS SHOWN ON THE DRAWINGS. STARTER BARS SHALL BE HELD IN PLACE BY TYING TO HORIZONTAL BARS AT CLEANOUT BLOCKS. PROVIDE COVER TO REINFORCEMENT AS SHOWN IN THE DETAILS.
3. CORE FILLING GROUT SHALL BE AS NOTED IN CONCRETE NOTES IN LIFTS NO MORE THAN 1200mm IN HEIGHT.

Element	Slump	Max. Agg. Size	Cement Type	Exposure Classifn.	Min. Conc. Grade (f'c) MPa U.N.O	Conc. Cover (U.N.O.)
Core Filling Grout	230±30	10	GP	-	20	-

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 400 800 1200 1600 2000mm
400 200

SCALE 1:20

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

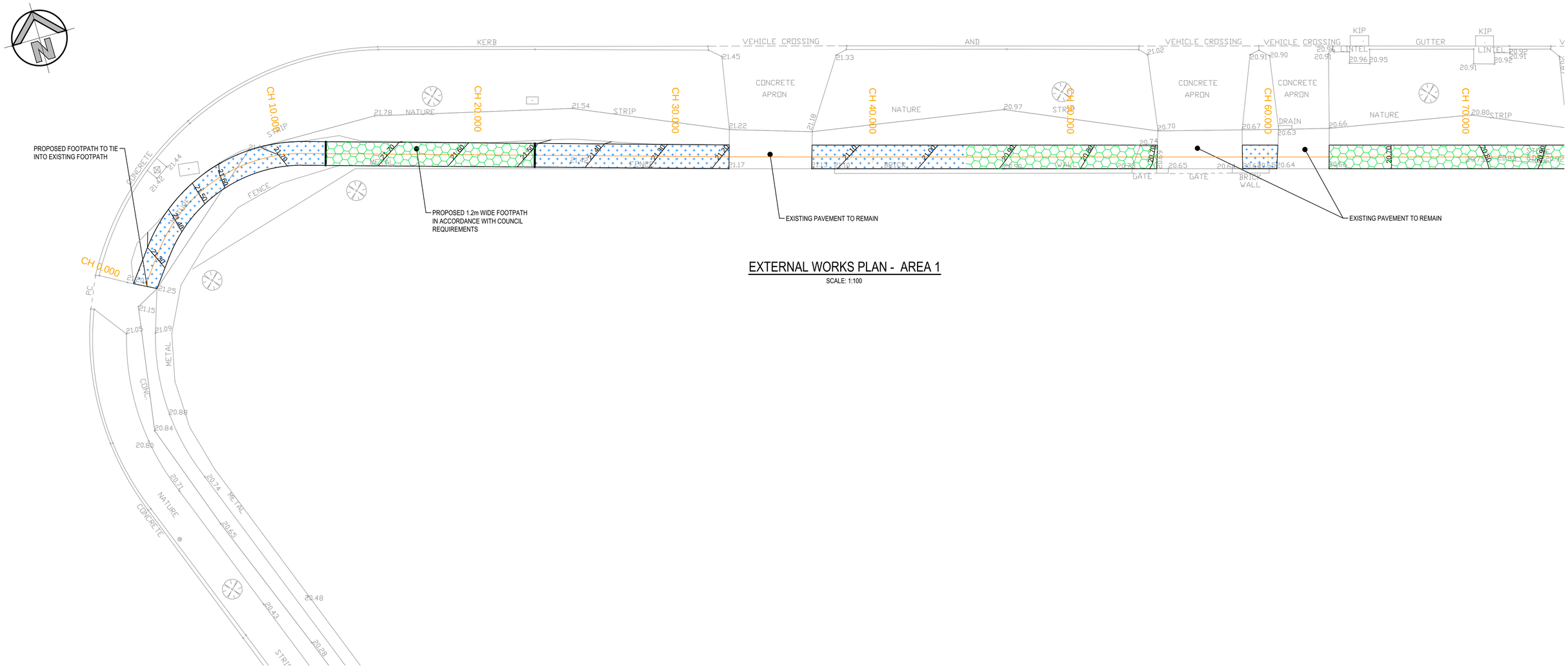
Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
RETAINING WALL DETAILS

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number 22T46_DA_C310

Revision 01



EXTERNAL WORKS PLAN - AREA 1

SCALE: 1:100

PAVEMENT TYPE 1

HEAVY DUTY CONCRETE PAVEMENT

- 80mm THICK 25MPa CONCRETE SLAB (UNREINFORCED)
- 25mm SAND BEDDING
- COMPACTED SUBGRADE (ASSUMED MIN. CBR 3%)

PAVEMENT TYPE 3

FILTAPAVE

- FILTAPAVE OR EQUIVALENT
- 100mm COMPACTED DGB20
- COMPACTED SUBGRADE (ASSUMED MIN. CBR 3%)

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	AFe	NW	06.06.2024

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

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DRAWING TO BE PRINTED IN COLOUR

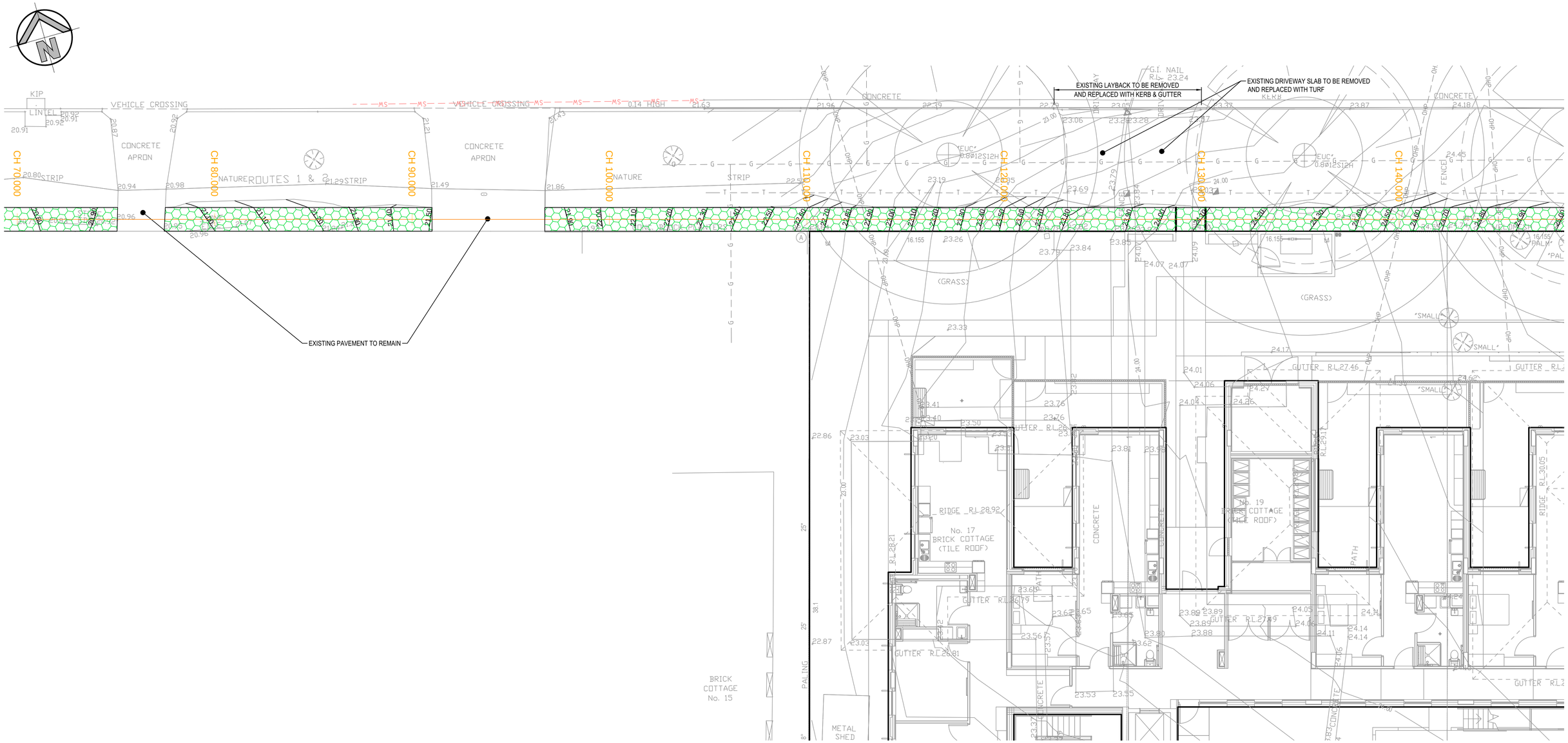
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL WORKS PLAN
SHEET 1 OF 4

Drawn	Designed	Original issue date
A.Fernandes	N.Wetzlar	MAY 2024
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

Drawing number: 22T46_DA_EX01
Revision: 01



EXTERNAL WORKS PLAN

SCALE: 1:100

PAVEMENT TYPE 3

FILTAPAVE

- FILTAPAVE OR EQUIVALENT
- 100mm COMPACTED DGB20
- COMPACTED SUBGRADE (ASSUMED MIN. CBR 3%)

0 2 4 6 8 10m

2 1

SCALE 1:100

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

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SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	AFe	NW	06.06.2024					

Client
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Architect
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DRAWING TO BE PRINTED IN COLOUR

henry&hymas

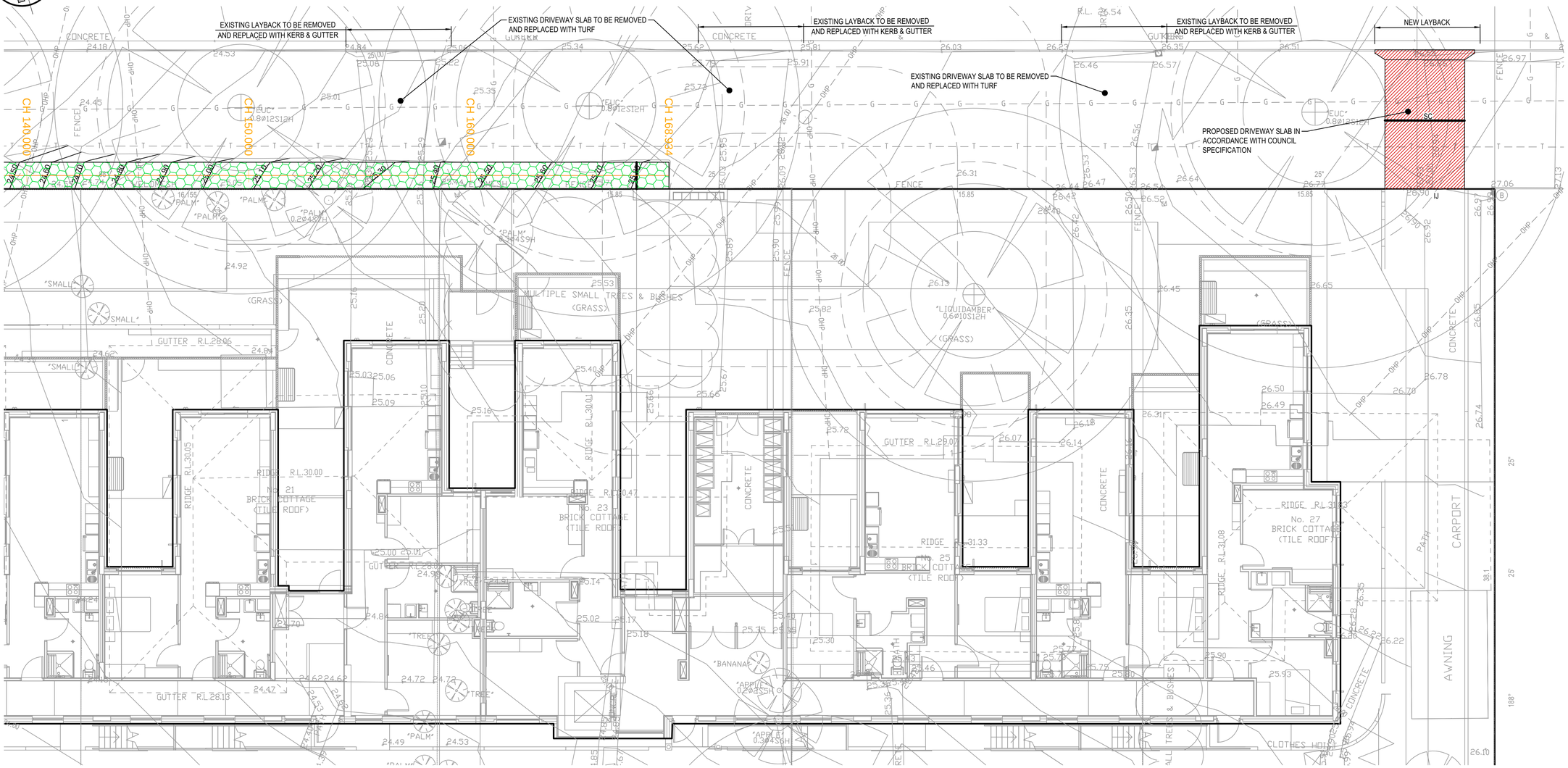
Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL WORKS PLAN
SHEET 2 OF 4

Drawn	Designed	Original issue date
A.Fernandes	N.Wetzlar	MAY 2024
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

Drawing number: 22T46_DA_EX02

Revision: 01



EXTERNAL WORKS PLAN

SCALE: 1:100

PAVEMENT TYPE 2

150mm THICK 32MPa CONCRETE SLAB WITH TOP SLP2 MESH (MIN.40mm COVER)
100mm COMPACTED DGB 20
COMPACTED SUBGRADE (ASSUMED MIN. CBR 3%)

PAVEMENT TYPE 3

FILTAPAVE

FILTAPAVE OR EQUIVALENT
100mm COMPACTED DGB20
COMPACTED SUBGRADE (ASSUMED MIN. CBR 3%)

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 2 4 6 8 10m
2 1
SCALE 1:100

FOR DA ONLY

SURVEY INFORMATION
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NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	AFe	NW	06.06.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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Email email@hhconsult.com.au
Web www.henryandhymas.com.au

DRAWING TO BE PRINTED IN COLOUR

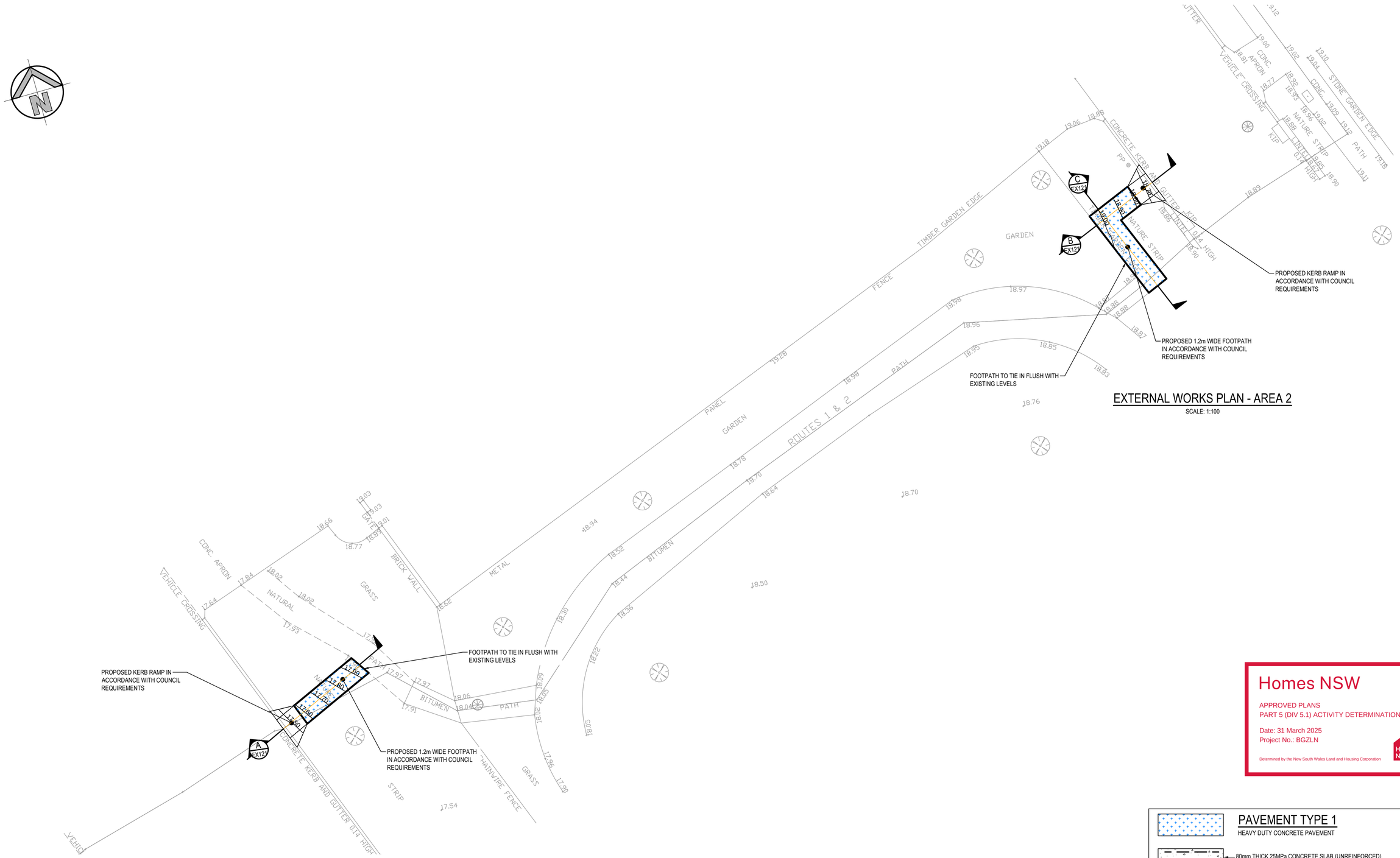
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL WORKS PLAN
SHEET 3 OF 4

Drawn	Designed	Original issue date
A.Fernandes	N.Wetzlar	MAY 2024
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

Drawing number 22T46_DA_EX03
Revision 01



Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Homes NSW

PAVEMENT TYPE 1

HEAVY DUTY CONCRETE PAVEMENT

- 80mm THICK 25MPa CONCRETE SLAB (UNREINFORCED)
- 25mm SAND SEDDING
- COMPACTED SUBGRADE (ASSUMED MIN. CBR 3%)

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	AFe	NW	06.06.2024

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

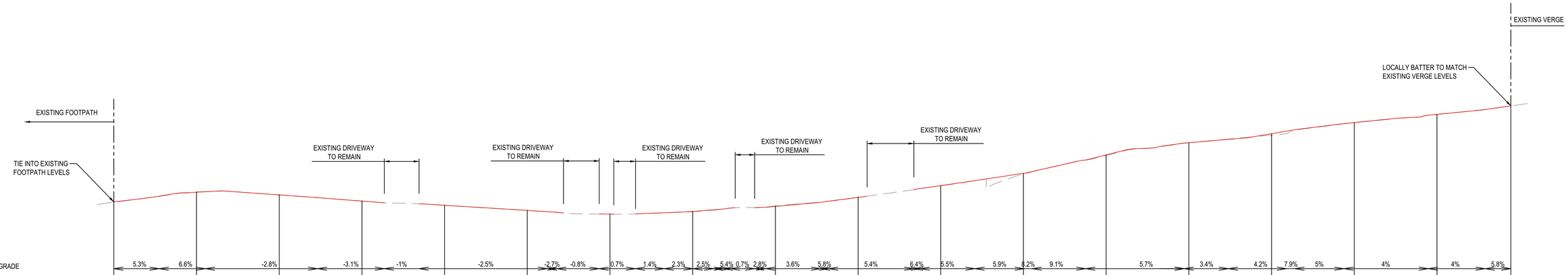
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL WORKS PLAN
SHEET 4 OF 4

Drawn	Designed	Original issue date
A.Fernandes	N.Wetzlar	MAY 2024
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:100

Drawing number: 22T46_DA_EX04
Revision: 01



Datum RL17

DESIGN LEVELS	21.232	21.702	21.572	21.273	21.069	20.822	20.645	20.768	21.014	21.452	22.022	22.617	23.511	24.101	24.538	25.076	25.471	25.885
EXISTING LEVELS	21.229	21.715	21.571	21.271	21.069	20.819	20.646	20.763	21.037	21.448	22.017	22.580	23.478	24.100	24.468	25.070	25.476	25.882
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	140.000	150.000	160.000	168.934

PROPOSED EXTERNAL FOOTPATH CL LONGITUDINAL SECTION

HORIZONTAL SCALE 1:250
VERTICAL SCALE 1:100

0 5 10 15 20 25m
5 4 3 2 1
SCALE 1:250

0 2 4 6 8 10m
2 1
SCALE 1:100

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	SC	NW	06.06.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

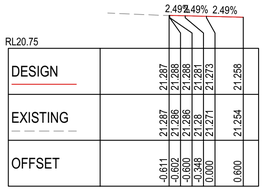
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL FOOTPATH LONG SECTION

Drawn	Designed	Original issue date
M.Barrozo	S.Chen	FEB 2024
Checked	Approved	Scale @A1
N.Heazlewood	A.Francis	AS NOTED

Drawing number: 22T46_DA_EX10
Revision: 01



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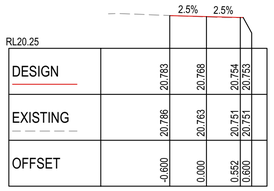

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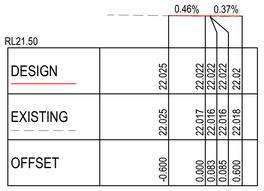

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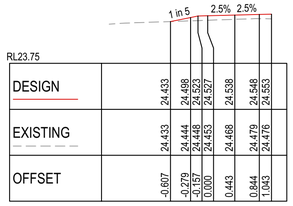

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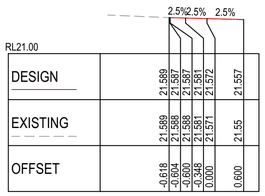

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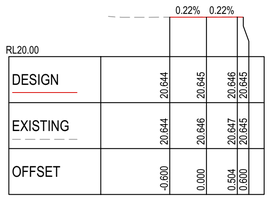

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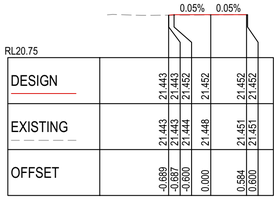

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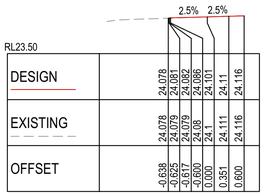

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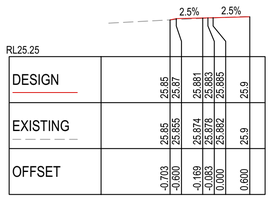

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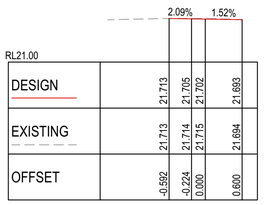

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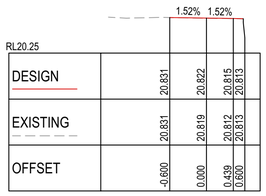

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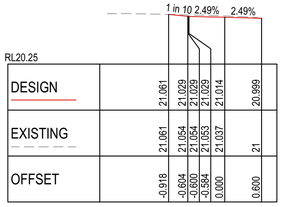

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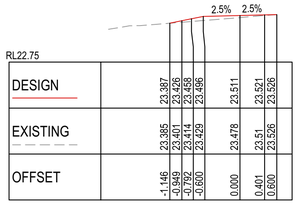

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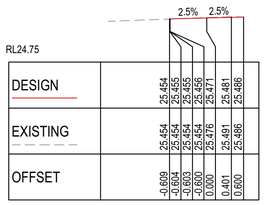

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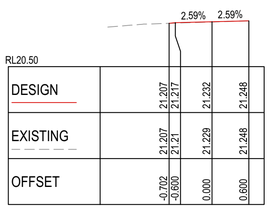

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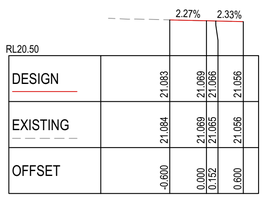

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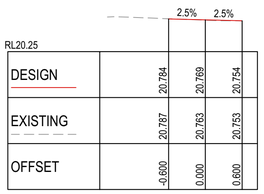
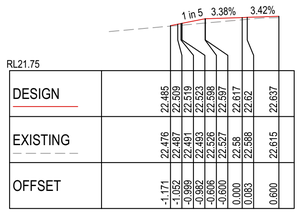


CH 70.038



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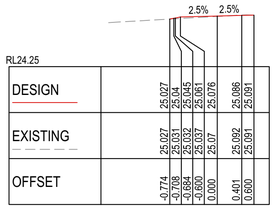

CH 150

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 1000 2000 3000 4000 5000mm
1000 600 200
SCALE 1:50

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	SC	NW	06.06.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

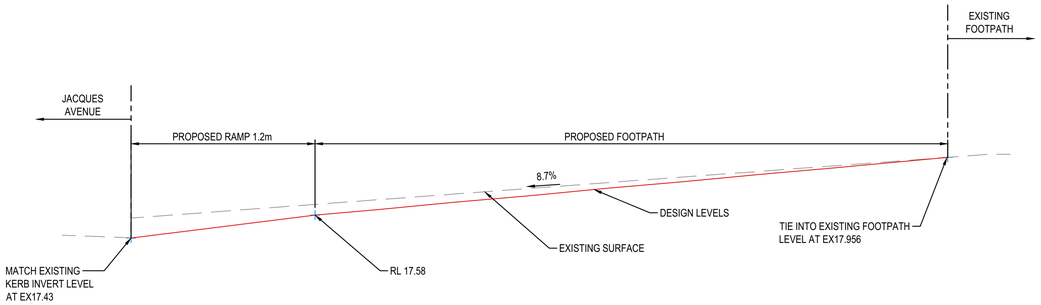
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL FOOTPATH CROSS SECTIONS

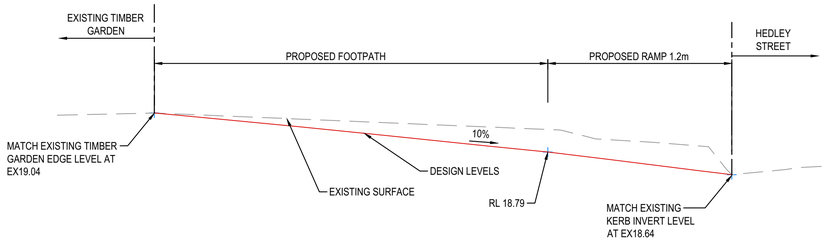
Drawn	Designed	Original issue date
M.Barrozo	S.Chen	FEB 2024
Checked	Approved	Scale @A1
N.Heazlewood	A.Francis	AS NOTED

Drawing number 22T46_DA_EX11
Revision 01



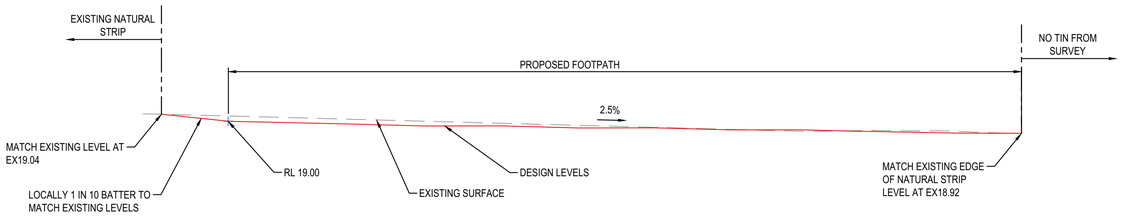
EXTERNAL WORKS AREA 3 SECTION - A

HORIZONTAL SCALE 1:20
VERTICAL SCALE 1:20



EXTERNAL WORKS AREA 2 SECTION - B

HORIZONTAL SCALE 1:20
VERTICAL SCALE 1:20



EXTERNAL WORKS AREA 2 SECTION - C

HORIZONTAL SCALE 1:20
VERTICAL SCALE 1:20

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporaton

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
WATSDON BUCHAN
DATUM: A.H.D.
ORIGIN OF LEVELS: SSM 22740 RL41.10

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DA ONLY	SC	NW	06.06.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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Email email@hhconsult.com.au
Web www.henryandhymas.com.au

DRAWING TO BE PRINTED IN COLOUR

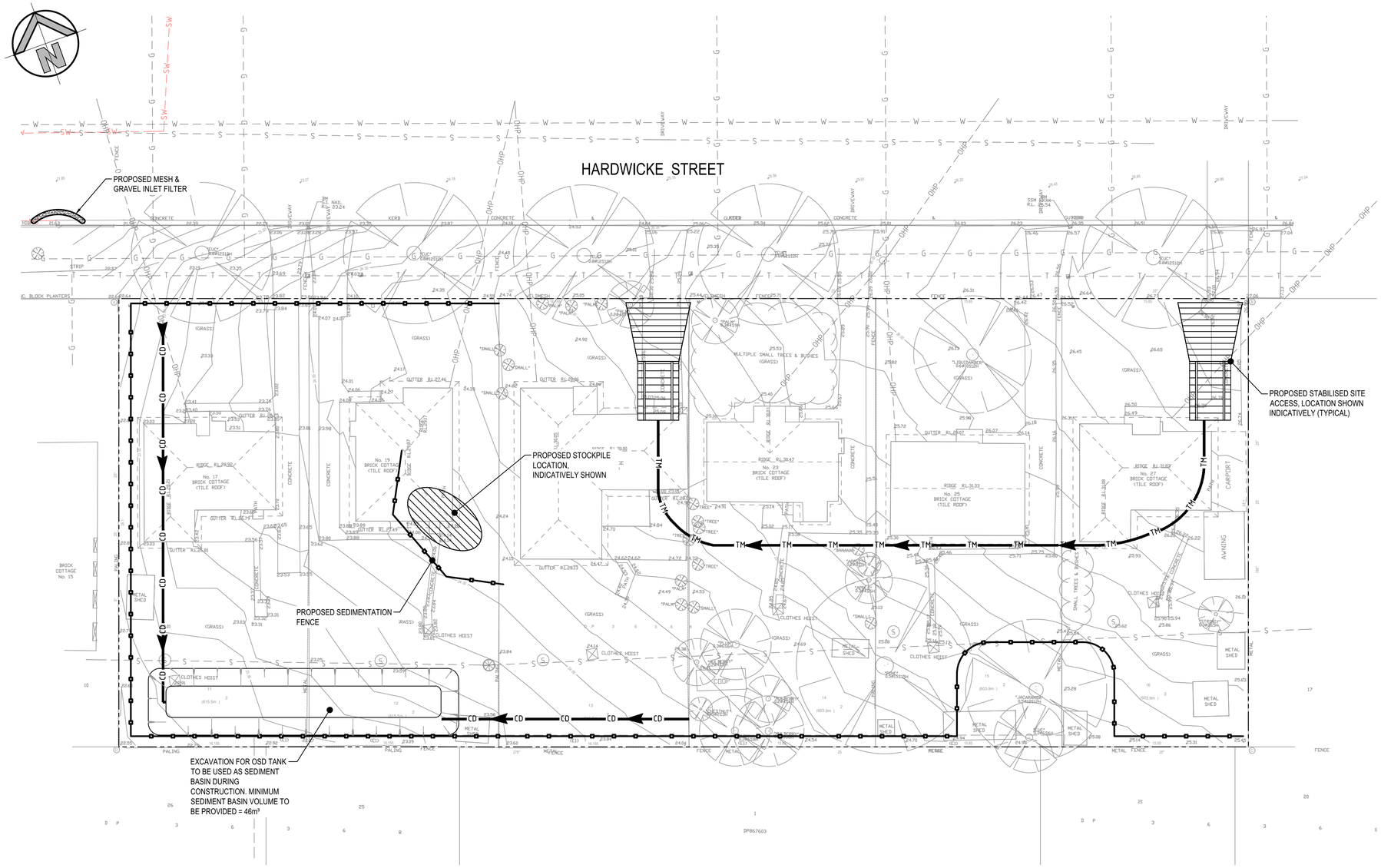
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
EXTERNAL FOOTPATH RAMP SECTIONS

Drawn	Designed	Original issue date
M.Barrozo	S.Chen	FEB 2024
Checked	Approved	Scale @A1
N.Heazlewood	A.Francis	AS NOTED

Drawing number: 22T46_DA_EX12
Revision: 01



SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1:200

LEGEND

- TRAFFIC MANOEUVRING
- PROPOSED CATCH DRAIN
- PROPOSED SEDIMENTATION FENCE
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED MESH & GRAVEL INLET FILTER
- PROPOSED STOCKPILE LOCATION
- SEDIMENT BASIN

SEDIMENT & EROSION CONTROL NOTES

- ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH RESPECTIVE COUNCIL SPECIFICATIONS AND LANDCOM'S "SOIL AND CONSTRUCTION" MANUAL.
- ALL PERIMETER & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN EARTH WORKS AND/OR CLEARING.
- THE SEDIMENT & EROSION CONTROL PLAN MAY REQUIRE FUTURE ADJUSTMENT TO REFLECT CONSTRUCTION STAGING. IT IS ALSO THE CONTRACTORS RESPONSIBILTY TO PREPARE THEIR OWN SEDIMENT AND EROSION CONTROL PLAN WHICH SUITS THE DESIGNED CONSTRUCTION STAGING.
- FILTRATION BUFFER ZONES ARE TO BE FENCED OFF AND ACCESS PROHIBITED TO ALL PLANT AND MACHINERY.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS & SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
- ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING. TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE LOCATION.
- ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES.
- ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.
- ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND STRAW MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION U.N.O. BY LANDSCAPE ARCHITECTS.
- UPON COMPLETION OF ALL EARTHWORKS OR AS DIRECTED BY COUNCIL SOIL CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED, EROSION PROOF WITHIN 14 DAYS.
- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES.

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

Homes NSW

0 4 8 12 16 20m
4 3 2 1
SCALE 1:200

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	AFe	NW	06.06.2024
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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Email email@hhconsult.com.au
Web www.henryandhymas.com.au

DRAWING TO BE PRINTED IN COLOUR

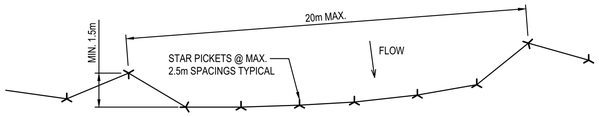
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

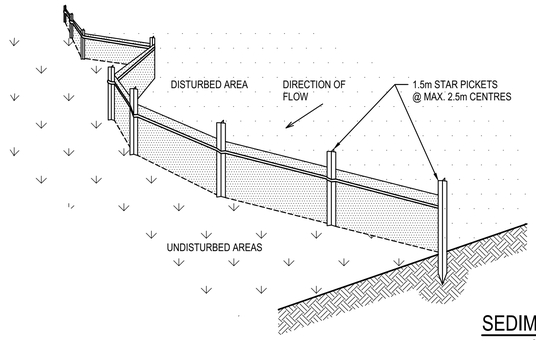
Title
SEDIMENT AND EROSION CONTROL PLAN

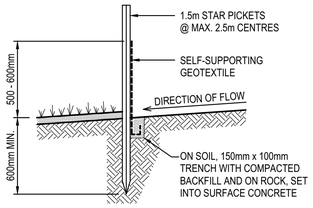
Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	APRIL 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

Drawing number 22T46_DA_SE01
Revision 02



PLAN





SECTION DETAIL

SEDIMENT FENCE

SCALE N.T.S.

SEDIMENT FENCE CONSTRUCTION NOTES:

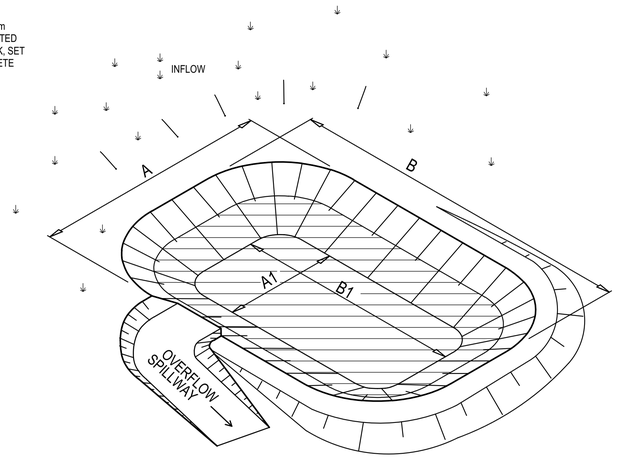
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.

2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.

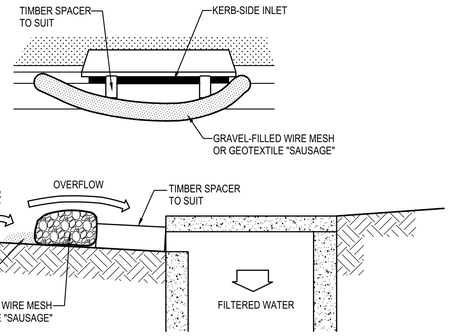
3. 3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.

4. 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.

5. 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



PERSPECTIVE VIEW

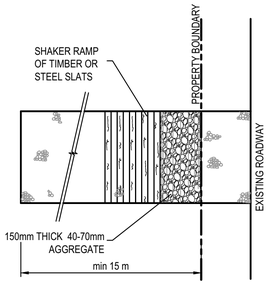


MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
2. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
3. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
4. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
5. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY CAN FIRMLY ABUT EACH OTHER AND SEDIMENT / LADEN WATERS CANNOT PASS BETWEEN.

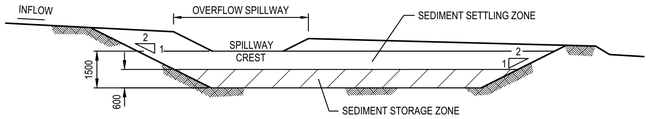
MESH & GRAVEL INLET FILTER

SCALE N.T.S.



PLAN
STABILISED SITE ACCESS WITH SHAKER RAMP

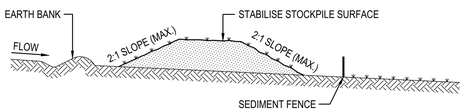
N.T.S.



TYPICAL SECTION

TYPE 'D' & 'F' SEDIMENTATION BASIN

N.T.S.



STOCKPILE CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

STOCKPILES

SCALE N.T.S.

SEDIMENTATION BASIN CALCULATIONS:
(FOR TYPE D & F SOILS) - PER 1 ha

BASIN CAPACITY = SETTLING ZONE + SEDIMENT STORAGE ZONE

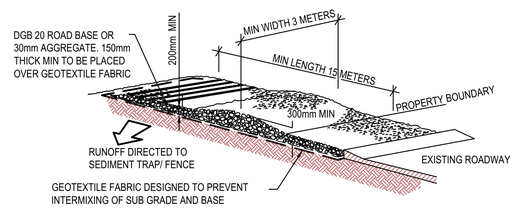
Settling Zone = 10 x C_v x A x $R_{(y\ \%lle\ ,\ 5\ day)}$
= 10 x 0.5 x 1.00 x 19.0
= 95.0 m³/ha
and
Sediment Storage Zone = 50 % Settling Zone
= 0.5 x 95.0 m³/ha
= 47.5 m³ /ha
therefore
BASIN CAPACITY = 95.0 + 47.5 = 142.5 m³/ha

CHECK THIS NUMBERS IN THE BLUE BOOK

CROSS NUMBERS TO BE REPLACED WITH RESPECTIVE NUMBERS

The basin is to be a slow settling basin with a slow discharge to the level of required storage capacity. This will mean that sediment will settle over a period of approximatly 5 days.

CONSTRUCTION SITE



GEOTEXTILE MAY BE A WOVEN OR NEEDLE PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4-90) OF 2500 N

STABILISED SITE ACCESS WITH SHAKER RAMP

N.T.S.

NOTES:

1. THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE.

2. THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.

3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.

4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY "HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
DATUM: A.H.D
ORIGIN OF LEVELS: SSM135870 RL26.542

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR DA ONLY	AFe	NW	06.06.2024					
01	ISSUED FOR DA ONLY	MP	NW	23.02.2024					

Client
NSW GOVERMENT LAND & HOUSING CORPORATION

Architect
CUSTANCE ARCHITECTURE

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DRAWING TO BE PRINTED IN COLOUR

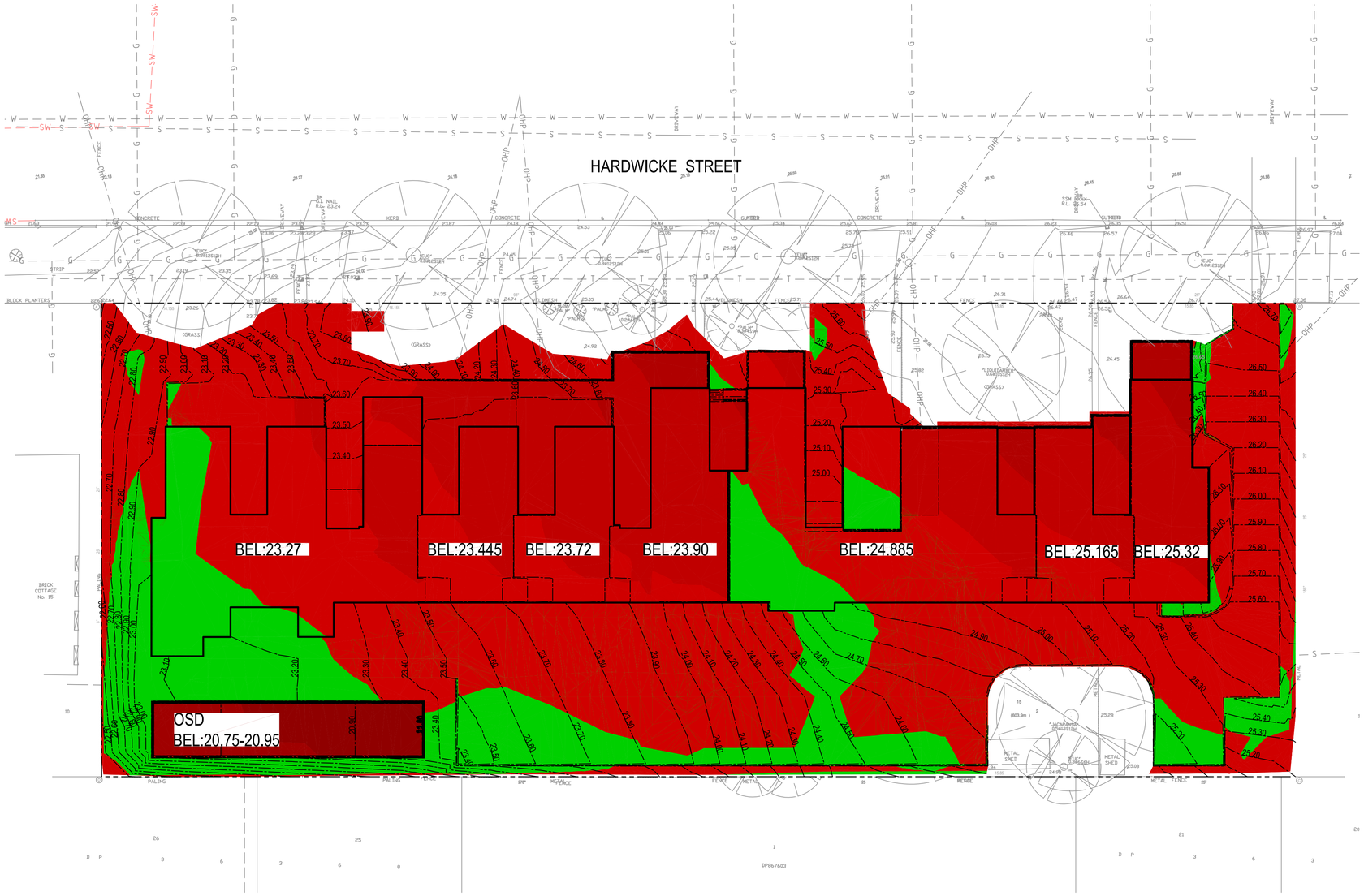
henry&hymas

Project
PROPOSED RESIDENTIAL DEVELOPMENT
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
SEDIMENT AND EROSION CONTROL DETAILS

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	APRIL 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	NTS

Drawing number: 22T46_DA_SE02
Revision: 02



BULK EARTHWORKS CUT AND FILL PLAN

SCALE: 1:200

LEGEND

EXISTING BOUNDARY

25.70 BE CONTOURS

DEPTH RANGE Lower_value		Upper_value		Colour
-10	to	-7	m	
-7	to	-6	m	
-6	to	-5	m	
-5	to	-4	m	
-4	to	-3	m	
-3	to	-2.5	m	
-2.5	to	-2	m	
-2	to	-1.5	m	
-1.5	to	-1	m	
-1	to	-.5	m	
-.5	to	.0	m	
.0	to	.5	m	
.5	to	1	m	
1	to	1.5	m	
1.5	to	2.	m	
2	to	2.5	m	
2.5	to	3.	m	
3.	to	4	m	
4	to	5	m	
5	to	6	m	
6	to	7	m	
7	to	10	m	
10	to	90	m	

EARTHWORKS QUANTITIES

(APPROXIMATE ONLY)

NOT TO BE USED FOR CONTRACTUAL PURPOSES. TENDERERS TO DETERMINE VOLUMES USING THEIR OWN METHOD OF CALCULATION.

- EARTHWORKS QUANTITIES -	
TOTAL AREA (3131 m²)	
CUT	1044 m³
FILL	75 m³
EXCESS OF CUT OVER FILL	969 m³
TOPSOIL STRIPPING "200mm" OF 632.2m³ NOT INCLUDED IN CALCULATION	
EXCAVATION FOR SERVICE TRENCHES NOT INCLUDED IN CALCULATION	
EXCAVATION FOR RETAINING WALLS NOT INCLUDED IN CALCULATION	

PAVEMENT THICKNESS "INCLUDING BEDDING THICKNESS"		
BUILDING SLAB	280	mm
OTHER AREAS	250	mm

Homes NSW

APPROVED PLANS
PART 5 (DIV 5.1) ACTIVITY DETERMINATION

Date: 31 March 2025
Project No.: BGZLN

Determined by the New South Wales Land and Housing Corporation

0 4 8 12 16 20m

4 3 2 1

SCALE 1:200

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
NORTON SURVEY PARTNERS
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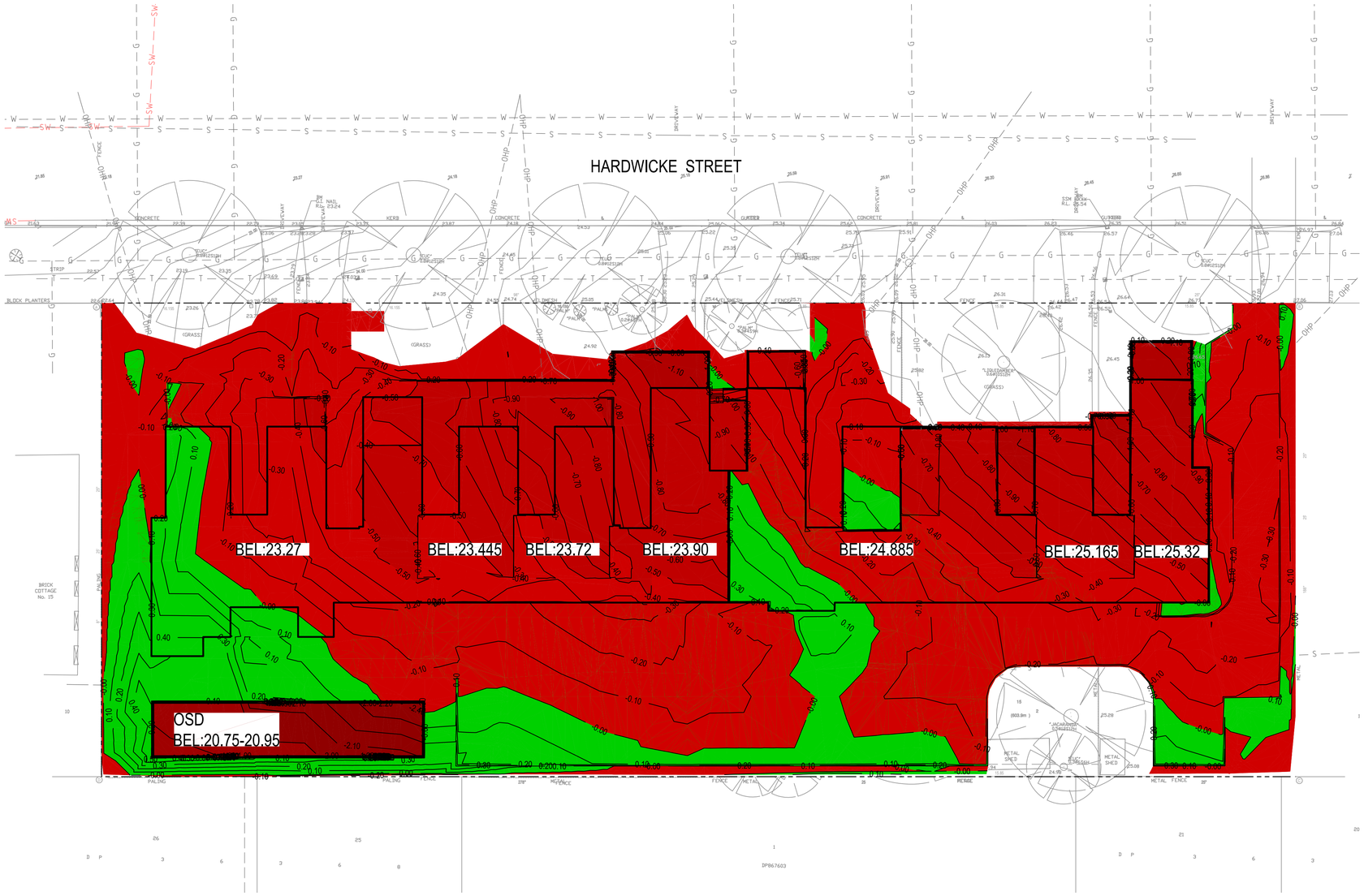
17-27 HARDWICKE ST, RIVERWOOD, NSW

Title
BULK EARTHWORKS CUT AND FILL PLAN

Drawn	Designed	Original issue date
S.Chen	N.Wetzlar	DECEMBER 2023
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

Drawing number 22T46_DA_BE01

Revision 02



BULK EARTHWORKS CUT AND FILL DEPTH PLAN

SCALE: 1:200

LEGEND

EXISTING BOUNDARY

-0.20 BE DEPTH CONTOURS

DEPTH RANGE Lower_value		Upper_value		Colour
-10	to	-7	m	
-7	to	-6	m	
-6	to	-5	m	
-5	to	-4	m	
-4	to	-3	m	
-3	to	-2.5	m	
-2.5	to	-2	m	
-2	to	-1.5	m	
-1.5	to	-1	m	
-1	to	-.5	m	
-.5	to	.0	m	
.0	to	.5	m	
.5	to	1	m	
1	to	1.5	m	
1.5	to	2.	m	
2	to	2.5	m	
2.5	to	3.	m	
3.	to	4	m	
4	to	5	m	
5	to	6	m	
6	to	7	m	
7	to	10	m	
10	to	90	m	

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EXCAVATION FOR RETAINING WALLS NOT INCLUDED IN CALCULATION	

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Homes NSW

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0 4 8 12 16 20m

4 3 2 1

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N.Wetzlar	A.Francis	1:200

Drawing number: 22T46_DA_BE02

Revision: 02