DEVELOPMENT APPLICATION

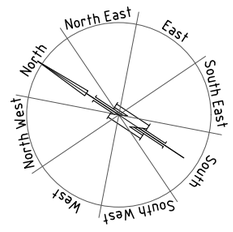
APPLICATION NUMBER:	PLN-24-184
PROPOSED DEVELOPMENT:	Multiple Dwellings (one existing, two proposed)
LOCATION:	201 Tolosa Street Glenorchy
APPLICANT:	Channel Constructions
ADVERTISING START DATE:	23/12/2025
ADVERTISING EXPIRY DATE:	15/01/2026

Plans and documentation are available for inspection at Council's Offices, located at 374 Main Road, Glenorchy between 8.30 am and 5.00 pm, Monday to Friday (excluding public holidays) and the plans are available on Glenorchy City Council's website (**www.gcc.tas.gov.au**) until **15/01/2026**.

During this time, any person may make representations relating to the applications by letter addressed to the Chief Executive Officer, Glenorchy City Council, PO Box 103, Glenorchy 7010 or by email to gccmail@gcc.tas.gov.au.

Representations must be received by no later than 11.59 pm on **15/01/2026**, or for postal and hand delivered representations, by 5.00 pm on **15/01/2026**.

374 Main Road, Glenorchy
PO Box 103, Glenorchy TAS 7010
(03) 6216 6800 | gccmail@gcc.tas.gov.au
www.gcc.tas.gov.au
ABN 19 753 252 493



GLENORCHY CITY COUNCIL
PLANNING SERVICES

APPLICATION No. : PLN-24-184

DATE RECEIVED: 04/12/2025

Widen existing cross over to min. 5.50m wide kerb & gutter crossing and access to be provided and constructed in accordance with Standard Drawing TSD-R09. Access to be inspected by Council prior to sealing or pouring of new concrete.

Remove Ex. gate

Existing bitumen and gravel driveway to be removed and upgraded to concrete driveway as per plans

Ex. Paling Fence

54.86m
146°25'

Ex. Paling Fence

C.T.55463/5
1102m²

SHED TO BE REMOVED

Ex.Concrete Cross Over

Remove sections of retaining wall to allow for cross over widening

Ex. SW I.O. Lid RL 79.177

Ex. SW outlet

Ex. Gas meter

Ex. gravity block retaining wall

Ex. Water meter

Remove concrete path

Ex. Residence

SW pipe

Ex mw

TOLOSA STREET

Kerb & Gutter

Footpath

51°31'

18.29m

Approx. Sewer Connection

Sewer I.O. Lid RL80.204

Ex. gravity block retaining wall with fence over

Ex. Telstra

5166

UNIT 1

UNIT 2

3700

2020

780

1785

Ex. Paling Fence

18.29m

231°31'

54.86m
326°25'

Ex. Paling Fence

Remove concrete path

Proposed Retaining wall, 0-1.5m

Remove existing block retaining wall

Proposed Retaining wall, 0-0.75m

Proposed Retaining wall, 0-2.4m

Proposed Retaining wall, 0-3.5m

CONTENTS

1. Site Plan
2. Landscape Plan
3. Driveway Plan
4. Vehicle Turning Plans
5. Retaining Wall Typical Detail
6. Stormwater Plan
7. Plumbing Details
8. Plumbing Notes
9. Existing Residence Plan
10. Unit 1 Lower Level Plan
11. Unit 1 Upper Level Plan
12. Unit 1 Elevations
13. Unit 1 Elevations
14. Unit 2 Lower Level Plan
15. Unit 2 Upper Level Plan
16. Unit 2 Elevations
17. Unit 2 Elevations

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

Total Hours to Date: 67hrs

SITE PLAN

SCALE 1:200
0 2000 4000

AMENDED 21/02/2025

DATE 04/12/25

DRAWING NO. 01 OF 17

DRAWN BY G.TILLEY
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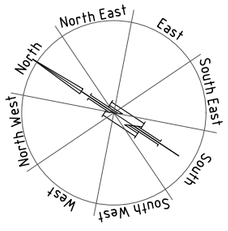
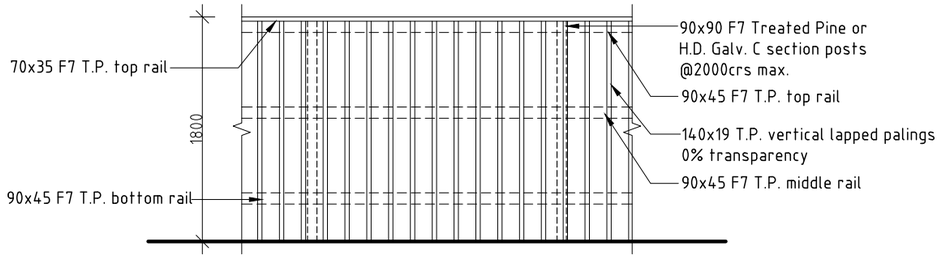
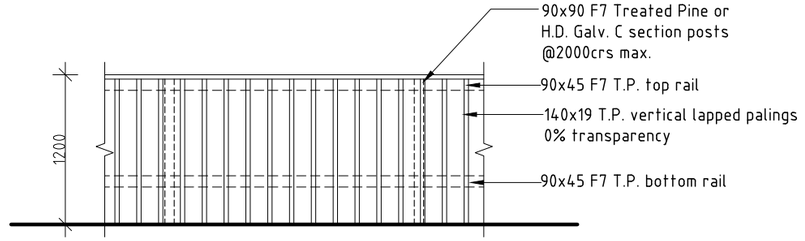
phone ph 0400 671 582



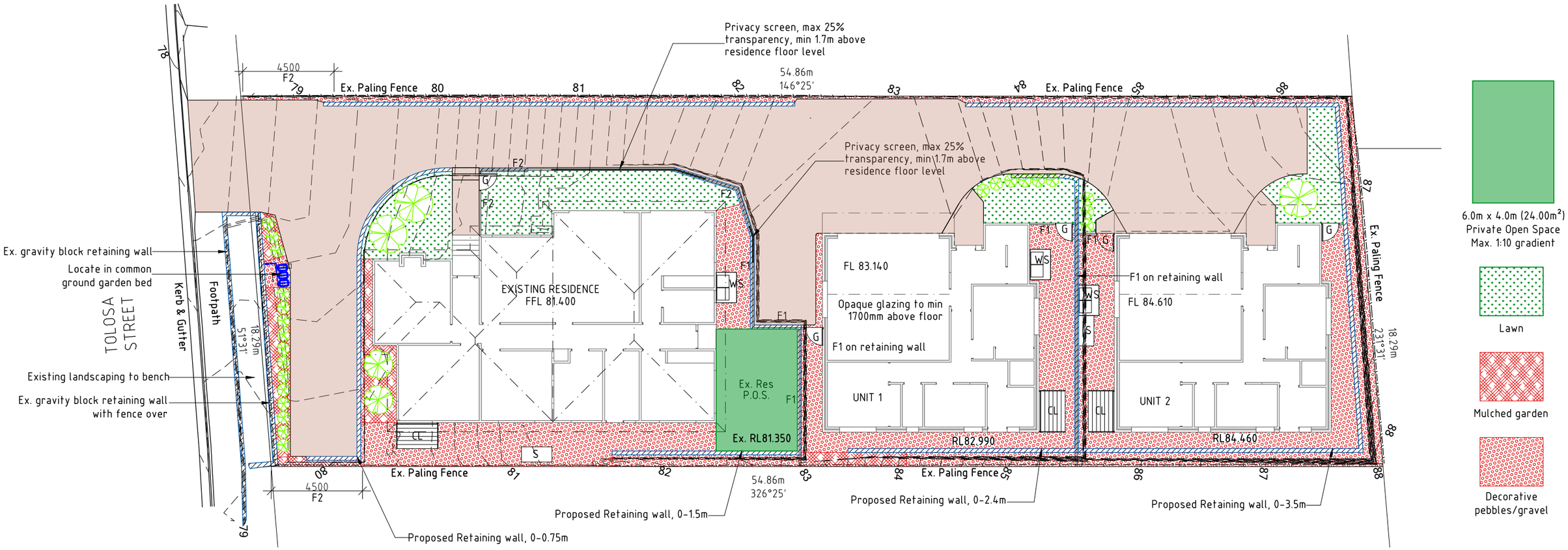


F1 FENCE ELEVATION (Typical)
Scale 1:50



F2 FENCE ELEVATION (Typical)
Scale 1:50

CL Freestanding Retractable clothes line
F1 1800 high paling fence
F2 1200 high paling fence
G Gate
S 750x1500 shed
WS 1.5m² impervious area for waste storage 1000x1500 concrete pad/paving
B● B off Thorn Bollard lights Satin black 1500-840 400K 24.5 watt LED 140Ø x 230mm high



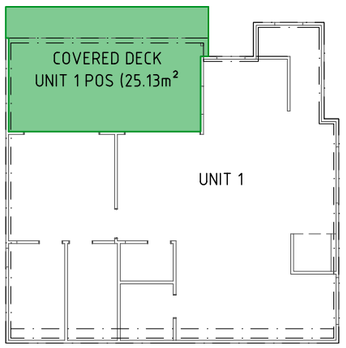
NOTE: Plant height stated is matured height apart from the hedge which can be managed to desired height.

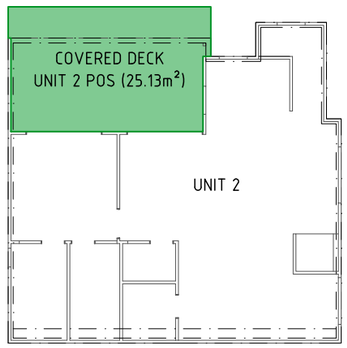
Garden bed not to extend against building, refer to CSIRO report for info

Protea neriifolia
2-3m high

Leucadendron Red gem
1.5m high

Escallonia "Hedge edge" or similar
0.5m high





Ex. Residence Private Open Space	128.69m²
Unit 1 Private Open Space	73.55m²
Unit 2 Private Open Space	84.33m²
Impervious surface	672.32m² divide by 1102m² = 61.00%
Pervious surface	429.68m² divide by 1102m² = 39.00%
Site coverage	530.69m² divide by 1102m² = 48.09%

GLENORCHY CITY COUNCIL
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DEVELOPMENT DRAWINGS ONLY
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PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

LANDSCAPE PLAN

SCALE 1:200
0 2000 4000

AMENDED

DATE 04/12/25

DRAWING NO. 02 OF 17

DRAWN BY G.TILLEY
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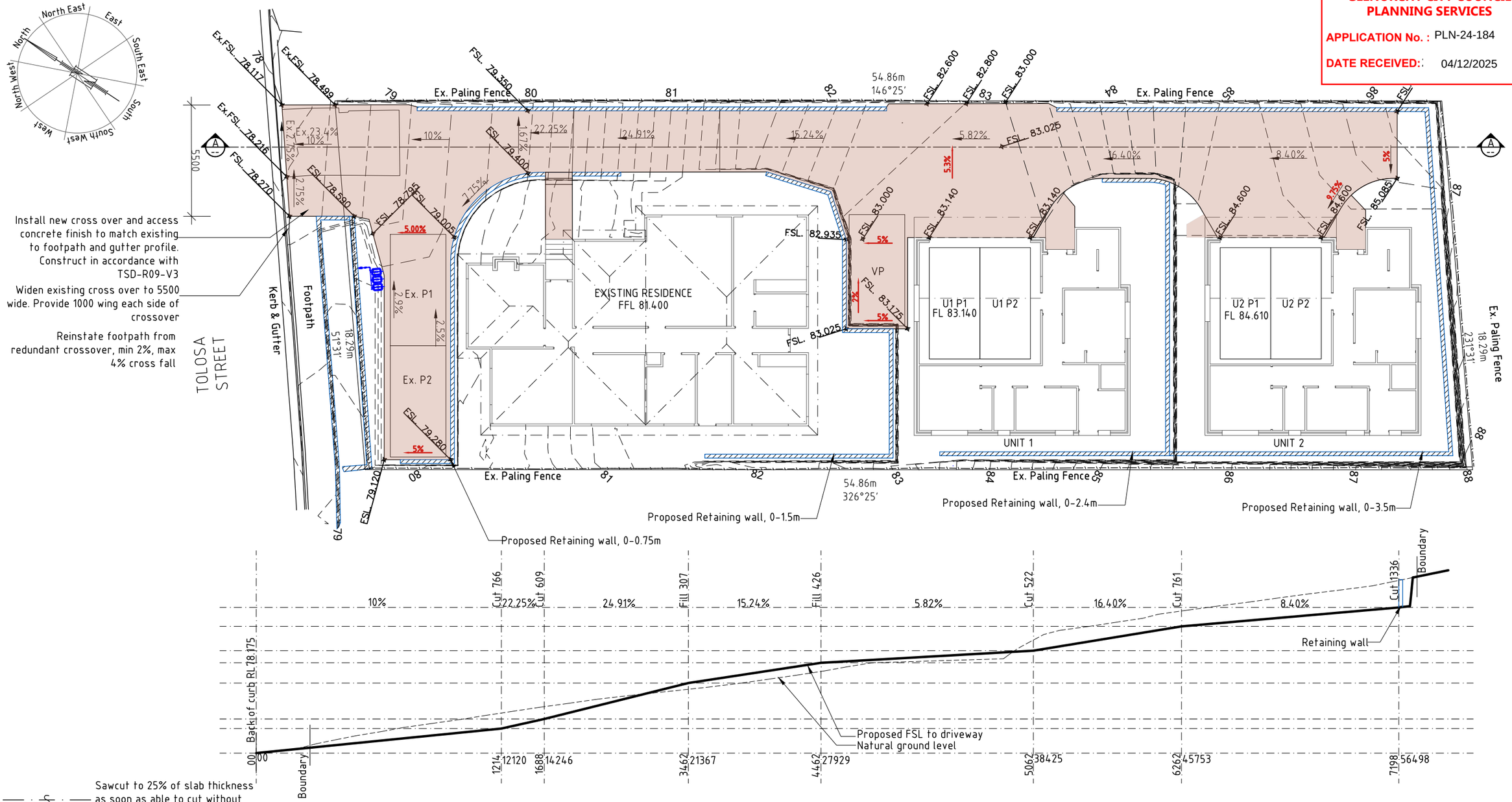
Certified: G. Tilley Accreditation No.CC620H



DRIVEWAY LONG SECTION (SECTION A-A)
SCALE 1:200

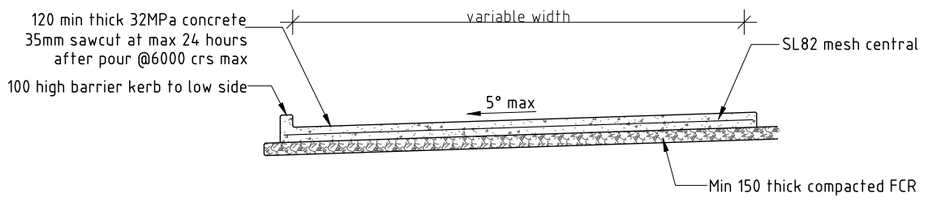
Sawcut to 25% of slab thickness as soon as able to cut without dragging out the aggregate

120 — 120mm Slab on grade, N25, 100 slump SL82 Central

Natural coloured concrete broom finished paving slab to driveway/access & parking

NOTE: All parking & turning areas to be clearly marked

NOTE: Max. 5% gradient to vehicle maneuvering areas



DRIVEWAY CROSS SECTION (TYPICAL)
SCALE 1:50

Carparking and vehicle maneuvering to be of sealed construction and comply with AS2890.1-2004
NO PARKING/KEEP CLEAR signage to be installed for the turning bays so as to remain clear of vehicles at all times.
Visitor parking signs to be installed at visitor parking bays
Signage noting residential parking for all units to be installed for Unit parking spaces.
Parking and vehicle circulation roadways & pedestrian paths to be provided with bollard lighting. Refer to landscape plan for lighting locations.

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PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

DRIVEWAY PLAN

DATE 04/12/25

DRAWN BY G.TILLEY
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SCALE 1:200
0 2000 4000

AMENDED

DRAWING NO. 03 OF 17

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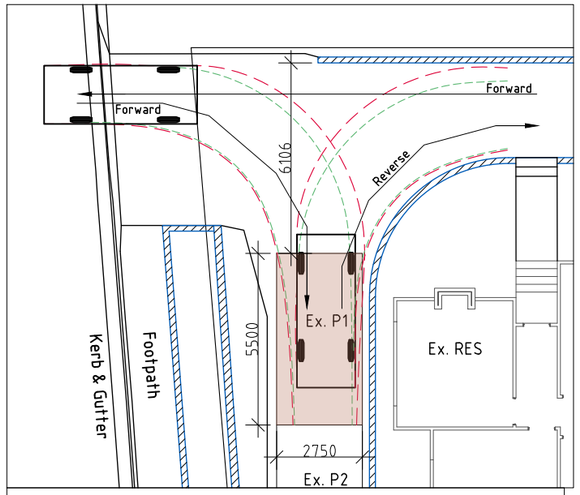
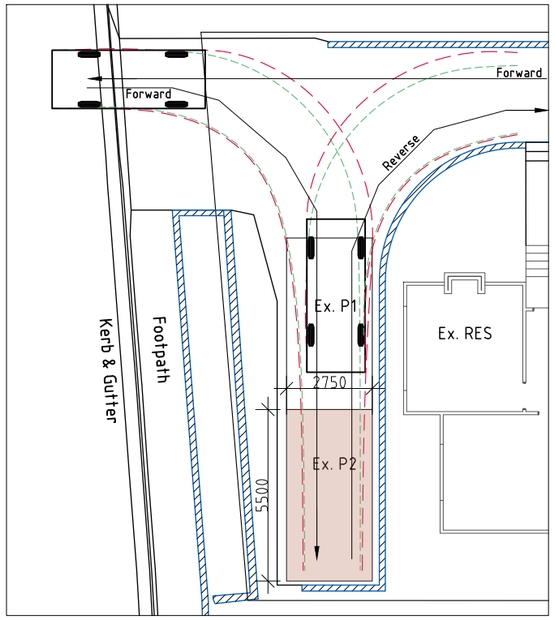
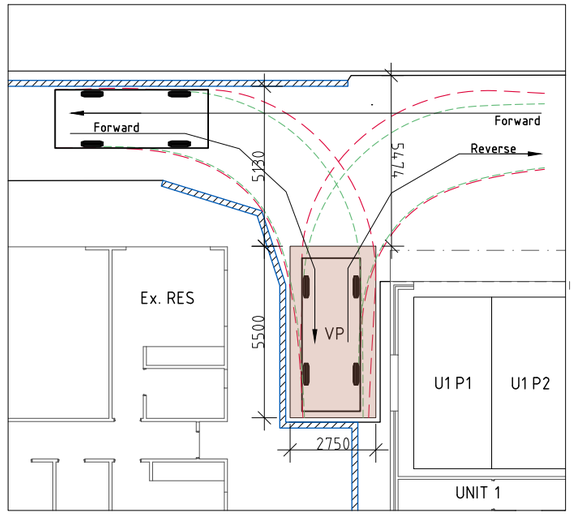
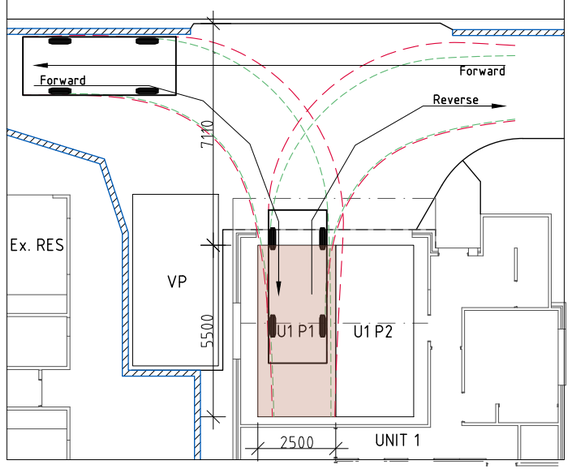
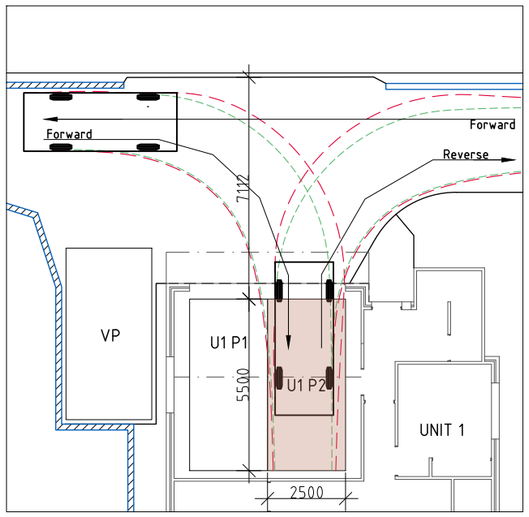
 8823

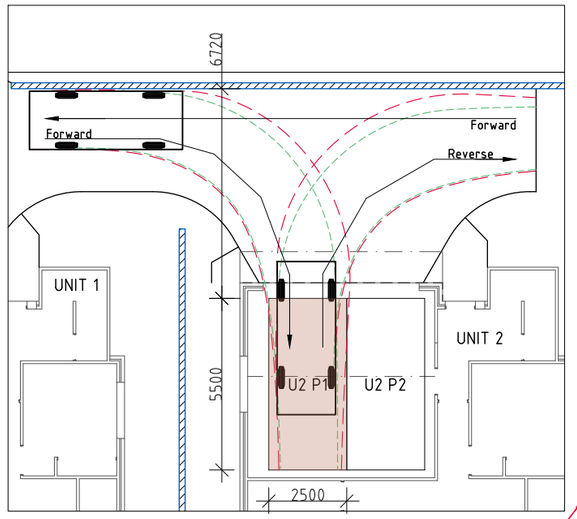


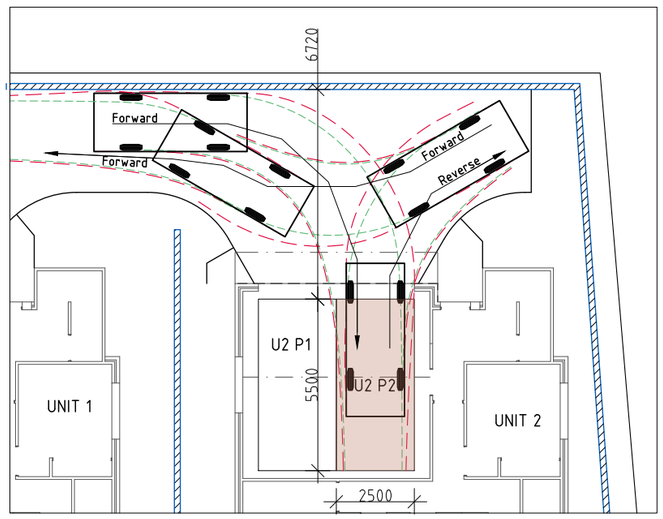












GLENORCHY CITY COUNCIL
PLANNING SERVICES

APPLICATION No. : PLN-24-184

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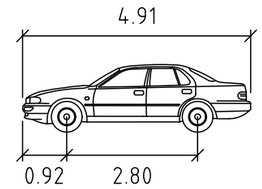

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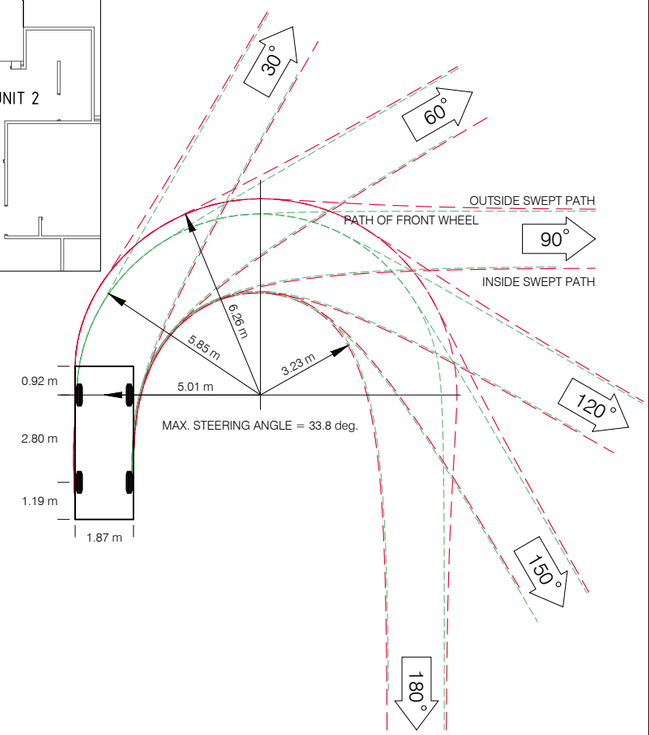
Track	: 1.77
Lock to Lock Time	: 6.00
Steering Angle	: 34.00



DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

RETAINING WALL TYPICAL DETAIL AT 3500 HIGH

DATE 04/12/25

SCALE 1:20
0 200 400

AMENDED

DRAWING NO. 04 OF 17

DRAWN BY G.TILLEY
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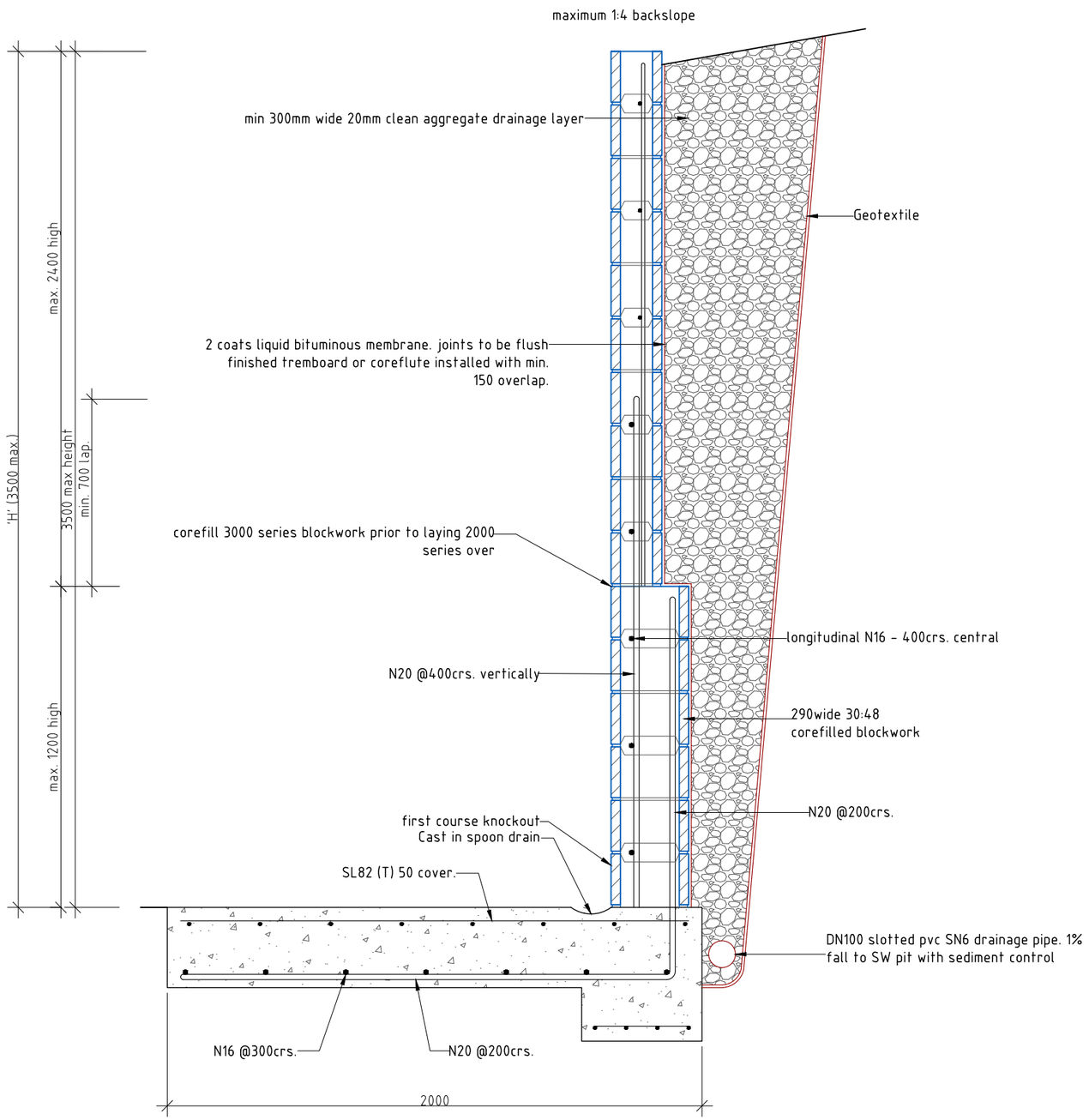

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PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

RETAINING WALL TYPICAL DETAIL AT 3500 HIGH

DATE 04/12/25

DRAWN BY G.TILLEY
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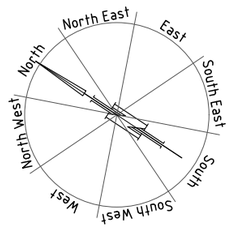
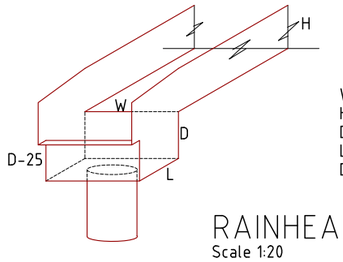
SCALE 1:20
0 200 400

AMENDED

DRAWING NO. 05 OF 17

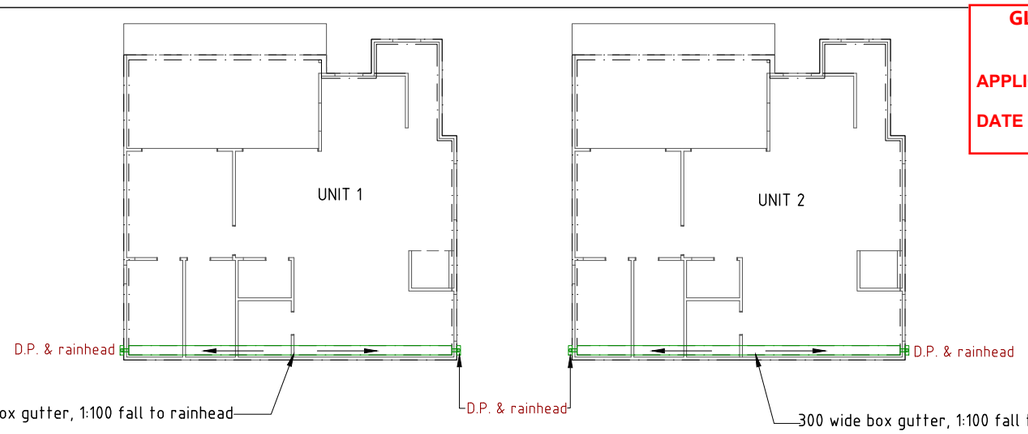
Certified: G. Tilley Accreditation No.CC6201H





W(Width) 300
H(Height) 120
D(Depth) 150
L(Length) 125
D-25 125

RAINHEAD DETAIL
Scale 1:20



Existing SW lot connection, located by Surveyor

Existing stormwater lot connection to be upgraded to DN150 uPVC SN8 stormwater lot connectionat Min 1:100 grade,PVC adaptor to 150x75x5 RHS & 600x600 grated disconnector pit at property boundary
Lid: 78.55
IL:78.29

Existing kerb outlet to be upgraded to 150x75x5 RHS in general accordance with TSD-SW29v3
TOK:78.38
IL:78.25

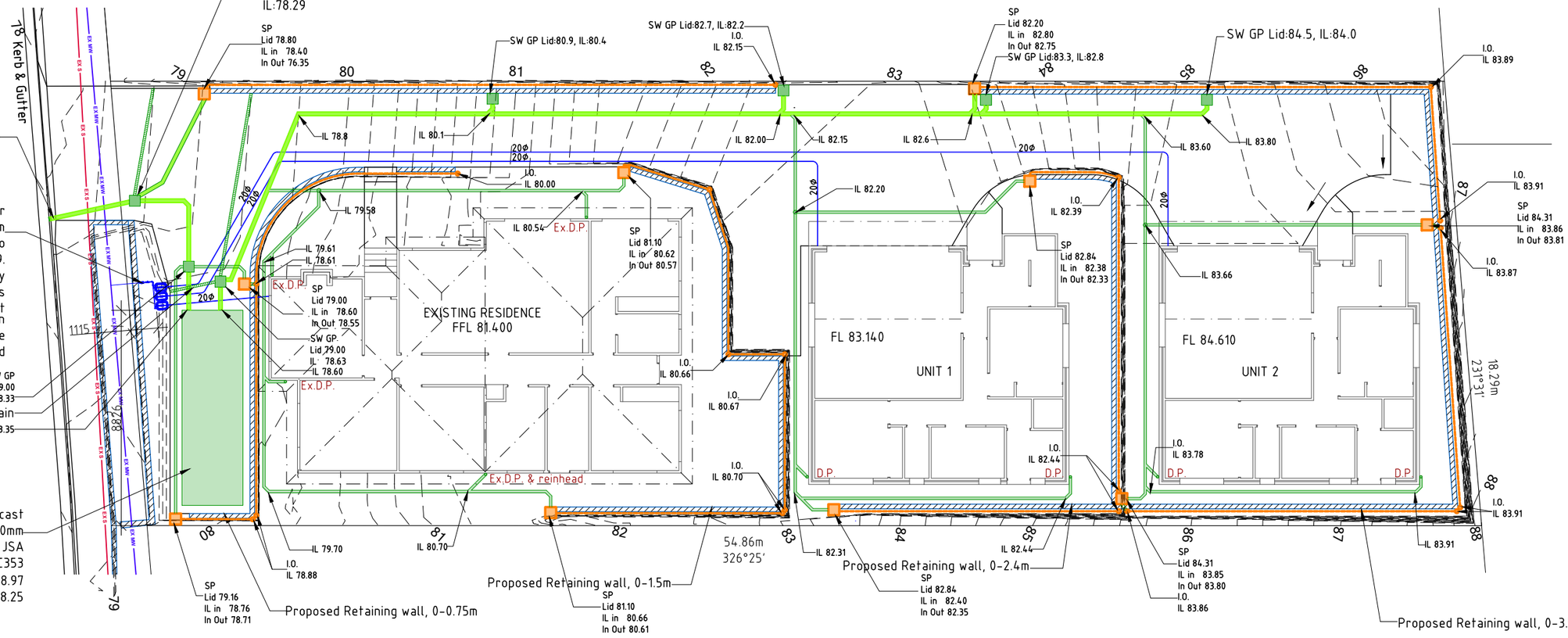
New DN32 ID25mm water connection with new 3/20mm sub meters on a manifold to TWS-W-0002 sheet 9. Works carried out by Taswater at the developers cost

Locate within type 'A' non trafficable box with concrete surround in common ground

SW GP
Lid 79.00
IL 78.33

Grated channel drain
IL 78.35

11.4kL below ground precast concrete deyention tank with 40mm orifice plate outlet. Refer to JSA drawing C353
Lid 78.97
IL 78.25



DN150 uPVC SN4 Stormwater pipe, min 1:100 fall, UNO

DN100 uPVC SN6 Stormwater pipe, min 1:100 fall.

450x450x600 deep precast stormwater pit with trafficable lid class 'B' 'ACO'

100mm Channel drain 'ACO' K100 or similar with class 'B'treafficable lid

100mm inspection opening to surface in accordance with AS/NZS 3500.3 Section 7.4

Continuous 100mm diameter slotted HDPE SN8 agricultural pipe with geo fabric sock graded with uniform fall of not less than 1:300 as per ABCB housing provisions Section 3.3.4(a)

100mm inspection opening to surface in accordance with AS/NZS 3500.3 section 6.4.1

Min 450square silt pit- outlet min 50mm below inlet in accordance with NCC Vol 2 3.1.3.4

Water meters for strata developments must be located in common property to allow unfettered access to enable reading, testing, inspection, maintenance and exchange without impediment and must be kept clear of obstructions at all times. Water meters in trafficable areas must be housed in trafficable boxes with a class "B" lid.

NOTE All works are to be in accordance with the Water supply code of Australia WSA03-2011-3.1 Version 3.1 MRWA Edition V2.0 & sewerage Code of Australia Melbourne Retail water agencies Code WSA02-2002 Version 2.3 MRWA Edition 1.0 & TasWater's supplements to those codes.

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

STORMWATER CONCEPT PLAN

DATE 04/12/25

SCALE 1:200
0 2000 4000

AMENDED

DRAWING NO. 06 OF 17

DRAWN BY G.TILLEY
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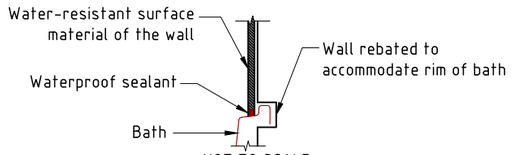
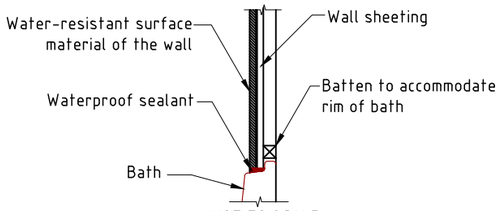


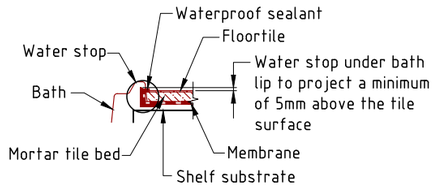
NOT TO SCALE

BATH/WALL JUNCTION - RECESSED



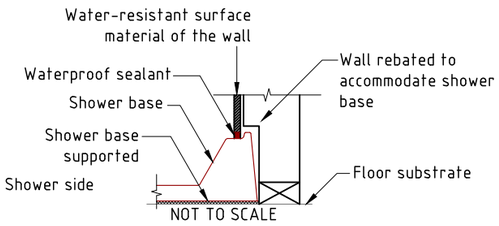
NOT TO SCALE

BATH/WALL JUNCTION - BATTENED



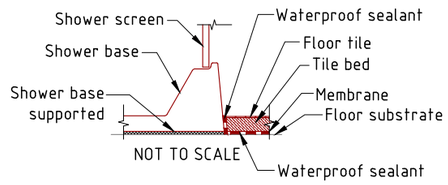
NOT TO SCALE

BATH/SHELF JUNCTION



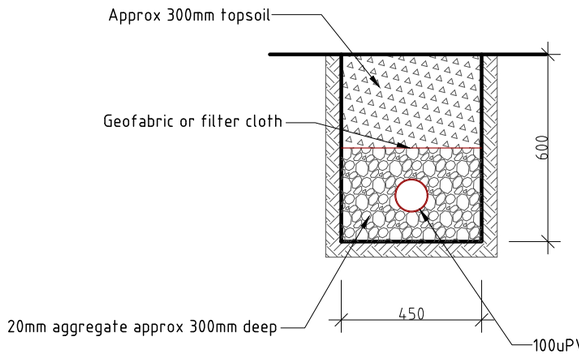
NOT TO SCALE

TYPICAL PREFORMED SHOWER BASE WALL/FLOOR JUNCTION

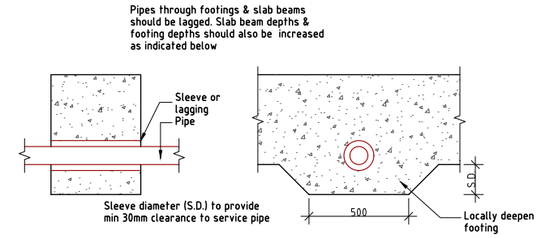


NOT TO SCALE

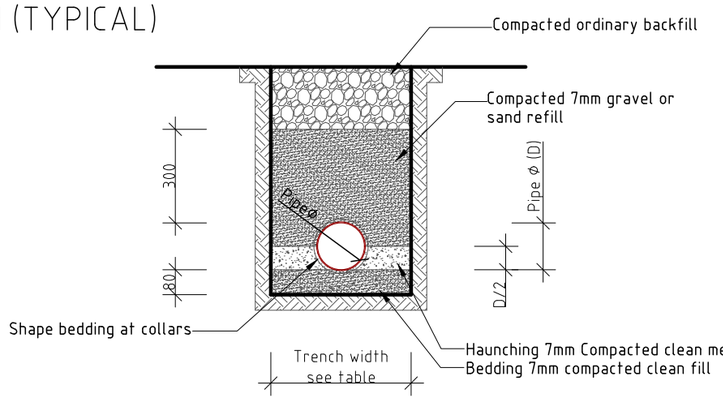
TYPICAL PREFORMED SHOWER BASE/FLOOR JUNCTION ON TIMBER FLOORS, INCLUDING PARTICLEBOARD, PLYWOOD AND OTHER TIMBER MATERIALS



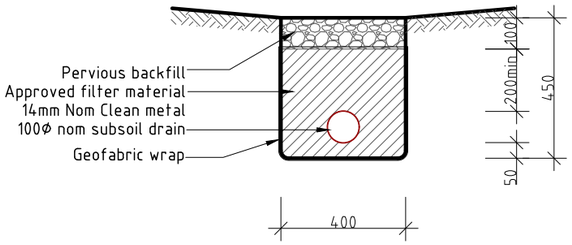
ABSORPTION TRENCH (TYPICAL)



FLEXIBLE CONNECTION FOR SERVICE PIPES PASSING THROUGH FOOTINGS



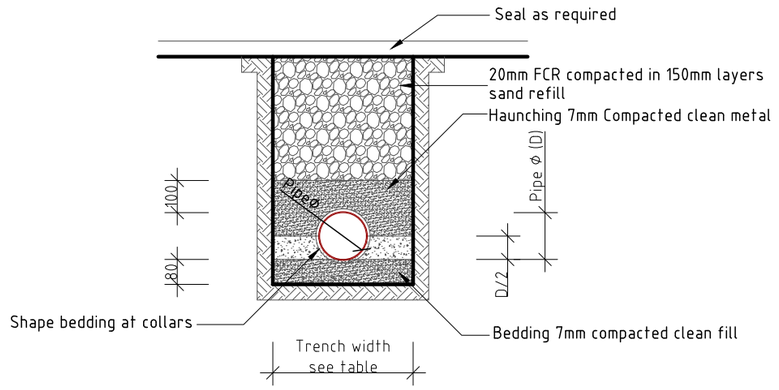
TYPICAL PIPE TRENCH DETAIL NON-TRAFFICABLE AREAS



TYPICAL AGG DRAIN DETAIL

NOTE: All materials and construction to comply with AS3500.3.2021

TRENCH WIDTHS	
Pipe diameter	Min trench width
Less than 50mm	250
75-100mm	450
150-300mm	600
>300mm	ø plus 300mm



TYPICAL PIPE TRENCH DETAIL TRAFFICABLE AREAS

Surface drainage to conform with NCC Vol. 2 Part H2D2.
NOTE: 50mm fall required over first 1m from building.

IMPORTANT NOTICE FOR ATTENTION OF OWNER:
The owners attention is drawn to the fact that foundations and associated drainage in all sites requires continuing maintenance to assist footing performance. Advice for foundation maintenance is contained in the CSRIO Building Technology File 18 and it is the owners responsibility to maintain the site in accordance with that document.

GLENORCHY CITY COUNCIL PLANNING SERVICES

APPLICATION No. : PLN-24-184

DATE RECEIVED: 04/12/2025

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

PLUMBING DETAILS

DATE 04/12/2025

DRAWN BY G.TILLEY
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phone ph 0400 671 582

SCALE 1:20
0 200 400

AMENDED

DRAWING NO. 07 OF 17

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WET AREAS TO COMPLY WITH NCC VOL. 2 PART H4D2, ABCB HOUSING PROVISIONS PART 10.2 AND AS 3740

WATERPROOFING OF ENCLOSED & UNENCLOSED SHOWERS:
FLOOR: Waterproof entire floor if no preformed shower base provided
WALLS: Waterproof to not less than 1800mm above the floor substrate
WALL JUNCTIONS AND JOINTS: Waterproof internal and external corners and horizontal joints within a height of 1800mm above the floor level with not less than 40mm width either side of the junction
WALL/FLOOR JUNCTIONS: Waterproof internal and external corners and joints
PENETRATIONS: Waterproof all penetrations

AREAS OUTSIDE THE SHOWER ON CONCRETE SLAB OR FC FLOORING:
FLOORS: Entire floor to be water resistant
WALLS/FLOOR JUNCTIONS: Waterproof all wall/floor junctions and where a flashing is used, the horizontal leg must be not less than 40mm

AREAS OUTSIDE THE SHOWER ON TIMBER FLOOR:
FLOORS: Waterproof entire floor
WALL/FLOOR JUNCTIONS: Waterproof all wall/floor junctions and where a flashing is used, the horizontal leg must be not less than 40mm.

AREAS ADJACENT TO NON-FREESTANDING BATHS AND SPAS (without showers):
FLOOR: Water resistant to entire floor on concrete or FC flooring; or Waterproof to entire floor on timber floor.
WALLS: Water resistant walls to a height of not less than 150mm above the vessels, for the full extent, where the vessel is within 75mm of a wall.
WALL JUNCTIONS AND JOINTS:Water resistant within 150mm above the vessel for the extent of the vessel to a width of 40mm either side of the junction
WALL/FLOOR JUNCTIONS: Waterproof for the extent of the vessel

AREAS ADJACENT TO INSERTED BATHS AND SPAS (without showers):
FLOOR: Water resistant to entire floor on concrete or FC flooring; or Waterproof to entire floor on timber floor.
HORIZONTAL SURFACES: Waterproof shelf adjoining bath or spa and include a waterstop under the vessel lip
WALLS: Waterproof walls to not less than 150mm above the lip of the vessel
WALL JUNCTIONS AND JOINTS: Waterproof junctions within 150mm of vessel to a width of 40mm either side of the junction
WALL/FLOOR JUNCTIONS: Waterproof wall/floor junctions 25mm above finished floor level
PENETRATIONS: Waterproof penetrations where they occur in horizontal surfaces, seal penetrations where they occur in vertical surfaces

OTHER AREAS (LAUNDRIES AND WCs):
FLOOR: Water resistant floor to entire room
WALLS: Water resistant wall to a height of not less than 150mm above the vessel for the extent of the vessel, where the vessel is within 75mm of wall
WALL JUNCTIONS AND JOINTS: Waterproof junctions where a vessel is fixed to a wall
WALL/FLOOR JUNCTIONS: Water resistant wall/floor junctions with horizontal leg not less than 40mm where flashing used
PENETRATIONS: Waterproof penetrations where they occur in surfaces required to be waterproof or water resistant.

WATERPROOFING SYSTEMS:
Waterproofing systems to be in accordance with ABCB Housing Provisions Part 10.2.6.

FALLS TO WET AREA FLOORS:
Where a floor waste is installed the continuous fall of a floor plane to the waste must be no less than 1:80 and no more than 1:50.

STEPDOWN SHOWERS:
Where stepdown showers are used, the shower area must be stepped down a minimum of 25mm below the finished floor level outside the shower. Refer to ABCB Housing Provisions Part 10.2.15 & relevant figures for details.

HOB CONSTRUCTION:
Shower hobs are to be constructed in accordance with ABCB Housing Provisions Part 10.2.16.

ENCLOSED SHOWERS WITH LEVEL THRESHOLD:
Enclosed showers with a level threshold must be provided with a waterstop in accordance with ABCB Housing Provisions Part 10.2.17 & relevant figures.

UNENCLOSED SHOWERS:
Unenclosed showers are to have a waterstop min. 1500mm from the shower rose with the vertical leg finishing flush with the top surface of the floor. Waterproof all all joins and junctions. Waterproof entire bathroom floor where unenclosed showers are installed. Refer to ABCB Housing Provisions Part 10.2.18 & relevant figures for details.

PENETRATIONS:
All penetrations in showers and wet areas must be waterproofed in accordance with ABCB Housing Provisions part 10.2.23.

FLASHINGS/JUNCTIONS:
All flashings and junctions in wet areas to be installed in accordance with ABCB Housing Provisions Part 10.2.24 & relevant figures.

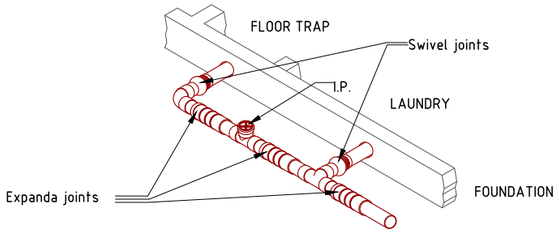
SHOWER SCREENS:
1900H Semi-frameless shower screens to comply with ABCB Housing Provisions Table 8.4.6 & AS 1288:2021. Minimum 6mm toughened safety organic coated glass, labelled to comply with industry standards. Install shower screens in accordance with ABCB Housing Provisions Part 10.2.32.

HYDRAULIC NOTES:
1. All plumbing shall be in accordance with the Tasmanian Plumbing Regulations, AS 3500 and to the local authority approval.
2. The location of the existing services where shown are approximate only and shall be confirmed on site where possible. Determine location of existing power, Telstra, water and drainage services prior to commencing new work.
3. Conceal all pipework in ceiling space, ducts, cavities, wall chases, cupboards etc. unless otherwise approved.
4. Refer to designers drawings and fixture and equipment technical specifications for pipework connections.
5. Make good all disturbed surfaces to match existing.
6. Remove all excess soil and surplus materials from site.
7. All plumbing to be installed by a licensed plumber.

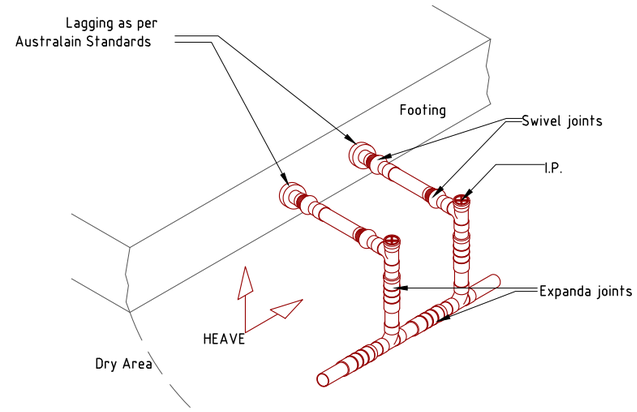
Install inspection openings at major bends for stormwater and all low points of downpipes.
All plumbing & drainage to be in accordance with local Council requirements.
Provide surface drain to back of bulk excavation to drain leveled pad prior to commencing footing excavation.
Stormwater line (100mm uPVC)
Sewer line (100mm uPVC)

SERVICES
The heated water system must be designed & installed with Part B2 of NCC Vol. 3 - Plumbing Code of Australia
Thermal insulation for heated water piping must:
a) be protected against the effects of weather and sunlight; and
b) be able to withstand the temperatures within the piping; and
c) use thermal insulation in accordance with AS/NZS 4859.1

Heated water piping that is not within a conditioned space must be thermally insulated as follows:
1. Internal piping:
   a) All flow and return internal piping that is -
      (i) within an unventilated wall spaces
      (ii) within an internal floor between storeys; or
      (iii) between ceiling and insulation and a ceiling
   Must have a minimum R-value of 0.2 (ie. 9mm of closed cell polymer insulation)
2. Piping located within a ventilated wall space, an enclosed building subfloor or a roof space:
   a) All flow and return piping
   b) Cold water supply piping and Relief valve piping within 500mm of the connection to central water heating system
   Must have a minimum R-value of 0.45 (ie. 19mm of closed cell polymer insulation)
3. Piping located outside the building or in an unenclosed building sub-floor or roof space
   a) All flow and return piping.
   b) Cold water supply piping and Relief valve piping within 500mm of the connection to central water heating system
   Must have a minimum R-value of 0.6 (ie. 25mm of closed cell polymer insulation)
   Piping within an insulated timber framed wall, such as that passing through a wall stud, is considered to comply with the above insulation requirements.



GUIDELINES FOR PVC-U DRAINAGE SYSTEM WITH EXPANSION AND SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS



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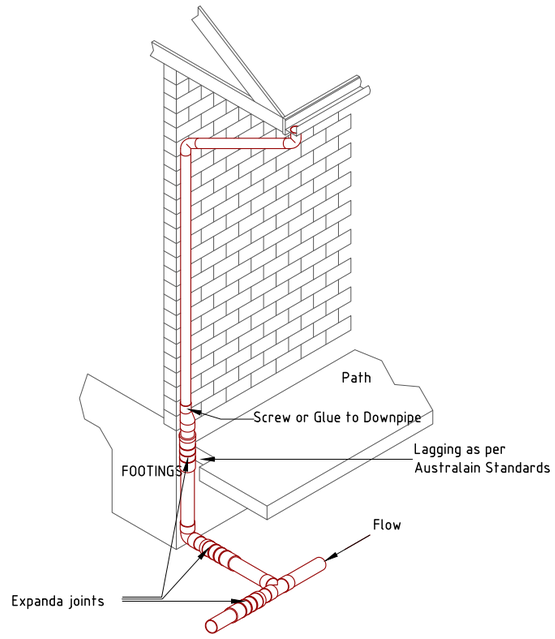

GUIDELINES FOR PVC-U DRAINAGE SYSTEM WITH EXPANSION AND SWIVEL JOINT LOCATIONS FOR REACTIVE SOILS

Hot & Cold Water Nominal Diameters	
Branch off takes	Min. DN20
Max. off take length 6m	DN18
Max. off take length 3m	DN15
Max. off take length 1m	DN10

Insulation Schedule		
Heated water pipes Type	Size Range	Insulation
Circulating Line	32-40	25mm Rockwool with foil wrap
Branch Line	20-25	19mm Bradflex
Offtake	18	13mm Bradflex
Cold water pipes exposed Type	Size Range	Insulation
All	>20	13mm Bradflex
Other cold watere pipes Type	Size Range	Insulation
All	All	Not required

NOTE: Water pipes associated directly with plan equipment shall be insulated in accordance with the manufacturers instructions for a typical installation

Surface drainage to conform with NCC Vol. 2 Part H2D2.
NOTE: 50mm fall required over first 1m from building.

IMPORTANT NOTICE FOR ATTENTION OF OWNER:
The owners attention is drawn to the fact that foundations and associated drainage in all sites requires continuing maintenance to assist footing performance. Advice for foundation maintenance is contained in the CSRIO Building Technology File 18 and it is the owners responsibility to maintain the site in accordance with that document.

GLENORCHY CITY COUNCIL PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

PLUMBING NOTES

SCALE N/A

AMENDED

DATE 04/12/2025

DRAWING NO. 08 OF 17

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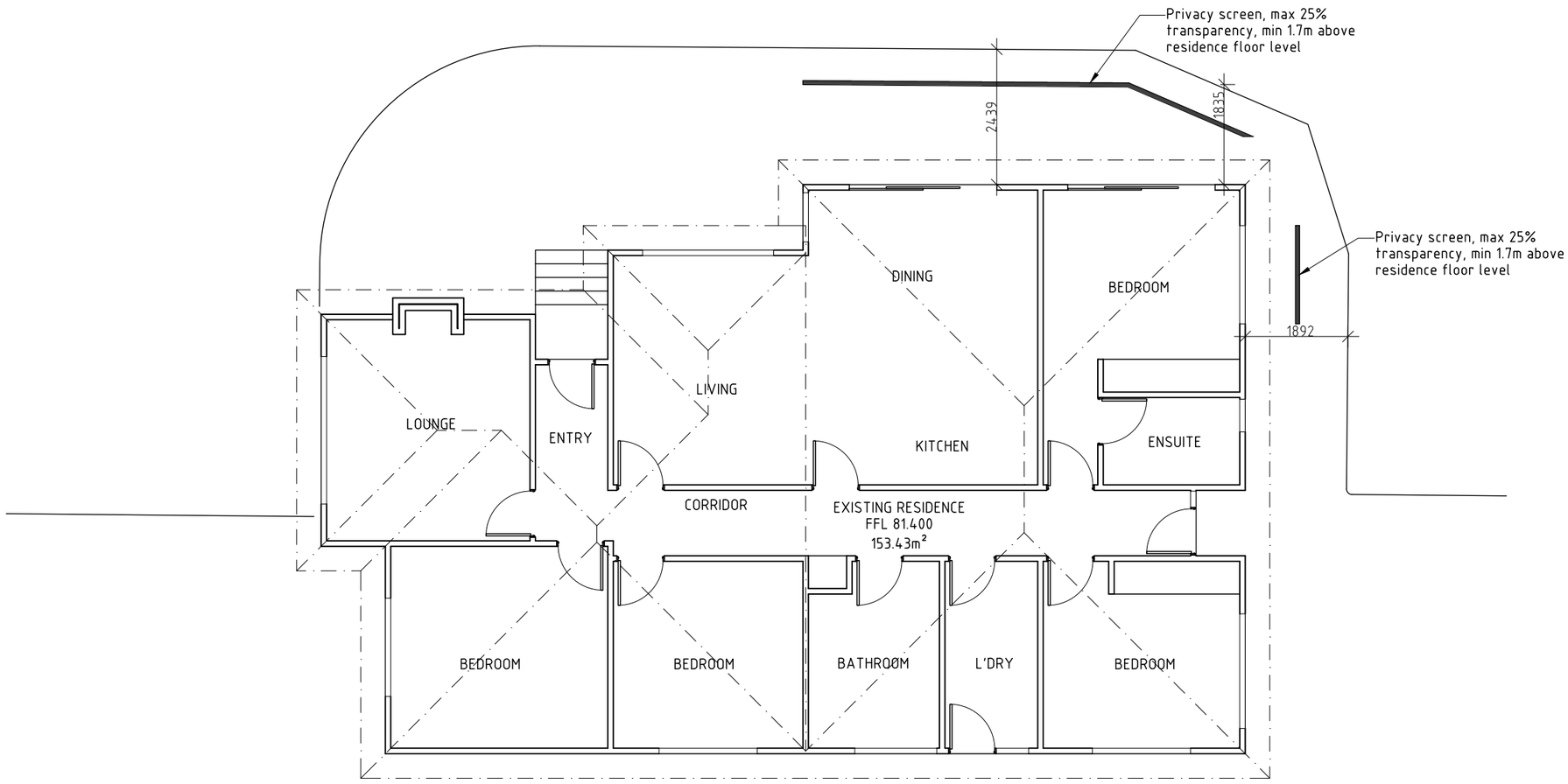

DEVELOPMENT DRAWINGS ONLY
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PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

EXISTING PLAN

SCALE 1:100
0 1000 2000

AMENDED

DATE
04/12/25

DRAWING NO.
09 OF 17

DRAWN BY G.TILLEY
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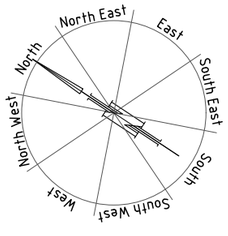

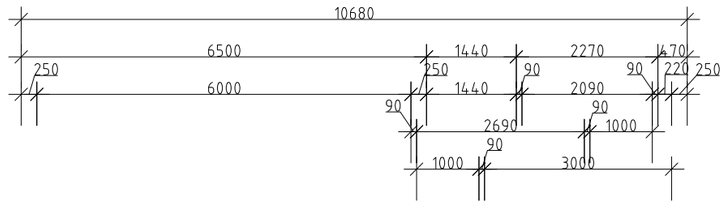

GLENORCHY CITY COUNCIL
PLANNING SERVICES

APPLICATION No. : PLN-24-184

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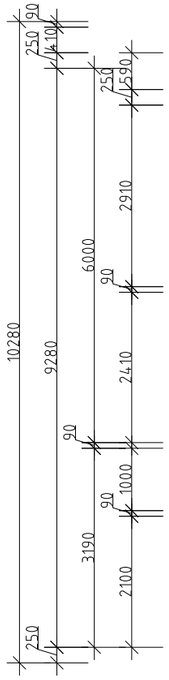

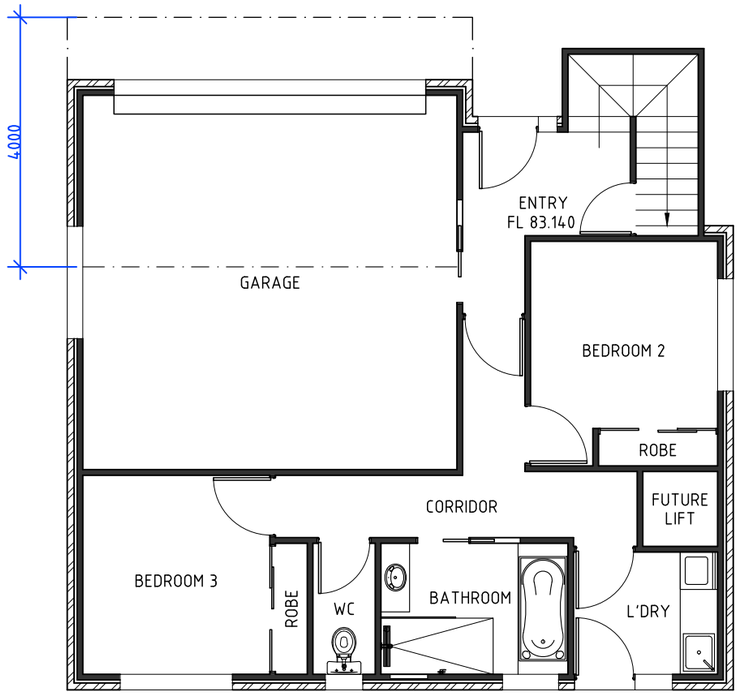

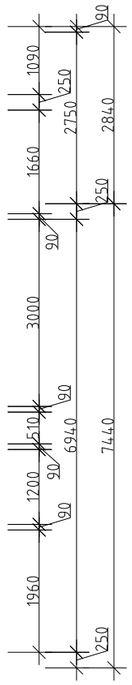

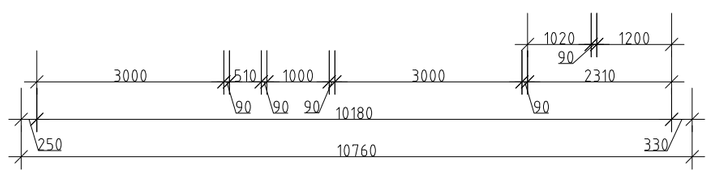

AREA	
Lower Level:	103.63m²
Upper Level:	85.00m²
Total:	188.63m²
Deck (POS):	25.13m²

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

UNIT 1 LOWER LEVEL

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

UNIT 1 LOWER LEVEL PLAN

DATE 04/12/25

SCALE 1:100
0 1000 2000

AMENDED

DRAWING NO. 10 OF 17

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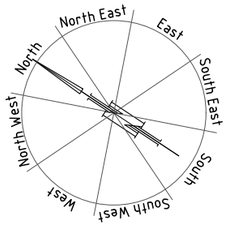

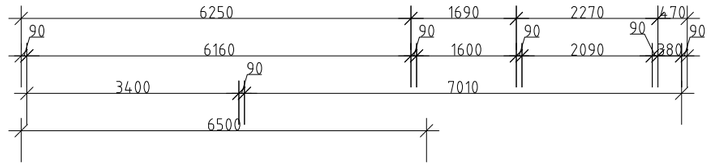

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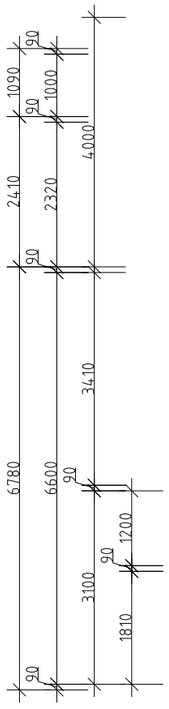

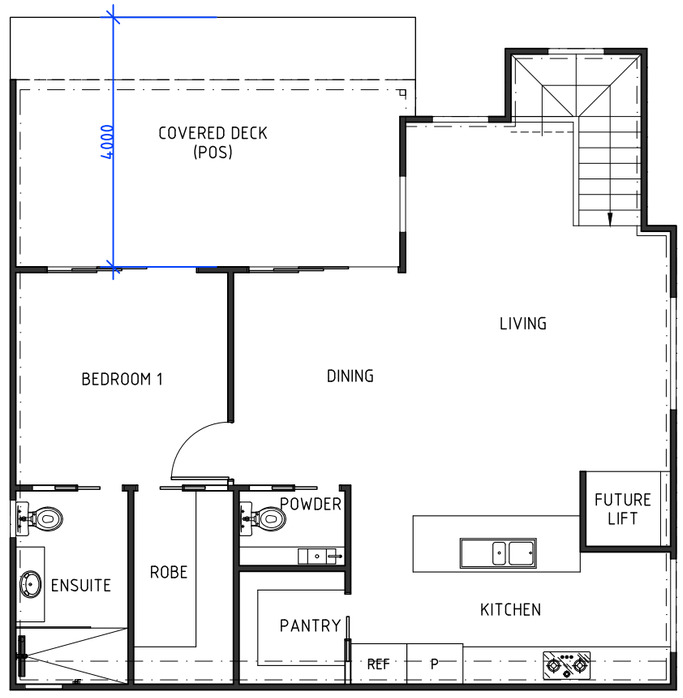

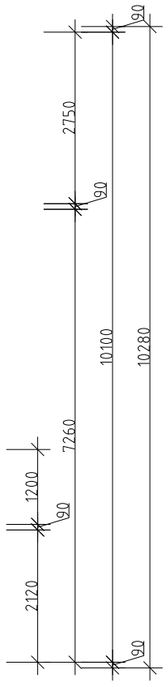

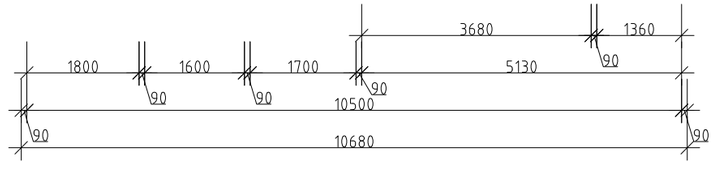

AREA
Lower Level: 103.63m²
Upper Level: 85.00m²
Total: 188.63m²
Deck (POS): 25.13m²

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

UNIT 1 UPPER LEVEL

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR
CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

UNIT 1 UPPER LEVEL PLAN

DATE 04/12/25

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SCALE 1:100
0 1000 2000

AMENDED

DRAWING NO. 11 OF 17

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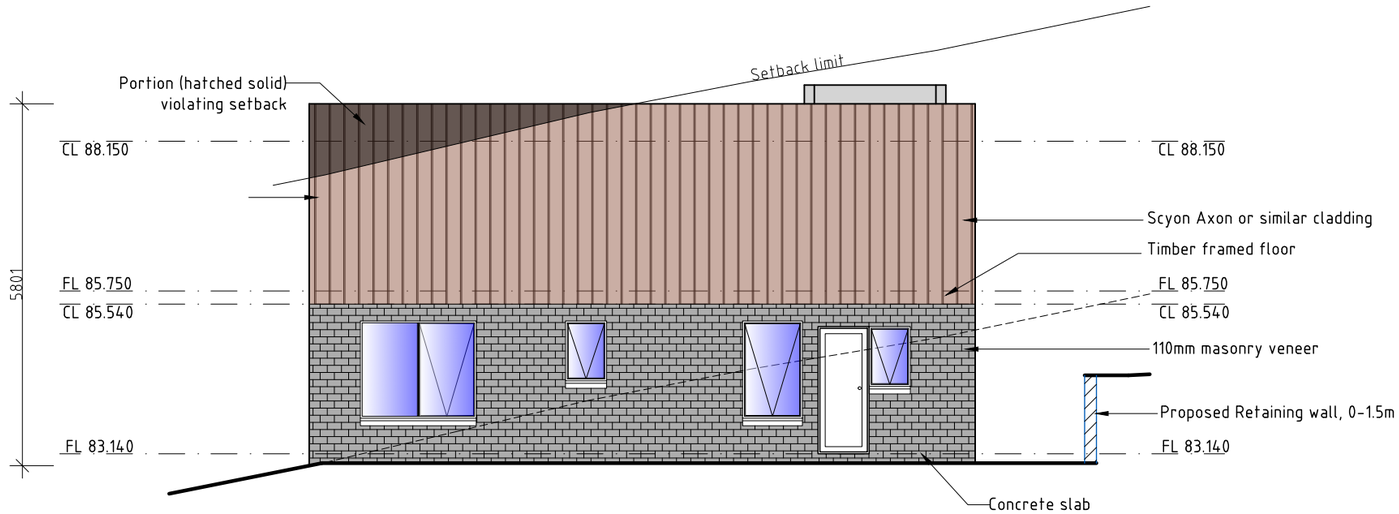
NORTH EAST ELEVATION



SOUTH WEST ELEVATION

DEVELOPMENT DRAWINGS ONLY
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UNIT 1

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

UNIT 1 ELEVATIONS

SCALE 1:100
0 1000 2000

AMENDED 21/02/2025

DATE 04/12/25

DRAWING NO. 12 OF 17

DRAWN BY G.TILLEY
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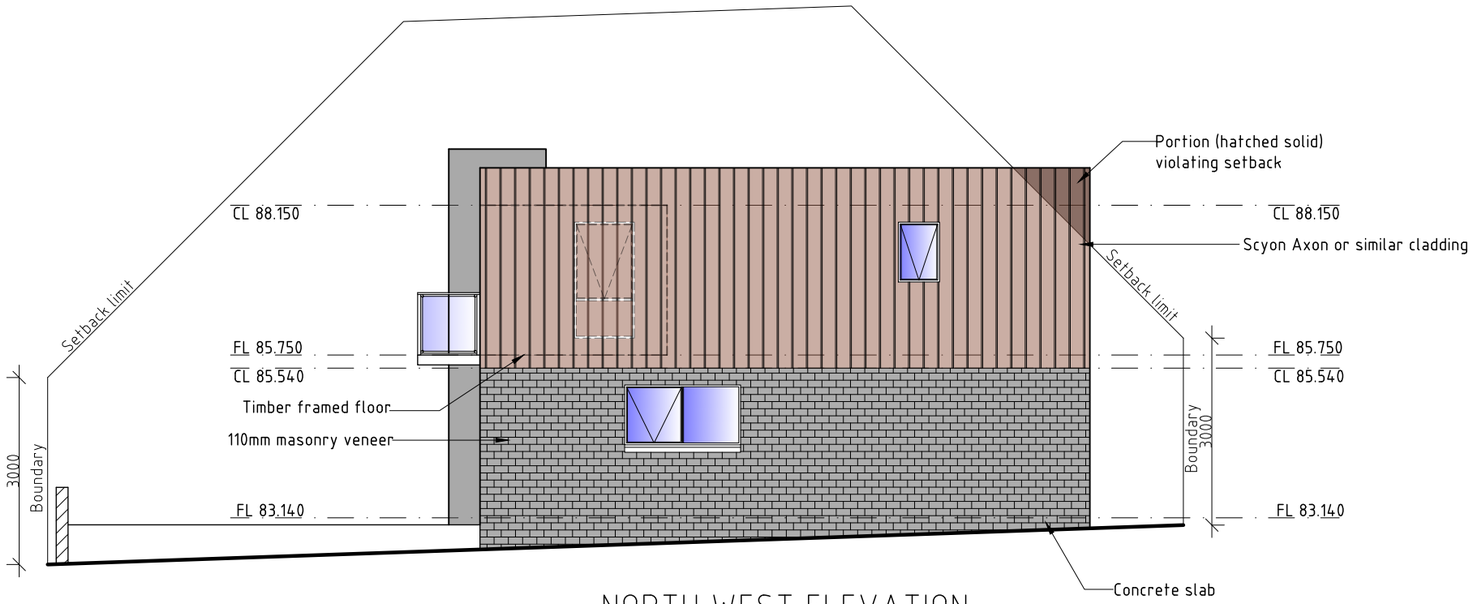
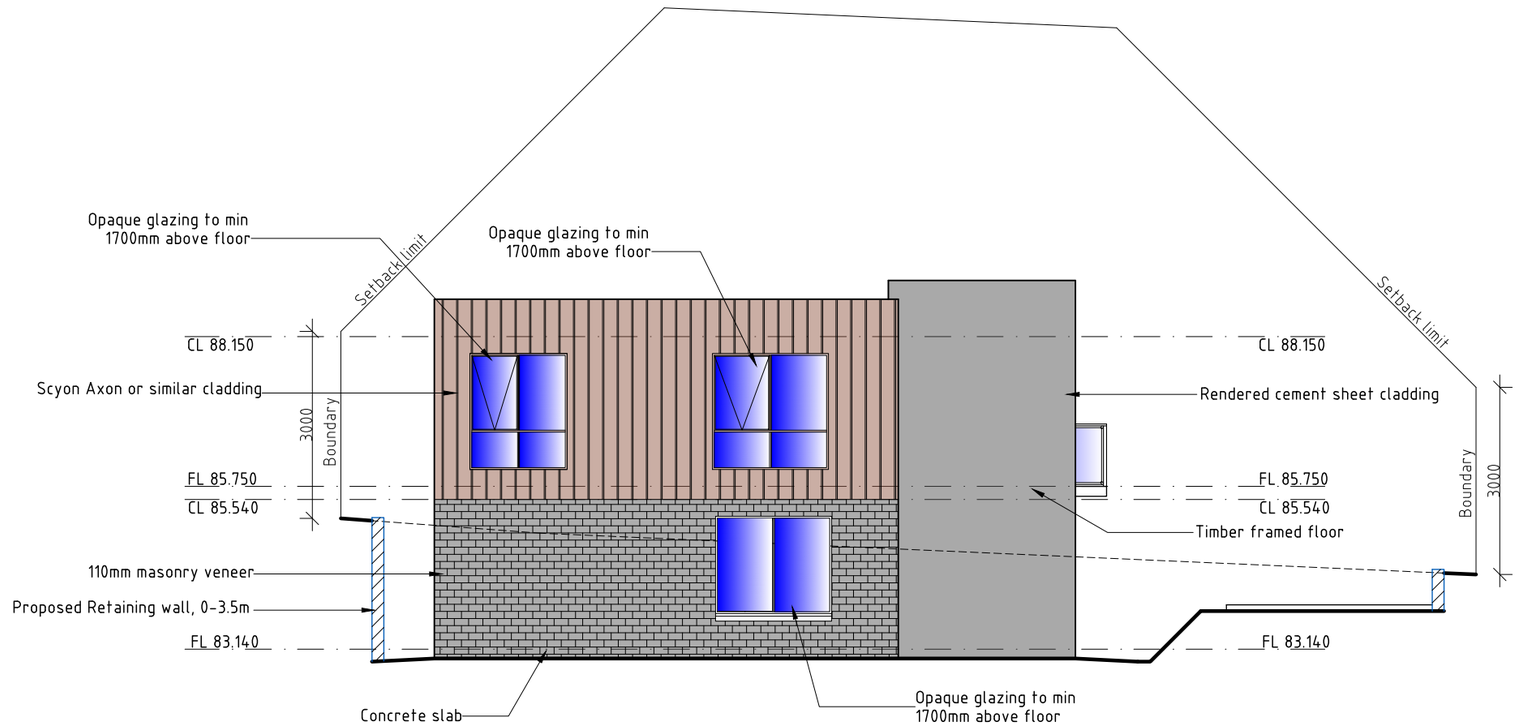


NORTH WEST ELEVATION



SOUTH EAST ELEVATION

DEVELOPMENT DRAWINGS ONLY
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UNIT 1

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

UNIT 1 ELEVATIONS

DATE 04/12/25

SCALE 1:100
0 1000 2000

AMENDED

DRAWING NO. 13 OF 17

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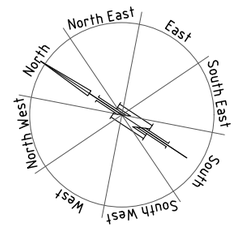

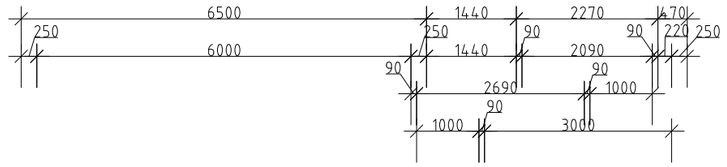

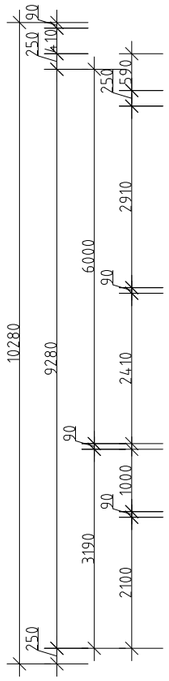

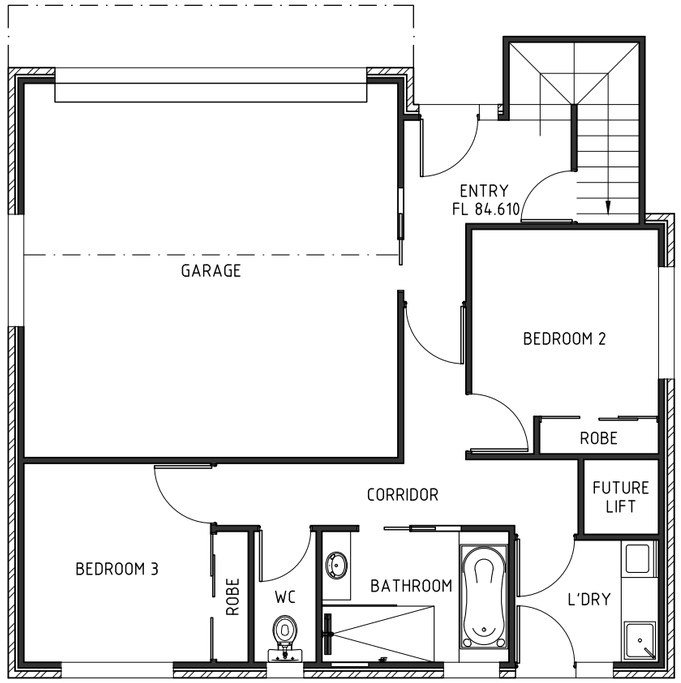

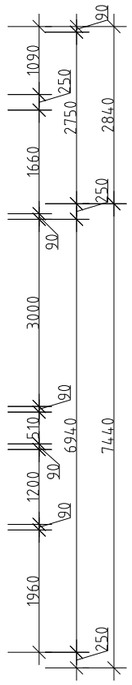

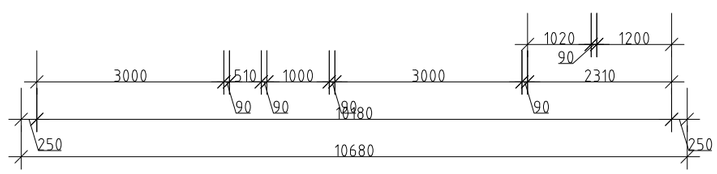

AREA
Lower Level: 103.63m²
Upper Level: 85.00m²
Total: 188.63m²
Deck (POS): 25.13m²

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

UNIT 2 LOWER LEVEL

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR
CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

UNIT 2 LOWER LEVEL PLAN

DATE
04/12/25

SCALE 1:100
0 1000 2000

AMENDED

DRAWING NO.
14 OF 17

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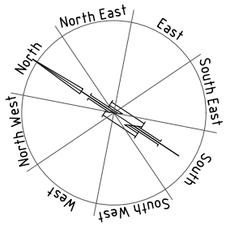
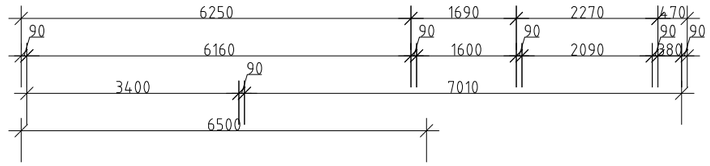
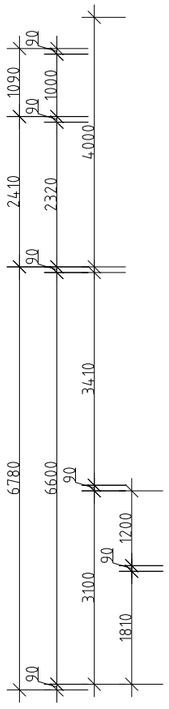


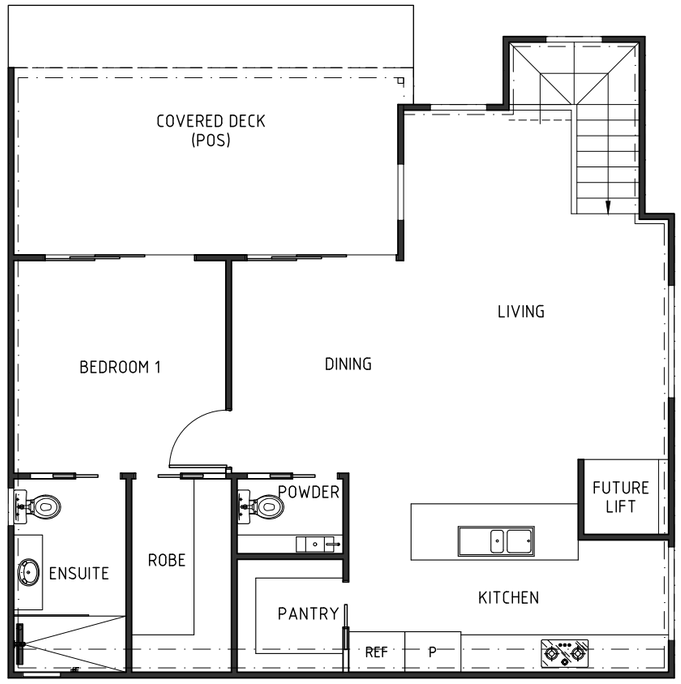


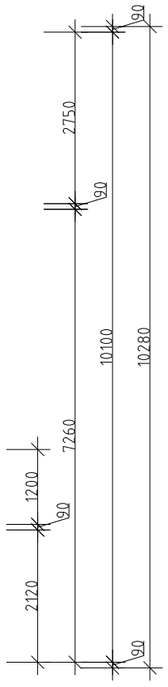
GLENORCHY CITY COUNCIL
PLANNING SERVICES

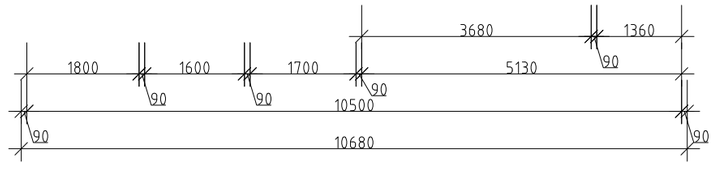
APPLICATION No. : PLN-24-184

DATE RECEIVED: 04/12/2025









AREA
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Upper Level: 85.00m²
Total: 188.63m²
Deck (POS): 25.13m²

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UNIT 2 UPPER LEVEL

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

UNIT 2 UPPER LEVEL PLAN

DATE 04/12/25

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SCALE 1:100
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DRAWING NO. 15 OF 17

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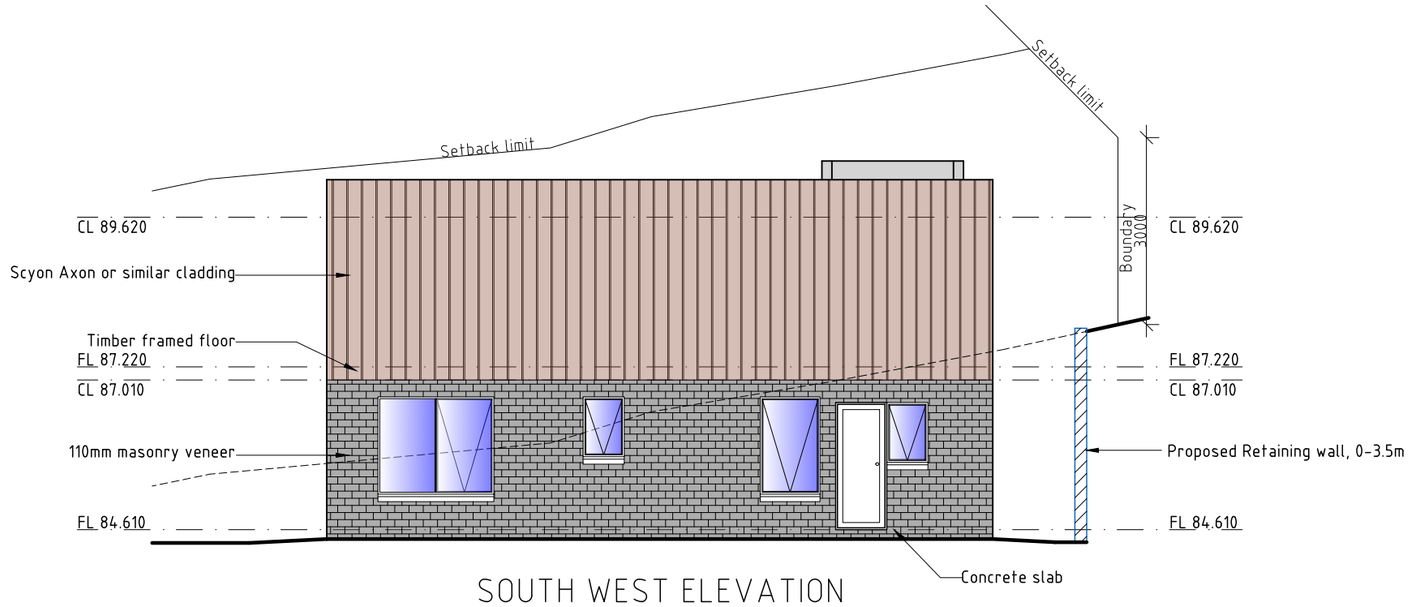
NORTH EAST ELEVATION



SOUTH WEST ELEVATION

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

UNIT 2

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR
CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

UNIT 2 ELEVATIONS

SCALE 1:100
0 1000 2000

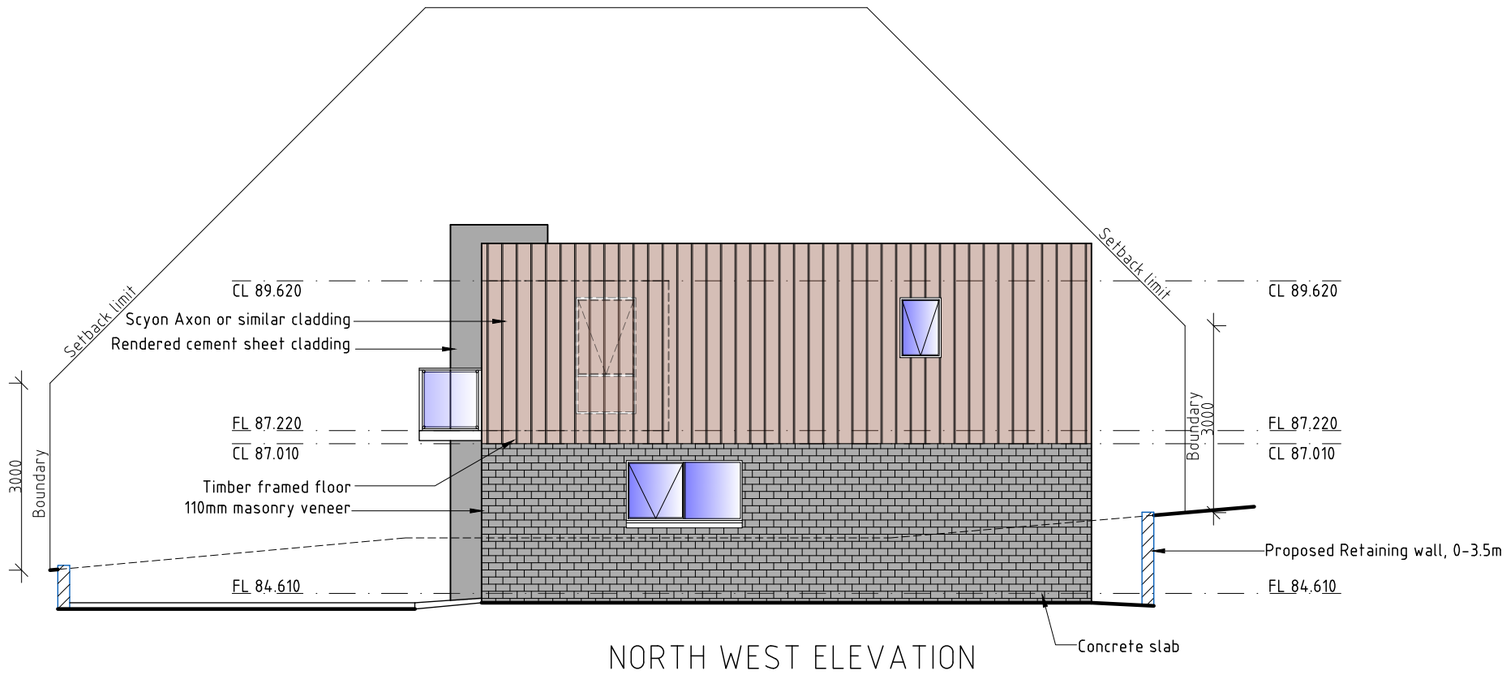
AMENDED
21/ 02/ 2025

DATE
04/ 12/ 25

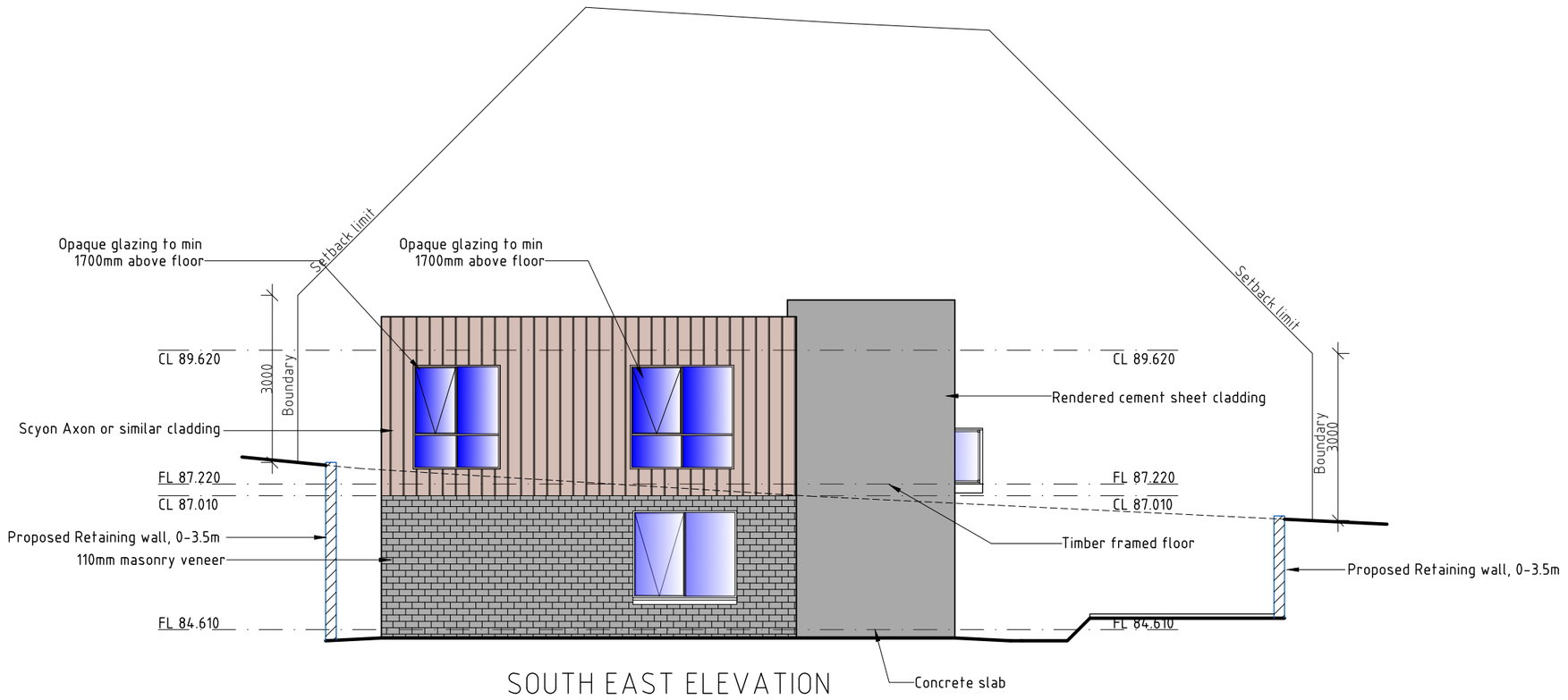
DRAWING NO.
16 OF 17

DRAWN BY G.TILLEY
email: gtilley7@bigpond.com
phone ph 0400 671 582

Certified: G. Tilley Accreditation No.CC620H



NORTH WEST ELEVATION



SOUTH EAST ELEVATION

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

UNIT 2

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR
CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

UNIT 2 ELEVATIONS

DATE
04/12/25

SCALE 1:100
0 1000 2000

AMENDED

DRAWING NO.
17 OF 17

DRAWN BY G.TILLEY
email: gltilley7@bigpond.com
phone ph 0400 671 582

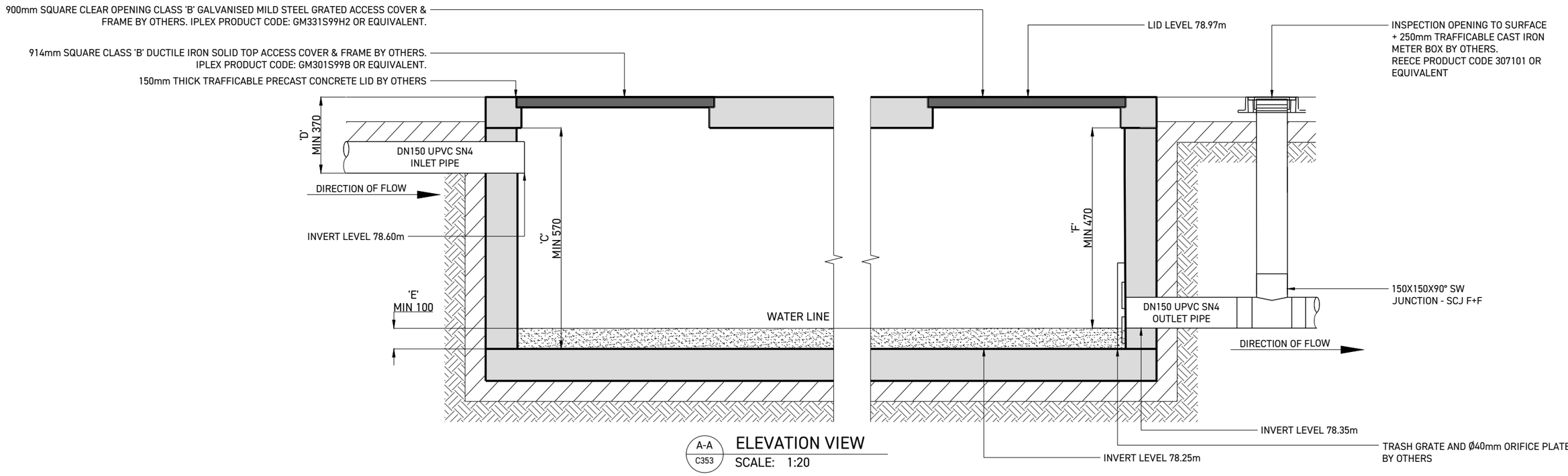
Certified: G. Tilley Accreditation No.CC620H
 8823

TANK SPECIFICATION	
TANK LENGTH 'A'	8000mm
TANK WIDTH 'B'	2500mm
HEIGHT 'C'	570mm
INLET INVERT 'D'	370mm
SLUDGE ZONE 'E'	100mm
DETENTION DEPTH 'F'	470mm
DETENTION VOLUME	9.4kL
OVERALL VOLUME	11.4kL

NOT FOR CONSTRUCTION

GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED:: 04/12/2025

TOP VIEW
SCALE: 1:20



A-A C353 ELEVATION VIEW
SCALE: 1:20

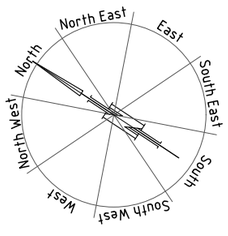
REV	DESCRIPTION	BY	CHK	DATE
B	FOR PLANNING APPROVAL - COUNCIL RFI	R.H.	M.H.	17/11/2025
A	FOR PLANNING APPROVAL	R.H.	M.H.	27/08/2025

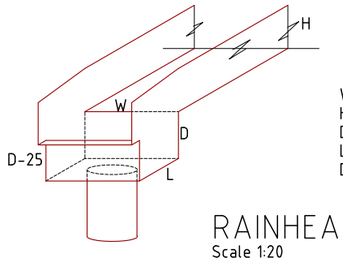
JSA SCIENCE IN DESIGN
121 Sandy Bay Road, Sandy Bay TAS 7005
Phone (03) 6240 9911 www.jsa.com.au

CHECKED: M. HORSHAM CC5865 I	SCALE: AS SHOWN	SIZE: A3	PROJECT: PROPOSED UNIT DEVELOPMENT 201 TOLOSA STREET GLENORCHY, 7010
DESIGNER: R. HORNER	DRAWN: R. HORNER		
STATUS: PLANNING APPROVAL			

DRAWING TITLE: DETENTION TANK DETAIL

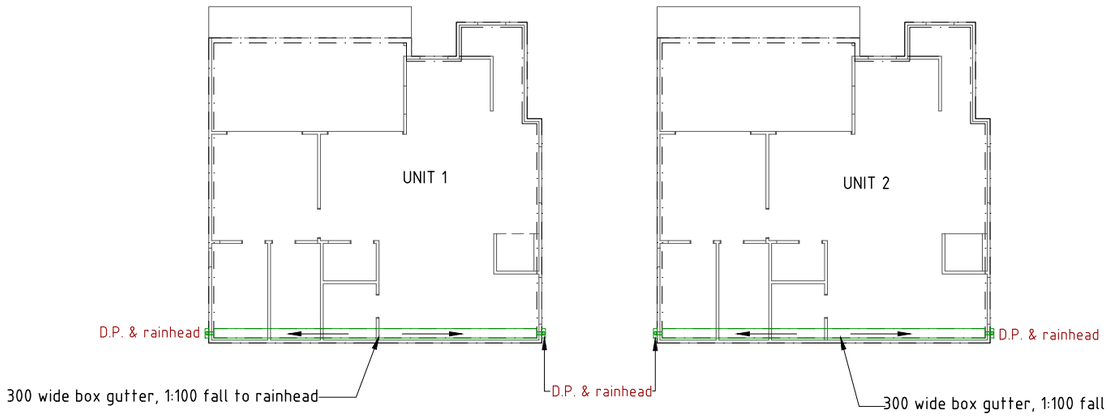
PROJECT NO	DWG NO	REV
25E75-11	C353	B





W(Width) 300
H(Height) 120
D(Depth) 150
L(Length) 125
D-25 125

RAINHEAD DETAIL
Scale 1:20



Existing SW lot connection, located by Surveyor

Existing stormwater lot connection to be upgraded to DN150 uPVC SN8 stormwater lot connectionat Min 1:100 grade,PVC adaptor to 150x75x5 RHS & 600x600 grated disconnector pit at property boundary
Lid: 78.55
IL:78.29

Existing kerb outlet to be upgraded to 150x75x5 RHS in general accordance with TSD-SW29v3
TOK:78.38
IL:78.25

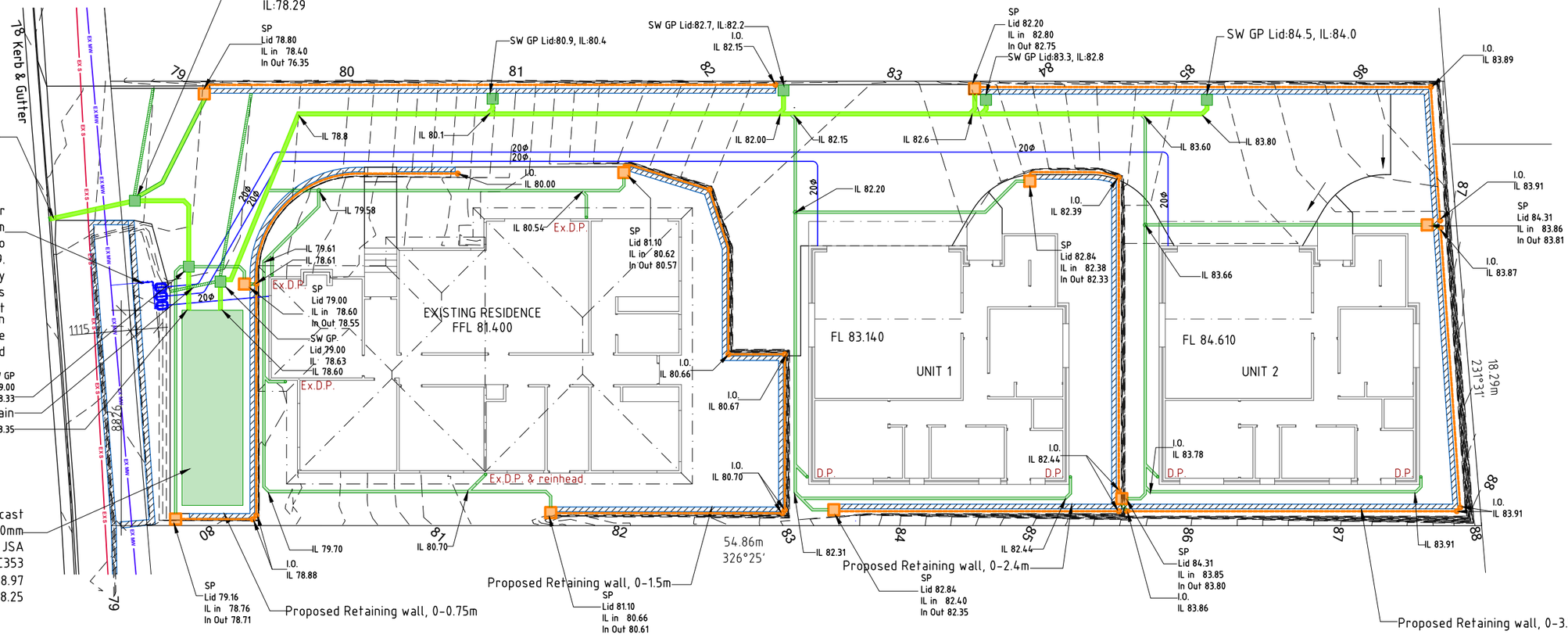
New DN32 ID25mm water connection with new 3/20mm sub meters on a manifold to TWS-W-0002 sheet 9. Works carried out by Taswater at the developers cost

Locate within type 'A' non trafficable box with concrete surround in common ground

SW GP
Lid 79.00
IL 78.33

Grated channel drain
IL 78.35

11.4kL below ground precast concrete deyention tank with 40mm orifice plate outlet. Refer to JSA drawing C353
Lid 78.97
IL 78.25



DN150 uPVC SN4 Stormwater pipe, min 1:100 fall, UNO

DN100 uPVC SN6 Stormwater pipe, min 1:100 fall.

450x450x600 deep precast stormwater pit with trafficable lid class 'B' 'ACO'

100mm Channel drain 'ACO' K100 or similar with class 'B'treafficable lid

100mm inspection opening to surface in accordance with AS/NZS 3500.3 Section 7.4

Continuous 100mm diameter slotted HDPE SN8 agricultural pipe with geo fabric sock graded with uniform fall of not less than 1:300 as per ABCB housing provisions Section 3.3.4(a)

100mm inspection opening to surface in accordance with AS/NZS 3500.3 section 6.4.1

Min 450square silt pit- outlet min 50mm below inlet in accordance with NCC Vol 2 3.1.3.4

GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

Water meters for strata developments must be located in common property to allow unfettered access to enable reading, testing, inspection, maintenance and exchange without impediment and must be kept clear of obstructions at all times. Water meters in trafficable areas must be housed in trafficable boxes with a class "B" lid.

NOTE All works are to be in accordance with the Water supply code of Australia WSA03-2011-3.1 Version 3.1 MRWA Edition V2.0 & sewerage Code of Australia Melbourne Retail water agencies Code WSA02-2002 Version 2.3 MRWA Edition 1.0 & TasWater's supplements to those codes.

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT
201 TOLOSA ST, GLENORCHY

STORMWATER CONCEPT PLAN

DATE
17/11/25

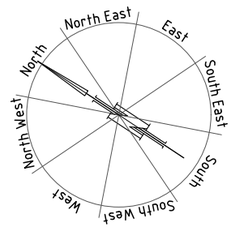
DRAWN BY G.TILLEY
email: gtilley7@bigpond.com
phone ph 0400 671 582

SCALE 1:200
0 2000 4000

AMENDED

DRAWING NO.
06 OF 17

Certified: G. Tilley Accreditation No.CC620H



GLENORCHY CITY COUNCIL
PLANNING SERVICES

APPLICATION No. : PLN-24-184

DATE RECEIVED: 04/12/2025

Widen existing cross over to min. 5.50m wide kerb & gutter crossing and access to be provided and constructed in accordance with Standard Drawing TSD-R09. Access to be inspected by Council prior to sealing or pouring of new concrete.

Remove Ex. gate

Existing bitumen and gravel driveway to be removed and upgraded to concrete driveway as per plans

Ex. Paling Fence

54.86m
146°25'

Ex. Paling Fence

Ex.Concrete Cross Over

Remove sections of retaining wall to allow for cross over widening

Ex. SW I.O. Lid RL 79.177

Ex. SW outlet

Ex. Gas meter

Ex. gravity block retaining wall

Ex. Water meter

C.T.55463/5
1102m²

SHED TO BE REMOVED

6750

6250

6750

6430

Remove concrete path

Ex. Residence

SW pipe

Ex mw

2020

780

1785

Ex. Paling Fence
18.29m
231°31'

TOLOSA STREET

Kerb & Gutter

Footpath

51°31'

18.29m

Approx. Sewer Connection

Sewer I.O.
Lid RL80.204

Ex. gravity block retaining wall with fence over

Ex. Telstra

3700

5166

UNIT 1

UNIT 2

1695

695

1695

695

1695

Ex. Paling Fence

54.86m
326°25'

Remove concrete path

Remove existing retaining wall

Proposed Retaining wall, 0-1.5m

Proposed Retaining wall, 0-0.75m

Proposed Retaining wall, 0-2.4m

Proposed Retaining wall, 0-3.5m

Proposed Retaining wall, 0-3.5m

Accredited Professional Engineer CC5865I
Mr Matthew Horsham
BE MIEAust CPEng NER
Signature ... Date. Oct 07, 2025
Accredited in the category of Engineer Civil
Phone: 03 6240 9911

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

Total Hours to Date: 65hrs

SITE PLAN

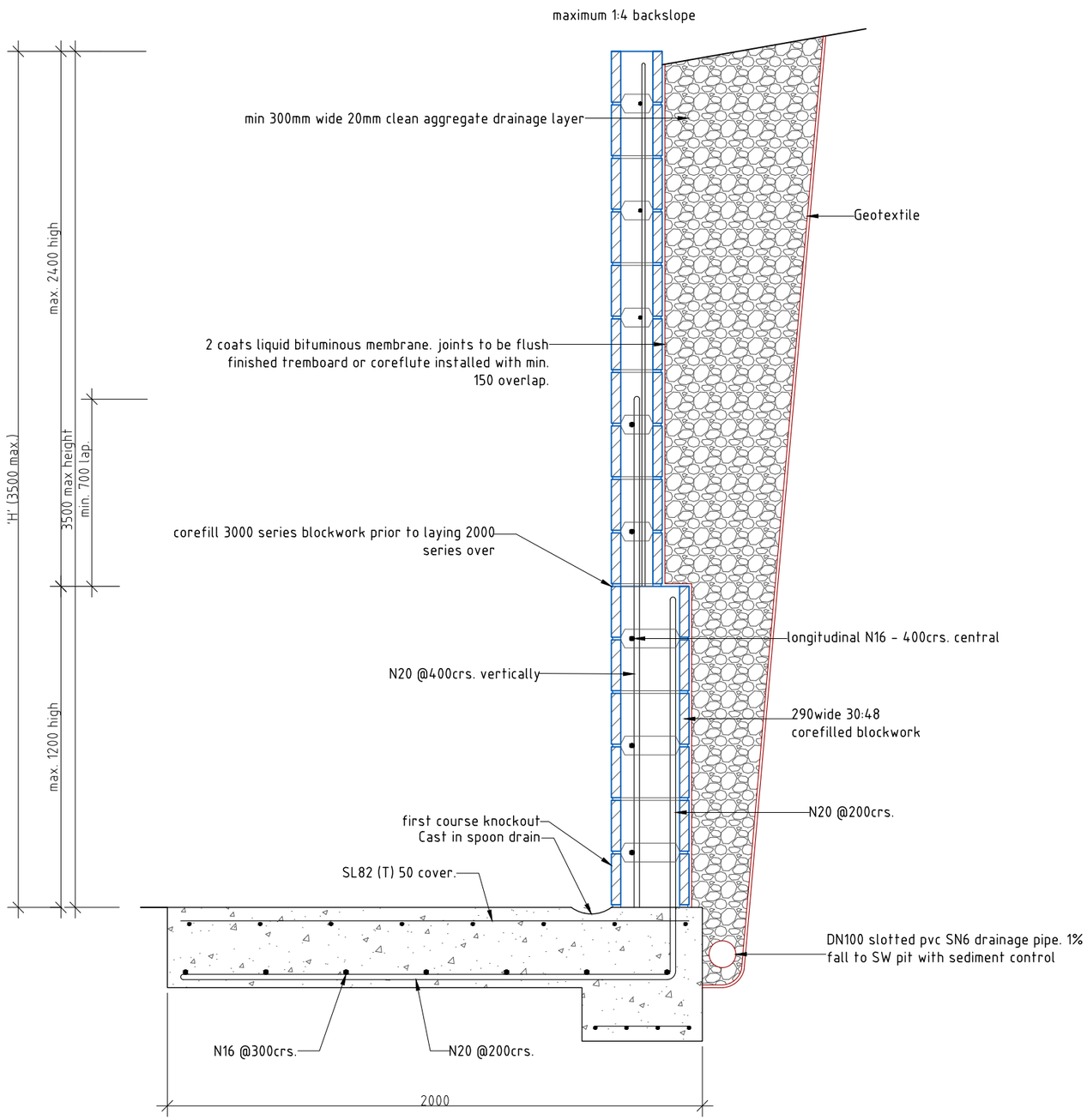
SCALE 1:200
0 2000 4000

AMENDED 21/ 02/ 2025

DATE 10/ 09/ 25

DRAWING NO. 01 OF 17

DRAWN BY G.TILLEY
email: gltilley7@bigpond.com
phone ph 0400 671 582
Certified: G. Tilley Accreditation No.CC620H



JSA SCIENCE IN DESIGN
JSA (TAS) PTY LTD JSA.COM.AU
Engineer to inspect footing and / or slab preparation 24 hrs before concrete pour
Phone: 03 6240 9911

Accredited Professional Engineer CC5865I
Mr Matthew Horsham
BE MIEAust CPEng NER
Signature ..... Date. Oct 07, 2025
Accredited in the category of Engineer Civil
Phone: 03 6240 9911

DEVELOPMENT DRAWINGS ONLY
NOT FOR CONSTRUCTION

PROPOSED UNIT DEVELOPMENT (ONE EXISTING) FOR CHANNEL CONSTRUCTION & JOINERY AT 201 TOLOSA ST, GLENORCHY

RETAINING WALL TYPICAL DETAIL AT 3500 HIGH

DATE 10/ 09/ 25

SCALE 1:20
0 200 400

AMENDED

DRAWING NO. 05 OF 17

DRAWN BY G.TILLEY
email: gtilley7@bigpond.com
phone ph 0400 671 582
Certified: G. Tilley Accreditation No.CC620H

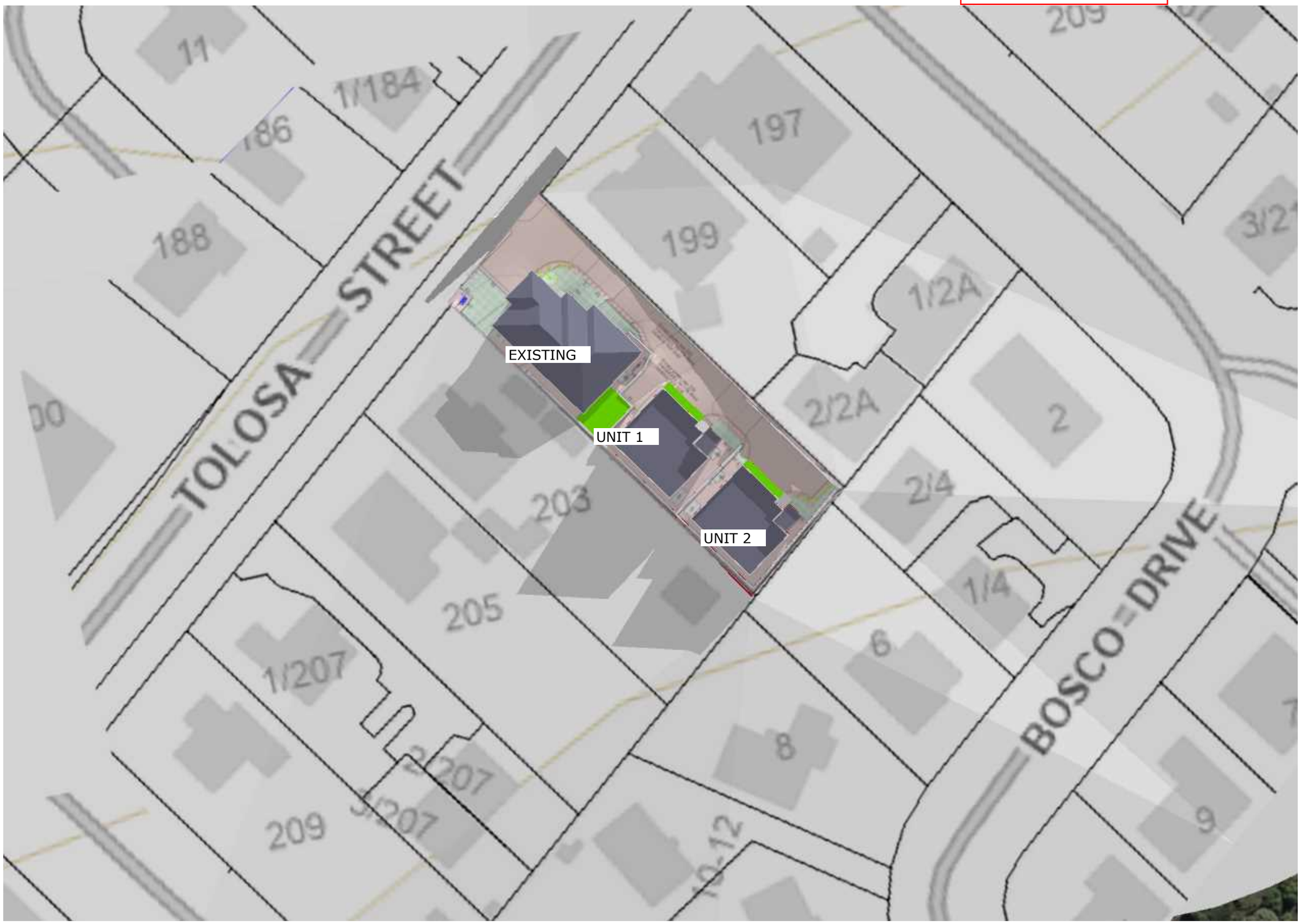
SunTracker - Shadow Diagrams

GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

0900 - JUNE 21

1:500

N



Shadowing by Sergei Nester www.viewbuild.com m: 0458 787 111

SunTracker - Shadow Diagrams

GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

1000 - JUNE 21

1:500

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SunTracker - Shadow Diagrams

GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

1100 - JUNE 21

1:500

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SunTracker - Shadow Diagrams

GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

1200 - JUNE 21

1:500

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GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

1300 - JUNE 21

1:500

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GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED:: 04/12/2025

1400 - JUNE 21

1:500

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GLENORCHY CITY COUNCIL
PLANNING SERVICES
APPLICATION No. : PLN-24-184
DATE RECEIVED: 04/12/2025

1500 - JUNE 21

1:500

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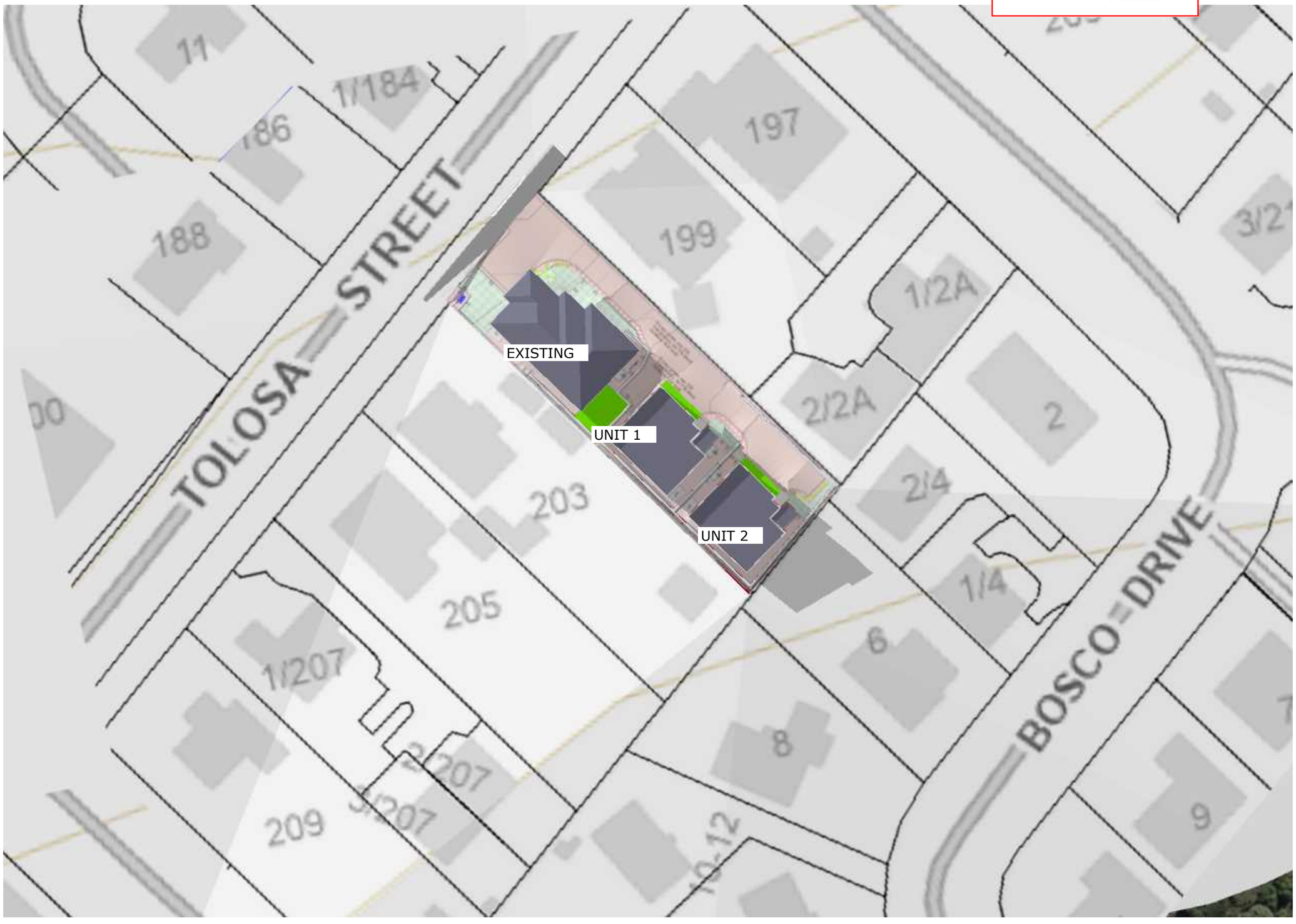

Shadowing by Sergei Nester www.viewbuild.com m: 0458 787 111

STORMWATER SYSTEM MAINTENANCE PLAN

DOCUMENT INFORMATION	
PROJECT ADDRESS:	201 Tolosa Street, Glenorchy
DOCUMENT TITLE:	Stormwater System Maintenance Plan
DOCUMENT NUMBER:	25R75-11-2
DATE OF REPORT:	28 August 2025
CLIENT:	Domenic Allocca
REPORT AUTHOR:	Rachel Horner, BE(Hons) BSc MIEAust
CHECKED BY:	Dr Jane Sargison, BE DPhil FIEAust CPEng NER CC6183N

Directors: Dr Jane Sargison BE DPhil FIEAust CPEng NER CC6193N
Mr Matthew Horsham BE MIEAust CPEng NER CC5865I
121 Sandy Bay Road, Sandy Bay 7005 Phone (03) 6240 9911 Email mail@jsa.com.au
JSA (Tas) Pty Ltd | ABN 45 165 277 681

REVISION HISTORY					
Revision Number	**Revision Description**	**Prepared By**	**Reviewed By**	**Authorised By**	**Date Prepared**
0	For Approval	Rachel Horner	Jane Sargison	Matthew Horsham	28/08/2025

SUMMARY

This Stormwater System Maintenance Plan is provided to property owners to review and ensure the ongoing effective operation of all systems.

This plan is provided to the owner of 201 Tolosa St, Glenorchy. It outlines the operational and maintenance measures to check and ensure the ongoing effective operation of stormwater treatment and detention systems installed on the property and should be made available to any future owners of the property.

This document contains important tasks to help protect the property and neighbouring land and comply with Planning Permit conditions. This document, including any attached plans or reports, must be provided to any future occupiers of the dwelling.

SYSTEM DESCRIPTION

Stormwater infrastructure is detailed on Stormwater Concept Plan, Drawing 06 by G Tilley and Detention Tank Detail, Drawing C353 by JSA and consists of the following elements:

In-ground detention tank – collection and detention of runoff from impervious areas

Silt traps in grated pits – primary treatment of runoff from hardstand areas

MAINTENANCE ACTIONS

In-ground detention tank

Maintenance schedule for the detention tank should be in general accordance with WSUD Engineering Procedures for Stormwater Management in Tasmania 2012 Chapter 11.

Routine inspection (every 6 months) of roof areas to ensure that they are kept relatively free of debris and leaves. Roof gutters should be inspected regularly and cleaned if necessary. Leaf screens may also be installed in most standard gutters and prevent excessive leaf litter accumulating in the guttering.

It may be necessary to prune surrounding vegetation and overhanging trees which may otherwise increase the deposition of debris on the roof and hardstand areas.

The screens at outlet points from the tank should be inspected regularly to check for blockage, at least every 6 months.

The tank should be examined for the accumulation of sludge at least every 2 to 3 years. If sludge is covering the base of the tank and affecting its operation (i.e. reducing storage capacity or blocking the low flow outlet) it should be removed by siphon or flushed from the tank. Professional tank cleaners can be used.

Stormwater treatment devices

Silt traps in grated pits

Maintenance schedule for silt traps should be in accordance with the manufacturer's specifications, and should include the following general maintenance tasks.

Large gross pollutants observed on the inlet grate of the silt trap should be collected and disposed of in onsite waste bins.

The silt trap should be inspected weekly or after heavy rainfall. Captured gross pollutants should be emptied from the silt trap and disposed of in onsite waste bins.

The grated pits should be inspected for a build-up of silt. The frequency will be determined by the silt condition on site. Allow for inspection and removal of silt every 3 months or after heavy rainfall. Silt build up in the grated pit should be removed and disposed of in onsite waste bins.

SUMMARY OF KEY MAINTENANCE ACTIONS

In-ground stormwater detention tank

Element	Inspection / Maintenance Task	Method	Frequency	Expected lifespan of element
Roof and gutter	Inspect and clean	Remove excessive debris and leaf litter from roof and gutter.	Every 6 months	
Outlet screen	Remove leaves/ debris. Check screen is not damaged.	Confirm screen at outlet is clear and water freely flows out of tank	Every 6 months	
Slow release outlet	Check for blockage	Visual inspection. Remove blockage if found.	Every 6 months	
Tank	Check silt build-up is no more than 10cm deep in tank	Part of contracted annual maintenance. Tank to be pumped / washed out	Every two years	40 years
	Remove silt	Scour tank using scour valve and hose	Every two years	

Reference: WSUD Engineering Procedures for Stormwater Management in Tasmania 2012, Chapter 11

Stormwater treatment devices

Silt traps in grated pits

Element	Inspection / Maintenance Task	Method	Frequency	Expected lifespan of element
Inlet grate	Check for floating debris on inlet grate	Visual inspection, collect debris and dispose in onsite waste bins	As observed	
Silt basket	Check for pollutant build-up in basket	Visual inspection of each basket, if minimal pollutant it will be emptied into the onsite waste bins	Dictated by silt condition on site, allow for every 3 months	
Pit	Remove silt and sediment from pit	Remove and dispose of in onsite waste bins	Dictated by silt condition on the site, allow for every 3 months	

Note: more frequent inspection may be needed in various circumstances e.g. heavy rain before vegetation is established.

STORMWATER MANAGEMENT PLAN

STORMWATER DESIGN

In accordance with:

Australian Rainfall and Runoff 2019

AS/NZS 3500.3 *Plumbing and Drainage Part 3: Stormwater Drainage*

Glenorchy City Council Stormwater Management Policy 2021

DOCUMENT INFORMATION	
PROJECT ADDRESS:	201 Tolosa Street, Glenorchy
DOCUMENT TITLE:	STORMWATER MANAGEMENT PLAN
DOCUMENT NUMBER:	25R75-11-1
DATE OF REPORT:	28 August 2025
CLIENT:	Domenic Allocca
REPORT AUTHOR:	Rachel Horner, BE(Hons) BSc MIEAust
CHECKED BY:	Dr Jane Sargison, BE DPhil FIEAust CPEng NER CC6183N

Directors: Dr Jane Sargison BE DPhil FIEAust CPEng NER CC6193N
Mr Matthew Horsham BE MIEAust CPEng NER CC5865I
121 Sandy Bay Road, Sandy Bay 7005 Phone (03) 6240 9911 Email mail@jsa.com.au
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REVISION HISTORY					
Revision Number	**Revision Description**	**Prepared By**	**Reviewed By**	**Authorised By**	**Date Prepared**
0	For Approval	Rachel Horner	Jane Sargison	Matthew Horsham	28/08/2025

SUMMARY

Report Summary

This report summarises the stormwater detention system design for the proposed development at 201 Tolosa Street, Glenorchy, and demonstrates compliance with the requirements of the Glenorchy City Council's Stormwater Management Policy.

The proposed works include construction of two new multiple dwellings, along with associated driveway, parking and hydraulic services with connections to existing infrastructure and upgraded stormwater outlet to kerb. The stormwater system for the site includes an in-ground detention tank collecting runoff from the impervious catchment areas.

Stormwater Detention

The proposed on-site stormwater detention (OSD) system includes an 11.4kL in-ground detention tank collecting runoff from the impervious catchment areas. The tank is fitted with a 40mm sharp edge orifice slow release outlet at the base such that the detention volume is available to detain the runoff from a 5% AEP storm event.

The OSD is designed to cater for the 5% AEP storm events. Durations of 5 minutes to 72 hours have been modelled. The permissible site discharge (PSD) to the kerb outlet is 2.4L/s, calculated based on the runoff rate from pre-development site, minus the runoff from the post-development pervious areas, in the 30 minute duration event. The peak flow rate from the post-development site occurs in the 1 hour duration event. The peak post development flow rate in the 5% AEP 1 hour duration event is 2.4L/s, which does not exceed the PSD for the site, in accordance with Glenorchy City Council Stormwater Management Policy.

Rachel Horner

Civil / Environmental Engineer

TABLE OF CONTENTS

TABLE OF FIGURES

1 PROJECT DESCRIPTION

1.1 Existing Conditions

The existing site is a 1102m^2 residential lot featuring an existing dwelling, shed, gravel driveway and concrete paths. Refer to Figure 1 for existing site conditions. Stormwater runoff from the site is collected in piped system and discharged to kerb.

Figure 1: Existing conditions at 201 Tolosa Street, Glenorchy

1.2 Proposed Stormwater System

The proposed stormwater system collects the runoff from roof and hardstand catchment areas. Stormwater from impervious surfaces is disposed of via gravity to a proposed in-ground detention system, prior to discharge to kerb via upgraded connection.

The runoff rates for the site are calculated using the extended rational method (ERM), for 5% Annual Exceedance Probability (AEP) storm events. The inundation rates for these rainfall events are determined from Bureau of Meteorology (BOM) 2016 Intensity-Frequency-Duration (IFD) data for Glenorchy [1]. A description of the DRAINS model is provided in this report.

The on-site detention system proposed is shown on Stormwater Concept Plan, Drawing 06 by G Tilley and Detention Tank Detail, Drawing C353 by JSA. The 11.4kL in-ground detention tank collects runoff from impervious areas, and is fitted with a 40mm sharp edge orifice plate slow release outlet at the base such that the detention volume is reserved to detain the 5% AEP storm event.

2 DRAINS MODEL

2.1 DRAINS Inputs and Assumptions

2.1.1 Model

DRAINS software was utilised to run an extended rational method (ERM) model of the proposed development site. Refer to Figure 2 for screenshot of DRAINS model layout.

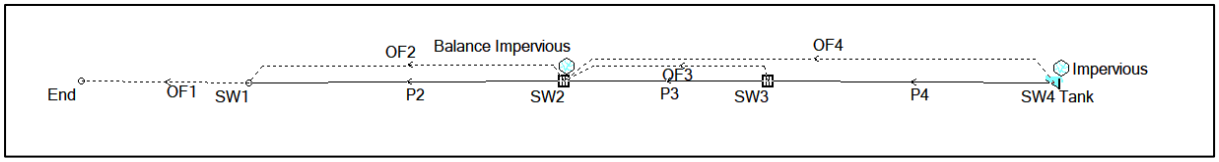

Figure 2: DRAINS model layout

Design rainfalls were imported from BOM 2016 IFD design rainfalls for Glenorchy [1]. The 10 year ARI runoff coefficients (C10) for input to the DRAINS model are summarised in Table 1, in accordance with the Glenorchy City Council Stormwater Management Policy [2], section 6(g)(ii).

Table 1: C10 values for ERM model

	C10
Impervious Area	0.9
Pervious Area	0.4

Ensembles of storms are modelled in DRAINS, as recommended in ARR 2019 [3], to model the runoff from a catchment. An ensemble of 10 temporal patterns for each storm event are modelled, with the results based on the median of the outputs for each ensemble.

2.1.2 Catchment Areas

The catchment areas are summarised in Table 2 for the pre-development and post-development site. Catchment areas were determined based on survey data and architectural design plans.

Table 2: Site catchment areas in m^2

	Pre-development	**Post-development**
Site area	1102	1102
Roofs	221	401
Concrete (including driveways, paths, unroofed decks)	42	319
Gravel	188	0
Balance (pervious)	651	382

Runoff from catchment nodes has been modelled in DRAINS utilising time of concentration of 5 minutes.

Table 3 summarises the input data for the post-development impervious sub-catchment nodes in the DRAINS model (Figure 2).

Table 3: DRAINS catchment nodes

Catchment Description	DRAINS Notation	Total area (ha)
Impervious areas collected in detention system, including all roof areas and the majority of concrete areas	Impervious	0.0683
Balance of driveway area which is not able to be collected in the detention system	Balance Impervious	0.0037

2.1.3 Detention Tank

A detention tank node has been included in the model collecting stormwater runoff from the majority of the impervious areas. The tank is modelled with an internal height of 570mm, with minimum 100mm sludge zone in the base (effective detention depth of 470mm). The tank surface area is 20m^2 to provide a detention volume of 11.4kL. The tank includes a 40mm orifice plate slow release outlet at the base such that the detention volume is reserved to detain the 5% AEP storm event. Model input data for the detention node is shown in Figure 3. Overflow from the detention tank is via the open grated lid in the top of the tank, and directed down the driveway and onto the road. This overflow structure ensures that any blockages impacting the tank slow release outlet are noticeable and are more likely to be remedied promptly.

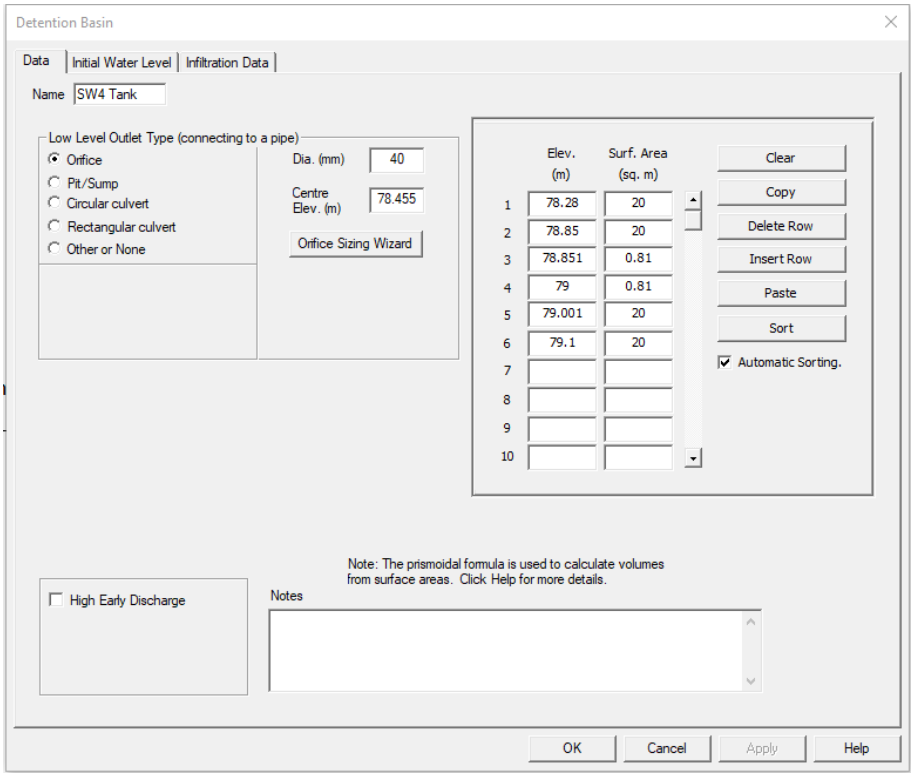

Figure 3: Design input data for rainwater detention tank

2.2 DRAINS Results

Results from the DRAINS models are summarised in sections below. Refer to Figure 4 for reference when reading screenshots of DRAINS model outputs.

Legend:

x.xxx Peak flow rate from sub-catchment

x.xxx Peak flow rate in pipe

x.xxx Peak flow rate in overflow route

x.xxx Total peak flow rate from site (in pipes and overland flow routes combined)

On-grade pit

x.xx Peak HGL in pit

Detention tank

x.xx Peak tank water level

x.xx Peak tank tailwater level

Figure 4: DRAINS model legend

Peak flow rates from the site in the critical 5% AEP storm are summarised in Figure 5. The peak post-development flow rate (with detention) is 2.4L/s, which does not exceed the permissible site discharge (PSD) for the site of 2.4L/s. Hydrograph corresponding to the peak post-development flow rate is shown in Figure 6, with associated tank volume for the same storm event in Figure 7.

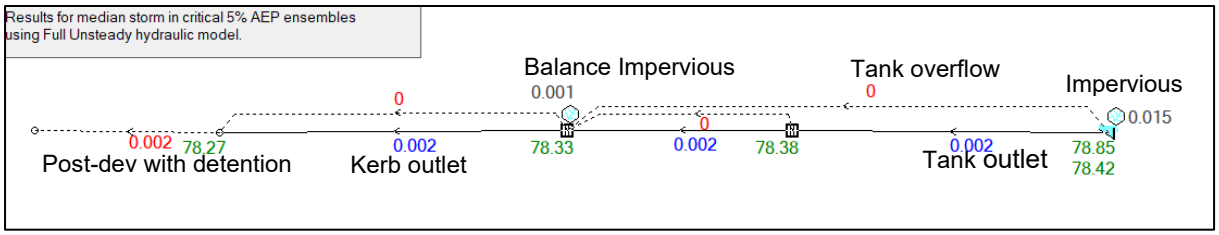

Figure 5: DRAINS model summary of peak flows in 5% AEP

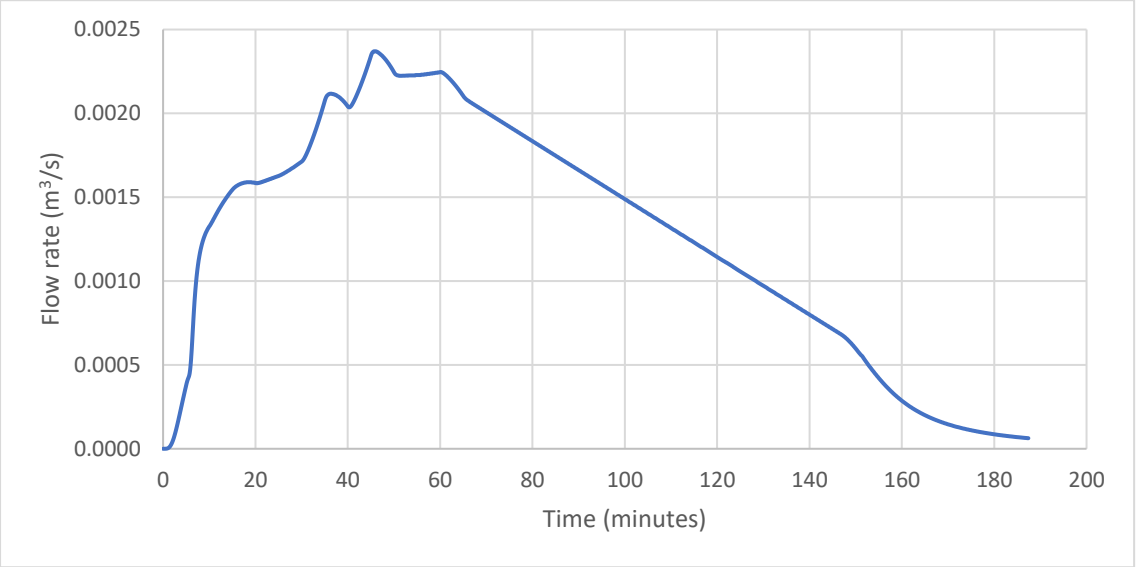

Figure 6: Flow rate hydrograph to lot connection in 5% AEP (1 hour duration event)

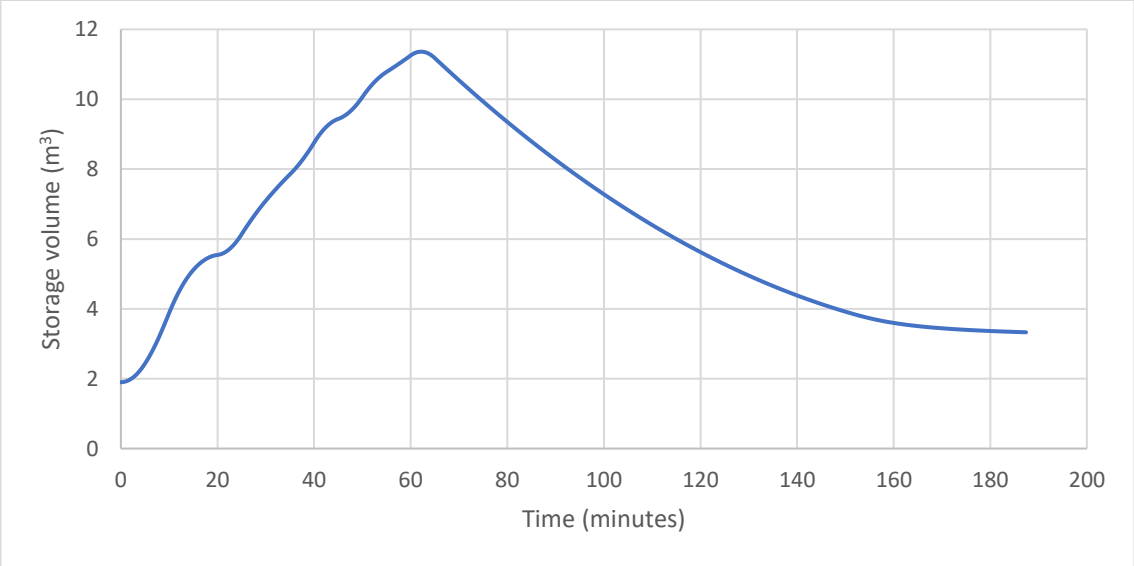

Figure 7: Volume in detention tank for 5% AEP (1 hour duration event)

3 GLENORCHY CITY COUNCIL STORMWATER MANAGEMENT POLICY

The stormwater system to service the proposed development at 201 Tolosa Street, Glenorchy has been designed to meet the requirements of the Glenorchy City Council Stormwater Management Policy [2], with the following key elements:

3.1 Council's Responsibilities

Council as the planning authority is responsible for assessing and determining applications for planning permits in accordance with the requirements of the TPSG and the Land Use Planning and Approvals Act 1993 *and for recognising the State Policy on Water Quality Management 1997. Council is also responsible for managing the Council stormwater system and protecting those stormwater assets in accordance with the requirements of the* Urban Drainage Act 2013.

Response:

The stormwater system to service the proposed development at 201 Tolosa Street, Glenorchy, has been designed to meet the requirements of the *Glenorchy City Council Stormwater Management Policy, 2021* [2].

3.2 Compliance With Industry Standards

Stormwater design in new developments is to be in accordance with the current versions of the industry standard documents Australian Rainfall and Runoff, and Australian Runoff Quality, and the Tasmanian Stormwater Standards for New Developments.

Response:

The stormwater system to service the proposed development has been designed in accordance with *Australian Rainfall and Runoff* (ARR) *2019* [3], Australian Runoff Quality (ARQ) [4], the Tasmanian Stormwater Standards for New Developments [5], AS/NZS 3500.3 [6] and the Glenorchy City Council Stormwater Management Policy [2].

3.3 Stormwater System Design Requirements

a) *The minor stormwater drainage system for new development shall be designed to accommodate a storm with a 5% AEP for land in the Central Business, General Business and Commercial zones and a storm with a 10% AEP for land in all other zones.*

   Response:

   The development site is on land zoned General Residential. The minor stormwater drainage system for the proposed development is designed to accommodate a storm with a 5% AEP, in accordance with on-site detention requirements. Summary of DRAINS modelling is provided in this report.

b) *The major stormwater drainage system for new development shall be designed for the safe conveyance of the 1% AEP storm event with an allowance for climate change.*

Response:

The major stormwater drainage system for the new development is designed for the safe conveyance of excess runoff not able to be accommodated in the piped system, which is directed down the driveway towards the public road.

3.4 Stormwater Disposal Method Requirements

a) Stormwater must be disposed of by gravity to the Council stormwater system where practicable.

Response:

Stormwater is disposed of via gravity to kerb via upgraded kerb outlet, refer to item (f).

b) Where disposal of stormwater by gravity to the Council stormwater system is not practicable:

(i) For land within the Rural Living or Low Density Residential zones, stormwater disposal must be consistent with the current disposal method; or

(ii) For land within all other zones, a report prepared by a Suitably Qualified Person demonstrates that the site is suitable for onsite stormwater disposal, and that the onsite stormwater disposal system is designed, and will be maintained and managed, to minimise the risk of failure to the satisfaction of the Senior Civil Engineer; or

(iii) For land in all zones, stormwater may be disposed of to the Council stormwater system via a pump system. Pump systems are not to be connected directly to a kerb connection. Pump systems must be designed by a Suitably Qualified Person and must be maintained and managed to minimise the risk of failure to the satisfaction of the Senior Civil Engineer. Where this disposal method is used, a Form 46 (Schedule of Maintenance - Prescribed Essential Building Services) is to be attached to the Occupancy Permit issued for the building on the land.

Response:

Not applicable, no onsite disposal or pump systems are proposed.

c) Where stormwater is discharged to a watercourse, rivulet or creek the impacts of increased water velocity or volume must be mitigated by adequate capacity energy dissipation to the satisfaction of the Senior Civil Engineer.

Response:

Not applicable, no discharge of stormwater to a watercourse, rivulet or creek.

d) All stormwater property connections downstream of the Boundary Box or Inspection Opening are classed as Council assets and will be maintained by the Council. However, Council may request that property owners contribute the cost of repairing damaged Council property connections if man-made damage is found. Note that Boundary Box and Inspection Openings are part of the private stormwater system and it is the property owner's responsibility to maintain them.

Response:

Lot connection inspection opening is nominated on Stormwater Concept Plan, Drawing 06 by G Tilley.

e) *Each lot will typically have only a single property connection. For those properties where Council determines that a single property connection is insufficient, multiple connection points into the Council stormwater system may be provided at the Senior Civil Engineer's discretion. The cost of providing such connections is to be paid by the property owner before the work is undertaken.*

Response:

The lot is proposed to have a single stormwater lot connection, as nominated on Stormwater Concept Plan, Drawing 06 by G Tilley.

f) *For any new multiple unit developments, Council may allow up to two units to discharge via a single property connection (minimum 150mm diameter circular or equivalent) direct to a kerb outlet provided that the calculated concentrated runoff does not exceed the hydraulic capacity of the kerb and gutter. A stormwater connection from any development which has a total catchment size more than 1,500m^2 will be connected directly to the Council stormwater system or other approved watercourse.*

Response:

Stormwater for the proposed three multiple dwelling development (2 new, 1 existing) is disposed of via gravity to kerb via upgraded kerb outlet. The existing DN300 stormwater main is located on the opposite side of Tolosa St to the proposed development. In order to reach the stormwater main, there are a number of existing services which a new stormwater connection would need to cross, including nbn (x2 lines), gas (125mm PE), HV power cable (11kV), water (2x DN50 Cu and DN450 DICL), and sewer (DN225 CO). It is impractical to provide a new connection to the stormwater main, due to the number, sizes and types of services which would need to be crossed. The existing dwelling discharges to kerb, and there is a side entry pit approximately 35m downslope from the property. On-site detention volume is designed to ensure that the post development runoff rate to the kerb outlet does not exceed the runoff rate from the existing pre-development site.

g) *If an existing developed property does not have a stormwater property connection, Council will provide one as funds become available and as other funding priorities allow. Council will consider any such installations through the budget process and assess their priority in Council's capital works program.*

Response:

Not applicable.

h) *If a property owner wishes to develop a property other than a single residential dwelling, they will be responsible for paying the cost of installing a stormwater property connection or upgrading the existing property connection to meet the needs of the development to the satisfaction of the Senior Civil Engineer. The upgrade of a stormwater connection associated with development is to be completed prior to a plumbing permit being granted. For all new and upgraded stormwater*

connections a Stormwater Connection Request Form must be submitted to Council and all relevant fees paid.

Response:

Upgraded lot connection is nominated on Stormwater Concept Plan, Drawing 06 by G Tilley.

i) Council will require a developer to provide a registered easement (at developer's cost) giving free and unfettered access to Council or its agents or nominees to any stormwater assets that become vested in Council.

Response:

Not applicable, there are no existing or proposed stormwater assets which will become vested in Council.

j) If a property owner wishes to develop a property, they shall be responsible for all the matters associated with gaining a suitable stormwater property connection. This includes:

(i) Design of the connection;

(ii) Negotiating and compensating easements with affected property owners;

(iii) Providing title plan to the Council, including any easement required, ready to be lodged with the Land Title Office and payment for associated legal cost; and

(iv) All construction and associated costs.

Response:

Lot connection inspection opening is nominated on Stormwater Concept Plan, Drawing 06 by G Tilley.

3.5 Stormwater Quality Management Requirements

a) The following development is exempt from the Stormwater Quality Management Requirements set out in 5(b) to 5(e):

(i) A single dwelling on a single lot that will be connected to the existing public stormwater system.

(ii) Development creating a total new impervious area less than 500m^2.

(iii) A subdivision creating new lots with no lot less than 5,000m^2 each in area, and with new roads and footpaths less than 500m^2 in area.

(iv) Subdivisions which are solely for the purpose of creating road reserve, public open space, public infrastructure, littoral or riparian reserve or minor boundary adjustments.

Response:

The proposed development is exempt from the Stormwater Quality Management Requirements.

(ii) The development is creating a new total impervious area of 282m^2 new unroofed concrete area + 214m^2 new roof area = 496m^2 total new impervious area (less than 500m^2 total new impervious area).

3.6 Stormwater Quantity Management Requirements

a) The following development is exempt from the Stormwater Quantity Management Requirements set out in 6(b) to 6(i):

(i) Development that does not result in any increase in the impervious area for site.

(ii) Development comprising a one-off Class 10a structure with a roof area of no greater than 40m^2 where there are no other changes in the impervious area for site.

(iii) Development comprising a one-off extension to Class 1 building resulting in an increase in impervious area no greater than 40m^2 where there are no other changes in the impervious area for site.

(iv) Development with an increase in the total impervious area of no greater than 500m^2 that discharges stormwater directly to a non-piped rivulet or creek.

(v) Development that discharges stormwater directly to the River Derwent.

(vi) Development that discharges stormwater to the downstream parts of the Council stormwater system which have been demonstrated to the satisfaction of the Senior Civil Engineer to have sufficient capacity to cater for the fully developed catchment including the development.

(vii) Development that discharges stormwater to the Council stormwater system where it has been demonstrated to the satisfaction of the Senior Civil Engineer that if the total catchment containing the site were fully developed without any increase in capacity of the Council stormwater system, the detention of stormwater would not be of benefit in mitigating the impacts of downstream flooding or the performance of the downstream Council stormwater system. Note: The development proponent is responsible for undertaking the modelling the total catchment.

(viii) Development that discharges stormwater to the Council stormwater system where it has been demonstrated to the satisfaction of the Senior Civil Engineer that it is not practicable to provide stormwater detention on the development site and that to mitigate the impacts of downstream flooding or the performance of the downstream Council stormwater system detention of stormwater can best be provided downstream of the development site AND a cash contribution has been paid to fully fund the cost of the detention to upgrade the downstream reticulation system to cater for 5% AEP events and the overall stormwater system to cater for 1% AEP events. Note: The development proponent is responsible for undertaking the necessary modelling.

Response:

The proposed development is not exempt from the Stormwater Quantity Management Requirements.

b) Any increase in stormwater runoff must be accommodated:

(i) *Within an existing public stormwater system to the satisfaction Council; or*

(ii) *Public infrastructure upgraded by the developer as part of the development proposal to the satisfaction of Council; or*

(iii) *On-site detention is designed to offset the increase in stormwater runoff caused by the development, to the satisfaction of Council.*

Response:

Increase in stormwater runoff is accommodated in (iii) on-site detention designed to offset the increase in stormwater runoff caused by the development. The on-site stormwater detention system proposed includes an 11.4kL in-ground detention tank fitted with a 40mm orifice plate outlet at the base to provide sufficient detention volume to detain the runoff from impervious areas in a 5% AEP storm.

c) *The impact of the stormwater quantity from the site may be offset via a cost contribution for a future improvement of the public stormwater system for infrastructure upgrades that are linked to an Urban Drainage Plan (or similar) created or accepted by Council.*

Response:

Not applicable, no cost contribution is proposed with this development proposal for offset of stormwater detention on this site.

d) *The maximum allowed peak runoff set by the Council is equivalent to the calculated runoff resulting from an assumed runoff coefficient for the entire site of 0.55 at all rainfall events, temporal patterns and durations, subject to the fact that the existing public stormwater has the capacity to accommodate the increase.*

Response:

On-site detention volume is designed to ensure that the post development runoff rate to the kerb does not exceed the runoff rate from the existing pre-development site.

e) *Development that results in an additional impervious area of greater than 250m^2 and which exceeds the maximum allowed peak runoff must have Onsite Stormwater Detention (OSD) designed by a suitably qualified person and approved by Council.*

Response:

The proposed development results in an additional impervious area of 496m^2. On-site detention volume of 11.4kL is designed to ensure that the post development runoff rate to the kerb does not exceed the runoff rate from the existing pre-development site.

f) *Any OSD required by 6(e) must cater for the difference between the Permissible Site Discharge (PSD) and the peak discharge over the period of the design storm, and the OSD shall be designed to cater for 5% AEP storm events, and ensure that the development does not detrimentally impact on downstream properties in event more severe than 5% AEP.*

Response:

The OSD is designed to cater for 5% AEP storm events. Durations of 5 minutes to 72 hours have been modelled. The peak post development flow rate in the 5% AEP 1 hour duration event with detention system included is 2.4L/s, which does not exceed the PSD for the site (2.4L/s from the 30 minute duration 5% AEP event).

Stormwater runoff in excess of the capacity of the piped stormwater system is directed down the driveway and onto the road, and does not detrimentally impact on downstream properties.

g) *Design Requirements to be submitted with OSD Proposal required by 6(e):*

(i) *Detailed hydraulic designs must be submitted in accordance with the Australian Rainfall and Runoff (AR&R) to achieve a peak discharge rate for the site equivalent to or less than an assumed runoff coefficient for the entire site of 0.55.*

(ii) *For the purposes of calculating the peak runoff, a runoff coefficient of 0.9 shall be used for impervious areas and a coefficient of 0.4 shall be used for pervious areas.*

(iii) *The impervious rates for calculating runoff from various surfaces are specified below*

i. *Roofs, driveways and carports, and other impervious hard standing areas will be 100% impervious for drainage calculation purposes.*

ii. *Driveways constructed with gravel or "grass-crete" or pervious pavers will be 80% impervious for drainage calculation purposes.*

iii. *Courtyards and paths paved with pervious pavers and proper subsurface drainage system constructed underneath will be 25% impervious for drainage calculation purposes; and*

iv. *Unroofed decks constructed with open timber decking will also be 25% impervious for the overall runoff coefficient calculation purposes.*

(iv) *The PSD shall be calculated based on the critical storm duration of the entire catchment calculated by a suitably qualified person, unless specified otherwise by the Council's Senior Civil Engineer.*

(v) *The Site Storage Requirement (SSR) shall be determined by calculating runoff volumes for the full range of site storm durations for the 5% AEP to determine the maximum SSR.*

(vi) *The following three (3) main elements shall be included in the OSD system design:*

i. *Temporary storage: this may consist of an open surface pond/tank or underground tank. It is designed to contain the excess volume of stormwater resulting from limits on the peak discharge flow rate.*

ii. *Discharge Control Pit: a flow control pit and litter and sediment removal component must be included in the OSD design. The outlet/orifice shall be a minimum internal diameter or width of at least 25 mm and protected by an approved mesh screen. An overflow structure must be designed to cater for flows exceeding the capacity of the OSD. The overflow structure must direct excess flows in a manner to minimise any detrimental effects on property downstream.*

iii. *Maintenance Scheme: a maintenance schedule/plan for the OSD must be submitted to the Council with the OSD engineering design. The cleaning of below ground storage facilities*

should be conducted in accordance with the requirements and risk control measures specified in AS2865-2009 Confined Spaces.

Response:

This report is provided to outline the design of the onsite stormwater detention for the site:

(i) DRAINS software was utilised to run an Extended Rational Method (ERM) model of the post-development site, in general accordance with ARR 2019 procedures. A description of the DRAINS model is provided in this report. The peak discharge rate from the impervious areas with detention tank included (2.4L/s in the 1 hour duration event) does not exceed the PSD calculated in (iv) below (2.4L/s in the 30 minute duration event).

(ii) For the purposes of calculating the peak runoff, a runoff coefficient of 0.9 is used for impervious areas and a coefficient of 0.4 is used for pervious areas.

(iii) The impervious catchment areas for the pre-development site are:

i. 221m^2 roofs (dwelling and shed) and 42m^2 concrete paths and driveway, are assumed to be 100% impervious.

ii. Driveways constructed with gravel are assumed to be 80% impervious and have total area for the site of 188m^2.

iii. Not applicable, no courtyards or paths paved with pervious pavers.

iv. Not applicable, no unroofed open timber decks.

The impervious catchment areas for the post development site are:

i. Roofs, driveways, concrete paths and unroofed decks, are assumed to be 100% impervious and have a total area for the site of 720m^2

ii. Not applicable, no gravel, “grass-crete” or pervious paving is proposed.

iii. Not applicable, no courtyards or paths paved with pervious pavers are proposed.

iv. Not applicable, no unroofed open timber decks are proposed.

(iv) The PSD has been calculated based on the critical storm duration of the entire catchment (30 minutes duration as advised by Council). The PSD (peak pre-development runoff) is calculated using the rational method:

$$Q = {}^{30min}I_{5\%AEP} \times \sum(C \times A) / 3600$$

$$= 17.4mm/h \times (0.9 \times (221m^2 + 42m^2 + 188m^2 \times 0.8) + 0.4 \times (188m^2 \times 0.2 + 651m^2)) / 3600$$

$$= 3.14L/s$$

The post-development runoff from the pervious areas is subtracted from this to determine the PSD from the post-development impervious areas.

$$Q_p = {}^{30min}I_{5\%AEP} \times C_p \times A_p / 3600$$

$$= 17.4mm/h \times 0.4 \times 382m^2 / 3600$$

= 0.74L/s

Q (PSD) = 3.14L/s – 0.74L/s

= 2.4L/s

(v) The Site Storage Requirement (SSR) has been determined by calculating runoff volumes for the full range of site storm durations (5 minutes to 72 hours) for the 5% AEP to determine the maximum SSR. The detention tank reaches maximum volume (11.4kL) in the 1 hour duration storm burst event.

(vi) The following three main elements are included in the OSD system design:

i. Temporary Storage: On site detention provided includes an 11.4kL in-ground detention tank fitted with a 40mm orifice plate outlet at the base such that the detention volume is provided to contain the excess volume of stormwater resulting from limits on the peak discharge flow rate.

ii. Discharge Control: Stormwater quality improvement devices (silt traps) are specified in grated pits, to provide litter and sediment removal upstream from the detention tank inlet. The orifice plate outlet is 40mm in diameter. Overflow from the detention tank is via the open grated lid in the top of the tank, and directed down the driveway and onto the road. This overflow structure ensures that any blockages within the tank slow release outlet are noticeable and are more likely to be remedied promptly, compared to a piped overflow connection directly to the below ground stormwater system.

iii. Maintenance Scheme: Refer to JSA Stormwater Maintenance Plan 25R75-11-2 outlining the maintenance schedule/plan for the OSD and treatment devices proposed.

h) *For developments where the additional impervious surface proposed is less than 250m^2, the following standard OSD sizes must be used:*

Additional Impervious Surface Proposed	On site Detention Required
40 to 65m^2	A minimum of 1.8m^3 (1,800 litres)
65m^2 to 100m^2	2.5m^3 (2,500 litres)
100m^2 to 150m^2	3.0m^3 (3,000 litres)
150m^2 to 200m^2	3.5m^3 (3,500 litres)
200m^2 to 250m^2	A minimum of 4.0m^3 (4,000 litres)
Over 250m^2	Engineering calculations required

Response:

Additional impervious surface proposed is 496m^2. Required on site detention volume is calculated by an engineer, as outlined in this report.

i) The maintenance of all OSD is the sole responsibility of the property owner.

Response:

The maintenance of all OSD is the sole responsibility of the property owner, as outlined in JSA Stormwater Maintenance Plan 25R75-11-2.

4 CONCLUSION

This document has outlined the stormwater system to service the proposed development at 201 Tolosa Street, Glenorchy.

Stormwater runoff from impervious catchment areas is collected and discharged to upgraded kerb outlet.

The proposed on-site stormwater detention system includes an 11.4kL in-ground detention tank collecting runoff from impervious catchment areas. The tank is fitted with a 40mm sharp edge orifice slow release outlet at the base such that the detention volume is available to detain the runoff from a 5% AEP storm event. The peak runoff rate from the developed site does not exceed the PSD for the site in the 5% AEP event.

The stormwater infrastructure is detailed on Stormwater Concept Plan, Drawing 06 by G Tilley and Detention Tank Detail, Drawing C353 by JSA.

5 REFERENCES

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[2] Glenorchy City Counil, *Council Policy: Stormwater Management Policy,* Glenorchy: Glenorchy City Council, 2021.

[3] J. Ball, M. Babister, R. Nathan, W. Weeks, E. Weinmann, M. Retallick and I. Testoni, Eds., Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia (Geoscience Australia), 2019.

[4] Wong, THF (Editor-in-Chief), Australian Runoff Quality: A Guide to Water Sensitive Urban Design, Crows Nest: Engineers Australia, 2006.

[5] DEP & LGAT, *Tasmanian Stormwater Policy Guideline and Standards for Development,* Hobart: Derwent Estuary Program and Local Government Association of Tasmania, 2021.

[6] Joint Technical Committee WS-014, Plumbing and Drainage, *AS/NZS 3500.3:2025 Australian/New Zealand Standard Plumbing and drainage Part 3: Stormwater drainage,* Standards Australia Limited, 2025.

APPENDIX A: LIST OF ACRONYMS

AEP	Annual Exceedance Probability
ARR	Australian Rainfall and Runoff
ARQ	Australian Runoff Quality
AS/NZS 3500.3	Australian/New Zealand Standard Plumbing and Drainage Part 3: Stormwater Drainage
BOM	Bureau of Meteorology
C	Runoff Coefficient
C10	10 year ARI runoff coefficient
DN	Nominal diameter
ERM	Extended Rational Method
IFD	Intensity – Frequency – Duration
OSD	On-site Stormwater Detention
PSD	Permissible Site Discharge
SSR	Site Storage Requirement