Stormwater Management Report

Proposed Retirement Living Development

25 Tall Oak Drive
Cotswald Hills

For: GTH Project No. 2 Pty Ltd

27 March 2026

Ref: B24-058

A QUALITY ASSURED COMPANY

CERTIFIED QUALITY ASSURANCE – ISO AS/NZS 9001, 4801 & 14001

SUNSHINE COAST
Suite 2, Norval Corporate Centre
13 Norval Court
Maroochydore QLD 4558
P: 0431 803 337 F: 07 5646 5857
PO Box 2016
Fortitude Valley BC, QLD 4006
E: sunshinecoast@westerapartners.com.au

BRISBANE
Level 2, 33 Longland Street
Newstead QLD 4006
P: 07 3852 4333 F: 07 5646 5857
PO Box 2016
Fortitude Valley BC, QLD 4006
E: brisbane@westerapartners.com.au

GOLD COAST
Level 3, 17 Welch Street
Southport QLD 4215
P: 07 5571 1599 F: 07 5646 5857
PO Box 6138
Southport Mail Centre 9726
E: goldcoast@westerapartners.com.au

NORTHERN NSW
11 Sailfish Way
Kingscliff NSW 2487
P: 02 6674 8047 F: 07 5646 5857
PO Box 1131
Kingscliff NSW 2487
E: nsw@westerapartners.com.au

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Westera Partners Contact:

Jared Hill
Phone: 0437 335 403
Email: jaredh@westerapartners.com.au

Certified for Issue by:

Jared Hill RPEQ 19891

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This report has been prepared for GTH Project No 2 Pty Ltd for the purpose of accompanying related applications to Toowoomba Regional Council. This report must only be used by Ruby Developments Pty Ltd for this purpose and must not be used or relied upon by any other person for any other purpose.

The assessment, conclusions or recommendations in this report are based on conditions encountered and information received at the time of preparing the report and may not be relied upon as site conditions or operations vary over time.

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1 INTRODUCTION

Westera Partners Pty Ltd has been commissioned by GTH Project No. 2 Pty Ltd to prepare a Stormwater Management Report to accompany related applications for a proposed Retirement Living Facility

The proposal involves 207 villas including associated internal access roads, carparking and ground level features. The primary access point will be provided from Tall Oak Drive.

This report documents how stormwater runoff will be managed on site in accordance with Toowoomba Regional Council's (TRC's) requirements.

2 SITE DESCRIPTION

2.1 Location and Land Use

The proposed development site is located at 1-11 Tallowwood Boulevard, Cotswald Hills, also known as Lot 1 & 2 SP330786. The site area is approximately 10.609Ha and is currently vacant, cleared land. The site falls at varying grade to the north and north-east towards Hermitage Road and an existing gully respectively.

The site is bound by Gowrie Junction Road to the west, residential properties to the south with a subdivision currently under construction, the stormwater gully to the east and Hermitage Road to the north. There is also an existing Council sewer pump station adjoining the north-east of the development site. Refer to Figure 1 for an indicative site location and Appendix D for detail site survey information.

Figure 1 – Indicative site location (Nearmap, 2024)

3 BACKGROUND

There is an existing Material Change of Use & Reconfiguration of a Lot approval over the development site (MCUI/2020/1802 & RAL/2020/1808) for a 185 villa Retirement Facility and four into five lot subdivision. There is also an existing Operational Works approval (OW/2022/3529) for stage 1 of the Retirement Facility and earthworks over the whole site. Works have commenced on site under this approval, however construction has been paused for a period of time now. This report has been completed with reference to the approval documents for the MCU/RAL as well as the OPW, with the approved stormwater management strategies to be generally maintained unless noted otherwise.

4 SITE DETAILS

4.1 Lawful Point of Discharge

The existing site currently discharges stormwater to the north and north-east towards three separate culverts under Hermitage Road.

Stormwater runoff from the development site will be collected discharged to the existing culverts via new stormwater outlets with the site broken up into separate catchments generally in accordance with existing site conditions and the approved Stormwater Management Report by ADG. Refer to the engineering plans within Appendix C for further information.

4.2 Existing Infrastructure

There is currently an existing 750mm stormwater pipe discharging runoff from Tall Oaks Drive and associated catchment from the south to a temporary outlet swale on site. It is proposed to extend this infrastructure through the development site and discharge to the existing culvert to the north under Hermitage Road.

4.3 Upstream Drainage Connection

All adjoining properties to the south will be able to achieve compliant lawful points of discharge without requiring piped inter-allotment drainage lines through the site. A cut off drain shall be constructed along the south boundary to manage nuisance flows reaching the site and direct them appropriately to a lawful point of discharge.

4.4 Flooding

The development site is impacted by Council's flood mapping with the existing gully to the east of the site shown as subject to flooding as well as a portion of the western edge of the site impacted by historical flood mapping. As outlined in the approved stormwater report for the original approval, works associated with the local master plan have ensured the site is flood free. The master plan involved in stream works along the stormwater gully to the east of the development site and works have been undertaken along Gowrie Junction Road to direct the west overland flow into a table drain. The site can now therefore be considered flood free and was previously approved on this basis.

5 STORMWATER QUANTITY MANAGEMENT

The existing approved Stormwater Report by ADG concluded that stormwater detention was not required for the site on the basis of the outcomes from approved masterplan. A detailed analysis of the existing and developed flows has therefore not been undertaken and it is considered that stormwater detention is still not required for the site. Internal stormwater catchments though have been set to generally maintain the existing flow regime off the site to the three respective lawful points of discharge. Refer to the engineering plans contained within Appendix C for further information on the existing and developed catchments.

6 WATER QUALITY MANAGEMENT

6.1 Operational Phase

The proposed development would ordinarily need address the State Planning Policy (SPP 2017) as the development site area exceeds 2500m^2. The development shall ensure that environmental values of receiving waters downstream of the development are maintained or enhanced during the construction and operation of the development in accordance with State Legislation and Local Government requirements. Formal stormwater quality treatment is not proposed with the development instead to pay monetary offsets to Toowoomba Regional Council in line with the original Infrastructure Agreement for the wider development area. Stormwater quality management should still be undertaken through the implementation of best management practices.

Pollutants typically generated during the operational phase of the development include:

- Litter/gross pollutants;
- Sediment;
- Nutrients (N & P);
- Hydrocarbons (oils and grease); and
- Heavy metals.

Stormwater quality best management practices that should be implemented for the development include:

- Regular cleaning & maintenance of the stormwater system and in particular the upstream cut off drain.
- On site management of litter and gross pollutants.

Stormwater modelling has been carried out using MUSIC modelling software to determine the required infrastructure needed to meet the Water Quality Objectives (WQO's) above.

6.2 Construction Phase

Management of stormwater runoff during construction and the implementation of an erosion & sediment control program is necessary to avoid impacts to receiving waters from pollutants typically generated during the construction phase. Typical pollutants are described in Table 1 below:

Table 1 – Pollutants Typically Generated During the Construction Phase

Pollutant	Sources
Litter (Gross Pollutants)	Paper, construction packaging, food packaging, cement bags.

Pollutant	Sources
Sediment	Unprotected exposed soils and stockpiles during earthworks and building.
Hydrocarbons	Fuel and oil spills, leaks from construction equipment.
Toxic materials	Cement slurry, asphalt prime, solvents, cleaning agents, wash waters.
pH altering substances	Acid sulphate soils, cement slurry and wash waters.

In addition to the degradation of receiving waters, impacts of inadequate erosion and sediment control downstream from the site include:

- traffic safety problems;
- blocked drains;
- local flooding problems;
- aesthetic pollution of drainage paths; and
- damage to local ecosystems.

6.2.1 Design Objectives

Management of stormwater runoff during construction should be undertaken in accordance with Appendix 2 of the SPP (July 2017). The SPP outlines the design objectives for construction phase stormwater management. These are presented in Table 2, Table 3 and Table 4.

Table 2 – SPP Appendix 2: Part 1 Construction Phase – Stormwater Management Design Objectives

Issue	Desired Outcomes
Drainage Control	1. Manage stormwater flows around or through areas of exposed soil to avoid contamination. 2. Manage sheet flows in order to avoid or minimise the generation of rill or gully erosion. 3. Provide stable concentrated flow paths to achieve the construction phase stormwater management design objectives for temporary drainage works (part 2). 4. Provide emergency spillways for sediment basins to achieve the construction phase stormwater management design objectives for emergency spillways on temporary sediment basins (part 3).
Erosion Control	1. Stage clearing and construction works to minimise the area of exposed soil at any one time. 2. Effectively cover or stabilise exposed soils prior to predicted rainfall. 3. Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised using methods which will achieve effective short-term stabilisation.

Issue	Desired Outcomes
Sediment Control	1. Direct runoff from exposed site soils to sediment controls that are appropriate to the extent of disturbance and level of erosion risk. 2. All exposed areas greater than 2500 metres must be provided with sediment controls which are designed, implemented and maintained to a standard which would achieve at least 80% of the average annual runoff volume of the contributing catchment treated (i.e. 80% hydrological effectiveness) to 50mg/L Total Suspended Solids (TSS) or less, and pH in the range (6.5–8.5).
Litter, Hydrocarbons and other contaminants	1. Remove gross pollutants and litter. 2. Avoid the release of oil or visible sheen to released waters. 3. Dispose of waste containing contaminants at authorised facilities.
Waterway Stability and flood flow management	1. Where measures are required to meet post-construction waterway stability objectives, these are either installed prior to land disturbance and are integrated with erosion and sediment controls, or equivalent alternative measures are implemented during construction. 2. Earthworks and the implementation of erosion and sediment controls are undertaken in ways which ensure flooding characteristics (including stormwater quantity characteristics) external to the development site are not worsened during construction for all events up to and including the 1 in 100 year ARI (1% AEP).

Table 3 – SPP Appendix 2: Part 2 Construction Phase – Stormwater Management Design Objectives for Temporary Drainage Works

Temporary Drainage Works	Anticipated Operation Design Life and Minimum Design Storm Event		
	<12 Months	12-24 Months	>24 Months
Drainage Structure	1 in 2 year ARI/39% AEP	1 in 5 year ARI/18% AEP	1 in 10 year ARI/10% AEP
Where located immediately up-slope of an occupied property that would be adversely affected by the failure or overtopping of the structure	1 in 10 year ARI/10% AEP		
Culvert Crossing	1 in 1 year ARI/63% AEP		

Table 4 – SPP Appendix 2: Part 3 Construction Phase – Stormwater Management Design Objectives for Emergency Spillways on Temporary Sediment Basins

Drainage Structure	Anticipated Operation Design Life and Minimum Design Storm Event		
	<3 Months	3-12 Months	>12 Months
Emergency spillways on temporary sediment basins	1 in 10 year ARI/10% AEP	1 in 20 year ARI/5% AEP	1 in 50 year ARI/2% AEP

Best practice erosion and sediment controls must be installed to minimise the discharge of sediment laden runoff during construction and to achieve the objectives outlined in Tables 2-4. This is discussed in the following section.

6.2.2 Erosion and Sediment Control

Management of stormwater runoff during construction is necessary to avoid pollution of downstream waterways from sediment and gross pollutant loading. Impacts of inadequate erosion and sediment control downstream from the site include:

- traffic safety problems;
- blocked drains;
- local flooding problems;
- aesthetic pollution of drainage paths; and
- damage to local ecosystems.

Best practice erosion and sediment controls must be installed to minimise the discharge of sediment laden runoff during construction. Erosion and sediment control plans shall be developed during detailed design phase and must be continually maintained and amended as required to minimise environmental harm.

Erosion and sediment control plans are based on three sets of control measures:

- drainage control;
- erosion control; and
- sediment control.

These control measures must be maintained in an effective operational condition. Sediment disposal from site is to occur to the satisfaction of Toowoomba Regional Council. Defects in erosion and sediment control devices, such as sediment fences, are to be inspected and documented. Upon Inspection, the Contractor is to determine whether the device should be replaced or repaired. Documentation is to include how the damage was caused and what measures can be implemented to reduce the possibility of repeat occurrences. Any damage to either permanent or temporary water quality control structures or devices is to be immediately rectified at the contractor's expense.

The effectiveness of the erosion and sediment control devices can be monitored by visual audits. All ESC measures are to be inspected:

- at least daily (when work is occurring on site) or weekly (when work is not occurring on site);
- within 24 hours of expected rain; and

- within 18 hours of a rainfall event (i.e. an event of sufficient intensity and duration to mobilise sediment on site).

Drainage paths are to be inspected to ensure the sediment fences are not being bypassed as a result of soil erosion.

Sediment laden runoff shall be prevented from entering neighbouring properties. This shall be achieved by landscaping disturbed areas immediately and prior to a rainfall event.

The proposed development has scored a 33 on the IECA erosion hazard assessment with trigger score value exceeded as a result of the development land area (refer Appendix A for details). Further details of proposed on site erosion and sediment control measures will be required at the detailed design phase of the development.

6.2.3 Maintenance and Monitoring Requirements

Periodic maintenance and monitoring of stormwater devices proposed in this report is crucial to ensure effective operation and design life.

Inspect field inlet grates, pits and underground pipes for blockage or damage at least 6 monthly or after significant rainfall event. Any installed filter baskets shall be inspected and maintained preferably by the manufacturer to avoid damage to units and to ensure adequate cleaning and record keeping. For the first 12 months routine inspections of filter baskets shall be carried out monthly with routine clean out at alternate months. Results of the initial 12 months maintenance program shall be used to determine future maintenance intervals. Refer manufacturer's maintenance and monitoring methodology for specific details. Maintenance of ESC measures must occur in accordance with Table 5.

Table 5 - ESC maintenance requirements.

ESC Measure	Maintenance Trigger	Timeframe for Completion of Maintenance
Sediment basins	When settled sediment exceeds the volume of the sediment storage zone	Within 7 days of the inspection.
Other ESC measures	The capacity of ESC measures falls below 75%.	By the end of the day.

Sediment accumulation on ESC devices is to be removed and disposed of to the satisfaction of Toowoomba Regional Council.

7 CONCLUSION

This Stormwater Management Report outlines how stormwater runoff from the site will be managed in order to not adversely impact the receiving environment. The report does not propose any significant variance to the approved stormwater scheme.

Stormwater runoff from the development site shall be directed to the existing culverts under Hermitage Road to the north of the site and to the north-east towards the existing stormwater gully. Stormwater detention is not considered to be required.

Stormwater quality treatment is not required with the developer instead providing monetary contributions to Council in lieu of formal treatment.

The development site is no longer considered to be impacted by flooding.

Further refinement of the proposed stormwater management measures is recommended at the detailed design phase to ensure coordination with final architectural layout.

By implementing the proposed stormwater management system, and providing adequate maintenance, the downstream environment and neighbouring properties will not experience any adverse deterioration of water quality as a result of the proposed development.

8 APPENDICES

Appendix A – Erosion Hazard Assessment

Erosion Hazard Assessment Form

Condition	Points	Score	Trigger value
AVERAGE SLOPE OF DISTURBANCE AREA [1]			
• not more than 3% [3% . 33H:1V]	0		
• more than 3% but not more than 5% [5% = 20H:1V]	1	**4**	**4**
• more than 5% but not more than 10% [10% = 10H:1V]	2		
• more than 10% but not more than 15% [15% . 6.7H:1V]	4		
• more than 15%	6		
SOIL CLASSIFICATION GROUP (AS1726) [2]			
• GW, GP, GM, GC	0		
• SW, SP, OL, OH	1	**3**	
• SM, SC, MH, CH	2		
• ML, CL, or if *imported fill* is used, or if soils are untested	3		
EMERSON (DISPERSION) CLASS NUMBER [3]			
• Class 4, 6, 7, or 8	0		
• Class 5	2	**4**	**6**
• Class 3, (default value if soils are untested)	4		
• Class 1 or 2	6		
DURATION OF SOIL DISTURBANCE [4]			
• not more than 1 month	0		
• more than 1 month but not more than 4 months	2	**6**	**6**
• more than 4 months but not more than 6 months	4		
• more than 6 months	6		
AREA OF DISTURBANCE [5]			
• not more than 1000 m^2	0		
• more than 1000 m^2 but not more than 5000 m^2	1	**6**	**4**
• more than 5000 m^2 but not more than 1 ha	2		
• more than 1 ha but not more than 4 ha	4		
• more than 4 ha	6		
WATERWAY DISTURBANCE [6]			
• No disturbance to a watercourse, open drain or channel	0	**2**	**2**
• Involves disturbance to a constructed open drain or channel	1		
• Involves disturbance to a natural watercourse	2		
REHABILITATION METHOD [7]			
Percentage of area (relative to total disturbance) revegetated by seeding without light mulching (i.e. worst-case revegetation method).			
• not more than 1%	0	**0**	
• more than 1% but not more than 5%	1		
• more than 5% but not more than 10%	2		
• more than 10%	4		
RECEIVING WATERS [8]			
• Saline waters only	0	**2**	
• Freshwater body (e.g. creek or freshwater lake or river)	2		
SUBSOIL EXPOSURE [9]			
• No subsoil exposure except of service trenches	0	**2**	
• Subsoils are likely to be exposed	2		
EXTERNAL CATCHMENTS [10]			
• No external catchment	0	**1**	
• External catchment diverted around the soil disturbance	1		
• External catchment not diverted around the soil disturbance	2		
ROAD CONSTRUCTION [11]			
• No road construction	0	**2**	
• Involves road construction works	2		
pH OF SOILS TO BE REVEGETATED [12]			
• more than pH 5.5 but less than pH 8	0	**1**	
• other pH values, or if soils are untested	1		
Total Score [13]		**33**	

Explanatory notes

Requirements: Specific issues or actions required by the proponent.

Warnings: Issues that should be considered by the proponent.

Comments: General information relating to the topic.

[1] **REQUIREMENTS:**
For sites with an average slope of proposed land disturbance greater than 10%, a preliminary ESCP must be submitted to the regulatory authority for approval during planning negotiations.

Proponents must demonstrate that adequate erosion and sediment control measures can be implemented on-site to effectively protect downstream environmental values.

If site or financial constraints suggest that it is not reasonable or practicable for the prescribed water quality objectives to be achieved for the proposal, then the proponent must demonstrate that alternative designs or construction techniques (e.g. pole homes, suspended slab) cannot reasonably be implemented on the site.

WARNINGS:
Steep sites usually require more stringent drainage and erosion controls than flatter grade sites.

COMMENTS:
The steeper the land, the greater the need for adequate drainage controls to prevent soil and mulch from being washed from the site.

[2] **REQUIREMENTS:**
If the actual soil K-factor is known from soil testing, then the Score shall be determined from Table 1.

If a preliminary ESCP is required during planning negotiations, then it must be demonstrated that adequate space is available for the construction and operation of any major sediment traps, including the provision for any sediment basins and their associated embankments and spillways. It must also be demonstrated that all reasonable and practicable measures can be taken to divert the maximum quantity of sediment-laden runoff (up to the specified design storm) to these sediment traps throughout the construction phase and until the contributing catchment is adequately stabilised against erosion.

WARNINGS:
The higher the point score, the greater the need to protect the soil from raindrop impact and thus the greater the need for effective erosion control measures. A point score of 2 or greater will require a greater emphasis to be placed on revegetation techniques that do not expose the soil to direct rainfall contact during vegetation establishment, e.g. turfing and *Hydromulching*.

COMMENTS:
Table 2 provides an *indication* of soil conditions likely to be associated with a particular Soil group based on a statistical analysis of soil testing across NSW. This table provides only an initial estimate of the likely soil conditions.

The left-hand-side of the table provides an indication of the type of sediment basin that will be required (Type C, F or D). The right-hand-side of the table provides an indication of the likely erodibility of the soil based on the Revised Universal Soil Loss Equation (RUSLE) K-factor.

Table 3 provides some general comments on the erosion potential of the various soil groups.

Table 1 – Score if soil K-factor is known

	RUSLE soil erodibility K-factor			
	K < 0.02	**0.02<K<0.04**	**0.04<K<0.06**	**K > 0.06**
Score	0	1	2	3

Table 2 – Statistical analysis of NSW soil data [1]

Unified Soil Class System	Likely sediment basin classification (%)			Probable soil erodibility K-factor (%) [2]			
	Dry	Wet		Low	Moderate	High	Very High
	Type C	Type F	Type D	K < 0.02	0.02<K<0.04	0.04<K<0.06	K > 0.06
GM	30	**58**	12	12	**51**	26	12
GC	**42**	33	25	13	**71**	17	0
SW	40	**48**	12	**49**	39	12	0
SP	**53**	32	15	**76**	18	5	1
SM	21	**67**	12	26	**48**	25	1
SC	26	**50**	24	16	**64**	18	2
ML	5	**63**	32	4	35	**45**	16
CL	9	**51**	39	12	**56**	19	13
OL	2	**80**	18	34	**61**	5	1
MH	12	41	**48**	15	19	**41**	25
CH	5	44	**51**	39	**43**	11	7

Notes: [1] Analysis of soil data presented in Landcom (2004).

[2] Soil erodibility based on Revised Universal Soil Loss Equation (RUSLE) K-factor.

Unified Soil Classification System (USCS)

GW Well graded gravels, gravel-sand mixtures, little or no fines
GP Poorly graded gravels, gravel-sand mixture, little or no fines
GM Silty gravels, poorly graded gravel-sand-silt mixtures
GC Clayey gravels, poorly graded gravel-sand-clay mixtures
SW Well graded sands, gravelly sands, little or no fines
SP Poorly graded sands, gravelly sands, little or no fines
SM Silty sands, poorly graded sand-silt mixtures
SC Clayey sands, poorly graded sand-clay mixtures
ML Inorganic silts & very fine sands, rock flour, silty or clayey fine sands with slight plasticity
CL Inorganic clays, low–medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL Organic silts and organic silt-clays of low plasticity
MH Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH Inorganic clays of high plasticity, fat clays
OH Organic clays of medium to high plasticity

Table 3 – Typical properties of various soil groups [1]

Soil Groups	Typical properties [2]
GW, GP	• Low erodibility potential.
GM, GC	• Low to medium erodibility potential. • May create turbid runoff if disturbed as a result of the release of silt and clay particles.
SW, SP	• Low to medium erodibility potential.
SM, SC	• Medium erodibility potential. • May create turbid runoff if disturbed as a result of the release of silt and clay particles.
MH, CH	• Highly variable (low to high) erodibility potential. • Will generally create turbid runoff if disturbed.
ML, CL	• High erodibility potential. • Tendency to be dispersive. • May create some turbidity in runoff if disturbed.

Note: [1] After Soil Services & NSW DLWC (1998).
[2] Any soil can represent a high erosion risk if the binding clays or silts are unstable.

Table 4 provides **general** guidelines on the suitability of various soil groups to various engineering applications.

Table 4 – Engineering suitability based on Unified Soil Classification [1]

Unified Soil Class	USC Group	Embankments		Fill	Slope stability	Untreated roads
		Water retaining	Non water retaining			
Well graded gravels	GW	Unsuitable	Excellent	Excellent	Excellent	Average
Poorly graded gravel	GP	Unsuitable	Average	Excellent	Average	Unsuitable
Silty gravels	GM	Unsuitable	Average	Good	Average	Average
Clayey gravels	GC	Suitable	Average	Good	Average	Excellent
Well graded sands	SW	Unsuitable	Excellent	Excellent	Excellent	Average
Poorly graded sands	SP	Unsuitable	Average	Good	Average	Unsuitable
Silty sands	SM	Suitable [2]	Average	Average	Average	Poor
Clayey sands	SC	Suitable	Average	Average	Average	Good
Inorganic silts	ML	Unsuitable	Poor	Average	Poor	Unsuitable
Inorganic clays	CL	Suitable [2]	Good	Average	Good	Poor
Organic silts	OL	Unsuitable	Unsuitable	Poor	Unsuitable	Unsuitable
Inorganic silts	MH	Unsuitable	Poor	Poor	Poor	Unsuitable
Inorganic clays	CH	Suitable [2]	Average	Unsuitable	Average	Unsuitable
Organic clays	OH	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable
Highly organic soils	Pt	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable

Notes: [1] Modified from Hazelton & Murphy (1992)
[2] Suitable only after modifications to soil such as compaction and/or erosion protection

[3] If the soils have not been tested for Emerson Class, then adopt a score of 4.

REQUIREMENTS:
Works proposed on sites containing Emerson Class 1 or 2 soils have a very high pollution potential and must submit a conceptual ESCP to the regulatory authority for review and/or approval (as required by the authority) during planning negotiations.

WARNINGS:
Class 3 and 5 soils disturbed by cut and fill operations or construction traffic are highly likely to discolour stormwater (i.e. cause turbid runoff). Chemical stabilisation will likely be required if these soils are placed immediately adjacent to a retaining wall. Any disturbed Class 1, 2, 3 and 5 soils that are to be revegetated must be covered with a non-dispersive topsoil as soon as possible (unless otherwise agreed by the regulatory authority).

Class 1 and 2 soils are highly likely to discolour (pollute) stormwater if exposed to rainfall or flowing water. Treatment of these soils with gypsum (or other suitable substance) will most likely be required. These soils should not be placed directly behind a retaining wall unless it has been adequately treated (stabilised) or covered with a non-dispersible soil.

[4] The duration of disturbance refers to the total duration of soil exposure to rainfall up until a time when there is at least 70% coverage of all areas of soil.

REQUIREMENTS:
All land developments with an expected soil disturbance period greater than 6 months must submit a conceptual ESCP to the regulatory authority for review and/or approval (as required by the authority) during planning negotiations.

COMMENTS:
Construction periods greater than 3 months will generally experience at least some significant storm events, independent of the time of year that the construction (soil disturbance) occurs.

[5] **REQUIREMENTS:**
Development proposals with an expected soil disturbance in excess of 1ha must submit a conceptual ESCP to the regulatory authority for review and/or approval (as required by the regulatory authority) during planning negotiations.

The area of disturbance refers to the total area of soil exposed to rainfall or dust-producing winds either as a result of:

(a) the removal of ground cover vegetation, mulch or sealed surfaces;
(b) past land management practices;
(c) natural conditions.

WARNINGS:
A *Sediment Basin* will usually be required if the disturbed area exceeds 0.25ha (2500m^2) within any sub-catchment (i.e. land flowing to one outlet point).

COMMENTS:
For soil disturbances greater than 0.25ha, the revegetation phase should be staged to minimise the duration for which soils are exposed to wind, rain and concentrated runoff.

[6] **REQUIREMENTS:**
All developments that involve earthworks or construction within a natural watercourse (whether that watercourse is in a natural or modified condition) must submit a conceptual ESCP to the regulatory authority for review and/or approval (as required by the regulatory authority) during planning negotiations.

Permits and/or licences may be required from the State Government, including possible submission of the ESCP to the relevant Government department.

[7] **REQUIREMENTS:**
No areas of soil disturbance shall be left exposed to rainfall or dust-producing winds at the end of a development without an adequate degree of protection and/or an appropriate action plan for the establishment of at least 70% cover.

COMMENTS:
Grass seeding without the application of a light mulch cover is considered the least favourable revegetation technique. A light mulch cover is required to protect the soil from raindrop impact, excessive temperature fluctuations, and the loss of essential soil moisture.

[8] **COMMENTS:**
All receiving waters can be adversely affected by unnatural quantities of sediment-laden runoff. Freshwater ecosystems are generally more susceptible to ecological harm resulting from the inflow of fine or dispersible clays than saline water bodies. The further inland a land disturbance is, the greater the potential for the released sediment to cause environmental harm as this sediment travels towards the coast.

For the purpose of this clause it is assumed that all sediment-laden runoff will eventually flow into saline waters. Thus, sediment-laden discharges that flow first into freshwater are likely to adversely affect both fresh and saline water bodies and are therefore considered potentially more damaging to the environment.

This clause does **not** imply that sediment-laden runoff will not cause harm to saline waters.

[9] **COMMENTS:**
This clause refers to subsoils exposed during the construction phase either as a result of past land practices or proposed construction activities. The exposure of subsoils resulting from the excavation of minor service trenches should not be considered.

[10] **WARNINGS:**
The greater the extent of external catchment, the greater the need to divert up-slope stormwater runoff around any soil disturbance.

COMMENTS:
The ability to separate “clean” (i.e. external catchment) stormwater runoff from “dirty” site runoff can have a significant effect on the size, efficiency and cost of the temporary drainage, erosion, and sediment control measures.

[11] **REQUIREMENTS:**
Permission must be obtained from the owner of a road reserve before placing any erosion and sediment control measures within the road reserve.

WARNINGS:
Few sediment control techniques work efficiently when placed on a road and/or around roadside stormwater inlets. Great care must be taken if sediment control measures are located on a public roadway, specifically:

- safety issues relating to road users;
- the risk of causing flooding on the road or within private property.

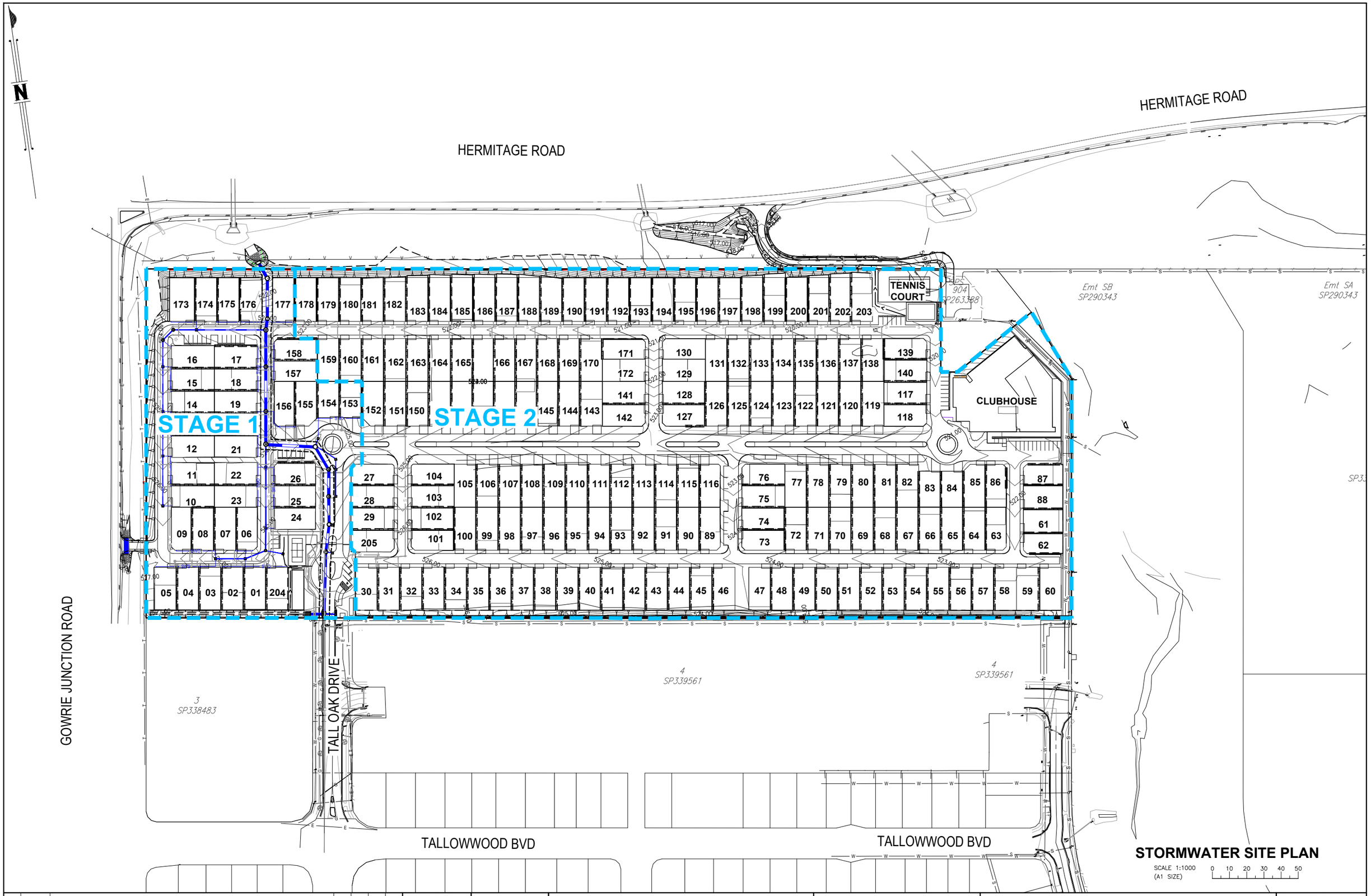
The construction of roads (whether temporary or permanent) will usually modify the flow path of stormwater runoff. This can affect how "dirty" site runoff is directed to the sediment control measures.

COMMENTS:
"On-road" sediment control devices are at best viewed as secondary or supplementary sediment control measures. Only in special cases and/or on very small projects (e.g. kerb and channel replacement) might these controls be considered as the "primary" sediment control measure.

[12] **WARNINGS:**
Soils with a pH less than 5.5 or greater than 8 will usually require treatment in order to achieve satisfactory revegetation. Soils with a pH of less than 5 (whether naturally acidic or in acid sulfate soil areas) may also limit the choice of chemical flocculants (e.g. Alum) for use in the flocculation of *Sediment Basins*.

[13] **REQUIREMENTS:**
A preliminary ESCP must be submitted to the local government for approval during the planning phase for any development that obtains a total point score of 17 or greater or when any trigger value is scored or exceeded.

Appendix B – Engineering Plans



STORMWATER SITE PLAN

SCALE 1:1000 (A1 SIZE) 0 10 20 30 40 50

No.	DATE	REVISIONS	DES	DRN	CHK	APD
D	13.03.26	ISSUED FOR CONSTRUCTION – UPDATED ACOUSTIC FENCE ALIGNMENT	S.C.D.	W.J.H	J.M.H	J.M.H
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER SITE PLAN
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24-058-1-C17
SHEET NUMBER: 17 OF 37
REVISION: D

B24-058-1-C_Stm_Site.dwg

N

HERMITAGE ROAD

HERMITAGE ROAD

3

STAGE 1

2

1

STAGE 2

TENNIS COURT

CLUBHOUSE

GOWRIE JUNCTION ROAD

TALL OAK DRIVE

TALLOWWOOD BVD

TALLOWWOOD BVD

Emt SB SP290343

Emt SA SP290343

SP 904 SP263388

3 SP338483

4 SP339561

4 SP339561

SP33

STORMWATER KEY PLAN

SCALE 1:1000 (A1 SIZE) 0 10 20 30 40 50

No.	DATE	REVISIONS	DES	DRN	CHK	APD
D	13.03.26	ISSUED FOR CONSTRUCTION – UPDATED ACOUSTIC FENCE ALIGNMENT	S.C.D.	W.J.H	J.M.H	J.M.H
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

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SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER KEY PLAN
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24–058–1–C18
SHEET NUMBER 18 OF 37
REVISION D

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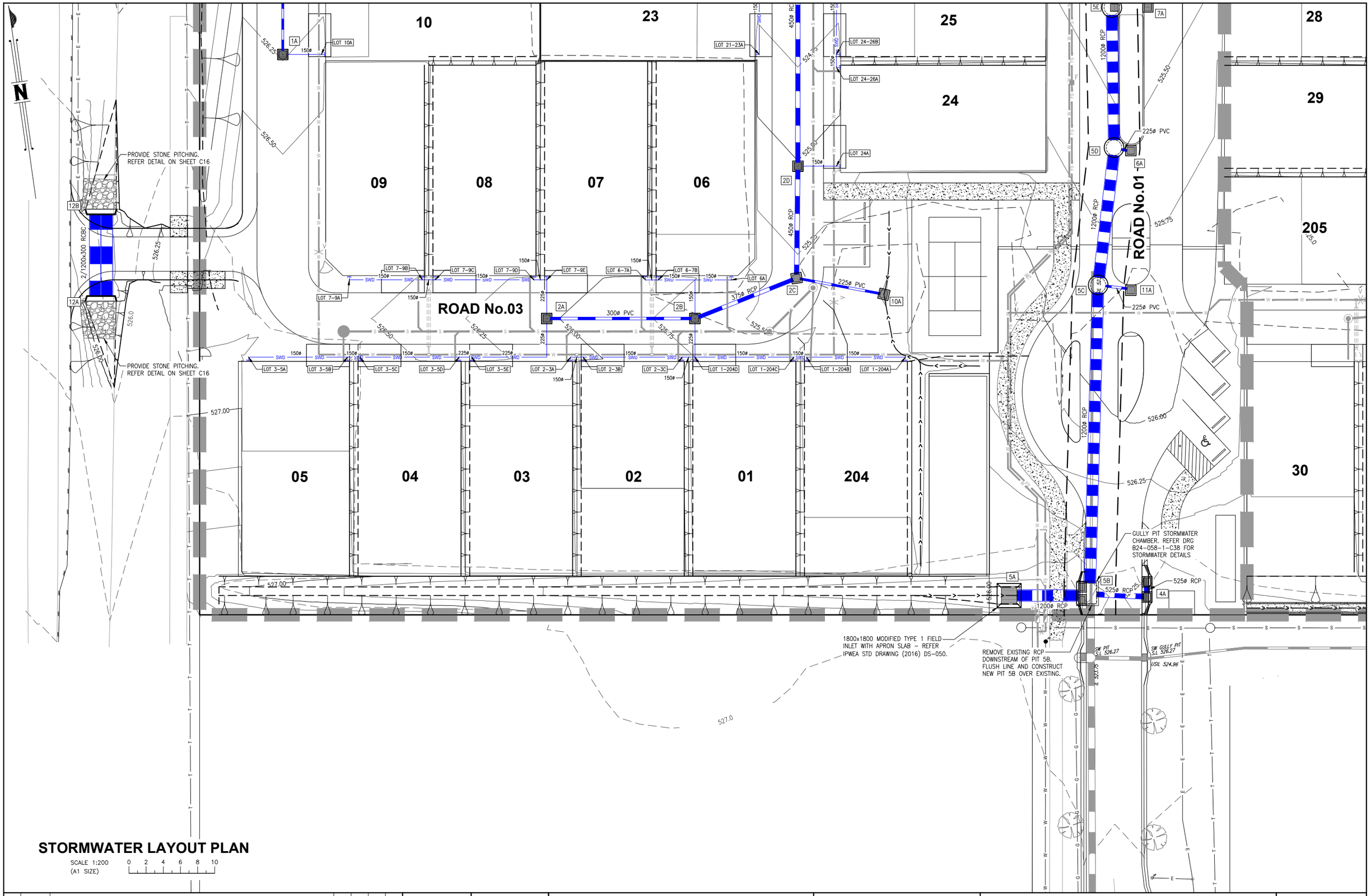

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE) 0 2 4 6 8 10

No.	DATE	REVISIONS	DES	DRN	CHK	APD
D	21.01.26	ENTRY FOOTPATH UPDATED	S.C.D.	W.J.H	N.K	J.M.H
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
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DATUM A.H.D.
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R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 1 of 3
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24-058-1-C19
SHEET NUMBER: 19 OF 37
REVISION: D

B24-058-1-C_Stm_Layout.dwg

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE)

0 2 4 6 8 10

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
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PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 2 of 3
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24-058-1-C20
SHEET NUMBER: 20 OF 37
REVISION: C

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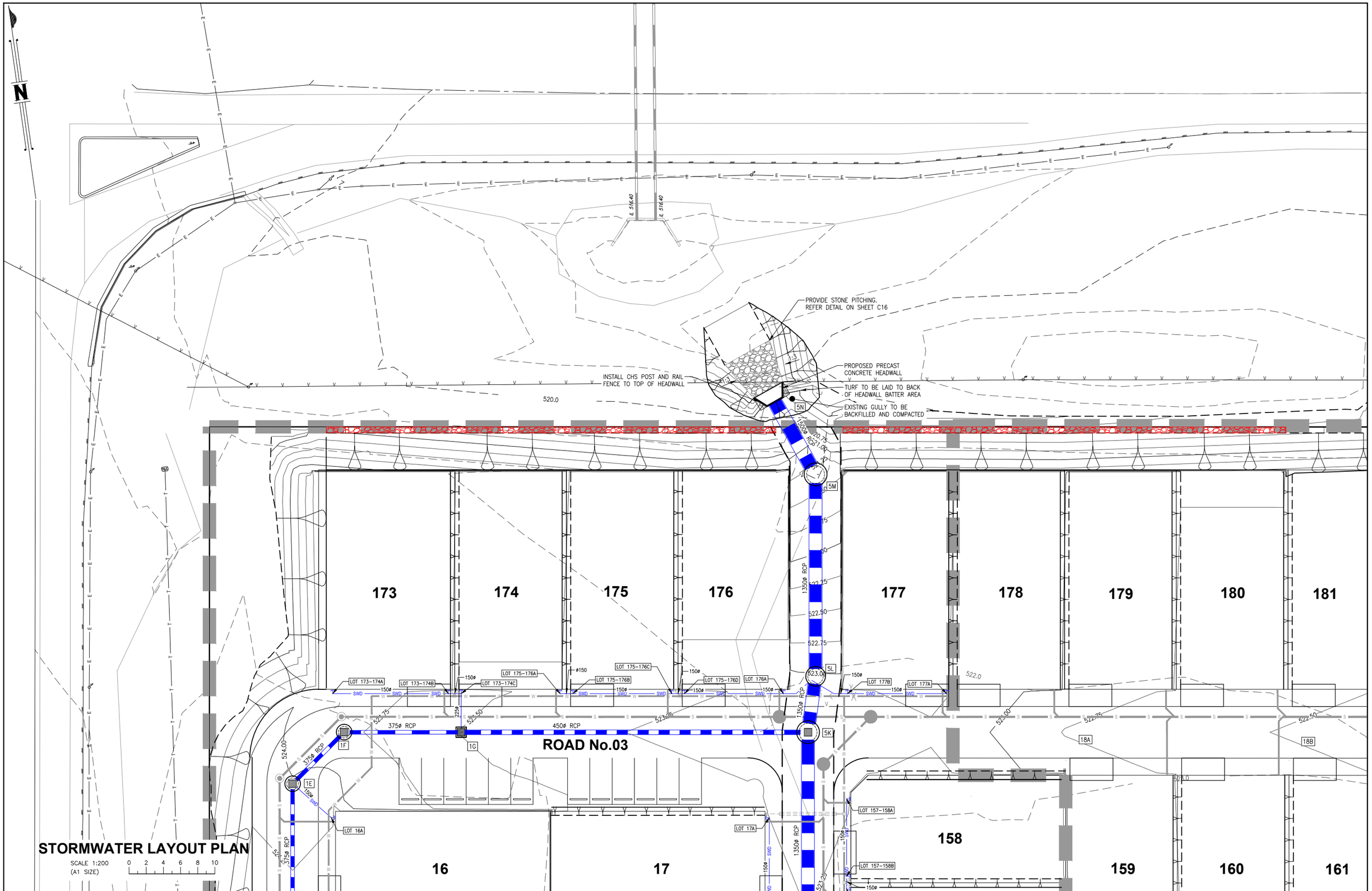

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE) 0 2 4 6 8 10

No.	DATE	REVISIONS	DES	DRN	CHK	APD
D	13.03.26	ISSUED FOR CONSTRUCTION – UPDATED ACOUSTIC FENCE ALIGNMENT	S.C.D.	W.J.H	J.M.H	J.M.H
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

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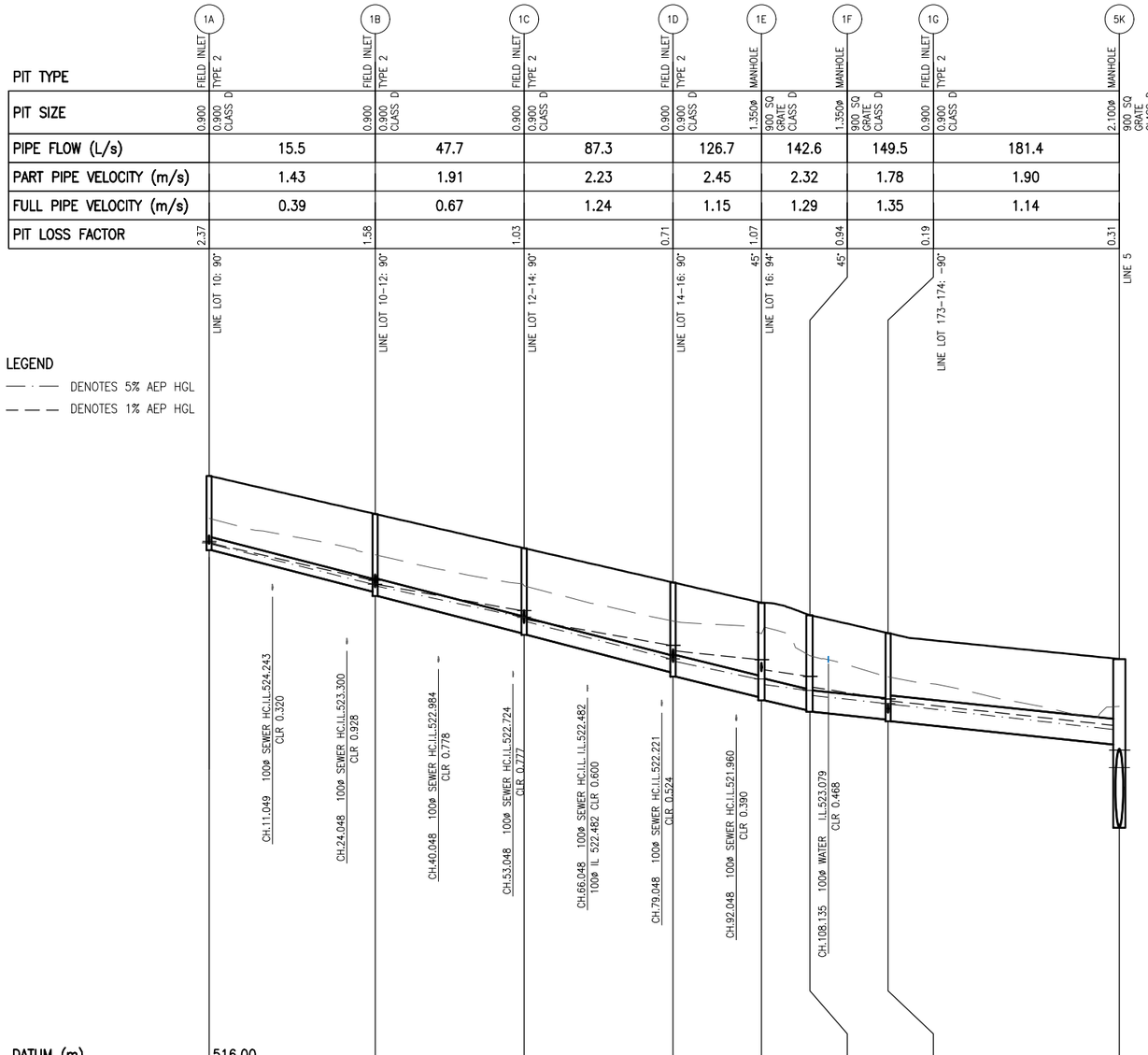
PHONE 07 5437 8555
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 3 of 3
CLIENT DTH PROJECT NO.2 PTY LTD

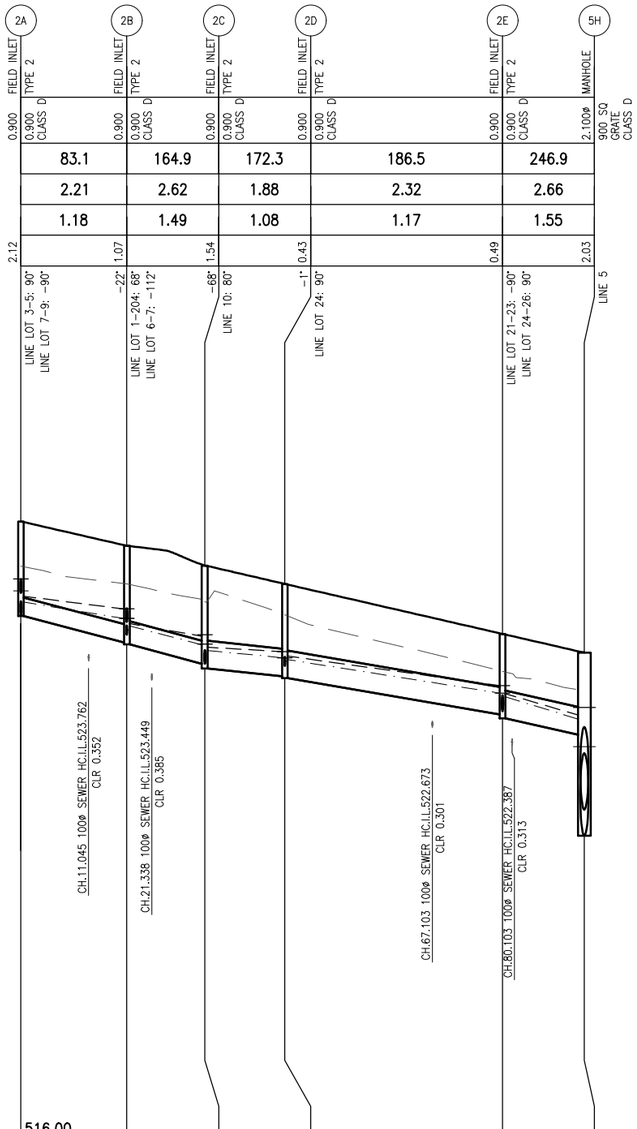
DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24-058-1-C21
SHEET NUMBER 21 OF 37
REVISION D

B24-058-1-C_Stm_Layout.dwg



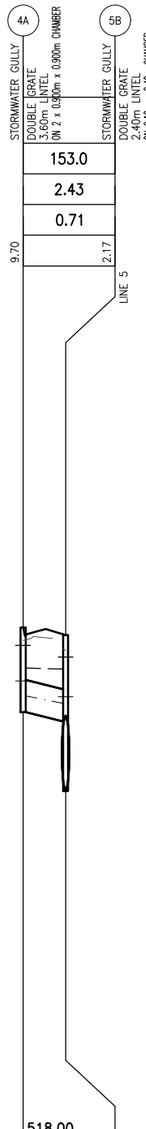
PIT TYPE		1A	1B	1C	1D	1E	1F	1G	5K
		FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	MANHOLE	FIELD INLET TYPE 2	MANHOLE
PIT SIZE		0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.350ø 900 SQ GRATE CLASS D	1.350ø 900 SQ GRATE CLASS D	0.900 0.900 CLASS D	2.100ø 900 SQ GRATE CLASS D
PIPE FLOW (L/s)		15.5	47.7	87.3	126.7	142.6	149.5	181.4	
PART PIPE VELOCITY (m/s)		1.43	1.91	2.23	2.45	2.32	1.78	1.90	
FULL PIPE VELOCITY (m/s)		0.39	0.67	1.24	1.15	1.29	1.35	1.14	
PIT LOSS FACTOR	2.37	1.58	1.03	0.71	1.07	0.94	0.19	0.31	
DATUM (m)		516.00							
PIPE SIZE (mm)		225ø	300ø	300ø	375ø	375ø	375ø	450ø	
PIPE CLASS		PVC SN8	PVC SN8	PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4	
PIPE GRADE (%)		2.50%	2.50%	2.50%	2.50%	2.00%	1.00%	1.00%	
HYDRAULIC GRADE LINE	525.062	525.039	524.345 524.306	523.767 523.687	523.041 522.994	522.686 522.594	522.488 522.401	522.262 522.249	521.143 521.061
DEPTH TO INVERT	1.296	1.355 1.430	1.483 1.513	1.566 1.641	1.673 1.703	1.656 1.686	1.510 1.540	1.491 2.943	
INVERT LEVEL	524.937	524.212 524.137	523.487 523.457	522.807 522.732	522.345 522.315	522.146 522.116	521.979 521.949	521.546 520.094	
FINISHED SURFACE LEVEL	526.233	525.567	524.970	524.373	524.018	523.802	523.489	523.037	
PIPE CHAINAGE	0.000	29.000	55.000	81.000	96.450	104.935	118.558	158.935	
PIPE LENGTH		29.000	26.000	26.000	15.450	8.485	13.623	40.377	

LINE 1



		2A	2B	2C	2D	2E	5H
		FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE
PIT SIZE		0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	2.100ø 900 SQ GRATE CLASS D
PIPE FLOW (L/s)		83.1	164.9	172.3	186.5	246.9	
PART PIPE VELOCITY (m/s)		2.21	2.62	1.88	2.32	2.66	
FULL PIPE VELOCITY (m/s)		1.18	1.49	1.08	1.17	1.55	
PIT LOSS FACTOR	2.12	1.07	1.54	0.43	0.49	2.03	
DATUM (m)		516.00					
PIPE SIZE (mm)		300ø	375ø	450ø	450ø	450ø	
PIPE CLASS		PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4	
PIPE GRADE (%)		2.50%	2.50%	1.00%	1.67%	2.00%	
HYDRAULIC GRADE LINE	524.902	524.718	524.455 524.330	524.033 523.930	523.811 523.782	523.234 523.174	522.362 521.822
DEPTH TO INVERT	1.540	1.576 1.606	1.600 1.675	1.507 1.537	1.314 1.375	1.336 2.986	
INVERT LEVEL	524.493	524.061 524.031	523.713 523.638	523.507 523.477	522.886 522.825	522.558 520.908	
FINISHED SURFACE LEVEL	526.033	525.637	525.313	525.014	524.200	523.894	
PIPE CHAINAGE	0.000	17.273	30.012	43.053	78.553	91.903	
PIPE LENGTH		17.273	12.739	13.041	35.500	13.350	

LINE 2



		4A	5B
		STORMWATER GULLY DOUBLE GRATE 3.60m LINTEL ON 2 x 0.900m x 0.900m CHAMBER	STORMWATER GULLY DOUBLE GRATE 2.40m LINTEL ON 2.10m x 2.40m CHAMBER
PIPE FLOW (L/s)		153.0	
PART PIPE VELOCITY (m/s)		2.43	
FULL PIPE VELOCITY (m/s)		0.71	
PIT LOSS FACTOR	9.70	2.17	
DATUM (m)		518.00	
PIPE SIZE (mm)		525ø	
PIPE CLASS		RCP CL4	
PIPE GRADE (%)		2.23%	
HYDRAULIC GRADE LINE	525.434	525.187	525.173 524.516
DEPTH TO INVERT	1.381	1.410 2.541	
INVERT LEVEL	524.926	524.771 523.640	
FINISHED SURFACE LEVEL	526.307	526.181	
PIPE CHAINAGE	0.000	6.932	
PIPE LENGTH		6.932	

LINE 4

STORMWATER LONGITUDINAL SECTION LINES 1-2 & 4

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25
0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

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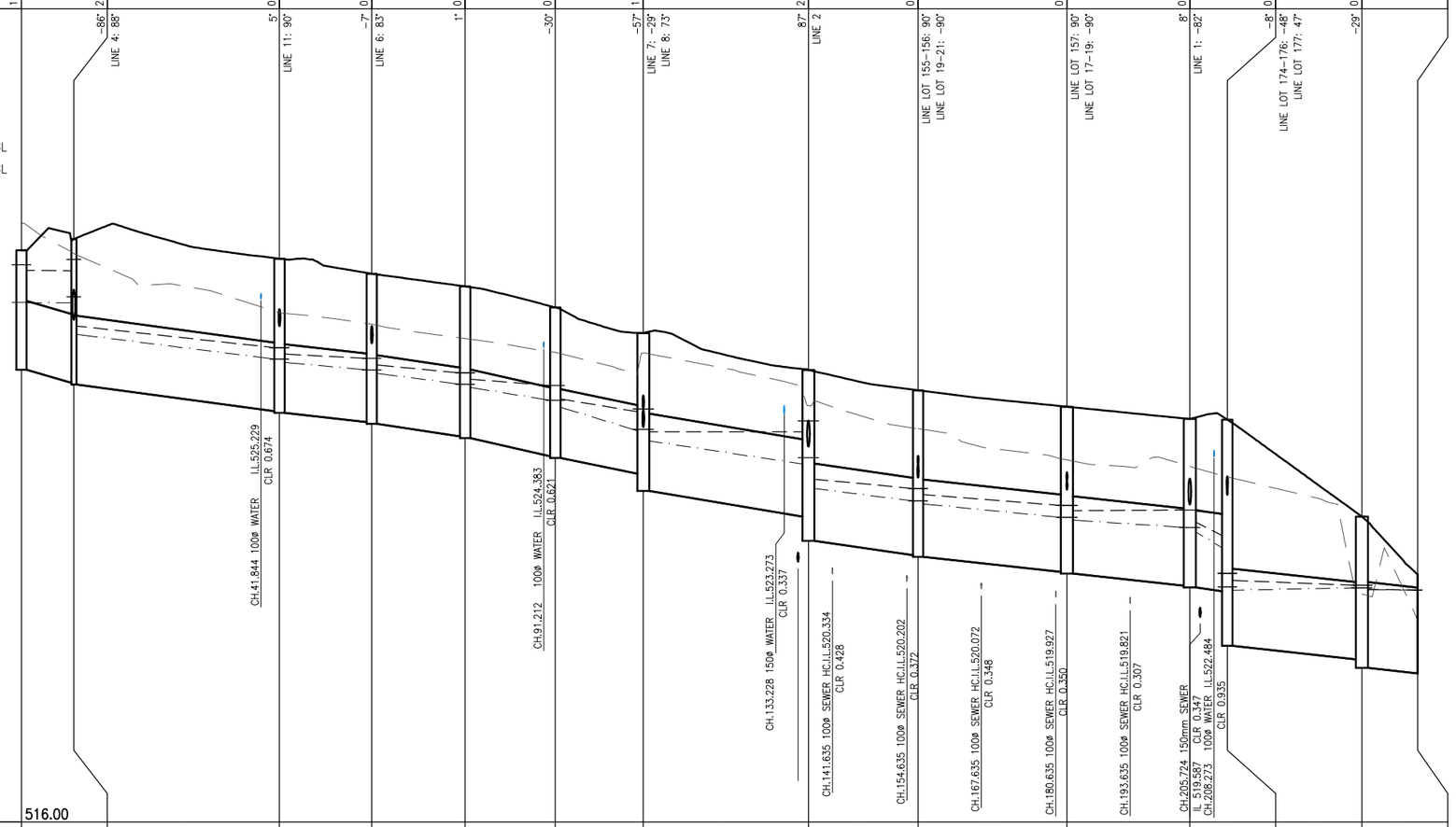
SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 1 – 2
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24-058-1-C22
SHEET NUMBER 22 OF 37
REVISION C

B24-058-1-C_Stm_Lsec.dwg

PIT TYPE	5A	5B	5C	5D	5E	5F	5G	5H	5I	5J	5K	5L	5M	5N
	1.80m x 1.80m GRATED MODIFIED TYPE 1 FIELD INLET ON 1.80m x 1.80m CHAMBER	STORMWATER GULLY DOUBLE GRATE 2.40m LINTEL ON 2.10m x 2.40m CHAMBER	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	CONCRETE HEADWALL
PIT SIZE	1.800ø CLASS D	1.800ø CLASS D	1.800ø CLASS D	1.800ø CLASS D	900 SQ GRATE CLASS D	900 SQ GRATE CLASS D	2.100ø CLASS D	2.100ø 900 SQ GRATE CLASS D	1.800ø 900 SQ GRATE CLASS D	1.800ø 900 SQ GRATE CLASS D	2.100ø 900 SQ GRATE CLASS D	1.800ø CLASS D	2.100ø CLASS D	1.500ø
PIPE FLOW (L/s)	345.1	2523.3	2564.3	2571.3	2575.9	2581.6	2666.5	2919.3	2984.6	3035.0	3255.6	3289.4	3281.9	
PART PIPE VELOCITY (m/s)	2.94	4.05	3.68	4.11	4.79	4.61	4.39	4.21	3.83	3.85	3.91	3.92	3.93	
FULL PIPE VELOCITY (m/s)	0.31	2.23	2.27	2.27	2.28	2.28	1.86	2.04	2.09	2.12	2.27	2.30	1.86	
PIT LOSS FACTOR	1.52	2.17	0.22	0.22	0.21	0.45	1.02	2.03	0.24	0.21	0.31	0.23	0.20	



LEGEND

—·— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

DATUM (m)	516.00													
PIPE SIZE (mm)	1200ø	1200ø	1200ø	1200ø	1200ø	1200ø	1350ø	1350ø	1350ø	1350ø	1350ø	1350ø	1500ø	
PIPE CLASS	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	
PIPE GRADE (%)	2.50%	1.30%	1.00%	1.33%	2.00%	1.80%	1.55%	1.30%	1.00%	1.00%	1.00%	1.00%	1.00%	
HYDRAULIC GRADE LINE	525.074 525.066	525.173 524.516	524.084 524.026	523.895 523.836	523.644 523.587	523.363 523.244	522.858 522.653	522.362 521.822	521.606 521.554	521.319 521.271	521.143 521.061	520.107 520.046	520.090 520.054	520.050
DEPTH TO INVERT	2.086	2.511 2.541	2.664 2.694	2.593 2.623	2.618 2.651	2.596 2.626	2.458 2.758	2.561 2.986	2.880 2.910	2.883 2.913	2.913 2.943	2.996 3.951	2.495 2.645	1.729
INVERT LEVEL	523.899	523.670 523.640	523.173 523.143	522.982 522.952	522.735 522.702	522.388 522.358	522.081 521.781	521.333 520.908	520.659 520.629	520.369 520.339	520.124 520.094	520.029 519.074	518.839 518.689	518.592 518.592
FINISHED SURFACE LEVEL	525.985	526.181	525.837	525.575	525.353	524.984	524.539	523.894	523.539	523.252	523.037	523.025	521.334	520.321
PIPE CHAINAGE	0.000	9.148	45.064	61.181	77.491	93.230	108.600	137.435	156.585	182.585	204.035	210.593	234.093	243.853
PIPE LENGTH	9.148	35.916	16.117	16.310	15.739	15.370	28.835	19.150	26.000	21.450	6.558	23.500	9.760	

LINE 5

STORMWATER LONGITUDINAL SECTIONS LINES 5 & 6

SCALES (A1 SIZE) 1:500 HORIZONTAL 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

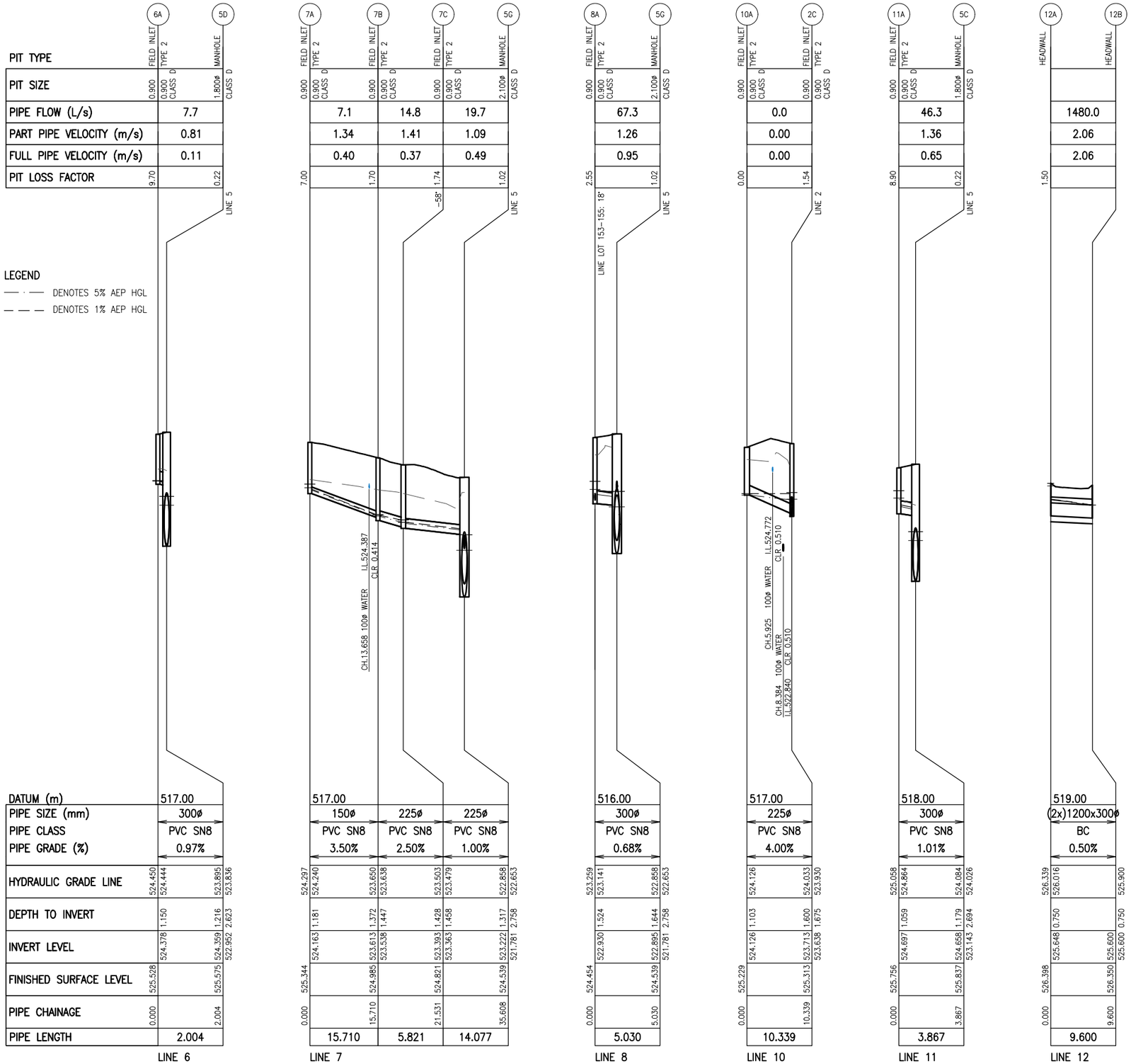
SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555

DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 3 – 5
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24-058-1-C23
SHEET NUMBER 23 OF 37
REVISION C

B24-058-1-C_Stm_Lsec.dwg



LEGEND

—— · —— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

PIT TYPE	6A	5D	7A	7B	7C	5G	8A	5G	10A	2C	11A	5C	12A	12B
	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	HEADWALL	HEADWALL
PIT SIZE	0.900 0.900 CLASS D	1.800ø CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	2.100ø CLASS D	0.900 0.900 CLASS D	2.100ø CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.800ø CLASS D		
PIPE FLOW (L/s)	7.7		7.1	14.8	19.7		67.3		0.0		46.3		1480.0	
PART PIPE VELOCITY (m/s)	0.81		1.34	1.41	1.09		1.26		0.00		1.36		2.06	
FULL PIPE VELOCITY (m/s)	0.11		0.40	0.37	0.49		0.95		0.00		0.65		2.06	
PIT LOSS FACTOR	9.70	0.22	7.00	1.70	1.74	1.02	2.55	1.02	0.00	1.54	8.90	0.22	1.50	
DATUM (m)	517.00		517.00				516.00		517.00		518.00		519.00	
PIPE SIZE (mm)	300ø		150ø	225ø	225ø		300ø		225ø		300ø		(2x)1200x300ø	
PIPE CLASS	PVC SN8		PVC SN8	PVC SN8	PVC SN8		PVC SN8		PVC SN8		PVC SN8		BC	
PIPE GRADE (%)	0.97%		3.50%	2.50%	1.00%		0.68%		4.00%		1.01%		0.50%	
HYDRAULIC GRADE LINE	524.450 524.444	523.895 523.836	524.297 524.240		523.650 523.638	523.503 523.479	522.858 522.653	523.259 523.141	522.858 522.653	524.126 524.033	523.930	525.058 524.864	524.084 524.026	526.339 526.016	525.900
DEPTH TO INVERT	1.150	1.216 2.623	1.181	1.372	1.447	1.428 1.458	1.317 2.758	1.524	1.644 2.758	1.103	1.600 1.675	1.059	1.179 2.694	0.750	0.750
INVERT LEVEL	524.378	524.359 522.952	524.163	523.613	523.538	523.393 523.363	523.222 521.781	522.930	522.895 521.781	524.126	523.713 523.638	524.658 523.143	525.837	525.648	525.600 525.600
FINISHED SURFACE LEVEL	525.528	525.575	525.344	524.985	524.821	524.539	524.539	524.454	524.539	525.229	525.313	525.756	525.837	526.398	526.350
PIPE CHAINAGE	0.000	2.004	0.000	15.710	21.531	35.608	5.030	0.000	5.030	0.000	10.339	0.000	3.867	0.000	9.600
PIPE LENGTH	2.004		15.710	5.821	14.077		5.030		10.339		3.867		9.600		
	LINE 6		LINE 7				LINE 8		LINE 10		LINE 11		LINE 12		

STORMWATER LONGITUDINAL SECTION LINES 7 - 12

SCALES (A1 SIZE) 1:500 HORIZONTAL 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

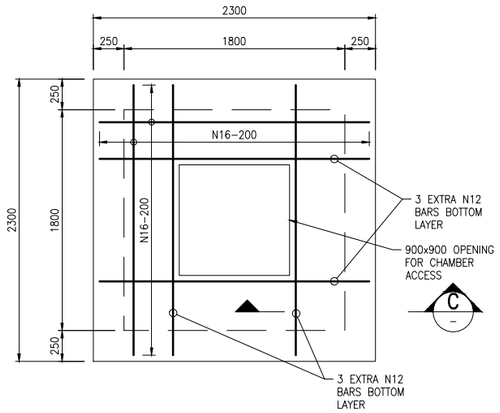
SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555

DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 6 – 12
CLIENT DTH PROJECT NO.2 PTY LTD

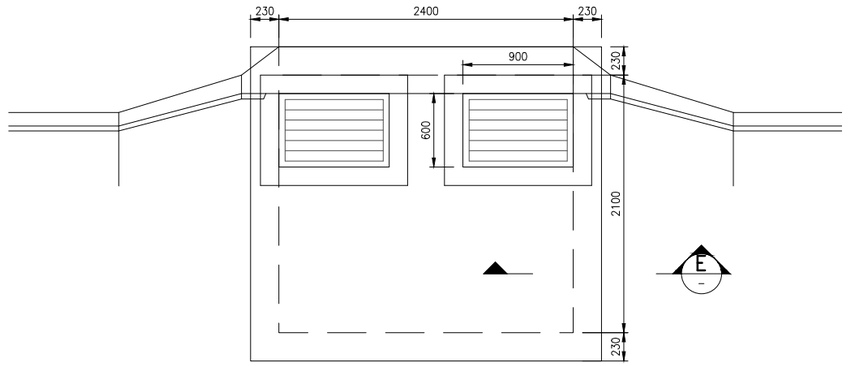
DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24-058-1-C24
SHEET NUMBER 24 OF 37
REVISION C

B24-058-1-C_Stm_Lsec.dwg



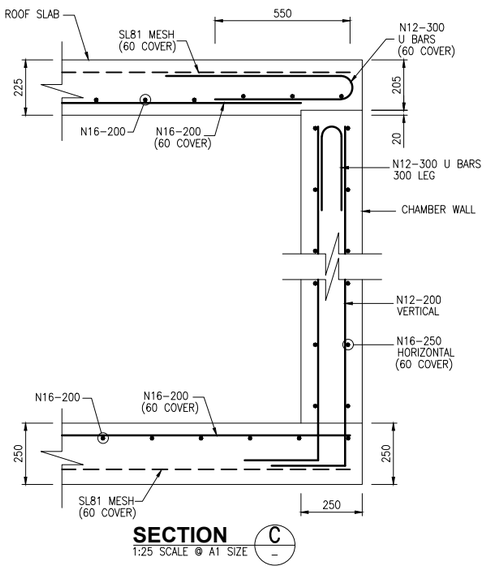
BOTTOM REINFORCEMENT PLAN

SCALE 1:25 @ A1 SIZE



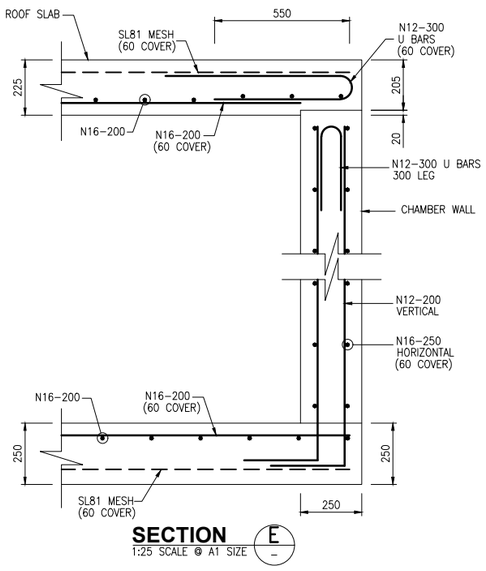
GULLY PIT STORMWATER CHAMBER DETAILS PITS 5B

SCALE 1:25 @ A1 SIZE

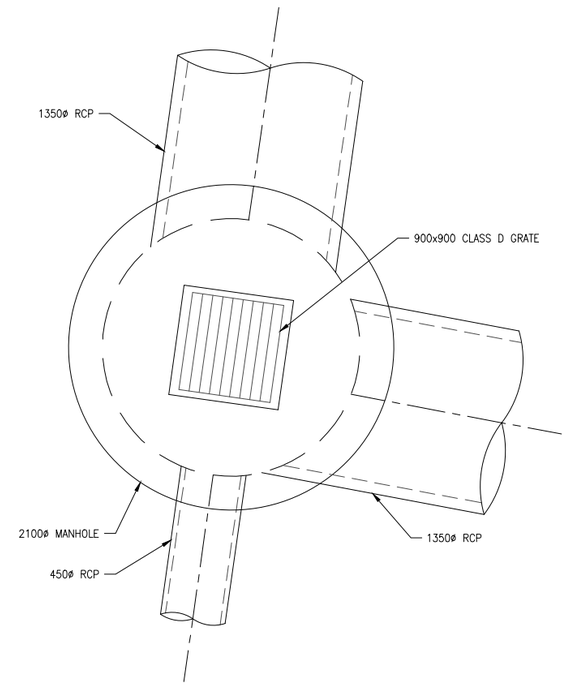


1800x1800 STORMWATER CHAMBER DETAILS

CONTRACTOR TO PROVIDE FORM 15 & FORM 12 WITH POST CONSTRUCTION QUALITY ASSURANCE DOCUMENTATION.



GULLY PIT STORMWATER CHAMBER DETAILS



STORMWATER MANHOLE 5H DETAIL

SCALE 1:25 @ A1 SIZE

NOTE:
ALL REINFORCEMENT SHOWN IS TO BE CHECKED AGAINST DTMR STD DWG SD–1304.

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
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E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047
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E centralvic@westerapartners.com.au

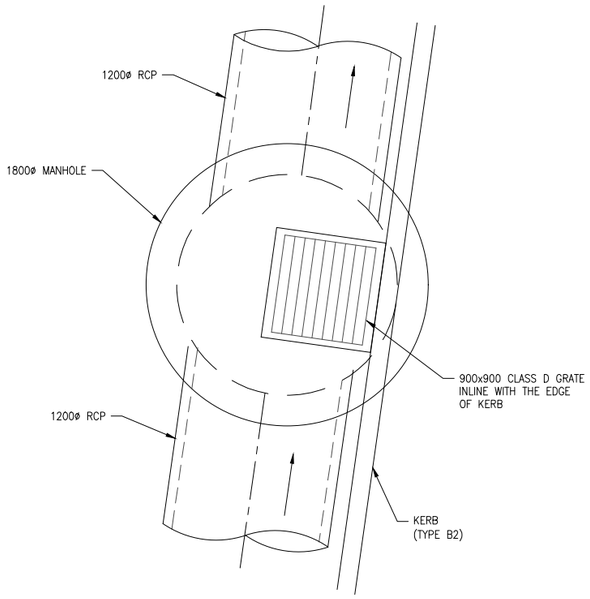
SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT: PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION: LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE: STORMWATER DETAILS 1 of 2
CLIENT: DTH PROJECT NO.2 PTY LTD

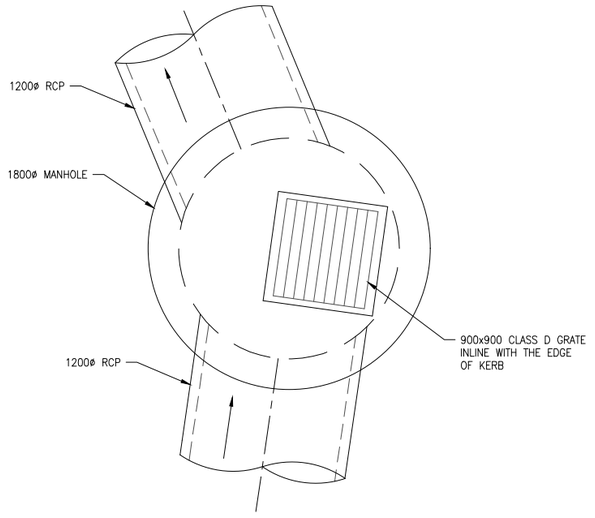
DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24–058–1–C31
SHEET NUMBER: 31 OF 37
REVISION: C

B24–058–1–C_Stm_Details.dwg



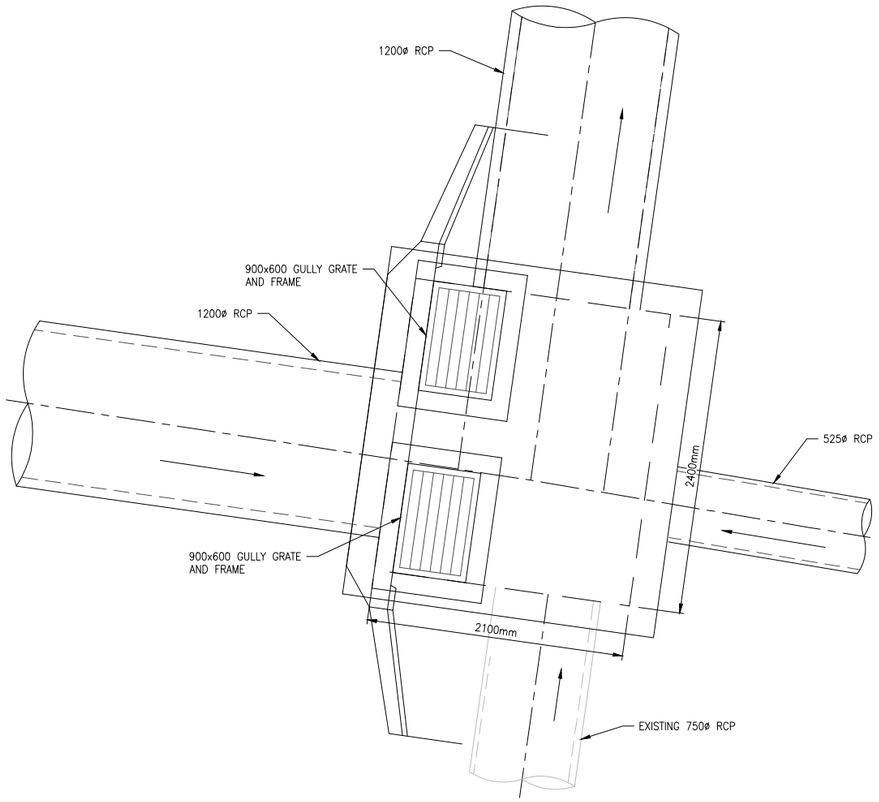
STORMWATER MANHOLE 5E DETAIL

SCALE 1:25 @ A1 SIZE



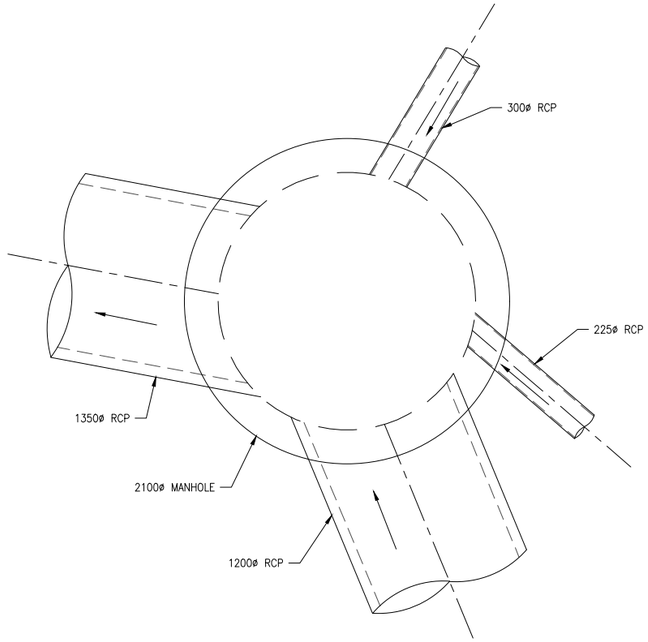
STORMWATER MANHOLE 5F DETAIL

SCALE 1:25 @ A1 SIZE



STORMWATER CHAMBER 5B DETAIL

SCALE 1:25 @ A1 SIZE



STORMWATER MANHOLE 5G DETAIL

SCALE 1:25 @ A1 SIZE

NOTE:
ALL REINFORCEMENT SHOWN IS TO BE CHECKED AGAINST DTMR STD DWG SD-1304.

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

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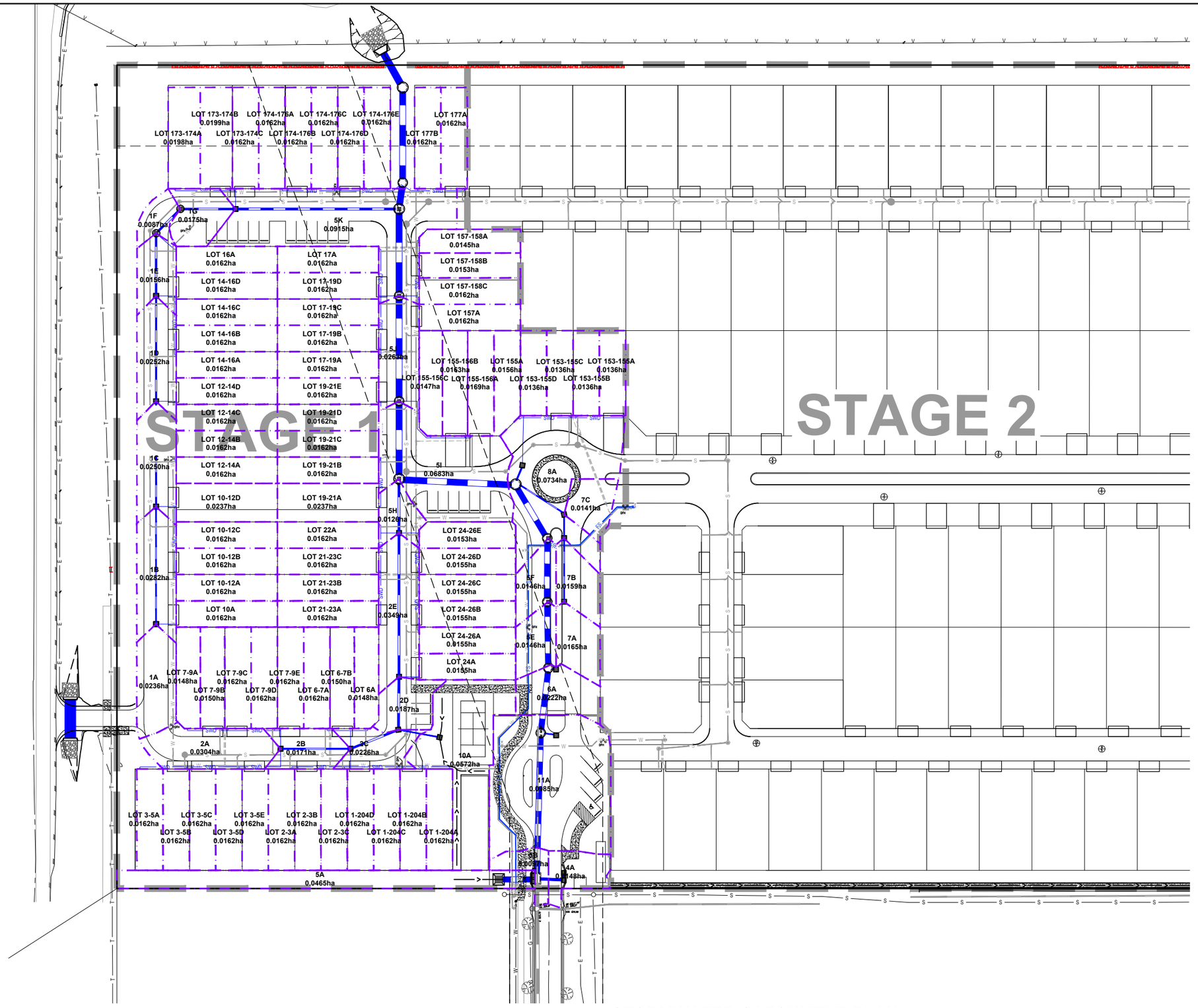
SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER DETAILS 2 of 2
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24-058-1-C32
SHEET NUMBER: 32 OF 37
REVISION: C

B24-058-1-C_Stm_Details.dwg



Name	A (ha)
1A	0.0236
1B	0.0282
1C	0.025
1D	0.0252
1E	0.0156
1F	0.0087
1G	0.0175
2A	0.0304
2B	0.0171
2C	0.0226
2D	0.0187
2E	0.0349
4A	0.0148
5A	0.0465
5B	0.0097
5E	0.0146
5F	0.0146
5H	0.0126
5I	0.0683
5J	0.0263
5K	0.0915
6A	0.0222
7A	0.0165
7B	0.0159
7C	0.0141
8A	0.0734
10A	0.0572
11A	0.0985
LOT 1-204A	0.0162
LOT 1-204B	0.0162
LOT 1-204C	0.0162
LOT 1-204D	0.0162
LOT 10A	0.0162
LOT 10-12A	0.0162
LOT 10-12B	0.0162
LOT 10-12C	0.0162
LOT 10-12D	0.0237
LOT 12-14A	0.0162
LOT 12-14B	0.0162
LOT 12-14C	0.0162
LOT 12-14D	0.0162
LOT 14-16A	0.0162
LOT 14-16B	0.0162
LOT 14-16C	0.0162
LOT 14-16D	0.0162
LOT 153-155A	0.0136
LOT 153-155B	0.0136
LOT 153-155C	0.0136
LOT 153-155D	0.0136
LOT 155A	0.0156
LOT 155-156A	0.0169
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LOT 155-156C	0.0147
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LOT 157-158C	0.0162
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LOT 17A	0.0162
LOT 17-19A	0.0162
LOT 17-19B	0.0162
LOT 17-19C	0.0162
LOT 17-19D	0.0162
LOT 173-174A	0.0198
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LOT 173-174C	0.0162
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LOT 174-176C	0.0162
LOT 174-176D	0.0162
LOT 174-176E	0.0162
LOT 177A	0.0162
LOT 177B	0.0162
LOT 19-21A	0.0237
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LOT 2-3B	0.0162
LOT 2-3C	0.0162
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LOT 21-23B	0.0162
LOT 21-23C	0.0162
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LOT 24A	0.0155
LOT 24-26A	0.0155
LOT 24-26B	0.0155
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LOT 24-26D	0.0155
LOT 24-26E	0.0153
LOT 3-5A	0.0162
LOT 3-5B	0.0162
LOT 3-5C	0.0162
LOT 3-5D	0.0162
LOT 3-5E	0.0162
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LOT 6-7A	0.0162
LOT 6-7B	0.015
LOT 7-9A	0.0148
LOT 7-9B	0.015
LOT 7-9C	0.0162
LOT 7-9D	0.0162
LOT 7-9E	0.0162

STORMWATER CATCHMENT PLAN

SCALE 1:500 (A1 SIZE)

0 5 10 15 20 25

No.	DATE	REVISIONS	DES	DRN	CHK	APD
D	13.03.26	ISSUED FOR CONSTRUCTION – UPDATED ACOUSTIC FENCE ALIGNMENT	S.C.D.	W.J.H	J.M.H	J.M.H
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CATCHMENT PLAN
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24-058-1-C33
SHEET NUMBER: 33 OF 37
REVISION: D

B24-058-1-C_Stm_Catch.dwg

5% AEP HYDROLOGY

Node	Node	Setout	Setout	Setout	Grate	Catch	Time	Intensity	Runoff	Area	Full	Full	Full	Partial	Partial	Partial	Catchment	Direct	Approach	Road	Flooded	Flooded	Flooded	Road	Road	Max Pond	Choke	Inlet	Inlet	Bypass	Bypass
Name	Type	Easting	Northing	RL	RL	ID	Tc	I	C	A	CA	Sum CA	Qc=CIA	CA	Sum CA	Qc=CIA	Flow Qc	Flow Qdg	Flow Qa	Capacity	Depth	Width	Vel. Dep	Grade	Xfall	Depth	Factor	Curve Nam	Flow Qg	Flow Qb	Node
(-)	(-)	(m)	(m)	(m)	(m)	(-)	(min)	(mm/hr)	(-)	(ha)	(ha)	(ha)	(L/s)	(ha)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(m)	(m)	(sq.m/s)	(%)	(%)	(m)	(-)	(-)	(L/s)	(L/s)	(-)
1A	FI 900x900 ON GRADE CENTRED	389815.5	6956116	526.23	526.23	1P	5	199	0.85	0.0236	0.02	0.02	11.1	0.02	0.02	11.1	11.1		11.1	842.9	0.023	1.85	0.01	2.3	2.5		0.75	2.0G,2.5X	7.9	3.2	1B
1B	FI 900x900 ON GRADE CENTRED	389819.5	6956145	525.57	525.57	1P	5	199	0.85	0.0282	0.024	0.024	13.3	0.024	0.024	13.3	13.3		47	842.9	0.04	3.18	0.03	2.3	3		0.75	2.0G,2.5X	18.9	28.1	1C
1C	FI 900x900 ON GRADE CENTRED	389823.2	6956171	524.97	524.97	1P	5	199	0.85	0.025	0.0213	0.0213	11.8	0.0213	0.0213	11.8	11.8		55.1	842.9	0.042	3.38	0.03	2.3	3		0.75	2.0G,2.5X	20.3	34.9	1D
1D	FI 900x900 ON GRADE CENTRED	389826.8	6956197	524.37	524.37	1P	5	199	0.85	0.0252	0.0214	0.0214	11.8	0.0214	0.0214	11.8	11.8		77.3	842.9	0.048	3.84	0.04	2.3	3		0.75	2.0G,2.5X	24	53.3	1E
1E	FI 900x900 ON GRADE CENTRED	389829	6956212	524.02	524.02	1P	5	199	0.85	0.0156	0.0133	0.0133	7.3	0.0133	0.0133	7.3	7.3		83.5	842.9	0.049	3.95	0.04	2.3	3		0.75	2.0G,2.5X	26.1	57.5	1F
1F	FI 900x900 ON GRADE CENTRED	389835.8	6956217	523.8	523.8	1P	5	199	0.85	0.0087	0.0074	0.0074	4.1	0.0074	0.0074	4.1	4.1		61.6	1182.6	0.043	3.65	0.03	2.3	3		0.75	2.0G,2.5X	21.2	40.3	1G
1G	FI 900x900 ON GRADE CENTRED	389849.3	6956215	523.49	523.49	1P	5	199	0.85	0.0175	0.0149	0.0149	8.2	0.0149	0.0149	8.2	8.2		57.9	841.4	0.043	3.44	0.03	2.3	3		0.75	2.0G,2.5X	20.7	37.2	5K
2A	FI 900x900 ON GRADE CENTRED	389841.6	6956082	526.03	526.03	1P	5	199	0.85	0.0304	0.0258	0.0258	14.3	0.0258	0.0258	14.3	14.3		74.1	842.5	0.047	3.78	0.04	2.3	3		0.75	2.0G,2.5X	23.1	51	2B
2B	FI 900x900 ON GRADE CENTRED	389858.7	6956079	525.64	525.64	1P	5	199	0.85	0.0171	0.0145	0.0145	8	0.0145	0.0145	8	8		104.3	842.5	0.054	4.29	0.05	2.3	3		0.75	2.0G,2.5X	32.1	72.2	2C
2C	FI 900x900 ON GRADE CENTRED	389871.1	6956082	525.31	525.31	1P	5	199	0.85	0.0172	0.0146	0.0146	8.1	0.0146	0.0146	8.1	8.1		125.4	1428	0.054	5.72	0.05	2.3	3		0.75	2.0G,2.5X	35.3	90.1	2D
2D	FI 900x900 ON GRADE CENTRED	389873.1	6956095	525.01	525.01	1P	5	199	0.85	0.0169	0.0144	0.0144	8	0.0144	0.0144	8	8		98.1	842.5	0.052	4.2	0.05	2.3	3		0.75	2.0G,2.5X	30.9	67.2	2E
2E	FI 900x900 ON GRADE CENTRED	389878	6956130	524.2	524.2	1P	5	199	0.85	0.0349	0.0297	0.0297	16.4	0.0297	0.0297	16.4	16.4		128.4	3763.7	0.058	4.64	0.06	2.3	3		0.75	2.0G,2.5X	35.8	92.6	5H
4A	SAL4D	389906.3	6956040	526.31	526.31	1P	5	199	0.85	0.0148	0.0126	0.0126	7	0.0126	0.0126	7	7	146	153	225	0.074						0.25	0.5	SAG	153		5B
5A	1800 by 1800 FIELD INLET	389890.5	6956042	523.9	525.99	1P	25	104	0.5	0.0465	0.0232	0.0232	6.7	0.0232	0.0232	6.7	6.7		336.3	1520.5	0.025						0.5	0.5	SAG	336.3		11A
5B	SAL4D	389889.5	6956041	526.18	526.18	1P	5	199	0.85	0.0097	0.0083	0.0083	4.6	0.0083	0.0083	4.6	4.6	550	554.6	225	0.225						0.25	0.5	SAG	225	329.6	5A
5C	MH1800	389905.8	6956077	525.84	525.84																										-
5D	MH1800	389909.8	6956092	525.58	525.58																										-
5E	FI 900x900 1800 dia ON GRADE CENTRED	389911.9	6956108	525.35	525.35	1P	5	199	0.85	0.0146	0.0124	0.0124	6.8	0.0124	0.0124	6.8	6.8		6.8	654.2	0.028	1.11	0.01	1	2.5		0.75	1.0G,2.5X	5.1	1.7	5F
5F	FI 900x900 1800 dia ON GRADE CENTRED	389914.1	6956124	524.98	524.98	1P	5	199	0.85	0.0146	0.0124	0.0124	6.9	0.0124	0.0124	6.9	6.9		8.6	884.1	0.025	1.13	0.02	1	2.5		0.75	1.0G,2.5X	6.4	2.1	8A
5G	MH2100	389908.2	6956138	524.54	524.54																										-
5H	FI 900x900 2100 dia ON GRADE CENTRED	389879.9	6956144	523.89	523.89	1P	5	199	0.85	0.0126	0.0107	0.0107	5.9	0.0107	0.0107	5.9	5.9		138.9	4448.8	0.041	5.03	0.06	2.3	1.1		0.75	2.0G,2.5X	37.3	101.6	5I
5I	FI 900x900 1800 dia ON GRADE SIDE	389882.6	6956162	523.54	523.54	1P	5	199	0.85	0.0683	0.0581	0.0581	32.1	0.0581	0.0581	32.1	32.1		155.9	630.8	0.07	5.57	0.06	1.3	3		0.75	1.0G,2.5X	50.3	105.6	5J
5J	FIELD INLET 900x900 2100 dia	389886.2	6956188	523.25	523.25	1P	5	199	0.85	0.0263	0.0223	0.0223	12.3	0.0223	0.0223	12.3	12.3		163.8	0							0.5	SAG	0	163.8	5K
5K	FIELD INLET 900x900 2100 dia	389889.2	6956209	523.04	523.04														300.7							0.5	SAG	300.7		-
5L	MH1800	389891	6956216	523.02	523.02																										-
5M	MH2100	389894.3	6956239	521.33	521.33																										-
5N	HWOUT	389890.8	6956248	520.3	520.32																										-
6A	FI 900x900 ON GRADE CENTRED	389911.8	6956092	525.53	525.53	1P	5	199	0.85	0.0222	0.0189	0.0189	10.4	0.0189	0.0189	10.4	10.4		10.4	4544.5	0.025	1.99	0.01	1.4	3		0.75	1.0G,2.5X	7.7	2.8	7A
7A	FI 900x900 ON GRADE SIDE	389916	6956108	525.34	525.34	1P	5	199	0.85	0.0165	0.014	0.014	7.7	0.014	0.014	7.7	7.7		10.5	654.2	0.032	1.3	0.02	1.4	2.5		0.75	1.0G,2.5X	7.1	3.5	7B
7B	FI 900x900 ON GRADE CENTRED	389918.2	6956123	524.99	524.99	1P	5	199	0.85	0.0159	0.0135	0.0135	7.5	0.0135	0.0135	7.5	7.5		10.9	706.5	0.029	1.19	0.02	2.5	2.5		0.75	2.0G,2.5X	7.8	3.1	8A
7C	FI 900x900 ON GRADE CENTRED	389919.1	6956129	524.82	524.82	1P	5	199	0.85	0.0141	0.012	0.012	6.6	0.012	0.012	6.6	6.6		6.6	3489.3	0.021	1.69	0.01	2.5	1.2		0.75	2.0G,2.5X	5	1.7	8A
8A	FIELD INLET 900x900	389910.6	6956143	524.45	524.45	1P	5	199	0.85	0.0734	0.0624	0.0624	34.5	0.0624	0.0624	34.5	34.5		68	61.5	0.075					0.075	0.5	SAG	61.5	6.5	5H
10A	FIELD INLET 900x900	389880.9	6956079	525.23	525.23														0	491	0					0.3	0.5	SAG	0		-
11A	FIELD INLET 900x900	389909.5	6956076	525.76	525.76	1P	5	199	0.85	0.0985	0.0838	0.0838	46.3	0.0838	0.0838	46.3	46.3		46.3	491	0.062					0.3	0.5	SAG	46.3		6A
12A	HWIN	389790.6	6956091	526.4	526.4														0										0		-
12B	HWIN	389791.9	6956101	526.35	526.35																										-

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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www.westerapartners.com.au | ABN 52 097 417 975

BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au
GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au
SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 1 of 4
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR CONSTRUCTION
DRAWING NUMBER: B24-058-1-C34
SHEET NUMBER: 34 OF 37
REVISION: C

B24-058-1-C_Stm_Calcs.dwg

5% AEP HYDRAULICS

Pipe ID	Pipe Type	Pipe Length	Pipe Size	Full Pipe Area Af	Pipe Grade	Pipe Grade	Full-area Tct	Full-area I	Full-area Sum CA	Full-area Qc=CIA	Part-area Tct	Part-area I	Part-area Sum CA	Part-area Qc=CIA	Catchment Flow Qc	Direct Node Flow Q	Direct Pipe Flow Q	Peak Flow Qrat	Net Bypass Flow Qb	Pipe Flow Q	Capacity Flow Qcap	Q/Qcap Ratio	Full Pipe Vel Vf=Q/A	Norm Depth Vel Vn=Q/	Crit Depth Vel Vc=Q/	Capacity Vel Vcap=Qca	US Node Grate RL	Pipe US IL	Pipe DS IL	DS Node Grate RL	Cover Limit	Cover Min	Pipe DS Bend	Pipe DS Drop	US Node Ku	US Node Kw	Pipe Vhead	Phead Loss (Ku.Vhea	WSE Loss (Kw.Vh	Pipe Thead Los	US Node HGL	Pipe US HGL	Pipe DS HGL	DS Node HGL	HGL Grade	HGL Grade	Pboard US
(-)	(-)	(m)	(mm)	(sq.m)	(%)	(1 in)	(min)	(mm/hr)	(ha)	(L/s)	(min)	(mm/hr)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(-)	(m/s)	(m/s)	(m/s)	(m/s)	(m)	(m)	(m)	(m)	(m)	(m)	(deg)	(m)	(-)	(-)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(%)	(1 in)	(m)
1Ato 1B	PVCSN8	29	225	0.04	2.5	40	5.04	198.63	0.0339	18.7	5	199	0.0337	18.7	18.7			18.7	-10.8	7.9	71	0.11	0.2	1.18	0.72	1.79	526.23	524.94	524.21	525.57	0.45	1.06	0	0.075	7		0	0.01		0.72	525.02	525.01	524.29	524.29	2.48	40.3	1.21
1Bto 1C	PVCSN8	26	300	0.071	2.5	40	5.28	196.21	0.0993	54.1	5.24	196.58	0.0992	54.2	54.2			54.2	-28.1	26.1	153	0.17	0.37	1.61	0.95	2.16	525.57	524.14	523.49	524.97	0.45	1.12	0	0.03	4.09		0.01	0.03		0.63	524.29	524.26	523.66	523.66	2.31	43.3	1.28
1Cto 1D	PVCSN8	26	300	0.071	2.5	40	5.5	194.04	0.1759	94.8	5.4	195	0.1754	95	95			95	-50.1	44.9	153	0.29	0.63	1.88	1.14	2.16	524.97	523.46	522.81	524.37	0.45	1.2	0	0.075	1.88		0.02	0.04		0.64	523.66	523.62	522.95	522.95	2.58	38.7	1.31
1Dto 1E	RCPCL4	15.45	375	0.11	2.5	40	5.71	191.87	0.2526	134.6	5.51	193.92	0.2508	135.1	135.1			135.1	-68.5	66.6	277.3	0.24	0.6	2.06	1.2	2.51	524.37	522.73	522.35	524.02	0.9	1.26	45	0.03	1.61		0.02	0.03		0.36	522.95	522.92	522.59	522.59	2.1	47.6	1.42
1Eto 1F	RCPCL4	8.49	375	0.11	2	50	5.84	190.59	0.2797	148.1	5.64	192.63	0.2779	148.7	148.7			148.7	-57.5	91.3	248.1	0.37	0.83	2.07	1.34	2.25	524.02	522.32	522.15	523.8	0.9	1.3	45	0.03	1.67		0.03	0.06		0.14	522.59	522.54	522.43	522.43	1.2	83.2	1.42
1Fto 1G	RCPCL4	13.62	375	0.11	1	100	5.91	189.88	0.2872	151.5	5.71	191.92	0.2854	152.1	152.1			152.1	-40.3	111.8	175.4	0.64	1.01	1.68	1.45	1.59	523.8	522.12	521.98	523.49	0.9	1.15	0	0.03	1.4		0.05	0.07		0.14	522.43	522.36	522.22	522.22	1.02	98.2	1.37
1Gto 5K	RCPCL4	40.38	450	0.159	1	100	6.03	188.77	0.3496	183.3	5.75	191.54	0.3466	184.4	184.4			184.4	-54.2	130.3	285.2	0.46	0.82	1.75	1.42	1.79	523.49	521.95	521.55	523.04	0.9	1.04	-82.4	1.451	0.62		0.03	0.02		0.39	522.22	522.2	521.76	521.25	1.1	91.2	1.27
2Ato 2B	PVCSN8	17.27	300	0.071	2.5	40	5.33	195.73	0.1618	87.9	5.22	196.81	0.1614	88.2	88.2			88.2	-66.3	21.9	153	0.14	0.31	1.54	0.9	2.16	526.03	524.49	524.06	525.64	0.45	1.23	-21.7	0.03	7		0	0.03		0.4	524.64	524.61	524.24	524.24	2.13	46.9	1.39
2Bto 2C	RCPCL4	12.74	375	0.11	2.5	40	5.47	194.29	0.3122	168.5	5.29	196.1	0.311	169.4	169.4			169.4	-117.3	52.1	277.3	0.19	0.47	1.93	1.11	2.51	525.64	524.03	523.71	525.31	0.9	1.23	-67.7	0.075	3.61		0.01	0.04		0.32	524.24	524.2	523.87	523.88	2.55	39.2	1.4
2Cto 2D	RCPCL4	13.04	450	0.159	1	100	5.58	193.23	0.3268	175.4	5.37	195.27	0.3253	176.4	176.4			176.4	-90.1	86.4	285.2	0.3	0.54	1.57	1.24	1.79	525.31	523.64	523.51	525.01	0.9	1.07	-0.6	0.03	2.01	2.35	0.02	0.03	0.04	0.12	523.88	523.84	523.75	523.75	0.7	143.8	1.44
2Dto 2E	RCPCL4	35.5	450	0.159	1.67	60	5.69	192.14	0.3544	189.2	5.48	194.19	0.3529	190.3	190.3			190.3	-74.5	115.9	368.2	0.31	0.73	2.05	1.36	2.32	525.01	523.48	522.89	524.2	0.9	0.87	0	0.061	1.33		0.03	0.04		0.59	523.75	523.71	523.15	523.15	1.6	62.3	1.26
2Eto 5H	RCPCL4	13.35	450	0.159	2	50	5.98	189.19	0.4851	254.9	5.7	191.95	0.4818	256.9	256.9			256.9	-110.9	146	403.4	0.36	0.92	2.33	1.48	2.54	524.2	522.82	522.56	523.89	0.9	0.91	0	1.65	1.22		0.04	0.05		0.18	523.15	523.09	522.75	522.32	2.6	38.4	1.05
4Ato 5B	RCPCL4	6.93	525	0.216	2.23	44.8	5	199	0.0126	7	5	199	0.0126	7	7	146		153		153	642.8	0.24	0.71	2.43	1.42	2.97	526.31	524.93	524.77	526.18	0.9	0.73	88.5	1.131	9.7		0.03	0.25		0.15	525.43	525.19	525.06	525.17	1.81	55.4	0.87
5Ato 5B	RCPCL4	9.15	1200	1.131	2.5	40	25	104	0.0232	6.7	25	104	0.0232	6.7	6.7			6.7	329.6	336.3	6167	0.05	0.3	2.92	1.46	5.45	525.99	523.9	523.67	526.18	0.9	0.89	-86.5	0.03	1.53		0	0.01		0	525.07	525.06	525.06	525.17	-0.01	-14972.1	0.92
5Bto 5C	RCPCL4	35.92	1200	1.131	1.3	76.9	25.08	103.84	0.0441	12.7	5.06	198.42	0.0255	14	14	696	1804	2514		2514	4447.1	0.57	2.22	4.05	2.85	3.93	526.18	523.64	523.17	525.84	0.9	1.36	4.6	0.03	2.17	2.59	0.25	0.55	0.65	0.46	525.17	524.51	524.08	524.08	1.2	83.2	1.01
5Cto 5D	RCPCL4	16.12	1200	1.131	1	100	25.38	103.2	0.1278	36.6	5.03	198.68	0.1077	59.4	59.4	696	1804	2559.4		2559.4	3900.4	0.66	2.26	3.68	2.87	3.45	525.84	523.14	522.98	525.58	0.9	1.41	-7.5	0.03	0.22		0.26	0.06		0.16	524.08	524.03	523.89	523.89	0.81	123	1.75
5Dto 5E	RCPCL4	16.31	1200	1.131	1.33	75	25.51	102.91	0.1467	41.9	5.17	197.33	0.1266	69.4	69.4	696	1804	2569.4	-2.8	2566.6	4503.8	0.57	2.27	4.11	2.88	3.98	525.58	522.95	522.73	525.35	0.9	1.41	0.9	0.032	0.22		0.26	0.06		0.22	523.89	523.84	523.64	523.64	1.18	84.6	1.68
5Eto 5F	RCPCL4	15.74	1200	1.131	2	50	25.65	102.62	0.1591	45.4	5.3	195.98	0.1389	75.6	75.6	696	1804	2575.6	-4.5	2571.1	5516	0.47	2.27	4.79	2.88	4.88	525.35	522.7	522.39	524.98	0.9	1.42	-30.4	0.03	0.21		0.26	0.06		0.3	523.64	523.59	523.36	523.36	1.43	70.1	1.71
5Fto 5G	RCPCL4	15.37	1200	1.131	1.8	55.6	25.78	102.34	0.1715	48.8	5.43	194.66	0.1513	81.8	81.8	696	1804	2581.8	-4.9	2576.9	5232.9	0.49	2.28	4.61	2.88	4.63	524.98	522.36	522.08	524.54	0.9	1.23	-56.9	0.3	0.45		0.26	0.12		0.22	523.36	523.24	522.83	522.85	2.69	37.2	1.62
5Gto 5H	RCPCL4	28.84	1350	1.431	1.55	64.5	25.91	102.06	0.3215	91.1	5.56	193.38	0.3013	161.9	161.9	696	1804	2661.9	-6.5	2655.4	6651.2	0.4	1.86	4.38	2.72	4.65	524.54	521.78	521.33	523.89	0.9	1.2	87.3	0.426	1.01	1.15	0.18	0.18	0.2	0.45	522.85	522.65	522.21	522.32	1.51	66.1	1.69
5Hto 5I	RCPCL4	19.15	1350	1.431	1.3	76.9	26.15	101.55	0.8173	230.5	5.8	190.98	0.7935	421	421	696	1804	2921	-86	2835	6088.2	0.47	1.98	4.18	2.79	4.25	523.89	520.91	520.66	523.54	0.9	1.53	0	0.03	2.03	2.54	0.2	0.41	0.51	0.25	522.32	521.81	521.6	521.6	1.11	89.8	1.58
5Ito 5J	RCPCL4	26	1350	1.431	1	100	26.3	101.21	0.9714	273.1	5.96	189.38	0.9476	498.5	498.5	696	1804	2998.5	-120.9	2877.6	5339.7	0.54	2.01	3.8	2.81	3.73	523.54	520.63	520.37	523.25	0.9	1.53	0	0.03	0.28		0.21	0.06		0.26	521.6	521.54	521.29	521.29	0.96	103.8	1.94
5Jto 5K	RCPCL4	21.45	1350	1.431	1	100	26.52	100.74	1.102	308.4	6.18	187.4	1.0782	561.3	561.3	696	1804	3061.3	-193.1	2868.2	5339.7	0.54	2	3.8	2.81	3.73	523.25	520.34	520.12	523.04	0.9	1.55	7.6	0.03	0.2		0.2	0.04		0.14	521.29	521.24	521.25	521.25	-0.01	-9815.3	1.97
5Kto 5L	RCPCL4	6.56	1350	1.431	1	100	26.7	100.36	1.4516	404.7	6.32	186.11	1.4257	737.1	737.1	696	1804	3237.1	53.5	3290.6	5339.7	0.62	2.3	3.92	2.96	3.73	523.04	520.09	520.03	523.02	0.9	1.62	-7.6	0.954	0.67		0.27	0.18		0	521.25	521.07	520.8	520.11	4.12	24.3	1.79
5Lto 5M	RCPCL4	23.5	1350	1.431	1	100	26.75	100.24	1.5483	431.1	6.36	185.72	1.5217	785	785	696	1804	3285		3285	5339.7	0.62	2.29	3.92	2.96	3.73	523.02	519.07	518.84	521.33	0.9	1.22	-29.2	0.15	0.22		0.27	0.06		0.12	520.11	520.04	520.09	520.09	-0.19	-525.9	2.92
5Mto 5N	RCPCL4	9.76	1500	1.767	1	100	26.95	99.83	1.5483	429.3	6.56	183.95	1.5217	777.6	777.6	696	1804	3277.6		3277.6	7071.9	0.46	1.85	3.92	2.81	4	521.33	518.69	518.59	520.32	0.9	-1.5	0	0.03	0.2		0.18	0.04		0.02	520.09	520.05	520.05	520.05	0.04	2284.8	1.24
6Ato 5D	PVCSN8	2	300	0.071	0.97	102.8	5	199	0.0189	10.4	5	199	0.0189	10.4	10.4			10.4	-2.8	7.7	95.4	0.08	0.11	0.81	0.67	1.35	525.53	524.38	524.36	525.58	0.45	0.86	83.3	1.407	9.7		0	0.01		0.02	524.45	524.44	524.42	523.89	1.37	72.8	1.08
7Ato 7B	PVCSN8	15.71	150	0.018	3.5	28.6	5	199	0.014	7.7	5	199	0.014	7.7	7.7			7.7	-0.7	7.1	28.5	0.25	0.4	1.34	0.77	1.61	525.34	524.16	523.61	524.99	0.45	1.03	0	0.075	7		0.01	0.06		0.52	524.3	524.24	523.66	523.65	3.67	27.3	1.05
7Bto 7C	PVCSN8	5.82	225	0.04	2.5	40	5.13	197.69	0.0275	15.1	5	199	0.0271	15	15.1			15.1	-0.3	14.8	71	0.21	0.37	1.41	0.87	1.79	524.99	523.54	523.39	524.82	0.45	1.2	-58.3	0.03	1.7		0.01	0.01		0.14	523.65	523.64	523.5	523.5	2.37	42.3	1.33
7Cto 5G	PVCSN8	14.08	225	0.04	1	100.3	5.18	197.21	0.0394	21.6	5.05	198.51	0.0391	21.6	21.6			21.6	-1.9	19.7	44.9	0.44	0.49	1.09	0.95	1.13	524.82	523.36	523.22	524.54	0.45	1.07	-29	1.441	1.74	1.91	0.01	0.02	0.02	0.14	523.5	523.48	523.33	522.85	1.08	92.4	1.32
8Ato 5G	PVCSN8	5.03	300	0.071	0.68	147.1	5.3	195.98	0.1105	60.2	5.11	197.93	0.1099	60.4	60.4			60.4	0.4	60.8	79.8	0.76	0.86	1.24	1.27	1.13	524.45	522.93	522.9	524.54	0.45	1.23	73.3	1.115	5.92		0.04	0.22		0.03	523.35	523.13	523.09	522.85	0.77	130.6	1.1
10Ato 2C	PVCSN8	10.34	225	0.04	4	25												0		0	89.8	0	0	0	0	2.26	525.23	524.13	523.71	525.31	0.45	0.9	80.1	0.075			0			0.25	524.13	524.13	523.87	523.88	2.47	40.6	1.1
11Ato 5C	PVCSN8	3.87	300	0.071	1.01	99.2	5	199	0.0838	46.3	5	199	0.0838	46.3	46.3			46.3		46.3	97.2	0.48	0.65	1.36	1.15	1.37	525.76	524.7	524.66	525.84	0.45	0.77	89.8	1.515	8.9		0.02	0.19		0.03	525.06	524.86	524.8	524.08	1.54	65	0.7
12Ato 12E	BC	9.6	(2x)1200x 300	0.72	0.5	200											1480	1480		1480	952.8	1.55	2.06	2.06	2.06	1.32	526.4	525.65	525.6	526.35	0.5	0.18	0		1.5		0.22	0.32		0.12	526.34	526.02	525.9	525.9	1.21	82.9	0.06

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

WESTERA PARTNERS
STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS
www.westerapartners.com.au | ABN 52 097 417 975

BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au
GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au
SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 2 of 4
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24-058-1-C35
SHEET NUMBER 35 OF 37
REVISION C

B24-058-1-C_Stm_Calcs.dwg

1% AEP HYDROLOGY

Node	Node	Setout	Setout	Setout	Grate	Catch	Time	Intensity	Runoff	Area	Full	Full	Full	Partial	Partial	Partial	Catchmen	Direct	Approach	Road	Flooded	Flooded	Flooded	Road	Road	Max Pond	Choke	Inlet	Inlet	Bypass	Bypass
Name	Type	Easting	Northing	RL	RL	ID	Tc	I	C	A	CA	Sum CA	Qc=CIA	CA	Sum CA	Qc=CIA	Flow Qc	Flow Qdg	Flow Qa	Capacity	Depth	Width	Vel. Dep	Grade	Xfall	Depth	Factor	Curve Nan	Flow Qg	Flow Qb	Node
(-)	(-)	(m)	(m)	(m)	(m)	(-)	(min)	(mm/hr)	(-)	(ha)	(ha)	(ha)	(L/s)	(ha)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(m)	(m)	(sq.m/s)	(%)	(%)	(m)	(-)	(-)	(L/s)	(L/s)	(-)
1A	FI 900x900 ON GRADE CENTRED	389815.5	6956116	526.23	526.23	1P	5	262	0.97	0.0236	0.0229	0.0229	16.7	0.0229	0.0229	16.7	16.7		16.7	842.9	0.027	2.16	0.02	2.3	2.5		0.75	2.0G,2.5X	10	6.7	1B
1B	FI 900x900 ON GRADE CENTRED	389819.5	6956145	525.57	525.57	1P	5	262	0.97	0.0282	0.0275	0.0275	20	0.0275	0.0275	20	20		72.6	842.9	0.047	3.75	0.04	2.3	3		0.75	2.0G,2.5X	22.9	49.7	1C
1C	FI 900x900 ON GRADE CENTRED	389823.2	6956171	524.97	524.97	1P	5	262	0.97	0.025	0.0243	0.0243	17.7	0.0243	0.0243	17.7	17.7		90.4	842.9	0.051	4.07	0.04	2.3	3		0.75	2.0G,2.5X	28.3	62.1	1D
1D	FI 900x900 ON GRADE CENTRED	389626.8	6956197	524.37	524.37	1P	5	262	0.97	0.0252	0.0245	0.0245	17.8	0.0245	0.0245	17.8	17.8		125.9	842.9	0.058	4.61	0.05	2.3	3		0.75	2.0G,2.5X	35.4	90.5	1E
1E	FI 900x900 ON GRADE CENTRED	389629	6956212	524.02	524.02	1P	5	262	0.97	0.0156	0.0152	0.0152	11	0.0152	0.0152	11	11		136	842.9	0.059	4.74	0.06	2.3	3		0.75	2.0G,2.5X	36.9	99.1	1F
1F	FI 900x900 ON GRADE CENTRED	389835.8	6956217	523.8	523.8	1P	5	262	0.97	0.0087	0.0085	0.0085	6.2	0.0085	0.0085	6.2	6.2		105.3	1182.6	0.052	4.46	0.05	2.3	3		0.75	2.0G,2.5X	32.3	73	1G
1G	FI 900x900 ON GRADE CENTRED	389849.3	6956215	523.49	523.49	1P	5	262	0.97	0.0175	0.017	0.017	12.4	0.017	0.017	12.4	12.4		99.4	841.4	0.053	4.22	0.05	2.3	3		0.75	2.0G,2.5X	31.3	68.1	5K
2A	FI 900x900 ON GRADE CENTRED	389841.6	6956082	526.03	526.03	1P	5	262	0.97	0.0304	0.0295	0.0295	21.5	0.0295	0.0295	21.5	21.5		111.5	842.5	0.055	4.4	0.05	2.3	3		0.75	2.0G,2.5X	33.2	78.3	2B
2B	FI 900x900 ON GRADE CENTRED	389858.7	6956079	525.64	525.64	1P	5	262	0.97	0.0171	0.0166	0.0166	12.1	0.0166	0.0166	12.1	12.1		158.5	842.5	0.063	5.02	0.06	2.3	3		0.75	2.0G,2.5X	43.1	115.4	2C
2C	FI 900x900 ON GRADE CENTRED	389671.1	6956082	525.31	525.31	1P	5	262	0.97	0.0172	0.0167	0.0167	12.2	0.0167	0.0167	12.2	12.2		195.5	1428	0.063	6.74	0.06	2.3	3		0.75	2.0G,2.5X	60.9	134.7	2D
2D	FI 900x900 ON GRADE CENTRED	389673.1	6956095	525.01	525.01	1P	5	262	0.97	0.0169	0.0164	0.0164	12	0.0164	0.0164	12	12		146.7	842.5	0.061	4.88	0.06	2.3	3		0.75	2.0G,2.5X	38.5	108.2	2E
2E	FI 900x900 ON GRADE CENTRED	389878	6956130	524.2	524.2	1P	5	262	0.97	0.0349	0.0339	0.0339	24.7	0.0339	0.0339	24.7	24.7		200.2	3763.7	0.089	5.48	0.07	2.3	3		0.75	2.0G,2.5X	63	137.1	5H
4A	SAL4D	389906.3	6956040	526.31	526.31	1P	5	262	0.97	0.0148	0.0144	0.0144	10.5	0.0144	0.0144	10.5	10.5	271	281.5	225	0.225					0.25	0.5	SAG	225	56.5	5B
5A	1800 by 1800 FIELD INLET	389890.5	6956042	523.9	525.99	1P	25	136	0.5	0.0465	0.0232	0.0232	8.8	0.0232	0.0232	8.8	8.8		1249.1	1520.5	0.337						0.5	0.5	SAG	1249.1		11A
5B	SAL4D	389899.5	6956041	526.18	526.18	1P	5	262	0.97	0.0097	0.0094	0.0094	6.9	0.0094	0.0094	6.9	6.9	1402	1465.3	225	0.225					0.25	0.5	SAG	225	1240.3	5A
5C	MH1800	389905.8	6956077	525.84	525.84																										-
5D	MH1800	389909.8	6956092	525.58	525.58																										-
5E	FI 900x900 1800 dia ON GRADE CENTRED	389911.9	6956108	525.35	525.35	1P	5	262	0.97	0.0146	0.0141	0.0141	10.3	0.0141	0.0141	10.3	10.3		10.3	654.2	0.032	1.29	0.02	1	2.5		0.75	1.0G,2.5X	7.6	2.7	5F
5F	FI 900x900 1800 dia ON GRADE CENTRED	389914.1	6956124	524.98	524.98	1P	5	262	0.97	0.0146	0.0142	0.0142	10.3	0.0142	0.0142	10.3	10.3		13	884.1	0.029	1.32	0.02	1	2.5		0.75	1.0G,2.5X	8.6	4.4	8A
5G	MH2100	389908.2	6956138	524.54	524.54																										-
5H	FI 900x900 2100 dia ON GRADE CENTRED	389879.9	6956144	523.89	523.89	1P	5	262	0.97	0.0126	0.0123	0.0123	8.9	0.0123	0.0123	8.9	8.9		241.6	4448.8	0.051	6.23	0.08	2.3	1.1		0.75	2.0G,2.5X	71.4	170.2	5I
5I	FI 900x900 1800 dia ON GRADE SIDE	389882.6	6956162	523.54	523.54	1P	5	262	0.97	0.0683	0.0664	0.0664	48.3	0.0664	0.0664	48.3	48.3		251.9	630.8	0.083	6.66	0.08	1.3	3		0.75	1.0G,2.5X	92.4	159.5	5J
5J	FIELD INLET 900x900 2100 dia	389886.2	6956188	523.25	523.25	1P	5	262	0.97	0.0263	0.0255	0.0255	18.6	0.0255	0.0255	18.6	18.6		247.1	0								0.5	SAG	0	247.1	5K
5K	FIELD INLET 900x900 2100 dia	389889.2	6956209	523.04	523.04														465.3								0.5	SAG	465.3		-
5L	MH1800	389891	6956216	523.02	523.02																										-
5M	MH2100	389894.3	6956239	521.33	521.33																										-
5N	HWOUT	389890.8	6956248	520.3	520.32																										-
6A	FI 900x900 ON GRADE CENTRED	389911.8	6956092	525.53	525.53	1P	5	262	0.97	0.0222	0.0216	0.0216	15.7	0.0216	0.0216	15.7	15.7		15.7	4544.5	0.029	2.32	0.01	1.4	3		0.75	1.0G,2.5X	9.6	6.1	7A
7A	FI 900x900 ON GRADE SIDE	389916	6956108	525.34	525.34	1P	5	262	0.97	0.0165	0.016	0.016	11.6	0.016	0.016	11.6	11.6		17.7	654.2	0.039	1.59	0.02	1.4	2.5		0.75	1.0G,2.5X	11.4	6.3	7B
7B	FI 900x900 ON GRADE CENTRED	389918.2	6956123	524.99	524.99	1P	5	262	0.97	0.0159	0.0154	0.0154	11.2	0.0154	0.0154	11.2	11.2		17.6	706.5	0.035	1.42	0.02	2.5	2.5		0.75	2.0G,2.5X	10.3	7.2	8A
7C	FI 900x900 ON GRADE CENTRED	389919.1	6956129	524.82	524.82	1P	5	262	0.97	0.0141	0.0137	0.0137	9.9	0.0137	0.0137	9.9	9.9		9.9	3489.3	0.025	1.97	0.01	2.5	1.2		0.75	2.0G,2.5X	7.5	2.5	8A
8A	FIELD INLET 900x900	389910.6	6956143	524.45	524.45	1P	5	262	0.97	0.0734	0.0713	0.0713	51.9	0.0713	0.0713	51.9	51.9		106	61.5	0.075					0.075	0.5	SAG	61.5	44.5	5H
10A	FIELD INLET 900x900	389880.9	6956079	525.23	525.23														0	491	0					0.3	0.5	SAG	0		-
11A	FIELD INLET 900x900	389909.5	6956076	525.76	525.76	1P	5	262	0.97	0.0985	0.0957	0.0957	69.7	0.0957	0.0957	69.7	69.7		69.7	491	0.081					0.3	0.5	SAG	69.7		6A
12A	HWIN	389790.6	6956091	526.4	526.4														0										0		-
12B	HWIN	389791.9	6956101	526.35	526.35																										-

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

WESTERA PARTNERS
STRUCTURAL+CIVIL+ENVIRONMENTAL ENGINEERS
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BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au
GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au
SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 3 of 4
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR CONSTRUCTION
DRAWING NUMBER B24-058-1-C36
SHEET NUMBER 36 OF 37
REVISION C

B24-058-1-C_Stm_Calcs.dwg

1% AEP HYDRAULICS

Pipe	Pipe	Pipe	Pipe	Full Pipe	Pipe	Pipe	Full-area	Full-area	Full-area	Full-area	Part-area	Part-area	Part-area	Part-area	Catchment	Direct Node	Direct Pipe	Peak	Net Bypass	Pipe	Excess Pipe	Capacity	Q/Qcap	Full Pipe	Norm Depth	Crit Depth	Capacity Vel	US Node	Pipe	Pipe	DS Node	Cover	Cover	Pipe	Pipe	US Node	US Node	Pipe	Phead Loss	W&E Loss	Pipe	US Node	Pipe	Pipe	DS Node	HGL	HGL	Fboard
ID	Type	Length	Size	Area Af	Grade	Grade	Tct	I	Sum CA	Qc=CIA	Tct	I	Sum CA	Qc=CIA	Flow Qc	Flow Qdg	Flow Qdp	Flow Qrat	Flow Qb	Flow Q	Flow Qx	Flow Qcap	Ratio	Vel Vf=Q/Af	Vel Vn=Q/An	Vel Vc=Q/Ac	Vcap=Qcap/Af	Grate RL	US IL	DS IL	Grate RL	Limit	Min	DS Bend	DS Drop	Ku	Kw	Vhead	(Ku.Vhead)	(Kw.Vh	Thead Loss	HGL	US HGL	DS HGL	HGL	Grade	Grade	US
(-)	(-)	(m)	(mm)	(sq.m)	(%)	(1 in)	(min)	(mm/hr)	(ha)	(L/s)	(min)	(mm/hr)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(-)	(m/s)	(m/s)	(m/s)	(m/s)	(m)	(m)	(m)	(m)	(m)	(m)	(deg)	(m)	(-)	(-)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(%)	(1 in)	(m)
1Ato 1B	PVCSN8	29	225	0.04	2.5	40	5.04	261.48	0.0387	28.1	5	262	0.0386	28.1	28.1			28.1	-18.2	9.9		71	0.14	0.25	1.26	0.77	1.79	526.23	524.94	524.21	525.57	0.45	1.06	0	0.075	7		0	0.02		0.72	525.04	525.02	524.31	524.31	2.43	41.2	1.19
1Bto 1C	PVCSN8	26	300	0.071	2.5	40	5.28	258.09	0.1135	81.4	5.24	258.62	0.1134	81.5	81.5			81.5	-49.7	31.7		153	0.21	0.45	1.71	1.01	2.16	525.57	524.14	523.49	524.97	0.45	1.12	0	0.03	4		0.01	0.04		0.6	524.31	524.27	523.71	523.71	2.17	46.2	1.25
1Cto 1D	PVCSN8	26	300	0.071	2.5	40	5.5	255.06	0.201	142.4	5.39	256.58	0.2003	142.8	142.8			142.8	-85.1	57.7		153	0.38	0.82	2.01	1.25	2.16	524.97	523.46	522.81	524.37	0.45	1.2	0	0.075	1.97		0.03	0.07		0.65	523.71	523.64	523.01	523.01	2.44	40.9	1.26
1Dto 1E	RCPCl.4	15.45	375	0.11	2.5	40	5.71	252.02	0.2887	202.1	5.51	254.88	0.2867	203	203			203	-113.5	89.5		277.3	0.32	0.81	2.24	1.33	2.51	524.37	522.73	522.35	524.02	0.9	1.26	45	0.03	1.71		0.03	0.06		0.32	523.01	522.95	522.68	522.68	1.72	58	1.36
1Eto 1F	RCPCl.4	8.49	375	0.11	2	50	5.84	250.22	0.3197	222.2	5.56	254.13	0.3163	223.3	223.3			223.3	-99.1	124.2		248.1	0.5	1.12	2.25	1.52	2.25	524.02	522.32	522.15	523.8	0.9	1.3	45	0.03	1.69		0.06	0.11		0.08	522.68	522.58	522.55	522.55	0.27	374.8	1.33
1Fto 1G	RCPCl.4	13.62	375	0.11	1	100	5.91	249.23	0.3282	227.2	5.63	253.14	0.3248	228.4	228.4			228.4	-73	155.4		175.4	0.89	1.41	1.79	1.69	1.59	523.8	522.12	521.98	523.49	0.9	1.15	0	0.03	1.45		0.1	0.15		0.13	522.55	522.41	522.3	522.3	0.8	124.6	1.25
1Gto 5K	RCPCl.4	40.38	450	0.159	1	100	6.03	247.69	0.3995	274.9	5.75	251.55	0.3962	276.8	276.8			276.8	-93.6	183.2		285.2	0.64	1.15	1.9	1.62	1.79	523.49	521.95	521.55	523.04	0.9	1.04	-82.4	1.451	0.68		0.07	0.05		0.39	522.3	522.25	521.81	521.62	1.1	91.2	1.19
2Ato 2B	PVCSN8	17.27	300	0.071	2.5	40	5.33	257.42	0.1849	132.2	5.22	258.94	0.1845	132.7	132.7			132.7	-101.3	31.4		153	0.21	0.44	1.7	1.01	2.16	526.03	524.49	524.06	525.64	0.45	1.23	-21.7	0.03	7		0.01	0.07		0.37	524.7	524.63	524.3	524.3	1.92	52.2	1.33
2Bto 2C	RCPCl.4	12.74	375	0.11	2.5	40	5.47	255.41	0.3568	253.1	5.27	258.27	0.355	254.7	254.7			254.7	-183.4	71.3		277.3	0.26	0.65	2.1	1.23	2.51	525.64	524.03	523.71	525.31	0.9	1.23	-67.7	0.075	3.38		0.02	0.07		0.3	524.3	524.23	523.96	523.97	2.08	48.1	1.34
2Cto 2D	RCPCl.4	13.04	450	0.159	1	100	5.58	253.92	0.3735	263.5	5.37	256.78	0.3718	265.2	265.2			265.2	-134.7	130.5		285.2	0.46	0.82	1.75	1.42	1.79	525.31	523.64	523.51	525.01	0.9	1.07	-0.6	0.03	2.06	2.42	0.03	0.07	0.08	0.1	523.97	523.89	523.83	523.83	0.45	221.5	1.34
2Dto 2E	RCPCl.4	35.5	450	0.159	1.67	60	5.69	252.4	0.405	284	5.47	255.43	0.403	285.9	285.9			285.9	-119.1	166.8		368.2	0.45	1.05	2.26	1.56	2.32	525.01	523.48	522.89	524.2	0.9	0.87	0	0.061	1.19		0.06	0.07		0.54	523.83	523.76	523.29	523.29	1.34	74.8	1.18
2Eto 5H	RCPCl.4	13.35	450	0.159	2	50	5.98	248.26	0.5543	382.3	5.7	252.14	0.5507	385.7	385.7			385.7	-164.7	220.9		403.4	0.55	1.39	2.59	1.76	2.54	524.2	522.82	522.56	523.89	0.9	0.91	0	1.65	1.36		0.1	0.13		0.24	523.29	523.16	522.97	523.15	1.41	70.9	0.91
4Ato 5B	RCPCl.4	6.93	525	0.216	2.23	44.8	5	262	0.0144	10.5	5	262	0.0144	10.5	10.5	271		281.5	-56.5	225		642.8	0.35	1.04	2.71	1.63	2.97	526.31	524.93	524.77	526.18	0.9	0.73	88.5	1.131	5.8		0.06	0.32		0.02	526.13	525.81	525.79	525.98	0.27	365.7	0.18
5Ato 5B	RCPCl.4	9.15	1200	1.131	2.5	40	25	136	0.0232	8.8	25	136	0.0232	8.8	8.8			8.8	1240.3	1249.1		6167	0.2	1.1	4.27	2.17	5.45	525.99	523.9	523.67	526.18	0.9	0.89	-86.5	0.03	1.5		0.06	0.09		0.01	525.89	525.8	525.79	525.98	0.1	975	0.1
5Bto 5C	RCPCl.4	35.92	1200	1.131	1.3	76.9	25.08	135.79	0.0471	17.8	5.06	261.19	0.0285	20.6	20.6	1673	1809	3502.6		3502.6		4447.1	0.79	3.1	4.35	3.42	3.93	526.18	523.64	523.17	525.84	0.9	1.36	4.6	0.03	1.96	2.36	0.49	0.96	1.15	0.29	525.98	524.83	524.54	524.54	0.8	125.4	0.2
5Cto 5D	RCPCl.4	16.12	1200	1.131	1	100	25.38	134.95	0.1428	53.5	5.03	261.55	0.1224	88.9	88.9	1673	1809	3570.9		3570.9		3900.4	0.92	3.16	3.91	3.46	3.45	525.84	523.14	522.98	525.58	0.9	1.41	-7.5	0.03	0.22		0.51	0.11		0.14	524.54	524.43	524.3	524.3	0.84	119.3	1.29
5Dto 5E	RCPCl.4	16.31	1200	1.131	1.33	75	25.51	134.57	0.1644	61.4	5.17	259.67	0.144	103.9	103.9	1673	1809	3585.9	-6.1	3579.8		4503.8	0.79	3.17	4.42	3.47	3.98	525.58	522.95	522.73	525.35	0.9	1.41	0.9	0.032	0.22		0.51	0.11		0.14	524.3	524.18	524.04	524.04	0.84	118.7	1.28
5Eto 5F	RCPCl.4	15.74	1200	1.131	2	50	25.65	134.19	0.1785	66.5	5.3	257.77	0.1582	113.2	113.2	1673	1809	3595.2	-8.8	3586.5		5516	0.65	3.17	5.19	3.47	4.88	525.35	522.7	522.39	524.98	0.9	1.42	-30.4	0.03	0.21		0.51	0.11		0.13	524.04	523.93	523.8	523.8	0.85	118.3	1.31
5Fto 5G	RCPCl.4	15.37	1200	1.131	1.8	55.6	25.78	133.82	0.1927	71.6	5.43	255.93	0.1724	122.5	122.5	1673	1809	3604.5	-10.5	3594.1		5232.9	0.69	3.18	4.98	3.48	4.63	524.98	522.36	522.08	524.54	0.9	1.23	-56.9	0.3	0.45		0.52	0.23		0.13	523.8	523.57	523.44	523.49	0.85	117.8	1.18
5Gto 5H	RCPCl.4	28.84	1350	1.431	1.55	64.5	25.91	133.47	0.3641	135	5.56	254.14	0.3438	242.7	242.7	1673	1809	3724.7	-44.5	3680.1		6651.2	0.55	2.57	4.76	3.15	4.65	524.54	521.78	521.33	523.89	0.9	1.2	87.3	0.426	1.01	1.15	0.34	0.34	0.39	0.13	523.49	523.1	522.97	523.15	0.45	221	1.05
5Hto 5I	RCPCl.4	19.15	1350	1.431	1.3	76.9	26.15	132.79	0.9307	343.3	5.8	250.77	0.9062	631.3	631.3	1673	1809	4113.3	-146.7	3966.5		6088.2	0.65	2.77	4.53	3.28	4.25	523.89	520.91	520.66	523.54	0.9	1.53	0	0.03	2	2.46	0.39	0.78	0.96	0.1	523.15	522.18	522.1	522.1	0.43	230.9	0.75
5Ito 5J	RCPCl.4	26	1350	1.431	1	100	26.3	132.35	1.1068	406.9	5.94	248.84	1.0811	747.3	747.3	1673	1809	4229.3	-182.5	4046.7		5339.7	0.76	2.83	4.1	3.31	3.73	523.54	520.63	520.37	523.25	0.9	1.53	0	0.03	0.31		0.41	0.13		0.15	522.1	521.97	521.83	521.83	0.57	176.2	1.44
5Jto 5K	RCPCl.4	21.45	1350	1.431	1	100	26.52	131.74	1.2561	459.7	6.16	246.12	1.2303	841.1	841.1	1673	1809	4323.1	-291.2	4032		5339.7	0.76	2.82	4.1	3.31	3.73	523.25	520.34	520.12	523.04	0.9	1.55	7.6	0.03	0.2		0.4	0.08		0.12	521.83	521.75	521.62	521.62	0.57	175.4	1.42
5Kto 5L	RCPCl.4	6.56	1350	1.431	1	100	26.7	131.24	1.6556	603.6	6.32	244.15	1.6288	1104.6	1104.6	1673	1809	4586.6	80.5	4667.1		5339.7	0.87	3.26	4.2	3.61	3.73	523.04	520.09	520.03	523.02	0.9	1.62	-7.6	0.954	0.71		0.54	0.38		0	521.62	521.24	521.01	520.34	3.53	28.4	1.41
5Lto 5M	RCPCl.4	23.5	1350	1.431	1	100	26.75	131.09	1.7662	643.1	6.32	244.15	1.7347	1176.5	1176.5	1673	1809	4658.5		4658.5		5339.7	0.87	3.25	4.2	3.61	3.73	523.02	519.07	518.84	521.33	0.9	1.22	-29.2	0.15	0.22		0.54	0.12		0.19	520.34	520.22	520.13	520.13	0.36	278	2.69
5Mto 5N	RCPCl.4	9.76	1500	1.767	1	100	26.95	130.54	1.7662	640.4	6.52	241.8	1.7347	1165.2	1165.2	1673	1809	4647.2		4647.2		7071.9	0.66	2.63	4.27	3.27	4	521.33	518.69	518.59	520.32	0.9	-1.5	0	0.03	0.2		0.35	0.07		0.04	520.13	520.06	520.05	520.05	0.12	864.2	1.2
6Ato 5D	PVCSN8	2	300	0.071	0.97	102.8	5	262	0.0216	15.7	5	262	0.0216	15.7	15.7			15.7	-6.1	9.6		95.4	0.1	0.14	0.87	0.72	1.35	525.53	524.38	524.36	525.58	0.45	0.86	83.3	1.407	9.7		0	0.01		0.02	524.46	524.45	524.42	524.3	1.44	69.6	1.07
7Ato 7B	PVCSN8	15.71	150	0.018	3.5	28.6	5	262	0.016	11.6	5	262	0.016	11.6	11.6			11.6	-0.3	11.4		28.5	0.4	0.64	1.52	0.92	1.61	525.34	524.16	523.61	524.99	0.45	1.03	0	0.075	5.68		0.02	0.12		0.51	524.38	524.26	523.68	523.68	3.71	27	0.96
7Bto 7C	PVCSN8	5.82	225	0.04	2.5	40	5.13	260.17	0.0314	22.7	5	262	0.031	22.6	22.7			22.7	-1.2	21.6		71	0.3	0.54	1.57	0.98	1.79	524.99	523.54	523.39	524.82	0.45	1.2	-58.3	0.03	1.28		0.01	0.02		0.13	523.68	523.66	523.55	523.56	1.86	53.7	1.31
7Cto 5G	PVCSN8	14.08	225	0.04	1	100.3	5.18	259.49	0.0451	32.5	5.05	261.32	0.0447	32.4	32.5			32.5	-3.6	28.9		44.9	0.64	0.73	1.2	1.09	1.13	524.82	523.36	523.22	524.54	0.45	1.07	-29	1.441	1.75	1.93	0.03	0.05	0.05	0.1	523.56	523.5	523.44	523.49	0.47	215	1.26
8Ato 5G	PVCSN8	5.03	300	0.071	0.68	147.1	5.3	257.77	0.1263	90.4	5.11	260.5	0.1256	90.9	90.9			90.9	-30.4	60.4		79.8	0.76	0.85	1.24	1.27	1.13	524.45	522.93	522.9	524.54	0.45	1.23	73.3	1.115	4.2		0.04	0.16		0.02	523.62	523.46	523.44	523.49	0.39	256.3	0.84
10Ato 2C	PVCSN8	10.34	225	0.04	4	25												0		0		89.8	0	0	0	0	2.26	525.23	524.13	523.71	525.31	0.45	0.9	80.1	0.075			0			0.17	524.13	524.13	523.96	523.97	1.6	62.6	1.1
11Ato 5C	PVCSN8	3.87	300	0.071	1.01	99.2	5	262	0.0957	69.7	5	262	0.0957	69.7	69.7			69.7		69.7		97.2	0.72	0.99	1.49	1.35	1.37	525.76	524.7	524.66	525.84	0.45	0.77	89.8	1.515	6.61		0.05	0.33		0.04	525.23	524.9	524.85	524.54	1.47	68.2	0.53
12Ato 12B	BC	9.6	(2x)1200 x300	0.72	0.5	200											4040	4040		4040	2464.3	952.8	4.24	5.61	5.61	5.61	1.32	526.4	525.65	525.6	526.35	0.5	0.18	0		1.5		0.24	0.37		0.13	526.4	526.03	525.9	525.9	1.37	73.1	0

No.	DATE	REVISIONS	DES	DRN	CHK	APD
C	28.11.25	ISSUED FOR CONSTRUCTION	S.C.D.	W.J.H	N.K	J.M.H
B	09.10.25	RFI RESPONSE	S.C.D.	W.J.H	N.K	J.M.H
A	06.06.25	ISSUED FOR APPROVAL	S.C.D.	W.J.H	N.K	J.M.H

DESIGNED S.C.D.
DRAWN W.J.H
CHECKED N.K
APPROVED J.M.H
DATE FEBRUARY 2025
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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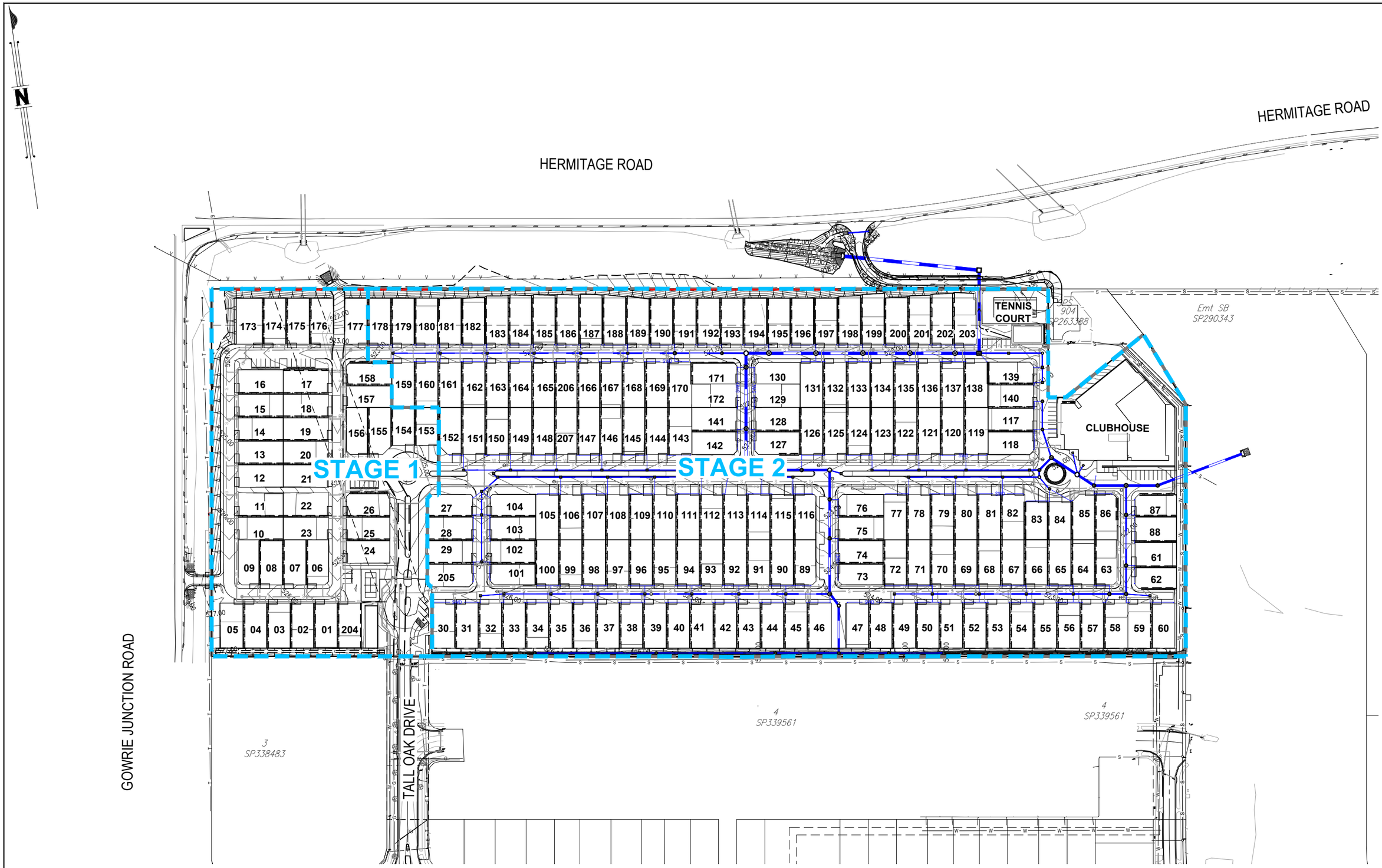
DSQ LAND SURVEYORS
PHONE 07 5437 8555
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 4 of 4
CLIENT DTH PROJECT NO.2 PTY LTD

DRAWING STATUS
FOR CONSTRUCTION
DRAWING NUMBER
B24-058-1-C37
SHEET NUMBER 37 OF 37
REVISION C

B24-058-1-C_Stm_Calcs.dwg



STORMWATER SITE PLAN

SCALE 1:2000 (A1 SIZE) 0 20 40 60 80 100

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DOCUMENT CONTROL
DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au
GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au
SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER SITE PLAN
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C32
SHEET NUMBER 32 OF 82
REVISION B

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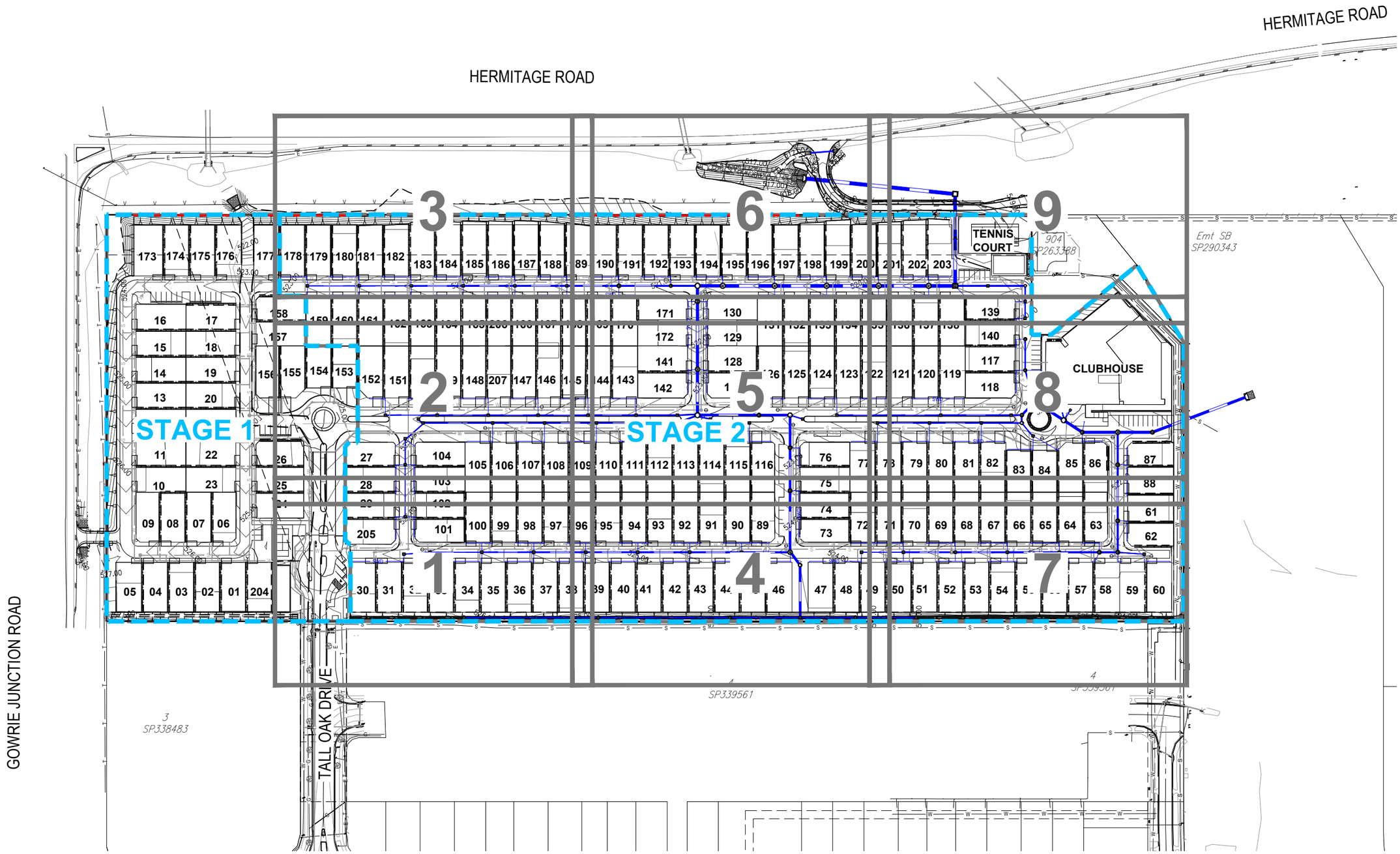

STORMWATER KEY PLAN

SCALE 1:2000 (A1 SIZE)

0 20 40 60 80 100

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER KEY PLAN
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C33
SHEET NUMBER 33 OF 82
REVISION B

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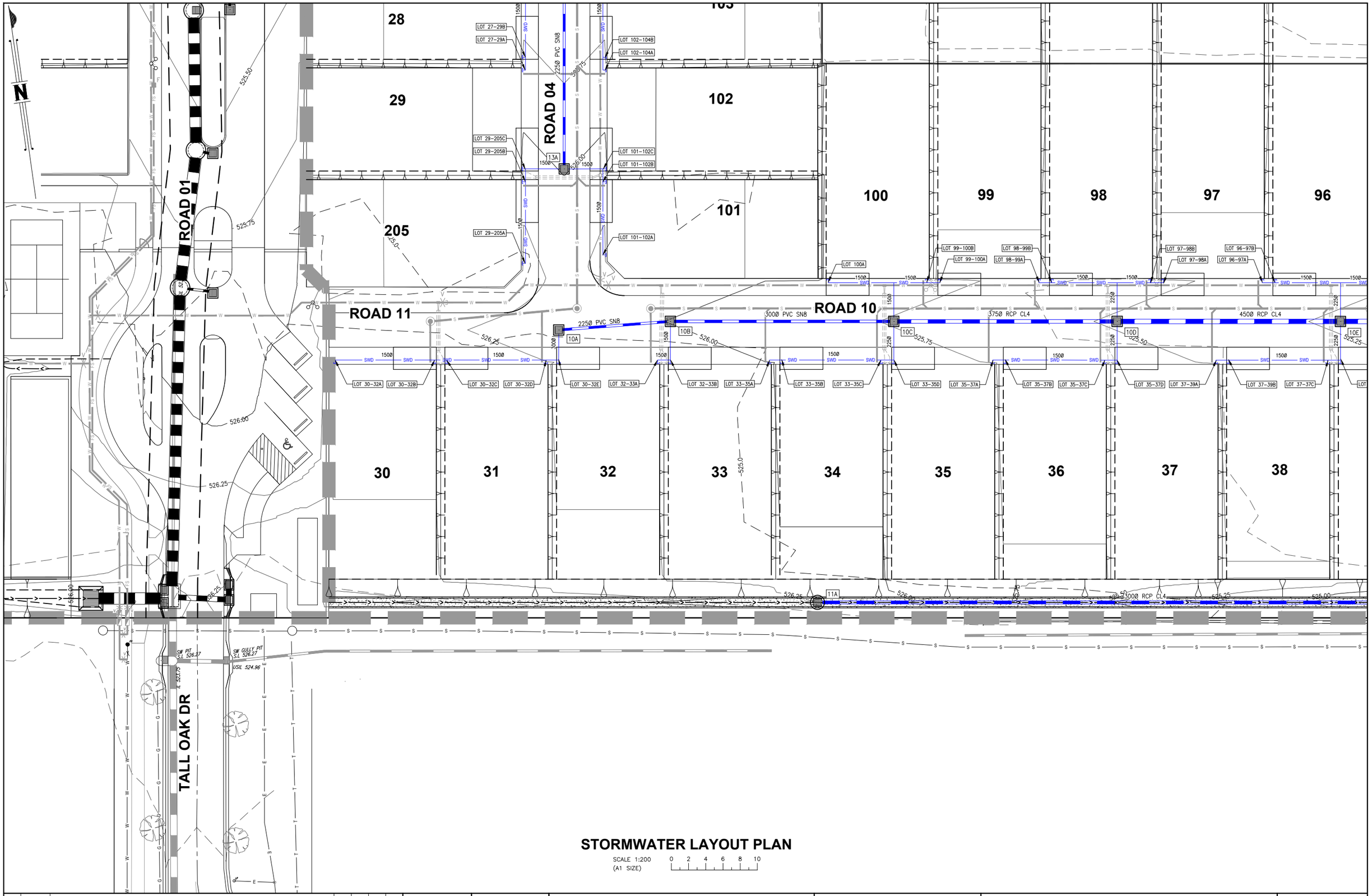

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE)

0 2 4 6 8 10

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
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SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555

DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 1 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C34
SHEET NUMBER 34 OF 82
REVISION B

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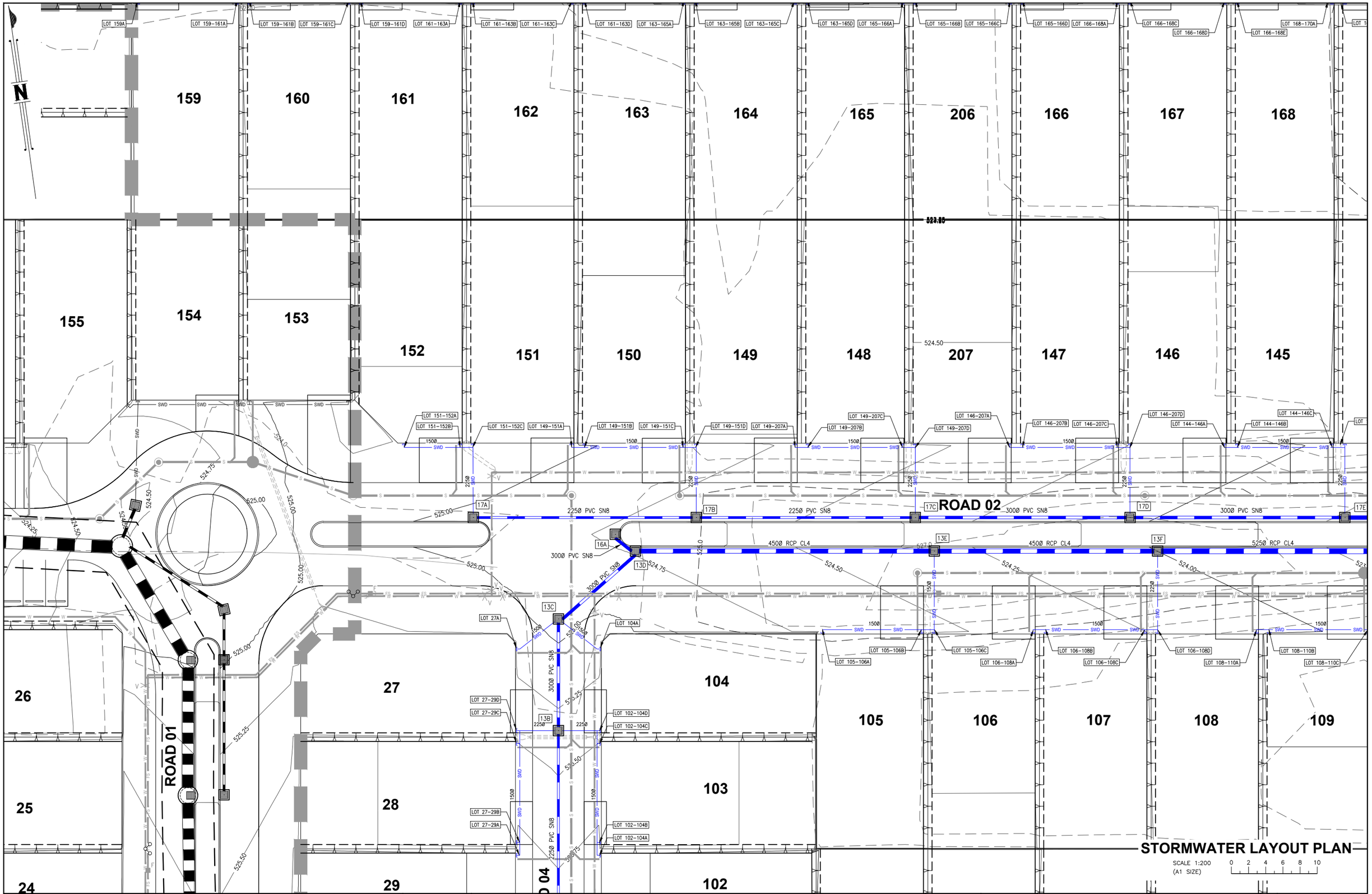

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE)

0 2 4 6 8 10

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT	PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION	LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE	STORMWATER LAYOUT PLAN 2 of 9
CLIENT	GTH PROJECT NO.2 PTY LTD

DRAWING STATUS	FOR APPROVAL
DRAWING NUMBER	B24-058-2-C35
SHEET NUMBER	35 OF 82
REVISION	B

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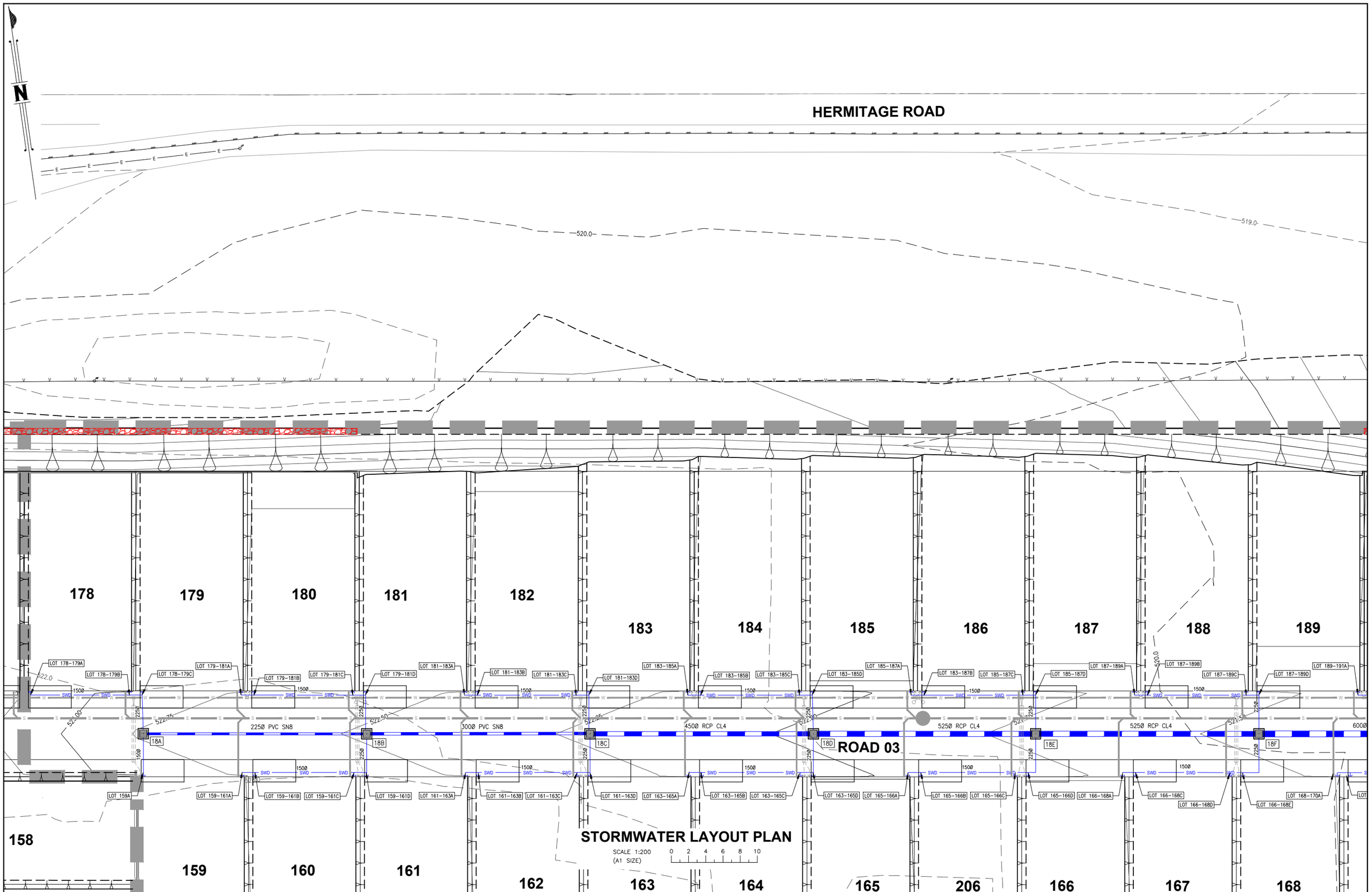

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 3 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C36
SHEET NUMBER 36 OF 82
REVISION A

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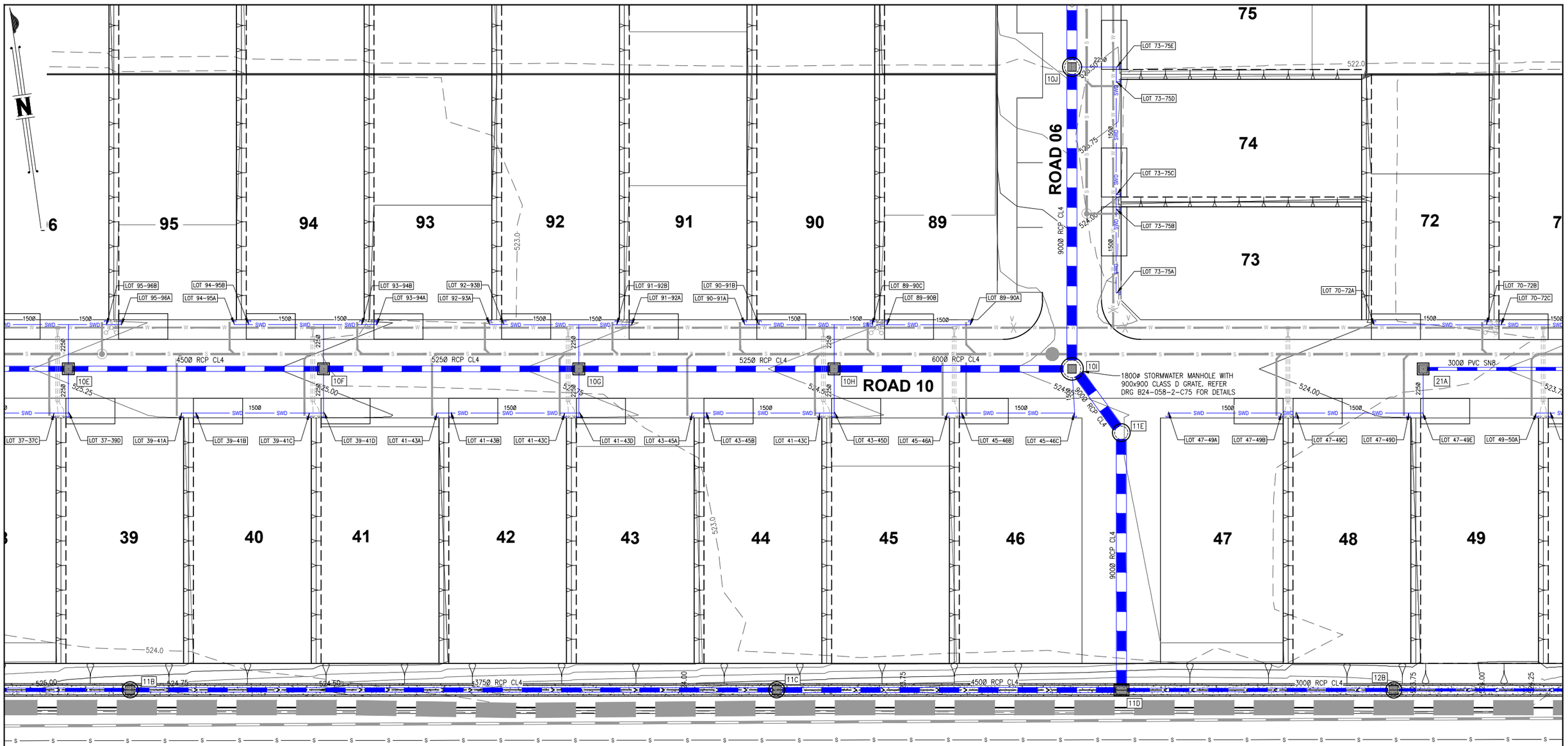

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE) 0 2 4 6 8 10

4
SP339561

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
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PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 4 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C37
SHEET NUMBER 37 OF 82
REVISION B

B24-058-2-C_Stm_Layout.dwg

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE)

0 2 4 6 8 10

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

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DSQ LAND SURVEYORS
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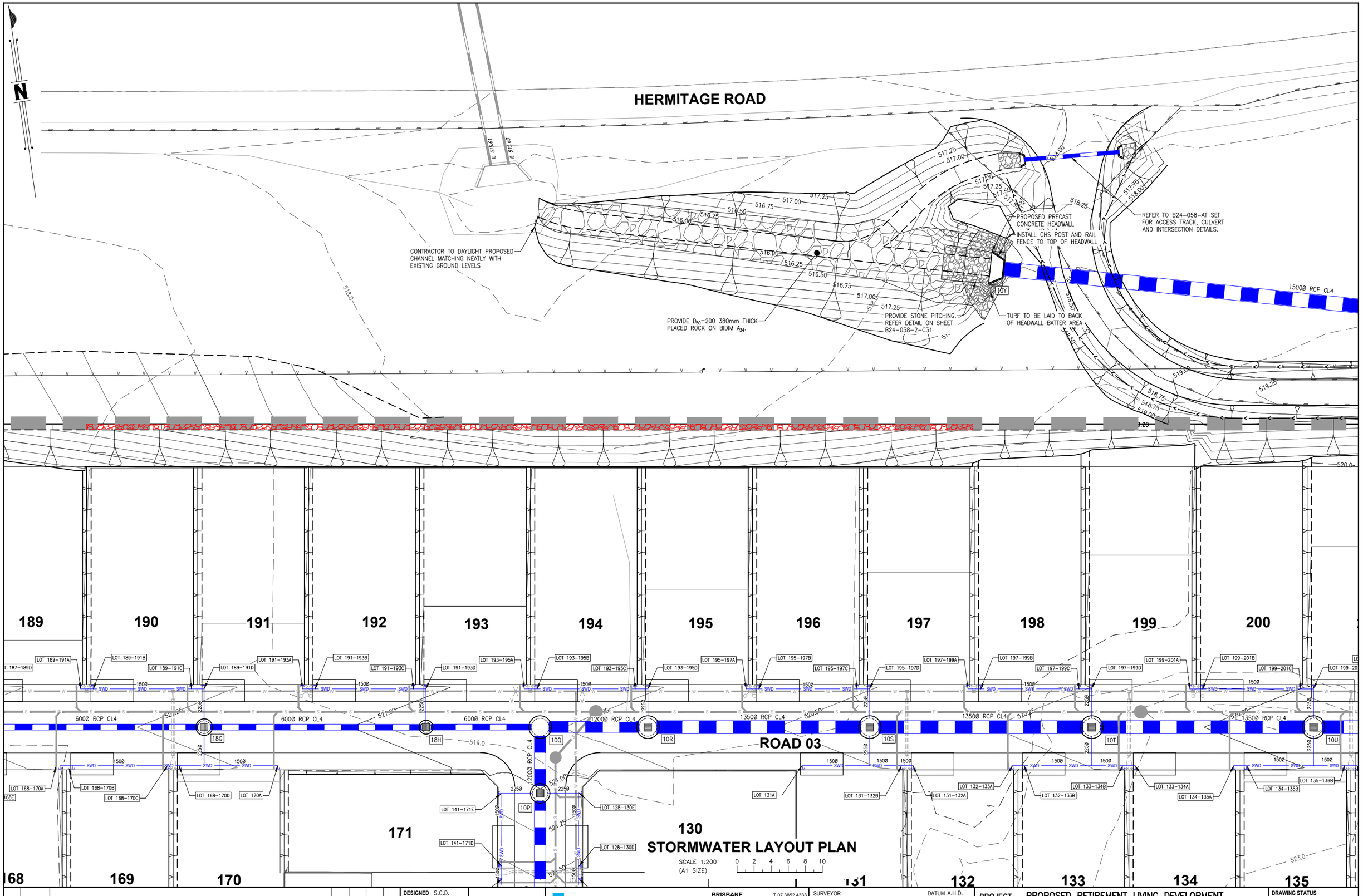
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 5 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C38
SHEET NUMBER 38 OF 82
REVISION A

B24-058-2-C_Stm_Layout.dwg



No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
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NORTHERN NSW T 02 6674 8047
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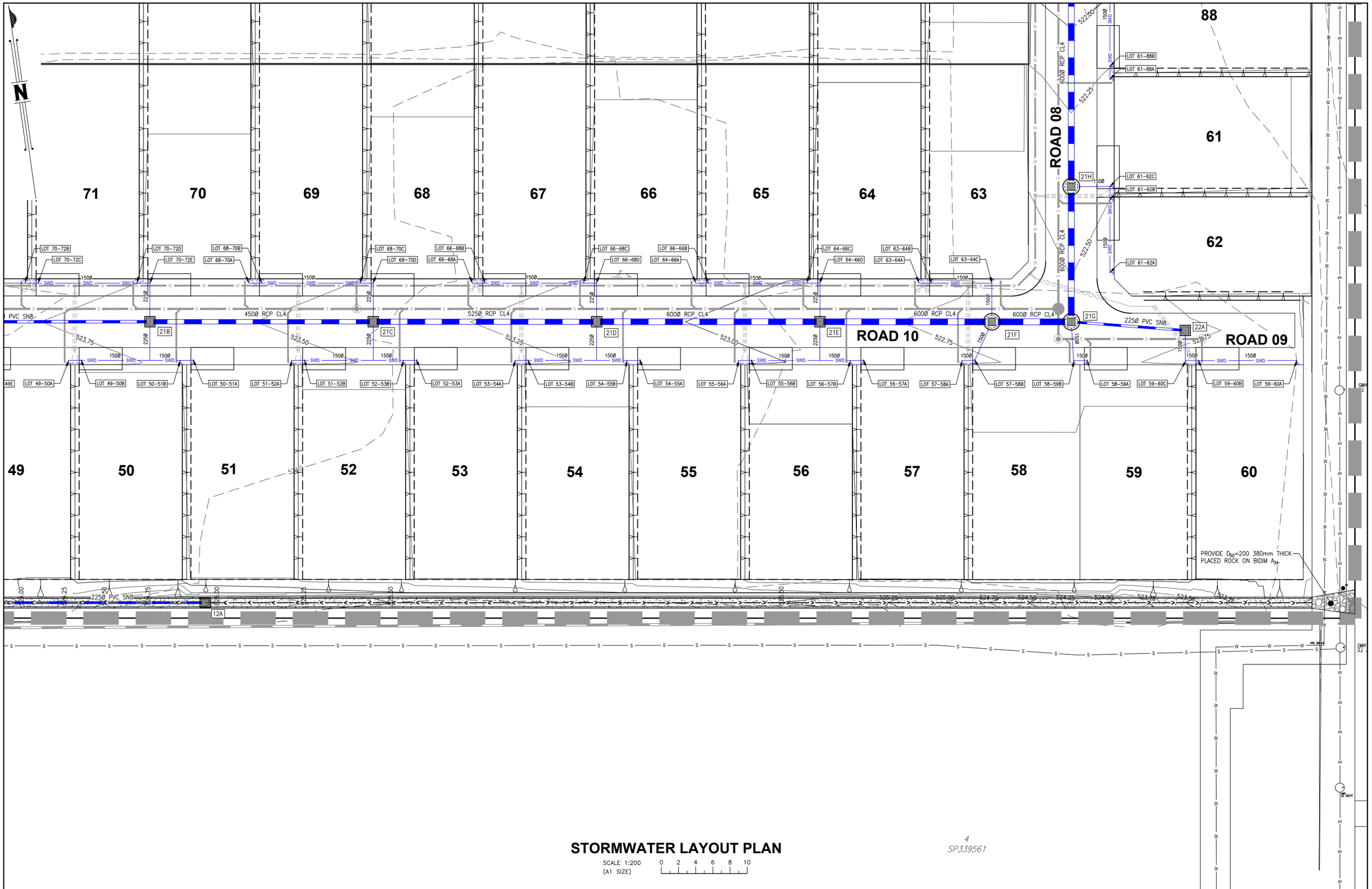
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 6 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24-058-2-C39
SHEET NUMBER: 39 OF 82
REVISION: B

B24-058-2-C_Stm_Layout.dwg



STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE)

0 2 4 6 8 10

4
SP339561

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
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DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 7 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C40
SHEET NUMBER 40 OF 82
REVISION B

B24-058-2-C_Stm_Layout.dwg

STORMWATER LAYOUT PLAN

SCALE 1:200 (A1 SIZE)

0 2 4 6 8 10

ROAD 02

ROAD 03

ROAD 07

CLUBHOUSE

2100x1900 STORMWATER CHAMBER WITH 900x900 CLASS D GRATE. REFER DRG B24-058-2-C74 FOR DETAILS

2100ø STORMWATER MANHOLE WITH 900x900 CLASS D GRATE. REFER DRG B24-058-2-C76 FOR DETAILS

1800ø STORMWATER MANHOLE WITH 900x900 CLASS D GRATE. REFER DRG B24-058-2-C75 FOR DETAILS

1500ø STORMWATER MANHOLE WITH 900x900 CLASS D GRATE. REFER DRG B24-058-2-C76 FOR DETAILS

REFER INSET ON B24-058-2-C42 FOR CONTINUATION

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
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APPROVED J.M.H
DATE MARCH 2026
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PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 8 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C41
SHEET NUMBER 41 OF 82
REVISION B

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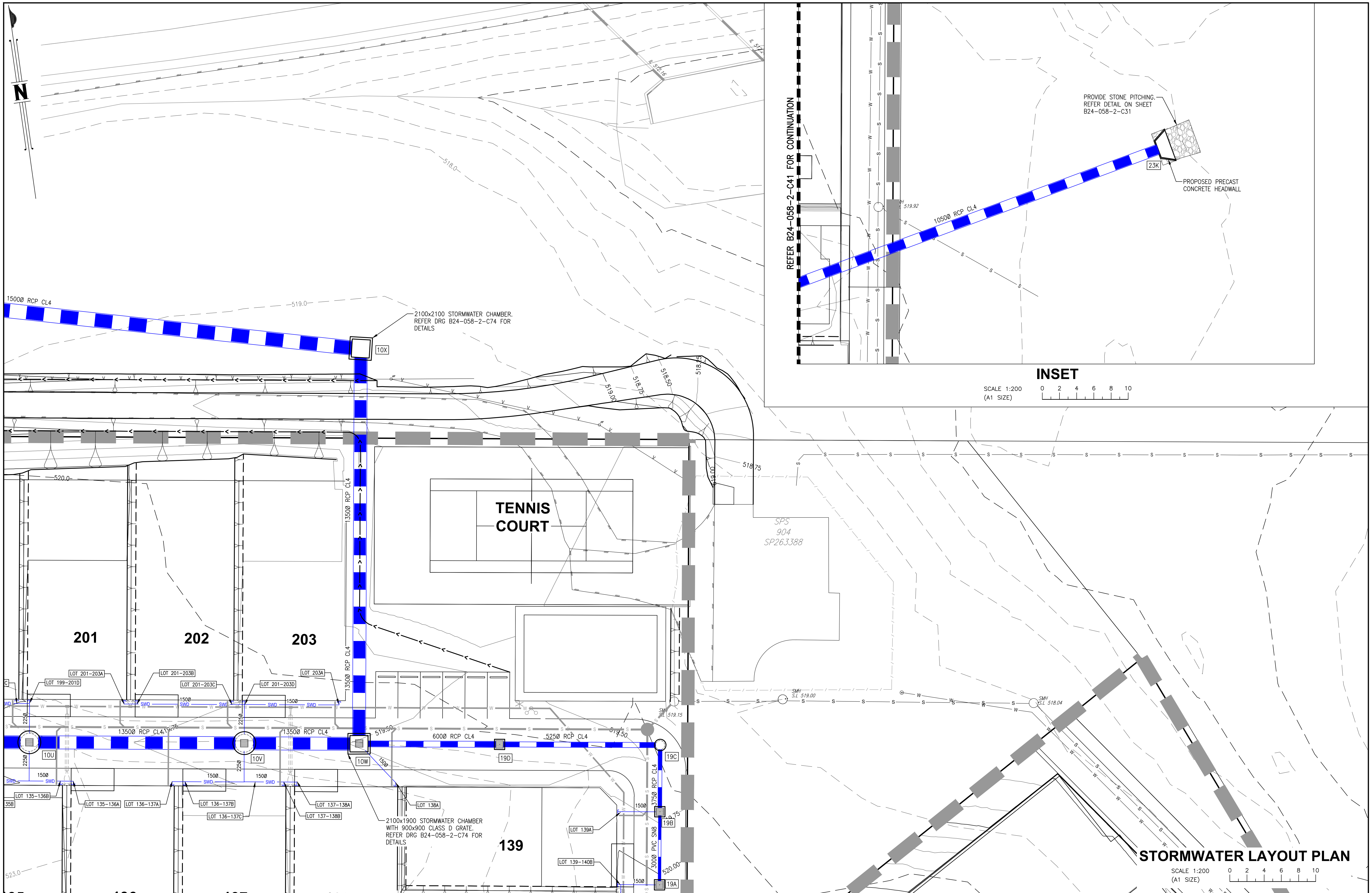

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
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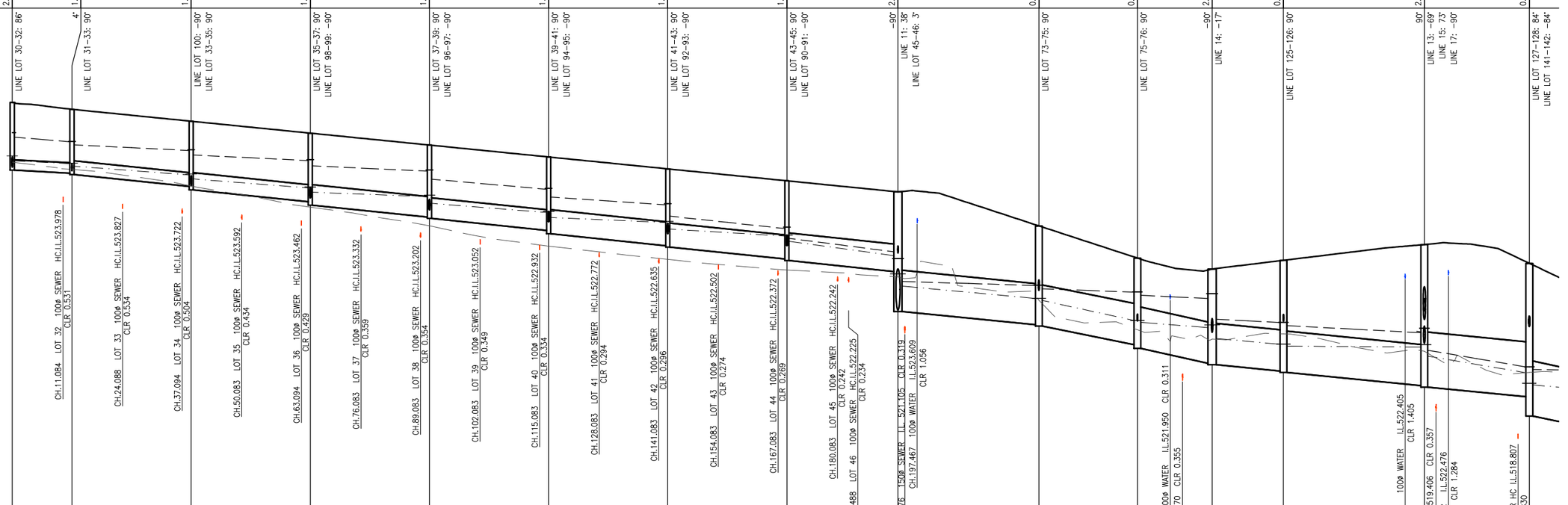
SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LAYOUT PLAN 9 of 9
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C42
SHEET NUMBER 42 OF 82
REVISION A

B24-058-2-C_Stm_Layout.dwg

PIT TYPE		10A FIELD INLET TYPE 2	10B FIELD INLET TYPE 2	10C FIELD INLET TYPE 2	10D FIELD INLET TYPE 2	10E FIELD INLET TYPE 2	10F FIELD INLET TYPE 2	10G FIELD INLET TYPE 2	10H FIELD INLET TYPE 2	10I FIELD INLET TYPE 2	10J FIELD INLET TYPE 2	10K FIELD INLET TYPE 2	10L MANHOLE	10M FIELD INLET TYPE 2	10N MANHOLE	10O FIELD INLET TYPE 2
PIT SIZE		0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.800ø 900 SQ GRATE CLASS D	1.500ø 900 SQ GRATE CLASS D	1.500ø 900 SQ GRATE CLASS D	1.800ø CLASS D	1.500ø 900 SQ GRATE CLASS D	2.100ø CLASS D	1.800ø 900 SQ GRATE CLASS D
PIPE FLOW (L/s)		34.9	54.8	104.9	161.7	219.2	277.3	337.2	402.8	881.1	901.7	921.2	936.7	950.1	1528.5	
PART PIPE VELOCITY (m/s)		0.93	1.43	1.68	1.87	2.01	2.14	2.23	2.37	2.83	3.69	3.84	2.88	2.87	3.22	
FULL PIPE VELOCITY (m/s)		0.88	0.78	0.95	1.02	1.38	1.28	1.56	1.42	1.39	1.42	1.45	1.47	1.49	1.35	
PIT LOSS FACTOR	2.27		1.77	1.89	1.79	1.53	1.31	1.16	1.11	2.43	0.42	0.38	2.12	0.33	2.11	0.34



LEGEND

—·— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

ALL FIELD INLETS ARE TO BE FITTED WITH ATLAN STORMSACK FI.L.TER BASKET

REFER DWG. B24–058–C44 FOR CONTINUATION

DATUM (m)	514.00															
PIPE SIZE (mm)		225ø	300ø	375ø	450ø	450ø	525ø	525ø	600ø	900ø	900ø	900ø	900ø	900ø	1200ø	
PIPE CLASS		PVC SN8	PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	
PIPE GRADE (%)		0.54%	1.04%	1.04%	1.04%	1.04%	1.04%	1.04%	1.06%	1.00%	2.02%	2.23%	1.01%	0.99%	0.99%	
HYDRAULIC GRADE LINE 5% AEP	524.975	524.870	524.818	524.752	524.581	524.474	524.300	524.183	524.121	523.940	523.763	523.632	523.549	523.379	523.246	523.112	522.401	522.136	521.869	521.821	521.387	521.344	521.288	520.993	520.867	520.827	520.856	520.608	520.015	519.979
DEPTH TO INVERT	1.477	1.392	1.422	1.422	1.497	1.497	1.572	1.572	1.602	1.602	1.677	1.677	1.707	1.707	1.737	1.737	2.608	2.158	2.188	1.889	1.969	2.057	2.087	2.417	2.447	3.080	3.110	2.912	3.333	
INVERT LEVEL	524.666	524.600	524.570	524.310	524.235	523.975	523.900	523.640	523.610	523.350	523.275	523.015	522.985	522.725	522.695	522.453	521.582	521.291	521.261	520.857	520.777	520.451	520.421	520.280	520.250	519.961	519.931	519.720	519.299	
FINISHED SURFACE LEVEL	526.143	525.992	525.732	525.472	525.212	524.952	524.692	524.432	524.190	523.449	522.746	522.508	522.697	523.041	522.632															
PIPE CHAINAGE	0.000	13.038	39.038	65.038	91.038	117.038	143.038	169.038	193.267	224.017	245.518	261.817	277.375	308.125	331.025															
PIPE LENGTH	12.136	25.100	25.100	25.100	25.100	25.100	25.100	25.100	22.879	29.100	20.000	14.650	13.908	29.250	21.400															

LINE 10

STORMWATER LONGITUDINAL SECTION LINES 10 (PART)

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555

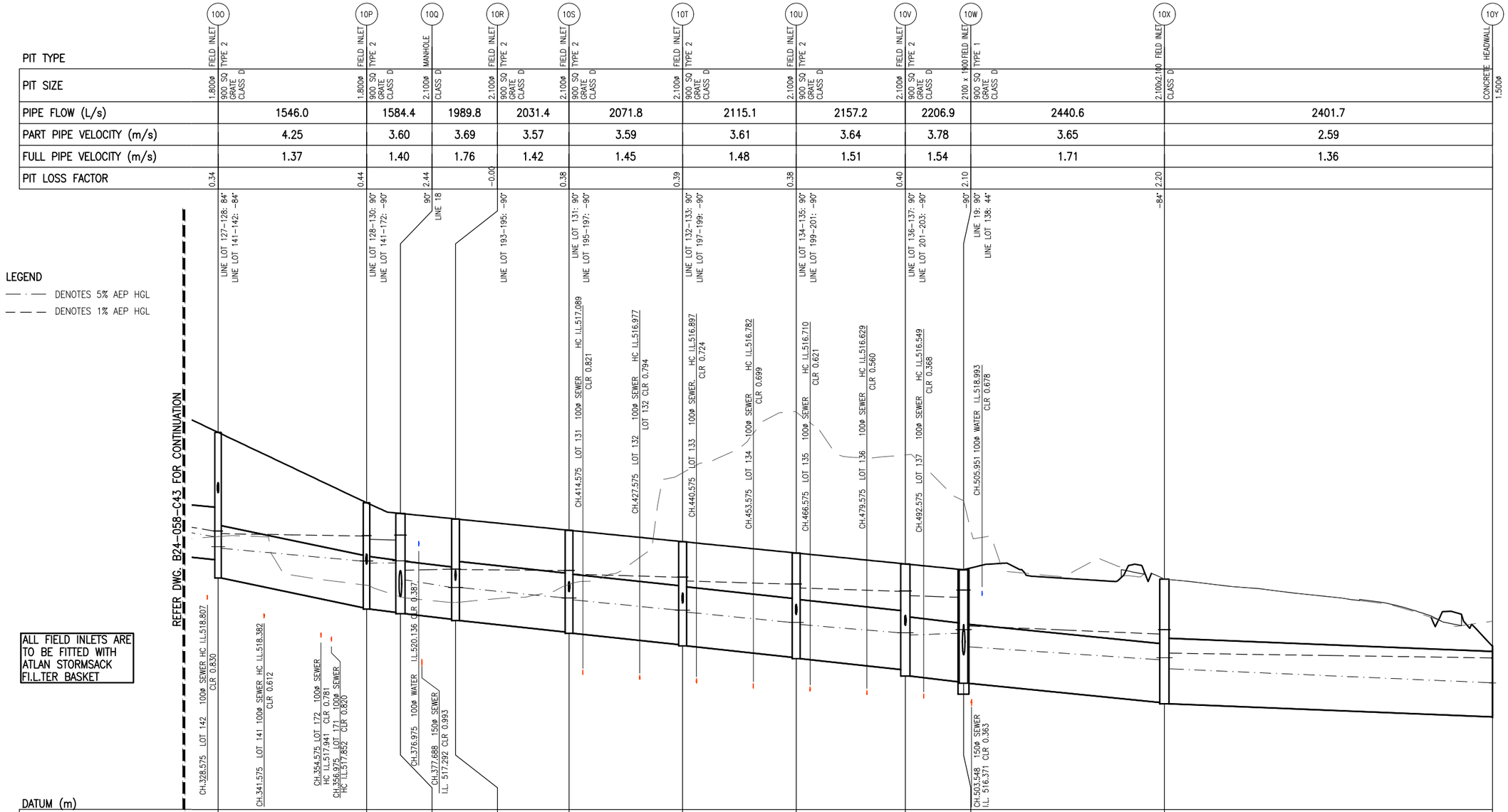
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 10 (PART)
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24–058–2–C43
SHEET NUMBER 43 OF 82
REVISION A

B24–058–2–C_Stm_Lsec.dwg

PIT TYPE		10O FIELD INLET		10P FIELD INLET	10Q MANHOLE	10R FIELD INLET	10S FIELD INLET		10T FIELD INLET		10U FIELD INLET		10V FIELD INLET	10W FIELD INLET		10X FIELD INLET	10Y CONCRETE HEADWALL
PIT SIZE	1.800ø	900 SQ GRATE CLASS D		1.800ø 900 SQ GRATE CLASS D	2.100ø CLASS D	2.100ø 900 SQ GRATE CLASS D	2.100ø 900 SQ GRATE CLASS D		2.100ø 900 SQ GRATE CLASS D		2.100ø 900 SQ GRATE CLASS D		2.100ø 900 SQ GRATE CLASS D	2100 x 1800 900 SQ GRATE CLASS D		2.100ø2.100 CLASS D	1.500ø
PIPE FLOW (L/s)		1546.0		1584.4	1989.8	2031.4	2071.8		2115.1		2157.2		2206.9	2440.6		2401.7	
PART PIPE VELOCITY (m/s)		4.25		3.60	3.69	3.57	3.59		3.61		3.64		3.78	3.65		2.59	
FULL PIPE VELOCITY (m/s)		1.37		1.40	1.76	1.42	1.45		1.48		1.51		1.54	1.71		1.36	
PIT LOSS FACTOR	0.34		0.44		2.44	-0.00		0.38		0.39		0.38			0.40		2.10	2.20	
DATUM (m)																	
PIPE SIZE (mm)		1200ø		1200ø	1200ø	1350ø	1350ø		1350ø		1350ø		1350ø	1350ø		1500ø	
PIPE CLASS		RCP CL4		RCP CL4	RCP CL4	RCP CL4	RCP CL4		RCP CL4		RCP CL4		RCP CL4	RCP CL4		RCP CL4	
PIPE GRADE (%)		2.09%		1.30%	1.18%	1.07%	1.07%		1.07%		1.08%		1.19%	1.00%		0.41%	
HYDRAULIC GRADE LINE 5% AEP	520.015	519.979		519.689	519.640	519.694	519.257	519.083	519.082	518.843	518.800	518.565	518.518	518.284	518.236	518.047	517.994	518.119	517.725	517.477	517.222	516.900
DEPTH TO INVERT	2.912	3.333		2.405	2.435	2.266	2.296	2.296	2.326	2.326	2.356	2.356	2.386	2.386	2.416	2.416	2.566	2.567	2.597	2.823	2.853	1.624
INVERT LEVEL	519.720	519.299		518.619	518.589	518.511	518.481	518.355	518.325	518.065	518.035	517.775	517.745	517.485	517.455	517.205	517.055	516.921	516.891	516.452	516.422	516.121	516.121
FINISHED SURFACE LEVEL	522.632			521.024		520.777		520.651		520.391		520.131		519.871		519.621		519.488		519.275		517.745	
PIPE CHAINAGE	331.025			365.025		372.775		385.398		411.398		437.398		463.398		488.398		501.748		547.712		622.848	
PIPE LENGTH		32.500			5.950	10.673	24.200		24.200		24.200		23.050	11.250		43.964	74.086



STORMWATER LONGITUDINAL SECTIONS LINE 10 (PART)

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25
0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 10 (PART)
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C44
SHEET NUMBER 44 OF 82
REVISION A

B24-058-2-C_Stm_Lsec.dwg

PIT TYPE	11A FIELD INLET TYPE 2	11B FIELD INLET TYPE 2	11C FIELD INLET TYPE 2	11D 1.200 x 0.900 FIELD INLET GRATE CLASS D	11E MANHOLE CLASS D	10I FIELD INLET TYPE 2
PIT SIZE	1.200ø 900 SQ GRATE CLASS D	1.200ø 900 SQ GRATE CLASS D	1.200ø 900 SQ GRATE CLASS D	1.200 x 0.900 FIELD INLET GRATE CLASS D	1.350ø CLASS D	1.800ø 900 SQ GRATE CLASS D
PIPE FLOW (L/s)	41.5	99.5	176.7	475.5	469.2	
PART PIPE VELOCITY (m/s)	1.70	1.91	1.89	1.99	2.01	
FULL PIPE VELOCITY (m/s)	0.59	0.90	1.11	0.75	0.74	
PIT LOSS FACTOR	7.00	2.95	1.78	2.28	1.97	2.41
				-90° LINE 12: 90°	-38°	LINE 10

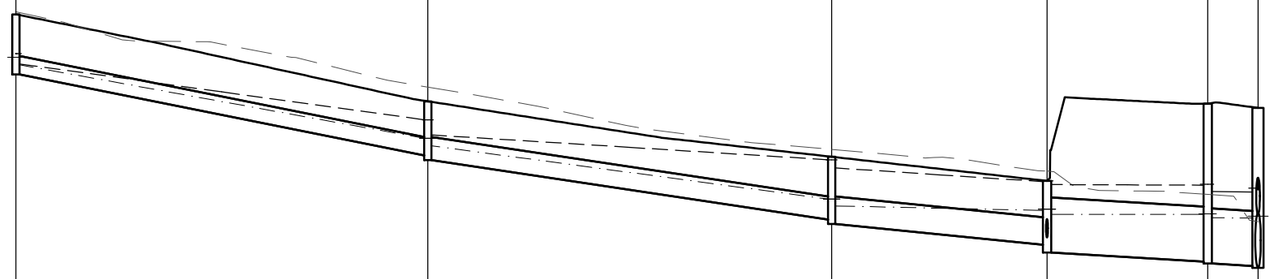
PIT TYPE	12A FIELD INLET TYPE 2	12B FIELD INLET TYPE 2	11D 1.200 x 0.900 FIELD INLET GRATE CLASS D
PIT SIZE	0.900 0.900 CLASS D	1.200ø 900 SQ GRATE CLASS D	1.200 x 0.900 FIELD INLET GRATE CLASS D
PIPE FLOW (L/s)	55.9	79.2	
PART PIPE VELOCITY (m/s)	2.52	1.12	
FULL PIPE VELOCITY (m/s)	1.41	1.12	
PIT LOSS FACTOR	3.61	0.61	2.28
			LINE 11

LEGEND

—·— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

ALL FIELD INLETS ARE TO BE FITTED WITH ATLAN STORMSACK FI.L.TER BASKET



DATUM (m)	517.00						516.00		
PIPE SIZE (mm)	300ø		375ø	450ø	900ø	900ø	225ø		300ø
PIPE CLASS	RCP CL4		RCP CL4	RCP CL4	RCP CL4	RCP CL4	PVC SN8		RCP CL4
PIPE GRADE (%)	2.00%		1.50%	1.00%	0.60%	0.62%	4.61%		0.50%
HYDRAULIC GRADE LINE 5% AEP	525.015 524.892	523.695 523.573	522.703 522.592	522.540 522.454	522.462 522.398	522.427 522.145	524.179 523.815	522.736 522.697	522.540 522.454
DEPTH TO INVERT	0.981	0.881 0.956	1.022 1.097	1.043 1.168	2.574 2.604	2.579 2.608	0.836	0.915 0.990	0.921 1.168
INVERT LEVEL	524.735	523.416 523.341	522.371 522.296	521.957 521.832	521.683 521.653	521.611 521.582	523.620	522.286 522.211	522.079 521.832
FINISHED SURFACE LEVEL	525.716	524.297	523.393	523.000	524.257	524.190	524.456	523.201	523.000
PIPE CHAINAGE	-168.164	-100.994	-35.124	-0.001	26.200	34.414	0.000	29.967	57.686
PIPE LENGTH	65.970		64.670	33.848	24.851	6.639	28.917		26.444
	LINE 11						LINE 12		

STORMWATER LONGITUDINAL SECTION LINES 11 & 12

SCALES (A1 SIZE) 1:500 HORIZONTAL 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER LINE 11 AND 12 AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555 DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 11 & 12
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C45
SHEET NUMBER 45 OF 82
REVISION B

B24-058-2-C_Stm_Lsec.dwg

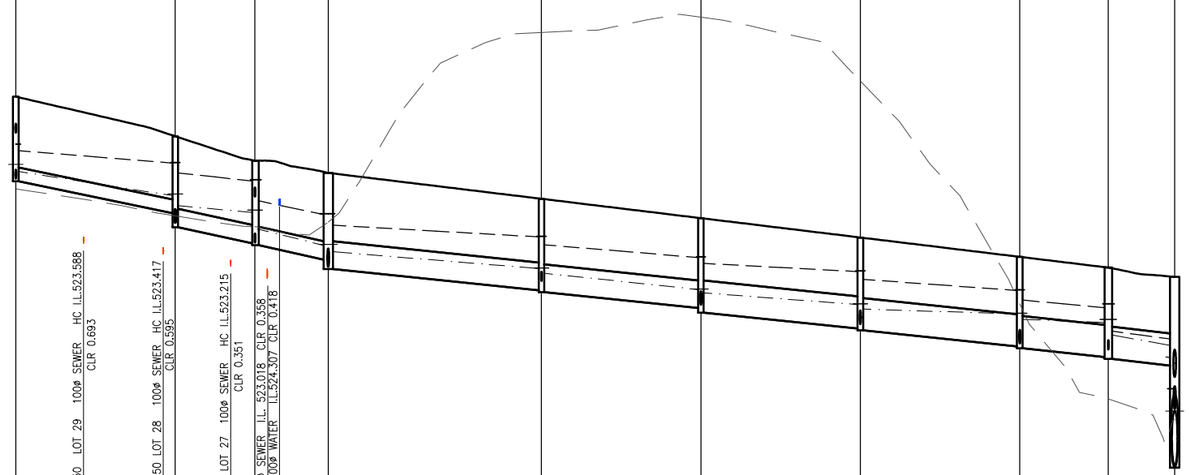
PIT TYPE	13A	13B	13C	13D	13E	13F	13G	13H	13I	10N	14A	10L	15A	15B	15C	10N	16A	13D
	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	FIELD INLET TYPE 2
PIT SIZE	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.200ø 900 SQ GRATE CLASS D	2.100ø CLASS D	0.900 0.900 CLASS D	1.800ø CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	2.100ø CLASS D	0.900 0.900 CLASS D	1.500ø 900 SQ GRATE CLASS D
PIPE FLOW (L/s)	36.4	91.6	117.8	158.5	190.0	227.3	264.4	301.6	329.0		24.7		30.4	66.5	86.0		21.8	
PART PIPE VELOCITY (m/s)	1.67	2.13	2.29	1.86	1.95	2.04	2.12	2.21	2.31		1.24		1.24	1.76	1.70		1.36	
FULL PIPE VELOCITY (m/s)	0.92	1.30	1.67	1.00	1.19	1.05	1.22	1.39	1.52		0.35		0.43	0.60	0.78		0.31	
PIT LOSS FACTOR	2.18 1.92	1.91	2.07	1.06	0.97	0.96	0.89	1.75	2.11		9.70 2.12		2.40 2.36	1.77	2.11		9.70 2.07	

LEGEND

—·— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

ALL FIELD INLETS ARE TO BE FITTED WITH ATLAN STORMSACK FI.L.TER BASKET



DATUM (m)	517.00										514.00		515.00				517.00	
PIPE SIZE (mm)	225ø	300ø	300ø	450ø	450ø	525ø	525ø	525ø	525ø		300ø		300ø	375ø	375ø		300ø	
PIPE CLASS	PVC SN8	PVC SN8	PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4		PVC SN8		PVC SN8	RCP CL4	RCP CL4		PVC SN8	
PIPE GRADE (%)	2.07%	2.15%	2.25%	1.04%	1.04%	1.04%	1.04%	1.08%	1.14%		1.26%		1.06%	1.62%	1.22%		1.77%	
HYDRAULIC GRADE LINE 5% AEP	524.875 524.760	524.393 524.201	524.130 523.823	523.571 523.451	523.188 523.101	522.844 522.781	522.600 522.517	522.449 522.349	522.347 522.093	520.856 520.608	521.372 521.312	521.288 520.993	521.424 521.395	521.252 521.202	521.238 521.169	520.856 520.608	523.604 523.557	523.571 523.451
DEPTH TO INVERT	1.379	1.255 1.484	1.344 1.374	1.414 1.564	1.490 1.520	1.465 1.540	1.484 1.514	1.459 1.489	1.459 1.489	1.445 3.110	1.191	1.382 2.087	1.494	1.875 1.950	1.960 1.990	2.154 3.110	1.480	1.531 1.564
INVERT LEVEL	524.601	524.081 523.851	523.591 523.561	523.322 523.172	522.824 522.794	522.534 522.459	522.199 522.169	521.909 521.879	521.734 521.704	521.596 519.931	521.192	521.126 520.421	521.261	521.089 521.014	520.984 520.954	520.887 519.931	523.236	523.205 523.172
FINISHED SURFACE LEVEL	525.980	525.335	524.935	524.736	524.314	523.999	523.683	523.368	523.193	523.041	522.383	522.508	522.755	522.964	522.944	523.041	524.716	524.736
PIPE CHAINAGE	0.000	26.000	39.000	50.953	85.733	111.733	137.733	163.733	178.180	189.003	0.000	6.638	0.000	17.172	20.232	26.948	0.000	3.060
PIPE LENGTH	25.100	12.100	10.603	33.580	25.100	25.100	25.100	13.397	9.472		5.268		16.272	1.892	5.496		1.726	
	LINE 13										LINE 14		LINE 15				LINE 16	

STORMWATER LONGITUDINAL SECTIONS LINES 13 - 16

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
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SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

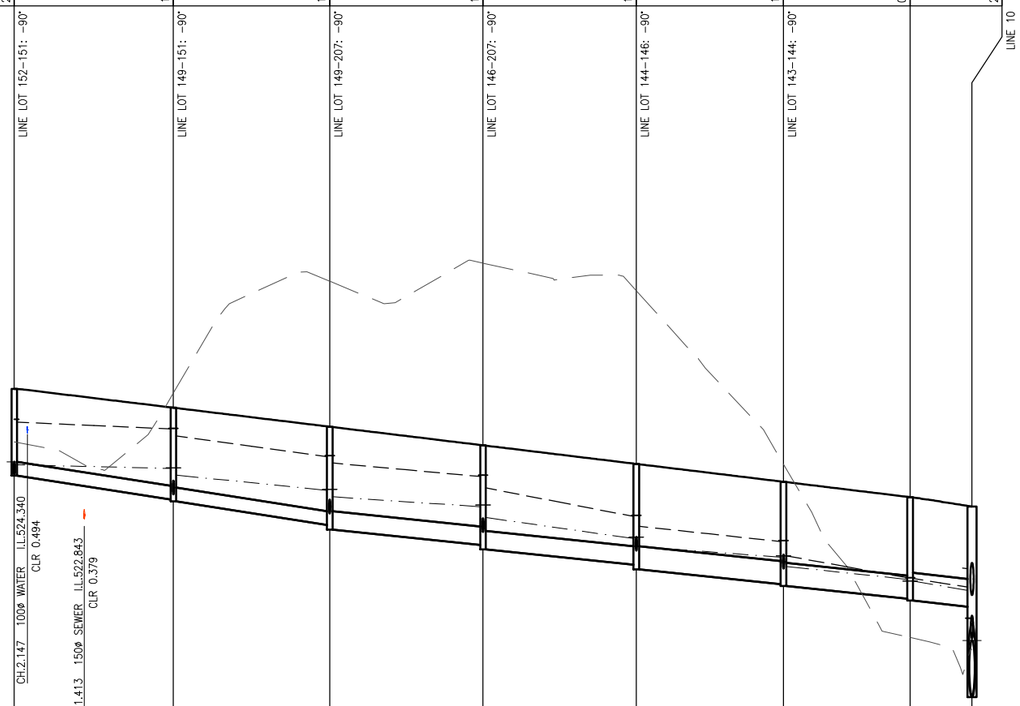
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 13 – 16
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24–058–2–C46
SHEET NUMBER: 46 OF 82
REVISION: A

B24–058–2–C_Stm_Lsec.dwg

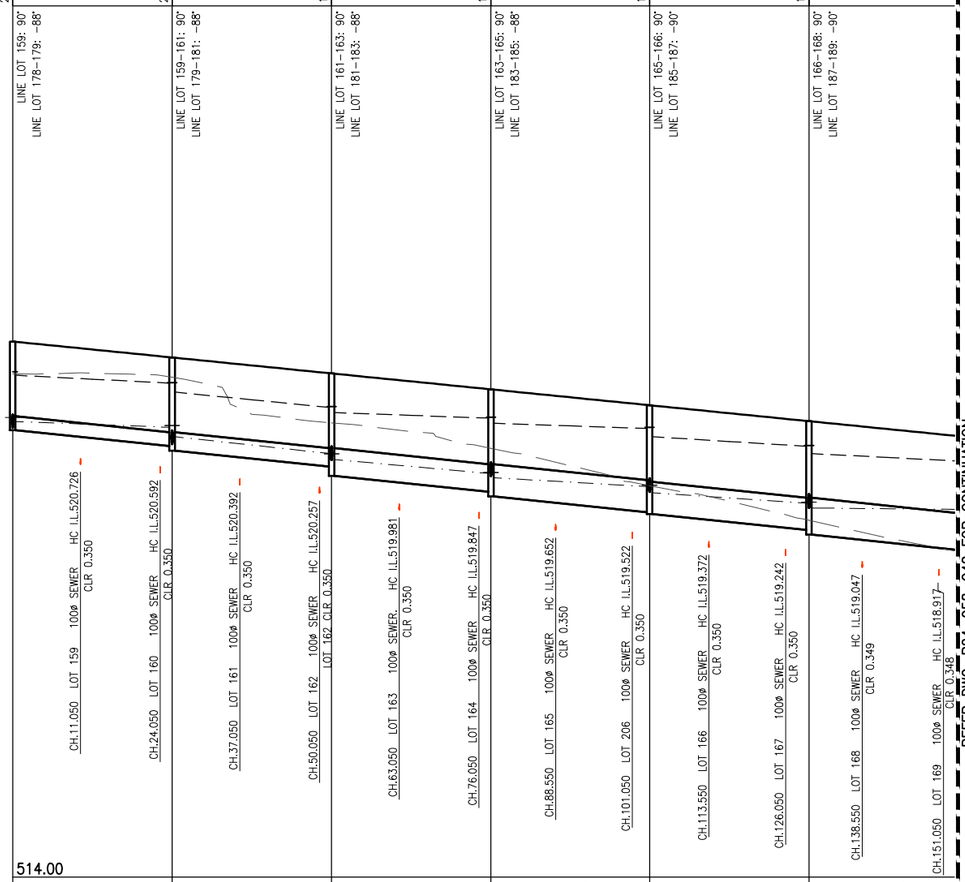
	17A	17B	17C	17D	17E	17F	17G	10N
PIT TYPE	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE CLASS D
PIT SIZE	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	2.100ø CLASS D
PIPE FLOW (L/s)	23.2	45.2	79.3	115.4	151.9	183.8	200.2	
PART PIPE VELOCITY (m/s)	1.34	1.57	1.55	1.63	1.82	1.85	2.04	
FULL PIPE VELOCITY (m/s)	0.58	1.14	1.12	1.63	1.38	1.66	1.26	
PIT LOSS FACTOR 2.25	1.64	1.62	1.30	1.36	1.08	0.00	2.11	



DATUM (m)	517.00							
PIPE SIZE (mm)	225ø	225ø	300ø	300ø	375ø	375ø	450ø	
PIPE CLASS	PVC SN8	PVC SN8	PVC SN8	PVC SN8	RCP CL4	RCP CL4	RCP CL4	
PIPE GRADE (%)	1.55%	1.55%	1.04%	1.04%	1.04%	1.05%	1.13%	
HYDRAULIC GRADE LINE 5% AEP	523.767 523.720	523.671 523.552	523.319 523.199	523.064 522.861	522.543 522.387	522.236 522.062	521.824	520.856 520.608
DEPTH TO INVERT	1.417	1.498 1.528	1.601 1.676	1.623 1.698	1.644 1.719	1.668 1.698	1.654 1.684	1.633 3.110
INVERT LEVEL	523.542	523.153 523.123	522.740 522.665	522.415 522.340	522.090 522.015	521.775 521.745	521.539 521.509	521.408 519.931
FINISHED SURFACE LEVEL	524.959	524.651	524.341	524.038	523.734	523.443	523.193	523.041
PIPE CHAINAGE	0.000	25.957	51.457	76.457	101.457	125.459	146.111	156.207
PIPE LENGTH	25.057	24.600	24.100	24.100	23.101	19.753	8.895	

LINE 17

	18A	18B	18C	18D	18E	18F
	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2
	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D
	27.9	84.6	142.7	201.3	261.0	322.0
	1.21	1.57	1.82	1.98	2.11	2.24
	0.70	1.20	0.90	0.93	1.21	1.14
2.24	2.11	1.84	1.62	1.38	1.21	



REFER DWG. B24–058–C48 FOR CONTINUATION

514.00							
225ø	300ø	450ø	525ø	525ø	600ø		
PVC SN8	PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4		
1.04%	1.04%	1.04%	1.04%	1.04%	1.05%		
521.493 521.426	521.360 521.178	520.899 520.806	520.596 520.509	520.386 520.264	520.110 520.016		
1.443	1.443 1.518	1.518 1.668	1.668 1.743	1.743 1.773	1.773 1.848		
521.287	521.027 520.952	520.692 520.542	520.282 520.207	519.948 519.918	519.658 519.583		
522.730	522.470	522.210	521.950	521.691	521.431		
0.000	26.000	52.000	78.000	103.873	129.873		
25.100	25.100	25.100	24.973	25.100	24.800		

LINE 18

ALL FIELD INLETS ARE TO BE FITTED WITH ATLAN STORMSACK F.I.L.TER BASKET

LEGEND

—·— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

STORMWATER LONGITUDINAL SECTIONS LINES 17 & 18 (PART)

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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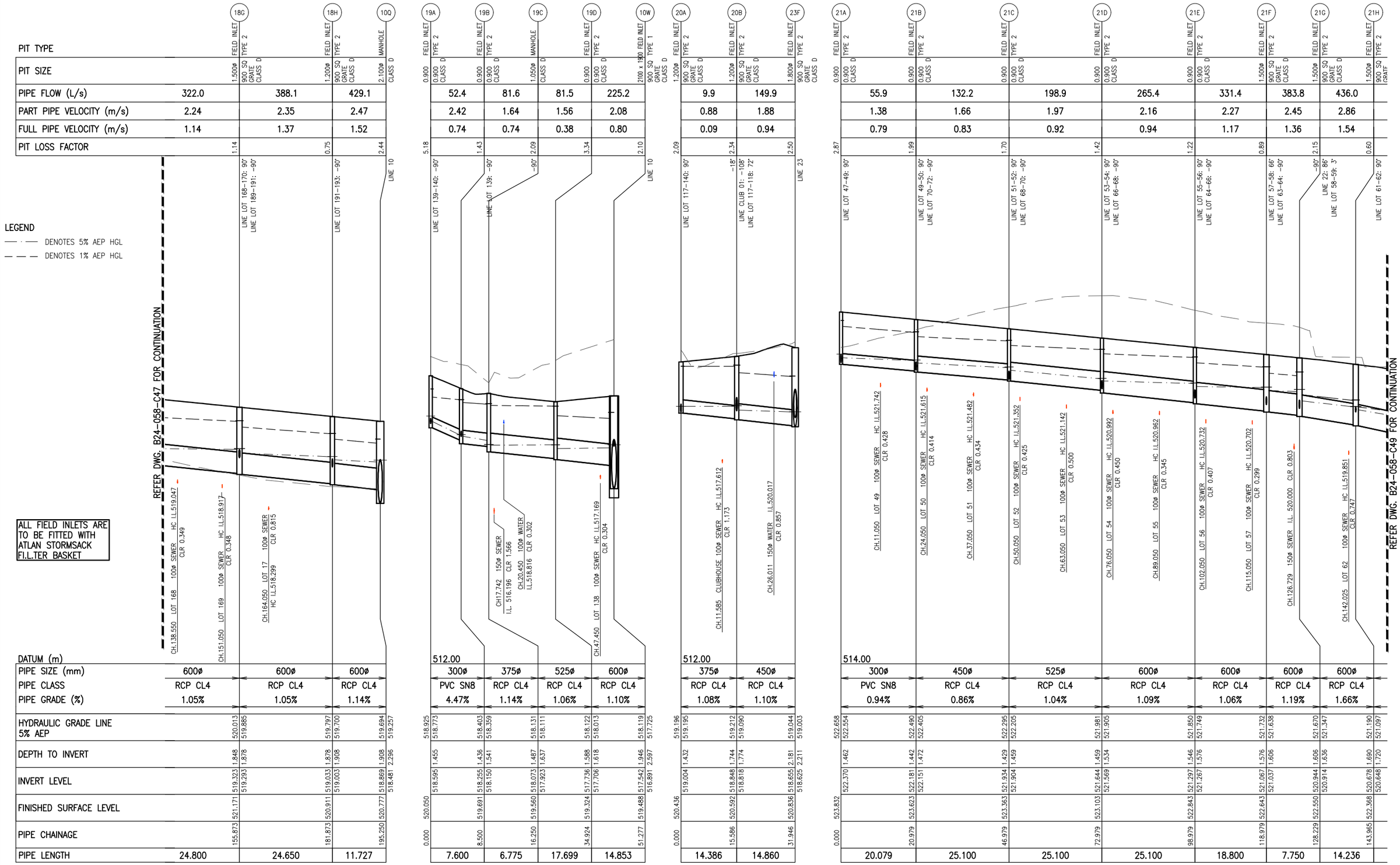
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 17 & 18 (PART)
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24–058–2–C47
SHEET NUMBER 47 OF 82
REVISION A

B24–058–2–C_Stm_Lsec.dwg



PIT TYPE		18G	18H	10Q	19A	19B	19C	19D	10W	20A	20B	23F	21A	21B	21C	21D	21E	21F	21G	21H
		FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	2100 x 1900 FIELD INLET TYPE 1	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2
PIT SIZE		1.500ø 900 SQ GRATE CLASS D	1.200ø 900 SQ GRATE CLASS D	2.100ø CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.050ø CLASS D	0.900 0.900 CLASS D	900 SQ GRATE CLASS D	1.200ø 900 SQ GRATE CLASS D	1.200ø 900 SQ GRATE CLASS D	1.800ø 900 SQ GRATE CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.500ø 900 SQ GRATE CLASS D	1.500ø 900 SQ GRATE CLASS D	1.500ø 900 SQ GRATF
PIPE FLOW (L/s)	322.0	388.1	429.1		52.4	81.6	81.5	225.2		9.9	149.9		55.9	132.2	198.9	265.4	331.4	383.8	436.0	
PART PIPE VELOCITY (m/s)	2.24	2.35	2.47		2.42	1.64	1.56	2.08		0.88	1.88		1.38	1.66	1.97	2.16	2.27	2.45	2.86	
FULL PIPE VELOCITY (m/s)	1.14	1.37	1.52		0.74	0.74	0.38	0.80		0.09	0.94		0.79	0.83	0.92	0.94	1.17	1.36	1.54	
PIT LOSS FACTOR	1.14	0.75	2.44		5.18 1.43	2.09	3.34	2.10		2.09 2.34	2.50		2.87 1.99	1.70	1.42	1.22	0.89	2.15	0.60	
DATUM (m)					512.00					512.00			514.00							
PIPE SIZE (mm)	600ø	600ø	600ø		300ø	375ø	525ø	600ø		375ø	450ø		300ø	450ø	525ø	600ø	600ø	600ø	600ø	
PIPE CLASS	RCP CL4	RCP CL4	RCP CL4		PVC SN8	RCP CL4	RCP CL4	RCP CL4		RCP CL4	RCP CL4		PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	
PIPE GRADE (%)	1.05%	1.05%	1.14%		4.47%	1.14%	1.06%	1.10%		1.08%	1.10%		0.94%	0.86%	1.04%	1.09%	1.06%	1.19%	1.66%	
HYDRAULIC GRADE LINE 5% AEP		520.013 519.865	519.797 519.700	519.694 519.257	518.925 518.773	518.403 518.359	518.131 518.111	518.122 518.013	518.119 517.725	519.196 519.195	519.212 519.090	519.044 519.003	522.658 522.554	522.490 522.405	522.295 522.205	521.981 521.905	521.850 521.749	521.732 521.638	521.670 521.347	521.190 521.097
DEPTH TO INVERT		1.848 1.878	1.878 1.908	1.908 2.296	1.455 1.436	1.541 1.487	1.637 1.588	1.618 1.946	2.597	1.432 1.744	1.774 2.181	2.211	1.462 1.442	1.472 1.429	1.459 1.546	1.534 1.459	1.576 1.546	1.576 1.606	1.606 1.636	1.690 1.720
INVERT LEVEL		519.323 519.293	519.033 519.003	518.869 518.481	518.595 518.255	518.150 518.073	517.923 517.736	517.706 518.869	517.542 516.891	519.004 518.848	518.818 518.655	518.625	522.370 522.181	522.151 521.934	521.904 521.297	521.569 521.267	521.644 521.067	521.037 520.944	520.914 520.678	520.648
FINISHED SURFACE LEVEL		521.171 519.691	520.911 519.560	520.777 519.488	520.050 519.324	519.277				520.436 520.592	520.836		523.832 523.623	523.363 523.103	522.843 522.643	522.550 522.368				
PIPE CHAINAGE		155.873 8.500	181.873 16.250	195.250 34.924	0.000 51.277					0.000 15.586	31.946		0.000 20.979	46.979	72.979	98.979	118.979	128.229	143.965	
PIPE LENGTH	24.800	24.650	11.727		7.600	6.775	17.699	14.853		14.386	14.860		20.079	25.100	25.100	25.100	18.800	7.750	14.236	
		LINE 19								LINE 20			LINE 21							

STORMWATER LONGITUDINAL SECTIONS LINES 18 (PART), 19 - 21 (PART)

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25
0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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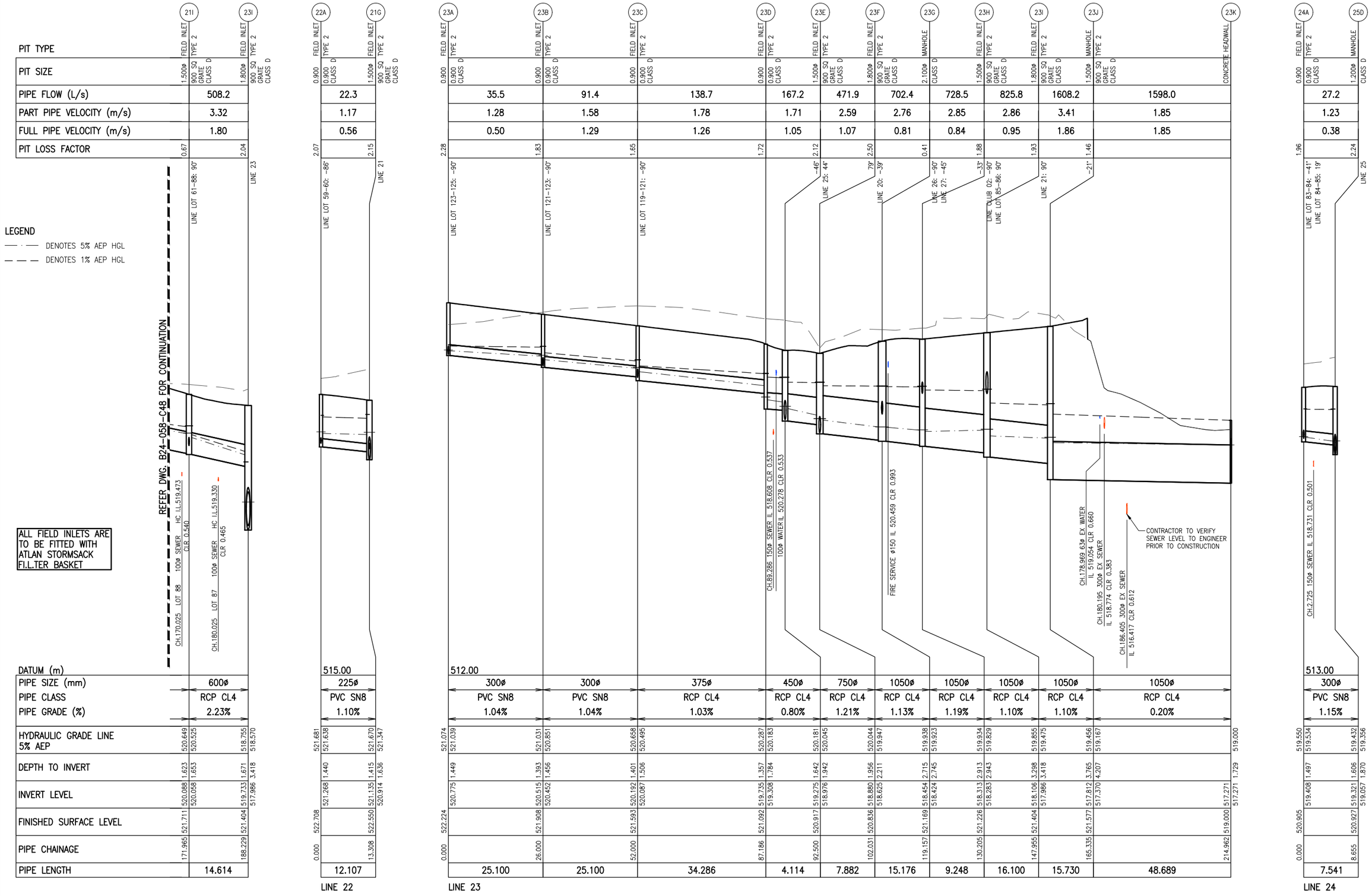
SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 18 (PART),19 – 21 (PART)
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C48
SHEET NUMBER 48 OF 82
REVISION A

B24-058-2-C_Stm_Lsec.dwg



PIT TYPE	21I	23I	22A	21G	23A	23B	23C	23D	23E	23F	23G	23H	23I	23J	23K	24A	25D
	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE TYPE 2	CONCRETE HEADWALL	FIELD INLET TYPE 2	MANHOLE TYPE 2
PIT SIZE	1.500ø 900 SQ GRATE CLASS D	1.800ø 900 SQ GRATE CLASS D	0.900 0.900 CLASS D	1.500ø 900 SQ GRATE CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.500ø 900 SQ GRATE CLASS D	1.800ø 900 SQ GRATE CLASS D	2.100ø CLASS D	1.500ø 900 SQ GRATE CLASS D	1.800ø 900 SQ GRATE CLASS D	1.500ø 900 SQ GRATE CLASS D		0.900 0.900 CLASS D	1.200ø CLASS D
PIPE FLOW (L/s)	508.2		22.3		35.5	91.4	138.7	167.2	471.9	702.4	728.5	825.8	1608.2	1598.0		27.2	
PART PIPE VELOCITY (m/s)	3.32		1.17		1.28	1.58	1.78	1.71	2.59	2.76	2.85	2.86	3.41	1.85		1.23	
FULL PIPE VELOCITY (m/s)	1.80		0.56		0.50	1.29	1.26	1.05	1.07	0.81	0.84	0.95	1.86	1.85		0.38	
PIT LOSS FACTOR	0.67	2.04	2.07	2.15	2.28	1.83	1.65	1.72	2.12	2.50	0.41	1.88	1.93	1.46		1.96	2.24
DATUM (m)			515.00		512.00											513.00	
PIPE SIZE (mm)	600ø		225ø		300ø	300ø	375ø	450ø	750ø	1050ø	1050ø	1050ø	1050ø	1050ø		300ø	
PIPE CLASS	RCP CL4		PVC SN8		PVC SN8	PVC SN8	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4	RCP CL4		PVC SN8	
PIPE GRADE (%)	2.23%		1.10%		1.04%	1.04%	1.03%	0.80%	1.21%	1.13%	1.19%	1.10%	1.10%	0.20%		1.15%	
HYDRAULIC GRADE LINE 5% AEP	520.649 520.525	518.755 518.570	521.681 521.638	521.670 521.347	521.074 521.039	521.031 520.851	520.658 520.495	520.287 520.183	520.181 520.045	520.044 519.947	519.938 519.923	519.934 519.829	519.855 519.475	519.456 519.167	519.000	519.550 519.534	519.432 519.356
DEPTH TO INVERT	1.623 1.653	1.671 3.418	1.440	1.415 1.636	1.449	1.393 1.456	1.401 1.506	1.357 1.784	1.642 1.942	1.956 2.211	2.715 2.745	2.913 2.943	3.298 3.418	3.765 4.207	1.729	1.497	1.606 1.870
INVERT LEVEL	520.088 520.058	519.733 517.986	521.268	521.135 520.914	520.775	520.515 520.452	520.192 520.087	519.735 519.308	519.275 518.976	518.880 518.625	518.454 518.424	518.313 518.283	518.106 517.986	517.812 517.370	517.271 517.271	519.408	519.321 519.057
FINISHED SURFACE LEVEL	521.711	521.404	522.708	522.550	522.224	521.908	521.593	521.092	520.917	520.836	521.169	521.226	521.404	521.577	519.000	520.905	520.927
PIPE CHAINAGE	171.965	188.229	0.000	13.308	0.000	26.000	52.000	87.186	92.500	102.031	119.157	130.205	147.955	165.335	214.962	0.000	8.655
PIPE LENGTH	14.614		12.107		25.100	25.100	34.286	4.114	7.882	15.176	9.248	16.100	15.730	48.689		7.541	
	LINE 23		LINE 22		LINE 23											LINE 24	

STORMWATER LONGITUDINAL SECTIONS LINES 21 (PART), 22 - 24

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25
0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
B	19.03.26	ISSUED FOR APPROVAL – STORMWATER LINE 23 AMENDMENTS	S.C.D.	P.H.Z	J.M.H	J.M.H
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DOCUMENT CONTROL: DESIGNED S.C.D. | DRAWN P.H.Z | CHECKED J.M.H | APPROVED J.M.H | DATE MARCH 2026

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

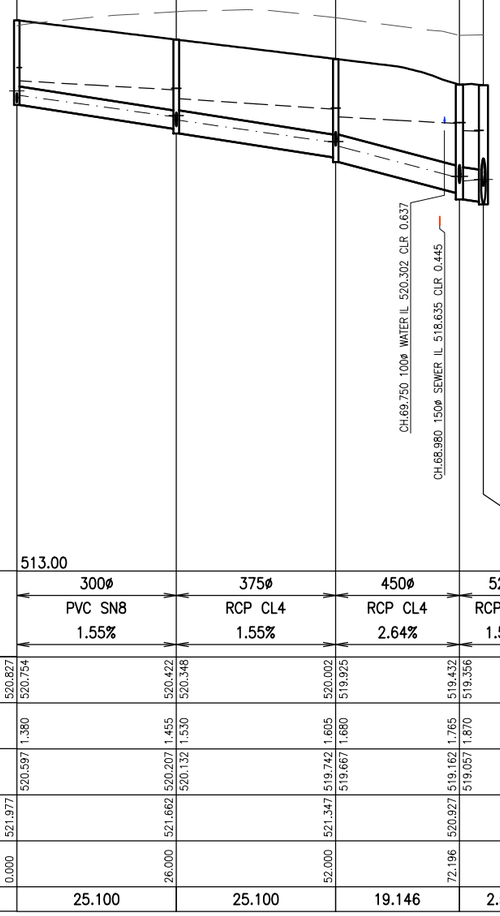
SURVEYOR: DSQ LAND SURVEYORS, PHONE 07 5437 8555 | DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT: PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION: LOT 1 ON SP330786, TALL OAK DRIVE, COTSWOLD HILLS
TITLE: STORMWATER LONGITUDINAL SECTIONS LINES 21 (PART), 22 – 24
CLIENT: GTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24-058-2-C49
SHEET NUMBER: 49 OF 82
REVISION: B

B24-058-2-C_Stm_Lsec.dwg

PIT TYPE	25A	25B	25C	25D	23E	26A	23G	27A	23G
	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	MANHOLE	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2	FIELD INLET TYPE 2
PIT SIZE	0.900 0.900 CLASS D	0.900 0.900 CLASS D	0.900 0.900 CLASS D	1.200ø CLASS D	1.500ø 900 SQ GRATE CLASS D	0.600 0.600 CLASS D	2.100ø 900 SQ GRATE CLASS D	0.600 0.600 CLASS D	2.100ø 900 SQ GRATE CLASS D
PIPE FLOW (L/s)	41.6	86.9	136.1	161.4		3.5		1.4	
PART PIPE VELOCITY (m/s)	1.55	1.87	2.53	2.15		0.71		0.51	
FULL PIPE VELOCITY (m/s)	0.59	0.79	0.86	0.75		0.05		0.02	
PIT LOSS FACTOR	3.64 1.82	1.67	2.24	2.22		7.00 0.41		7.00 0.41	
	LINE LOT 77-78: 90°	LINE LOT 78-80: 90°	LINE LOT 80-82: 90°	-90° LINE 24: 41°	LINE 23		LINE 23		LINE 23



DATUM (m)	513.00					513.00		513.00	
PIPE SIZE (mm)	300ø	375ø	450ø	525ø		300ø		300ø	
PIPE CLASS	PVC SN8	RCP CL4	RCP CL4	RCP CL4		PVC SN8		PVC SN8	
PIPE GRADE (%)	1.55%	1.55%	2.64%	1.53%		1.29%		1.12%	
HYDRAULIC GRADE LINE 5% AEP	520.827 520.754	520.422 520.348	520.002 519.925	519.432 519.356	519.383 519.319	519.324 519.323	518.815 518.809	519.322	518.815 518.809
DEPTH TO INVERT	1.380	1.455 1.530	1.605 1.680	1.765 1.870	1.899 1.942	1.471	1.950 2.745	1.456	1.998 2.745
INVERT LEVEL	520.597	520.207 520.132	519.742 519.667	519.162 519.057	519.018 518.976	519.279	519.219 518.424	519.294	519.171 518.424
FINISHED SURFACE LEVEL	521.977	521.662	521.347	520.927	520.917	520.750	521.169	520.750	521.169
PIPE CHAINAGE	0.000	26.000	52.000	72.196	76.096	0.000	6.057	0.000	12.310
PIPE LENGTH	25.100	25.100	19.146	2.550		4.707		10.960	
	LINE 25					LINE 26		LINE 27	

LEGEND

—·— DENOTES 5% AEP HGL

— — — DENOTES 1% AEP HGL

STORMWATER LONGITUDINAL SECTIONS LINES 25 - 27

SCALES (A1 SIZE) 1:500 HORIZONTAL, 1:50 VERTICAL

0 5 10 15 20 25

0 0.5 1.0 1.5 2.0 2.5

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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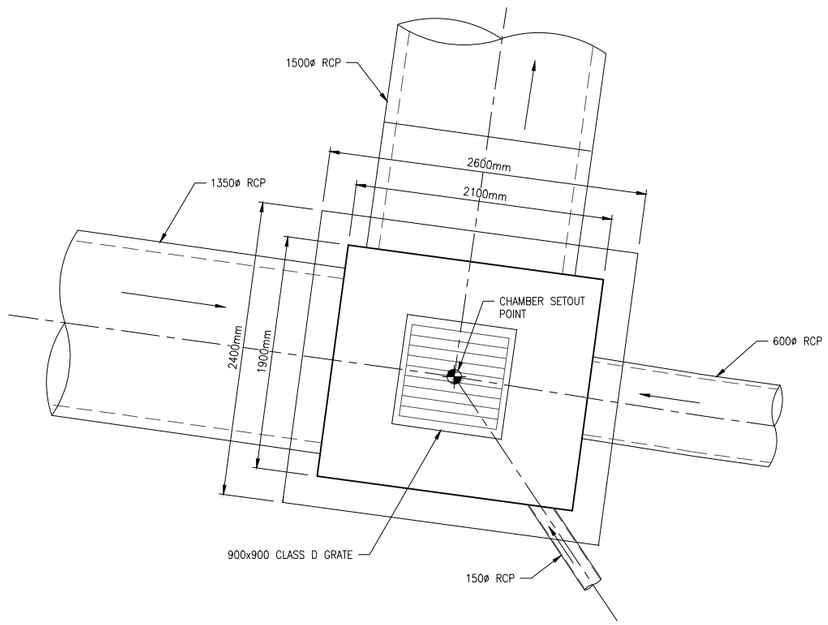
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR DSQ LAND SURVEYORS PHONE 07 5437 8555
DATUM A.H.D. PSM 191512 R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER LONGITUDINAL SECTIONS LINES 25 – 27
CLIENT GTH PROJECT NO.2 PTY LTD

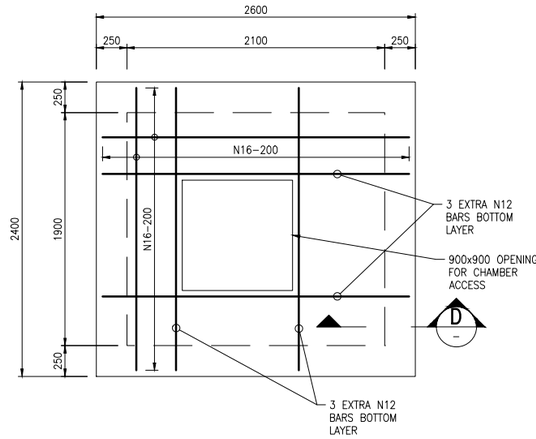
DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C50
SHEET NUMBER 50 OF 82
REVISION A

B24-058-2-C_Stm_Lsec.dwg



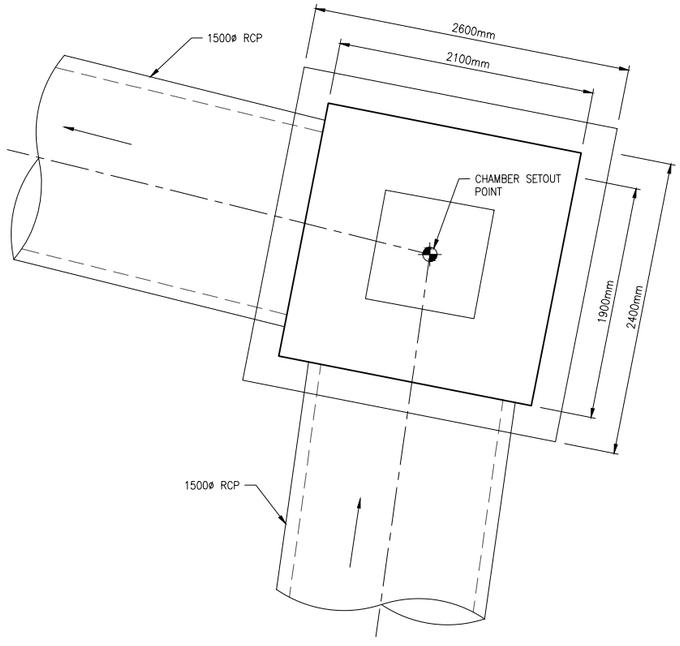
STORMWATER CHAMBER 10W DETAIL

SCALE 1:25 @ A1 SIZE



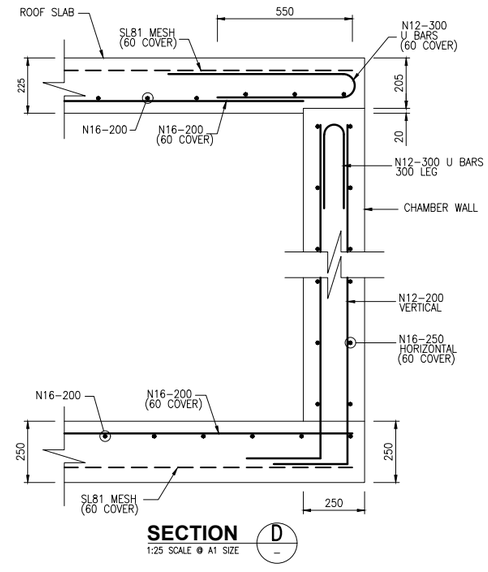
BOTTOM REINFORCEMENT PLAN

SCALE 1:25 @ A1 SIZE



STORMWATER CHAMBER 10X DETAIL

SCALE 1:25 @ A1 SIZE



1900x2100 STORMWATER CHAMBER DETAILS

NOTE:
ALL REINFORCEMENT SHOWN IS TO BE CHECKED AGAINST DTMR STD DWG SD–1304.

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
APPROVED

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E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047
E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922
E centralvic@westerapartners.com.au

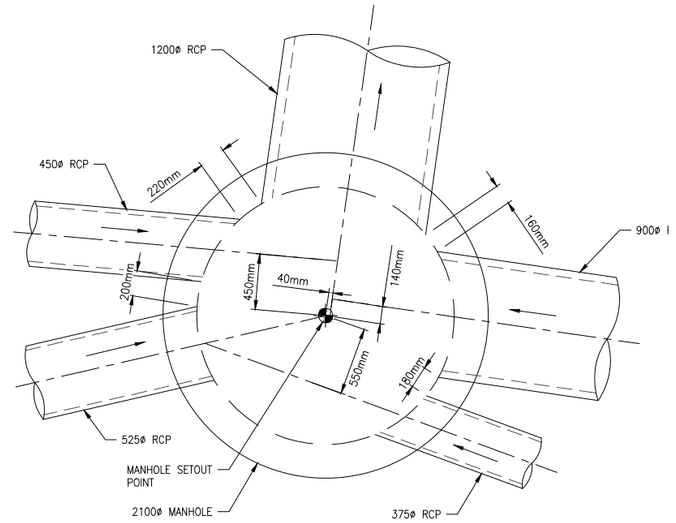
SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT: PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION: LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE: STORMWATER DETAILS 1 of 3
CLIENT: GTH PROJECT NO.2 PTY LTD

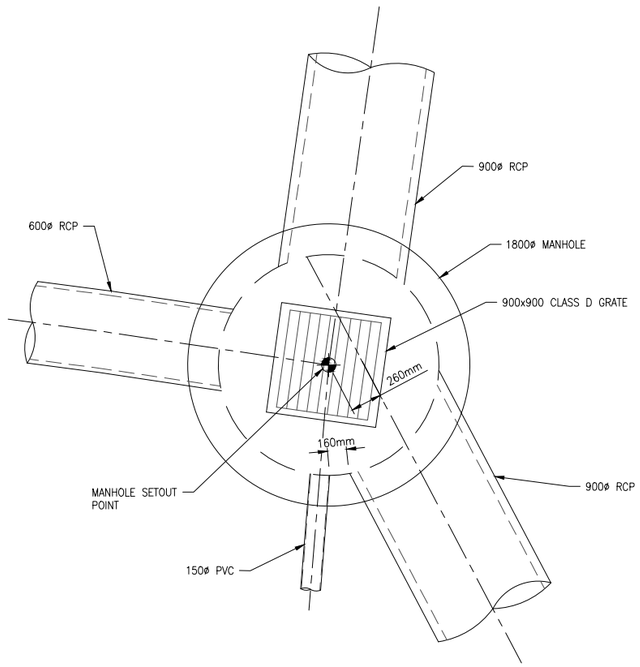
DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24–058–2–C74
SHEET NUMBER: 74 OF 82
REVISION: A

B24–058–2–C_Stm_Details.dwg



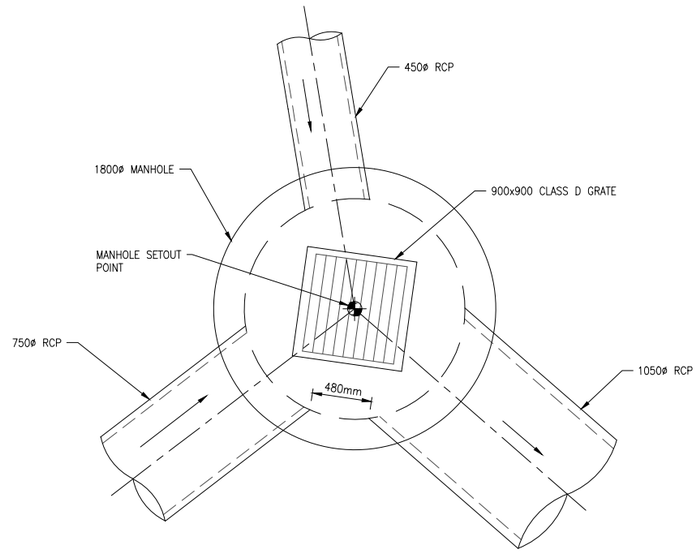
STORMWATER MANHOLE 10N DETAIL

SCALE 1:25 @ A1 SIZE



STORMWATER MANHOLE 10I DETAIL

SCALE 1:25 @ A1 SIZE



STORMWATER MANHOLE 23F DETAIL

SCALE 1:25 @ A1 SIZE

NOTE:
ALL REINFORCEMENT SHOWN IS TO BE CHECKED AGAINST DTMR STD DWG SD-1304.

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au
SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

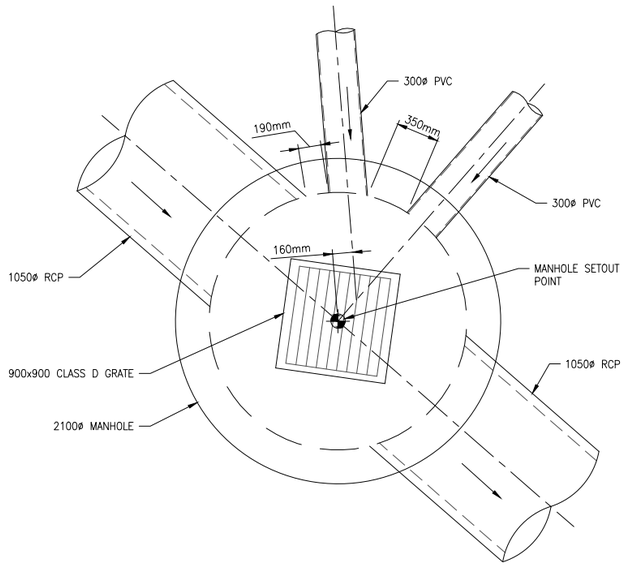
SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER DETAILS 2 of 3
CLIENT GTH PROJECT NO.2 PTY LTD

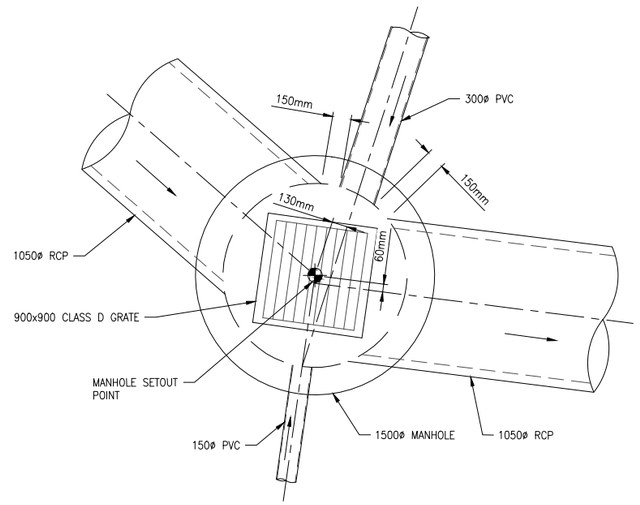
DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C75
SHEET NUMBER 75 OF 82
REVISION A

B24-058-2-C_Stm_Details.dwg



STORMWATER MANHOLE 23G DETAIL

SCALE 1:25 @ A1 SIZE



STORMWATER MANHOLE 23H DETAIL

SCALE 1:25 @ A1 SIZE

NOTE:
ALL REINFORCEMENT SHOWN IS TO BE CHECKED AGAINST DTMR STD DWG SD-1304.

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047
E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922
E centralvic@westerapartners.com.au

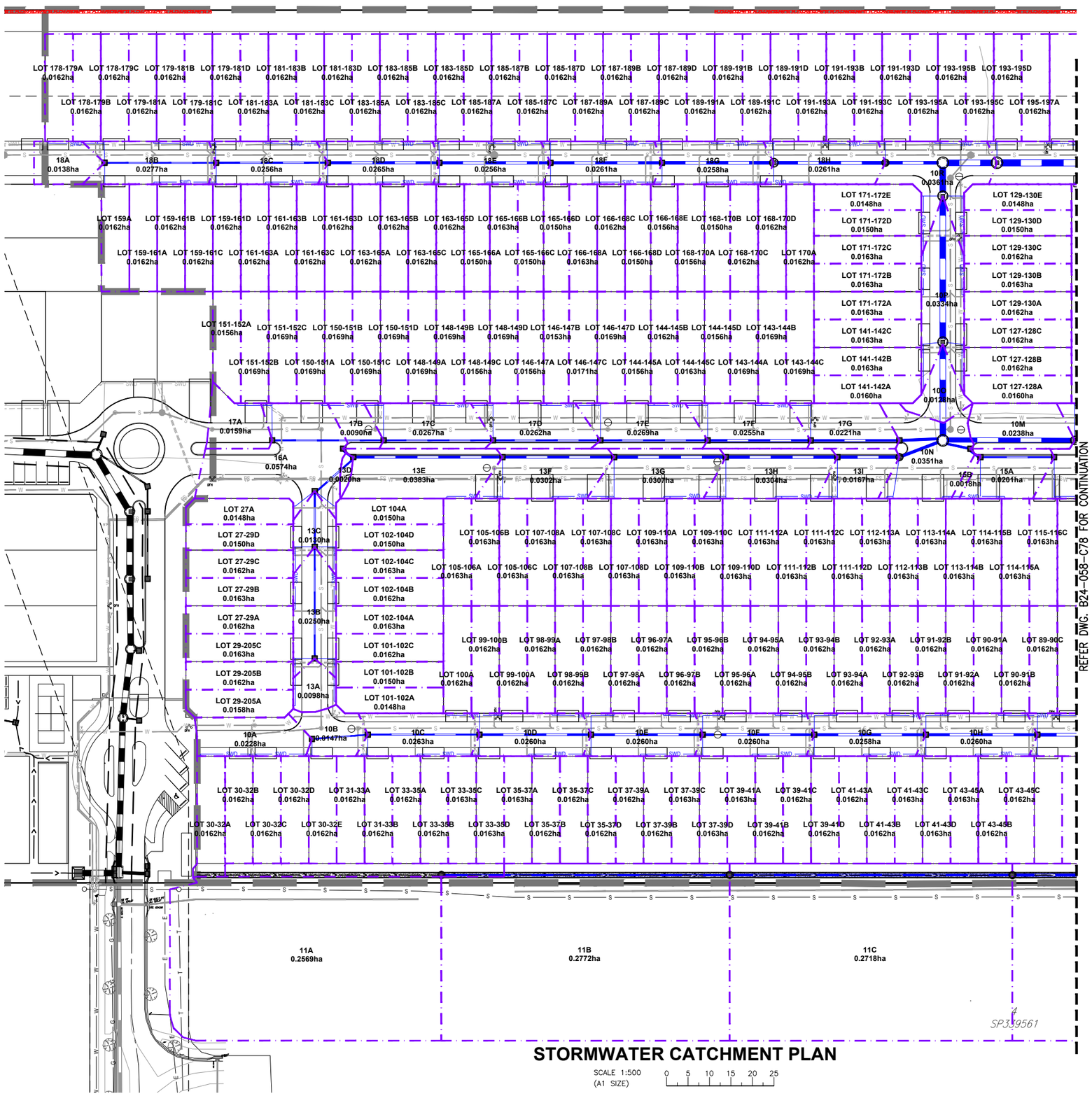
SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER DETAILS 3 of 3
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24-058-2-C76
SHEET NUMBER: 76 OF 82
REVISION: A

B24-058-2-C_Stm_Details.dwg



STORMWATER CATCHMENT PLAN

SCALE 1:500 (A1 SIZE)

0 5 10 15 20 25

Node Name	Area A		Node Name	Area A		Node Name	Area A		Node Name	Area A		Node Name	Area A
(-)	(ha)		(-)	(ha)		(-)	(ha)		(-)	(ha)		(-)	(ha)
10A	0.0228		CLUB 01A	0.1904		LOT 141-172C	0.0163		LOT 197-199C	0.0162		LOT 64-66A	0.0163
10B	0.0147		CLUB 02A	0.1084		LOT 141-172D	0.015		LOT 197-199D	0.0162		LOT 64-66B	0.0163
10C	0.0263		LOT 100A	0.0163		LOT 141-172E	0.0148		LOT 199-201A	0.0162		LOT 64-66C	0.0163
10D	0.026		LOT 100B			LOT 143-144A	0.0169		LOT 199-201B	0.0162		LOT 64-66D	0.0163
10E	0.026		LOT 101-102A	0.0148		LOT 143-144B	0.0169		LOT 199-201C	0.0162		LOT 66-68A	0.0162
10F	0.026		LOT 101-102B	0.015		LOT 143-144C	0.0169		LOT 199-201D	0.0162		LOT 66-68B	0.0162
10G	0.0258		LOT 101-102C	0.0162		LOT 144-146A	0.0156		LOT 201-203A	0.015		LOT 66-68C	0.0162
10H	0.026		LOT 102-104A	0.0163		LOT 144-146B	0.0162		LOT 201-203B	0.0156		LOT 66-68D	0.0162
10I	0.0234		LOT 102-104B	0.0162		LOT 144-146C	0.0163		LOT 201-203C	0.0156		LOT 68-70A	0.0162
10J	0.0299		LOT 102-104C	0.0163		LOT 144-146D	0.0156		LOT 201-203D			LOT 68-70B	0.0163
10K	0.0275		LOT 102-104D	0.015		LOT 146-207A	0.0156		LOT 203A	0.0156		LOT 68-70C	0.0162
10L			LOT 104A	0.015		LOT 146-207B	0.0153		LOT 27A	0.0148		LOT 68-70D	0.0163
10M	0.0238		LOT 105-106A	0.0163		LOT 146-207C	0.0171		LOT 27-29A	0.0162		LOT 70-72A	0.0163
10N			LOT 105-106B	0.0163		LOT 146-207D	0.0169		LOT 27-29B	0.0163		LOT 70-72B	0.0163
10O	0.0128		LOT 105-106C	0.0163		LOT 149-151A	0.0169		LOT 27-29C	0.0162		LOT 70-72C	0.0163
10P	0.0334		LOT 106-108A	0.0163		LOT 149-151B	0.0169		LOT 27-29D	0.015		LOT 70-72D	0.0163
10Q			LOT 106-108B	0.0163		LOT 149-151C	0.0169		LOT 29-205A	0.0158		LOT 70-72E	0.0163
10R	0.0361		LOT 106-108C	0.0163		LOT 149-151D	0.0169		LOT 29-205B	0.0162		LOT 73-75A	0.0148
10S	0.0259		LOT 106-108D	0.0163		LOT 149-207A	0.0169		LOT 29-205C	0.0163		LOT 73-75B	0.015
10T	0.0261		LOT 108-110A	0.0163		LOT 149-207B	0.0169		LOT 30-32A	0.0162		LOT 73-75C	0.0162
10U	0.0262		LOT 108-110B	0.0163		LOT 149-207C	0.0156		LOT 30-32B	0.0162		LOT 73-75D	0.0163
10V	0.0253		LOT 108-110C	0.0163		LOT 149-207D	0.0169		LOT 30-32C	0.0162		LOT 73-75E	0.0162
10W	0.0132		LOT 108-110D	0.0163		LOT 152-151A	0.0156		LOT 30-32D	0.0162		LOT 75-76A	0.0163
10X			LOT 110-112A	0.0163		LOT 152-151B	0.0169		LOT 30-32E	0.0162		LOT 75-76B	0.015
10Y			LOT 110-112B	0.0163		LOT 152-151C	0.0169		LOT 31-33A	0.0162		LOT 75-76C	0.0148
11A	0.2569		LOT 110-112C	0.0163		LOT 159A	0.0162		LOT 31-33B	0.0162		LOT 77-78A	0.0163
11B	0.2772		LOT 110-112D	0.0163		LOT 159-161A	0.0162		LOT 33-35A	0.0162		LOT 77-78B	0.0163
11C	0.2718		LOT 112-113A	0.0163		LOT 159-161B	0.0162		LOT 33-35B	0.0162		LOT 77-78C	0.0163
11D	0.2593		LOT 112-113B	0.0163		LOT 159-161C	0.0162		LOT 33-35C	0.0163		LOT 78-80A	0.0163
11E			LOT 113-114A	0.0163		LOT 159-161D	0.0162		LOT 33-35D	0.0163		LOT 78-80B	0.0163
12A	0.1487		LOT 113-114B	0.0163		LOT 161-163A	0.0162		LOT 35-37A	0.0163		LOT 78-80C	0.0163
12B	0.1198		LOT 113-114C			LOT 161-163B	0.0162		LOT 35-37B	0.0162		LOT 78-80D	0.0163
13A	0.0096		LOT 114-115A	0.0163		LOT 161-163C	0.0162		LOT 35-37C	0.0162		LOT 80-82A	0.0163
13B	0.025		LOT 114-115B	0.0163		LOT 161-163D	0.0162		LOT 35-37D	0.0162		LOT 80-82B	0.0163
13C	0.013		LOT 115-116A	0.0149		LOT 163-165A	0.0162		LOT 37-39A	0.0162		LOT 80-82C	0.0163
13D	0.002		LOT 115-116B	0.015		LOT 163-165B	0.0162		LOT 37-39B	0.0162		LOT 80-82D	0.0163
13E	0.0383		LOT 115-116C	0.0163		LOT 163-165C	0.0162		LOT 37-39C	0.0163		LOT 82A	0.0163
13F	0.0302		LOT 117-118A	0.0161		LOT 163-165D	0.0162		LOT 37-39D	0.0163		LOT 83-84A	0.0137
13G	0.0307		LOT 117-118B	0.0162		LOT 165-166A	0.015		LOT 39-41A	0.0163		LOT 83-84B	0.0136
13H	0.0304		LOT 117-118C	0.0162		LOT 165-166B	0.0163		LOT 39-41B	0.0162		LOT 83-84C	0.0137
13I	0.0167		LOT 117-140A	0.0162		LOT 165-166C	0.015		LOT 39-41C	0.0162		LOT 84-85A	0.0154
14A	0.0646		LOT 117-140B	0.0162		LOT 165-166D	0.015		LOT 39-41D	0.0162		LOT 84-85B	
15A	0.0201		LOT 117-140C			LOT 165-166E			LOT 41-43A	0.0162		LOT 84-85C	0.0136
15B	0.0018		LOT 119A	0.0169		LOT 166-168A	0.0163		LOT 41-43B	0.0162		LOT 85-86A	0.0148
15C			LOT 119-121A	0.0169		LOT 166-168B	0.0162		LOT 41-43C	0.0163		LOT 85-86B	0.015
16A	0.0574		LOT 119-121B	0.0169		LOT 166-168C	0.015		LOT 41-43D	0.0163		LOT 85-86C	0.0162
17A	0.0159		LOT 119-121C	0.0169		LOT 166-168D	0.0156		LOT 43-45A	0.0163		LOT 87A	0.0136
17B	0.009		LOT 119-121D	0.0169		LOT 166-168E			LOT 43-45B	0.0162		LOT 89-90A	0.0148
17C	0.0267		LOT 121-123A	0.0169		LOT 168-170A	0.0156		LOT 43-45C	0.0162		LOT 89-90B	0.015
17D	0.0262		LOT 121-123B	0.0169		LOT 168-170B	0.015		LOT 43-45D	0.0162		LOT 89-90C	0.0162
17E	0.0269		LOT 121-123C	0.0169		LOT 168-170C	0.0162		LOT 45-46A	0.0163		LOT 90-91A	0.0162
17F	0.0255		LOT 121-123D	0.0169		LOT 168-170D	0.0162		LOT 45-46B	0.0163		LOT 90-91B	0.0162
17G	0.0221		LOT 123-125A	0.0169		LOT 168-170E			LOT 45-46C	0.0163		LOT 90-91C	
18A	0.0138		LOT 123-125B	0.0169		LOT 170A	0.0162		LOT 47-49A	0.0163		LOT 91-92A	0.0162
18B	0.0277		LOT 123-125C	0.0169		LOT 178-179A	0.0162		LOT 47-49B	0.0163		LOT 91-92B	0.0162
18C	0.0256		LOT 123-125D	0.0169		LOT 178-179B	0.0162		LOT 47-49C	0.0163		LOT 92-93A	0.0162
18D	0.0265		LOT 125-126A	0.0169		LOT 178-179C	0.0162		LOT 47-49D	0.0163		LOT 92-93B	0.0162
18E	0.0256		LOT 125-126B	0.0169		LOT 179-181A	0.0162		LOT 47-49E	0.0163		LOT 92-93C	
18F	0.0261		LOT 125-126C	0.0169		LOT 179-181B	0.0162		LOT 49-50A	0.0163		LOT 93-94A	0.0162
18G	0.0258		LOT 127-128A	0.016		LOT 179-181C	0.0162		LOT 49-50B	0.0163		LOT 93-94B	0.0162
18H	0.0261		LOT 127-128B	0.0162		LOT 179-181D	0.0162		LOT 49-50C			LOT 94-95A	0.0162
19A	0.036		LOT 127-128C	0.0162		LOT 181-183A	0.0162		LOT 50-51A	0.0163		LOT 94-95B	0.0162
19B	0.0072		LOT 128-130A	0.0162		LOT 181-183B	0.0162		LOT 50-51B	0.0163		LOT 94-95C	
19C			LOT 128-130B	0.0163		LOT 181-183C	0.0162		LOT 51-52A	0.0163		LOT 95-96A	0.0162
19D	0.0715		LOT 128-130C	0.0162		LOT 181-183D	0.0162		LOT 51-52B	0.0163		LOT 95-96B	0.0162
20A			LOT 128-130D	0.015		LOT 183-185A	0.0162		LOT 51-52C			LOT 96-97A	0.0162
20B	0.0109		LOT 128-130E	0.0148		LOT 183-185B	0.0162		LOT 52-53A	0.0163		LOT 96-97B	0.0162
21A	0.055		LOT 131A	0.0162		LOT 183-185C	0.0162		LOT 52-53B	0.0163		LOT 96-97C	
21B	0.021		LOT 131B			LOT 183-185D	0.0162		LOT 53-54A	0.0163		LOT 97-98A	0.0162
21C	0.0259		LOT 131-132A	0.0162		LOT 185-187A	0.0162		LOT 53-54B	0.0163		LOT 97-98B	0.0162
21D	0.026		LOT 131-132B	0.0162		LOT 185-187B	0.0162		LOT 53-54C			LOT 98-99A	0.0162
21E	0.026		LOT 132-133A	0.0162		LOT 185-187C	0.0162		LOT 54-55A	0.0163		LOT 98-99B	0.0162
21F	0.0205		LOT 132-133B	0.0162		LOT 185-187D	0.0162		LOT 54-55B	0.0163		LOT 98-99C	
21G	0.0024		LOT 132-133C			LOT 187-189A	0.0162		LOT 55-56A	0.0163		LOT 99-100A	0.0162
21H	0.0295		LOT 133-134A	0.0162		LOT 187-189B	0.0162		LOT 55-56B	0.0163		LOT 99-100B	0.0162
21I	0.0264		LOT 133-134B	0.0162		LOT 187-189C	0.0162		LOT 55-56C				
22A	0.0102		LOT 134-135A	0.0162		LOT 187-189D	0.0162		LOT 56-57A	0.0163			
23A	0.0177		LOT 134-135B	0.0162		LOT 189-191A	0.0162		LOT 56-57B	0.0163			
23B	0.0271		LOT 134-135C			LOT 189-191B	0.0162		LOT 57-58A	0.0163			
23C	0.028		LOT 135-136A	0.0162		LOT 189-191C	0.0162		LOT 57-58B	0.0163			
23D	0.0365		LOT 135-136B	0.0162		LOT 189-191D	0.0162		LOT 58-59A	0.0163			
23E	0.0295		LOT 136-137A	0.0162		LOT 191-193A	0.0162		LOT 58-59B	0.0163			
23F			LOT 136-137B	0.0162		LOT 191-193B	0.0162		LOT 59-60A	0.0163			
23G	0.035		LOT 136-137C			LOT 191-193C	0.0162		LOT 59-60B	0.0163			
23H	0.0259		LOT 137-138A	0.0162		LOT 191-193D	0.0162		LOT 59-60C	0.0163			
23I	0.0529		LOT 137-138B	0.0162		LOT 193-195A	0.0162		LOT 61-62A	0.0136			
23J			LOT 138A	0.0162		LOT 193-195B	0.0162		LOT 61-62B	0.0138			
23K			LOT 139A	0.0148		LOT 193-195C	0.0162		LOT 61-62C	0.0161			
24A	0.0069		LOT 139-140A	0.0162		LOT 193-195D	0.0162		LOT 61-88A	0.0161			
25A	0.0415		LOT 139-140B	0.015		LOT 195-197A	0.0162		LOT 61-88B	0.0161			
25B	0.0298		LOT 141-142A	0.016		LOT 195-197B	0.0162		LOT 61-88C	0.0161			
25C	0.0302		LOT 141-142B	0.0163		LOT 195-197C	0.0162		LOT 61-88D	0.0138			
25D			LOT 141-142C	0.0163		LOT 195-197D	0.0162		LOT 63-64A	0.0163			
26A	0.0074		LOT 141-172A	0.0163		LOT 197-199A	0.0162		LOT 63-64B	0.015			
27A	0.003		LOT 141-172B	0.0163		LOT 197-199B	0.0162		LOT 63-64C	0.0148			

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026
DOCUMENT CONTROL

J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.
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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

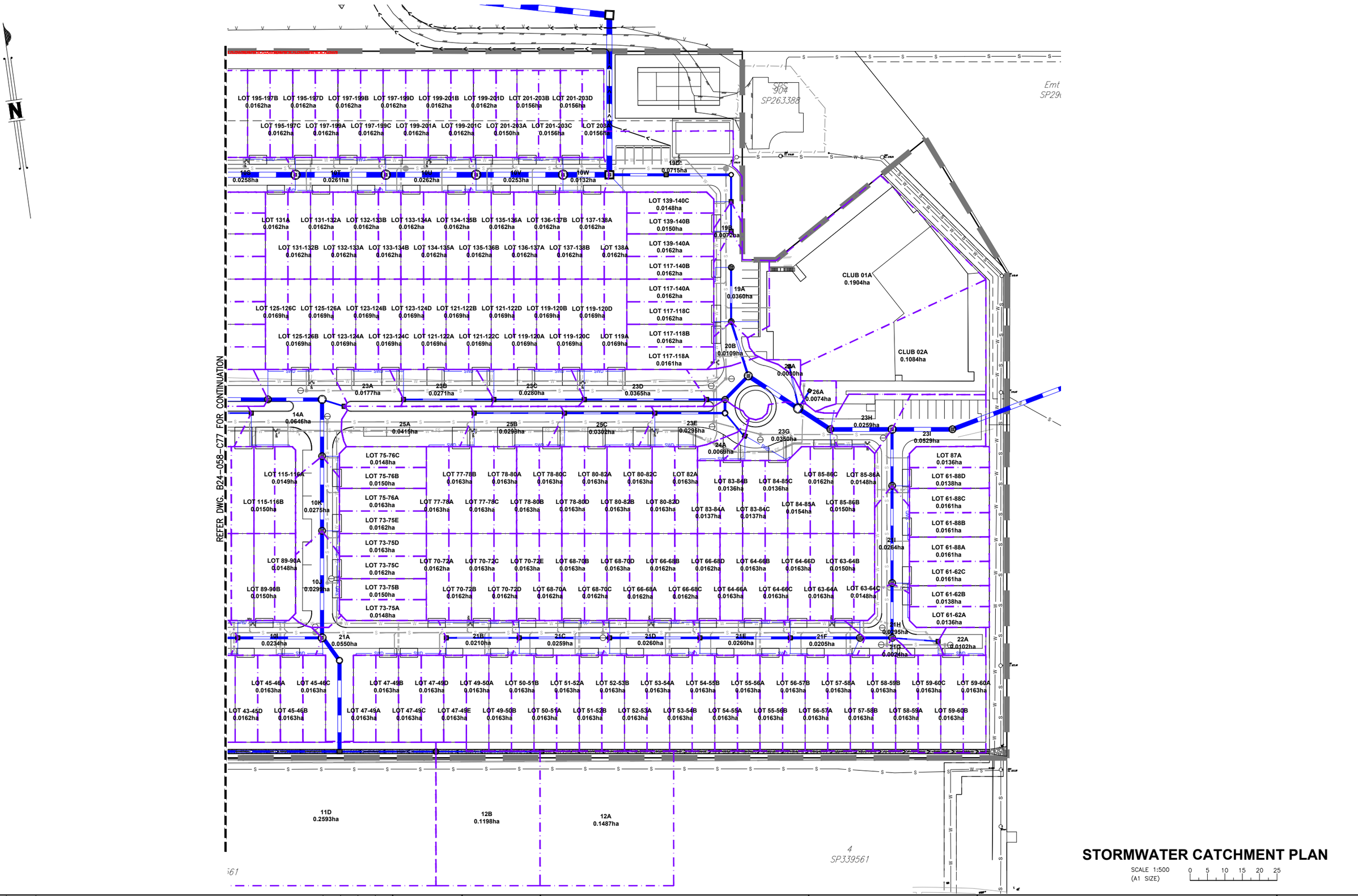
SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CATCHMENT PLAN 1 of 2
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24-058-2-C77
SHEET NUMBER: 77 OF 82
REVISION: A

B24-058-2-C_Stm_Catch.dwg



STORMWATER CATCHMENT PLAN

SCALE 1:500 (A1 SIZE)

0 5 10 15 20 25

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

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PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786 TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CATCHMENT PLAN 2 of 2
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C78
SHEET NUMBER 78 OF 82
REVISION A

B24-058-2-C_Stm_Catch.dwg

5% AEP HYDROLOGY

Node Name	Node Type	Setout Easting	Setout Northing	Setout RL	Grate RL	Catch ID	Time Tc	Intensity I	Runoff C	Area A	Full CA	Full Sum CA	Full Qc=CIA	Partial CA	Partial Sum CA	Partial Qc=CIA	Catchment Flow Qc	Approach Flow Qa	Road Capacity	Flooded Depth	Flooded Width	Flooded Vel.Dep	Road Grade	Road Xfall	Max Pond Depth	Choke Factor	Inlet Curve Name	Inlet Flow Qg	Bypass Flow Qb	Bypass Node
(-)	(-)	(m)	(m)	(m)	(m)	(-)	(min)	(mm/hr)	(-)	(ha)	(ha)	(ha)	(L/s)	(ha)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(m)	(m)	(sq.m/s)	(%)	(%)	(m)	(-)	(-)	(L/s)	(L/s)	(-)
10A	FI 900x900 ON GRADE CENTRED	389948.74	6956065.52	526.14	526.14	1P	5	199	0.85	0.0228	0.0194	0.0194	10.7	0.0194	0.0194	10.7	10.7	10.7	191.8	0.024	2.83	0.01	1	3		0.75	1.0G,2.5X	7.8	3	10B
10B	FI 900x900 ON GRADE CENTRED	389961.75	6956064.69	525.99	525.99	1P	5	199	0.85	0.0147	0.0125	0.0125	6.9	0.0125	0.0125	6.9	6.9	17.8	425.1	0.031	2.66	0.01	1	3		0.75	1.0G,2.5X	10.4	7.4	10C
10C	FI 900x900 ON GRADE CENTRED	389987.5	6956061.05	525.73	525.73	1P	5	199	0.85	0.0263	0.0224	0.0224	12.4	0.0224	0.0224	12.4	12.4	32.9	876.1	0.037	3.6	0.02	1	3		0.75	1.0G,2.5X	17	15.9	10D
10D	FI 900x900 ON GRADE CENTRED	390013.24	6956057.41	525.47	525.47	1P	5	199	0.85	0.026	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	49.2	876.1	0.043	4.19	0.02	1	3		0.75	1.0G,2.5X	20.1	29.1	10E
10E	FI 900x900 ON GRADE CENTRED	390038.99	6956053.77	525.21	525.21	1P	5	199	0.85	0.026	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	62.5	876.1	0.047	4.58	0.03	1	3		0.75	1.0G,2.5X	22.1	40.3	10F
10F	FI 900x900 ON GRADE CENTRED	390064.73	6956050.13	524.95	524.95	1P	5	199	0.85	0.026	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	73.7	876.1	0.05	4.87	0.03	1	3		0.75	1.0G,2.5X	23.8	49.9	10G
10G	FI 900x900 ON GRADE CENTRED	390090.47	6956046.49	524.69	524.69	1P	5	199	0.85	0.0258	0.022	0.022	12.1	0.022	0.022	12.1	12.1	83.2	876.1	0.052	5.1	0.03	1	3		0.75	1.0G,2.5X	26.9	56.2	10H
10H	FI 900x900 ON GRADE CENTRED	390116.22	6956042.86	524.43	524.43	1P	5	199	0.85	0.026	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	89.6	876.1	0.053	5.24	0.03	1	3		0.75	1.0G,2.5X	29.2	60.3	10I
10I	FI 900x900 1800 dia ON GRADE SIDE	390140.21	6956039.47	524.19	524.19	1P	5	199	0.85	0.0234	0.0199	0.0199	11	0.0199	0.0199	11	11	85.9	252.9	0.042	6.59	0.02	1	3		0.75	1.0G,2.5X	31.6	54.3	21A
10J	FI 900x900 1500 dia ON GRADE CENTRED	390144.51	6956069.91	523.45	523.45	1P	5	199	0.85	0.0299	0.0255	0.0255	14.1	0.0255	0.0255	14.1	14.1	20.7	275.7	0.024	2.59	0.02	3.3	3		0.75	2.0G,2.5X	11.6	9.2	10K
10K	FI 900x900 1500 dia ON GRADE CENTRED	390147.52	6956091.2	522.75	522.75	1P	5	199	0.85	0.0275	0.0234	0.0234	12.9	0.0234	0.0234	12.9	12.9	32	99.4	0.024	4.07	0.02	3.3	3		0.75	2.0G,2.5X	16.1	15.9	14A
10L	MH1500	390149.81	6956107.34	522.51	522.51																									-
10M	FI 900x900 1500 dia ON GRADE CENTRED	390134.4	6956109.52	522.7	522.7	1P	5	199	0.85	0.0238	0.0203	0.0203	11.2	0.0203	0.0203	11.2	11.2	11.2	2974.9	0.026	2.1	0.01	1	2.5		0.75	1.0G,2.5X	8	3.3	14A
10N	MH2100	390103.95	6956113.82	523.04	523.04																									-
10O	FI 900x900 1500 dia ON GRADE CENTRED	390107.16	6956136.5	522.63	522.63	1P	5	199	0.85	0.0128	0.0109	0.0109	6	0.0109	0.0109	6	6	11.1	63.6	0.014	2.97	0.01	4.7	2.5		0.75	4.0G,2.5X	7.9	3.2	10P
10P	FI 900x900 1500 dia ON GRADE CENTRED	390111.92	6956170.16	521.02	521.02	1P	5	199	0.85	0.0334	0.0284	0.0284	15.7	0.0284	0.0284	15.7	15.7	49.4	9365	0.035	2.97	0.03	4.6	3		0.75	4.0G,2.5X	20.1	29.3	10R
10Q	MH2100	390113	6956177.83	520.78	520.78																									-
10R	FI 900x900 1800 dia ON GRADE CENTRED	390125.5	6956176.07	520.65	520.65	1P	5	199	0.85	0.0361	0.0307	0.0307	17	0.0307	0.0307	17	17	118.7	414.9	0.063	5.46	0.04	1	3		0.75	1.0G,2.5X	35.8	82.9	10S
10S	FI 900x900 1800 dia ON GRADE CENTRED	390151.24	6956172.43	520.39	520.39	1P	5	199	0.85	0.0259	0.022	0.022	12.2	0.022	0.022	12.2	12.2	108.2	895.7	0.058	5.6	0.04	1	3		0.75	1.0G,2.5X	34.2	74	10T
10T	FI 900x900 1800 dia ON GRADE CENTRED	390176.99	6956168.79	520.13	520.13	1P	5	199	0.85	0.0261	0.0222	0.0222	12.3	0.0222	0.0222	12.3	12.3	107.4	895.7	0.057	5.58	0.04	1	3		0.75	1.0G,2.5X	34.1	73.3	10U
10U	FI 900x900 1800 dia ON GRADE CENTRED	390202.73	6956165.15	519.87	519.87	1P	5	199	0.85	0.0262	0.0222	0.0222	12.3	0.0222	0.0222	12.3	12.3	106.7	895.7	0.057	5.57	0.04	1	3		0.75	1.0G,2.5X	34	72.7	10V
10V	FI 900x900 2100 dia ON GRADE CENTRED	390227.49	6956161.65	519.62	519.62	1P	5	199	0.85	0.0253	0.0215	0.0215	11.9	0.0215	0.0215	11.9	11.9	97.8	839.8	0.055	5.39	0.04	1	3		0.75	1.0G,2.5X	32.2	65.6	10W
10W	FI 900x900 2100 x 1900 ON GRADE CENTRED	390240.7	6956159.79	519.49	519.49	1P	5	199	0.85	0.0132	0.0112	0.0112	6.2	0.0112	0.0112	6.2	6.2	77.1	762.9	0.056	4.48	0.03	1	3		0.75	1.0G,2.5X	24.7	52.3	19D
10X	MH2100	390247.14	6956205.3	519.27	519.27																									-
10Y	HW OUT	390174.22	6956223.41	517.75	517.75																									-
11A	FI 900x900 1200 dia ON GRADE CENTRED	389973.98	6956028.92	525.72	525.72	1P	5	199	0.85	0.2569	0.2185	0.2185	120.8	0.2185	0.2185	120.8	120.8	98.8	1601.2	0.092	1	0.14	2	3		1	2.0G,2.5X	41.5	57.3	11B
11B	FI 900x900 1200 dia ON GRADE CENTRED	390040.49	6956019.52	524.3	524.3	1P	5	199	0.85	0.2772	0.2358	0.2358	130.3	0.2358	0.2358	130.3	130.3	165.6	12270	0.126	1	0.21	1.6	3		1	1.0G,2.5X	64.9	100.7	11C
11C	FI 900x900 1200 dia ON GRADE CENTRED	390105.71	6956010.3	523.39	523.39	1P	5	199	0.85	0.2718	0.2312	0.2312	127.8	0.2312	0.2312	127.8	127.8	206.5	16269.2	0.155	1	0.25	1.1	3		1	1.0G,2.5X	90.9	115.6	11D
11D	FIELD INLET 900x900 1200 dia	390140.49	6956005.39	523	523	1P	5	199	0.85	0.2593	0.2206	0.2206	121.9	0.2206	0.2206	121.9	121.9	236	760	0.184					0.5	0.5	SAG	236		-
11E	MH1050	390144.27	6956032.33	524.26	524.26																									-
12A	FI 900x900 ON GRADE CENTRED	390197.67	6955997.31	524.46	524.46	1P	5	199	0.85	0.1487	0.1265	0.1265	69.9	0.1265	0.1265	69.9	69.9	55.9					2.5	3		1	2.0G,2.5X	27.2	28.7	LOST
12B	FI 900x900 1200 dia ON GRADE CENTRED	390167.94	6956001.51	523.2	523.2	1P	5	199	0.85	0.1198	0.1019	0.1019	56.3	0.1019	0.1019	56.3	56.3	45.3	10035.1	0.065	1	0.07	2.4	3		1	2.0G,2.5X	24.8	20.5	11D
13A	FI 900x900 ON GRADE CENTRED	389951.99	6956083.99	525.98	525.98	1P	5	199	0.85	0.0098	0.0083	0.0083	4.6	0.0083	0.0083	4.6	4.6	9	847.5	0.021	1.71	0.01	2.3	3		0.75	2.0G,2.5X	6.7	2.2	13B
13B	FI 900x900 ON GRADE CENTRED	389955.63	6956109.74	525.34	525.34	1P	5	199	0.85	0.025	0.0212	0.0212	11.7	0.0212	0.0212	11.7	11.7	34.5	274.2	0.029	3.14	0.02	3.3	3		0.75	2.0G,2.5X	16.6	17.9	13C
13C	FI 900x900 ON GRADE CENTRED	389957.45	6956122.61	524.93	524.93	1P	5	199	0.85	0.013	0.011	0.011	6.1	0.011	0.011	6.1	6.1	37.4	0	0	0.23	0.33	2	3		0.75	2.0G,2.5X	17.1	20.2	16A
13D	FI 900x900 1500 dia ON GRADE SIDE	389967.44	6956129.18	524.74	524.74	1P	5	199	0.85	0.002	0.0017	0.0017	0.9	0.0017	0.0017	0.9	0.9	39.6	2656.4	0.042	3.37	0.02	1	0.2		0.75	1.0G,2.5X	20.2	19.4	13E
13E	FI 900x900 ON GRADE SIDE	390001.87	6956124.31	524.31	524.31	1P	5	199	0.85	0.0383	0.0326	0.0326	18	0.0326	0.0326	18	18	40.1	2384.2	0.036	3.99	0.02	1	2.5		0.75	1.0G,2.5X	20.3	19.8	13F
13F	FI 900x900 ON GRADE SIDE	390027.62	6956120.67	524	524	1P	5	199	0.85	0.0302	0.0257	0.0257	14.2	0.0257	0.0257	14.2	14.2	44.6	2384.2	0.037	4.15	0.02	1	2.5		0.75	1.0G,2.5X	21.3	23.3	13G
13G	FI 900x900 ON GRADE SIDE	390053.36	6956117.03	523.68	523.68	1P	5	199	0.85	0.0307	0.0261	0.0261	14.4	0.0261	0.0261	14.4	14.4	48.3	2384.2	0.039	4.28	0.02	1	2.5		0.75	1.0G,2.5X	22.1	26.2	13H
13H	FI 900x900 ON GRADE SIDE	390079.11	6956113.39	523.37	523.37	1P	5	199	0.85	0.0304	0.0259	0.0259	14.3	0.0259	0.0259	14.3	14.3	51	2384.2	0.039	4.37	0.02	1	2.5		0.75	1.0G,2.5X	22.7	28.3	13I
13I	FI 900x900 1200 dia ON GRADE SIDE	390093.41	6956111.37	523.19	523.19	1P	5	199	0.85	0.0167	0.0142	0.0142	7.8	0.0142	0.0142	7.8	7.8	41.5	2719.9	0.038	3.92	0.02	1	2.5		0.75	1.0G,2.5X	20.6	20.9	15C
14A	FI 900x900 ON GRADE CENTRED	390155.82	6956104.52	522.38	522.38	1P	5	199	0.85	0.0646	0.0549	0.0549	30.4	0.0549	0.0549	30.4	30.4	76.9	514.3	0.036	6.61	0.02	1.2	3		0.75	1.0G,2.5X	24.7	52.2	25A
15A	FI 900x900 ON GRADE SIDE	390129.11	6956106.33	522.75	522.75	1P	5	199	0.85	0.0201	0.0171	0.0171	9.4	0.0171	0.0171	9.4	9.4	25.5	1995.7	0.029	3.51	0.01	1	2.5		0.75	1.0G,2.5X	15.6	9.9	14A
15B	FI 900x900 ON GRADE SIDE	390112.11	6956108.73	522.96	522.96	1P	5	199	0.85	0.0018	0.0015	0.0015	0.8	0.0015	0.0015	0.8	0.8	27.4	3058.1	0.037	2.93	0.02	1	2.5		0.75	1.0G,2.5X	16.6	10.8	15A
15C	FI 900x900 ON GRADE CENTRED	390110.04	6956110.99	522.94	522.94													46.1	59.3	0.019	10.03	0.01	1.2	3		0.75	1.0G,2.5X	19.5	26.6	15B
16A	FI 900x900 ON GRADE CENTRED	389965.37	6956131.44	524.72	524.72	1P	5	199	0.85	0.0574	0.0489	0.0489	27	0.0489	0.0489	27	27	60.4	3.1	0.004	10.17	0.01	1.2	3		0.75	1.0G,2.5X	21.8	38.6	13D
17A	FI 900x900 ON GRADE SIDE	389949.28	6956135.68	524.96	524.96	1P	5	199	0.85	0.0159	0.0135	0.0135	7.5	0.0135	0.0135	7.5	7.5	12.8	1223.8	0.024	2.98	0.01	1	2.5		0.75	1.0G,2.5X	8.4	4.4	16A
17B	FI 900x900 ON GRADE SIDE	389974.99	6956132.05	524.65	524.65	1P	5	199	0.85	0.009	0.0077	0.0077	4.2	0.0077	0.0077	4.2	4.2	4.2	2974.9	0.018	1.45	0.01	1	2.5		0.75	1.0G,2.5X	2.9	1.4	17C
17C	FI 900x900 ON GRADE SIDE	390000.23	6956128.48	524.34	524.34	1P	5	199	0.85	0.0267	0.0227	0.0227	12.5	0.0227	0.0227	12.5	12.5	25.7	2609.5	0.031	3.3	0.02	1	2.5		0.75	1.0G,2.5X	15.7	10	17D
17D	FI 900x900 ON GRADE SIDE	390024.99	6956124.98	524.04	524.04	1P	5	199	0.85	0.0262	0.0223	0.0223	12.3	0.0223	0.0223	12.3	12.3	32.1	2609.6	0.034	3.59	0.02	1	2.5		0.75	1.0G,2.5X	18.5	13.6	17E
17E	FI 900x900 ON GRADE SIDE	390049.74	6956121.48	523.73	523.73	1P	5	199	0.85	0.0269	0.0228	0.0228	12.6	0.0228	0.0228	12.6	12.6	37.2	2610.5	0.036	3.79	0.02	1	2.5		0.75	1.0G,2.5X	19.6	17.6	17F
17F	FI 900x900 ON GRADE SIDE	390073.51	6956118.12	523.44	523.44	1P	5	199	0.85	0.0255	0.0217	0.0217	12	0.0217	0.0217	12	12	40.5	2350.2	0.036	4.02	0.02	1	2.5		0.75	1.0G,2.5X	20.4	20.1	17G
17G	FI 900x900 ON GRADE SIDE	390093.96	6956115.23	523.19	523.19	1P	5	199	0.85	0.0221	0.0188	0.0188	10.4	0.0188	0.0188	10.4	10.4	33.4	1144.5	0.037	3.34	0.02	1	2.5		0.75	1.0G,2.5X	18.8	14.7	15C
18A	FI 900x900 ON GRADE CENTRED	389919.67	6956205.16	522.73	522.73	1P	5	199	0.85	0.0138	0.0117	0.0117	6.5	0.0117	0.0117	6.5	6.5	11.8	417.8	0.027	2.3	0.01	3	3		0.75	2.0G,2.5X	8.2	3.6	18B
18B	FI 900x900 ON GRADE CENTRED	389945.42	6956201.52	522.47	522.47	1P	5	199	0.85	0.0277	0.0236	0.0236	13	0.0236	0.0236	13	13	37.8	414.9	0.041	3.56	0.02	1	3		0.75	1.0G,2.5X	18	19.8	18C
18C	FI 900x900 ON GRADE CENTRED	389971.16	6956197.88	522.21	522.21	1P	5	199	0.85	0.0256	0.0218	0.0218	12.1	0.0218	0.0218	12.1	12.1	53	414	0.047	4.04	0.03	1	3		0.75	1.0G,2.5X	20.7	32.3	18D
18D	FI 900x900 ON GRADE CENTRED	389996.9	6956194.24	521.95	521.95	1P	5	199	0.85	0.0265	0.0225	0.0225	12.5	0.0225	0.0225	12.5	12.5	65.9	414.9	0.051	4.38	0.03	1	3		0.75	1.0G,2.5X	22.6	43.2	18E
18E	FI 900x900 ON GRADE CENTRED	390022.52	6956190.62	521.69	521.69	1P	5	199	0.85	0.0256	0.0218	0.0218	12.1	0.0218	0.0218	12.1	12.1	77.3	417.6	0.054	4.64	0.03	1	3		0.75	1.0G,2.5X	24.8	52.5	18F
18F	FI 900x900 ON GRADE CENTRED	390048.27	6956186.98	521.43	521.43	1P	5	199	0.85	0.0261	0.0222	0.0222	12.3	0.0222	0.0222	12.3	12.3	84.9	2.7	0.003	10.18	0.02	1	3		0.75	1.0G,2.5X	27.6	57.4	18G
18G	FI 900x900 1500 dia ON GRADE CENTRED	390074.01	6956183.35	521.17	521.17	1P	5	199	0.85	0.0258	0.022	0.022	12.1	0.022	0.022	12.1	12.1	89.7	698.3	0.034	8.27	0.02	1	3		0.75	1.0G,2.5X	29.3	60.4	18H
18H	FI 900x900 1200 dia ON GRADE CENTRED	390099.76	6956179.71	520.91	520.91	1P	5	199	0.85	0.0261	0.0222	0.0222	12.3	0.0222	0.0222	12.3	12.3	85.9	2007.5	0.057	4.76	0.04	1	3		0.75	1.0G,2.5X	27.9	58	10R
19A	FI 900x900 ON GRADE CENTRED	390273.11	6956138.79	520.05	520.05	1P	5	199	0.85	0.036	0.0306	0.0306	16.9	0.0306	0.0306	16.9	16.9	102.2	1162.7	0.048	3.8	0.05	4.2	3		1	4.0G,2.5X	42.4	59.7	19B
19B	FI 900x900 ON GRADE CENTRED	390274.3	6956147.21	519.69	519.69	1P	5	199	0.85	0.0072	0.0061	0.0061	3.4	0.0061	0.0061	3.4	3.4	78.4	165.1	0.03	5.11	0.03	4.2	3		0.75	4.0G,2.5X	24.4	54	19D
19C	MH1050	390275.39	6956154.88	519.56	519.56																									-
19D	FIELD INLET 900x900	390256.9	6956157.5	519.32	519.32	1P	5	199	0.85	0.0715	0.0608	0.0608	33.6	0.0608	0.0608	33.6	33.6	144.5	38.2	0.132					0.055	0.5	SAG	144.5		-
20A	FIELD INLET 900x900 1800 dia	390271.66	6956128.48	520.44	520.44													85.3	0							0.5	SAG	0	85.3	19A
20B	FI 900x900 1800 dia ON GRADE CENTRED	390269.47	6956113.05	520.59	520.59	1P	5	199	0.85	0.0109	0.0093	0.0093	5.1	0.0093	0.0093	5.1	5.1	121.5	556.2	0.066	5.31	0.05	1	3		0.75	1.0G,2.5X	36.2	85.3	20A
21A	FI 900x900 ON GRADE CENTRED	390175.63	6956034.46	523.83	523.83	1P	5	199	0.85	0.055	0.0468	0.0468	25.9	0.0468	0.0468	25.9	25.9	96	678.6	0.049	6.03	0.03	1	3		0.75	1.0G,2.5X	31.6	64.4	21B
21B	FI 900x900 ON GRADE CENTRED	390196.4	6956031.52	523.62	523.62	1P	5	199	0.85	0.021	0.0179	0.0179	9.9	0.0179	0.0179	9.9	9.9	84.9	903.3	0.053	5.1	0.03	1	3		0.75	1.0G,2.5X	27.6	57.3	21C
21C	FI 900x900 ON GRADE CENTRED	390222.14	6956027.88	523.36	523.36	1P	5	199	0.85	0.0259	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	90.6	414.9	0.057	4.94	0.04	1	3		0.75	1.0G,2.5X	29.6	61	21D
21D	FI 900x900 ON GRADE CENTRED	390247.89	6956024.25	523.1	523.1	1P	5	199	0.85	0.026	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	94.3	414.9	0.058	5.01	0.04	1	2.5		0.75	1.0G,2.5X	31	63.4	21E
21E	FI 900x900 ON GRADE CENTRED	390273.63	6956020.61	522.84	522.84	1P	5	199	0.85	0.026	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	96.8	414.9	0.059	5.06	0.04	1	2.5		0.75	1.0G,2.5X	31.8	64.9	21F
21F	FI 900x900 1500 dia ON GRADE CENTRED	390293.44	6956017.81	522.64	522.64	1P	5	199	0.85	0.0205	0.0174	0.0174	9.6	0.0174	0.0174	9.6	9.6	92.4	582.4	0.036	5.91	0.03	1	0.8		0.75	1.0G,2.5X	30.3	62.2	21G
21G	FI 900x900 1500 dia ON GRADE CENTRED	390302.59	6956016.51	522.55	522.55	1P	5	199	0.85	0.0024	0.002	0.002	1.1	0.002	0.002	1.1	1.1	68.6	2406.6	0.033	5.74	0.02	1	3		0.75	1.0G,2.5X	23	45.5	21H
21H	FI 900x900 1500 dia ON GRADE CENTRED	390304.8	6956032.1	522.37	522.37	1P	5	199	0.85	0.0295	0.0251	0.0251	13.9	0.0251	0.0251	13.9	13.9	66	381	0.047	4.36	0.03	1.3	3		0.75	1.0G,2.5X	22.7	43.4	21I
21I	FI 900x900 1500 dia ON GRADE CENTRED	390308.72	6956059.82	521.71	521.71	1P	5	199	0.85	0.0264	0.0224	0.0224	12.4	0.0224	0.0224	12.4	12.4	65	332	0.039	3.86	0.03	3	3		0.75	2.0G,2.5X	21.7	43.2	23I
22A	FI 900x900 ON GRADE CENTRED	390315.59	6956013.67	522.71	522.71	1P	5	199	0.85	0.0102	0.0086	0.0086	4.8	0.0086	0.0086	4.8	4.8	10.1	56.3	0.007	10.07	0	1	3		0.75	1.0G,2.5X	7.5	2.5	21H
23A	FI 900x900 ON GRADE SIDE	390173.02	6956104.06	522.22	522.22	1P	5	199	0.85	0.0177	0.0151	0.0151	8.3	0.0151	0.0151	8.3	8.3	14.2	2666.6	0.025	2.62	0.01	1	2.5		0.75	1.0G,2.5X	9.3	4.9	23B
23B	FI 900x900 ON GRADE SIDE	390198.76	6956100.42	521.91	521.91	1P	5	199	0.85	0.0271	0.0231	0.0231	12.8	0.0231	0.0231	12.8	12.8	29.5	2666.6	0.033	3.44	0.02	1	2.5		0.75	1.0G,2.5X	17.7	11.8	23C
23C	FI 900x900 ON GRADE SIDE	390224.51	6956096.78	521.59	521.59	1P	5	199	0.85	0.028	0.0238	0.0238	13.2	0.0238	0.0238	13.2	13.2	30.8	2666.6	0.034	3.5	0.02	1	2.5		0.75	1.0G,2.5X	18.2	12.6	23D
23D	FI 900x900 ON GRADE SIDE	390259.34	6956091.86	521.09	521.09	1P	5	199	0.85	0.0365	0.0311	0.0311	17.2	0.0311	0.0311	17.2	17.2	38.6	610.8	0.026	3.75	0.02	1	2.4		0.75	1.0G,2.5X	19.9	18.7	23E
23E	FI 900x900 1500 dia ON GRADE CENTRED	390264.61	6956091.11	520.92	520.92	1P	5	199	0.85	0.0295	0.0251	0.0251	13.9	0.0251	0.0251	13.9	13.9	84.7	2751.3	0.057	4.05	0.04	1	1.1		0.75	1.0G,2.5X	27.5	57.2	23F
23F	FIELD INLET 900x900 1800 dia	390272.17	6956096.91	520.84	520.84													113.8	0							0.5	SAG	0	113.8	20B
23G	FI 900x900 1200 dia ON GRADE CENTRED	390285.09	6956085.66	521.17	521.17	1P	5	199	0.85	0.035	0.0298	0.0298	16.5	0.0298	0.0298	16.5	16.5	16.5										16.5		-
23H	FI 900x900 1200 dia ON GRADE CENTRED	390293.42	6956078.41	521.23	521.23	1P	5	199	0.85	0.0259	0.0221	0.0221	12.2	0.0221	0.0221	12.2	12.2	99.6	612.5	0.058	5.24	0.04	1	3		1	1.0G,2.5X	43.8	55.8	23F
23I	FI 900x900 1500 dia ON GRADE CENTRED	390310.99	6956075.92	521.4	521.4	1P	5	199	0.85	0.0529	0.045	0.045	24.9	0.045	0.045	24.9	24.9	68.1					1	3		1	1.0G,2.5X	30.6	37.5	23H
23J	MH1500	390328.2	6956073.49	521.58	521.58																									-
23K	HW IN	390376.64	6956084.28	519	519																									-
24A	FI 900x900 ON GRADE CENTRED	390268.8	6956080.01	520.9	520.9	1P	5	199	0.85	0.0069	0.0059	0.0059	3.3	0.0059	0.0059	3.3	3.3	3.3					1	3		0.75	1.0G,2.5X	2.4	0.8	23F
25A	FI 900x900 ON GRADE SIDE	390192.58	6956097.36	521.98	521.98	1P	5	199	0.85	0.0415	0.0353	0.0353	19.5	0.0353	0.0353	19.5	19.5	74.4	2384.1	0.045	5.03	0.03	1	2.5		0.75	1.0G,2.5X	26.9	47.5	25B
25B	FI 900x900 ON GRADE SIDE	390218.32	6956093.72	521.66	521.66	1P	5	199	0.85	0.0298	0.0254	0.0254	14	0.0254	0.0254	14	14	72.1	2384.1	0.045	4.97	0.03	1	2.5		0.75	1.0G,2.5X	26.5	45.6	25C
25C	FI 900x900 ON GRADE SIDE	390244.06	6956090.08	521.35	521.35	1P	5	199	0.85	0.0302	0.0257	0.0257	14.2	0.0257	0.0257	14.2	14.2	70.4	2384.1	0.044	4.93	0.03	1	2.5		0.75	1.0G,2.5X	26.2	44.2	23E
25D	MH1200	390264.06	6956087.25	520.93	520.93																									-
26A	FIELD INLET 600x600	390289.06	6956090.23	520.75	520.75	1P	5	199	0.85	0.0074	0.0063	0.0063	3.5	0.0063	0.0063	3.5	3.5	3.5		0.008					-0.15	0.5	SAG	3.5		-
27A	FIELD INLET 600x600	390284.29	6956097.95	520.75	520.75	1P	5	199	0.85	0.003	0.0025	0.0025	1.4	0.0025	0.0025	1.4	1.4	1.4	124.4	0.003					0.157	0.5	SAG	1.4		-
CLUB01A	GEMLIFE ROOFWATER STUB	390276.8	6956112.01	520.72	520.72	1P	5	199	0.85	0.1904	0.1619	0.1619	89.5	0.1619	0.1619	89.5	89.5	89.5	5	-1					-2.429	0.5	SAG	89.5		-
CLUB02A	GEMLIFE ROOFWATER STUB	390294.12	6956083.36	521.35	521.35	1P	5	199	0.85	0.1084	0.0922	0.0922	51	0.0922	0.0922	51	51	51	5	-1					-2.661	0.5	SAG	5	46	23H

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DOCUMENT CONTROL
DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026

APPROVED
J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.

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CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 1 of 4
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C79
SHEET NUMBER 79 OF 82
REVISION A

B24-058-2-C_Stm_Calcs.dwg

5% AEP HYDRAULICS

Pipe ID (-)	Pipe Type (-)	Pipe Length (m)	Pipe Size (mm)	Full Pipe Area Af (sq.m)	Pipe Grade (%)	Pipe Grade (1 in)	Full-area Tct (min)	Full-area I (mm/hr)	Full-area Sum CA (ha)	Full-area Qc=CIA (L/s)	Part-area Tct (min)	Part-area I (mm/hr)	Part-area Sum CA (ha)	Part-area Qc=CIA (L/s)	Catchment Flow Qc (L/s)	Direct Node Flow Qdg (L/s)
10A to 10B	PVC SN8	12.14	225	0.04	0.54	186.2	5.24	196.58	0.0885	48.3	5.15	197.54	0.0883	48.4	48.4	
10B to 10C	PVC SN8	25.1	300	0.071	1.04	96.5	5.34	195.57	0.1286	69.9	5.23	196.65	0.1283	70.1	70.1	
10C to 10D	RCP CL4	25.1	375	0.11	1.04	96.5	5.55	193.48	0.2477	133.1	5.34	195.64	0.2465	134	134	
10D to 10E	RCP CL4	25.1	450	0.159	1.04	96.5	5.76	191.38	0.3804	202.2	5.46	194.35	0.3778	204	204	
10E to 10F	RCP CL4	25.1	450	0.159	1.04	96.5	5.97	189.29	0.5131	269.8	5.57	193.27	0.5081	272.8	272.8	
10F to 10G	RCP CL4	25.1	525	0.216	1.04	96.5	6.18	187.38	0.6458	336.1	5.72	191.75	0.639	340.4	340.4	
10G to 10H	RCP CL4	25.1	525	0.216	1.04	96.5	6.39	185.5	0.7784	401.1	5.88	190.17	0.7697	406.6	406.6	
10H to 10I	RCP CL4	22.88	600	0.283	1.06	94.4	6.6	183.62	0.9225	470.5	6.08	188.28	0.9134	477.7	477.7	
10I to 10J	RCP CL4	29.1	900	0.636	1	100	6.79	181.9	2.1184	1070.4	6.14	187.77	2.0803	1085	1085	-113
10J to 10K	RCP CL4	20	900	0.636	2.02	49.6	7.03	179.75	2.2106	1103.8	6.35	185.86	2.1693	1120	1120	-113
10K to 10L	RCP CL4	14.8	900	0.636	2.2	45.4	7.2	178.42	2.2732	1126.6	6.5	184.46	2.2308	1143	1143	-113
10L to 10M	RCP CL4	14.06	900	0.636	1	100	7.32	177.43	2.3281	1147.4	6.63	183.35	2.2857	1164.1	1164.1	-113
10M to 10N	RCP CL4	28.95	900	0.636	1	100	7.44	176.49	2.3915	1172.4	6.75	182.29	2.3491	1189.5	1189.5	-113
10N to 10O	RCP CL4	21.1	1200	1.131	1	100	7.68	174.56	3.6071	1749.1	6.82	181.63	3.537	1784.5	1784.5	-113
10O to 10P	RCP CL4	32.5	1200	1.131	2.09	47.8	7.86	173.16	3.7006	1779.9	7.09	179.25	3.6472	1816	1816	-113
10P to 10Q	RCP CL4	5.95	1200	1.131	1.3	76.8	8.13	171.11	3.8626	1835.9	7.3	177.62	3.798	1873.9	1873.9	-113
10Q to 10R	RCP CL4	10.67	1200	1.131	1.18	84.6	8.18	170.77	4.8117	2282.5	7.12	179.01	4.7055	2339.9	2339.9	-113
10R to 10S	RCP CL4	24.2	1350	1.431	1.07	93.1	8.26	170.15	4.8977	2314.8	7.21	178.3	4.7915	2373.1	2373.1	-113
10S to 10T	RCP CL4	24.2	1350	1.431	1.07	93.1	8.47	168.73	5.0165	2351.2	7.41	176.69	4.9103	2409.9	2409.9	-113
10T to 10U	RCP CL4	24.2	1350	1.431	1.07	93.1	8.67	167.32	5.1492	2393.3	7.6	175.21	5.0391	2452.6	2452.6	-113
10U to 10V	RCP CL4	23.05	1350	1.431	1.08	92.2	8.87	165.91	5.282	2434.3	7.77	173.85	5.1646	2494.1	2494.1	-113
10V to 10W	RCP CL4	11.25	1350	1.431	1.19	84.3	9.06	164.63	5.4115	2474.7	7.92	172.62	5.2848	2534.1	2534.1	-113
10W to 10X	RCP CL4	43.96	1350	1.431	1	99.9	9.16	164.07	5.5732	2539.9	8.1	171.28	5.467	2601	2601	-113
10X to 10Y	RCP CL4	74.09	1500	1.767	0.41	246.5	9.52	161.87	5.5732	2505.9	8.46	168.77	5.4652	2562.1	2562.1	-113
11A to 11B	RCP CL4	65.97	300	0.071	2.04	49.1	5	199	0.2185	120.8	5	199	0.2185	120.8	120.8	-22
11B to 11C	RCP CL4	64.67	375	0.11	1.53	65.5	5.55	193.5	0.4543	244.2	5	199	0.4302	237.8	244.2	-44
11C to 11D	RCP CL4	33.92	450	0.159	1.04	96.6	6.09	188.2	0.6855	358.3	5.54	193.61	0.6614	355.7	358.3	-66
11D to 11E	RCP CL4	26.08	900	0.636	0.52	191.7	6.37	185.66	1.1344	585	5.82	190.78	1.1104	588.5	588.5	-113
11E to 10I	RCP CL4	6.79	900	0.636	0.6	165.3	6.59	183.7	1.1344	578.9	6.04	188.65	1.1104	581.9	581.9	-113
12A to 12B	PVC SN8	28.97	225	0.04	4.61	21.7	5	199	0.1265	69.9	5	199	0.1265	69.9	69.9	-14
12B to 11D	RCP CL4	26.52	300	0.071	0.52	191.3	5.24	196.59	0.2284	124.7	5	199	0.2223	122.9	124.7	-25
13A to 13B	PVC SN8	25.1	225	0.04	2.07	48.3	5.13	197.75	0.0886	48.7	5.12	197.83	0.0886	48.7	48.7	
13B to 13C	PVC SN8	12.1	300	0.071	2.15	46.5	5.33	195.65	0.2183	118.6	5.24	196.57	0.2177	118.9	118.9	
13C to 13D	PVC SN8	10.6	300	0.071	2.25	44.4	5.44	194.65	0.2546	137.6	5.34	195.56	0.254	138	138	
13D to 13E	RCP CL4	33.58	450	0.159	1.04	96.5	5.52	193.76	0.3051	164.2	5.43	194.68	0.3046	164.7	164.7	
13E to 13F	RCP CL4	25.1	450	0.159	1.04	96.5	5.8	190.96	0.3791	201.1	5.62	192.76	0.3771	201.9	201.9	
13F to 13G	RCP CL4	25.1	525	0.216	1.04	96.5	6.01	188.88	0.4601	241.4	5.82	190.8	0.4578	242.6	242.6	
13G to 13H	RCP CL4	25.1	525	0.216	1.04	96.5	6.22	187	0.5415	281.3	6.03	188.73	0.5392	282.7	282.7	
13H to 13I	RCP CL4	13.4	525	0.216	1.08	92.7	6.43	185.12	0.6227	320.2	6.14	187.71	0.6176	322	322	
13I to 10N	RCP CL4	9.17	525	0.216	1.18	84.8	6.54	184.12	0.6645	339.9	6.25	186.71	0.6594	342	342	
14A to 10L	PVC SN8	5.42	300	0.071	1.23	81.6	5	199	0.0549	30.4	5	199	0.0549	30.4	30.4	
15A to 15B	PVC SN8	16.27	300	0.071	1.06	94.8	5.16	197.36	0.0564	30.9	5.08	198.15	0.0562	30.9	30.9	
15B to 15C	RCP CL4	1.89	375	0.11	1.62	61.8	5.3	196	0.1132	61.6	5.21	196.92	0.1129	61.8	61.8	
15C to 10N	RCP CL4	5.2	375	0.11	1.29	77.4	5.32	195.84	0.1132	61.6	5.22	196.76	0.1129	61.7	61.7	
16A to 13D	PVC SN8	1.73	300	0.071	1.77	56.4	5	199	0.0489	27	5	199	0.0489	27	27	
17A to 17B	PVC SN8	25.06	225	0.04	1.55	64.4	5.13	197.69	0.0556	30.5	5.08	198.23	0.0554	30.5	30.5	
17B to 17C	PVC SN8	24.6	225	0.04	1.55	64.3	5.34	195.6	0.1207	65.6	5.27	196.27	0.1205	65.7	65.7	
17C to 17D	PVC SN8	24.1	300	0.071	1.04	96.4	5.54	193.55	0.1998	107.4	5.41	194.86	0.199	107.7	107.7	
17D to 17E	PVC SN8	24.1	300	0.071	1.04	96.4	5.75	191.55	0.2773	147.5	5.58	193.22	0.2761	148.2	148.2	
17E to 17F	RCP CL4	23.1	375	0.11	1.04	96.3	5.95	189.54	0.3543	186.6	5.68	192.17	0.3515	187.6	187.6	
17F to 17G	RCP CL4	19.75	375	0.11	1.05	95.6	6.14	187.75	0.4192	218.6	5.86	190.37	0.4161	220	220	
17G to 10N	RCP CL4	8.6	450	0.159	1.17	85.1	6.3	186.27	0.438	226.6	6.03	188.75	0.4349	228	228	
18A to 18B	PVC SN8	25.1	225	0.04	1.04	96.5	5.14	197.58	0.067	36.8	5.05	198.54	0.0668	36.8	36.8	
18B to 18C	PVC SN8	25.1	300	0.071	1.04	96.5	5.35	195.49	0.2012	109.2	5.24	196.57	0.2009	109.7	109.7	
18C to 18D	RCP CL4	25.1	450	0.159	1.04	96.5	5.56	193.4	0.3336	179.2	5.36	195.36	0.3321	180.2	180.2	
18D to 18E	RCP CL4	24.97	525	0.216	1.04	96.5	5.77	191.3	0.4667	248	5.56	193.4	0.465	249.8	249.8	
18E to 18F	RCP CL4	25.1	525	0.216	1.04	96.5	5.98	189.22	0.5958	313.2	5.66	192.4	0.5914	316.1	316.1	
18F to 18G	RCP CL4	24.8	600	0.283	1.05	95.4	6.19	187.32	0.7269	378.2	5.84	190.64	0.7213	382	382	
18G to 18H	RCP CL4	24.65	600	0.283	1.05	94.8	6.39	185.46	0.8717	449.1	5.99	189.12	0.8639	453.8	453.8	
18H to 10Q	RCP CL4	11.73	600	0.283	1.14	87.7	6.6	183.61	0.9492	484.1	6.19	187.26	0.9414	489.7	489.7	
19A to 19B	PVC SN8	7.6	300	0.071	4.47	22.4	5.05	198.54	0.0572	31.5	5.03	198.66	0.0571	31.5	31.5	
19B to 19C	RCP CL4	6.77	375	0.11	1.14	87.4	5.11	197.9	0.0759	41.7	5.1	198.03	0.0759	41.7	41.7	
19C to 19D	RCP CL4	17.7	525	0.216	1.06	94.8	5.17	197.34	0.0759	41.6	5.15	197.46	0.0759	41.6	41.6	
19D to 10W	RCP CL4	14.85	600	0.283	1.1	90.8	5.31	195.86	0.1367	74.4	5.27	196.33	0.1365	74.4	74.4	
20A to 20B	RCP CL4	13.79	375	0.11	1.13	88.5	5.06	198.36	0.0276	15.2	5.05	198.48	0.0276	15.2	15.2	
20B to 23F	RCP CL4	14.56	450	0.159	1.12	89	5.18	197.21	0.2401	131.6	5.05	198.46	0.2393	131.9	131.9	
21A to 21B	PVC SN8	20.08	300	0.071	0.94	106.3	5.25	196.5	0.1159	63.2	5.14	197.58	0.1155	63.4	63.4	
21B to 21C	RCP CL4	25.1	450	0.159	0.86	115.8	5.42	194.82	0.2581	139.7	5.21	196.86	0.2569	140.5	140.5	
21C to 21D	RCP CL4	25.1	525	0.216	1.04	96.5	5.63	192.73	0.3908	209.2	5.38	195.24	0.3888	210.9	210.9	
21D to 21E	RCP CL4	25.1	600	0.283	1.09	92.1	5.84	190.64	0.5234	277.2	5.57	193.27	0.5211	279.8	279.8	
21E to 21F	RCP CL4	18.8	600	0.283	1.06	94	6.05	188.59	0.6562	343.7	5.74	191.6	0.6526	347.3	347.3	
21F to 21G	RCP CL4	7.75	600	0.283	1.19	83.8	6.2	187.18	0.7404	385	5.86	190.4	0.7355	389	389	
21G to 21H	RCP CL4	14.24	600	0.283	1.66	60.3	6.27	186.6	0.8202	425.1	5.89	190.05	0.814	429.7	429.7	
21H to 21I	RCP CL4	26.5	600	0.283	2.11	47.3	6.39	185.53	0.8823	454.7	6.03	188.73	0.8769	459.7	459.7	
21I to 23I	RCP CL4	14.76	600	0.283	2.2	45.4	6.61	183.55	0.9692	494.1	6.22	187	0.9625	499.9	499.9	
22A to 21G	PVC SN8	12.11	225	0.04	1.1	91	5.13	197.66	0.0501	27.5	5.04	198.62	0.0498	27.5	27.5	
23A to 23B	PVC SN8	25.1	300	0.071	1.04	96.5	5.19	197.15	0.0726	39.7	5.17	197.27	0.0725	39.7	39.7	
23B to 23C	PVC SN8	25.1	300	0.071	1.04	96.5	5.39	195.06	0.1531	83	5.29	196.14	0.1526	83.1	83.1	
23C to 23D	RCP CL4	34.29	375	0.11	1.03	97.4	5.6	192.97	0.2488	133.4	5.42	194.82	0.2474	133.9	133.9	
23D to 23E	RCP CL4	4.11	450	0.159	0.8	125.2	5.89	190.11	0.2799	147.8	5.7	191.96	0.2784	148.5	148.5	
23E to 23F	RCP CL4	7.88	750	0.442	1.21	82.7	5.92	189.77	0.6228	328.3	5.6	193.01	0.6178	331.2	331.2	
23F to 23G	RCP CL4	15.63	1050	0.866	1.1	91.2	5.99	189.11	0.8629	453.3	5.64	192.64	0.8567	458.4	458.4	
23G to 23H	RCP CL4	9.85	1050	0.866	1.12	89.1	6.12	187.93	0.9016	470.6	5.77	191.33	0.8954	475.9	475.9	
23H to 23I	RCP CL4	16.4	1050	0.866	1.08	92.4	6.2	187.19	1.055	548.6	5.77	191.3	1.0449	555.2	555.2	
23I to 23J	RCP CL4	15.88	1050	0.866	1.09	91.4	6.73	182.44	2.0691	1048.6	6.1	188.08	2.0454	1068.6	1068.6	
23J to 23K	RCP CL4	48.69	1050	0.866	0.2	490.6	6.86	181.25	2.0691	1041.7	6.23	186.89	2.0454	1061.9	1061.9	
24A to 25D	PVC SN8	7.54	300	0.071	1.15	87.1	5.16	197.41	0.0656	36	5.12	197.83	0.0655	36	36	
25A to 25B	PVC SN8	25.1	300	0.071	1.55	64.4	5.18	197.19	0.0768	42.1	5.09	198.15	0.0765	42.1	42.1	
25B to 25C	RCP CL4	25.1	375	0.11	1.55	64.4	5.39	195.1	0.1574	85.3	5.28	196.18	0.1571	85.6	85.6	
25C to 25D	RCP CL4	19.15	450	0.159	2.64	37.9	5.6	193.01	0.2522	135.2	5.42	194.82	0.2513	136	136	
25D to 23E	RCP CL4	2.55	525	0.216	1.53	65.4	5.76	191.41	0.3178	169	5.56	193.38	0.3166	170.1	170.1	
26A to 23G	PVC SN8	5.16	300	0.071	1.17	85.1	5	199	0.0063	3.5	5	199	0.0063	3.5	3.5	
27A to 23G	PVC SN8	11.41	300	0.071	1.08	92.7	5	199	0.0025	1.4	5	199	0.0025	1.4	1.4	
CLUB01A to 20B	RCP CL4	6.5	375	0.11	2.28	43.9	5	199	0.1619	89.5	5	199	0.1619	89.5	89.5	
CLUB02A to 23H	PVC SN8	4.4	300	0.071	3.18	31.4	5	199	0.0922	51	5	199	0.0922	51	51	

Pipe ID (-)	Peak Flow Qrat (L/s)	Net Bypass Flow Qb (L/s)	Pipe Flow Q (L/s)	Capacity Flow Qcap (L/s)	Q/Qcap Ratio (-)	Full Pipe Vel Vf=Q/Af (m/s)	Norm Depth Vel Vn=Q/An (m/s)	Crit Depth Vel Vc=Q/Ac (m/s)	Capacity Vel Vcap=Qcap/Af (m/s)	US Node Grate RL (m)	Pipe USIL (m)	Pipe DSIL (m)	DS Node Grate RL (m)	Cover Limit (m)	Cover Min (m)	Pipe DS Bend (deg)	Pipe DS Drop (m)
10A to 10B	48.4	-13.5	34.9	32.9	1.06	0.88	0.93	1.18	0.83	526.14	524.67	524.6	525.99	0.45	1.17	4.4	0.03
10B to 10C	70.1	-15.3	54.8	98.5	0.56	0.78	1.43	1.22	1.39	525.99	524.57	524.31	525.73	0.45	1.12	0	0.075
10C to 10D	134	-29.1	104.9	178.5	0.59	0.95	1.68	1.42	1.62	525.73	524.24	523.98	525.47	0.9	1.12	0	0.075
10D to 10E	204	-42.3	161.7	290.3	0.56	1.02	1.87	1.54	1.83	525.47	523.9	523.64	525.21	0.9	1.12	0	0.03
10E to 10F	272.8	-53.5	219.2	290.3	0.76	1.38	2.01	1.75	1.83	525.21	523.61	523.35	524.95	0.9	1.15	0	0.075
10F to 10G	340.4	-63.1	277.3	437.9	0.63	1.28	2.14	1.77	2.02	524.95	523.28	523.02	524.69	0.9	1.15	0	0.03
10G to 10H	406.6	-69.4	337.2	437.9	0.77	1.56	2.23	1.94	2.02	524.69	522.99	522.73	524.43	0.9	1.18	0	0.03
10H to 10I	477.7	-74.9	402.8	634.6	0.63	1.42	2.37	1.93	2.24	524.43	522.7	522.45	524.19	0.9	1.13	-90	0.872
10I to 10J	972	-91	881	1811.1	0.49	1.38	2.83	2.14	2.85	524.19	521.58	521.29	523.45	0.9	1.28	0	0.03
10J to 10K	1007	-105.4	901.6	2572.4	0.35	1.42	3.69	2.16	4.04	523.45	521.26	520.86	522.75	0.9	1.01	0	0.08
10K to 10L	1030	-108.8	921.2	2687.9	0.34	1.45	3.83	2.18	4.23	522.75	520.78	520.45	522.51	0.9	1.01	-90	0.03
10L to 10M	1051.1	-114.5	936.6	1811.1	0.52	1.47	2.87	2.2	2.85	522.51	520.42	520.28	522.7	0.9	1.2	0	0.03
10M to 10N	1076.5	-126.6	949.9	1811.1	0.52	1.49	2.88	2.21	2.85	522.7	520.25	519.96	523.04	0.9	1.56	90	0.03
10N to 10O	1671.5	-143.2	1528.3	3900.4	0.39	1.35	3.24	2.33	3.45	523.04	519.93	519.72	522.63	0.9	1.75	0	0.421
10O to 10P	1703	-156.9	1546.1	5641.8	0.27	1.37	4.25	2.34	4.99	522.63	519.3	518.62	521.02	0.9	1.24	0	0.03
10P to 10Q	1760.9	-176.4	1584.5	4451.4	0.36	1.4	3.6	2.36	3.94	521.02	518.59	518.51	520.78	0.9	1.07	90	0.03
10Q to 10R	2226.9	-237	1989.9	4241.8	0.47	1.76	3.69	2.57	3.75	520.78	518.48	518.35	520.65	0.9	1.09	0	0.03
10R to 10S	2260.1	-228.7	2031.4	5534.7	0.37	1.42	3.57	2.46	3.87	520.65	518.32	518.06	520.39	0.9	0.97	0	0.03
10S to 10T	2296.9	-225.1	2071.8	5534.7	0.37	1.45	3.59	2.48	3.87	520.39	518.03	517.77	520.13	0.9	1	0	0.03
10T to 10U	2339.6	-224.4	2115.1	5534.7	0.38	1.48	3.61	2.49	3.87	520.13	517.74	517.48	519.87	0.9	1.03	0	0.03
10U to 10V	2381.1	-223.8	2157.3	5560.9	0.39	1.51	3.64	2.51	3.89	519.87	517.45	517.2	519.62	0.9	1.06	0	0.15
10V to 10W	2421.1	-214.1	2207	5816.7	0.38	1.54	3.78	2.53	4.06	519.62	517.05	516.92	519.49	0.9	1.21	-90	0.03
10W to 10X	2488	-47.4	2440.7	5341.1	0.46	1.71	3.65	2.63	3.73	519.49	516.89	516.45	519.27	0.9	1.24	-84.1	0.03
10X to 10Y	2449.1	-47.4	2401.7	4504.2	0.53	1.36	2.59	2.51	2.55	519.27	516.42	516.12	517.75	0.9	-1.52	0	
11A to 11B	98.8	-57.3	41.5	138.1	0.3	0.59	1.71	1.11	1.95	525.72	524.68	523.34	524.3	0.9	0.66	0	0.075
11B to 11C	200.2	-100.7	99.5	216.8	0.46	0.9	1.92	1.39	1.96	524.3	523.26	522.27	523.39	0.9	0.64	0	0.075
11C to 11D	292.3	-115.6	176.7	290.2	0.61	1.11	1.91	1.59	1.82	523.39	522.2	521.85	523	0.9	0.71	-90.1	0.03
11D to 11E	475.5	-28.7	446.7	1308	0.34	0.7	1.86	1.7	2.06	523	521.82	521.68	524.26	0.9	0.78	-37.6	0.03
11E to 10I	468.9	-28.7	440.1	1408.6	0.31	0.69	1.96	1.69	2.21	524.26	521.65	521.61	524.19	0.9	1.69	37.7	0.03
12A to 12B	55.9	-28.7	27.2	96.4	0.28	0.68	2.08	1.07	2.42	524.46	523.57	522.24	523.2	0.45	0.65	0	0.075
12B to 11D	99.7	-49.2	50.5	69.9	0.72	0.71	1.08	1.19	0.99	523.2	522.16	522.03	523	0.9	0.67	89.9	0.208
13A to 13B	48.7	-12.2	36.4	64.7	0.56	0.92	1.67	1.21	1.63	525.98	524.6	524.08	525.34	0.45	1.04	0	0.23
13B to 13C	118.9	-27.3	91.6	141.8	0.65	1.3	2.13	1.54	2.01	525.34	523.85	523.59	524.93	0.45	1.05	48.6	0.03
13C to 13D	138	-20.2	117.8	145.3	0.81	1.67	2.29	1.8	2.06	524.93	523.56	523.32	524.74	0.45	1.08	41.4	0.15
13D to 13E	164.7	-6.2	158.5	290.3	0.55	1	1.86	1.53	1.83	524.74	523.17	522.82	524.31	0.9	1.05	0	0.03
13E to 13F	201.9	-11.9	190	290.3	0.65	1.19	1.95	1.64	1.83	524.31	522.79	522.53	524	0.9	1.02	0	0.075
13F to 13G	242.6	-15.4	227.3	437.9	0.52	1.05	2.04	1.63	2.02	524	522.46	522.2	523.68	0.9	0.97	0	0.03
13G to 13H	282.7	-18.3	264.4	437.9	0.6	1.22	2.12	1.73	2.02	523.68	522.17	521.91	523.37	0.9	0.94	0	0.03
13H to 13I	322	-20.4	301.6	446.8	0.68	1.39	2.21	1.84	2.06	523.37	521.88	521.73	523.19	0.9	0.94	-21.1	0.03
13I to 10N	342	-13	329	467.3	0.7	1.52	2.34	1.91	2.16	523.19	521.7	521.6	523.04	0.9	0.91	-68.9	1.665
14A to 10L	30.4	-5.7	24.7	107.1	0.23	0.35	1.23	0.94	1.51	522.38	521.19	521.13	522.51	0.45	0.9	-17.1	0.705
15A to 15B	30.9	-0.5	30.4	99.4	0.31	0.43	1.24	1	1.41	522.75	521.26	521.09	522.96	0.45	1.2	39.6	0.075
15B to 15C	61.8	4.7	66.5	223.1	0.3	0.6	1.76	1.2	2.02	522.96	521.01	520.98	522.94	0.9	1.57	-22.7	0.03
15C to 10N	61.7	24.3	86	199.4	0.43	0.78	1.74	1.31	1.81	522.94	520.95	520.89	523.04	0.9	1.62	73.1	0.956
16A to 13D	27	-5.2	21.8	128.8	0.17	0.31	1.36	0.9	1.82	524.72	523.24	523.21	524.74	0.45	1.18	-39.6	0.034
17A to 17B	30.5	-7.3	23.2	56	0.41	0.58	1.34	1.01	1.41	524.96	523.54	523.15	524.65	0.45	1.19	0	0.03
17B to 17C	65.7	-20.5	45.2	56	0.81	1.14	1.57	1.34	1.41	524.65	523.12	522.74	524.34	0.45	1.3	0	0.075
17C to 17D	107.7	-28.4	79.3	98.5	0.8	1.12	1.55	1.43	1.39	524.34	522.67	522.42	524.04	0.45	1.33	0	0.075
17D to 17E	148.2	-32.8	115.4	98.5	1.17	1.63	1.63	1.77	1.39	524.04	522.34	522.09	523.73	0.45	1.35	0	0.075
17E to 17F	187.6	-35.8	151.9	178.8	0.85	1.38	1.82	1.67	1.62	523.73	522.02	521.78	523.44	0.9	1.3	0	0.03
17F to 17G	220	-36.2	183.8	179.4	1.02	1.66	1.85	1.86	1.62	523.44	521.75	521.54	523.19	0.9	1.28	0	0.03
17G to 10N	228	-27.9	200.2	309.1	0.65	1.26	2.07	1.68	1.94	523.19	521.51	521.41	523.04	0.9	1.2	-90	1.477
18A to 18B	36.8	-8.9	27.9	45.7	0.61	0.7	1.21	1.08	1.15	522.73	521.29	521.03	522.47	0.45	1.21	0	0.075
18B to 18C	109.7	-25.1	84.6	98.5	0.86	1.2	1.57	1.48	1.39	522.47	520.95	520.69	522.21	0.45	1.21	0	0.15
18C to 18D	180.2	-37.6	142.7	290.3	0.49	0.9	1.82	1.47	1.83	522.21	520.54	520.28	521.95	0.9	1.21	0	0.075
18D to 18E	249.8	-48.5	201.3	437.9	0.46	0.93	1.98	1.56	2.02	521.95	520.21	519.95	521.69	0.9	1.21	0	0.03
18E to 18F	316.1	-55.1	261	437.9	0.6	1.21	2.11	1.73	2.02	521.69	519.92	519.66	521.43	0.9	1.24	0	0.075
18F to 18G	382	-60	322	629	0.51	1.14	2.24	1.76	2.22	521.43	519.58	519.32	521.17	0.9	1.24	0	0.03
18G to 18H	453.8	-65.7	388.1	630.9	0.62	1.37	2.35	1.89	2.23	521.17	519.29	519.03	520.91	0.9	1.27	0	0.03
18H to 10Q	489.7	-60.6	429.1	656.1	0.65	1.52	2.47	1.98	2.32	520.91	519	518.87	520.78	0.9	1.3	0	0.388
19A to 19B	31.5	20.8	52.4	204.6	0.26	0.74	2.42	1.2	2.89	520.05	518.6	518.26	519.69	0.45	1.14	0	0.105
19B to 19C	41.7	39.8	81.6	187.6	0.43	0.74	1.64	1.29	1.7	519.69	518.15	518.07	519.56	0.9	1.05	-90	0.15
19C to 19D	41.6	39.8	81.5	441.9	0.18	0.38	1.56	1.17	2.04	519.56	517.92	517.74	519.32	0.9	1.06	0	0.03
19D to 10W	74.4	150.8	225.2	644.5	0.35	0.8	2.08	1.54	2.28	519.32	517.71	517.54	519.49	0.9	1.02	90	0.651
20A to 20B	15.2	-5.3	10	186.5	0.05	0.09	0.9	0.69	1.69	520.44	519	518.85	520.59	0.9	1.07	-17.5	0.03
20B to 23F	131.9	18	149.9	302.3	0.5	0.94	1.9	1.49	1.9	520.59	518.82	518.65	520.84	0.9	1.34	-39.5	0.03
21A to 21B	63.4	-7.5	55.9	93.8	0.6	0.79	1.38	1.23	1.33	523.83	522.37	522.18	523.62	0.45	1.15	0	0.03
21B to 21C	140.5	-8.3	132.2	265	0.5	0.83	1.66	1.43	1.67	523.62	522.15	521.93	523.36	0.9	0.98	0	0.03
21C to 21D	210.9	-12	198.9	437.9	0.45	0.92	1.97	1.55	2.02	523.36	521.9	521.64	523.1	0.9	0.93	0	0.075
21D to 21E	279.8	-14.3	265.4	640.1	0.41	0.94	2.16	1.63	2.26	523.1	521.57	521.3	522.84	0.9	0.93	0	0.03
21E to 21F	347.3	-15.9	331.4	633.6	0.52	1.17	2.27	1.78	2.24	522.84	521.27	521.07	522.64	0.9	0.97	0	0.03
21F to 21G	389	-5.2	383.8	671.1	0.57	1.36	2.45	1.89	2.37	522.64	521.04	520.94	522.55	0.9	1	-90	0.03
21G to 21H	429.7	6.3	436	791	0.55	1.54	2.86	2	2.8	522.55	520.91	520.68	522.37	0.9	1.03	0	0.03
21H to 21I	459.7	9.5	469.3	893	0.53	1.66	3.2	2.07	3.16	522.37	520.65	520.09	521.71	0.9	1.05	0	0.03
21I to 23I	499.9	8.3	508.2	911.8	0.56	1.8	3.31	2.15	3.22	521.71	520.06	519.73	521.4	0.9	1	90	1.747
22A to 21G	27.5	-5.2	22.3	47.1	0.47	0.56	1.17	0.99	1.18	522.71	521.27	521.14	522.55	0.45	1.2	85.7	0.221
23A to 23B	39.7	-10.8	28.9	98.5	0.29	0.41	1.21	0.98	1.39	522.22	520.78	520.52	521.91	0.45	1.1	0	0.063
23B to 23C	83.1	-11.8	71.4	98.5	0.72	1.01	1.52	1.36	1.39	521.91	520.45	520.19	521.59	0.45	1.11	0	0.105
23C to 23D	133.9	-21.5	112.4	177.7	0.63	1.02	1.7	1.46	1.61	521.59	520.09	519.74	521.09	0.9	1	0	0.427
23D to 23E	148.5	-18.7	129.8	255	0.51	0.82	1.61	1.42	1.6	521.09	519.31	519.28	520.92	0.9	1.21	-45.5	0.3
23E to 23F	331.2	-13.8	317.4	1224.8	0.26	0.72	2.33	1.61	2.77	520.92	518.98	518.88	520.84	0.9	1.2	78.5	0.255
23F to 23G	458.4	4.2	462.6	2860	0.16	0.53	2.43	1.65	3.3	520.84	518.62	518.45	521.17	0.9	1.19	0	0.03
23G to 23H	475.9	4.2	480.1	2893.6	0.17	0.55	2.47	1.67	3.34	521.17	518.42	518.31	521.23	0.9	1.71	-33	0.03
23H to 23I	555.2	-16.8	538.4	2842.1	0.19	0.62	2.52	1.73	3.28	521.23	518.28	518.11	521.4	0.9	1.9	0	0.12
23I to 23J	1068.6	-2.7	1065.9	2858	0.37	1.23	3.06	2.16	3.3	521.4	517.99	517.81	521.58	0.9	2.38	-20.6	0.442
23J to 23K	1061.9	-2.7	1059.1	1233.4	0.86	1.22	1.6	2.15	1.42	521.58	517.37	517.27	519	0.9	0.39	0	
24A to 25D	36	-8.8	27.2	103.6	0.26	0.38	1.23	0.97	1.47	520.9	519.41	519.32	520.93	0.45	1.2	41.3	0.265
25A to 25B	42.1	-0.6	41.6	120.6	0.34	0.59	1.55	1.11	1.71	521.98	520.6	520.21	521.66	0.45	1.08	0	0.075
25B to 25C	85.6	1.3	86.9	218.6	0.4	0.79	1.87	1.32	1.98	521.66	520.13	519.74	521.35	0.9	1.15	0	0.075
25C to 25D	136	0.1	136.1	463.2	0.29	0.86	2.53	1.44	2.91	521.35	519.67	519.16	520.93	0.9	1.22	-90	0.105
25D to 23E	170.1	-8.7	161.4	532.1	0.3	0.75	2.15	1.44	2.46	520.93	519.06	519.02	520.92	0.9	1.35	44.5	0.042
26A to 23G	3.5		3.5	104.8	0.03	0.05	0.68	0.54	1.48	520.75	519.28	519.22	521.17	0.45	1.21	-90	0.795
27A to 23G	1.4		1.4	100.5	0.01	0.02	0.5	0.43	1.42	520.75	519.29	519.17	521.17	0.45	1.2	-45.2	0.748
CLUB01A to 20B	89.5		89.5	264.7	0.34	0.81	2.16	1.33	2.4	520.72	519.22	519.07	520.59	0.9	1.12	-107.5	0.252
CLUB02A to 23H	51	-46	5	172.6	0.03	0.07	1.08	0.6	2.44	521.35	519.88	519.74	521.23	0.45	1.17	-90	1.458

Pipe ID (-)	US Node Ku (-)	US Node Kw (-)	Pipe Vhead (m)	Phead Loss (Ku.Vhead) (m)	WSE Loss (Kw.Vhead) (m)	Pipe Thead Loss (m)	US Node HGL (m)	Pipe US HGL (m)	Pipe DS HGL (m)	DS Node HGL (m)	HGL Grade (%)	HGL Grade (1 in)	F'board US (m)
10A to 10B	2.27	2.69	0.04	0.09	0.11	0.06	524.98	524.87	524.81	524.82	0.52	191.3	1.17
10B to 10C	1.77	2.16	0.03	0.05	0.07	0.23	524.82	524.75	524.56	524.58	0.76	130.9	1.17
10C to 10D	1.89	2.34	0.05	0.09	0.11	0.24	524.58	524.47	524.28	524.3	0.78	127.7	1.15
10D to 10E	1.79	2.22	0.05	0.09	0.12	0.16	524.3	524.18	524.09	524.12	0.38	266	1.17
10E to 10F	1.53	1.86	0.1	0.15	0.18	0.24	524.12	523.94	523.74	523.76	0.79	126.4	1.09
10F to 10G	1.31	1.56	0.08	0.11	0.13	0.18	523.76	523.63	523.52	523.55	0.43	230.3	1.19
10G to 10H	1.16	1.37	0.12	0.14	0.17	0.22	523.55	523.38	523.23	523.25	0.61	164.2	1.14
10H to 10I	1.11	1.3	0.1	0.11	0.13	0.21	523.25	523.11	522.8	522.4	1.36	73.7	1.19
10I to 10J	2.43	2.71	0.1	0.24	0.27	0.29	522.4	522.14	521.86	521.87	0.93	107.4	1.79
10J to 10K	0.42	0.46	0.1	0.04	0.05	0.4	521.87	521.82	521.38	521.39	2.18	45.8	1.58
10K to 10L	0.38	0.4	0.11	0.04	0.04	0.23	521.39	521.34	521.23	521.29	0.78	127.4	1.36
10L to 10M	2.12	2.67	0.11	0.23	0.3	0.14	521.29	520.99	520.86	520.87	0.91	109.6	1.22
10M to 10N	0.33	0.36	0.11	0.04	0.04	0.15	520.87	520.83	520.8	520.86	0.08	1271	1.83
10N to 10O	2.11	2.67	0.09	0.2	0.25	0.11	520.86	520.61	520.24	520.01	1.73	57.7	2.19
10O to 10P	0.34	0.37	0.1	0.03	0.04	0.46	520.01	519.98	519.68	519.69	0.91	110.3	2.62
10P to 10Q	0.44	0.49	0.1	0.04	0.05	0.01	519.69	519.64	519.64	519.69	-0.04	-2325.3	1.33
10Q to 10R	2.44	2.76	0.16	0.39	0.44	0.12	519.69	519.26	519.08	519.08	1.65	60.8	1.08
10R to 10S	0	0.01	0.1	0	0	0.26	519.08	519.08	518.84	518.84	1	100.1	1.57
10S to 10T	0.38	0.4	0.11	0.04	0.04	0.26	518.84	518.8	518.56	518.56	0.99	101.5	1.55
10T to 10U	0.39	0.42	0.11	0.04	0.05	0.26	518.56	518.52	518.28	518.28	0.98	101.9	1.57
10U to 10V	0.38	0.41	0.12	0.04	0.05	0.24	518.28	518.24	518.04	518.05	0.84	119.1	1.59
10V to 10W	0.4	0.43	0.12	0.05	0.05	0.02	518.05	517.99	518.04	518.12	-0.37	-269.5	1.57
10W to 10X	2.1	2.66	0.15	0.31	0.39	0.4	518.12	517.72	517.43	517.48	0.67	148.5	1.37
10X to 10Y	2.2	2.71	0.09	0.21	0.26	0.3	517.48	517.22	516.9	516.9	0.43	230.7	1.8
11A to 11B	7		0.02	0.12		1.27	524.96	524.84	523.62	523.62	1.85	54	0.75
11B to 11C	2.95		0.04	0.12		0.83	523.62	523.49	522.72	522.72	1.2	83.5	0.68
11C to 11D	1.78		0.06	0.11		0.13	522.72	522.61	522.49	522.5	0.36	279.6	0.67
11D to 11E	2.43	3.12	0.03	0.06	0.08	0.02	522.5	522.43	522.42	522.43	0.01	8052.5	0.5
11E to 10I	1.97	2.31	0.02	0.05	0.06	0	522.43	522.37	522.37	522.4	0.01	7620.5	1.83
12A to 12B	6.27		0.02	0.15		1.15	523.86	523.71	522.6	522.6	3.84	26.1	0.6
12B to 11D	1.58		0.03	0.04		0.07	522.6	522.56	522.49	522.5	0.27	367.2	0.6
13A to 13B	2.18	2.66	0.04	0.09	0.11	0.43	524.87	524.76	524.37	524.39	1.57	63.7	1.11
13B to 13C	1.92	2.23	0.09	0.16	0.19	0.11	524.39	524.2	524.09	524.13	0.9	111.6	0.94
13C to 13D	1.91	2.17	0.14	0.27	0.31	0.23	524.13	523.82	523.56	523.57	2.52	39.7	0.8
13D to 13E	2.07	2.37	0.05	0.1	0.12	0.32	523.57	523.45	523.18	523.19	0.81	122.8	1.16
13E to 13F	1.06	1.2	0.07	0.08	0.09	0.26	523.19	523.1	522.84	522.84	1.06	94.5	1.13
13F to 13G	0.97	1.12	0.06	0.05	0.06	0.24	522.84	522.78	522.59	522.6	0.76	131.8	1.16
13G to 13H	0.96	1.1	0.08	0.07	0.08	0.16	522.6	522.52	522.44	522.45	0.32	314.2	1.08
13H to 13I	0.89	1	0.1	0.09	0.1	0.06	522.45	522.35	522.3	522.35	0.37	268.2	0.92
13I to 10N	1.75	2.15	0.12	0.21	0.25	0.08	522.35	522.09	521.92	520.86	1.88	53.3	0.85
14A to 10L	9.7		0.01	0.06		0.06	521.37	521.31	521.23	521.29	1.55	64.6	1.01
15A to 15B	2.4	3.09	0.01	0.02	0.03	0.17	521.42	521.39	521.25	521.25	0.91	109.3	1.33
15B to 15C	2.36	2.68	0.02	0.04	0.05	0.01	521.25	521.2	521.22	521.24	-1.12	-89.2	1.71
15C to 10N	1.77	2.26	0.03	0.05	0.07	0.04	521.24	521.17	521.06	520.86	2.11	47.3	1.7
16A to 13D	9.7		0	0.05		0	523.6	523.56	523.56	523.57	0.05	1966.6	1.11
17A to 17B	2.25	2.66	0.02	0.04	0.05	0.07	523.77	523.72	523.66	523.67	0.24	421.6	1.19
17B to 17C	1.64	1.8	0.07	0.11	0.12	0.25	523.67	523.55	523.3	523.32	1.01	98.6	0.98
17C to 17D	1.62	1.87	0.06	0.1	0.12	0.16	523.32	523.2	523.04	523.06	0.67	148.8	1.02
17D to 17E	1.3	1.49	0.14	0.18	0.2	0.34	523.06	522.86	522.52	522.54	1.42	70.3	0.97
17E to 17F	1.36	1.61	0.1	0.13	0.16	0.17	522.54	522.39	522.21	522.24	0.75	134.1	1.19
17F to 17G	1.08	1.23	0.14	0.15	0.17	0.21	522.24	522.06	521.85	521.82	1.06	94.2	1.21
17G to 10N			0.08			0.08	521.82	521.82	521.67	520.86	1.77	56.4	1.37
18A to 18B	2.24	2.67	0.03	0.06	0.07	0.13	521.49	521.43	521.33	521.36	0.37	267.5	1.24
18B to 18C	2.11	2.49	0.07	0.15	0.18	0.26	521.36	521.18	520.91	520.9	1.09	92.1	1.11
18C to 18D	1.84	2.25	0.04	0.08	0.09	0.25	520.9	520.81	520.58	520.6	0.9	111	1.31
18D to 18E	1.62	1.99	0.04	0.07	0.09	0.21	520.6	520.51	520.37	520.39	0.57	174.6	1.35
18E to 18F	1.38	1.65	0.07	0.1	0.12	0.23	520.39	520.26	520.1	520.11	0.67	149.5	1.3
18F to 18G	1.21	1.43	0.07	0.08	0.09	0.07	520.11	520.02	519.99	520.01	0.09	1133.1	1.32
18G to 18H	1.14	1.34	0.1	0.11	0.13	0.1	520.01	519.88	519.79	519.8	0.39	253.9	1.16
18H to 10Q	0.75	0.83	0.12	0.09	0.1	0.06	519.8	519.7	519.64	519.69	0.49	205	1.11
19A to 19B	5.18	5.45	0.03	0.15	0.15	0.32	518.93	518.77	518.4	518.4	4.92	20.3	1.12
19B to 19C	1.43	1.59	0.03	0.04	0.04	0.06	518.4	518.36	518.25	518.13	1.67	59.7	1.29
19C to 19D	2.09	2.8	0.01	0.02	0.02	0.05	518.13	518.11	518.12	518.12	-0.06	-1701.7	1.43
19D to 10W	3.34		0.03	0.11		0.06	518.12	518.01	518.04	518.12	-0.15	-665.4	1.2
20A to 20B	2.09	3.24	0	0	0	0	519.2	519.2	519.2	519.21	0	-33766.5	1.24
20B to 23F	2.34	2.71	0.05	0.11	0.12	0.11	519.21	519.09	519.04	519.04	0.35	286.5	1.38
21A to 21B	2.87	3.27	0.03	0.09	0.1	0.12	522.66	522.55	522.48	522.49	0.39	257.7	1.17
21B to 21C	1.99	2.41	0.04	0.07	0.08	0.18	522.49	522.41	522.28	522.3	0.51	196.6	1.13
21C to 21D	1.7	2.11	0.04	0.07	0.09	0.26	522.3	522.2	521.97	521.98	0.94	106.2	1.07
21D to 21E	1.42	1.7	0.04	0.06	0.08	0.16	521.98	521.9	521.83	521.85	0.28	358.6	1.12
21E to 21F	1.22	1.44	0.07	0.09	0.1	0.05	521.85	521.75	521.72	521.73	0.14	701.5	0.99
21F to 21G	0.89	1	0.09	0.08	0.09	0.03	521.73	521.64	521.61	521.67	0.39	256.2	0.91
21G to 21H	2.15	2.66	0.12	0.26	0.32	0.22	521.67	521.35	521.18	521.19	1.16	86.3	0.88
21H to 21I	0.6	0.66	0.14	0.08	0.09	0.53	521.19	521.1	520.64	520.65	1.74	57.4	1.18
21I to 23I	0.67	0.75	0.16	0.11	0.12	0.15	520.65	520.53	520.05	518.75	3.2	31.3	1.06
22A to 21G	2.07	2.66	0.02	0.03	0.04	0.03	521.68	521.64	521.61	521.67	0.25	404.6	1.03
23A to 23B	2.23	2.75	0.01	0.02	0.02	0.18	520.93	520.91	520.76	520.79	0.58	173.3	1.3
23B to 23C	1.92	2.44	0.05	0.1	0.13	0.25	520.79	520.66	520.43	520.45	0.93	107.9	1.12
23C to 23D	1.77	2.22	0.05	0.09	0.12	0.34	520.45	520.33	519.95	519.64	1.11	89.7	1.14
23D to 23E	2.01	2.23	0.03	0.07	0.08	0.03	519.64	519.56	519.5	519.38	1.39	71.8	1.46
23E to 23F	2.22	2.42	0.03	0.06	0.06	0.03	519.38	519.32	519.14	519.04	2.26	44.2	1.53
23F to 23G	2.5	2.87	0.01	0.04	0.04	0.17	519.04	519	518.82	518.82	1.2	83.4	1.79
23G to 23H	0.41	0.43	0.02	0.01	0.01	0.11	518.82	518.81	518.73	518.74	0.8	124.5	2.35
23H to 23I	1.91	2.31	0.02	0.04	0.05	0.06	518.74	518.69	518.73	518.75	-0.22	-458.7	2.49
23I to 23J	2.04	2.39	0.08	0.16	0.18	0.14	518.75	518.57	518.51	518.53	0.38	262.3	2.65
23J to 23K	1.62	1.96	0.08	0.12	0.15	0.07	518.53	518.39	518.32	518.32	0.13	745.8	3.04
24A to 25D	1.96	2.22	0.01	0.01	0.02	0.08	519.55	519.53	519.43	519.43	1.43	70.1	1.35
25A to 25B	3.64	4.14	0.02	0.06	0.07	0.38	520.83	520.75	520.41	520.42	1.39	72	1.15
25B to 25C	1.82	2.34	0.03	0.06	0.07	0.38	520.42	520.35	519.99	520	1.44	69.7	1.24
25C to 25D	1.67	2.07	0.04	0.06	0.08	0.5	520	519.92	519.42	519.43	2.64	37.9	1.34
25D to 23E	2.24	2.7	0.03	0.06	0.08	0.01	519.43	519.36	519.38	519.38	-0.85	-117.5	1.49
26A to 23G	7		0	0		0.06	519.32	519.32	519.26	518.82	1.3	77	1.43
27A to 23G	7		0	0		0.12	519.32	519.32	519.2	518.82	1.1	90.6	1.43
CLUB01A to 20B	1.5		0.03	0.05		0.07	519.49	519.44	519.22	519.21	3.34	30	1.23
CLUB02A to 23H	1.5		0	0		0.12	519.93	519.93	519.78	518.74	3.58	27.9	1.41

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DOCUMENT CONTROL
DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026

APPROVED
J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.

WESTERA PARTNERS
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www.westerapartners.com.au | ABN 52 097 417 975

BRISBANE T 07 3852 4333 E brisbane@westerapartners.com.au
GOLD COAST T 07 5571 1599 E goldcoast@westerapartners.com.au
SUNSHINE COAST T 07 5391 3777 E sunshinecoast@westerapartners.com.au
NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT: PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION: LOT 1 ON SP330786, TALL OAK DRIVE, COTSWOLD HILLS
TITLE: STORMWATER CALCULATIONS 2 of 4
CLIENT: GTH PROJECT NO.2 PTY LTD

DRAWING STATUS: FOR APPROVAL
DRAWING NUMBER: B24-058-2-C80
SHEET NUMBER: 80 OF 82
REVISION: A

B24-058-2-C_Stm_Calcs.dwg

1% AEP HYDROLOGY

Node Name	Node Type	Setout Easting	Setout Northing	Setout RL	Grate RL	Catch ID	Time Tc	Intensity I	Runoff C	Area A	Full CA	Full Sum CA	Full Qc=CIA	Partial CA	Partial Sum CA	Partial Qc=CIA	Catchment Flow Qc	Approach Flow Qa	Road Capacity	Flooded Depth	Flooded Width	Flooded Vel.Dep	Road Grade	Road Xfall	Max Pond Depth	Choke Factor	Inlet Curve Name	Inlet Flow Qg	Bypass Flow Qb	Bypass Node
(-)	(-)	(m)	(m)	(m)	(m)	(-)	(min)	(mm/hr)	(-)	(ha)	(ha)	(ha)	(L/s)	(ha)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(m)	(m)	(sq.m/s)	(%)	(%)	(m)	(-)	(-)	(L/s)	(L/s)	(-)
10A	FI 900x900 ON GRADE CENTRED	389948.74	6956065.52	526.14	526.14	1P	5	262	0.97	0.0228	0.0222	0.0222	16.1	0.0222	0.0222	16.1	16.1	16.1	191.8	0.027	3.35	0.01	1	3		0.75	1.0G,2.5X	9.8	6.3	10B
10B	FI 900x900 ON GRADE CENTRED	389961.75	6956064.69	525.99	525.99	1P	5	262	0.97	0.0147	0.0143	0.0143	10.4	0.0143	0.0143	10.4	10.4	36.2	425.1	0.041	3.48	0.02	1	3		0.75	1.0G,2.5X	17.7	18.5	10C
10C	FI 900x900 ON GRADE CENTRED	389987.5	6956061.05	525.73	525.73	1P	5	262	0.97	0.0263	0.0256	0.0256	18.6	0.0256	0.0256	18.6	18.6	69.6	876.1	0.048	4.77	0.03	1	3		0.75	1.0G,2.5X	23.2	46.4	10D
10D	FI 900x900 ON GRADE CENTRED	390013.24	6956057.41	525.47	525.47	1P	5	262	0.97	0.026	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	116.8	876.1	0.059	5.79	0.04	1	3		0.75	1.0G,2.5X	35.5	81.3	10E
10E	FI 900x900 ON GRADE CENTRED	390038.99	6956053.77	525.21	525.21	1P	5	262	0.97	0.026	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	151.6	876.1	0.065	6.39	0.05	1	3		0.75	1.0G,2.5X	41.4	110.3	10F
10F	FI 900x900 ON GRADE CENTRED	390064.73	6956050.13	524.95	524.95	1P	5	262	0.97	0.026	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	180.6	876.1	0.069	6.82	0.05	1	3		0.75	1.0G,2.5X	56.6	124.1	10G
10G	FI 900x900 ON GRADE CENTRED	390090.47	6956046.49	524.69	524.69	1P	5	262	0.97	0.0258	0.0251	0.0251	18.3	0.0251	0.0251	18.3	18.3	194.3	876.1	0.071	7.01	0.06	1	3		0.75	1.0G,2.5X	63.8	130.5	10H
10H	FI 900x900 ON GRADE CENTRED	390116.22	6956042.86	524.43	524.43	1P	5	262	0.97	0.026	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	200.9	876.1	0.072	7.1	0.06	1	3		0.75	1.0G,2.5X	66.9	133.9	10I
10I	FI 900x900 1800 dia ON GRADE SIDE	390140.21	6956039.47	524.19	524.19	1P	5	262	0.97	0.0234	0.0228	0.0228	16.6	0.0228	0.0228	16.6	16.6	187.6	252.9	0.057	8.35	0.04	1	3		0.75	1.0G,2.5X	70.7	116.8	21A
10J	FI 900x900 1500 dia ON GRADE CENTRED	390144.51	6956069.91	523.45	523.45	1P	5	262	0.97	0.0299	0.0291	0.0291	21.2	0.0291	0.0291	21.2	21.2	38.8	275.7	0.031	3.28	0.02	3.3	3		0.75	2.0G,2.5X	17.4	21.4	10K
10K	FI 900x900 1500 dia ON GRADE CENTRED	390147.52	6956091.2	522.75	522.75	1P	5	262	0.97	0.0275	0.0267	0.0267	19.4	0.0267	0.0267	19.4	19.4	65.9	99.4	0.031	5.34	0.02	3.2	3		0.75	2.0G,2.5X	21.9	44	14A
10L	MH1800	390149.81	6956107.34	522.51	522.51																									-
10M	FI 900x900 1500 dia ON GRADE CENTRED	390134.4	6956109.52	522.7	522.7	1P	5	262	0.97	0.0238	0.0232	0.0232	16.9	0.0232	0.0232	16.9	16.9	16.9	2974.9	0.031	2.44	0.01	1	2.5		0.75	1.0G,2.5X	10.1	6.8	14A
10N	MH1500E900	390103.95	6956113.82	523.04	523.04																									-
10O	FI 900x900 1500 dia ON GRADE CENTRED	390107.16	6956136.5	522.63	522.63	1P	5	262	0.97	0.0128	0.0124	0.0124	9	0.0124	0.0124	9	9	21.7	63.6	0.018	3.83	0.01	4.7	2.5		0.75	4.0G,2.5X	12	9.7	10P
10P	FI 900x900 1500 dia ON GRADE CENTRED	390111.92	6956170.16	521.02	521.02	1P	5	262	0.97	0.0334	0.0324	0.0324	23.6	0.0324	0.0324	23.6	23.6	109.5	9365	0.047	4	0.05	4.6	3		0.75	4.0G,2.5X	32.9	76.6	10R
10Q	MH2100	390113	6956177.83	520.78	520.78																									-
10R	FI 900x900 1800 dia ON GRADE CENTRED	390125.5	6956176.07	520.65	520.65	1P	5	262	0.97	0.0361	0.0351	0.0351	25.6	0.0351	0.0351	25.6	25.6	265	414.9	0.086	7.38	0.07	1	3		0.75	1.0G,2.5X	80.9	184.1	10S
10S	FI 900x900 1800 dia ON GRADE CENTRED	390151.24	6956172.43	520.39	520.39	1P	5	262	0.97	0.0259	0.0251	0.0251	18.3	0.0251	0.0251	18.3	18.3	234.8	895.7	0.077	7.48	0.06	1	3		0.75	1.0G,2.5X	74.3	160.5	10T
10T	FI 900x900 1800 dia ON GRADE CENTRED	390176.99	6956168.79	520.13	520.13	1P	5	262	0.97	0.0261	0.0254	0.0254	18.5	0.0254	0.0254	18.5	18.5	231	895.7	0.076	7.44	0.06	1	3		0.75	1.0G,2.5X	73.5	157.5	10U
10U	FI 900x900 1800 dia ON GRADE CENTRED	390202.73	6956165.15	519.87	519.87	1P	5	262	0.97	0.0262	0.0254	0.0254	18.5	0.0254	0.0254	18.5	18.5	227.9	895.7	0.076	7.4	0.06	1	3		0.75	1.0G,2.5X	72.8	155.1	10V
10V	FI 900x900 2100 dia ON GRADE CENTRED	390227.49	6956161.65	519.62	519.62	1P	5	262	0.97	0.0253	0.0246	0.0246	17.9	0.0246	0.0246	17.9	17.9	205.5	839.8	0.073	7.12	0.06	1	3		0.75	1.0G,2.5X	67.9	137.5	10W
10W	FI 900x900 2100 x 1900 ON GRADE CENTRED	390240.7	6956159.79	519.49	519.49	1P	5	262	0.97	0.0132	0.0128	0.0128	9.3	0.0128	0.0128	9.3	9.3	159.9	762.9	0.074	5.89	0.05	1	3		0.75	1.0G,2.5X	45.7	114.2	19D
10X	MH2100	390247.14	6956205.3	519.27	519.27																									-
10Y	HWOUT	390174.22	6956223.41	517.75	517.75																									-
11A	FI 900x900 1200 dia ON GRADE CENTRED	389973.98	6956028.92	525.72	525.72	1P	5	262	0.97	0.2569	0.2497	0.2497	181.7	0.2497	0.2497	181.7	181.7	135.7	1601.2	0.107	1	0.18	2	3		1	2.0G,2.5X	49.1	86.6	11B
11B	FI 900x900 1200 dia ON GRADE CENTRED	390040.49	6956019.52	524.3	524.3	1P	5	262	0.97	0.2772	0.2694	0.2694	196.1	0.2694	0.2694	196.1	196.1	239.7	12270	0.154	1	0.29	1.6	3		1	1.0G,2.5X	100.5	139.2	11C
11C	FI 900x900 1200 dia ON GRADE CENTRED	390105.71	6956010.3	523.39	523.39	1P	5	262	0.97	0.2718	0.2642	0.2642	192.3	0.2642	0.2642	192.3	192.3	288.5	16269.2	0.187	1	0.33	1.1	3		1	1.0G,2.5X	114.7	173.8	11D
11D	FIELD INLET 900x900 1350 dia	390140.49	6956005.39	523	523	1P	5	262	0.97	0.2593	0.2521	0.2521	183.5	0.2521	0.2521	183.5	183.5	346.5	760	0.237					0.5	0.5	SAG	346.5		-
11E	MH1350	390144.27	6956032.33	524.26	524.26																									-
12A	FI 900x900 ON GRADE CENTRED	390197.67	6955997.31	524.46	524.46	1P	5	262	0.97	0.1487	0.1446	0.1446	105.2	0.1446	0.1446	105.2	105.2	74.2					2.5	3		1	2.0G,2.5X	30.8	43.4	LOST
12B	FI 900x900 1200 dia ON GRADE CENTRED	390167.94	6956001.51	523.2	523.2	1P	5	262	0.97	0.1198	0.1165	0.1165	84.8	0.1165	0.1165	84.8	84.8	62.8	10035.1	0.074	1	0.09	2.4	3		1	2.0G,2.5X	28.6	34.2	11D
13A	FI 900x900 ON GRADE CENTRED	389951.99	6956083.99	525.98	525.98	1P	5	262	0.97	0.0098	0.0095	0.0095	6.9	0.0095	0.0095	6.9	6.9	18.6	847.5	0.028	2.24	0.02	2.3	3		0.75	2.0G,2.5X	10.7	7.9	13B
13B	FI 900x900 ON GRADE CENTRED	389955.63	6956109.74	525.34	525.34	1P	5	262	0.97	0.025	0.0243	0.0243	17.7	0.0243	0.0243	17.7	17.7	76.6	274.2	0.04	4.24	0.04	3.3	3		0.75	2.0G,2.5X	23.8	52.8	13C
13C	FI 900x900 ON GRADE CENTRED	389957.45	6956122.61	524.93	524.93	1P	5	262	0.97	0.013	0.0126	0.0126	9.2	0.0126	0.0126	9.2	9.2	97.2	0	0	0.23	0.85	2	3		0.75	2.0G,2.5X	30.6	66.6	16A
13D	FI 900x900 1500 dia ON GRADE SIDE	389967.44	6956129.18	524.74	524.74	1P	5	262	0.97	0.002	0.0019	0.0019	1.4	0.0019	0.0019	1.4	1.4	100.2	2656.4	0.059	4.78	0.04	1	0.2		0.75	1.0G,2.5X	37.5	62.7	13E
13E	FI 900x900 ON GRADE SIDE	390001.87	6956124.31	524.31	524.31	1P	5	262	0.97	0.0383	0.0372	0.0372	27.1	0.0372	0.0372	27.1	27.1	96.3	2384.2	0.05	5.54	0.03	1	2.5		0.75	1.0G,2.5X	35.9	60.3	13F
13F	FI 900x900 ON GRADE SIDE	390027.62	6956120.67	524	524	1P	5	262	0.97	0.0302	0.0294	0.0294	21.4	0.0294	0.0294	21.4	21.4	107.7	2384.2	0.052	5.78	0.04	1	2.5		0.75	1.0G,2.5X	38.9	68.8	13G
13G	FI 900x900 ON GRADE SIDE	390053.36	6956117.03	523.68	523.68	1P	5	262	0.97	0.0307	0.0299	0.0299	21.7	0.0299	0.0299	21.7	21.7	116.5	2384.2	0.054	5.95	0.04	1	2.5		0.75	1.0G,2.5X	40.5	76	13H
13H	FI 900x900 ON GRADE SIDE	390079.11	6956113.39	523.37	523.37	1P	5	262	0.97	0.0304	0.0296	0.0296	21.5	0.0296	0.0296	21.5	21.5	123.5	2384.2	0.055	6.08	0.04	1	2.5		0.75	1.0G,2.5X	41.7	81.8	13I
13I	FI 900x900 1200 dia ON GRADE SIDE	390093.41	6956111.37	523.19	523.19	1P	5	262	0.97	0.0167	0.0162	0.0162	11.8	0.0162	0.0162	11.8	11.8	106.6	2719.9	0.053	5.59	0.04	1	2.5		0.75	1.0G,2.5X	38.7	67.9	15C
14A	FI 900x900 ON GRADE CENTRED	390155.82	6956104.52	522.38	522.38	1P	5	262	0.97	0.0646	0.0628	0.0628	45.7	0.0628	0.0628	45.7	45.7	201.4	514.3	0.052	9.59	0.04	1.2	3		0.75	1.0G,2.5X	67.1	134.3	25A
15A	FI 900x900 ON GRADE SIDE	390129.11	6956106.33	522.75	522.75	1P	5	262	0.97	0.0201	0.0195	0.0195	14.2	0.0195	0.0195	14.2	14.2	97.2	1995.7	0.048	5.8	0.03	1	2.5		0.75	1.0G,2.5X	36.3	60.9	14A
15B	FI 900x900 ON GRADE SIDE	390112.11	6956108.73	522.96	522.96	1P	5	262	0.97	0.0018	0.0017	0.0017	1.3	0.0017	0.0017	1.3	1.3	109.2	3058.1	0.062	4.92	0.04	1	2.5		0.75	1.0G,2.5X	39.2	70	15A
15C	FI 900x900 ON GRADE CENTRED	390110.04	6956110.99	522.94	522.94													148.2	59.3	0.021	11.02	0.03	1.2	3		0.75	1.0G,2.5X	40.2	107.9	15B
16A	FI 900x900 ON GRADE CENTRED	389965.37	6956131.44	524.72	524.72	1P	5	262	0.97	0.0574	0.0558	0.0558	40.6	0.0558	0.0558	40.6	40.6	137.4	3.1	0.004	10.17	0.03	1.2	3		0.75	1.0G,2.5X	38.6	98.8	13D
17A	FI 900x900 ON GRADE SIDE	389949.28	6956135.68	524.96	524.96	1P	5	262	0.97	0.0159	0.0154	0.0154	11.2	0.0154	0.0154	11.2	11.2	24.3	1223.8	0.03	3.79	0.01	1	2.5		0.75	1.0G,2.5X	15	9.3	16A
17B	FI 900x900 ON GRADE SIDE	389974.99	6956132.05	524.65	524.65	1P	5	262	0.97	0.009	0.0087	0.0087	6.4	0.0087	0.0087	6.4	6.4	6.4	2974.9	0.021	1.7	0.01	1	2.5		0.75	1.0G,2.5X	4.3	2.1	17C
17C	FI 900x900 ON GRADE SIDE	390000.23	6956128.48	524.34	524.34	1P	5	262	0.97	0.0267	0.0259	0.0259	18.9	0.0259	0.0259	18.9	18.9	48.8	2609.5	0.04	4.2	0.02	1	2.5		0.75	1.0G,2.5X	22.2	26.5	17D
17D	FI 900x900 ON GRADE SIDE	390024.99	6956124.98	524.04	524.04	1P	5	262	0.97	0.0262	0.0254	0.0254	18.5	0.0254	0.0254	18.5	18.5	69.9	2609.6	0.045	4.81	0.03	1	2.5		0.75	1.0G,2.5X	26.1	43.8	17E
17E	FI 900x900 ON GRADE SIDE	390049.74	6956121.48	523.73	523.73	1P	5	262	0.97	0.0269	0.0261	0.0261	19	0.0261	0.0261	19	19	89.4	2610.5	0.05	5.27	0.03	1	2.5		0.75	1.0G,2.5X	33	56.4	17F
17F	FI 900x900 ON GRADE SIDE	390073.51	6956118.12	523.44	523.44	1P	5	262	0.97	0.0255	0.0248	0.0248	18.1	0.0248	0.0248	18.1	18.1	100.9	2350.2	0.051	5.66	0.04	1	2.5		0.75	1.0G,2.5X	37.7	63.2	17G
17G	FI 900x900 ON GRADE SIDE	390093.96	6956115.23	523.19	523.19	1P	5	262	0.97	0.0221	0.0215	0.0215	15.6	0.0215	0.0215	15.6	15.6	85.8	1144.5	0.053	4.75	0.04	1	2.5		0.75	1.0G,2.5X	31.5	54.3	15C
18A	FI 900x900 ON GRADE CENTRED	389919.67	6956205.16	522.73	522.73	1P	5	262	0.97	0.0138	0.0134	0.0134	9.8	0.0134	0.0134	9.8	9.8	22.8	417.8	0.034	2.94	0.02	3	3		0.75	2.0G,2.5X	12.5	10.3	18B
18B	FI 900x900 ON GRADE CENTRED	389945.42	6956201.52	522.47	522.47	1P	5	262	0.97	0.0277	0.027	0.027	19.6	0.027	0.027	19.6	19.6	81.9	414.9	0.055	4.75	0.03	1	3		0.75	1.0G,2.5X	26.5	55.4	18C
18C	FI 900x900 ON GRADE CENTRED	389971.16	6956197.88	522.21	522.21	1P	5	262	0.97	0.0256	0.0249	0.0249	18.1	0.0249	0.0249	18.1	18.1	125.5	414	0.065	5.58	0.04	1	3		0.75	1.0G,2.5X	36.8	88.7	18D
18D	FI 900x900 ON GRADE CENTRED	389996.9	6956194.24	521.95	521.95	1P	5	262	0.97	0.0265	0.0258	0.0258	18.8	0.0258	0.0258	18.8	18.8	159.4	414.9	0.071	6.1	0.05	1	3		0.75	1.0G,2.5X	45.4	114	18E
18E	FI 900x900 ON GRADE CENTRED	390022.52	6956190.62	521.69	521.69	1P	5	262	0.97	0.0256	0.0249	0.0249	18.1	0.0249	0.0249	18.1	18.1	187.9	417.6	0.075	6.48	0.06	1	3		0.75	1.0G,2.5X	60.4	127.5	18F
18F	FI 900x900 ON GRADE CENTRED	390048.27	6956186.98	521.43	521.43	1P	5	262	0.97	0.0261	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	196.5	2.7	0.003	10.18	0.04	1	3		0.75	1.0G,2.5X	64.9	131.6	18G
18G	FI 900x900 1500 dia ON GRADE CENTRED	390074.01	6956183.35	521.17	521.17	1P	5	262	0.97	0.0258	0.0251	0.0251	18.3	0.0251	0.0251	18.3	18.3	200.5	698.3	0.045	10.85	0.04	1	3		0.75	1.0G,2.5X	66.9	133.7	18H
18H	FI 900x900 1200 dia ON GRADE CENTRED	390099.76	6956179.71	520.91	520.91	1P	5	262	0.97	0.0261	0.0254	0.0254	18.5	0.0254	0.0254	18.5	18.5	184.6	2007.5	0.076	6.35	0.06	1	3		0.75	1.0G,2.5X	58.7	125.9	10R
19A	FI 900x900 ON GRADE CENTRED	390273.11	6956138.79	520.05	520.05	1P	5	262	0.97	0.036	0.035	0.035	25.5	0.035	0.035	25.5	25.5	204.7	1162.7	0.062	4.93	0.08	4.2	3		1	4.0G,2.5X	84.3	120.4	19B
19B	FI 900x900 ON GRADE CENTRED	390274.3	6956147.21	519.69	519.69	1P	5	262	0.97	0.0072	0.007	0.007	5.1	0.007	0.007	5.1	5.1	163.6	165.1	0.041	5.76	0.04	4.2	3		0.75	4.0G,2.5X	45.3	118.3	19D
19C	MH1050	390275.39	6956154.88	519.56	519.56																									-
19D	FIELD INLET 900x900	390256.9	6956157.5	519.32	519.32	1P	5	262	0.97	0.0715	0.0695	0.0695	50.5	0.0695	0.0695	50.5	50.5	295	38.2	0.214					0.055	0.5	SAG	295		-
20A	FIELD INLET 900x900 1200 dia	390271.66	6956128.48	520.44	520.44													179.3	0							0.5	SAG	0	179.3	19A
20B	FI 900x900 1200 dia ON GRADE CENTRED	390269.47	6956113.05	520.59	520.59	1P	5	262	0.97	0.0109	0.0106	0.0106	7.7	0.0106	0.0106	7.7	7.7	258.8	556.2	0.089	7.89	0.07	1	3		0.75	1.0G,2.5X	79.5	179.3	20A
21A	FI 900x900 ON GRADE CENTRED	390175.63	6956034.46	523.83	523.83	1P	5	262	0.97	0.055	0.0534	0.0534	38.9	0.0534	0.0534	38.9	38.9	194.7	678.6	0.064	7.86	0.05	1	3		0.75	1.0G,2.5X	64	130.7	21B
21B	FI 900x900 ON GRADE CENTRED	390196.4	6956031.52	523.62	523.62	1P	5	262	0.97	0.021	0.0204	0.0204	14.9	0.0204	0.0204	14.9	14.9	171.6	903.3	0.069	6.64	0.05	1	3		0.75	1.0G,2.5X	51.8	119.7	21C
21C	FI 900x900 ON GRADE CENTRED	390222.14	6956027.88	523.36	523.36	1P	5	262	0.97	0.0259	0.0252	0.0252	18.3	0.0252	0.0252	18.3	18.3	190.1	414.9	0.076	6.52	0.06	1	3		0.75	1.0G,2.5X	61.5	128.5	21D
21D	FI 900x900 ON GRADE CENTRED	390247.89	6956024.25	523.1	523.1	1P	5	262	0.97	0.026	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	198.9	414.9	0.077	6.63	0.06	1	2.5		0.75	1.0G,2.5X	66.2	132.7	21E
21E	FI 900x900 ON GRADE CENTRED	390273.63	6956020.61	522.84	522.84	1P	5	262	0.97	0.026	0.0253	0.0253	18.4	0.0253	0.0253	18.4	18.4	203.1	414.9	0.077	6.68	0.06	1	2.5		0.75	1.0G,2.5X	67.4	135.7	21F
21F	FI 900x900 1500 dia ON GRADE CENTRED	390293.44	6956017.81	522.64	522.64	1P	5	262	0.97	0.0205	0.0199	0.0199	14.5	0.0199	0.0199	14.5	14.5	194.8	582.4	0.048	6.61	0.05	1	0.8		0.75	1.0G,2.5X	64	130.8	21G
21G	FI 900x900 1500 dia ON GRADE CENTRED	390302.59	6956016.51	522.55	522.55	1P	5	262	0.97	0.0024	0.0023	0.0023	1.7	0.0023	0.0023	1.7	1.7	145.4	2406.6	0.044	6.85	0.04	1	3		0.75	1.0G,2.5X	39.8	105.6	21H
21H	FI 900x900 1500 dia ON GRADE CENTRED	390304.8	6956032.1	522.37	522.37	1P	5	262	0.97	0.0295	0.0287	0.0287	20.9	0.0287	0.0287	20.9	20.9	146.5	381	0.064	5.88	0.05	1.3	3		0.75	1.0G,2.5X	40	106.5	21I
21I	FI 900x900 1500 dia ON GRADE CENTRED	390308.72	6956059.82	521.71	521.71	1P	5	262	0.97	0.0264	0.0257	0.0257	18.7	0.0257	0.0257	18.7	18.7	149.1	332	0.053	5.28	0.06	3	3		0.75	2.0G,2.5X	38.9	110.3	23I
22A	FI 900x900 ON GRADE CENTRED	390315.59	6956013.67	522.71	522.71	1P	5	262	0.97	0.0102	0.0099	0.0099	7.2	0.0099	0.0099	7.2	7.2	20.2	56.3	0.009	10.26	0	1	3		0.75	1.0G,2.5X	11.3	8.8	21H
23A	FI 900x900 ON GRADE SIDE	390173.02	6956104.06	522.22	522.22	1P	5	262	0.97	0.0177	0.0172	0.0172	12.5	0.0172	0.0172	12.5	12.5	26.4	2666.6	0.032	3.3	0.02	1	2.5		0.75	1.0G,2.5X	16.1	10.3	23B
23B	FI 900x900 ON GRADE SIDE	390198.76	6956100.42	521.91	521.91	1P	5	262	0.97	0.0271	0.0264	0.0264	19.2	0.0264	0.0264	19.2	19.2	57.3	2666.6	0.042	4.42	0.03	1	2.5		0.75	1.0G,2.5X	23.8	33.5	23C
23C	FI 900x900 ON GRADE SIDE	390224.51	6956096.78	521.59	521.59	1P	5	262	0.97	0.028	0.0272	0.0272	19.8	0.0272	0.0272	19.8	19.8	67.2	2666.6	0.045	4.69	0.03	1	2.5		0.75	1.0G,2.5X	25.6	41.6	23D
23D	FI 900x900 ON GRADE SIDE	390259.34	6956091.86	521.09	521.09	1P	5	262	0.97	0.0365	0.0355	0.0355	25.8	0.0355	0.0355	25.8	25.8	88.3	610.8	0.037	4.81	0.03	1	2.4		0.75	1.0G,2.5X	32.6	55.7	23E
23E	FI 900x900 1500 dia ON GRADE CENTRED	390264.61	6956091.11	520.92	520.92	1P	5	262	0.97	0.0295	0.0287	0.0287	20.9	0.0287	0.0287	20.9	20.9	200.9	2751.3	0.082	6.05	0.07	1	1.1		0.75	1.0G,2.5X	66.9	133.9	23F
23F	FIELD INLET 900x900 1800 dia	390272.17	6956096.91	520.84	520.84													244.7	0							0.5	SAG	0	244.7	20B
23G	FI 900x900 2100 dia ON GRADE CENTRED	390285.09	6956085.66	521.17	521.17	1P	5	262	0.97	0.035	0.034	0.034	24.8	0.034	0.034	24.8	24.8	24.8										24.8		-
23H	FI 900x900 1500 dia ON GRADE CENTRED	390293.42	6956078.41	521.23	521.23	1P	5	262	0.97	0.0259	0.0252	0.0252	18.3	0.0252	0.0252	18.3	18.3	195.2	612.5	0.074	6.75	0.06	1	3		1	1.0G,2.5X	85.7	109.6	23F
23I	FI 900x900 1800 dia ON GRADE CENTRED	390310.99	6956075.92	521.4	521.4	1P	5	262	0.97	0.0529	0.0514	0.0514	37.4	0.0514	0.0514	37.4	37.4	147.7					1	3		1	1.0G,2.5X	53.5	94.1	23H
23J	MH1500	390328.2	6956073.49	521.58	521.58																									-
23K	HWIN	390376.64	6956084.28	519	519																									-
24A	FI 900x900 ON GRADE CENTRED	390268.8	6956080.01	520.9	520.9	1P	5	262	0.97	0.0069	0.0067	0.0067	4.9	0.0067	0.0067	4.9	4.9	4.9					1	3		0.75	1.0G,2.5X	3.7	1.2	23F
25A	FI 900x900 ON GRADE SIDE	390192.58	6956097.36	521.98	521.98	1P	5	262	0.97	0.0415	0.0404	0.0404	29.4	0.0404	0.0404	29.4	29.4	170.2	2384.1	0.062	6.86	0.05	1	2.5		0.75	1.0G,2.5X	59.5	110.7	25B
25B	FI 900x900 ON GRADE SIDE	390218.32	6956093.72	521.66	521.66	1P	5	262	0.97	0.0298	0.029	0.029	21.1	0.029	0.029	21.1	21.1	157.7	2384.1	0.06	6.67	0.05	1	2.5		0.75	1.0G,2.5X	51.5	106.2	25C
25C	FI 900x900 ON GRADE SIDE	390244.06	6956090.08	521.35	521.35	1P	5	262	0.97	0.0302	0.0294	0.0294	21.4	0.0294	0.0294	21.4	21.4	153.6	2384.1	0.06	6.6	0.05	1	2.5		0.75	1.0G,2.5X	48.8	104.8	23E
25D	MH1200	390264.06	6956087.25	520.93	520.93																									-
26A	FIELD INLET 600x600	390289.06	6956090.23	520.75	520.75	1P	5	262	0.97	0.0074	0.0072	0.0072	5.3	0.0072	0.0072	5.3	5.3	5.3		0.012					-0.15	0.5	SAG	5.3		-
27A	FIELD INLET 600x600	390284.29	6956097.95	520.75	520.75	1P	5	262	0.97	0.003	0.0029	0.0029	2.1	0.0029	0.0029	2.1	2.1	2.1	124.4	0.005					0.157	0.5	SAG	2.1		-
CLUB 01A	GEMLIFE ROOFWATER STUB	390276.8	6956112.01	520.72	520.72	1P	5	262	0.97	0.1904	0.1851	0.1851	134.7	0.1851	0.1851	134.7	134.7	134.7	5	-1					-2.429	0.5	SAG	134.7		-
CLUB 02A	GEMLIFE ROOFWATER STUB	390294.12	6956083.36	521.35	521.35	1P	5	262	0.97	0.1084	0.1053	0.1053	76.7	0.1053	0.1053	76.7	76.7	76.7	5	-1					-2.661	0.5	SAG	5	71.7	23H

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DOCUMENT CONTROL
DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026

APPROVED
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For and on behalf of WESTERA PARTNERS PTY. LTD.

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PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 3 of 4
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C81
SHEET NUMBER 81 OF 82
REVISION A

B24-058-2-C_Stm_Calcs.dwg

1% AEP HYDRAULICS

Pipe ID	Pipe Type	Pipe Length	Pipe Size	Full Pipe Area Af	Pipe Grade	Pipe Grade	Full-area Tct	Full-area I	Full-area Sum CA	Full-area Qc=CIA	Part-area Tct	Part-area I	Part-area Sum CA	Part-area Qc=CIA	Peak Flow Qrat	Net Bypass Flow Qb	Pipe Flow Q	Excess Pipe Flow Qx	Capacity Flow Qcap	Q/Qcap Ratio	Full Pipe Vel Vf=Q/Af	Norm Depth Vel Vn=Q/An	Crit Depth Vel Vc=Q/Ac	Capacity Vel Vcap=Qcap/Af	US Node Grate RL	Pipe US IL	Pipe DS IL	DS Node Grate RL	Cover Limit	Cover Min	Pipe DS Bend	Pipe DS Drop	US Node Ku	US Node Kw	Pipe Vhead	Phead Loss (Ku.Vhead)	WSE Loss (Kw.Vhead)	Pipe Thead Loss	US Node HGL	Pipe US HGL	Pipe DS HGL	DS Node HGL	HGL Grade	HGL Grade	Fboard US
(-)	(-)	(m)	(mm)	(sq.m)	(%)	(1 in)	(min)	(mm/hr)	(ha)	(L/s)	(min)	(mm/hr)	(ha)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(L/s)	(-)	(m/s)	(m/s)	(m/s)	(m/s)	(m)	(m)	(m)	(m)	(m)	(m)	(deg)	(m)	(-)	(-)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(%)	(1 in)	(m)
10A to 10B	PVCSN8	12.14	225	0.04	0.54	186.2	5.24	258.61	0.1012	72.7	5.15	259.95	0.1009	72.8	72.8	-32.3	40.5		32.9	1.23	1.02	1.02	1.27	0.83	526.14	524.67	524.6	525.99	0.45	1.17	4.4	0.03	1.56	1.85	0.05	0.08	0.1	0.1	525.48	525.38	525.29	525.29	0.81	123	0.66
10B to 10C	PVCSN8	25.1	300	0.071	1.04	96.5	5.34	257.19	0.147	105	5.23	258.71	0.1466	105.4	105.4	-38	67.3		98.5	0.68	0.95	1.5	1.33	1.39	525.99	524.57	524.31	525.73	0.45	1.12	0	0.075	1.48	1.67	0.05	0.07	0.08	0.12	525.29	525.22	525.1	525.11	0.48	206.3	0.7
10C to 10D	RCPCL4	25.1	375	0.11	1.04	96.5	5.55	254.27	0.2831	200	5.34	257.3	0.2817	201.3	201.3	-78.9	122.4		178.5	0.69	1.11	1.74	1.51	1.62	525.73	524.24	523.98	525.47	0.9	1.12	0	0.075	1.57	1.81	0.06	0.1	0.11	0.12	525.11	525	524.87	524.89	0.49	205.3	0.62
10D to 10E	RCPCL4	25.1	450	0.159	1.04	96.5	5.76	251.34	0.4348	303.5	5.45	255.67	0.4315	306.5	306.5	-113.7	192.7		290.3	0.66	1.21	1.95	1.65	1.83	525.47	523.9	523.64	525.21	0.9	1.12	0	0.03	1.54	1.79	0.07	0.12	0.13	0.11	524.89	524.76	524.64	524.67	0.46	219	0.58
10E to 10F	RCPCL4	25.1	450	0.159	1.04	96.5	5.97	248.41	0.5864	404.7	5.57	253.98	0.5807	409.7	409.7	-142.8	266.9		290.3	0.92	1.68	2.07	1.94	1.83	525.21	523.61	523.35	524.95	0.9	1.15	0	0.075	1.23	1.39	0.14	0.18	0.2	0.22	524.67	524.47	524.25	524.27	0.88	114.2	0.54
10F to 10G	RCPCL4	25.1	525	0.216	1.04	96.5	6.18	245.84	0.7381	504	5.71	252.11	0.7296	510.9	510.9	-156.5	354.4		437.9	0.81	1.64	2.25	1.99	2.02	524.95	523.28	523.02	524.69	0.9	1.15	0	0.03	1.25	1.4	0.14	0.17	0.19	0.17	524.27	524.08	523.91	523.94	0.68	147.4	0.68
10G to 10H	RCPCL4	25.1	525	0.216	1.04	96.5	6.39	243.33	0.8896	601.3	5.87	249.81	0.879	610	610	-163	447		437.9	1.02	2.06	2.3	2.27	2.02	524.69	522.99	522.73	524.43	0.9	1.18	0	0.03	1.13	1.26	0.22	0.25	0.27	0.27	523.94	523.66	523.39	523.42	1.08	92.7	0.76
10H to 10I	RCPCL4	22.88	600	0.283	1.06	94.4	6.6	240.82	1.0543	705.3	6.08	247.04	1.0438	716.3	716.3	-171	545.3		634.6	0.86	1.93	2.51	2.24	2.24	524.43	522.7	522.45	524.19	0.9	1.13	-90	0.872	1.12	1.27	0.19	0.21	0.24	0.23	523.42	523.18	522.88	522.74	1.29	77.7	1.01
10I to 10J	RCPCL4	29.1	900	0.636	1	100	6.79	238.53	2.421	1604.1	6.14	246.36	2.3775	1626.9	1396.9	-179.7	1217.3		1811.1	0.67	1.91	3.05	2.46	2.85	524.19	521.58	521.29	523.45	0.9	1.28	0	0.03	2.38	2.68	0.19	0.44	0.5	0.2	522.74	522.24	522.15	522.15	0.3	331.2	1.45
10J to 10K	RCPCL4	20	900	0.636	2.02	49.6	7.03	235.65	2.5264	1653.8	6.35	243.82	2.4792	1679.1	1449.1	-214.1	1235.1		2572.4	0.48	1.94	4	2.48	4.04	523.45	521.26	520.86	522.75	0.9	1.01	0	0.08	0.38	0.41	0.19	0.07	0.08	0.09	522.15	522.07	522	522.01	0.35	287.4	1.29
10K to 10L	RCPCL4	14.8	900	0.636	2.2	45.4	7.2	233.82	2.5979	1687.3	6.5	241.94	2.5494	1713.4	1483.4	-229.2	1254.2		2687.9	0.47	1.97	4.15	2.49	4.23	522.75	520.78	520.45	522.51	0.9	1.01	-90	0.03	0.35	0.37	0.2	0.07	0.07	0.07	522.01	521.93	521.86	521.97	0.48	208.5	0.74
10L to 10M	RCPCL4	14.06	900	0.636	1	100	7.32	232.46	2.6607	1718.1	6.63	240.46	2.6122	1744.9	1514.9	-207.8	1307		1811.1	0.72	2.05	3.1	2.55	2.85	522.51	520.42	520.28	522.7	0.9	1.2	0	0.03	2.1	2.59	0.22	0.45	0.56	0.07	521.97	521.41	521.34	521.34	0.52	192	0.54
10M to 10N	RCPCL4	28.95	900	0.636	1	100	7.44	231.18	2.7331	1755.1	6.75	239.06	2.6847	1782.8	1552.8	-235.5	1317.3		1811.1	0.73	2.07	3.1	2.56	2.85	522.7	520.25	519.96	523.04	0.9	1.56	90	0.03	0.3	0.32	0.22	0.07	0.07	0.15	521.34	521.27	521.12	521.22	0.53	189	1.36
10N to 10O	RCPCL4	21.1	1200	1.131	1	100	7.68	228.52	4.1224	2616.8	6.81	238.32	4.0398	2674.4	2444.4	-314	2130.3		3900.4	0.55	1.88	3.52	2.64	3.45	523.04	519.93	519.72	522.63	0.9	1.75	0	0.421	2.11	2.67	0.18	0.38	0.48	0.13	521.22	520.73	520.37	520.38	1.72	58	1.82
10O to 10P	RCPCL4	32.5	1200	1.131	2.09	47.8	7.86	226.59	4.2292	2661.9	6.93	236.83	4.136	2720.9	2490.9	-349.7	2141.2		5641.8	0.38	1.89	4.64	2.65	4.99	522.63	519.3	518.62	521.02	0.9	1.24	0	0.03	0.31	0.33	0.18	0.06	0.06	0.09	520.38	520.31	520.26	520.27	0.16	614.4	2.26
10P to 10Q	RCPCL4	5.95	1200	1.131	1.3	76.8	8.13	223.86	4.4143	2745	7.23	233.42	4.3279	2806.2	2576.2	-401.6	2174.6		4451.4	0.49	1.92	3.91	2.67	3.94	521.02	518.59	518.51	520.78	0.9	1.07	90	0.03	0.4	0.44	0.19	0.08	0.08	0.02	520.27	520.19	520.17	520.28	0.31	321.7	0.76
10Q to 10R	RCPCL4	10.67	1200	1.131	1.18	84.6	8.18	223.42	5.4991	3412.7	7.12	234.64	5.3777	3505.1	3275.1	-534	2741.1		4241.8	0.65	2.42	3.99	2.97	3.75	520.78	518.48	518.35	520.65	0.9	1.09	0	0.03	2.29	2.68	0.3	0.69	0.8	0.05	520.28	519.48	519.5	519.5	-0.21	-466.2	0.5
10R to 10S	RCPCL4	24.2	1350	1.431	1.07	93.1	8.26	222.62	5.5974	3461.3	7.2	233.75	5.474	3554.3	3324.3	-504.6	2819.7		5534.7	0.51	1.97	3.88	2.79	3.87	520.65	518.32	518.06	520.39	0.9	0.97	0	0.03	0.04	0.04	0.2	0.01	0.01	0.06	519.5	519.49	519.47	519.47	0.1	956.3	1.15
10S to 10T	RCPCL4	24.2	1350	1.431	1.07	93.1	8.47	220.8	5.7331	3516.3	7.38	231.78	5.6039	3607.9	3377.9	-494	2883.8		5534.7	0.52	2.01	3.91	2.82	3.87	520.39	518.03	517.77	520.13	0.9	1	0	0.03	0.39	0.41	0.21	0.08	0.09	0.07	519.47	519.39	519.32	519.32	0.29	342.8	0.92
10T to 10U	RCPCL4	24.2	1350	1.431	1.07	93.1	8.67	218.99	5.8848	3579.7	7.55	229.9	5.7472	3670.2	3440.2	-491	2949.2		5534.7	0.53	2.06	3.93	2.84	3.87	520.13	517.74	517.48	519.87	0.9	1.03	0	0.03	0.4	0.42	0.22	0.09	0.09	0.07	519.32	519.23	519.16	519.16	0.31	327.8	0.81
10U to 10V	RCPCL4	23.05	1350	1.431	1.08	92.2	8.87	217.17	6.0366	3641.6	7.72	228.04	5.89	3731	3501	-488.6	3012.3		5560.9	0.54	2.1	3.96	2.87	3.89	519.87	517.45	517.2	519.62	0.9	1.06	0	0.15	0.39	0.41	0.23	0.09	0.09	0.07	519.16	519.07	519	519	0.32	314.2	0.71
10V to 10W	RCPCL4	11.25	1350	1.431	1.19	84.3	9.06	215.44	6.1845	3701.1	7.91	225.99	6.0362	3789.2	3559.2	-464.6	3094.7		5816.7	0.53	2.16	4.13	2.9	4.06	519.62	517.05	516.92	519.49	0.9	1.21	-90	0.03	0.42	0.46	0.24	0.1	0.11	0.04	519	518.9	518.86	519.02	0.34	297.7	0.62
10W to 10X	RCPCL4	43.96	1350	1.431	1	99.9	9.16	214.6	6.3694	3796.8	8.1	224.07	6.248	3888.9	3658.9	-108.8	3550.1		5341.1	0.66	2.48	3.99	3.09	3.73	519.49	516.89	516.45	519.27	0.9	1.24	-84.1	0.03	2.08	2.62	0.31	0.65	0.82	0.19	519.02	518.2	518.02	518.12	0.42	236.3	0.46
10X to 10Y	RCPCL4	74.09	1500	1.767	0.41	246.5	9.52	211.3	6.3694	3738.5	8.47	220.77	6.248	3831.7	3601.7	-108.8	3492.9		4504.2	0.78	1.98	2.81	2.88	2.55	519.27	516.42	516.12	517.75	0.9	-1.52	0		2.2	2.71	0.2	0.44	0.54	0.18	518.12	517.58	517.47	517.47	0.15	685.3	1.16
11A to 11B	RCPCL4	65.97	300	0.071	2.04	49.1	5	262	0.2497	181.7	5	262	0.2497	181.7	135.7	-86.6	49.1		138.1	0.36	0.7	1.79	1.18	1.95	525.72	524.68	523.34	524.3	0.9	0.66	0	0.075	6.76		0.02	0.17		0.96	525.02	524.85	523.94	523.94	1.38	72.3	0.7
11B to 11C	RCPCL4	64.67	375	0.11	1.53	65.5	5.55	254.3	0.5192	366.7	5	262	0.4917	357.9	277.7	-139.2	138.6		216.8	0.64	1.25	2.08	1.6	1.96	524.3	523.26	522.27	523.39	0.9	0.64	0	0.075	2.98		0.08	0.24		0.4	523.94	523.7	523.3	523.3	0.62	160.3	0.36
11C to 11D	RCPCL4	33.92	450	0.159	1.04	96.6	6.09	246.94	0.7834	537.3	5.54	254.46	0.7559	534.3	405.3	-173.8	231.5		290.2	0.8	1.46	2.03	1.8	1.82	523.39	522.2	521.85	523	0.9	0.71	-90.1	0.03	1.2		0.11	0.13		0.22	523.3	523.17	522.94	522.97	0.66	151.8	0.1
11D to 11E	RCPCL4	26.08	900	0.636	0.52	191.7	6.37	243.54	1.2965	877.1	5.82	250.5	1.269	883	653	-43.4	609.7		1308	0.47	0.96	2.02	1.88	2.06	523	521.82	521.68	524.26	0.9	0.78	-37.6	0.03	2.97	3.6	0.05	0.14	0.17	0.03	522.97	522.81	522.78	522.79	0.11	882.5	0.03
11E to 10I	RCPCL4	6.79	900	0.636	0.6	165.3	6.59	240.94	1.2965	867.7	6.04	247.53	1.269	872.6	642.6	-43.4	599.2		1408.6	0.43	0.94	2.12	1.87	2.21	524.26	521.65	521.61	524.19	0.9	1.69	37.7	0.03	1.97	2.31	0.05	0.09	0.1	0.01	522.79	522.69	522.68	522.74	0.11	913.5	1.46
12A to 12B	PVCSN8	28.97	225	0.04	4.61	21.7	5	262	0.1446	105.2	5	262	0.1446	105.2	74.2	-43.4	30.8		96.4	0.32	0.78	2.16	1.12	2.42	524.46	523.57	522.24	523.2	0.45	0.65	0	0.075	5.75		0.03	0.18		0.69	523.9	523.72	523.07	523.07	2.26	44.3	0.56
12B to 11D	RCPCL4	26.52	300	0.071	0.52	191.3	5.24	258.62	0.261	187.5	5	262	0.2541	184.9	134.5	-77.6	56.9		69.9	0.81	0.81	1.1	1.24	0.99	523.2	522.16	522.03	523	0.9	0.67	89.9	0.208	0.91		0.03	0.03		0.09	523.07	523.04	522.94	522.97	0.35	288.6	0.13
13A to 13B	PVCSN8	25.1	225	0.04	2.07	48.3	5.13	260.24	0.1012	73.2	5.12	260.36	0.1012	73.2	73.2	-33	40.2		64.7	0.62	1.01	1.71	1.26	1.63	525.98	524.6	524.08	525.34	0.45	1.04	0	0.23	1.76	2.05	0.05	0.09	0.11	0.2	525.21	525.1	524.9	524.91	0.8	124.6	0.77
13B to 13C	PVCSN8	12.1	300	0.071	2.15	46.5	5.33	257.32	0.2494	178.3	5.24	258.6	0.2488	178.8	178.8	-77	101.7		141.8	0.72	1.44	2.18	1.63	2.01	525.34	523.85	523.59	524.93	0.45	1.05	48.6	0.03	1.52	1.6	0.11	0.16	0.17	0.13	524.91	524.74	524.6	524.63	1.11	90.5	0.43
13C to 13D	PVCSN8	10.6	300	0.071	2.25	44.4	5.44	255.9	0.2909	206.8	5.34	257.19	0.2903	207.4	207.4	-66.6	140.8		145.3	0.97	1.99	2.34	2.06	2.06	524.93	523.56	523.32	524.74	0.45	1.08	41.4	0.15	1.59	1.7	0.2	0.32	0.34	0.22	524.63	524.28	524.06	524.07	2.12	47.2	0.31
13D to 13E	RCPCL4	33.58	450	0.159	1.04	96.5	5.52	254.67	0.3487	246.7	5.4	256.42	0.3475	247.5	247.5	-32.5	215		290.3	0.74	1.35	2	1.74	1.83	524.74	523.17	522.82	524.31	0.9	1.05	0	0.03	1.86	2.01	0.09	0.17	0.19	0.19	524.07	523.88	523.69	523.7	0.57	176.1	0.66
13E to 13F	RCPCL4	25.1	450	0.159	1.04	96.5	5.8	250.75	0.4333	301.8	5.62	253.27	0.431	303.2	303.2	-43.2	260		290.3	0.9	1.63	2.06	1.92	1.83	524.31	522.79	522.53	524	0.9	1.02	0	0.075	0.94	1	0.14	0.13	0.14	0.21	523.7	523.57	523.36	523.37	0.83	120.3	0.61
13F to 13G	RCPCL4	25.1	525	0.216	1.04	96.5	6.01	247.85	0.5259	362	5.82	250.52	0.5232	364.1	364.1	-51.7	312.4		437.9	0.71	1.44	2.2	1.87	2.02	524	522.46	522.2	523.68	0.9	0.97	0	0.03	0.9	0.99	0.11	0.1	0.11	0.13	523.37	523.26	523.13	523.14	0.53	189.6	0.63
13G to 13H	RCPCL4	25.1	525	0.216	1.04	96.5	6.22	245.34	0.6189	421.8	5.93	248.93	0.6131	423.9	423.9	-58.9	365		437.9	0.83	1.69	2.26	2.02	2.02	523.68	522.17	521.91	523.37	0.9	0.94	0	0.03	0.88	0.95	0.15	0.13	0.14	0.18	523.14	523	522.82	522.83	0.72	138.9	0.54
13H to 13I	RCPCL4	13.4	525	0.216	1.08	92.7	6.43	242.83	0.7116	480	6.14	246.29	0.7058	482.9	482.9	-64.7	418.2		446.8	0.94	1.93	2.34	2.18	2.06	523.37	521.88	521.73	523.19	0.9	0.94	-21.1	0.03	0.82	0.88	0.19	0.16	0.17	0.13	522.83	522.66	522.54	522.6	0.94	105.8	0.54
13I to 10N	RCPCL4	9.17	525	0.216	1.18	84.8	6.54	241.49	0.7594	509.4	6.25	244.95	0.7536	512.8	512.8	-50.8	462		467.3	0.99	2.13	2.46	2.32	2.16	523.19	521.7	521.6	523.04	0.9	0.91	-68.9	1.665	1.63	1.92	0.23	0.38	0.45	0.1	522.6	522.16	522.02	521.22	1.49	67.2	0.59
14A to 10L	PVCSN8	5.42	300	0.071	1.23	81.6	5	262	0.0628	45.7	5	262	0.0628	45.7	45.7	21.4	67.1		107.1	0.63	0.95	1.6	1.33	1.51	522.38	521.19	521.13	522.51	0.45	0.9	-17.1	0.705	3.96		0.05	0.18		0.03	522.07	521.89	521.86	521.97	0.48	208.1	0.31
15A to 15B	PVCSN8	16.27	300	0.071	1.06	94.8	5.16	259.7	0.0644	46.5	5.08	260.81	0.0642	46.5	46.5	4.5	51		99.4	0.51	0.72	1.41	1.19	1.41	522.75	521.26	521.09	522.96	0.45	1.2	39.6	0.075	4.27	4.67	0.03	0.11	0.12	0.05	521.69	521.56	521.52	521.54	0.28	360.4	1.07
15B to 15C	RCPCL4	1.89	375	0.11	1.62	61.8	5.3	257.8	0.1293	92.6	5.21	259.09	0.129	92.9	92.9	16.4	109.2		223.1	0.49	0.99	2.01	1.44	2.02	522.96	521.01	520.98	522.94	0.9	1.57	-22.7	0.03	2.18	2.61	0.05	0.11	0.13	0.01	521.54	521.41	521.4	521.45	0.39	257.9	1.42
15C to 10N	RCPCL4	5.2	375	0.11	1.29	77.4	5.32	257.58	0.1293	92.5	5.22	258.87	0.129	92.8	92.8	56.6	149.4		199.4	0.75	1.35	1.98	1.66	1.81	522.94	520.95	520.89	523.04	0.9	1.62	73.1	0.956	1.77	2.24	0.09	0.16	0.21	0.05	521.45	521.24	521.13	521.22	2.11	47.3	1.5
16A to 13D	PVCSN8	1.73	300	0.071	1.77	56.4	5	262	0.0558	40.6	5	262	0.0558	40.6	40.6	-2	38.6		128.8	0.3	0.55	1.59	1.08	1.82	524.72	523.24	523.21	524.74	0.45	1.18	-39.6	0.034	3.92		0.02	0.06		0	524.12	524.06	524.06	524.07	0.16	627.7	0.6
17A to 17B	PVCSN8	25.06	225	0.04	1.55	64.4	5.13	260.17	0.0635	45.9	5.08	260.93	0.0633	45.9	45.9	-16.2	29.7		56	0.53	0.75	1.43	1.1	1.41	524.96	523.54	523.15	524.65	0.45	1.19	0	0.03	1.43	1.66	0.03	0.04	0.05	0.11	524.46	524.42	524.31	524.32	0.44	229	0.5
17B to 17C	PVCSN8	24.6	225	0.04	1.55	64.3	5.34	257.25	0.138	98.6	5.27	258.18	0.1377	98.8	98.8	-46.1	52.6		56	0.94	1.32	1.6	1.47	1.41	524.65	523.12	522.74	524.34	0.45	1.3	0	0.075	1.28	1.39	0.09	0.11	0.12	0.34	524.32	524.19	523.85	523.87	1.37	72.8	0.33
17C to 17D	PVCSN8	24.1	300	0.071	1.04	96.4	5.54	254.38	0.2283	161.3	5.41	256.21	0.2275	161.9	161.9	-69.7	92.2		98.5	0.94	1.3	1.58	1.54	1.39	524.34	522.67	522.42	524.04	0.45	1.33	0	0.075	1.21	1.37	0.09	0.1	0.12	0.22	523.87	523.75	523.53	523.55	0.91	110	0.47
17D to 17E	PVCSN8	24.1	300	0.071	1.04	96.4	5.75	251.56	0.3169	221.5	5.58	253.9	0.3155	222.6	222.6	-88	134.5		98.5	1.37	1.9	1.9	1.99	1.39	524.04	522.34	522.09	523.73	0.45	1.35	0	0.075	1.01	1.14	0.18	0.19	0.21	0.47	523.55	523.34	522.88	522.9	1.93	51.7	0.48
17E to 17F	RCPCL4	23.1	375	0.11	1.04	96.3	5.95	248.75	0.4049	279.8	5.68	252.43	0.4017	281.7	281.7	-99.1	182.6		178.8	1.02	1.65	1.84	1.86	1.62	523.73	522.02	521.78	523.44	0.9	1.3	0	0.03	1.14	1.27	0.14	0.16	0.18	0.25	522.9	522.72	522.47	522.49	1.08	92.2	0.84
17F to 17G	RCPCL4	19.75	375	0.11	1.05	95.6	6.14	246.33	0.479	327.8	5.8	250.81	0.4739	330.2	330.2	-100.3	229.8		179.4	1.28	2.08	2.08	2.18	1.62	523.44	521.75	521.54	523.19	0.9	1.28	0	0.03	1.05	1.13	0.22	0.23	0.25	0.34	522.49	522.24	521.88	521.88	1.8	55.4	0.96
17G to 10N	RCPCL4	8.6	450	0.159	1.17	85.1	6.3	244.36	0.5005	339.7	5.94	248.85	0.4947	342	342	-84.4	257.5		309.1	0.83	1.62	2.17	1.91	1.94	523.19	521.51	521.41	523.04	0.9	1.2	-90	1.477	0.11		0.13	0.01		0.09	521.88	521.87	521.72	521.22	1.67	59.8	1.31
18A to 18B	PVCSN8	25.1	225	0.04	1.04	96.5	5.14	260.01	0.0766	55.3	5.05	261.35	0.0763	55.4	55.4	-23.3	32.1		45.7	0.7	0.81	1.24	1.14	1.15	522.73	521.29	521.03	522.47	0.45	1.21	0	0.075	1.45	1.7	0.03	0.05	0.06	0.13	522.24	522.18	522.05	522.06	0.51	195.4	0.49
18B to 18C	PVCSN8	25.1	300	0.071	1.04	96.5	5.35	257.08	0.2299	164.2	5.24	258.6	0.2295	164.9	164.9	-68.4	96.5		98.5	0.98	1.37	1.59	1.58	1.39	522.47	520.95	520.69	522.21	0.45	1.21	0	0.15	1.54	1.63	0.1	0.15	0.16	0.25	522.06	521.91	521.66	521.67	1	100.5	0.41
18C to 18D	RCPCL4	25.1	450	0.159	1.04	96.5	5.56	254.15	0.3812	269.1	5.36	256.91	0.3796	270.9	270.9	-101.7	169.2		290.3	0.58	1.06	1.89	1.57	1.83	522.21	520.54	520.28	521.95	0.9	1.21	0	0.075	1.47	1.69	0.06	0.08	0.1	0.09	521.67	521.57	521.48	521.5	0.35	284.1	0.54
18D to 18E	RCPCL4	24.97	525	0.216	1.04	96.5	5.77	251.23	0.5333	372.2	5.46	255.5	0.5287	375.2	375.2	-126.9	248.3		437.9	0.57	1.15	2.09	1.69	2.02	521.95	520.21	519.95	521.69	0.9	1.21	0	0.03	1.26	1.45	0.07	0.08	0.1	0.08	521.5	521.4	521.31	521.33	0.33	300.2	0.45
18E to 18F	RCPCL4	25.1	525	0.216	1.04	96.5	5.98	248.31	0.681	469.7	5.66	252.76	0.6759	474.6	474.6	-134	340.6		437.9	0.78	1.57	2.23	1.95	2.02	521.69	519.92	519.66	521.43	0.9	1.24	0	0.075	1.07	1.2	0.13	0.14	0.15	0.16	521.33	521.18	521.02	521.03	0.63	159.6	0.36
18F to 18G	RCPCL4	24.8	600	0.283	1.05	95.4	6.19	245.76	0.8308	567.1	5.84	250.3	0.8244	573.2	573.2	-138.1	435.1		629	0.69	1.54	2.4	1.99	2.22	521.43	519.58	519.32	521.17	0.9	1.24	0	0.03	0.99	1.09	0.12	0.12	0.13	0.12	521.03	520.9	520.78	520.79	0.5	199.3	0.4
18G to 18H	RCPCL4	24.65	600	0.283	1.05	94.8	6.39	243.28	0.9962	673.2	5.98	248.35	0.9867	680.7	680.7	-146.6	534		630.9	0.85	1.89	2.5	2.21	2.23	521.17	519.29	519.03	520.91	0.9	1.27	0	0.03	0.89	0.97	0.18	0.16	0.18	0.19	520.79	520.62	520.43	520.44	0.76	132.3	0.38
18H to 10Q	RCPCL4	11.73	600	0.283	1.14	87.7	6.6	240.81	1.0848	725.6	6.18	245.83	1.0752	734.2	734.2	-132.4	601.8		656.1	0.92	2.13	2.63	2.37	2.32	520.91	519	518.87	520.78	0.9	1.3	0	0.388	0.65	0.68	0.23	0.15	0.16	0.11	520.44	520.28	520.17	520.28	0.96	104.2	0.47
19A to 19B	PVCSN8	7.6	300	0.071	4.47	22.4	5.05	261.35	0.0654	47.4	5.03	261.53	0.0653	47.4	47.4	46.7	94.2		204.6	0.46	1.33	2.83	1.56	2.89	520.05	518.6	518.26	519.69	0.45	1.14	0	0.105	2.47	2.51	0.09	0.22	0.23	0.07	519.68	519.45	519.38	519.38	0.95	105.6	0.37
19B to 19C	RCPCL4	6.77	375	0.11	1.14	87.4	5.11	260.47	0.0868	62.8	5.1	260.64	0.0867	62.8	62.8	81.5	144.3		187.6	0.77	1.31	1.87	1.63	1.7	519.69	518.15	518.07	519.56	0.9	1.05	-90	0.15	0.91	0.94	0.09	0.08	0.08	0.05	519.38	519.3	519.26	519.27	0.68	147.8	0.31
19C to 19D	RCPCL4	17.7	525	0.216	1.06	94.8	5.17	259.68	0.0868	62.6	5.15	259.85	0.0867	62.6	62.6	81.5	144.1		441.9	0.33	0.67	1.82	1.39	2.04	519.56	517.92	517.74	519.32	0.9	1.06	0	0.03	1.54	2.35	0.02	0.03	0.05	0.02	519.27	519.22	519.2	519.2	0.11	891.9	0.28
19D to 10W	RCPCL4	14.85	600	0.283	1.1	90.8	5.31	257.61	0.1562	111.8	5.27	258.26	0.156	111.9	111.9	325.9	437.8		644.5	0.68	1.55	2.45	2	2.28	519.32	517.71	517.54	519.49	0.9	1.02	90	0.651	2.2		0.12	0.27		0.08	519.2	518.93	518.86	519.02	0.51	196.9	0.12
20A to 20B	RCPCL4	13.79	375	0.11	1.13	88.5	5.06	261.1	0.0316	22.9	5.05	261.28	0.0316	22.9	22.9	-13	9.9		186.5	0.05	0.09	0.9	0.69	1.69	520.44	519	518.85	520.59	0.9	1.07	-17.5	0.03	1.15	2.65	0	0	0	0	520.31	520.31	520.31	520.35	0	31256.7	0.12
20B to 23F	RCPCL4	14.56	450	0.159	1.12	89	5.18	259.49	0.2744	197.8	5.05	261.24	0.2735	198.5	198.5	39.5	238		302.3	0.79	1.5	2.11	1.83	1.9	520.59	518.82	518.65	520.84	0.9	1.34	-39.5	0.03	1.57	1.86	0.11	0.18	0.21	0.1	520.35	520.13	520.03	520.04	0.7	143.7	0.25
21A to 21B	PVCSN8	20.08	300	0.071	0.94	106.3	5.25	258.49	0.1324	95.1	5.14	260.01	0.132	95.4	95.4	-7.4	88		93.8	0.94	1.24	1.51	1.51	1.33	523.83	522.37	522.18	523.62	0.45	1.15	0	0.03	2.1		0.08	0.17		0.17	523.6	523.43	523.26	523.28	0.83	121	0.24
21B to 21C	RCPCL4	25.1	450	0.159	0.86	115.8	5.42	256.15	0.295	209.9	5.2	259.18	0.2934	211.2	211.2	-15.9	195.3		265	0.74	1.23	1.82	1.66	1.67	523.62	522.15	521.93	523.36	0.9	0.98	0	0.03	1.57	1.78	0.08	0.12	0.14	0.12	523.28	523.14	523.02	523.04	0.47	213.2	0.34
21C to 21D	RCPCL4	25.1	525	0.216	1.04	96.5	5.63	253.22	0.4466	314.1	5.38	256.73	0.4443	316.9	316.9	-24.7	292.2		437.9	0.67	1.35	2.17	1.81	2.02	523.36	521.9	521.64	523.1	0.9	0.93	0	0.075	1.36	1.54	0.09	0.13	0.14	0.12	523.04	522.9	522.78	522.79	0.46	216.8	0.32
21D to 21E	RCPCL4	25.1	600	0.283	1.09	92.1	5.84	250.29	0.5982	415.9	5.56	254.15	0.5952	420.2	420.2	-28.9	391.3		640.1	0.61	1.38	2.38	1.9	2.26	523.1	521.57	521.3	522.84	0.9	0.93	0	0.03	1.2	1.32	0.1	0.12	0.13	0.1	522.79	522.66	522.56	522.58	0.41	246.4	0.31
21E to 21F	RCPCL4	18.8	600	0.283	1.06	94	6.05	247.46	0.7499	515.5	5.73	251.81	0.7453	521.3	521.3	-31.8	489.5		633.6	0.77	1.73	2.47	2.11	2.24	522.84	521.27	521.07	522.64	0.9	0.97	0	0.03	1	1.09	0.15	0.15	0.17	0.12	522.58	522.41	522.29	522.3	0.63	157.5	0.27
21F to 21G	RCPCL4	7.75	600	0.283	1.19	83.8	6.2	245.58	0.8462	577.2	5.85	250.14	0.84	583.6	583.6	-7.4	576.2		671.1	0.86	2.04	2.67	2.31	2.37	522.64	521.04	520.94	522.55	0.9	1	-90	0.03	0.81	0.86	0.21	0.17	0.18	0.07	522.3	522.12	522.05	522.16	0.88	113.6	0.34
21G to 21H	RCPCL4	14.24	600	0.283	1.66	60.3	6.27	244.8	0.9373	637.4	5.88	249.65	0.9297	644.7	644.7	2.4	647.1		791	0.82	2.29	3.12	2.49	2.8	522.55	520.91	520.68	522.37	0.9	1.03	0	0.03	1.99	2.39	0.27	0.53	0.64	0.16	522.16	521.52	521.36	521.37	1.11	90.1	0.39
21H to 21I	RCPCL4	26.5	600	0.283	2.11	47.3	6.39	243.38	1.0084	681.7	6.03	247.63	1.0022	689.4	689.4	5.7	695		893	0.78	2.46	3.49	2.62	3.16	522.37	520.65	520.09	521.71	0.9	1.05	0	0.03	0.59	0.62	0.31	0.18	0.19	0.4	521.37	521.18	520.83	520.85	1.34	74.6	0.99
21I to 23I	RCPCL4	14.76	600	0.283	2.2	45.4	6.61	240.73	1.1076	740.6	6.22	245.34	1.1	749.6	749.6	-2.7	746.9		911.8	0.82	2.64	3.6	2.77	3.22	521.71	520.06	519.73	521.4	0.9	1	90	1.747	0.62	0.68	0.36	0.22	0.24	0.19	520.85	520.6	520.15	519.86	3.1	32.3	0.87
22A to 21G	PVCSN8	12.11	225	0.04	1.1	91	5.13	260.13	0.0573	41.4	5.04	261.47	0.057	41.4	41.4	-15.3	26		47.1	0.55	0.65	1.21	1.05	1.18	522.71	521.27	521.14	522.55	0.45	1.2	85.7	0.221	1.67	1.86	0.02	0.04	0.04	0.04	522.13	522.09	522.05	522.16	0.34	297.5	0.57
23A to 23B	PVCSN8	25.1	300	0.071	1.04	96.5	5.19	259.41	0.0829	59.8	5.17	259.58	0.0829	59.8	59.8	-24.2	35.5		98.5	0.36	0.5	1.28	1.05	1.39	522.22	520.78	520.52	521.91	0.45	1.1	0	0.063	2.28	2.74	0.01	0.03	0.04	0.03	521.08	521.04	521.01	521.03	0.12	805.1	1.15
23B to 23C	PVCSN8	25.1	300	0.071	1.04	96.5	5.39	256.48	0.175	124.7	5.29	258	0.1743	124.9	124.9	-33.5	91.4		98.5	0.93	1.29	1.58	1.54	1.39	521.91	520.45	520.19	521.59	0.45	1.11	0	0.105	1.83	2.11	0.09	0.16	0.18	0.22	521.03	520.85	520.63	520.66	0.89	111.9	0.88
23C to 23D	RCPCL4	34.29	375	0.11	1.03	97.4	5.6	253.55	0.2844	200.3	5.42	256.14	0.2827	201.2	201.2	-62.5	138.7		177.7	0.78	1.26	1.78	1.6	1.61	521.59	520.09	519.74	521.09	0.9	1	0	0.427	1.65	2.03	0.08	0.13	0.16	0.21	520.66	520.5	520.28	520.29	0.63	160	0.93
23D to 23E	RCPCL4	4.11	450	0.159	0.8	125.2	5.89	249.55	0.3198	221.7	5.68	252.48	0.3178	222.9	222.9	-55.7	167.2		255	0.66	1.05	1.71	1.56	1.6	521.09	519.31	519.28	520.92	0.9	1.21	-45.5	0.3	1.72	1.84	0.06	0.1	0.1	0.01	520.29	520.18	520.17	520.18	0.34	291.1	0.8
23E to 23F	RCPCL4	7.88	750	0.442	1.21	82.7	5.92	249.07	0.7118	492.5	5.6	253.61	0.706	497.4	497.4	-25.5	471.9		1224.8	0.39	1.07	2.59	1.84	2.77	520.92	518.98	518.88	520.84	0.9	1.2	78.5	0.255	2.12	2.32	0.06	0.12	0.14	0.01	520.18	520.05	520.03	520.04	0.18	557	0.74
23F to 23G	RCPCL4	15.63	1050	0.866	1.1	91.2	5.99	248.15	0.9862	679.8	5.59	253.67	0.9769	688.4	688.4	14	702.4		2860	0.25	0.81	2.73	1.88	3.3	520.84	518.62	518.45	521.17	0.9	1.19	0	0.03	2.5	2.86	0.03	0.08	0.1	0.01	520.04	519.95	519.94	519.94	0.07	1512.8	0.79
23G to 23H	RCPCL4	9.85	1050	0.866	1.12	89.1	6.12	246.57	1.0304	705.7	5.73	251.85	1.021	714.3	714.3	14	728.3		2893.6	0.25	0.84	2.78	1.9	3.34	521.17	518.42	518.31	521.23	0.9	1.71	-33	0.03	0.41	0.43	0.04	0.01	0.02	0.01	519.94	519.92	519.92	519.93	0.07	1406.9	1.23
23H to 23I	RCPCL4	16.4	1050	0.866	1.08	92.4	6.2	245.58	1.2057	822.5	5.76	251.39	1.1933	833.3	833.3	-7.9	825.4		2842.1	0.29	0.95	2.84	1.98	3.28	521.23	518.28	518.11	521.4	0.9	1.9	0	0.12	1.88	2.26	0.05	0.09	0.1	0.01	519.93	519.83	519.81	519.86	0.09	1095.4	1.29
23I to 23J	RCPCL4	15.88	1050	0.866	1.09	91.4	6.73	239.25	2.3647	1571.6	6.1	246.77	2.3376	1602.4	1602.4	5.5	1608		2858	0.56	1.86	3.4	2.53	3.3	521.4	517.99	517.81	521.58	0.9	2.38	-20.6	0.442	1.93	2.16	0.18	0.34	0.38	0.06	519.86	519.47	519.42	519.46	0.35	288.7	1.55
23J to 23K	RCPCL4	48.69	1050	0.866	0.2	490.6	6.86	237.66	2.3647	1561.1	6.23	245.19	2.3376	1592.1	1592.1	5.5	1597.6		1233.4	1.3	1.85	1.85	2.52	1.42	521.58	517.37	517.27	519	0.9	0.39	0		1.46	1.66	0.17	0.25	0.29	0.17	519.46	519.17	519	519	0.34	292.4	2.12
24A to 25D	PVCSN8	7.54	300	0.071	1.15	87.1	5.16	259.77	0.075	54.1	5.12	260.37	0.0749	54.1	54.1	-25.9	28.3		103.6	0.27	0.4	1.25	0.98	1.47	520.9	519.41	519.32	520.93	0.45	1.2	41.3	0.265	1.4	1.53	0.01	0.01	0.01	0.01	520.32	520.3	520.3	520.31	0.09	1172.1	0.59
25A to 25B	PVCSN8	25.1	300	0.071	1.55	64.4	5.18	259.47	0.0877	63.2	5.09	260.81	0.0874	63.4	63.4	10.7	74		120.6	0.61	1.05	1.79	1.39	1.71	521.98	520.6	520.21	521.66	0.45	1.08	0	0.075	3.63	3.86	0.06	0.2	0.22	0.15	521.21	520.99	520.84	520.87	0.59	170.8	0.77
25B to 25C	RCPCL4	25.1	375	0.11	1.55	64.4	5.39	256.54	0.1799	128.2	5.21	259.07	0.1788	128.7	128.7	15.1	143.8		218.6	0.66	1.3	2.11	1.63	1.98	521.66	520.13	519.74	521.35	0.9	1.15	0	0.075	1.67	1.93	0.09	0.14	0.17	0.17	520.87	520.7	520.53	520.55	0.67	148.8	0.79
25C to 25D	RCPCL4	19.15	450	0.159	2.64	37.9	5.6	253.61	0.2883	203.1	5.42	256.14	0.2872	204.3	204.3	10.1	214.4		463.2	0.46	1.35	2.86	1.74	2.91	521.35	519.67	519.16	520.93	0.9	1.22	-90	0.105	1.37	1.54	0.09	0.13	0.14	0.11	520.55	520.4	520.3	520.31	0.57	176.9	0.8
25D to 23E	RCPCL4	2.55	525	0.216	1.53	65.4	5.76	251.38	0.3632	253.6	5.56	254.13	0.3619	255.5	255.5	-15.8	239.7		532.1	0.45	1.11	2.39	1.67	2.46	520.93	519.06	519.02	520.92	0.9	1.35	44.5	0.042	1.89	2.09	0.06	0.12	0.13	0.01	520.31	520.18	520.17	520.18	0.31	322.3	0.62
26A to 23G	PVCSN8	5.16	300	0.071	1.17	85.1	5	262	0.0072	5.3	5	262	0.0072	5.3	5.3		5.3		104.8	0.05	0.07	0.77	0.61	1.48	520.75	519.28	519.22	521.17	0.45	1.21	-90	0.795	4.38		0	0		0	519.94	519.94	519.94	519.94	0	33778.1	0.81
27A to 23G	PVCSN8	11.41	300	0.071	1.08	92.7	5	262	0.0029	2.1	5	262	0.0029	2.1	2.1		2.1		100.5	0.02	0.03	0.57	0.48	1.42	520.75	519.29	519.17	521.17	0.45	1.2	-45.2	0.748	4.49		0	0		0	519.94	519.94	519.94	519.94	0	212596.5	0.81
CLUB01A to 20B	RCPCL4	6.5	375	0.11	2.28	43.9	5	262	0.1851	134.7	5	262	0.1851	134.7	134.7		134.7		264.7	0.51	1.22	2.41	1.58	2.4	520.72	519.22	519.07	520.59	0.9	1.12	-107.5	0.252	1.5		0.08	0.11		0.04	520.47	520.35	520.31	520.35	0.59	169.6	0.25
CLUB02A to 23H	PVCSN8	4.4	300	0.071	3.18	31.4	5	262	0.1053	76.7	5	262	0.1053	76.7	76.7	-71.7	5		172.6	0.03	0.07	1.08	0.6	2.44	521.35	519.88	519.74	521.23	0.45	1.17	-90	1.458	1.5		0	0		0.04	519.93	519.93	519.92	519.93	0.4	249.6	1.41

No.	DATE	REVISIONS	DES	DRN	CHK	APD
A	11.03.26	ISSUED FOR APPROVAL	S.C.D.	P.H.Z	J.M.H	J.M.H

DOCUMENT CONTROL
DESIGNED S.C.D.
DRAWN P.H.Z
CHECKED J.M.H
APPROVED J.M.H
DATE MARCH 2026

APPROVED
J. HILL RPEQ 19891
For and on behalf of WESTERA PARTNERS PTY. LTD.

WESTERA PARTNERS
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NORTHERN NSW T 02 6674 8047 E nsw@westerapartners.com.au
CENTRAL VICTORIA T 03 5441 0922 E centralvic@westerapartners.com.au

SURVEYOR
DSQ LAND SURVEYORS
PHONE 07 5437 8555

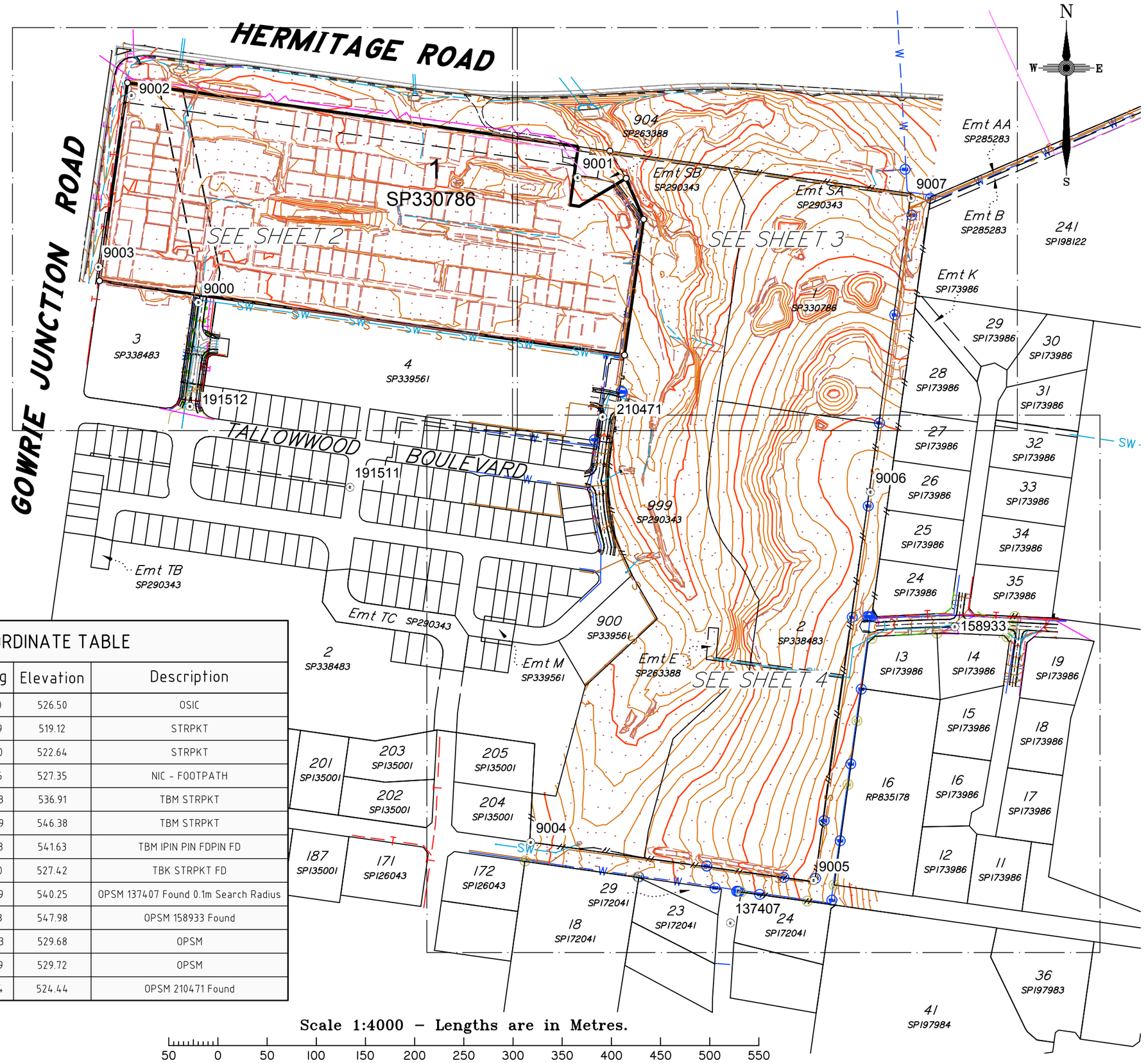
DATUM A.H.D.
PSM 191512
R.L. 529.898

PROJECT PROPOSED RETIREMENT LIVING DEVELOPMENT
LOCATION LOT 1 ON SP330786
TALL OAK DRIVE, COTSWOLD HILLS
TITLE STORMWATER CALCULATIONS 4 of 4
CLIENT GTH PROJECT NO.2 PTY LTD

DRAWING STATUS FOR APPROVAL
DRAWING NUMBER B24-058-2-C82
SHEET NUMBER 82 OF 82
REVISION A

B24-058-2-C_Stm_Calcs.dwg

Appendix C – Site Survey & Architectural Drawings



COORDINATE TABLE				
Point #	Easting	Northing	Elevation	Description
9000	389897.35	6956031.10	526.50	OSIC
9001	390282.97	6956157.99	519.12	STRPKT
9002	389829.23	6956241.50	522.64	STRPKT
9003	389795.57	6956067.16	527.35	NIC - FOOTPATH
9004	390235.16	6955482.73	536.91	TBM STRPKT
9005	390522.98	6955443.99	546.38	TBM STRPKT
9006	390580.65	6955838.53	541.63	TBM IPIN PIN FDPIN FD
9007	390622.12	6956137.00	527.42	TBK STRPKT FD
137407	390438.31	6955400.89	540.25	OPSM 137407 Found 0.1m Search Radius
158933	390666.43	6955701.63	547.98	OPSM 158933 Found
191511	390051.48	6955843.43	529.68	OPSM
191512	389888.62	6955925.69	529.72	OPSM
210471	390308.31	6955914.84	524.44	OPSM 210471 Found

Scale 1:4000 – Lengths are in Metres.

50 0 50 100 150 200 250 300 350 400 450 500 550

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DETAIL SURVEY
Tall Oak Drive, Cotswold Hills

GENERAL NOTES:

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- ELECTRICITY O/H
- SEWER MANHOLE
- S — SEWER MAIN
- STORMWATER M/H
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- SW — SW — STORMWATER LINE
- WATER METER
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- W — W — BYDA WATER MAIN
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- BYDA O/H ELEC
- S — S — BYDA SEWER MAIN
- T — T — BYDA COMM'S
- OF — OF — BYDA OPTIC FIBRE
- G — G — BYDA GAS MAIN
- SW — SW — BYDA STORMWATER

GDA2020

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Horiz. Datum MGA2020–56 | Vert. Datum AHD
Origin 191512 | Origin PSM 191512 RL 529.898

Locality: COTSWOLD HILLS

Local Government: TOOWOOMBA R. C.

SHEET 1 OF 4 | Scale A3 1:4000

DRAWING NUMBER 15376-DTM-01 | REV. B

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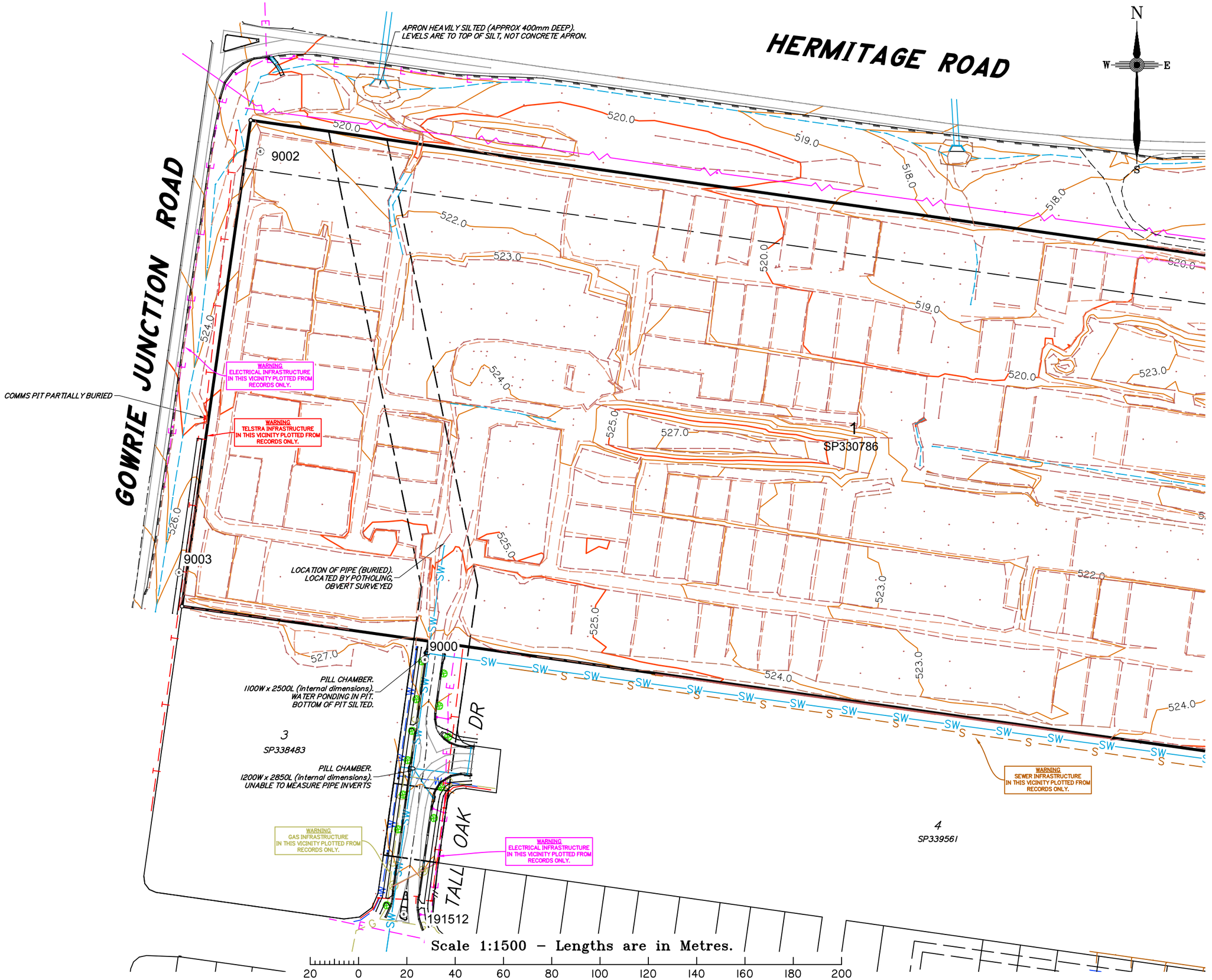
DETAIL SURVEY
Tall Oak Drive, Cotswold Hills



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GDA2020

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Horiz. Datum MGA2020–56	Vert. Datum AHD
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Locality: COTSWOLD HILLS

Local Government: TOOWOOMBA R. C.

SHEET 2 OF 4 | Scale A3 1:1500

DRAWING NUMBER 15376-DTM-01 | REV. B

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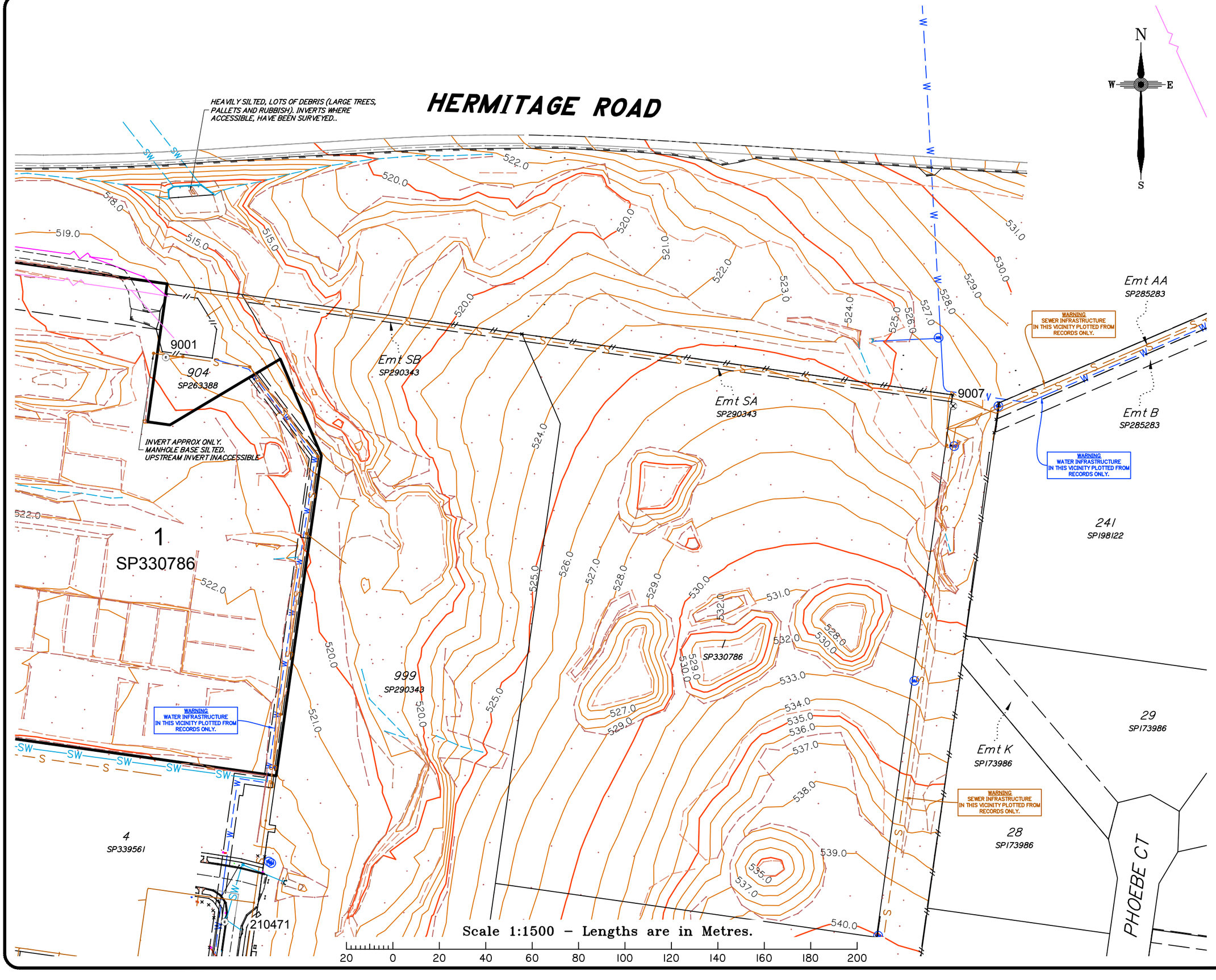
DETAIL SURVEY
Tall Oak Drive, Cotswold Hills



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SHEET 3 OF 4 | Scale A3 1:1500

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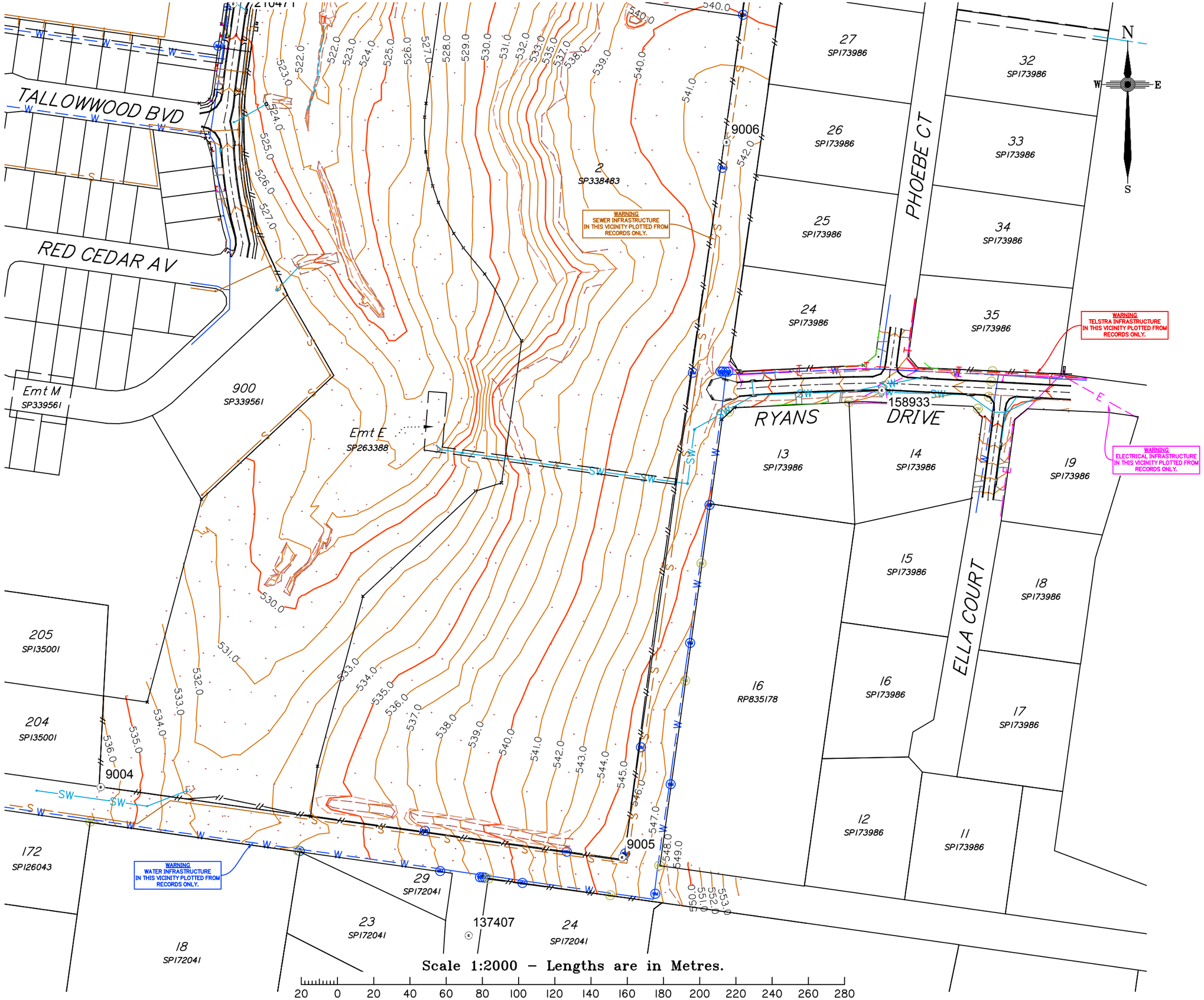

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SHEET 4 OF 4 | Scale A3 1:2000

DRAWING NUMBER 15376-DTM-01 | REV. B

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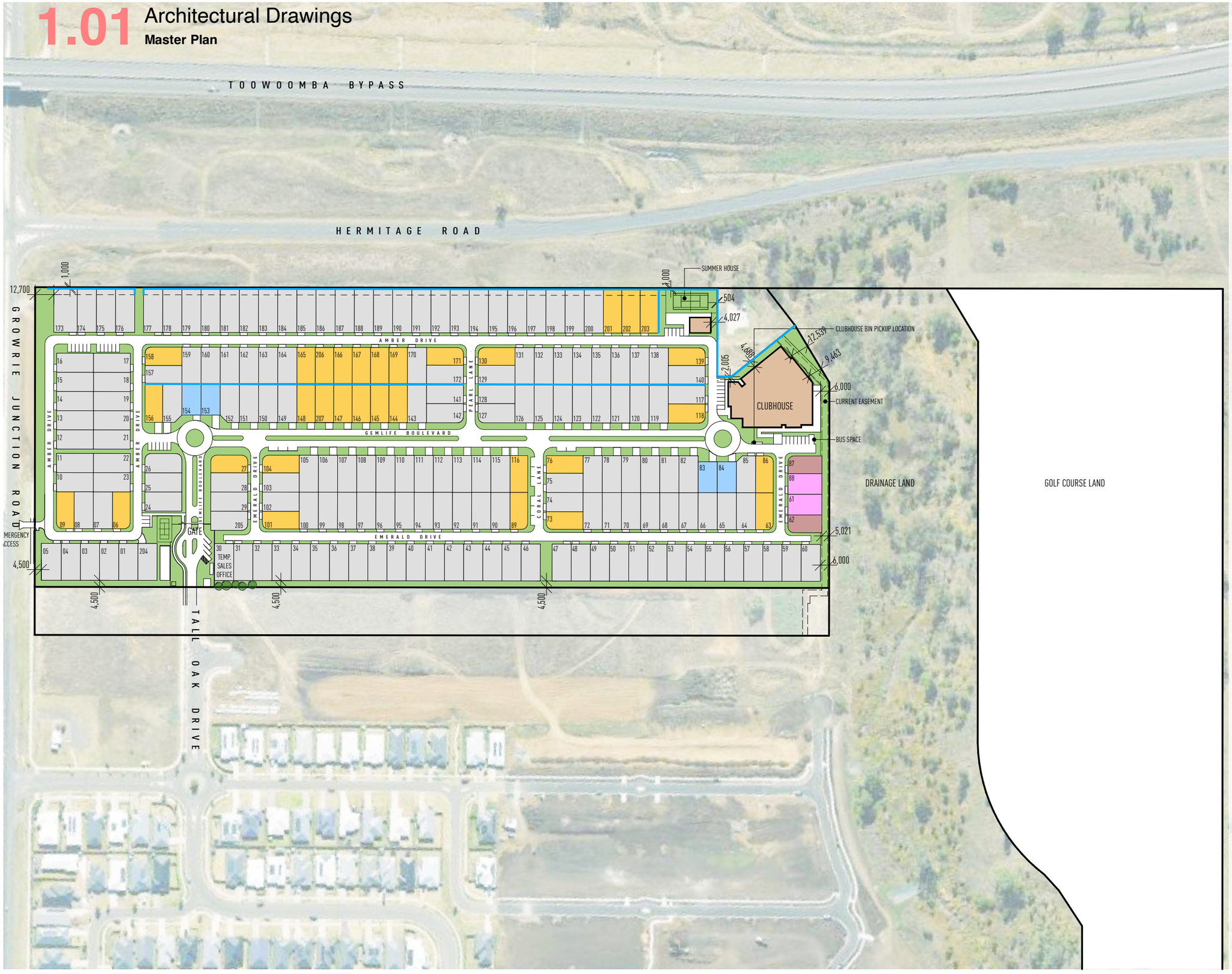
1.01 Architectural Drawings

Master Plan



SITE 1

TOTAL NUMBER OF LOTS 207

LOT SIZE	YIELD	%
13.0m x 25.0m STANDARD LOTS	167	82
12.0m x 25.0m SMALL LOTS	17	8
13.0m x 21.0m SMALL LOTS	4	1
12.0m x 23.0m SMALL LOTS	2	1
14.0m x 23.0m SMALL LOTS	17	8
ACOUSTIC FENCE (REFER STATEMENT OF LANDSCAPE INTENT)		

STATISTICS

VISITOR CAR PARKING	60 + 1 MINI BUS SPACE
SITE AREA	106 526 m2 (approx)
SITE COVER	40 156 m2
TOTAL SITE OVER (LOTS + ROADS + FACILITIES)	58 345 m2
SITE PERIMETER	1 517 m

LAND BUDGET

SITE AREA	14.545 ha	100%
MHE LOTS	7.560ha	52%
COMMUNITY FACILITIES	0.340ha	2%
GOLF COURSE	3.937ha	27%
LANDSCAPING / PEDESTRIAN CONNECTION / STORMWATER	0.979ha	7%
INTERNAL DRIVEWAYS	1.729ha	12%

VIRAGE ARCHITECTS

LEVEL 1 33 ELKHORN AVENUE
SURFERS PARADISE, QLD. 4217 AUSTRALIA
PO BOX 42. ISLE OF CAPRI, QLD. 4217

TEL 07 5527 5300
EMAIL INFO@JPD.COM.AU
WEB WWW.JPD.COM.AU

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ISSUE	DATE	DESCRIPTION
U	13.10.25	Master plan updated
T	12.09.25	Master plan updated
S	07.08.25	Entry statement amended
R	30.07.25	Entry statement amended
O	22.07.25	Bin pickup location added
P	09.07.25	Acoustic fence added
O	26.03.25	Car parking added

PROJECT Proposed New Development
Tall Oak Drive Cotswold QLD

CLIENT GemLife

NORTH

DRAWING TITLE BP1495/1.01

10m 50m 125m

SCALE 1:2500 @ A3

Master Plan

virage