CITY OF MORETON BAY

Enquiries: Xavier Dubreuil
Direct 07 5433 2739
Our Ref: DA/2023/3491
Your Ref: 22-000082_1A-1B
Date: 24 October 2023

Foreverlen Pty Ltd
PO Box 5233
BRISBANE QLD 4001

Dear Applicant,

Re: DEVELOPMENT APPROVAL
Planning Act 2016

Development Application No.:	**DA/2023/3491**
Property Location:	**409-423 Caboolture River Road LILYWOOD** **403 Caboolture River Road UPPER CABOOLTURE**
Property Description:	**Lot 1 RP 866105** **Lot 12 RP 866105**
Development Type:	**Operational Works - Development Permit for Roadworks, Stormwater and Earthworks (Lilywood Landings, Stage 1A & 1B)**

Please be advised that on 23 October 2023 the above development application was approved by Council's Delegate as the Assessment Manager in accordance with section 63 of the *Planning Act 2016* subject to conditions.

The following type of approval has been issued:

- **Development Permit - Operational Works for Roadworks, Stormwater & Earthworks**

The development allowed by this approval must be carried out in accordance with the attached Decision package.

Attached is an extract from the *Planning Act 2016* which details your appeal rights and the appeal rights of any submitters, if applicable, regarding this decision.

Should you require any further information about this matter, please contact Xavier Dubreuil as referenced above.

Yours faithfully

X. Dubreuil

Xavier Dubreuil
Senior Engineer
Development Services

Enclosures: Attachment 1 - Decision Notice
Attachment 2 - Assessment Manager Conditions
Attachment 3 - Approved Plans / Documents
Attachment 4 - Appeal Rights
Attachment 5 - Infrastructure Charges

Cc Unitywater
Development.Services@Unitywater.com

ATTACHMENT 1

Decision Notice

Decision Notice

Planning Act 2016, section 63

APPLICATION DETAILS

Application No:	**DA/2023/3491**
Applicant:	**Foreverlen Pty Ltd**
Street Address:	**409-423 Caboolture River Road LILYWOOD** **403 Caboolture River Road UPPER CABOOLTURE**
Real Property Description:	**Lot 1 RP 866105** **Lot 12 RP 866105**
Planning Scheme:	**Moreton Bay Regional Council Planning Scheme**

APPROVAL DETAILS

Date of Decision: **23 October 2023**

The development application was approved by Council's Delegate as the Assessment Manager subject to conditions (refer Attachment 2).

Application Type	Development Permit	Preliminary Approval
Operational Works for Roadworks, Stormwater and Earthworks	☑	☐

OTHER NECESSARY PERMITS

Not applicable.

In addition to this approval, you may also be required to obtain a water approval from the Northern SEQ Distributor Retailer, trading as Unitywater. To engage a Registered Certifier to lodge your connection application, go to Unitywater's website www.unitywater.com/certifier

CURRENCY PERIOD OF APPROVAL

The currency period stated in section 85 of the *Planning Act 2016* applies to this approval as outlined below:

- Operational Works - 2 years from the date of this approval starts to have effect.

DEEMED APPROVAL

Not applicable.

VARIATION APPROVAL

Not applicable.

INFRASTRUCTURE

Unless otherwise specified, all assessment manager conditions of this development approval relating to the provision of infrastructure are non-trunk infrastructure conditions under Chapter 4, section 145 of the *Planning Act 2016*.

ASSESSMENT MANAGER CONDITIONS

The Conditions relevant to this development approval are listed in Attachment 2 of the Decision package.

APPROVED PLANS / DOCUMENTS

The approved plans and/or documents as listed below for this development approval are included in Attachment 3 of the Decision package.

The approved plans/documents for this development approval are listed below.

Approved Plans and Documents			
Plan / Document Name	**Reference Number**	**Prepared By**	**Dated**
Title Sheet & Locality Plan	22-000082_1A-1B Dwg. 1000 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Site Layout Plan	22-000082_1A-1B Dwg. 1100 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Retaining Wall Setout Plan Sheet 1 of 2	22-000082_1A-1B Dwg. 1200 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Retaining Wall Setout Plan Sheet 2 of 2	22-000082_1A-1B Dwg. 1201 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Retaining Wall Notes and Details	22-000082_1A-1B Dwg. 1202 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Control Line Setout Plan Sheet 1 of 2	**22-000082_1A-1B Dwg. 1300 Rev. D**	Egis Consulting Pty Ltd	06/10/2023
Control Line Setout Plan Sheet 2 of 2	22-000082_1A-1B Dwg. 1301 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Roadworks Layout Plan Sheet 1 of 5	22-000082_1A-1B Dwg. 1310 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Roadworks Layout Plan Sheet 2 of 5	22-000082_1A-1B Dwg. 1311 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Roadworks Layout Plan Sheet 3 of 5	22-000082_1A-1B Dwg. 1312 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Roadworks Layout Plan Sheet 4 of 5	22-000082_1A-1B Dwg. 1313 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Roadworks Layout Plan Sheet 5 of 5	22-000082_1A-1B Dwg. 1314 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Intersection Details	22-000082_1A-1B Dwg. 1320 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Road 3 Longitudinal Section Sheet 1 of 2	22-000082_1A-1B Dwg. 1330 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Road 3 Longitudinal Section Sheet 2 of 2	22-000082_1A-1B Dwg. 1331 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Road 3 Cross Section Sheet 1 of 2	22-000082_1A-1B Dwg. 1332 Rev. D	Egis Consulting Pty Ltd	06/10/2023

Approved Plans and Documents			
Plan / Document Name	**Reference Number**	**Prepared By**	**Dated**
Road 3 Cross Section Sheet 2 of 2	22-000082_1A-1B Dwg. 1333 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Road 4 Longitudinal Section	22-000082_1A-1B Dwg. 1334 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Road 4 Cross Sections	22-000082_1A-1B Dwg. 1335 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Road 5 Longitudinal and Cross Sections	**22-000082_1A-1B Dwg. 1336 Rev. D**	Egis Consulting Pty Ltd	06/10/2023
Southern Swale Longitudinal Section	22-000082_1A-1B Dwg. 1340 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Southern Swale Cross Section Sheet 1 of 4	22-000082_1A-1B Dwg. 1341 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Southern Swale Cross Section Sheet 2 of 4	22-000082_1A-1B Dwg. 1342 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Southern Swale Cross Section Sheet 3 of 4	22-000082_1A-1B Dwg. 1343 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Southern Swale Cross Section Sheet 4 of 4	22-000082_1A-1B Dwg. 1344 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Layout Plan Sheet 1 of 2	**22-000082_1A-1B Dwg. 1400 Rev. D**	Egis Consulting Pty Ltd	06/10/2023
Stormwater Layout Plan Sheet 2 of 2	**22-000082_1A-1B Dwg. 1401 Rev. D**	Egis Consulting Pty Ltd	06/10/2023
Stormwater Drainage Noes and Details	22-000082_1A-1B Dwg. 1402 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Catchment Plan	22-000082_1A-1B Dwg. 1410 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Longitudinal Section Sheet 1 of 3	22-000082_1A-1B Dwg. 1420 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Longitudinal Section Sheet 2 of 3	22-000082_1A-1B Dwg. 1421 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Longitudinal Section Sheet 3 of 3	22-000082_1A-1B Dwg. 1422 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Calculation Table Sheet 1 of 2	22-000082_1A-1B Dwg. 1430 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Calculation Table Sheet 2 of 2	22-000082_1A-1B Dwg. 1431 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Structures Details Sheet 1 of 2	22-000082_1A-1B Dwg. 1440 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Stormwater Structures Details Sheet 2 of 2	22-000082_1A-1B Dwg. 1441 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Bio-Basin G1 Layout Plan	**22-000082_1A-1B Dwg. 1700 Rev. D**	Egis Consulting Pty Ltd	06/10/2023
Bio-Basin G1 Section Plan	22-000082_1A-1B Dwg. 1701 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Bio-Basin G2 Layout Plan	22-000082_1A-1B Dwg. 1702 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Bio-Basin G2 Section Plan	22-000082_1A-1B Dwg. 1703 Rev. D	Egis Consulting Pty Ltd	06/10/2023
Bio-Basin Notes and Details	22-000082_1A-1B Dwg. 1704 Rev. D	Egis Consulting Pty Ltd	06/10/2023

Note: Approved plans as indicated in **BOLD** above are annotated in **red** on the stamped plans by Council dated 23/10/2023

ASSESSMENT BENCHMARKS

The Assessment Benchmarks that applied to the development from the following Categorising Instruments include;

Categorising Instrument (*Planning Regulation 2017*)

State Planning Policy
- *State Planning Policy 2017*, Part E.

Regional Plan
- *South East Queensland Regional Plan 2017 (ShapingSEQ).*

Local Categorising Instrument (Moreton Bay Regional Planning Scheme)

- MBRC Planning Scheme - Works Code, Caboolture West Local Plan Code & Reconfiguring a lot Code (applicable precinct only)

Local Categorising Instrument (Variation Approval)

Not applicable.

Local Categorising Instrument (Temporary Local Planning Instrument)

Not applicable.

OTHER RELEVANT ASSESSMENT MATTERS

Not applicable.

REASONS FOR THE DECISION

Not Applicable.

REASONS FOR APPROVAL DESPITE NON-COMPLIANCE WITH ASSESSMENT BENCHMARKS

Not applicable.

REFERRAL AGENCY CONDITIONS

There were no Referral Agencies applicable to this development application.

SUBMISSIONS

Not applicable.

APPEAL RIGHTS

Attachment 4 of the Decision package is an extract from the *Planning Act 2016* which details your appeal rights, and the appeal rights of any submitters, if applicable, regarding this decision.

ATTACHMENT 2

Assessment Manager Conditions of Approval

CONDITION		**TIMING**
OPERATIONAL WORKS - All		
DEVELOPMENT ENGINEERING		
1	**Non-Conforming Designs**	
	Only non-conforming designs listed in this approval have been accepted. All other discrepancies with Council standards shall be redesigned and / or reconstructed as necessary to conform with Council standards at no cost to Council.	At all times during construction and prior to works being accepted Off Maintenance.
2	**Errors and Omissions**	
	Where errors or omissions occur in the design or works do not conform to or meet Council standards then these works shall be rectified to comply with Council standards at no cost to Council. Where drawings contain insufficient detail or do not contain details of works that are either necessary or associated with the development then these works shall be designed and constructed to Council standards. Only the approved plans shall be used for construction. Note: Council reserves the right to amend the approved drawings or request further information should this become necessary.	At all times during construction and prior to works being accepted Off Maintenance.
3	**Works – Applicant's Expense**	
	All works, services, facilities and/or public utility alterations required by or as a consequence of this approval or stated condition/s, whether carried out by the Council or otherwise, shall be at the developer's expense unless otherwise specified or agreed in writing. Replace existing Council infrastructure (including but not limited to street trees and footpaths) to Council's standards.	At all times during construction and prior to works being accepted Off Maintenance.
4	**Works – Connection to existing works**	
	Where existing works, including roads and drainage works, will not link up with and join smoothly to proposed works and are not more than twenty (20) metres from the nearest point of the proposed works the developer shall carry out such works as are necessary to ensure that the incomplete works, including roads and drainage, are constructed to link up with and join smoothly to the works proposed in accordance with Council's standards. These works are to be undertaken at the developer's expense unless otherwise specified or agreed in writing.	Prior to works being accepted On Maintenance.

CONDITION		TIMING
5	**Notification of Finalisation of Works**	
	Notify Council in writing that the development works on site have been finalised.	At the time of completion of construction.
6	**As Constructed Drawings**	
A	Provide, for review and approval, Council with a preliminary set of the surveyor and engineering As Constructed drawings for the approved works and a digital ADAC file. Note: The current design standard and relevant planning scheme policy is MBRC Planning Scheme Policy Operational Works inspection, maintenance and bonding procedures.	Prior to requesting an On Maintenance inspection.
B	Submit 'As Constructed' drawings and digital ADAC file in accordance with Council's Planning Scheme, relevant Planning Scheme Policies and design standards current at the time of development.	Prior to works being accepted On Maintenance.
7	**Works Through Land not owned by the Developer**	
	Where any works are proposed to be undertaken on or extend into any property not owned by the developer then the other property owner's written consent must be lodged with Council. The written consent from the land owner must identify the correct drawing title and number (including revision number) for the works within or through their land.	Prior to any works commencing within those properties.
8	**Works in Existing Roads**	
A	Works carried out in or affecting existing Roads must be undertaken so that these roads are maintained in a safe and useable condition.	At all times.
B	Provide to Council's delegated officer and receive acknowledgement of a Traffic Management Plan, with site specific Guidance Scheme, prepared and signed by an appropriately qualified person and in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) for any works that will affect traffic movements or traffic safety in existing roads. Note: • A 'Part Road Closure Application' for Development Works form is to accompany the Traffic Management Plan submission. • This submission is required to be made in addition to any Traffic Management Plan which has been submitted and/or approved as part of a Construction Management Plan for the site during the development application process for Material Change of Use or Reconfiguring a Lot or subsequent non-IDAS applications.	At least five (5) days prior to undertaking the works in or affecting existing roads.

CONDITION		TIMING
9	**Information Sign – Works in Existing Roads**	
	A construction advisory road sign must be erected and regularly updated and maintained displaying the developer and contractors details and the expected completion date for works on existing roads. The sign shall be located so as be clearly legible to the public from of minimum 15m distance from the existing road on which the works are to be carried out on.	For the duration of the works from commencement to acceptance of On Maintenance.
10	**Notification to Affected Premises**	
A	Provide Council with a copy of an information kit for 'Notification to Affected Premises' which includes the following: • A layout plan of the proposed development showing adjoining lot boundaries, new and existing roads, park and open space, drainage reserves and community purposes lots as applicable; • Details of any external works with any changes to existing works highlighted for easy identification; • Scheduled start and completion dates; • Contact names and phone numbers for the Developer, Supervising Engineer, Consulting Engineer, the Contractor, Wildlife Spotter and who to contact in an emergency; and • The site working hours authorised for the site works.	Prior to distribution of information kit to residents.
B	Provide all occupiers of premises adjoining the site, directly opposite the frontage of the site, adjacent to and directly opposite external works and residents/occupiers likely to be directly affected by the works with a copy of the 'Notification to Affected Premises' information kit. Provide Council's delegated officer with a list of premises which the information kit has been delivered to.	Not less than 14 days prior to commencing any construction works.
11	**Information Sign – Development Works**	
	An information sign containing the following details and after hours contact details must be provided at each entrance to the development site: • Developer • Supervising Consultant/ Engineers / Project Manager • Principal Contractor The sign must be at least 0.9m (W) by 0.6m (H). The sign must be erected and maintained for the duration of the development works.	For the duration of the development works from commencement to acceptance On Maintenance by Council.

CONDITION		TIMING
12	**Prestart Meeting**	
	Arrange a prestart meeting with Council officers from Development Services section on 3205 0555 or (Email - council@moretonbay.qld.gov.au - Attention - Development Services - Engineering Waraba Construction Team - Referencing DA/2023/3491. The following people will be required to attend the prestart meeting: • Developer's Supervising Engineer • Contractor's Engineer / Project Manager • Contractor's Site Supervisor • Fauna Manager (where required).	Not less than 7 days prior to commencing any construction works.
13	**Mandatory Inspections with Council Officers**	
	Submit required documentation for each mandatory inspection in accordance with MBRC Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures.	Prior to requesting inspection.
	Undertake the following inspections with Council's delegated officer (where applicable to approved works) in accordance with MBRC Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures:	As prescribed below.
A	Stormwater drainage.	Prior to backfilling stormwater trenches.
B	Subgrade / box inspection.	Prior to placement of structural pavements.
C	Preseal inspection.	Prior to priming and sealing of structural pavements.
D	For concrete slabs and concrete pavements - foundations / subgrade and pre-pour inspections.	Prior to concrete pouring.
E	On maintenance inspection for Council's acceptance of all works.	Prior to works being accepted On Maintenance.
F	Off maintenance inspection of all works. Note: Reinspections attract a fee in accordance with Council's Fee Schedule. The fee must be paid prior to the reinspection.	After maintenance period has elapsed.
G	Provide Council's delegated officer with a copy of an Engineers' Certificate Soil tester's reports demonstrating that required compaction standards, finished levels and textures of finish have been obtained in accordance with Council's Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures.	Prior to proceeding to construction of next layer or surfacing.

CONDITION		TIMING
14	**Testing Frequency – General**	
A	All testing of the works shall be carried to comply with the minimum testing frequencies given in MBRC Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures. Note: Council's delegated officer may vary the frequency of testing to suit site conditions but must provide written advice to the supervising engineer prior to commencement of the relevant works.	At all times during construction.
B	Provide a plan identifying locations where testing has occurred.	Prior to works being accepted On Maintenance.
15	**Construction Hours Restrictions**	
	Ensure hours of construction are limited to 0630 to 1830 Monday to Saturday and not at all on Sundays and public holidays. Note: Council's engineer may approve (in writing) work outside the above hours where it can be demonstrated to the satisfaction of Council that the work will not cause unreasonable interference with the amenity of adjoining premise and any person.	At all times.
16	**Construction Nuisance and Annoyance**	
	Ensure construction works do not cause unreasonable interference with the amenity of adjoining premise and any person by reason of noise, vibration, electrical interference, smell, fumes, vapour, steam, soot, ash, dust, silt, wastewater, waste products, grit, oil or otherwise.	At all times.
17	**Construction Site Management**	
	Ensure the construction site is kept in a clean and tidy state.	At all times.
18	**Temporary Sedimentation, Erosion and Runoff Control**	
A	Implement an Erosion and Sediment Control Plan which is prepared by an experienced Certified Professional in Erosion and Sediment Control (CPESC) in accordance with International Erosion Control Association Australasia (IECA) Best Practice and Sediment Control document and MBRC Planning Scheme current at the time of development.	Prior to commencement of works and to be maintained current at all times during construction and until the development is accepted off-maintenance.
B	The temporary erosion and sediment control measures shall be maintained and be functional until the end of the Maintenance Period for the works or earlier if Council's delegated officer considers they are no longer required. Note: Council's delegated officer may order additional measures to control silt on site at no cost to Council.	At all times during construction.

CONDITION		TIMING
19	**Haul Routes**	
	Submit and have approved by Council's delegated officer all haul routes for the transport of imported or spoil material and gravel pavement material along Council roads below sub-arterial standard. Note: Refer to MBRC Planning Scheme Values and Constraints Mapping - Road Hierarchy for details on sub-arterial and arterial roads.	Prior to a prestart meeting being held.
20	**Spillage onto Existing Roads**	
	Clean those parts of the access route to the site that are affected by any material dropped, deposited or spilled on the roads as a result of construction processes associated with the site. Note: • All materials must be swept up and removed from the roads and not directed into Council's stormwater drainage system. • All care must be taken to prevent sediments being deposited on roads.	At all times during construction.
21	**Dust Control – Nuisance and Annoyance**	
	Implement suitable dust control measures. If airborne particles are observed leaving the site, any work is to cease immediately and satisfactory dust suppression is to be implemented. Note: Dust suppression measures must be in place at all times including weekends and public holidays.	At all times prior to works being accepted Off Maintenance.
22	**Earthworks Batters**	
	Where approved drawings do not include specifications for scour and erosion protection apply the following treatments to batter slopes: • Slopes of 1:6 or flatter – topsoil and seed • Slopes between 1:6 and 1:4 – topsoil and turf • Slopes of 1:4 or greater – provide treatment recommendation from a qualified geotechnical engineer (R.P.E.Q.) for Council approval prior to undertaking batter works • Or as directed by Council. Note: Batters within Open and Civic Spaces are to be treated in accordance with MBRC Planning Scheme Policy Integrated Design - Open and Civil Space Design.	At all times during construction.
23	**Road Crossings in Existing Roads**	
	All services crossings under Existing Council Roads are to be tunnel bored unless approved otherwise by Council's delegated officer.	At all times during construction.

CONDITION		TIMING
	Where approval is given for open trenching, the following is to apply: • Minor Roads - backfill shall be compacted in layers to 95% standard maximum dry density and topped with 300mm of pavement material and a 50mm AC wearing course. • Sub-arterial or Arterial roads - refer to I.P.W.E.A. Standard Drawing RS-170. • Verge - Backfill shall be compacted to 90% standard maximum dry density and topped with 75mm of sandy loam. Restoration of any vegetation shall be undertaken to a standard as near as practicable to the pre-construction standard.	
24	**Site works – Stormwater Runoff Quality**	
	Carry out earthworks in accordance with the State Planning Policy - Water Quality and IECA Best Practice Erosion and Sediment Control document. Note: • Soil disturbances of greater than 1.0 hectares will require a site specific Erosion & Sediment Control Plan. • Earthworks are to be undertaken to ensure that soil disturbances are staged into manageable areas of not greater than 3.5 hectares.	At all time during construction and until the site is suitably stabilised.
25	**Earth Retaining Structures**	
A	Earth retaining structures within the subject land around areas of cut that are on or near the boundaries of the site must be designed to allow for the existing live and dead loads associated with the adjoining land/premises current occupancy and use of the adjoining land including allowance for a 2m high boundary fence. The minimum design life (the period assumed in design for which a structure or structural element is required to perform its intended purpose without replacement or major structural repairs) for the earth retaining structure that is specified in Table 2.1 of Australian Standard AS4678.	At all times.
B	Submit for Council records copies of Forms 15 & 16 as detailed under section 254 of the Building Act 2006. The forms are to be signed by an RPEQ for all structural retaining walls. Additionally, submit certification from an R.P.E.Q. that the design and construction of retaining walls comply with the requirements of this condition.	Prior to works being accepted On Maintenance.

CONDITION		TIMING
26	**Unsuitable Fill Materials**	
	Ensure that all fill material used on the development site is free of unsuitable materials, identified in AS3798 and the following: • actual acid sulfate soils and potential acid sulfate soils; • organic or putrescible matter; • material imported from land which is, or has been, listed on the "Environmental Management Register" under the *Environmental Protection Act 1994*; and • building demolition material.	At all times.
27	**Compaction Requirements**	
	All fill material which is intended to be load bearing, or the finished surface level of which is required to remain approximately constant, is selected, placed and compacted to the standard prescribed in Australian Standard AS3798 Guidelines on Earthworks for Commercial and Residential developments.	At all times during construction.
28	**Advisory Sign – Future Road Extension**	
	At the end of each road that is intended to extend with future development an advisory sign shall be supplied and erected to inform residents and the public of the future road extension. The sign shall be worded as follows: "This road may be extended with future development of the adjoining land. For further information refer to Council's Planning Scheme." This sign must be easily read at a distance of 5 metres. The sign shall not be attached to the road end hazard sign above the sign board.	Prior to works being accepted On Maintenance.
29	**Pavement Design**	
A	All road pavements must be designed, constructed and tested in accordance with MBRC Planning Scheme Policy - Integrated Design - Street, Roads and Utilities and standard drawings current at the time of construction. Note: • Council requires a primer seal placed under all asphalt surfaces. • Increased asphalt surface thicknesses for road thresholds are to be identified in the pavement design.	At all times during construction.
B	Submit, for review and approval by Council's delegated officer, a pavement design for all roads. Pavement designs are to include Soil tester's reports.	Prior to subgrade inspection.

CONDITION		TIMING
30	**Pavement Jointing Detail**	
	Undertake pavement jointing in accordance with I.P.W.E.A.Q. Standard Drawings RS-170.	Prior to works being accepted On Maintenance.
31	**Concrete Footpaths**	
	Construct concrete footpaths and kerb ramps in accordance with I.P.W.E.A. Standard Drawings RS-065 and RS-090.	Prior to works being accepted On Maintenance.
32	**Street Signs**	
	Street signs must be provided in accordance with Council's Standard Drawings and I.P.W.E.A. Standard Drawings. Note: • House numbers required for these signs shall be obtained from Council's house numbering officer by contacting Council's Customer Service. • The MBRC Logo is not to be put on the sign.	Prior to works being accepted On Maintenance.
33	**Road Safety Barrier System Certification and Quality Assurance Documentation**	

	Where road safety barriers are required provide the following:
	• certification from a Registered Professional Engineer Queensland (R.P.E.Q.) for the design and installation of the road safety barrier systems (including terminals) identified in the Approved Drawings and designs.
	• full documentation, in accordance with AS3845:1999, relating to all road safety barrier systems and terminals designed and installed. Documentation required includes:
	  ○ Site Information
	  ○ Road Safety Barrier System Information
	  ○ Crash attenuator Information
		Prior to works being accepted On Maintenance.

34	**Hazard Management**	
A	Undertake the hazard identification and treatment process for any additional, existing or introduced hazards identified onsite by the Consultant or by Council's delegated officer during the construction process. Undertake a review of the identified hazards and provide a copy of the completed Hazard Mitigation Worksheet found in AUSTROADS Guide to Road Design Part 6: Roadside Design, Safety and Barriers Appendix B along with any supporting information.	Prior to works being accepted On Maintenance.
B	Provide, for review and approval by Council's delegated officer, adequate design documentation for the recommended hazard management treatment in accordance with AS3845:1999 and AUSTROADS Guide to Road Design Part 6: Roadside Design, Safety and Barriers.	Prior to construction of any hazard management treatment.

CONDITION		TIMING
C	Construct approved hazard management treatments in accordance with Council's Planning Scheme, Planning Scheme Policies, standard drawings and any other relevant standards current at the time of development.	Prior to works being accepted On Maintenance.
35	**Stormwater Runoff Control – Batters and Retaining Walls**	
	Provide cut-off drains at the top of the batter with turf or rock lined batter drains for all batters and/or retaining walls generally higher than 600mm in height and with a catchment greater than 1000m2. Note: Where these are not detailed on the approved drawings then these works shall be in accordance with Council's current standards.	Prior to works being accepted On Maintenance.
36	**Stormwater Runoff Control – Open Drains**	
	Provide lining with appropriate scour protection to all open drains and bunds in accordance with Council's Planning Scheme, Planning Scheme Policies and standard drawings current at the time of development. Note: Dumped rock is generally not considered as an appropriate solution.	Prior to works being accepted On Maintenance.
37	**Stormwater Pipe Outlets and Culvert Inlets and Outlets**	

	Stabilise all culvert inlets and outlets or stormwater drainage outlets in accordance with industry best practice and the following requirements:
	• Rock gabion baskets/rock mattresses
	• Grouted rock/stone pitching with a properly designed and prepared base and constructed to the following requirements:
	  o Mortar to be 1 part cement to 3 parts sand (by volume).
	  o Open face stone pitching is to be used where the concrete is recessed 50mm behind the stone facing.
	  o Select spalls to avoid sharp edges.
	• Other solutions as approved by Council's delegated officer.
	
	Note: Dumped rock is generally not considered as an appropriate solution.
		At all times.

38	**Stormwater Overland Flow – Site Earthworks**	
	Earthworks must be undertaken on the site so as not to cause nuisance and annoyance to any person or premises. The development must: • Allow stormwater overland flow which entered the land prior to the commencement of the earthworks to continue to enter the land; and • Ensure stormwater overland flow from the development site is not discharged or diverted onto	At all times during construction.

CONDITION		TIMING
	land (other than a road) adjacent to the site in a manner which: o concentrates the rate of flow at any point along the property boundary; or o increases the peak flow rates of stormwater discharged at any point along the property boundary; beyond that which existed prior to commencement of these earthworks.	
39	**CCTV – Stormwater Pipes**	
A	Undertake and provide, to the satisfaction of the Council, a high definition Closed Circuit Television (CCTV) recording of all stormwater pipes, including inter allotment roof water drainage. Recording to be undertaken within one month immediately preceding making a request for On Maintenance inspection and post road pavement construction works. CCTV to clearly display all joints (full surrounds) and any form of damage or defects, including date and time of the recording. The recording is to include a report signed by a suitably qualified Registered Professional Engineer Queensland (RPEQ) stating that the recording has been reviewed and all works are satisfactory. Where defects have been identified, consultant is to provide method of rectification to Council for approval, prior to carrying out any rectification works.	Prior to a request for On Maintenance Inspection
B	Undertake and provide, to the satisfaction of the Council, a high definition Closed Circuit Television (CCTV) recording of all stormwater pipes, including inter allotment roof water drainage. Recording to be undertaken within one month immediately preceding making a request for Off Maintenance inspection. CCTV to clearly display all joints (full surrounds) and any form of damage or defects, including date and time of the recording. The recording is to include a report signed by a suitably qualified Registered Professional Engineer Queensland (RPEQ) stating that the recording has been reviewed and all works are satisfactory. Where defects have been identified, consultant is to provide method of rectification to Council for approval, prior to carrying out any rectification works.	Prior to a request for Off Maintenance inspection.
40	**Drainage Behind Retaining Walls**	
	Design and install agricultural pipes or strip drains behind retaining walls in accordance with Q.U.D.M. to connect to: • The proposed inter-allotment drainage systems; or • To drainage inlet structures via a stub connection in roadways; or	Prior to works being accepted On Maintenance.

CONDITION		TIMING
	• Directly to kerb and channel if there are no drainage structures within 10m of the frontage of the land; or • As approved in writing by Council's delegated officer. Notes: • Corrugated pipes are not to be used to connect the stormwater drainage to Council's infrastructure. • The drainage system behind retaining walls must not connect to Council's subsurface drainage system in the Council road.	
41	**Provision of Kerb Adapters**	
	Provide a minimum of two (2) metal kerb adaptors per lot for lots that drain to the road. Where a lot has side crossfall of up to 1.5%, one (1) kerb adaptor shall be located at each side of the lot. Where a lot has side crossfall of greater than 1.5%, both kerb adaptors shall be located at the low side of the lot. For lots with a concrete footpath at the frontage, the kerb adaptors shall be connected to the front boundary of the lot with Class SN8 uPVC stormwater pipe.	Prior to works being accepted On Maintenance.
42	**Fertilisers for Grassing and Landscape Works**	
	Odorous chemicals, fertilisers, soil conditioners or mulches shall not be used on land development projects. Only a non-odorous, commercially bagged and labelled fertiliser shall be used when seeding grass areas or laying turf. Without limiting the above, Council's delegated officer may approve the use of suitably composed and aged organic material, such as soil conditioners, at the following locations: • in isolated locations where existing and proposed houses are considerable distances from the work site; and • where, in the officer's opinion, their use would not adversely affect the occupiers of any nearby properties with strong odours or loose material blown from the work site. Council's delegated officer will provide the approval in writing with conditions where odorous fertilisers are approved.	At all times during construction.
43	**Stabilisation of Disturbed Areas**	
	Ensure that a grass strike rate of at least 80% cover has been attained on all disturbed areas or other approved means of stabilisation of grassed areas have been provided. Note: For residential and rural residential subdivisions, the road reserve between kerb and property line shall be turfed as a condition of completion.	Prior to works being accepted On Maintenance.

CONDITION		TIMING
44	**Certification – Public Stormwater Management Infrastructure**	
	Provide documentation to Council from a Registered Professional Engineer (RPEQ) specialising in stormwater design certifying that the stormwater management treatment train as approved in the stormwater management plan and design drawings has been constructed in accordance with engineering best practise and is functioning as designed. The certification shall include the completed sign-off forms for bioretention systems prepared by Water by Design in Partnership with Healthy Waterways shall be completed. The sign-off forms are accessible from www.waterbydesign.com.au.	Prior to works being accepted On Maintenance.
45	**Public Bioretention Inspections**	
	Provide Council with notice of the subsoil drains being laid and the filter media being installed. Note: Council's delegated officer may attend the inspection.	Not less than 48 hours prior to subsoil drains being laid and the filter media being installed.
46	**Maintenance Process for Public Bioretention Basin**	
A	The entire bioretention basin shall act as a sediment basin. Note: Council will consider alternative solutions to achieve the desired outcome.	During the build-out phase (80%) or up to a maximum of two (2) years.
B	Submit, for review and approval by Council's delegated officer, a deferred works schedule to cover the cost of basin conversion plus twenty-five percent (25%) and in accordance with the requirements of Council's Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures. The following works are to be included as a minimum in the deferred works bond schedule: • removal of sacrificial turf and geofabric; and • In-situ hydraulic conductivity testing of filter material in accordance with the "Guidelines for Soil Filter Media in Bioretention Systems: (produced by the Faculty for Advanced Water Biofiltration) requirements. • Planting out of the basin in accordance with the approved landscaping drawings.	Prior to the bioretention basin area being accepted On Maintenance as a sediment basin.
C	Construct deferred works and any other works necessary to convert to the basin from sediment basin to a functioning bioretention basin in accordance with Council's Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures. In-situ hydraulic conductivity testing of filter material is to be provided to Council's delegated officer to demonstrate that area can be planted out. Where in-situ hydraulic conductivity	Once the contributing catchment achieves eighty percent (80%) build-out or a maximum of 2 years.

CONDITION		TIMING
	testing shows that the filter material is not acceptable then replacement of the filter material is required in addition to planting out of basin area. Note: Deferred Works for bioretention basin conversion are subject to a separate on maintenance process to the other civil works for the development. The On Maintenance process is to be in accordance with Council's Planning Scheme Policy - Operational Works inspection, maintenance and bonding procedures including on and off maintenance inspections and maintenance period.	
OPERATIONAL WORKS - Stage 1A		
47	**Road Classifications for Pavement Design**	
	Design pavement in accordance with the following road classifications: Road 3 (fronting Lot 19) - Modified Living Residential (15.0m) - 1.2×10^5 ESA Road 3 - Modified Living Residential (16.5m) - 1.2×10^5 ESA Road 4 - Modified Living Residential (16.5m) - 1.2×10^5 ESA Road 5 - Driveway (3.0m) - 2.5×10^3 ESA	Prior to subgrade inspections.
OPERATIONAL WORKS - Stage 1B		
48	**Road Classifications for Pavement Design**	
	Design pavement in accordance with the following road classifications: Road 3 (fronting Lot 18) - Modified Living Residential (15.0m) - 1.2×10^5 ESA Road 3 - Modified Living Residential (16.5m) - 1.2×10^5 ESA	Prior to subgrade inspections.

ADVICES	
1	**Development Permit**
	This approval shall comply with all the conditions of related approval as stipulated in Council's Decision Notice – Development Permit dated 24 August 2023 referenced as DA/2021/4669. The Applicant needs to be aware that the Currency Period of that Decision Notice may determine the validity period of this Decision Notice.
2	**Extent of Checking by Council**
	This approval shall not be taken to mean that the drawings have been checked in detail and Council accepts no responsibility whatsoever for the survey information, the design, or for the accuracy of any information or detail contained in the approved drawings and specifications.
3	**Aboriginal Cultural Heritage Act**
	The *Aboriginal Cultural Heritage Act 2003* commenced in Queensland on April 16, 2004. Under the Act, indigenous parties are key in assessing cultural heritage significance. The *Aboriginal Cultural Heritage Act 2003* establishes a Duty of Care for indigenous cultural heritage. This applies on all land and water, including freehold land. The Cultural Heritage Duty of Care lies with the person or entity conducting the activity. Penalty provisions apply for failing to fulfil the Cultural Heritage Duty of Care. Those proposing an activity that involves additional surface disturbance beyond that which has already occurred on the proposed site need to be mindful of the Duty of Care requirement. Details of how to fulfil the Duty of Care are outlined in the Duty of Care Guidelines gazetted with the Act. Council strongly advises that you contact the relevant state agency to obtain a copy of the Duty of Care Guidelines and further information on the responsibilities of developer under the terms of the *Aboriginal Cultural Heritage Act 2003*.
4	**Environmental Protection Act**
	It remains the duty of care of the site owner not to cause Environmental Harm as defined under the *Environmental Protection Act 1994*.
5	**Road and Stormwater infrastructure**
	In respect to Road and Stormwater infrastructure, the works shall be designed and constructed in accordance with the relevant Planning scheme codes and policies; The current relevant planning scheme codes and policies are: • Works code; • Reconfiguring a lot codes; • PSP- Integrated Design • PSP- Operational Works Inspection, Maintenance and Bonding Procedures. All of which may be downloaded free of charge from Council's website at

ADVICES	
	www.moretonbay.qld.gov.au. The PSP- Operational Works Inspection, Maintenance and Bonding Procedures also contains details of other requirements such as: 1. arrangements for works going On or Off Maintenance; 2. inspection and testing; 3. checklists and certification proforma; 4. bonding procedures. Should further information be required regarding the road and stormwater component of the Operational Works Application, please contact Council's Officer, Xavier Dubreuil on phone (07) 5433 2739.
6	**Acceptance Based on Applicant's Certification**
	Council's acceptance of the above submission is based solely on the applicant's certification that the proposal conforms totally to Council's Planning Scheme, Planning Scheme Policies and standard drawings.
7	**Biosecurity Act 2014 - Fire Ant Control**
	Significant portions of the Moreton Bay are within Fire Ant Biosecurity Zone 2 and must remain vigilant for the presence of fire ants. Under the Biosecurity Act 2014, individuals and businesses are responsible for ensuring that they follow the movement controls for specific organic materials to help prevent the spread of fire ants within South East Queensland's fire ant biosecurity zones. Movement of a fire ant carrier from within the fire ant biosecurity zone may need a biosecurity instrument permit. More information is available on https://www.fireants.org.au/treat/business-and-industry/movement-controls

ATTACHMENT 3

Approved Plans / Documents

LILYWOOD LANDINGS

STAGES 1A & 1B - OPERATIONAL WORKS
FOR FOREVERLEN PTY LTD

LOCALITY PLAN
N.T.S

MORETON BAY REGIONAL COUNCIL

AREA OF SITE: 5.499 ha

LOT INFORMATION

LOT 12 ON RP866105, LOT 35 ON SP115959,
& LOT 1 ON RP866105

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CONSTRUCTION NOTE

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH:

- CRR INTERSECTION & IDC SET - 22-000082_CRR
- BULK EARTHWORKS SET - 22-000082_EWKS
- STAGE 2 SET - 22-000082_2
- STAGE 3 SET - 22-000082_3
- STAGE 4 SET - 22-000082_4
- STAGE 22 SET - 22-000082_22
- GEOTECHNICAL REPORT
- BAF TRUNK WATER INFRASTRUCTURE SET - 22-000082_TWI
- DOBSON LANE TRUNK GRAVITY SEWER SET - 20-000027
- SIGNALS PLANS (BY CV SERVICES)
- LANDSCAPE PLANS (BY AECOM)
- ELECTRICAL/ COMMS PLAN (BY CV SERVICES)

CONSTRUCTION HOLD POINT

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY LEVELS OF ALL EXISTING CROSSINGS AND CONNECTION POINTS.

LILYWOOD LANDINGS

STAGE 1A & 1B DA REF NO. -

Project No.:	Stage:	Milestone:	Revision Date.:	Drawing No.:	Revision:
22-000082_1A-1B	1A & 1B	OPERATIONAL WORKS	06/10/23	1000	D

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:1000 10 0 10 20 30 40 50m A1
1:2000 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE
SITE LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1100	D

Moreton Bay Regional Council

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1201

JOIN LINE

MAX. 1.04m

ROAD 03

ROAD 05

STAGE 01A

LOT 1 RP866105

LOT 12 RP866105

PMT

MAX. 0.50m

MAX. 0.40m

MAX. 0.54m

MAX. 0.47m

MAX. 1.35m

MAX. 0.82m

1.30m 1.35m 1.45m 1.45m

SLEEPER RETAINING WALL WITH ACOUSTIC FENCE PRE-CONSTRUCTED AS PART OF CABOOLTURE RIVER ROAD WORKS (REFER 22-000082_CRR DRAWINGS FOR DETAILS).

CABOOLTURE RIVER ROAD

LEGEND

- STAGE BOUNDARY
- STORMWATER STRUCTURE
- PROPOSED STORMWATER PIPE
- CONCRETE FOOTPATH
- 64.0 EXISTING SURFACE CONTOUR (0.5m INTERVALS)
- 66.0 DESIGN SURFACE CONTOUR (0.5m INTERVALS)
- PROPOSED WATER MAIN
- PROPOSED SEWER MAIN
- PROPOSED SLEEPER RETAINING WALL TYPE 1
- PROPOSED SLEEPER RETAINING WALL TYPE 2
- EXISTING TRUNK SEWER
- EXISTING SLEEPER RETAINING WALL + ACOUSTIC FENCE
- RL.22.15 FINISHED SURFACE LEVEL
- PROPOSED LOT BOUNDARY
- BUILD TO BOUNDARY

N

NOTE:
1. REFER TO DRG 22-000082_1A-1B_1202 FOR STANDARD RETAINING WALL NOTES AND DETAILS.

CAUTION !! UNDERGROUND TELECOMMS CABLES
UNDERGROUND TELECOMMUNICATION CABLES EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR CABLE LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING.

CAUTION !! UNDERGROUND GAS MAIN
UNDERGROUND GAS MAIN EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR MAIN LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING

CAUTION !! OVERHEAD ELECTRICAL CABLES
OVERHEAD ELECTRICITY CABLES EXIST IN THIS VICINITY. CONTACT ENERGEX WHERE CABLE CLEARANCE IS COMPROMISED BY MACHINERY.

CAUTION !! UNDERGROUND ELECTRICAL CABLES
UNDERGROUND ELECTRICITY CABLES EXIST IN THIS VICINITY. CONTACT ENERGEX FOR CABLE LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING

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C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK RT

DESIGN CHECK

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE 1:250 1:500 5 0 5 10m A1 A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

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PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

DISCLAIMER
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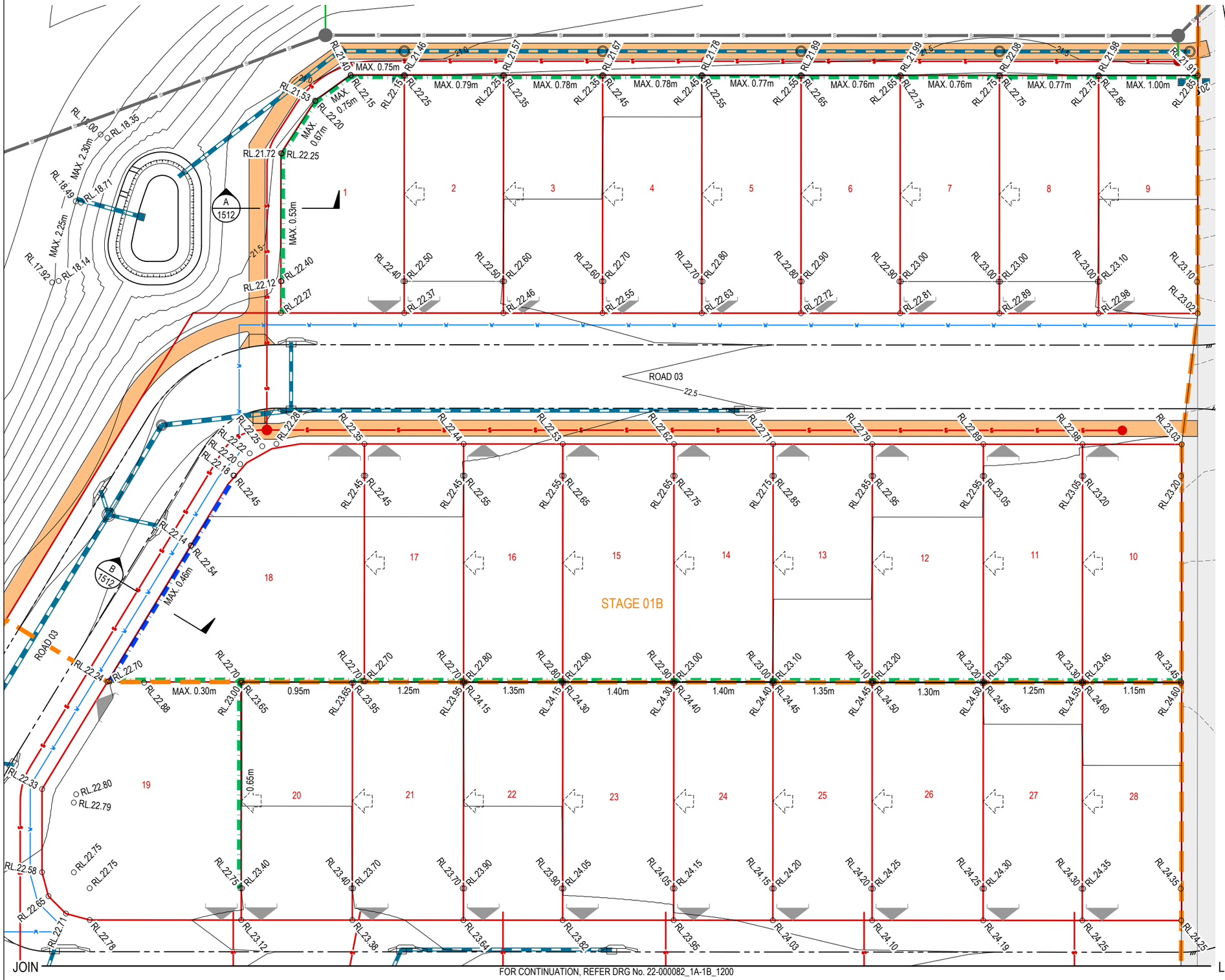
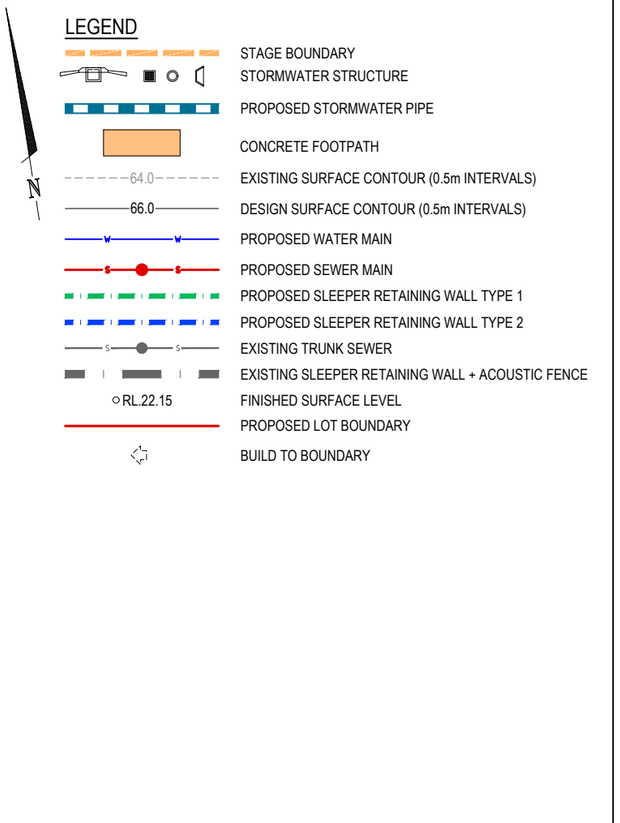
DRAWING TITLE: RETAINING WALL SETOUT PLAN SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1200	D

Moreton Bay Regional Council





NOTE:
1. REFER TO DRG 22-000082_1A-1B_1202 FOR STANDARD RETAINING WALL NOTES AND DETAILS.

CAUTION !! UNDERGROUND TELECOMMS CABLES
UNDERGROUND TELECOMMUNICATION CABLES EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR CABLE LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING.

CAUTION !! UNDERGROUND GAS MAIN
UNDERGROUND GAS MAIN EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR MAIN LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING

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OVERHEAD ELECTRICITY CABLES EXIST IN THIS VICINITY. CONTACT ENERGEX WHERE CABLE CLEARANCE IS COMPROMISED BY MACHINERY.

CAUTION !! UNDERGROUND ELECTRICAL CABLES
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REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
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C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:250 / 1:500 — 5 0 5 10m — A1 / A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

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PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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DRAWING TITLE: RETAINING WALL SETOUT PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1201	D

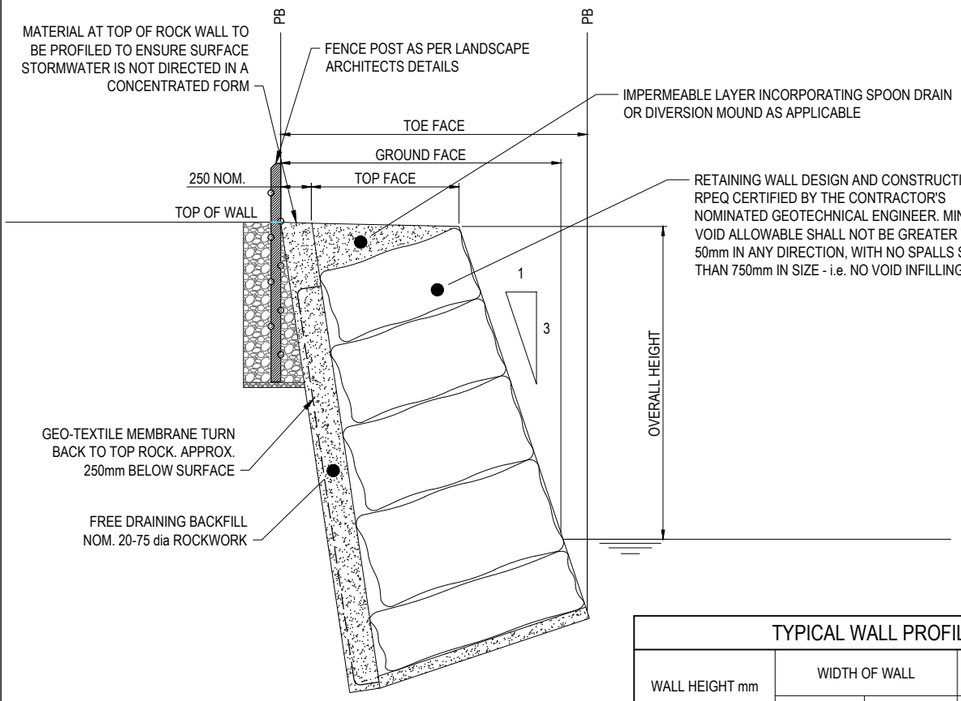
Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023

RETAINING WALL DESIGN AND CONSTRUCT NOTES:

1. CONCRETE SLEEPER RETAINING WALL IS A DESIGN AND CONSTRUCT ITEM.
2. CONTRACTOR SHALL ENGAGE A RPEQ STRUCTURAL ENGINEER WITH SUITABLE RETAINING WALL EXPERIENCE.
3. FOLLOWING DESIGN PARAMETERS SHALL BE ADOPTED.
   a) SURCHARGE LOAD 5kPa FOR INTERALLOTMENT WALLS.
   b) SURCHARGE LOAD 20kPa WHERE WALLS ARE SUPPORTING ROADS OR DRIVEWAYS.
   c) ALLOW FOR WIND AND DEAD LOADS FOR SOLID 1.8m HIGH FENCE, OR HIGHER IF SPECIFIED IN THE ACOUSTIC REPORT.
   d) ALLOW FOR MAX 1 IN 4 SLOPE AT TOP AND TOE OF WALLS.
   e) TORSIONALLY RIGID BEAMS SUCH AS UC SECTION SHALL BE SPECIFIED.
   f) DESIGN SHALL ACHIEVE 60 YEAR DESIGN LIFE. OR DESIGN LIFE SPECIFIED BY THE RELEVANT AUTHORITY.
   g) CONTRACTOR SHALL ARRANGE GEOTECHNICAL INVESTIGATION AND STRUCTURAL DESIGN SHALL ALLOW FOR CONDITIONS IDENTIFIED IN INVESTIGATION
   h) WALL DESIGN SHOULD INCLUDE FOUNDATION LEVELS WITH THEIR LINE OF INFLUENCE CLEAR OF ANY PROPOSED UTILITY SERVICES INSTALLATIONS.
4. CONTRACTOR SHALL PROVIDE RPEQ CERTIFIED STRUCTURAL DESIGN PRIOR TO CONSTRUCTION AND FORM 15 CERTIFICATION.
5. CONTRACTOR SHALL ARRANGE FOR RPEQ INSPECTIONS DURING CONSTRUCTION AND PROVIDE RPEQ CERTIFIED FORM 16 PRIOR TO PRACTICAL COMPLETION BEING AWARDED.
6. CONTRACTOR TO CONSIDER NEARBY EXISTING AND PROPOSED SERVICES WITHIN RPEQ DESIGN OF WALLS, AND TO OBTAIN BUILD OVER ASSET APPROVALS WITH THE RELEVANT AUTHORITIES AS REQUIRED BY THE AUTHORITIES' SPECIFICATIONS, PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE BUILD OVER ASSET APPROVALS TO THE SUPERINTENDENT, PRIOR TO CONSTRUCTION.
7. RETAINING WALLS TO BE CONSTRUCTED TO MANUFACTURERS SPECIFICATIONS.
8. PROVIDE APPROVED SAFETY FENCE TO ALL WALLS HIGHER THAN 1.0m.
9. CONTRACTOR TO ENSURE ALL WORKS ADJACENT TO EXISTING RETAINING WALLS IS UNDERTAKEN SO AS NOT TO IMPACT ON THE STRUCTURAL INTEGRITY OF THE EXISTING WALLS. SUBSOIL OUTLETS FOR EXISTING RETAINING WALLS TO BE KEPT FREE DRAINING AT ALL TIMES.
10. WALL ALIGNMENT IS TO BE PEGGED FOR INSPECTION BY SUPERINTENDENT PRIOR TO CONSTRUCTION.
11. WALLS TO BE VERTICAL FACE TYPE TO A MAXIMUM HEIGHT OF 2.5m. TYPE, FINISH AND COLOUR TO BE APPROVED BY SUPERINTENDENT, UNLESS NOTED OTHERWISE.
12. CONTRACTOR IS RESPONSIBLE FOR PROVIDING STRUCTURAL DESIGN, CONSTRUCTION SUPERVISION AND STRUCTURAL CERTIFICATION BY A SUITABLY QUALIFIED AND EXPERIENCED, REGISTERED STRUCTURAL ENGINEER (RPEQ) FOR ALL WALLS 1.0m HIGH OR GREATER.
13. BE LODGED FOR EARTH RETAINING STRUCTURES >1000mm HIGH.
14. ALL WALLS TO BE DESIGNED BASED ON A GEOTECHNICAL ASSESSMENT OF INSITU SOILS BY A SUITABLY QUALIFIED ENGINEER. SHOULD WALLS REQUIRE ADDITIONAL FOOTINGS AND/OR FOUNDATION SUPPORT, THESE ARE TO BE FACTORED INTO THE DESIGN AND THE TENDERED COST OF THE WALLS.
15. PRIVATE WALLS INCLUDING FOOTING TO BE CONTAINED WHOLLY WITHIN PRIVATE PROPERTY AND ARE TO BE FULLY CONTAINED WITHIN THE LOWER LOT UNLESS WALL ABUTS ROAD RESERVE/PARK, IN WHICH CASE THE WALL SHALL BE CONTAINED WHOLLY WITHIN THE PRIVATE PROPERTY.
16. SUBSOIL DRAINAGE BEHIND ALL WALLS TO INCLUDE DISCHARGE PIPE INTO THE NEAREST STORMWATER STRUCTURE (OR DEDICATED KERB ADAPTOR) AND MUST BE FREE DRAINING. ALL WALL DRAINAGE LINES DISCHARGING THROUGH LOTS OR ROAD VERGE TO BE SOLID uPVC (NO SLOTS) AND MUST BE FREE DRAINING.
17. WALLS ARE TO BE CAPABLE OF SUPPORTING TWO STOREY "HEAVY CONSTRUCTION" BUILDINGS.
18. CONTRACTOR TO PROVIDE & MAINTAIN SAFETY FENCE TO ALL WALLS GREATER THAN 1.0m IN HEIGHT.
19. A MINIMUM 600mm CLEARANCE IS TO BE MAINTAINED BETWEEN THE OUTSIDE OF THE BORED PIERS AND THE OUTSIDE OF ANY SEWER MAIN OR ROOFWATER PIPE IN THE VICINITY OF THE RETAINING WALL.
20. RETAINING WALL DESIGN AND CONSTRUCTION TO CONSIDER AND CATER FOR ALL SERVICES LOCATED UNDER, OR IN THE VICINITY OF, THE RETAINING WALL.
21. ALL WALLS TO BE DESIGNED TO ALLOW FOR 1.8m HIGH ENCLOSED FENCE.
22. WHERE APPLICABLE, RETAINING WALL DESIGN AND CONSTRUCTION SHALL MAKE ANY NECESSARY ALLOWANCES TO FACILITATE AND ENABLE FUTURE RETAINING WALL JOINTS/CONNECTIONS/EXTENSIONS.
23. EXTENT OF ALL WALLS TO BE CONFIRMED BY CONTRACTOR WITH SUPERINTENDENT PRIOR TO STARTING CONSTRUCTION.
24. ORANGE MESH SAFETY FENCING TO BE ERECTED ON TOP OF WALL 1.0m HIGH OR GREATER AND MAINTAINED UNTIL OFF-MAINTENANCE.



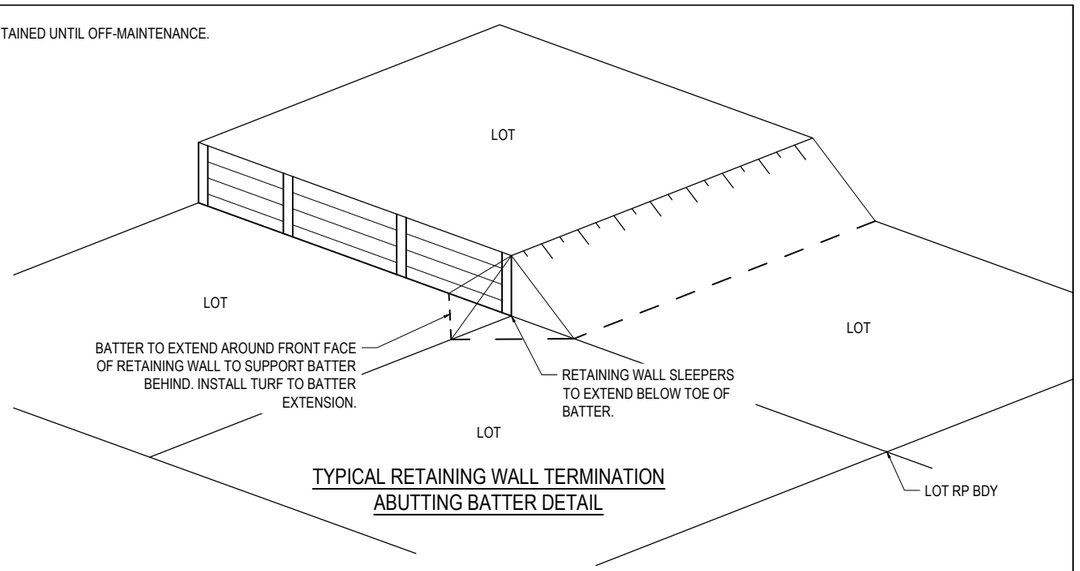
TYPICAL BOULDER RETAINING WALL DETAIL

N.T.S

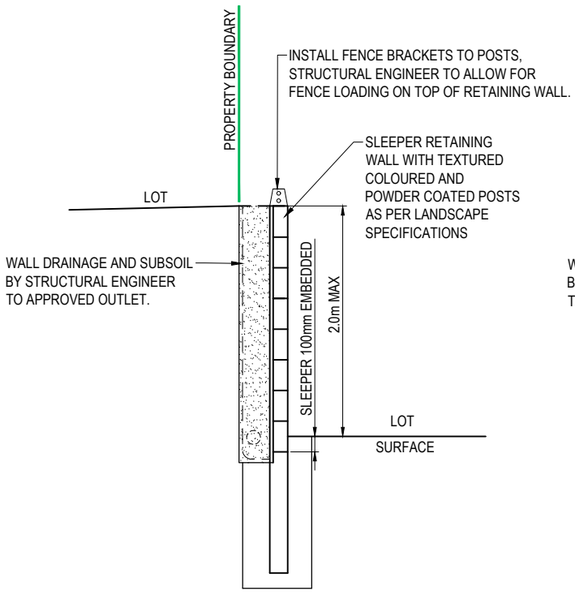
TYPICAL WALL PROFILE			
WALL HEIGHT mm	WIDTH OF WALL		WALL EMBEDMENT
	BASE	TOP	FRONT FACE
1000	700	600	300
1500	900	600	400
2000	1200	750	500
2500	1500	750	500
3000	1800	900	750

BOULDER RETAINING WALL NOTE

STEPPED BOULDER RETAINING WALLS TO BE CONSTRUCTED WITH 1.5m HORIZONTAL CLEARANCE BETWEEN THE FRONT AND BACK OF SUBSEQUENT WALLS.

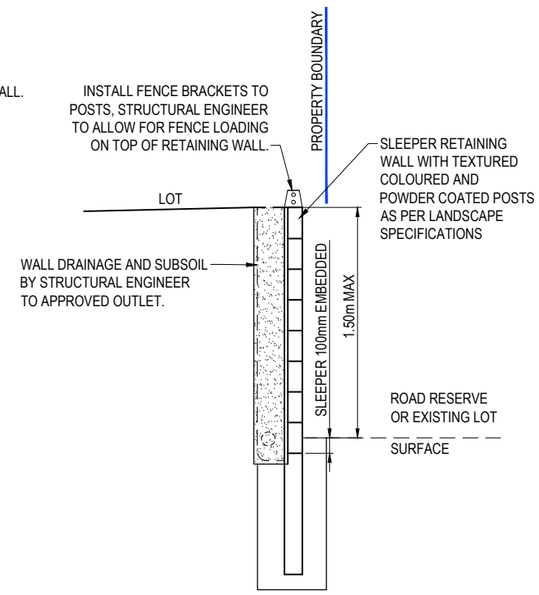


TYPICAL RETAINING WALL TERMINATION ABUTTING BATTER DETAIL



TYPICAL SINGLE TIER CONCRETE SLEEPER RETAINING WALL AT BDY TYPE 1 (INCLUDING B2B WALLS)

N.T.S



TYPICAL SINGLE TIER CONCRETE SLEEPER RETAINING WALL AT BDY TYPE 2

N.T.S

NOTE

DETAIL TO APPLY TO ALL RETAINING WALL TERMINATIONS ADJACENT TO BATTERS INCLUDING AT VERGES.

MINIMUM DESIGN REQUIREMENTS

- SURCHARGE LOADING ON BACKFILL : 5KPa FOR LOTS AND 20KPa FOR ROAD RESERVE.
- POST AND FOOTING DESIGN TO ALLOW FOR 1.8m HIGH FENCE OR HIGHER IF SPECIFIED IN THE ACOUSTIC REPORT.
- MAX 1V:4H SLOPE BEHIND WALL

NOTES:

1. RETAINING WALLS TO BE CONSTRUCTED TO MANUFACTURERS SPECIFICATIONS.
2. CONTRACTOR TO PROVIDE STRUCTURAL CERTIFICATION FOR RETAINING WALLS DESIGN AND CONSTRUCTION.
3. PROVIDE APPROVED SAFETY FENCE TO ALL WALLS HIGHER THAN 1.0m.
4. ALL RETAINING WALL FOOTINGS TO BE LOCATED A MINIMUM 1.0m HORIZONTALLY CLEAR OF THE ROOFWATER AND SEWER AND BE TAKEN BELOW THE ZONE OF INFLUENCE.

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:20 0.2 0 0.2 0.4 0.6 0.8 1m A1; 1:40 A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: RETAINING WALL NOTES & DETAILS

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1202	D

Moreton Bay Regional Council

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1301

JOIN

LINE

FUTURE DEVELOPMENT

CTP 524.104

CTP 466.445

TC 461.074

TC 125.608

CT 79.683

CT 140.964

ROAD 03

ROAD 04

ROAD 05

ROAD 1

ROAD 6

STAGE 01B

STAGE 01A

PROVIDE TEMPORARY TURNAROUND, REFER DETAIL ON DRG 22-000082_1A-1B_1301

END OF WORKS CH 256.995

END OF WORKS CH 158.032

END OF WORKS CH 540.000

TC 52.303

START OF WORKS CH 37.606

REFER TO JOIN TO EXISTING PAVEMENT DETAIL

709.619

CT 647.618

600mm WIDE INVERT, REFER DETAIL ON DRG 22-000082_1A-1B_1301

PMT

TC 624.057

CT 587.638

DRIVEWAY CROSSOVER TO BE CONSTRUCTED IN ACCORDANCE WITH IPWEA STD DRGs RS-049 & RS-050

Remove barrier kerb in Road 3 verge - CMB

LOT 12 RP866105

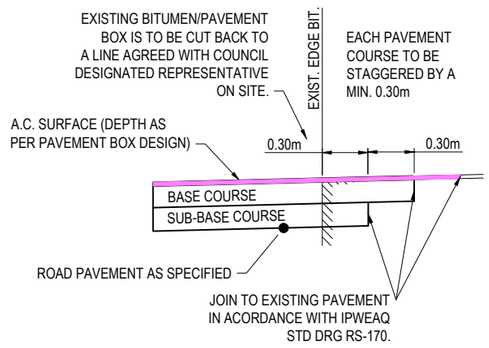
LOT 1 RP866105

CABOOLTURE RIVER ROAD

LEGEND

- STAGE BOUNDARY
- CONTROL LINE
- MOUNTABLE KERB & CHANNEL TYPE 'M3'
- BARRIER KERB & CHANNEL TYPE 'B1'
- BARRIER KERB ONLY TYPE 'B2'
- INDICATIVE DRIVEWAY LOCATIONS
- BUILD TO BOUNDARY
- 600mm WIDE INVERT

NOTE:
REFER TO DRAWING 22-000082_1A-1B_1301 FOR KERB DETAILS AND CONTROL LINE SETOUT TABLES



JOIN TO EXISTING PAVEMENT DETAIL
N.T.S.

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

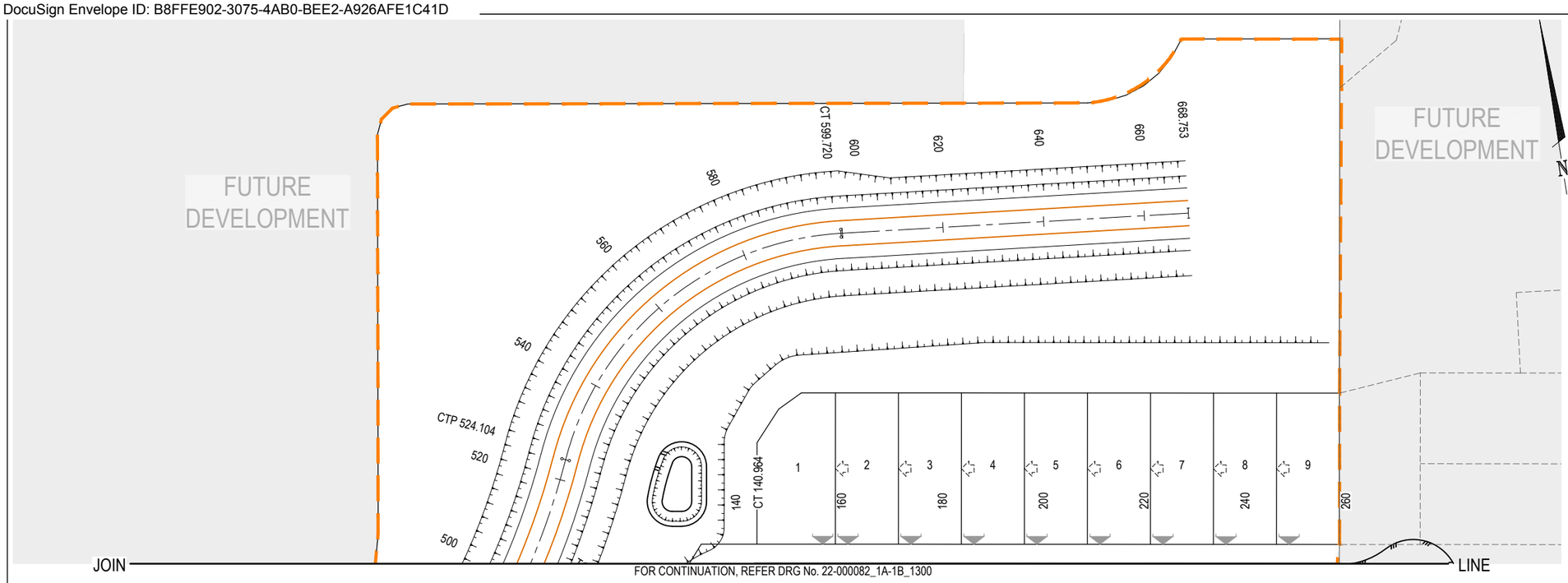
DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

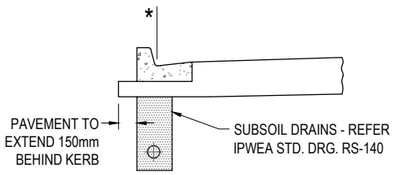
DRAWING TITLE: CONTROL LINE SETOUT PLAN SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1300	D

Moreton Bay Regional Council

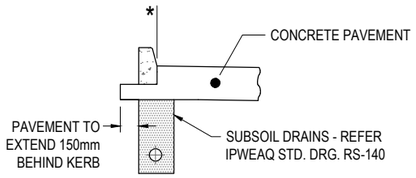
23/10/2023





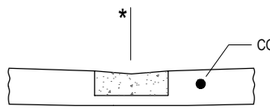
BARRIER KERB AND CHANNEL
TYPE B1 (300mm) IPWEA
SCALE 1 : 25

* NOMINAL KERB LINE



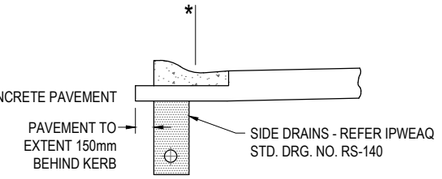
BARRIER KERB ONLY
TYPE B2 IPWEA
SCALE 1 : 25

* NOMINAL KERB LINE



600mm WIDE INVERT
IPWEA
SCALE 1 : 25

* NOMINAL KERB LINE



MOUNTABLE KERB AND CHANNEL
TYPE M3 IPWEAQ
SCALE 1 : 25

* NOMINAL KERB LINE

SWALE CONTROL LINE SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	90611.169	501776.763	3°46'26.13"			
IP 2	5.451	90611.527	501782.201				
TC	53.219	90649.438	501811.263	52°31'35.43"			
IP 3	63.537	90657.745	501817.632		R = -50.000	20.636	23°38'50.85"
CT	73.855	90662.800	501826.797	28°52'44.57"			
TC	186.492	90717.200	501925.426	28°52'44.57"			
IP 4	216.377	90731.681	501951.682		R = 300.000	59.770	11°24'54.73"
CT	246.262	90751.072	501974.552	40°17'39.31"			
TC	461.074	90889.994	502138.396	40°17'39.31"			
IP 5	463.760	90891.732	502140.446		R = 60.000	5.371	5°07'45.49"
CC	466.445	90893.646	502142.332	45°25'24.80"			
IP 6	495.275	90914.439	502162.819		R = -150.000	57.659	22°01'26.88"
CC	524.104	90926.031	502189.608	23°23'57.92"			
IP 7	561.912	90943.409	502229.768		R = 60.000	75.615	72°12'26.63"
CT	599.720	90986.959	502225.493	95°36'24.55"			
IP 8	668.753	91055.662	502218.748	95°36'24.55"			

ROAD 5 CONTROL LINE SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	90957.338	502008.533	233°56'50.25"			
TC	9.819	90949.400	502002.754	233°56'50.25"			
IP 2	14.217	90945.738	502000.089		R = 15.000	8.796	33°35'56.07"
CT	18.615	90941.214	501999.895	267°32'46.31"			
IP 3	50.436	90909.422	501998.533	267°32'46.31"			

ROAD 3 CONTROL LINE SETOUT TABLE

EXISTING ROAD

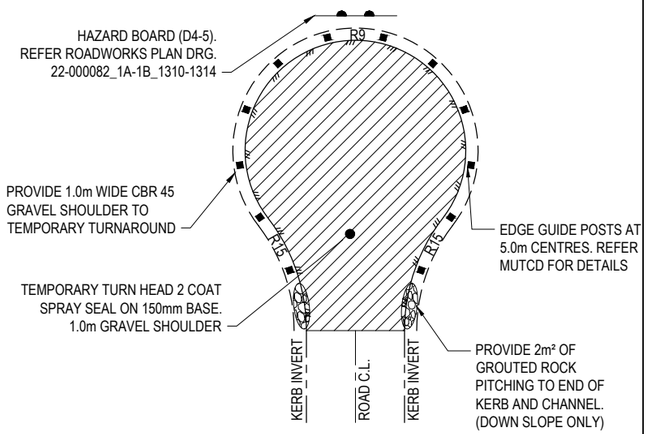
FUTURE STAGE WORKS

PT	CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
IP 1	0.000	90896.379	502042.959	8°55'08.74"			
TC	52.303	90904.488	502094.629	8°55'08.74"			
IP 2	65.993	90906.665	502108.503		R = 50.000	27.381	31°22'33.09"
CT	79.683	90915.747	502119.214	40°17'41.82"			
TC	125.608	90945.447	502154.242	40°17'41.82"			
IP 3	133.286	90950.897	502160.669		R = 15.000	15.355	58°39'12.62"
CT	140.964	90959.222	502159.358	98°56'54.44"			
TC	302.924	91119.211	502134.166	98°56'54.44"			
IP 4	314.306	91133.260	502131.954		R = 15.000	22.763	86°56'57.01"
CT	325.688	91131.798	502117.807	185°53'51.45"			
TC	461.554	91117.838	501982.660	185°53'51.45"			
IP 5	475.538	91115.761	501962.559		R = 15.000	27.968	106°49'43.31"
CT	489.522	91097.122	501970.365	292°43'34.77"			
TC	489.532	91097.113	501970.369	292°43'34.77"			
IP 6	538.585	91051.649	501989.412		R = -408.000	98.106	13°46'37.73"
CT	587.638	91002.959	501997.079	278°56'57.04"			
TC	624.057	90966.983	502002.745	278°56'57.04"			
IP 7	635.837	90952.167	502005.078		R = 15.000	23.561	89°59'48.96"
CT	647.618	90954.499	502019.895	8°56'46.00"			
IP 8	709.619	90964.141	502081.141	8°56'46.00"			

ROAD 4 CONTROL LINE SETOUT TABLE

PT	CHAINAGE	EASTING	NORTHING	BEARING
IP 1	0.000	90903.860	502090.633	98°56'54.40"
IP 2	224.257	91125.388	502055.751	98°56'54.40"

NOTE:
REFER TO DRG 22-000082_1A-1B_1300 FOR DRG LEGEND.



ROAD 3 & 4 - TYPICAL TEMPORARY
TURNAROUND AREA DETAIL
SCALE 1:250(A1)
SCALE 1:500(A3)

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:25 0.25 0 0.25 0.5 0.75 1.0 1.25m A1
1:50 A3
1:250 5 0 5 10m A1
1:500 A3
1:500 10 5 0 10 20m A1
1:1000 A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION, USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: CONTROL LINE SETOUT PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1301	D

Moreton Bay Regional Council

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1313

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1311

START OF WORKS CH 37.606

REFER TO JOIN TO EXISTING PAVEMENT DETAIL ON DRG 22-000082_1A-1B_1300

JOIN PROPOSED 2m WIDE FOOTPATH INTO EXISTING FOOTPATH NEATLY (BOTH SIDES).

600mm WIDE INVERT, REFER DETAIL ON DRG 22-000082_1A-1B_1301

PMT

REFER WATER PLANS FOR LIVE CONNECTION DETAIL.

PROVIDE TEMPORARY TURNAROUND, REFER DETAIL ON DRG 22-000082_1A-1B_1301

END OF WORKS CH 540.000

HAZARD BOARD (D4-5).

ROAD 03

ROAD 05

ROAD 6

STAGE 01A

FUTURE DEVELOPMENT

LOT 1 RP866105

LOT 2 RP866105

CT 647.618

TC 624.057

CT 587.638

CABOOLTURE RIVER ROAD

NOTE:

1. REFER TO DRG 22-000082_1A-1B_1311 FOR ROADWORKS LEGEND.
2. REFER TO DRG 22-000082_1A-1B_1314 FOR ROADWORKS NOTES.
3. REFER TO DRG 22-000082_1A-1B_1314 FOR TYPICAL DRIVEWAY & LOT SERVICE CONNECTION LAYOUT

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
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D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:250 / 1:500 — 5 0 5 10m — A1 / A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS — STAGES 1A & 1B

DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: ROADWORKS LAYOUT PLAN SHEET 1 OF 5

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1310	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1312

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1314

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1313

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1310

JOIN LINE

JOIN LINE

JOIN LINE

JOIN LINE

ROAD 03

ROAD 04

STAGE 01B

FUTURE DEVELOPMENT

PROVIDE TEMPORARY TURNAROUND, REFER DETAIL ON DRG 22-000082_1A-1B_1301

HAZARD BOARD (D4-5).

END OF WORKS CH 256.995

PROVIDE TEMPORARY TURNAROUND, REFER DETAIL ON DRG 22-000082_1A-1B_1301

HAZARD BOARD (D4-5).

END OF WORKS CH 158.032

709.619

CT 140.964

LEGEND

- STAGE BOUNDARY
- STORMWATER DRAINAGE
- EXISTING STORMWATER DRAINAGE MAINTENANCE HOLE
- GULLY PIT
- OUTLET STRUCTURE
- EXISTING STORMWATER STRUCTURE
- CONCRETE FOOTPATH (2m WIDE)
- ASPHALT SURFACING
- CONCRETE DRIVEWAY
- MOUNTABLE KERB & CHANNEL TYPE 'M3'
- BARRIER KERB & CHANNEL TYPE 'B1'
- BARRIER KERB ONLY TYPE 'B2'
- EDGE OF BITUMEN
- GRAVEL SHOULDER
- EXISTING SURFACE CONTOUR (0.50m INTERVALS)
- DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- PROPOSED WATER MAIN
- PROPOSED WATER FITTING
- PROPOSED WATER CONDUIT
- PROPOSED SEWERAGE RETICULATION
- PROPOSED KERB ADAPTER + LINE
- PROPOSED ROOF WATER LINE
- EXISTING WATER MAIN
- PROPOSED SLEEPER RETAINING WALL
- EXISTING BOULDER RETAINING WALL
- EXISTING RETAINING WALL + ACOUSTIC FENCE
- INDICATIVE DRIVEWAY LOCATION
- EDGE GUIDE POST
- PROPOSED BATTERS
- PROPOSED LOW FLOW CHANNEL AREA
- EXISTING TRUNK SEWER
- BUILD TO BOUNDARY

NOTE:
1. REFER TO DRG 22-000082_1A-1B_1314 FOR ROADWORKS NOTES.
2. REFER TO DRG 22-000082_1A-1B_1314 FOR TYPICAL DRIVEWAY & LOT SERVICE CONNECTION LAYOUT

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT

DESIGN CHECK:

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:250 1:500 5 0 5 10m A1 A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

DISCLAIMER
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DRAWING TITLE: ROADWORKS LAYOUT PLAN SHEET 2 OF 5

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1311	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023

FUTURE DEVELOPMENT

LINE

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1314

JOIN

BASIN TO BE CONSTRUCTED IN FUTURE WORKS STAGE

EXISTING WATERWAY EDGE

FUTURE DEVELOPMENT

FUTURE DEVELOPMENT

JOIN

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1311

LINE

LEGEND

- STAGE BOUNDARY
- STORMWATER DRAINAGE
- EXISTING STORMWATER DRAINAGE
- MAINTENANCE HOLE
- GULLY PIT
- OUTLET STRUCTURE
- EXISTING STORMWATER STRUCTURE
- CONCRETE FOOTPATH (2m WIDE)
- ASPHALT SURFACING
- CONCRETE DRIVEWAY
- MOUNTABLE KERB & CHANNEL TYPE 'M3'
- BARRIER KERB & CHANNEL TYPE 'B1'
- BARRIER KERB ONLY TYPE 'B2'
- EDGE OF BITUMEN
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- EXISTING SURFACE CONTOUR (0.50m INTERVALS)
- DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- PROPOSED WATER MAIN
- PROPOSED WATER FITTING
- PROPOSED WATER CONDUIT
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- EXISTING WATER MAIN
- PROPOSED SLEEPER RETAINING WALL
- EXISTING BOULDER RETAINING WALL
- EXISTING RETAINING WALL + ACOUSTIC FENCE
- INDICATIVE DRIVEWAY LOCATION
- EDGE GUIDE POST
- PROPOSED BATTERS
- PROPOSED LOW FLOW CHANNEL AREA
- EXISTING TRUNK SEWER
- BUILD TO BOUNDARY

NOTE:
1. REFER TO DRG 22-000082_1A-1B_1314 FOR ROADWORKS NOTES.
2. REFER TO DRG 22-000082_1A-1B_1314 FOR TYPICAL DRIVEWAY & LOT SERVICE CONNECTION LAYOUT

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

Ryan Ashworth

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:250 1:500 5 0 5 10m A1 A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: ROADWORKS LAYOUT PLAN SHEET 3 OF 5

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1312	D

Moreton Bay Regional Council

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1314

JOIN

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1311

LINE

FOR CONTINUATION, REFER DRG No. 22-000082_1A-1B_1310

JOIN LINE

FUTURE DEVELOPMENT

CTP 466/445

TC 461.074

CT 79.683

TC 52.303

ROAD 03

ROAD 3

ROAD 1

START OF WORKS
CH 37.606

REFER TO JOIN TO EXISTING PAVEMENT DETAIL ON DRG 22-000082_1A-1B_1300

JOIN PROPOSED 2m WIDE FOOTPATH INTO EXISTING FOOTPATH NEATLY (BOTH SIDES).

REFER BIO-BASIN PLANS FOR BASIN SETOUT, DETAILS AND NOTES.

709.619

LEGEND

- STAGE BOUNDARY
- STORMWATER DRAINAGE
- EXISTING STORMWATER DRAINAGE
- MAINTENANCE HOLE
- GULLY PIT
- OUTLET STRUCTURE
- EXISTING STORMWATER STRUCTURE
- CONCRETE FOOTPATH (2m WIDE)
- ASPHALT SURFACING
- CONCRETE DRIVEWAY
- MOUNTABLE KERB & CHANNEL TYPE 'M3'
- BARRIER KERB & CHANNEL TYPE 'B1'
- BARRIER KERB ONLY TYPE 'B2'
- EDGE OF BITUMEN
- GRAVEL SHOULDER
- EXISTING SURFACE CONTOUR (0.50m INTERVALS)
- DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- PROPOSED WATER MAIN
- PROPOSED WATER FITTING
- PROPOSED WATER CONDUIT
- PROPOSED SEWERAGE RETICULATION
- PROPOSED KERB ADAPTER + LINE
- PROPOSED ROOF WATER LINE
- EXISTING WATER MAIN
- PROPOSED SLEEPER RETAINING WALL
- EXISTING BOULDER RETAINING WALL
- EXISTING RETAINING WALL + ACOUSTIC FENCE
- INDICATIVE DRIVEWAY LOCATION
- EDGE GUIDE POST
- PROPOSED BATTERS
- PROPOSED LOW FLOW CHANNEL AREA
- EXISTING TRUNK SEWER
- BUILD TO BOUNDARY

NOTE:

1. REFER TO DRG 22-000082_1A-1B_1314 FOR ROADWORKS NOTES.
2. REFER TO DRG 22-000082_1A-1B_1314 FOR TYPICAL DRIVEWAY & LOT SERVICE CONNECTION LAYOUT

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK:

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:250 / 1:500 — 5 0 5 10m — A1 / A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

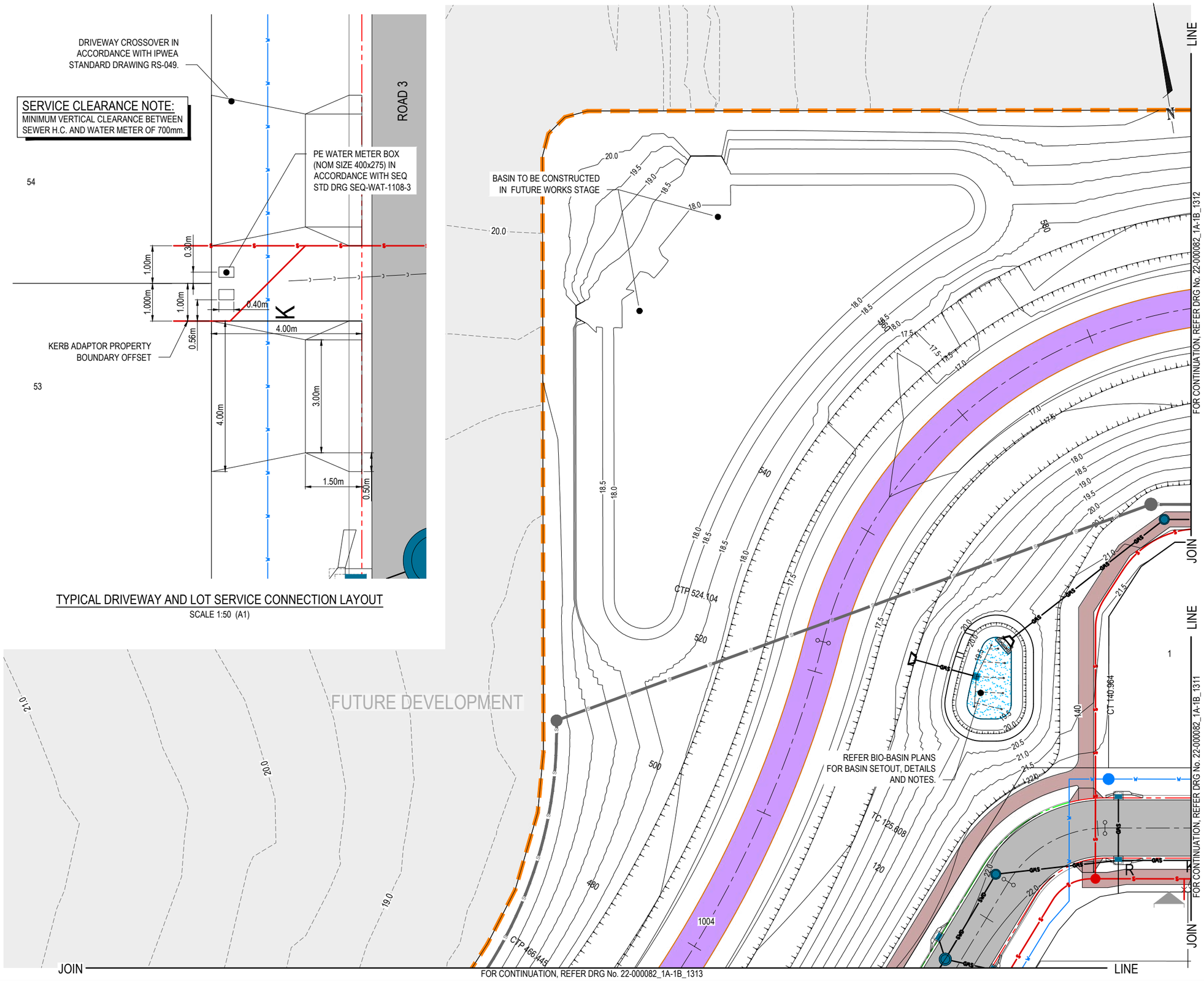
DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: ROADWORKS LAYOUT PLAN SHEET 4 OF 5

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1313	D

Moreton Bay Regional Council

TYPICAL DRIVEWAY AND LOT SERVICE CONNECTION LAYOUT
SCALE 1:50 (A1)



ROADWORKS NOTES

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT MORETON BAY REGIONAL COUNCIL STANDARD DRAWINGS AND METHODS.
2. NOTWITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE CROSS SECTIONS, THE ACTUAL LIMITS SHALL BE DETERMINED ON-SITE BY THE SUPERINTENDENT DURING CONSTRUCTION AND SIMILARLY THE FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION.
3. LEVELS FOR KERB AND CHANNELING CONSTRUCTION ARE AT EQUAL INTERVALS AT LIP OF CHANNEL UNLESS SHOWN OTHERWISE.
4. SIDE DRAINS TO BE CONSTRUCTED UNDER ALL KERBS AND ALL KERB AND CHANNEL AND IN LOCATIONS DIRECTED BY THE SUPERINTENDENT IN ACCORDANCE WITH MORETON BAY REGIONAL COUNCIL STANDARDS.
5. LEVELS AND GRADIENTS AT JUNCTIONS WITH EXISTING WORKS MAY BE VARIED AS REQUIRED TO ACHIEVE A SATISFACTORY CONNECTION AND THE CONTRACTOR SHALL INCLUDE THE COST OF THIS WORK IN THE TENDER PRICE. WHERE NEW WORK JOINS EXISTING, THE WORK SHALL TRANSITION NEATLY WITH THE PAVEMENT SO THAT DEVIATION FROM THE LINE OF A 3.0m STRAIGHT EDGE SHALL BE NO GREATER THAN 10mm.
6. SUBGRADE TEST RESULTS TO BE FORWARDED TO SUPERINTENDENT. FOR DETERMINATION OF BOX DEPTHS PRIOR TO EXCAVATION, TESTS SHALL INCLUDE SOAKED CBR AND/OR OTHER TESTS AS REQUESTED BY THE SUPERINTENDENT.
7. CONTRACTOR TO LIAISE WITH ALL RELEVANT SERVICE AUTHORITIES TO ASCERTAIN SERVICES PRESENT ON-SITE. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT BY THAT SERVICE AUTHORITY ONLY.
8. FOOTPATHS AND BATTERS TO HAVE MINIMUM OF 75mm TOPSOIL (AND GRASSING IF ORDERED).
9. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF DEMOLISHING ANY EXISTING STRUCTURES WITHIN THE SITE AREAS.
10. WORKS SHALL BE PROGRAMMED SO AS NOT TO DISTURB NEARBY HOUSEHOLDERS EITHER BY DUST, NOISE, FLOODING OR DISCONNECTION OF SERVICES.
11. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH WORKPLACE HEALTH AND SAFETY REQUIREMENTS.

NOTE:
1. REFER TO DRG 22-000082_1A-1B_1313 FOR ROADWORKS LEGEND.

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:250 / 1:500 — 5 0 5 10m — A1 / A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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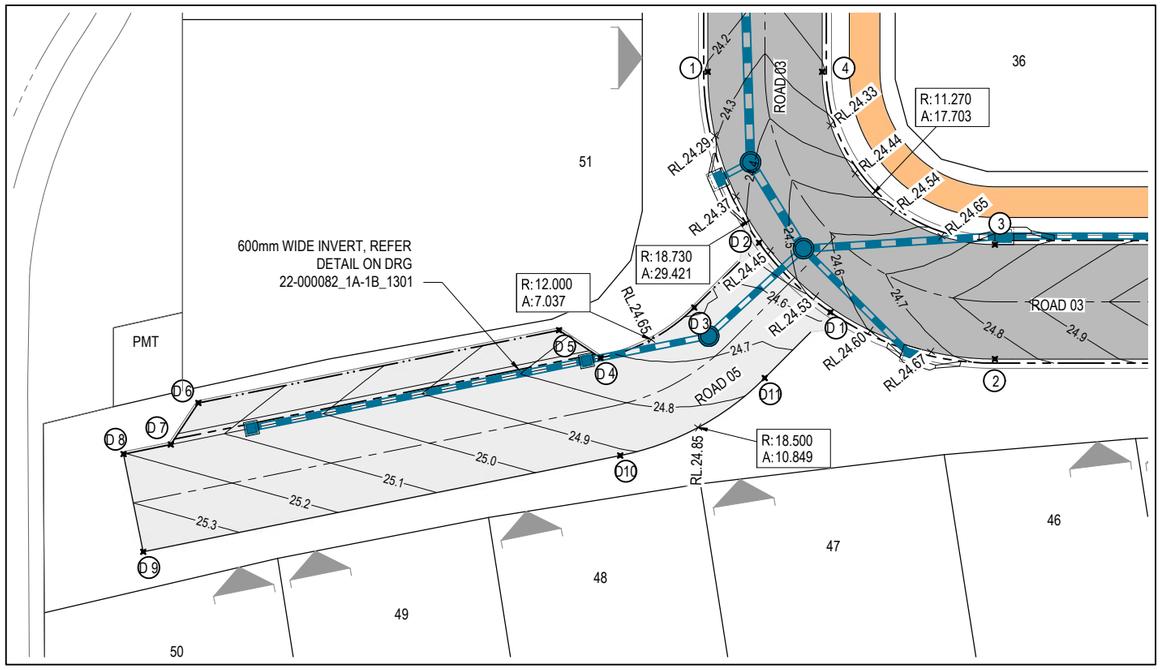
DRAWING TITLE: ROADWORKS LAYOUT PLAN SHEET 5 OF 5

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1314	D

Moreton Bay Regional Council



ROAD 3 BEND 1 + DRIVEWAY 1
SCALE 1:200

ROAD 3 BEND 1 SETOUT

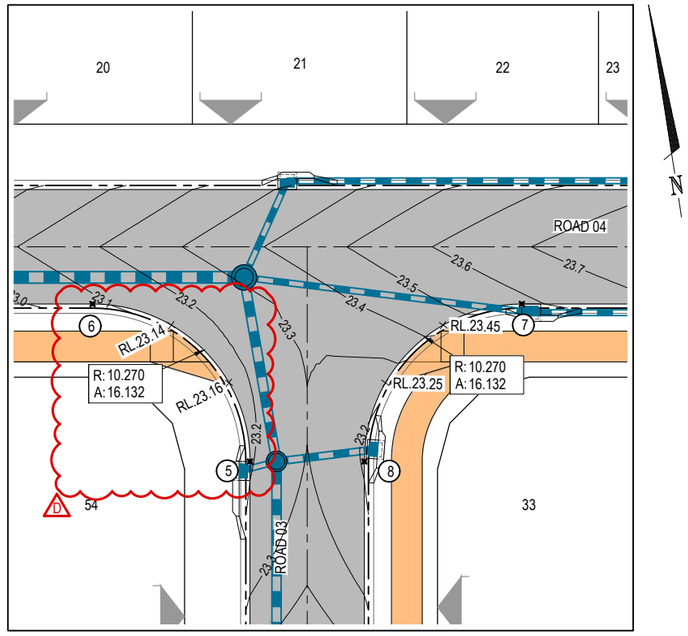
POINT ID	EASTING	NORTHING	LEVEL
1	90950.812	502020.476	24.216
2	90966.401	501999.060	24.744
3	90967.561	502006.430	24.744
4	90958.181	502019.315	24.216

DRIVEWAY 1 SETOUT

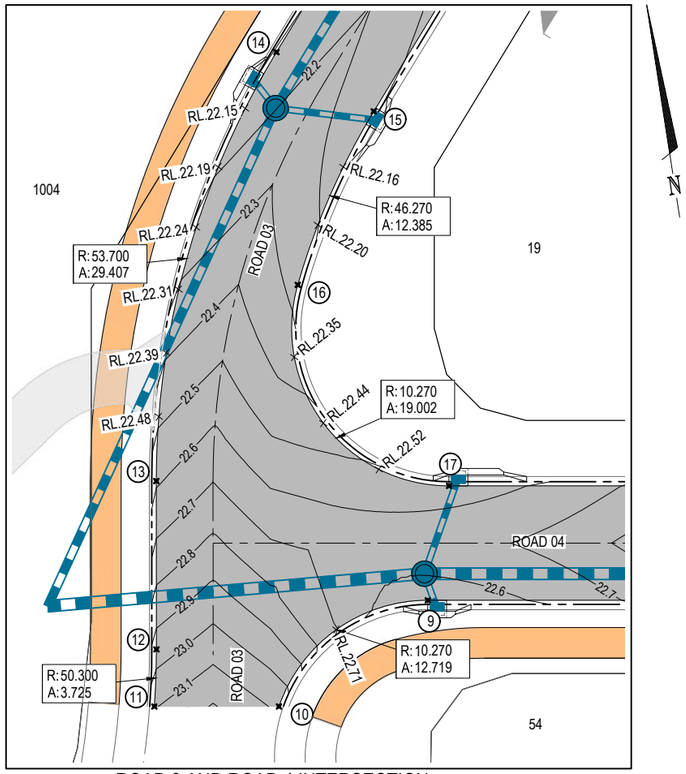
POINT ID	EASTING	NORTHING	LEVEL
D 1	90956.277	502003.741	24.535
D 2	90952.381	502008.945	24.418
D 3	90947.548	502005.426	24.583
D 4	90940.999	502003.139	24.719
D 5	90938.603	502005.338	24.857
D 6	90914.625	502004.311	25.222
D 7	90912.426	502001.915	25.155
D 8	90909.283	502001.780	25.203
D 9	90909.561	501995.286	25.398
D10	90941.278	501996.645	24.914
D11	90951.373	502000.171	24.778

ROAD 4 & 3 INTERSECTION

POINT ID	EASTING	NORTHING	LEVEL
5	90958.279	502067.891	23.193
6	90949.731	502079.634	23.079
7	90977.390	502075.279	23.579
8	90965.648	502066.731	23.193



ROAD 4 AND ROAD 3 INTERSECTION
SCALE 1:200



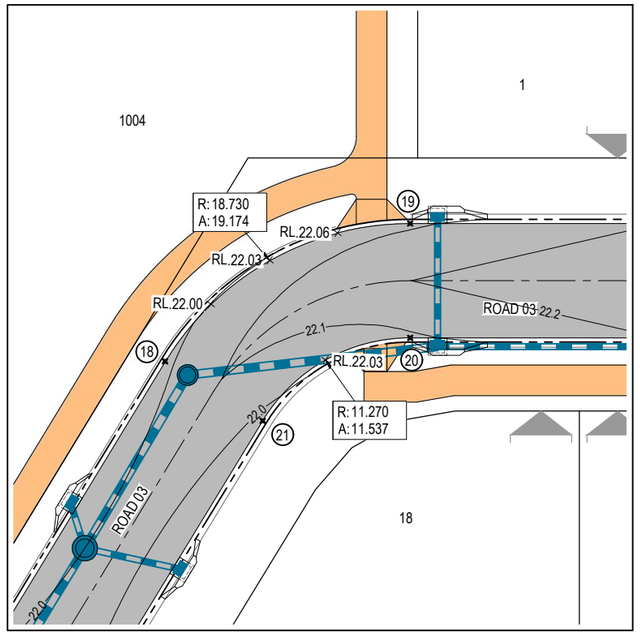
ROAD 3 AND ROAD 4 INTERSECTION
SCALE 1:200

ROAD 3 & 4 INTERSECTION

POINT ID	EASTING	NORTHING	LEVEL
9	90917.117	502084.770	22.551
10	90906.451	502079.445	23.075
11	90898.418	502080.706	23.092
12	90899.131	502084.361	22.951
13	90900.832	502095.203	22.587
14	90912.925	502121.606	22.125
15	90918.592	502116.801	22.124
16	90911.934	502106.402	22.270
17	90919.648	502091.923	22.557

ROAD 3 BEND 2 SETOUT

POINT ID	EASTING	NORTHING	LEVEL
18	90942.603	502156.654	21.979
19	90959.802	502163.043	22.088
20	90958.641	502155.674	22.088
21	90948.292	502151.829	21.982



ROAD 3 BEND 2
SCALE 1:200

LEGEND

- WORKS BOUNDARY
- CONTROL LINE
- 66.0 — DESIGN SURFACE CONTOUR (0.1m INTERVALS)
- RL.59.651 × — KERB INTERMEDIATE LEVEL
- 10 — KERB SETOUT POINT
- CONCRETE FOOTPATH
- ASPHALT SURFACING
- CONCRETE DRIVEWAY
- STORMWATER DRAINAGE
- MAINTENANCE HOLE
- GULLY PIT
- OUTLET STRUCTURE
- INDICATIVE DRIVEWAY LOCATIONS

NOTE
KERB SETOUT IS TO LIP OF KERB AND CHANNEL.
LEVEL ARE SHOWN TO LIP OF KERB AND CHANNEL.
KERB LEVELS SHOWN AT EQUAL INTERVALS, U.N.O.

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
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D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:200 1:400 — 2 0 2 4 6 8 10m — A1 A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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DRAWING TITLE: INTERSECTION DETAILS

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1320	D

Moreton Bay Regional Council

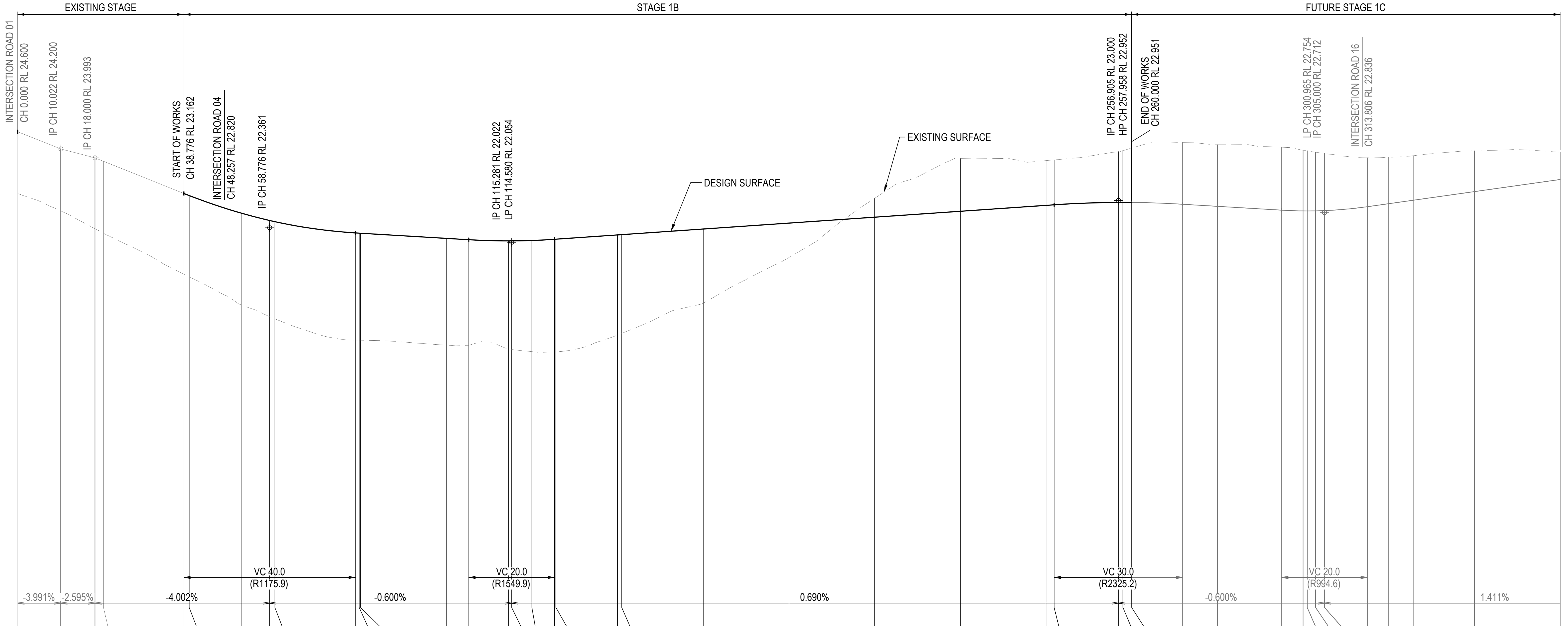
NOTE:

1. PRELIMINARY PAVEMENT DESIGNS HAVE BEEN BASED ON AN ASSUMED SUBGRADE CBR. ACTUAL PAVEMENT DESIGNS WILL BE BASED ON TEST RESULTS TAKEN AFTER STRIPPING HAS BEEN COMPLETED.
2. WHEN THE TOTAL PAVEMENT DEPTH (AS DETERMINED BY SUBGRADE TESTS) EXCEEDS THE NORMAL DEPTH, THE PAVEMENT GRAVEL SHALL EXTEND UNDER THE KERB AND CHANNEL TO 150mm BEHIND (TYP).

PRELIMINARY ROAD 3 PAVEMENT DESIGN

ROAD	SUBGRADE CBR	TRAFFIC ESA'S	ROAD CLASS	AC SURFACING (mm)	BASE (mm)	SUB-BASE (mm)	LOWER SUB-BASE (mm)	TOTAL BOX (mm)
ROAD 3	3 *	1.2 X 10^5	LIVING RESIDENTIAL	25 BCC TYPE 2	100	100	300	525

* ASSUMED SUBGRADE CBR



DATUM RL 13.0

CHAINAGES	0.000	10.022	18.000	20.000	38.776	40.000	52.303	58.776	60.000	78.776	79.683	80.000	100.000	105.281
CUT (-) / FILL	1.444	1.446	1.653	1.680	1.886	1.898	2.143	2.246	2.270	2.519	2.512	2.510	2.494	2.463
LHS LIP LEVEL	23.893	23.658	23.472	23.425	23.907	23.890	22.587	22.420	22.393	22.130	22.125	22.123	22.003	21.971
RHS LIP LEVEL					23.050	23.001	⊛		22.392	22.129	22.124	22.122	22.002	21.970
DESIGN SURFACE	24.600	24.200	23.993	23.913	23.162	23.113	22.698	22.531	22.504	22.241	22.236	22.234	22.114	22.082
EXISTING SURFACE	23.156	22.754	22.340	22.233	21.275	21.216	20.556	20.286	20.234	19.722	19.724	19.724	19.620	19.620
HORIZONTAL CURVES							R50.000							

CHAINAGES	114.580	115.281	120.000	125.281	125.608	140.000	140.964	160.000	180.000	200.000	220.000	240.000	241.905	256.905
CUT (-) / FILL	2.530	2.536	2.594	2.627	2.628	2.337	2.305	1.730	0.802	-0.442	-1.233	-1.045	-1.049	-1.185
LHS LIP LEVEL	21.943	21.944	21.953	21.980	21.983	22.081	22.088	22.219	22.357	22.495	22.633	22.771	22.785	22.840
RHS LIP LEVEL	21.942	21.943	21.952	21.979	21.982	22.081	22.088	22.219	22.357	22.495	22.633	22.771	22.785	22.840
DESIGN SURFACE	22.054	22.054	22.064	22.091	22.094	22.193	22.200	22.331	22.469	22.607	22.745	22.883	22.896	22.952
EXISTING SURFACE	19.524	19.518	19.469	19.464	19.465	19.856	19.894	20.601	21.667	23.049	23.978	23.928	23.945	24.137
HORIZONTAL CURVES					R15.000									

CHAINAGES	257.958	260.000	271.905	280.000	295.000	300.000	300.965	302.924	305.000	315.000	320.000	325.688	340.000	360.000
CUT (-) / FILL	-1.209	-1.270	-1.442	-1.436	-1.468	-1.418	-1.402	-1.368	-1.331	-1.140	-1.083	-1.038	-0.949	-0.639
LHS LIP LEVEL	22.840	22.839	22.798	22.750	22.660	22.642	22.642	22.644	22.650	22.741	22.811	22.892	23.094	23.376
RHS LIP LEVEL	22.840	22.839	22.798	22.750	22.660	22.642	22.642	22.644	22.650	22.741	22.811	22.892	23.094	23.376
DESIGN SURFACE	22.952	22.951	22.910	22.861	22.772	22.754	22.754	22.756	22.762	22.853	22.923	23.003	23.205	23.488
EXISTING SURFACE	24.161	24.221	24.352	24.297	24.239	24.172	24.156	24.124	24.093	23.993	24.006	24.042	24.155	24.127
HORIZONTAL CURVES								R15.000						

ROAD 3 - LONGITUDINAL SECTION

HORIZ SCALE: 1:500
VERTICAL SCALE: 1:50

⊛ REFER INTERSECTION DETAILS FOR LEVELS

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK
RT
DESIGN CHECK
AA

STATUS
ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:500 1:1000 — 10 5 0 10 20m — A1 A3 — HORIZONTAL
1:50 1:100 — 1 0.5 0 1 2m — A1 A3 — VERTICAL

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

egis

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PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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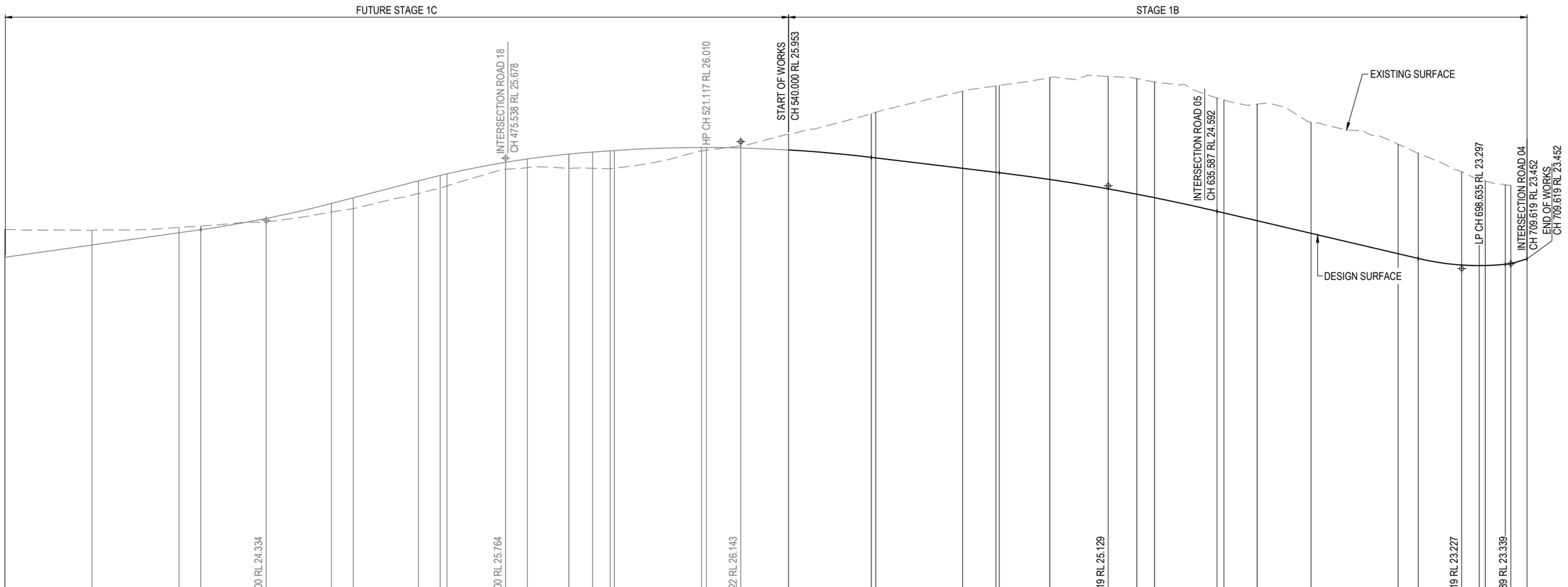
DRAWING TITLE
ROAD 3 LONGITUDINAL
SECTION SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1330	D

Moreton Bay
Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491 23/10/2023



CHAINAGES	CUT (-) / FILL	LHS LIP LEVEL	RHS LIP LEVEL	DESIGN SURFACE	EXISTING SURFACE
360.000	-0.639	23.376	23.376	23.488	24.127
380.000	-0.338	23.658	23.658	23.770	24.108
400.000	-0.123	23.940	23.940	24.052	24.175
405.000	-0.084	24.011	24.011	24.123	24.206
420.000	0.082	24.267	24.267	24.379	24.297
435.000	0.197	24.612	24.612	24.724	24.527
440.000	0.248	24.742	24.742	24.854	24.606
455.000	0.292	25.132	25.132	25.244	24.953
460.000	0.288	25.257	25.257	25.368	25.080
461.554	0.277	25.293	25.293	25.405	25.128
475.000	0.161	25.557	25.557	25.669	25.508
480.000	0.198	25.634	25.634	25.746	25.547
489.522	0.328	25.747	25.747	25.859	25.531
489.532	0.328	25.747	25.747	25.859	25.531
495.000	0.373	25.793	25.793	25.904	25.531
499.022	0.411	25.821	25.821	25.933	25.522
500.000	0.405	25.827	25.827	25.939	25.534
520.000	0.080	25.898	25.898	26.010	25.930
521.117	0.063	25.898	25.898	26.010	25.947
529.022	-0.045	25.888	25.888	26.000	26.045
540.000	-0.359	25.842	25.842	25.953	26.313
559.022	-1.004	25.670	25.670	25.782	26.787
560.000	-1.045	25.659	25.659	25.771	26.816
580.000	-1.770	25.418	25.418	25.530	27.300
587.638	-1.986	25.327	25.327	25.439	27.424
588.419	-2.006	25.317	25.317	25.429	27.435
600.000	-2.338	25.163	25.163	25.275	27.613
613.419	-2.583	24.946	24.946	25.058	27.641
620.000	-2.653	24.824	24.824	24.936	27.589
624.057	-2.660	24.744	24.744	24.856	27.516
638.419	-2.601	24.431	24.431	24.543	27.144
640.000	-2.592	24.394	24.394	24.506	27.098
647.618	-2.677	24.216	24.216	24.328	27.005
660.000	-2.552	23.926	23.926	24.038	26.590
680.000	-2.517	23.457	23.457	23.569	26.086
684.619	-2.415	23.349	23.349	23.461	25.876
694.619	-2.138	23.199	23.199	23.310	25.448
698.635	-1.979	23.930	23.110	23.297	25.276
700.000	-1.941	23.911	23.055	23.298	25.239
704.619	-1.827	23.845	22.879	23.327	25.153
705.889	-1.796	23.827	22.834	23.339	25.136
709.619	-1.631	23.775	22.709	23.452	25.083

ROAD 3 - LONGITUDINAL SECTION

HORIZ SCALE: 1:500
VERTICAL SCALE: 1:50

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
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DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:500 1:1000 10 5 0 10 20m A1 A3 HORIZONTAL
1:50 1:100 1 0.5 0 1 2m A1 A3 VERTICAL

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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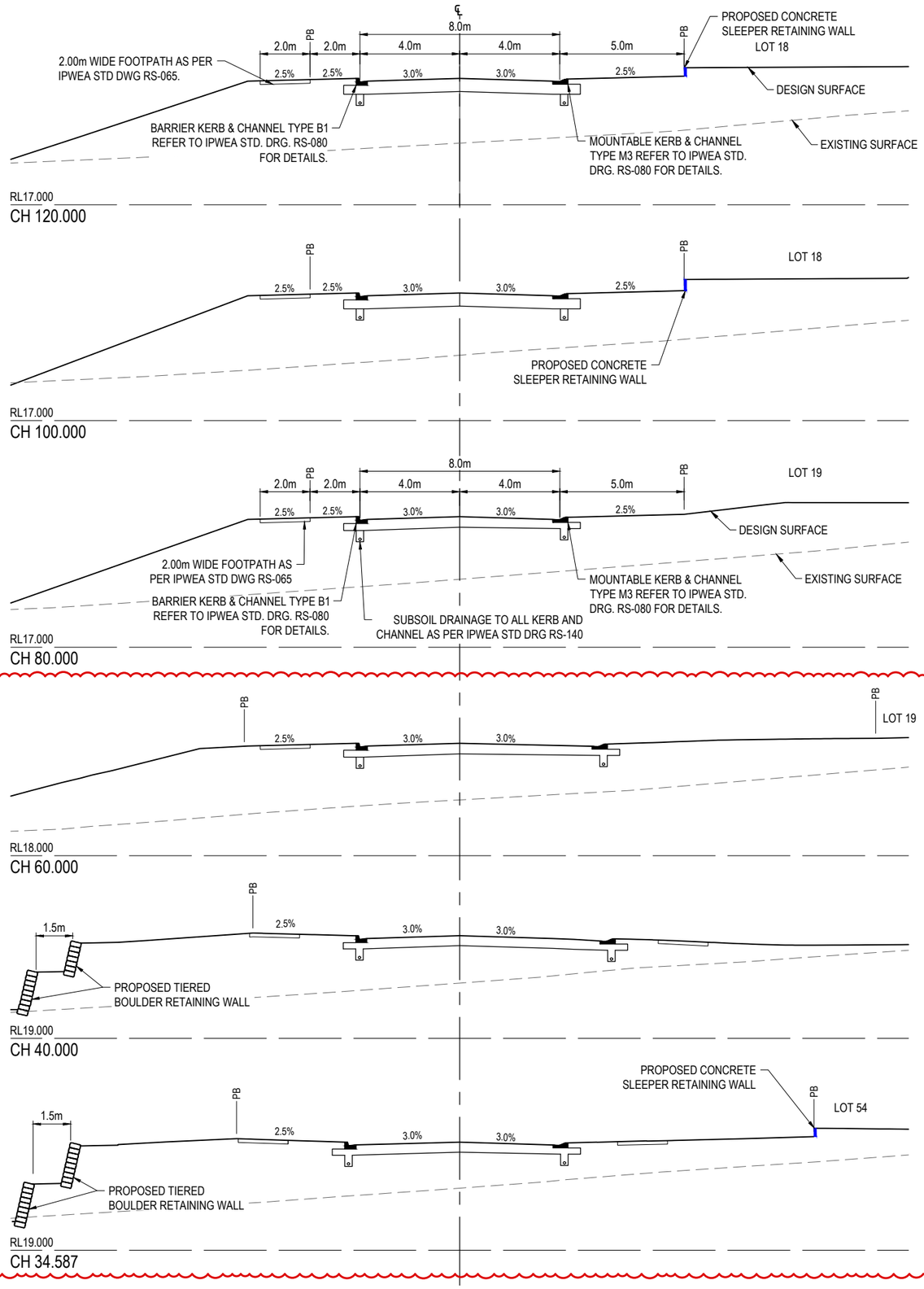
DRAWING TITLE: ROAD 3 LONGITUDINAL SECTION SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1331	D

Moreton Bay Regional Council



REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1 0 1 2 3 4 5m A1
1:200 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE
ROAD 3 CROSS SECTIONS
SHEET 1 OF 2

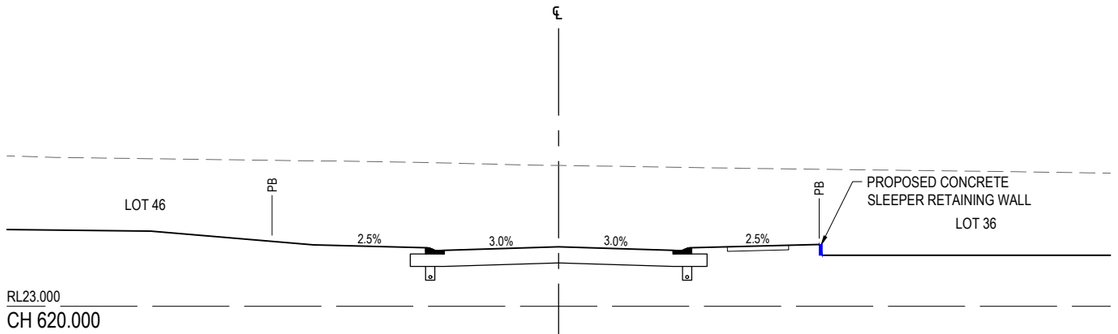
PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1332	D

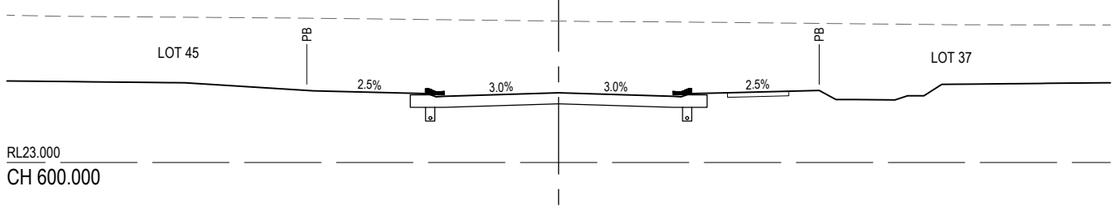
Moreton Bay Regional Council

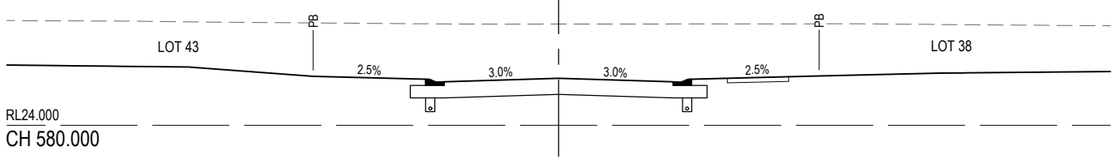
Approved Subject to Conditions of Decision Notice DA/2023/3491

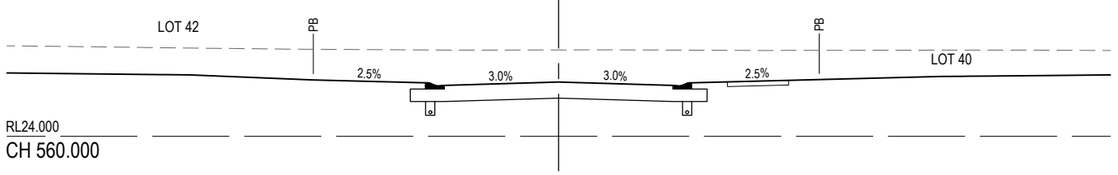
23/10/2023

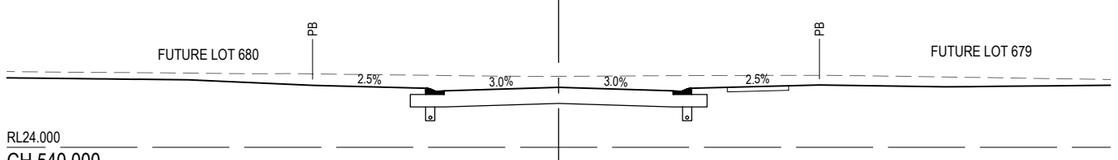
D

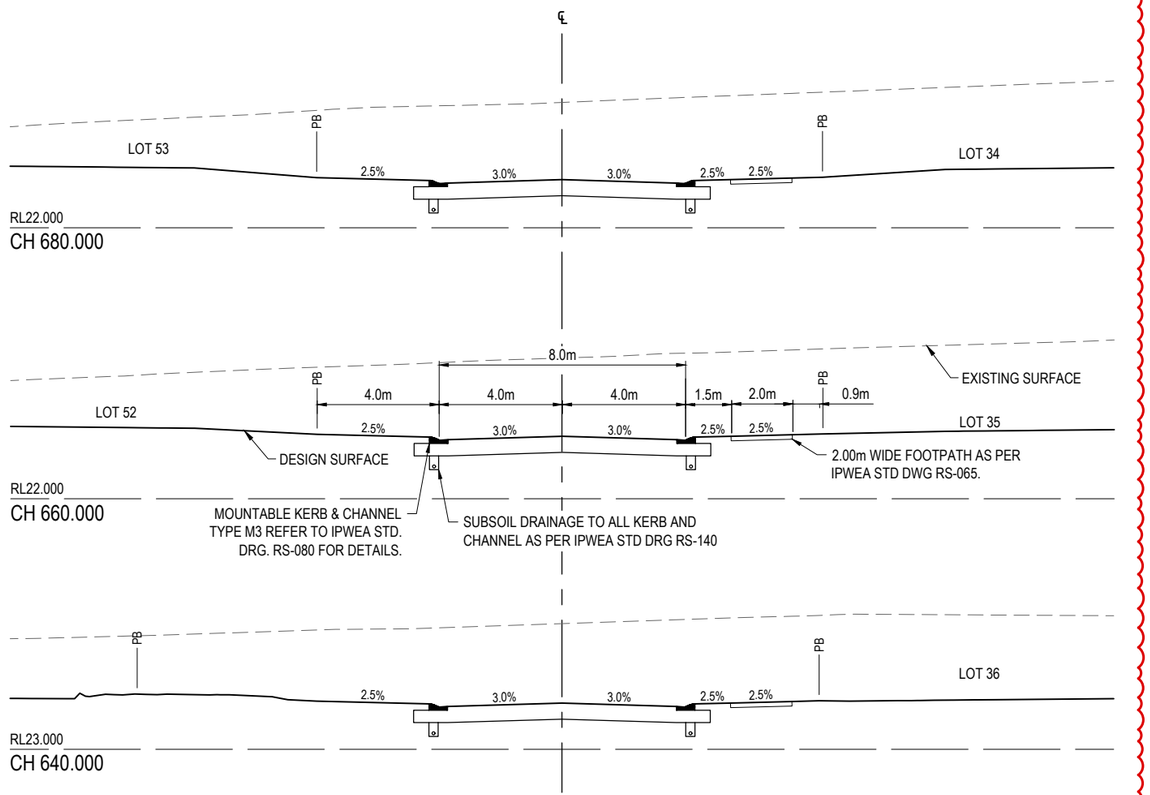












REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1 0 1 2 3 4 5m A1
1:200 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

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PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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DRAWING TITLE
ROAD 3 CROSS SECTIONS
SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1333	D

Moreton Bay Regional Council

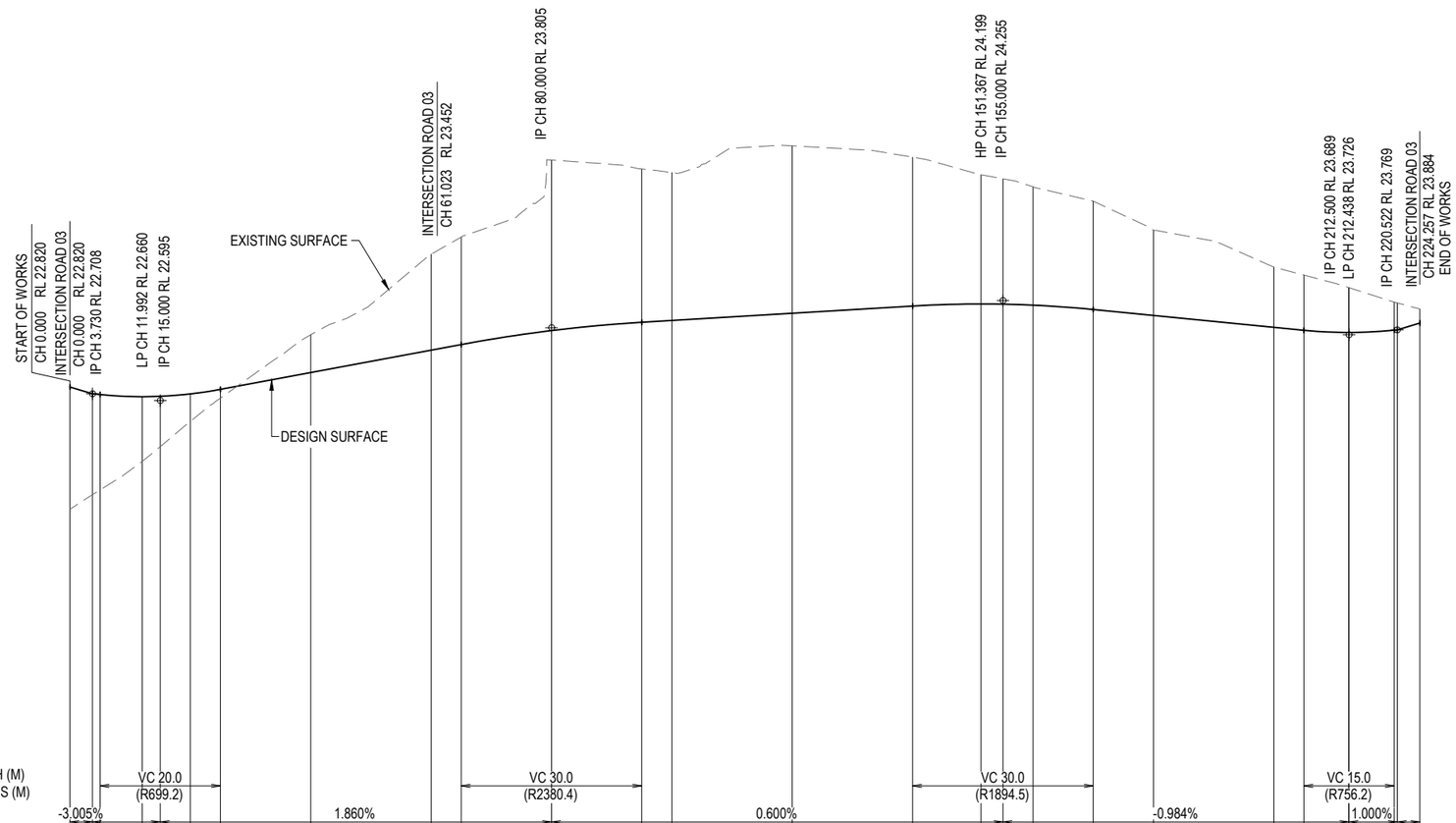
NOTE:

1. PRELIMINARY PAVEMENT DESIGNS HAVE BEEN BASED ON AN ASSUMED SUBGRADE CBR. ACTUAL PAVEMENT DESIGNS WILL BE BASED ON TEST RESULTS TAKEN AFTER STRIPPING HAS BEEN COMPLETED.
2. WHEN THE TOTAL PAVEMENT DEPTH (AS DETERMINED BY SUBGRADE TESTS) EXCEEDS THE NORMAL DEPTH, THE PAVEMENT GRAVEL SHALL EXTEND UNDER THE KERB AND CHANNEL TO 150mm BEHIND (TYP).

PRELIMINARY ROAD 3 PAVEMENT DESIGN

ROAD	SUBGRADE CBR	TRAFFIC ESA'S	ROAD CLASS	AC SURFACING (mm)	BASE (mm)	SUB-BASE (mm)	LOWER SUB-BASE (mm)	TOTAL BOX (mm)
ROAD 4	3 *	1.2 X 10^5	LIVING RESIDENTIAL	25 BCC TYPE 2	100	100	300	525

* ASSUMED SUBGRADE CBR



DATUM RL 15.0

CUT (-) / FILL	2.027	1.676	1.583	1.075	0.835	0.457	0.144	-0.628	-1.592	-1.784	-2.831	-2.546	-2.455
LHS LIP LEVEL	⊛					22.594	22.670	22.949	23.321	23.414	23.645	23.783	23.813
RHS LIP LEVEL					22.555	22.594	22.670	22.949	23.321	23.414	23.645	23.783	23.813
DESIGN SURFACE	22.820	22.708	22.695	22.660	22.667	22.706	22.781	23.060	23.433	23.526	23.757	23.895	23.925
EXISTING SURFACE	20.793	21.032	21.112	21.586	21.832	22.250	22.637	23.689	25.025	25.310	26.588	26.440	26.380
CHAINAGES	0.000	3.730	5.000	11.992	15.000	20.000	25.000	40.000	60.000	65.000	80.000	95.000	100.000
HORIZONTAL CURVES													

CUT (-) / FILL	-2.780	-2.470	-2.146	-2.082	-1.964	-1.799	-1.417	-0.998	-0.916	-0.745	-0.743	-0.466	-0.446	
LHS LIP LEVEL	23.933	24.053	24.087	24.083	24.067	23.995	23.897	23.702	23.671	⊛				
RHS LIP LEVEL	23.933	24.053	24.087	24.083	24.067	23.995	23.897	23.700	23.651					
DESIGN SURFACE	24.045	24.165	24.199	24.195	24.179	24.107	24.009	23.812	23.763	23.726	23.726	23.764	23.769	
EXISTING SURFACE	26.824	26.635	26.345	26.277	26.143	25.906	25.426	24.810	24.679	24.471	24.469	24.230	24.215	24.116
CHAINAGES	120.000	140.000	151.367	155.000	160.000	170.000	180.000	200.000	205.000	212.438	212.500	220.000	220.522	224.257
HORIZONTAL CURVES														

ROAD 4 - LONGITUDINAL SECTION

HORIZ SCALE: 1:500
VERTICAL SCALE: 1:50

⊛ REFER INTERSECTION DETAILS FOR LEVELS

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK
RT

DESIGN CHECK
AA

STATUS
ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:500 1:1000 10 5 0 10 20m A1 A3 HORIZONTAL
1:50 1:100 1 0.5 0 1 2m A1 A3 VERTICAL

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

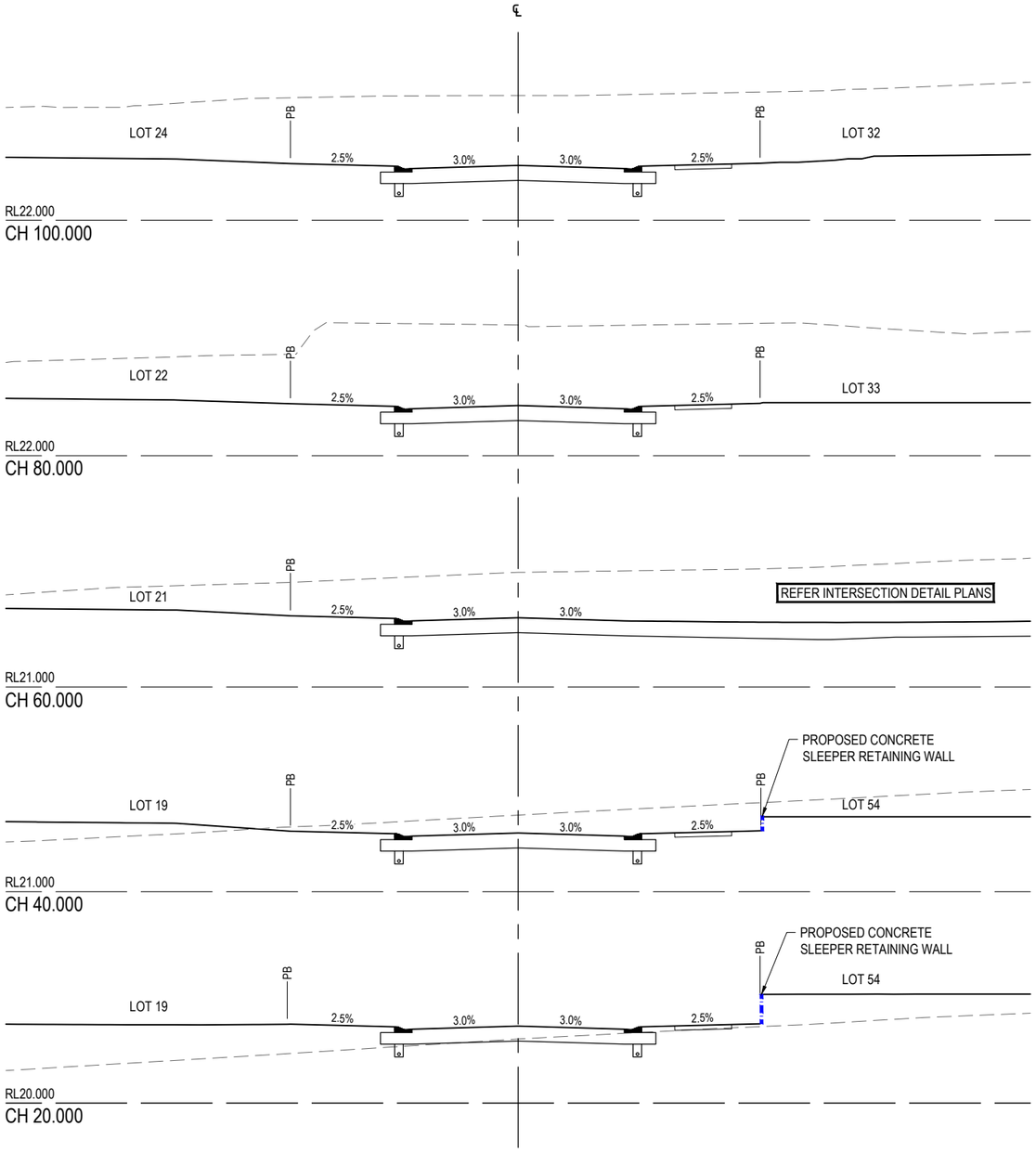
PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

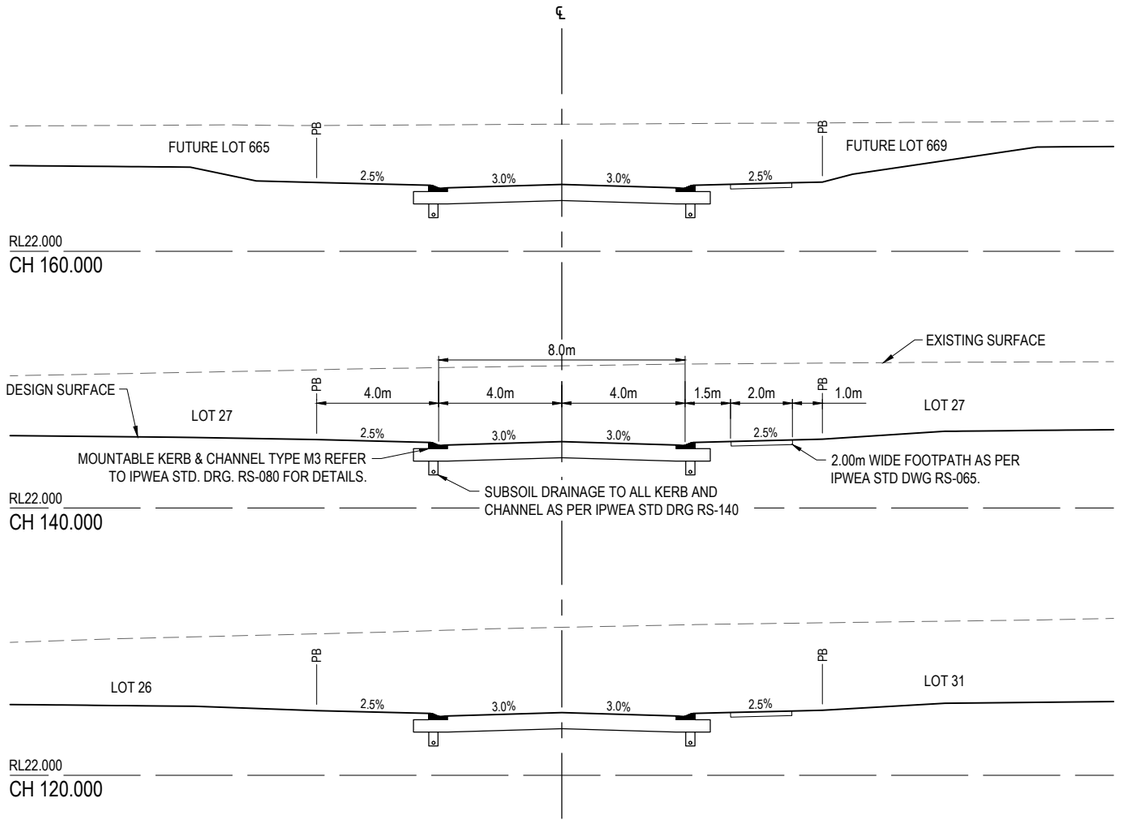
DRAWING TITLE
ROAD 4 LONGITUDINAL SECTION

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1334	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491 23/10/2023





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DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1 0 1 2 3 4 5m A1
1:200 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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DRAWING TITLE
ROAD 4 CROSS SECTIONS

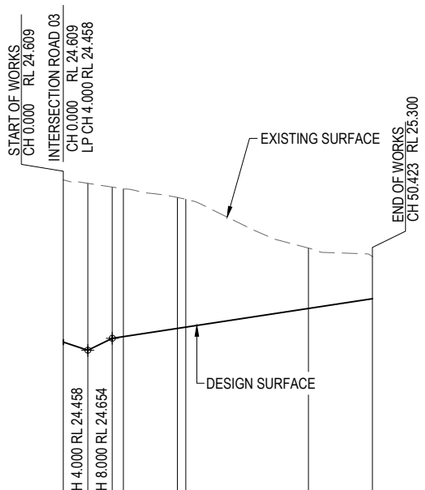
PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1335	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491 23/10/2023

PAVEMENT NOTE:

1. DRIVEWAY TO BE 175mm THICK N32 CONCRETE WITH SL92 MESH ON 150mm BASE TYPE 2.1. FINISH PER LANDSCAPE SPECIFICATION.



VERTICAL CURVE LEGTH (M)
VERTICAL CURVE RADIUS (M)
VERTICAL GRADE (%) -3.330% 4.885% 1.523%

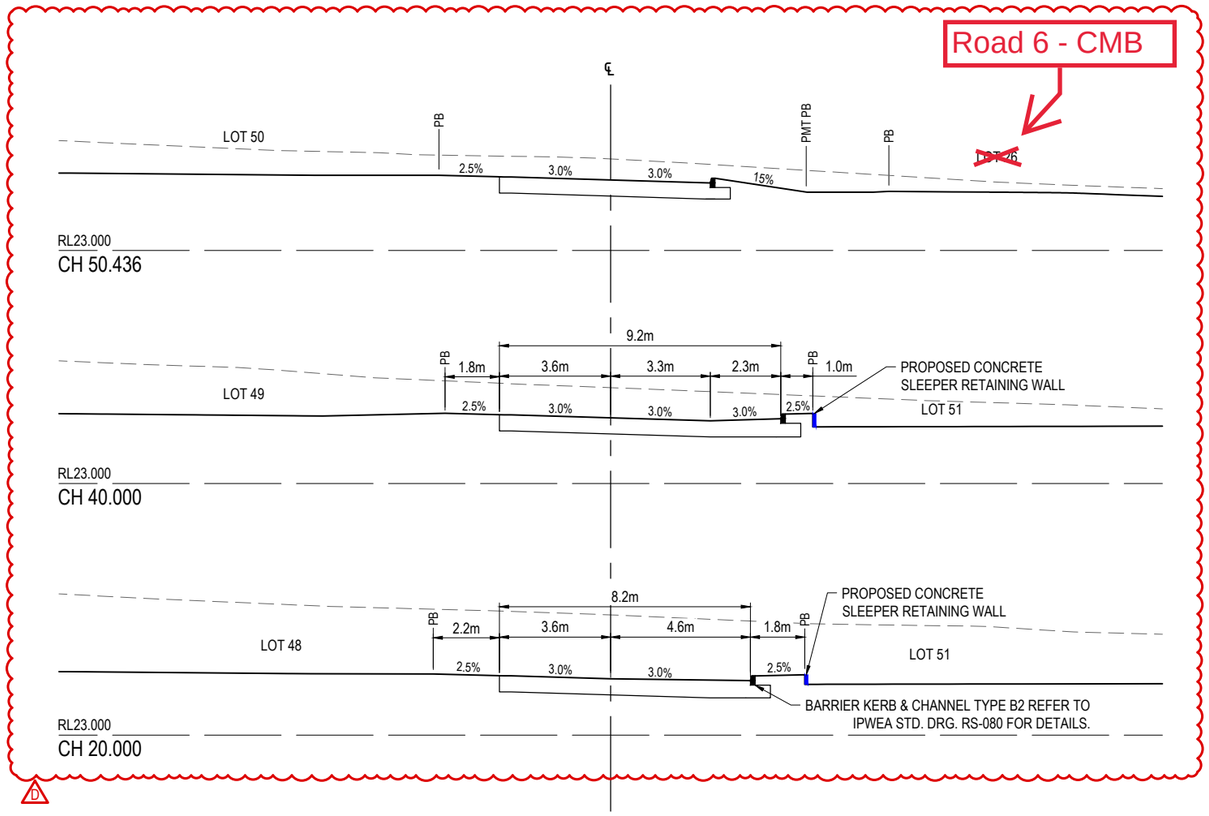
DATUM RL 20.0

CUT (-) / FILL	-2.645	-2.723	-2.466	-2.408	-2.135	-2.084	-0.983	-0.685	
LHS LIP LEVEL			24.751	24.779	24.913	24.934	25.239	25.397	
RHS LIP LEVEL			24.556	24.584	24.718	24.739	25.044		
DESIGN SURFACE	24.592	24.458	24.654	24.682	24.815	24.837	25.141	25.300	
EXISTING SURFACE	27.237	27.181	27.119	27.089	26.950	26.920	26.125	25.985	
CHAINAGES	0.000	4.000	8.000	9.819	18.615	20.000	40.000	50.436	
HORIZONTAL CURVES			R15.000						

ROAD 5 (DRIVEWAY) - LONGITUDINAL SECTION

HORIZ SCALE: 1:500
VERTICAL SCALE: 1:50

REFER INTERSECTION DETAILS FOR LEVELS



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D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1:200 1:500 1:1000 HORIZONTAL: 10 5 0 10 20m
1:50 1:100 VERTICAL: 1 0.5 0 1 2m
A1 A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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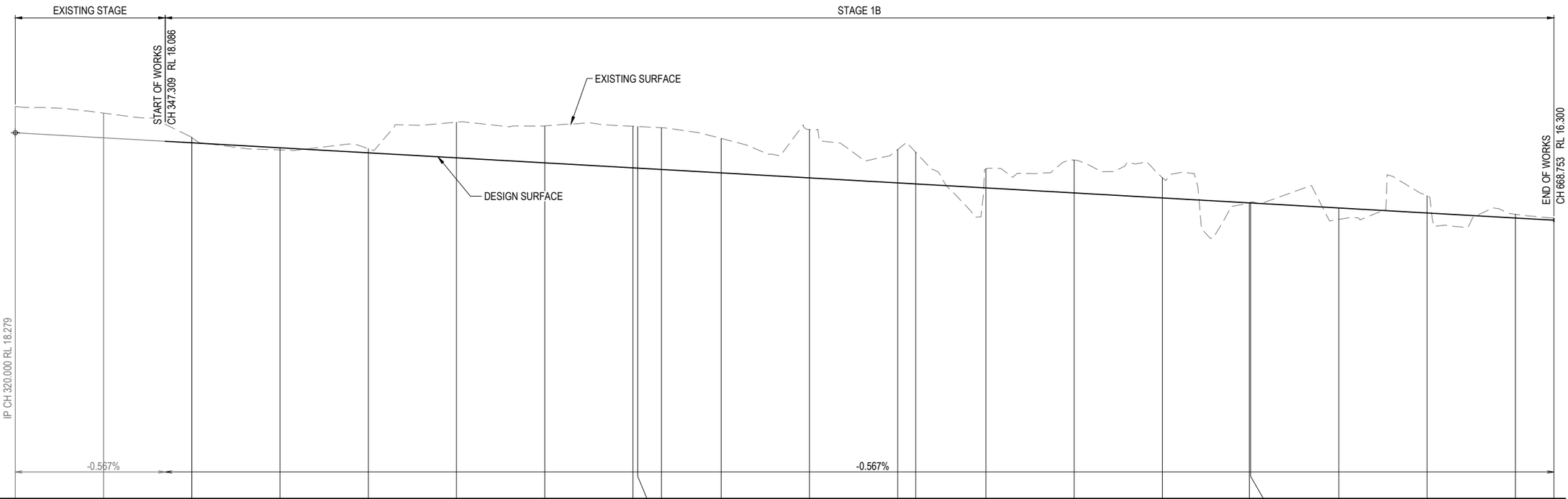
DRAWING TITLE: ROAD 5 LONGITUDINAL AND CROSS SECTIONS

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1336	D



VERTICAL CURVE LEGTH (m)
VERTICAL CURVE RADIUS (m)
VERTICAL GRADE (%)

DATUM RL 10.0

CUT (-) / FILL	-0.594	-0.558	-0.119	0.049	-0.095	-0.807	-0.837	-0.942	-0.942	-0.944	-0.780	-1.094	-0.756	-0.716	-0.430	-0.744	-0.460	-0.005	-0.015	0.259	-0.392	-0.083	-0.046		
DESIGN SURFACE	18.279	18.165	18.052	17.938	17.825	17.711	17.598	17.484	17.478	17.448	17.371	17.257	17.144	17.121	17.031	16.917	16.804	16.692	16.690	16.577	16.463	16.350	16.300		
EXISTING SURFACE	18.873	18.724	18.171	17.890	17.920	18.519	18.435	18.426	18.420	18.392	18.151	18.351	17.900	17.837	17.460	17.661	17.263	16.697	16.705	16.318	16.855	16.433	16.346		
CHAINAGES	320.000	340.000	360.000	380.000	400.000	420.000	440.000	460.000	461.074	466.445	480.000	500.000	520.000	524.104	540.000	560.000	580.000	599.720	600.000	620.000	640.000	660.000	668.753		
HORIZONTAL CURVES								R60.000			R-150.000					R60.000									

SOUTHERN SWALE LONGITUDINAL SECTION

HORIZ SCALE: 1:500
VERTICAL SCALE: 1:50

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:1000 10 0 10 20 30 40 50m A1
1:2000 A3
HORIZONTAL
1:100 2 1 0 2 4m A1
1:200 A3
VERTICAL

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

egis

www.egis-group.com

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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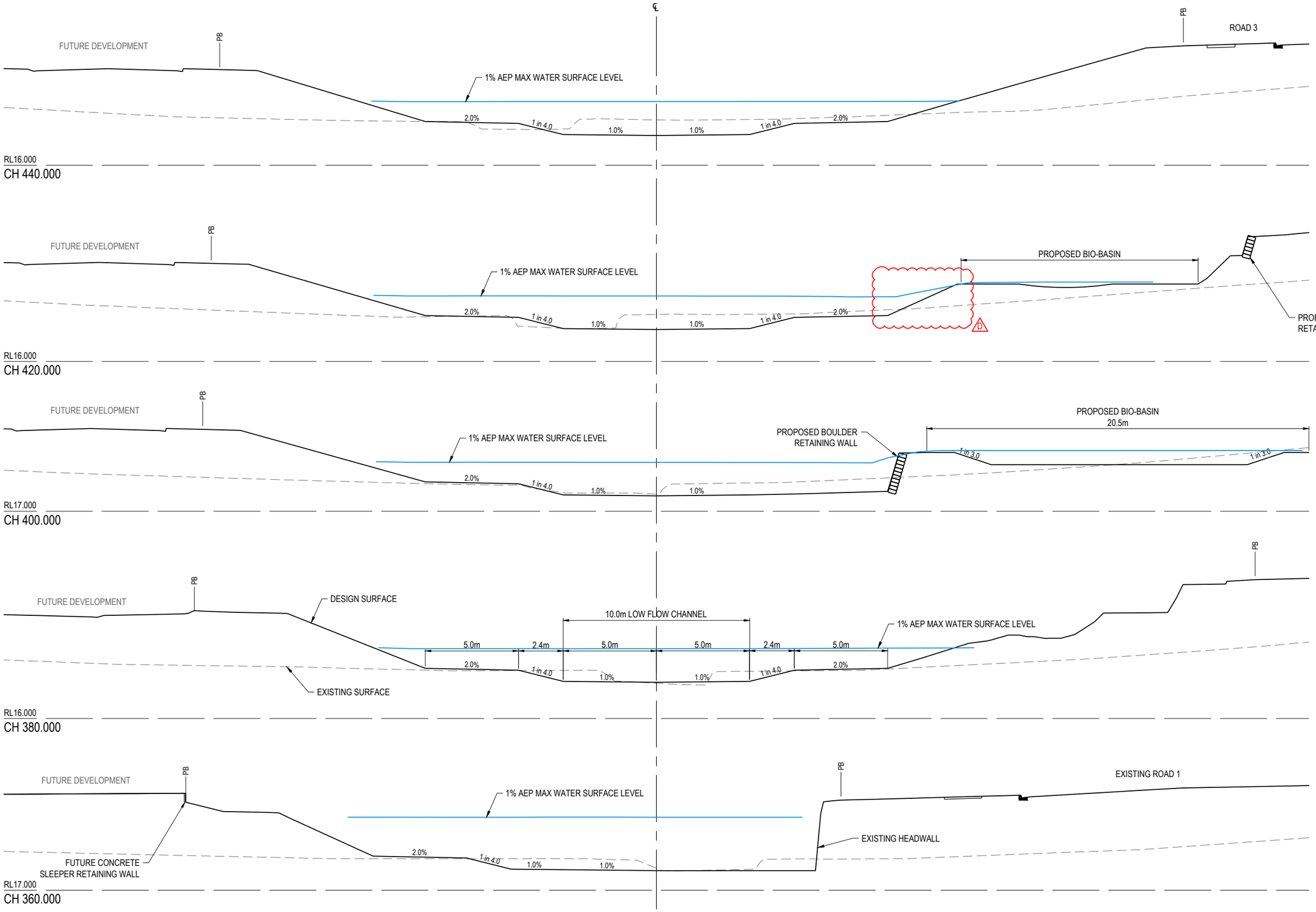
DRAWING TITLE
SOUTHERN SWALE LONGITUDINAL SECTION

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1340	D

Moreton Bay Regional Council



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DESIGN CHECK: AA

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APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1 0 1 2 3 4 5m A1
1:200 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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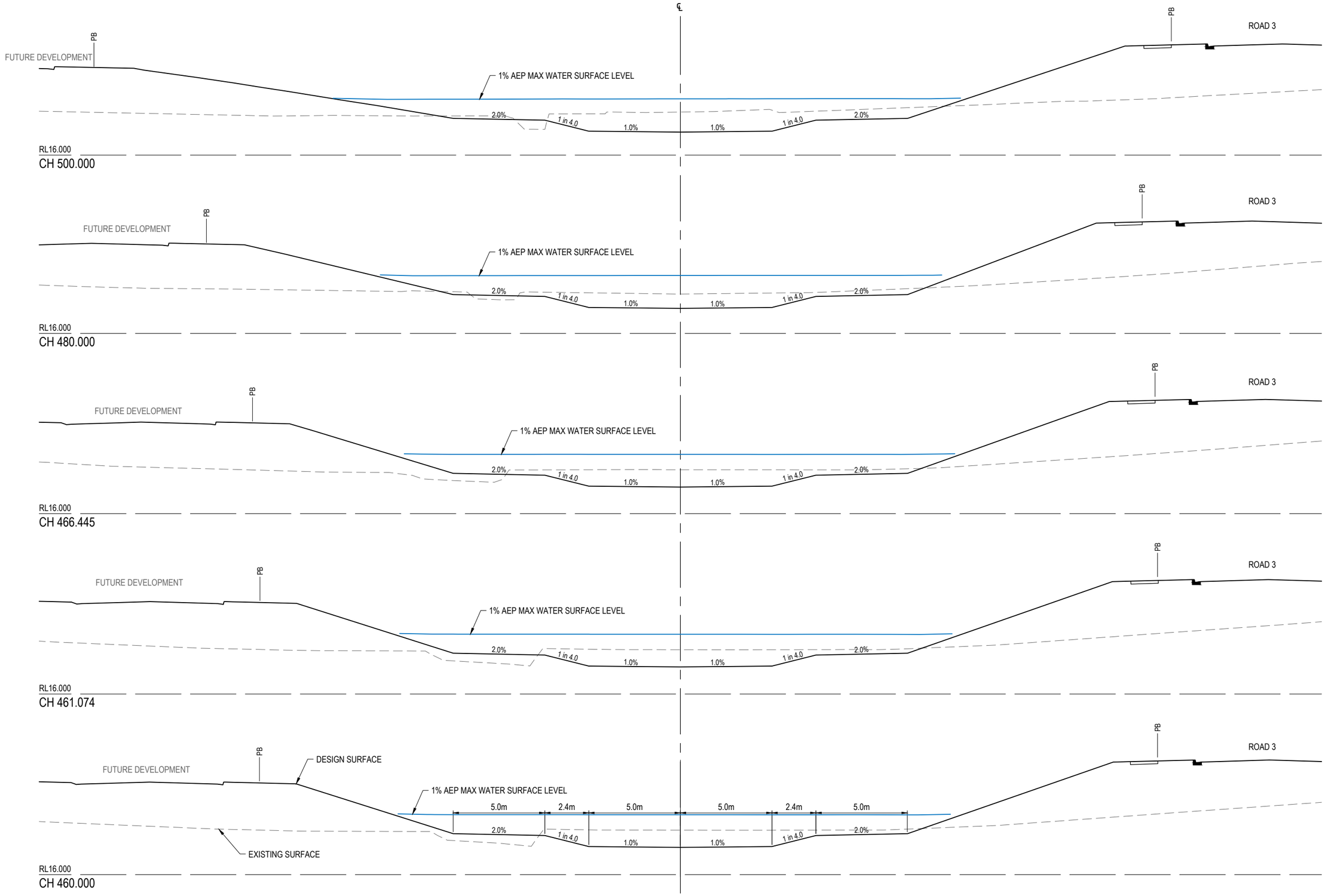
DRAWING TITLE
SOUTHERN SWALE CROSS SECTIONS SHEET 1 OF 4

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1341	D



REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1 0 1 2 3 4 5m A1
1:200 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

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PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

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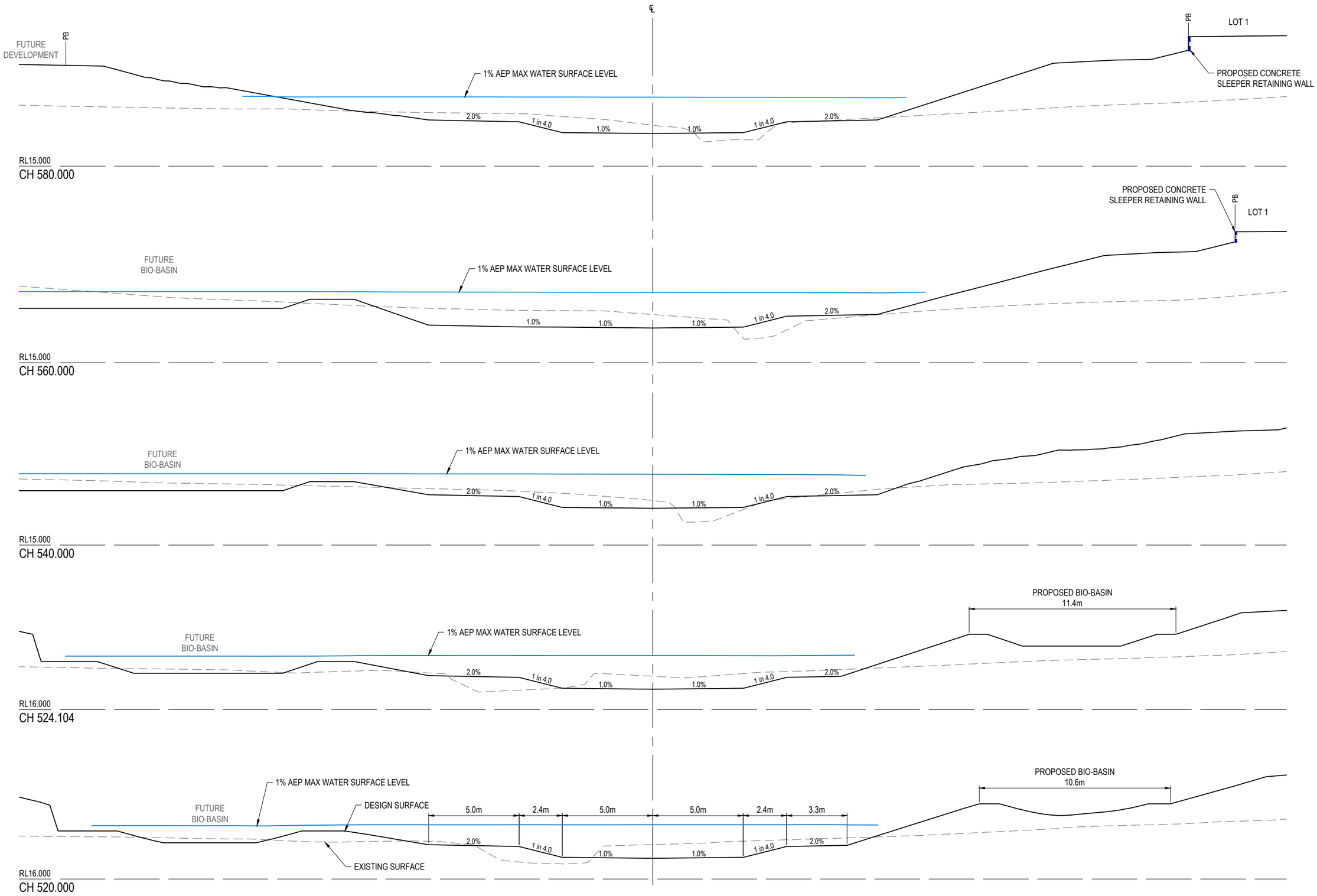
DRAWING TITLE
SOUTHERN SWALE CROSS SECTIONS SHEET 2 OF 4

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1342	D

Moreton Bay Regional Council



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B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:100 / 1:200 — 1 0 1 2 3 4 5m — A1 / A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

DISCLAIMER
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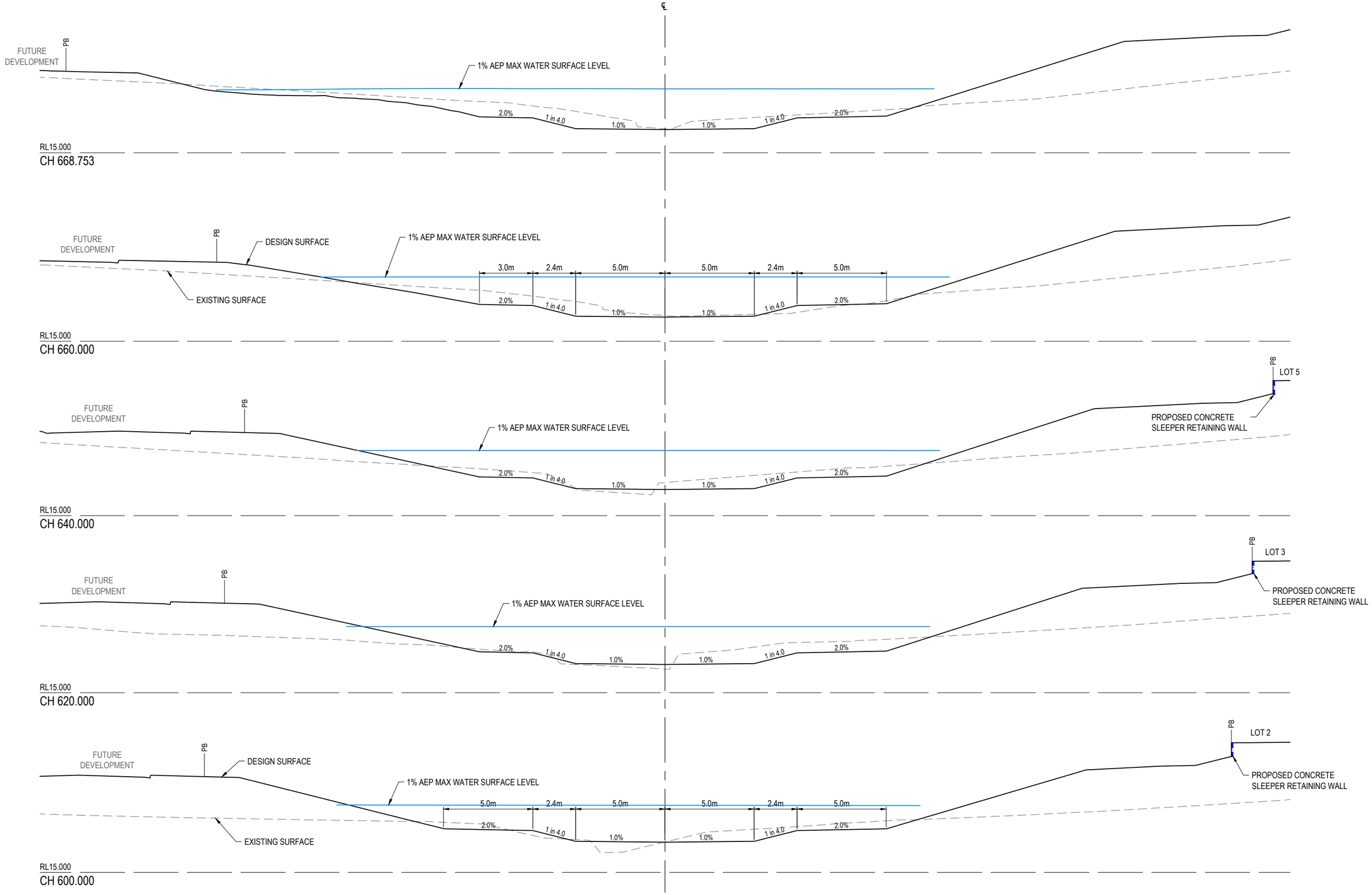
DRAWING TITLE: SOUTHERN SWALE CROSS SECTIONS SHEET 3 OF 4

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1343	D

Moreton Bay Regional Council



REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:100 1 0 1 2 3 4 5m A1
1:200 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

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PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

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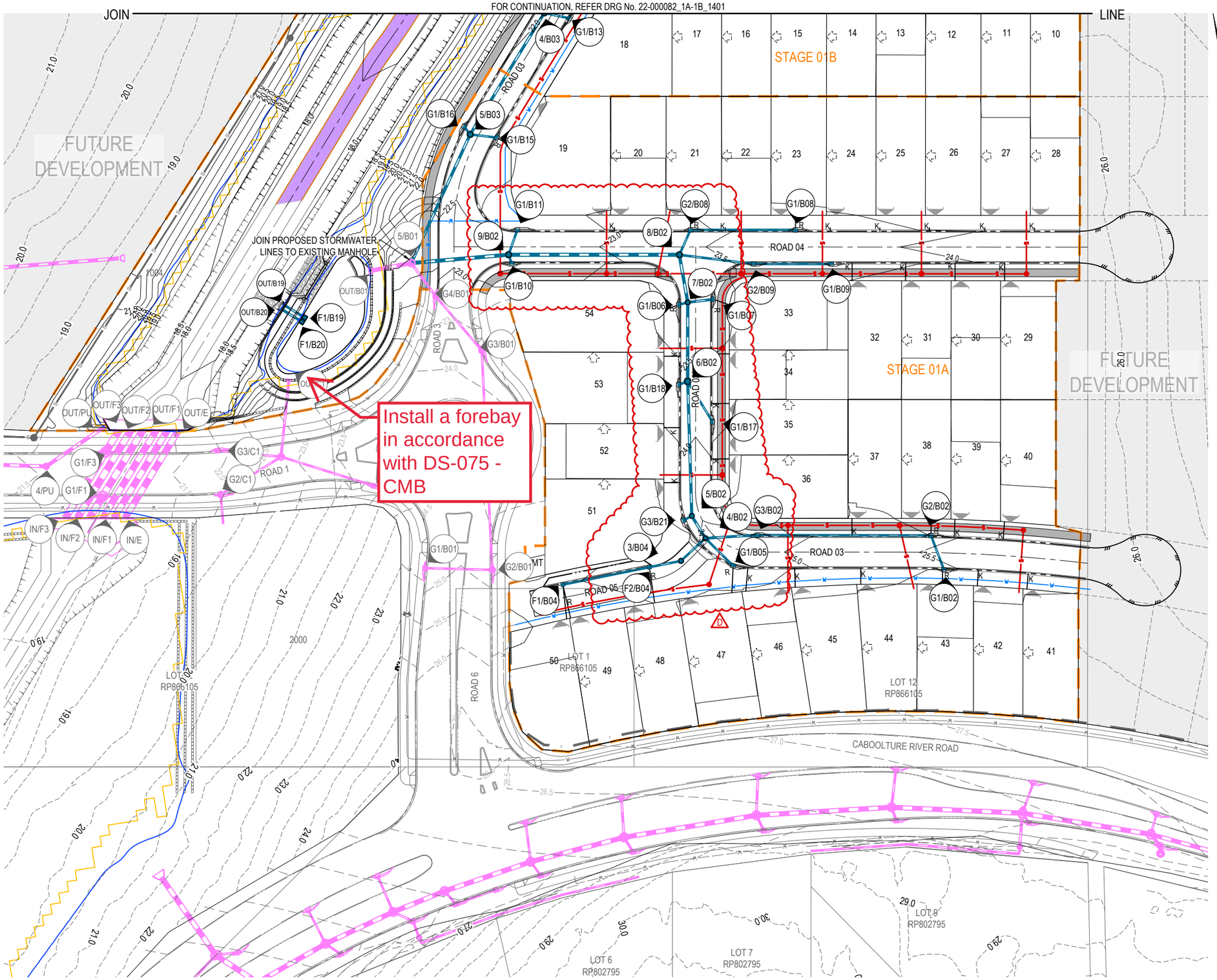
DRAWING TITLE
SOUTHERN SWALE CROSS SECTIONS SHEET 4 OF 4

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1344	D

Moreton Bay Regional Council



LEGEND

- STAGE BOUNDARY
- PROPOSED STORMWATER DRAINAGE
- PROPOSED MAINTENANCE HOLE
- PROPOSED GULLY PIT
- PROPOSED OUTLET STRUCTURE
- PROPOSED ROCK SCOUR PROTECTION
- EXISTING SURFACE CONTOUR (0.5m INTERVALS)
- DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- EXISTING STORMWATER DRAINAGE
- EXISTING MAINTENANCE HOLE
- EXISTING GULLY PIT
- EXISTING WATER RECTICULATION
- EXISTING SEWER RETICULATION
- PROPOSED WATER MAIN
- PROPOSED WATER FITTING
- PROPOSED WATER CONDUIT
- PROPOSED SEWERAGE RETICULATION
- PROPOSED SLEEPER RETAINING WALL
- EXISTING BOULDER RETAINING WALL
- EXISTING RETAINING WALL + ACOUSTIC FENCE
- PROPOSED KERB ADAPTER + LINE
- PROPOSED ROOF WATER LINE
- PROPOSED BATTERS
- PROPOSED LOW FLOW CHANNEL AREA
- CONCRETE FOOTPATH
- INDICATIVE DRIVEWAY LOCATION
- 5% AEP (20YR ARI) FLOOD LEVEL
- 1% AEP (100YR ARI) FLOOD LEVEL
- EXISTING TRUNK SEWER
- BUILD TO BOUNDARY

NOTE:

1. REFER TO DRG 22-000082_1A-1B_1402 FOR STORMWATER STANDARD NOTES AND DETAILS.
2. REFER TO DRG 22-000082_1A-1B_1410 FOR STORMWATER CATCHMENT PLAN.
3. REFER TO DRGs 22-000082_1A-1B_1420-1422 FOR STORMWATER LONGITUDINAL SECTIONS.
4. REFER TO DRGs 22-000082_1A-1B_1430-1431 FOR STORMWATER CALCULATION TABLES.

CAUTION !! UNDERGROUND TELECOMMS CABLES — UNDERGROUND TELECOMMUNICATION CABLES EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR CABLE LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING.	**CAUTION !!** UNDERGROUND GAS MAIN — UNDERGROUND GAS MAIN EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR MAIN LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING
CAUTION !! OVERHEAD ELECTRICAL CABLES — OVERHEAD ELECTRICITY CABLES EXIST IN THIS VICINITY. CONTACT ENERGEX WHERE CABLE CLEARANCE IS COMPROMISED BY MACHINERY.	**CAUTION !!** UNDERGROUND ELECTRICAL CABLES — UNDERGROUND ELECTRICITY CABLES EXIST IN THIS VICINITY. CONTACT ENERGEX FOR CABLE LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK:

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

www.egis-group.com

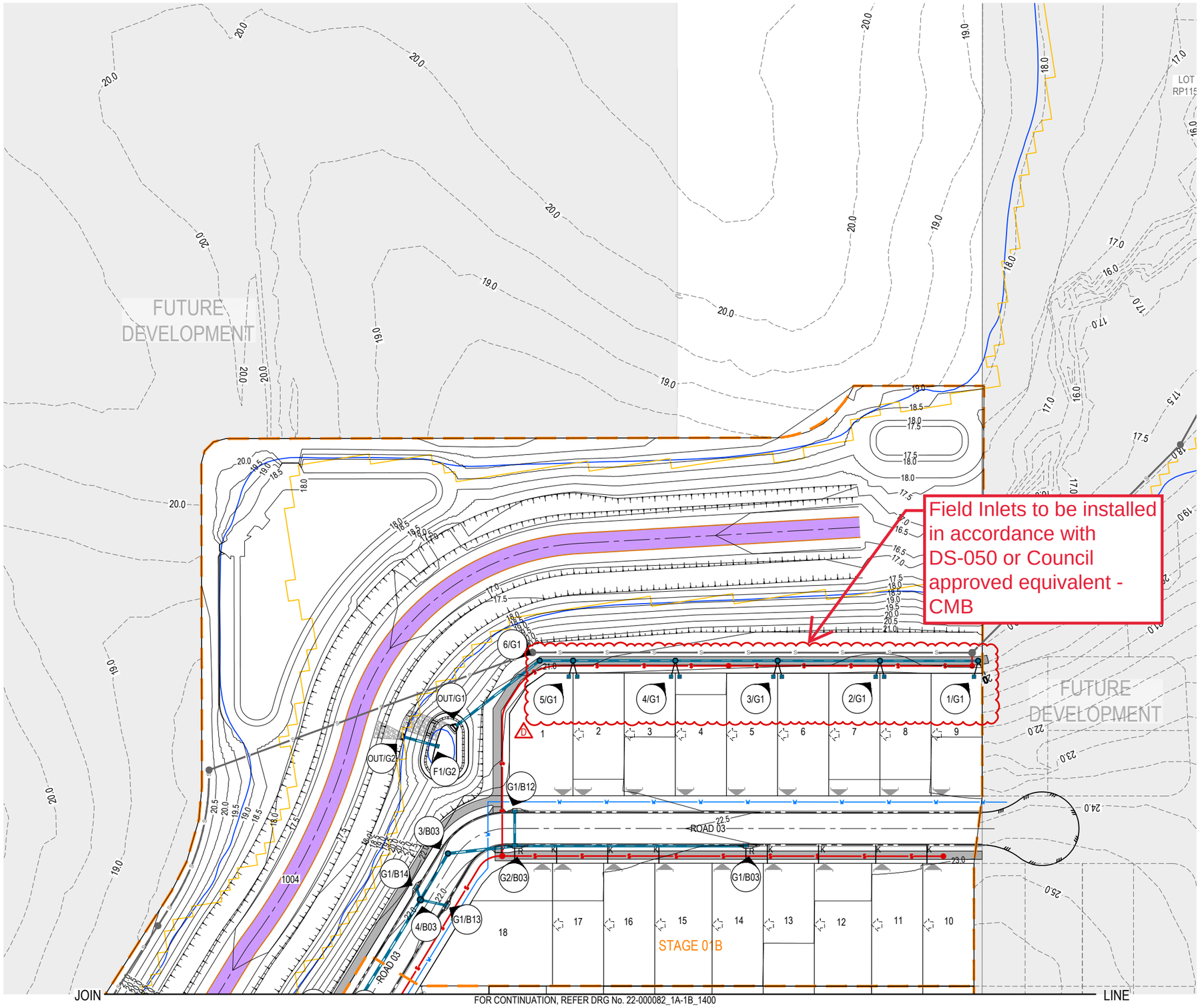
PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: STORMWATER LAYOUT PLAN SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1400	D

Moreton Bay Regional Council



LEGEND

- STAGE BOUNDARY
- PROPOSED STORMWATER DRAINAGE
- PROPOSED MAINTENANCE HOLE
- PROPOSED GULLY PIT
- PROPOSED OUTLET STRUCTURE
- PROPOSED ROCK SCOUR PROTECTION
- EXISTING SURFACE CONTOUR (0.5m INTERVALS)
- DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- EXISTING STORMWATER DRAINAGE
- EXISTING MAINTENANCE HOLE
- EXISTING GULLY PIT
- EXISTING WATER RECTICULATION
- EXISTING SEWER RETICULATION
- PROPOSED WATER MAIN
- PROPOSED WATER FITTING
- PROPOSED WATER CONDUIT
- PROPOSED SEWERAGE RETICULATION
- PROPOSED SLEEPER RETAINING WALL
- EXISTING BOULDER RETAINING WALL
- EXISTING RETAINING WALL + ACOUSTIC FENCE
- PROPOSED KERB ADAPTER + LINE
- PROPOSED ROOF WATER LINE
- PROPOSED BATTERS
- PROPOSED LOW FLOW CHANNEL AREA
- CONCRETE FOOTPATH
- INDICATIVE DRIVEWAY LOCATION
- 5% AEP (20YR ARI) FLOOD LEVEL
- 1% AEP (100YR ARI) FLOOD LEVEL
- EXISTING TRUNK SEWER
- BUILD TO BOUNDARY

NOTE:

1. REFER TO DRG 22-000082_1A-1B_1402 FOR STORMWATER STANDARD NOTES AND DETAILS.
2. REFER TO DRG 22-000082_1A-1B_1410 FOR STORMWATER CATCHMENT PLAN.
3. REFER TO DRGs 22-000082_1A-1B_1420-1422 FOR STORMWATER LONGITUDINAL SECTIONS.
4. REFER TO DRGs 22-000082_1A-1B_1430-1431 FOR STORMWATER CALCULATION TABLES.

CAUTION !! UNDERGROUND TELECOMMS CABLES
UNDERGROUND TELECOMMUNICATION CABLES EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR CABLE LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING.

CAUTION !! UNDERGROUND GAS MAIN
UNDERGROUND GAS MAIN EXIST IN THIS VICINITY. CONTACT SUPPLIER FOR MAIN LOCATIONS. EXTREME CARE MUST BE TAKEN WHILST EXCAVATING

CAUTION !! OVERHEAD ELECTRICAL CABLES
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REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:500 / 1:1000 — 10 5 0 10 20m — A1 / A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION, USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: STORMWATER LAYOUT PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1401	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023

STORMWATER DRAINAGE NOTES

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT M.B.R.C STANDARD DRAWINGS AND METHODS.
2. ALL STORMWATER PIPES UNDER ROADWAYS AND FOOTPATHS SHALL BE RCP CLASS 3 U.N.O.
3. ALL STORMWATER PIPES UP TO AND INCLUDING 600Ø SHALL BE R.R.J. STORMWATER PIPES GREATER THAN 600Ø SHALL BE INTERNAL FLUSH JOINTED WITH PROPRIETARY EXTERNAL BAND.
4. STEPIRONS ARE TO BE PROVIDED IN STORMWATER MANHOLES AND GULLIES GREATER THAN 1.20m DEEP, IN ACCORDANCE WITH M.B.R.C STD. DRG. SD.10.
5. ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE.
6. CONTRACTOR TO LIAISE WITH ALL RELEVANT SERVICE AUTHORITIES TO ASCERTAIN SERVICES PRESENT ON-SITE. ANY ALTERATION WORKS TO SERVICES WILL BE CARRIED OUT BY THAT SERVICE AUTHORITY ONLY.
7. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF DEMOLISHING ANY EXISTING STRUCTURES WITHIN THE SITE AREAS.
8. THE STORMWATER PIPE CLASSES HAVE BE DESIGNED FOR SERVICE LOADS ONLY, AND THE CONTRACTOR SHALL ASSESS ANTICIPATED CONSTRUCTION LOADS AND UPGRADE THE PIPE CLASSES IF NECESSARY, IN ACCORDANCE WITH AS3725-2007.
9. RETAINING WALL SUBSOIL DRAINS TO CONNECT TO KERB AND CHANNEL SUBSOIL OR STORMWATER DRAINAGE STRUCTURES.
10. WORKS SHALL BE PROGRAMMED SO AS NOT TO DISTURB NEARBY HOUSEHOLDERS EITHER BY DUST, NOISE, FLOODING OR DISCONNECTION OF SERVICES.
11. ALL CONSTRUCTION ACTIVITIES SHALL COMPLY WITH WORKPLACE HEALTH AND SAFETY REQUIREMENTS.
12. ANTI PONDING GULLIES ARE TO BE SIDE ENTRY TYPE. CHAMBER AND GRATE ONLY TYPE NOT TO BE USED.
13. GULLY PITS IN EXCESS OF 1.5 METRES DEEP ARE TO BE CONSTRUCTED AS A GULLY PIT/ACCESS CHAMBER STRUCTURE.
14. CRACKS IN STORMWATER PIPES WILL NOT BE ACCEPTED.
15. LEVELS AND GRADIENTS AT JUNCTIONS WITH EXISTING WORKS MAY BE VARIED AS REQUIRED TO ACHIEVE A SATISFACTORY CONNECTION AND THE CONTRACTOR SHALL INCLUDE THE COST OF THIS WORK IN THE TENDER PRICE. WHERE NEW WORK JOINS EXISTING, THE WORK SHALL TRANSITION NEATLY WITH THE PAVEMENT SO THAT DEVIATION FROM THE LINE OF A 3.0m STRAIGHT EDGE SHALL BE NO GREATER THAN 10mm.
16. CONDUITS SHALL BE IN ACCORDANCE WITH I.P.W.E.A STD. DRG. RS-101.
17. ALL EXCAVATION AND FILLING SHALL BE COMPACTED TO THE REQUIREMENTS OF AS3798-2007 IN ACCORDANCE WITH THE LOCAL AUTHORITY REQUIREMENTS.
18. ALL LEVELS ARE IN METRES ABOVE AUSTRALIAN HEIGHTS DATUM (mAHD) UNLESS OTHERWISE SHOWN

KERB ADAPTORS NOTES

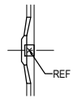
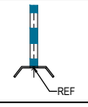
ALL LOTS NOT DRAINING TO A PROPERTY PIT TO HAVE 2 KERB ADAPTORS . KERB ADAPTORS SHOWN ARE INDICATIVE ONLY AND ARE TO BE INSTALLED IN ACCORDANCE WITH IPWEA STD DRG RS-081.

NOTE:
NOTWITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THE JOB DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE SUPERINTENDENT OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ANY UNDERGROUND SERVICES IN THIS AREA AND SHALL BE RESPONSIBLE FOR MAKING GOOD ANY DAMAGE THERETO.

SCOUR PROTECTION NOTES:

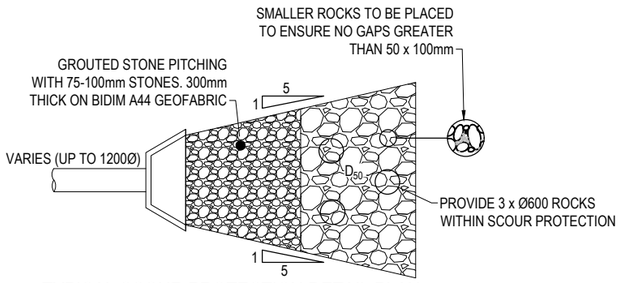
1. IF ROCK SIZE IS SPECIFIED ON THE PLAN AS D_{50} THIS CORRESPONDS TO A ROCK SIZE WITH A MEDIAN ROCK DIAMETER OF D_{50}. A VARIANCE OF ±30% IS ACCEPTABLE. Eg. IF D_{50} = 600 IS SPECIFIED THEN THE EQUIVALENT ROCK DIAMETER RANGES FROM 420mm TO 780mm.
2. NEITHER BREADTH NOR THICKNESS OF A SINGLE ROCK SHALL BE LESS THAN ONE HALF ITS LENGTH (ie THE ROCK SHALL BE CHUNKY RATHER THAN FLAT).
3. ROCK TYPE - BASALT OR OTHER APPROVED MATERIAL. TO BE CONFIRMED WITH SUPERINTENDENT BEFORE COMMENCING ROCK WORK.
4. ROCKS GREATER THAN D_{50}=450 TO BE PLACED AND INTERLOCKED INTO POSITION AND BUILT UP TO FINAL LEVELS SHOWN, ENSURING COVERAGE OF GEOFABRIC. GAPS BETWEEN THE BOULDERS ARE TO BE FILLED BY DROPPING STONES INTO GAPS AND LOCKING INTO POSITION WITH A CROWBAR.
5. ROCKS LESS THAN & EQUAL TO D_{50}=450 TO BE DUMPED & MOVED INTO POSITION. BUILD UP TO FINAL LEVELS & ENSURING COVERAGE OF GEOFABRIC.

REFERENCE POINT LOCATION FOR DRAINAGE STRUCTURES

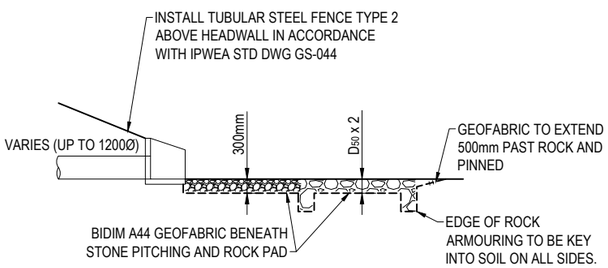
STRUCTURE TYPE	HORIZONTAL CONTROL (REFERENCE POINT LOCATION)		VERTICAL CONTROL (REFERENCE LEVEL)
MANHOLE		℄ OF MAIN SHAFT	FINISHED SURFACE LEVEL
GULLY PIT		GEOMETRIC CENTRE OF PIT STRUCTURE	KERB LIP LEVEL
HEADWALL		INTERSECTION OF HEADWALL FACE AND PIPE ℄	INVERT OF HEADWALL

ROCK SCOUR PROTECTION

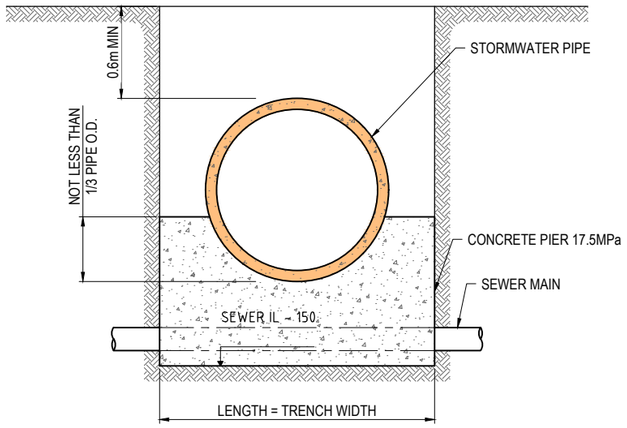
OUTLET	OUTLET PIPE SIZE	VELOCITY	D_{50}	'L'
OUT/G2	Ø 450	2.0m/s	300 mm	4.3m
OUT/B19 & OUT/B20	Ø 2/ 450	2.2m/s	300 mm	4.3m



TYPICAL SCOUR PROTECTION DETAIL PLAN
NTS

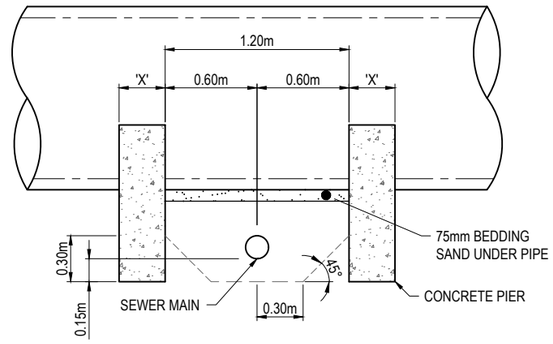


TYPICAL SCOUR PROTECTION SECTION
NTS



STORMWATER / SEWER BRIDGING DETAIL - SECTION

SCALE 1:20 (A1)
SCALE 1:40 (A3)



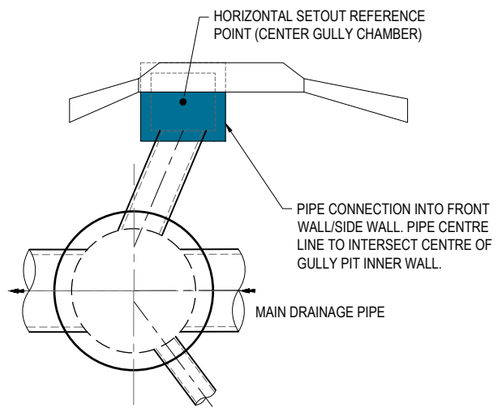
STORMWATER / SEWER BRIDGING DETAIL - ELEVATION

SCALE 1:20 (A1)
SCALE 1:40 (A3)

PIPE SIZE	X = WIDTH OF CONCRETE PIERS (mm)	
	FIRM/STIFF CLAY SAFE BEARING >150kPa	STIFF/VERY STIFF CLAY SAFE BEARING >200kPa
600Ø - 1050Ø	600	450
1200Ø - 2100Ø	450	350

NOTE:
GROUND CONDITIONS TO BE VERIFIED ON-SITE BY SUPERINTENDENT. IF LESSER GROUND CONDITIONS PREVAIL, SPECIALLY DESIGNED DRILLED PIERS ARE TO BE CONSIDERED.

NOTE:
CONTRACTOR TO ENSURE PIPE CONNECTORS TO GULLY PITS ARE NOT CONSTRUCTED INTO THE CORNER OF TWO WALLS.



TYPICAL GULLY PIT PIPE CONNECTION DETAIL
NTS

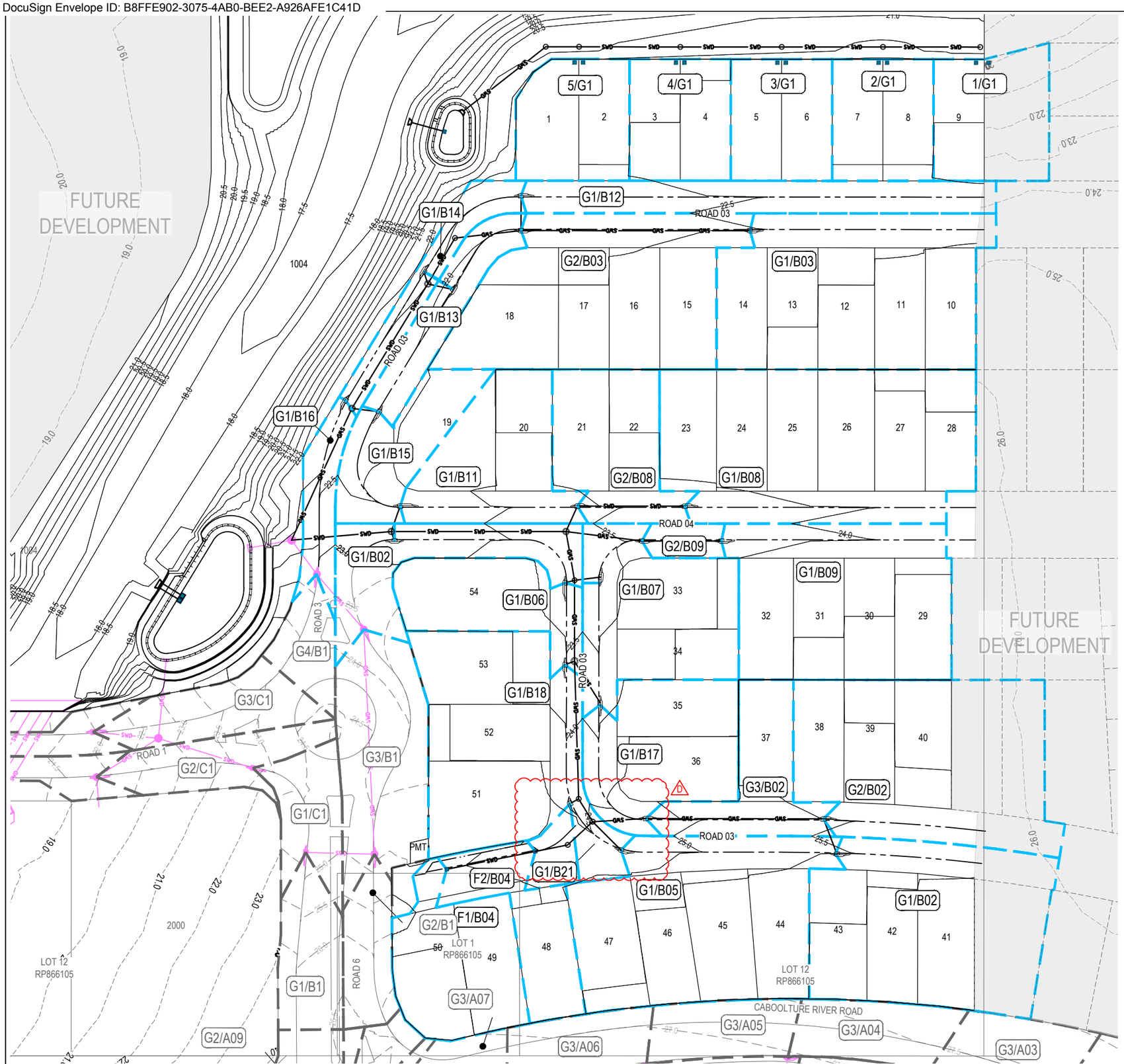
REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK:
STATUS: ISSUED FOR APPROVAL
APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD
SCALE: AS SHOWN
CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP
egis

www.egis-group.com
PROJECT: Lilywood LANDINGS
STAGES 1A & 1B
DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION, USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.
DRAWING TITLE: STORMWATER DRAINAGE NOTES AND DETAILS
PROJECT No. 22-000082_1A-1B
DRAWING No. 1402
REVISION D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491 23/10/2023



LEGEND

- STAGE BOUNDARY
- PROPOSED STORMWATER DRAINAGE
- PROPOSED MAINTENANCE HOLE
- PROPOSED GULLY PIT
- PROPOSED OUTLET STRUCTURE
- G1/A01 — PROPOSED STORMWATER CATCHMENT NAME
- F1/A03 — EXTERNAL STORMWATER CATCHMENT NAME
- PROPOSED STORMWATER CATCHMENT BOUNDARY
- EXISTING STORMWATER CATCHMENT BOUNDARY
- 64.0 — EXISTING SURFACE CONTOUR (0.5m INTERVALS)
- 66.0 — DESIGN SURFACE CONTOUR (0.5m INTERVALS)
- EXISTING STORMWATER DRAINAGE
- EXISTING MAINTENANCE HOLE
- EXISTING GULLY PIT

CATCHMENT NAME	CATCHMENT AREA (Ha)
G1/B01	0.058
G2/B01	0.045
G3/B01	0.122
G4/B01	0.035
G1/B02	0.228
G2/B02	0.245
G3/B02	0.077
G1/B03	0.243
G2/B03	0.234
F1/B04	0.106
F2/B04	0.072
G1/B05	0.231
G1/B06	0.084
G1/B07	0.136
G1/B08	0.285
G2/B08	0.100
G1/B09	0.204
G2/B09	0.016
G1/B10	0.090
G1/B11	0.112
G1/B12	0.093
G1/B13	0.054
G1/B14	0.047
G1/B15	0.072
G1/B16	0.038
G1/B17	0.119
G1/B18	0.215
G1/B21	0.017
G1/C1	0.052
G2/C1	0.058
G3/C1	0.064
1/G1	0.089
2/G1	0.075
3/G1	0.075
4/G1	0.075
5/G1	0.081

CAUTION !!
UNDERGROUND TELECOMMS CABLES
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CAUTION !!
OVERHEAD ELECTRICAL CABLES
OVERHEAD ELECTRICITY CABLES EXIST IN THIS VICINITY. CONTACT ENERGEX WHERE CABLE CLEARANCE IS COMPROMISED BY MACHINERY.

CAUTION !!
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DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:500 10 5 0 10 20m A1 | 1:1000 A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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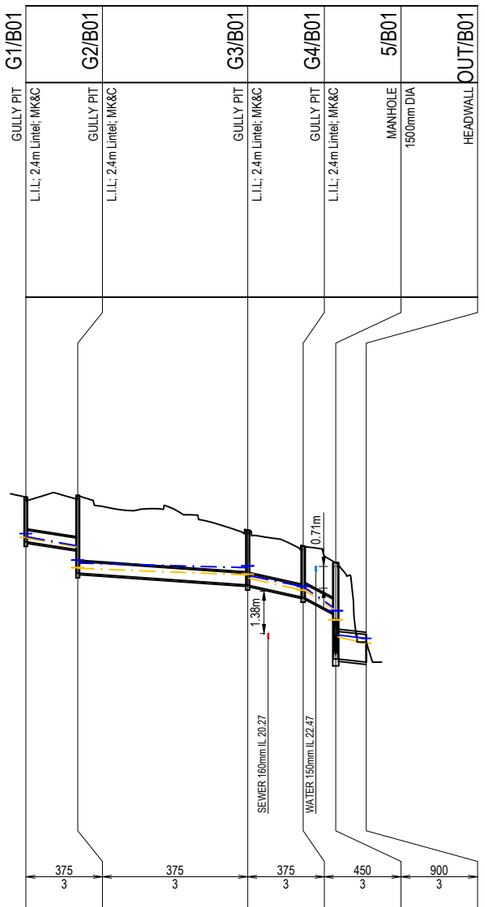
DRAWING TITLE: STORMWATER CATCHMENT PLAN

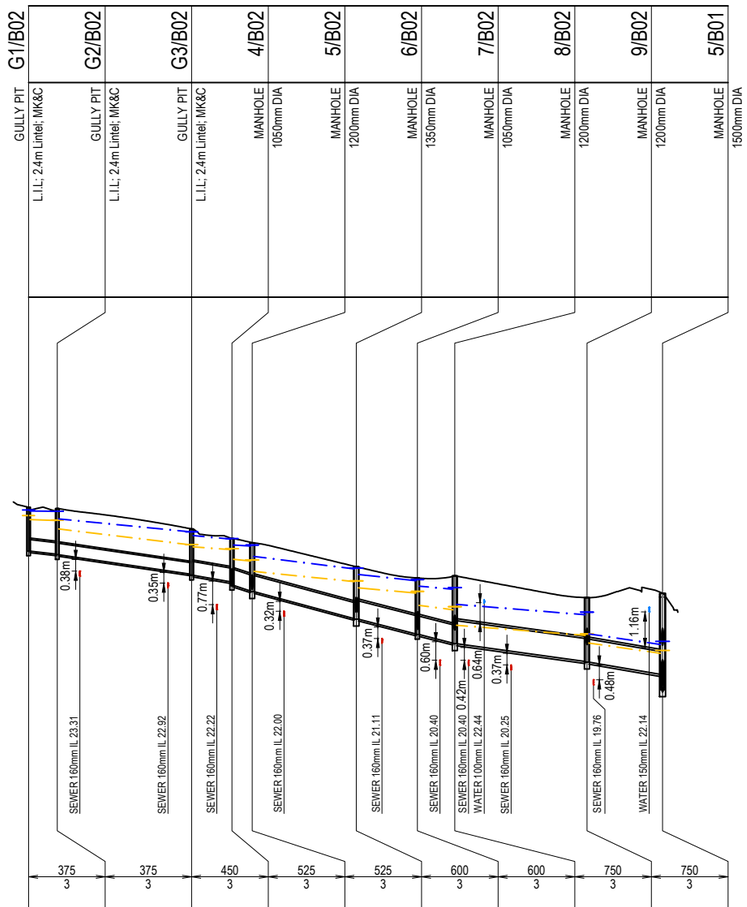
PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1410	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023





LEGEND

- DESIGN SURFACE
- EXISTING SURFACE
- HYDRAULIC GRADE LINE (10% AEP ARI)
- HYDRAULIC GRADE LINE (1% AEP ARI)

NOTES:

1. NOTWITHSTANDING THE STORMWATER STRUCTURE LEVELS SHOWN, THE COVER OR GRATE LEVEL SHALL SUIT THE FINISHED SURFACE PROFILE.
2. THE PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY. THE CONTRACTOR SHALL ASSESS ANTICIPATED LOADS AND UPGRADE THE PIPE CLASSES IF NECESSARY IN ACCORDANCE WITH AS 3725-2007. CRACKED PIPES WILL NOT BE ACCEPTED.
3. REFER DRG 22-000082_1A-1B_1403 FOR STORMWATER NOTES.

BRIDGING NOTE:

REFER TO BRIDGING DETAIL ON DRG 22-000082_1A-1B_1402

STRUCTURE NAME	G1/B01	G2/B01	G3/B01	G4/B01	5/B01	OUT/B01
STRUCTURE DESCRIPTION	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	MANHOLE 1500mm DIA	PRECAST HEADWALL
PIPE SIZE (mm)		375	375	375	450	900
PIPE CLASS		3	3	3	3	3
PIPE GRADE (%)		1.48%	0.69%	2.10%	4.72%	1.01%
PIPE SLOPE (1 in X)		67.68	145.95	47.65	21.19	99.46
FULL PIPE VELOCITY (m/s)		0.24	0.43	0.92	0.74	2.35
PART FULL VELOCITY (m/s)		1.32	1.18	2.17	2.99	3.19
DATUM RL	8.0					
H.G.L IN PIPE & W.S.E IN STRUCTURE	23.566	23.537 / 23.260 / 22.583	22.558	22.344 / 22.370	22.235 / 21.849 / 21.850	21.839 / 21.233 / 20.897	20.322 / 20.122 / 20.122	20.122
PIPE FLOW (Cumecs)		0.027	0.048	0.102	0.117	1.495		
PIPE CAPACITY AT GRADE (Cumecs)		0.213	0.145	0.254	0.620	1.823		
DEPTH TO INVERT		1.461	1.764	2.534	1.787	1.807	1.664	1.684	1.645	3.145	0.900	0.900
INVERT LEVEL OF DRAIN		23.420	23.170	22.400	22.020	22.000	21.620	21.600	21.100	19.600	19.500	19.500
DESIGN SURFACE LEVEL	24.881		24.934		23.807		23.284		22.745		20.400	
SETOUT COORDINATES	E 90884.107 N 502011.634	E 90900.749 N 502008.592		E 90906.740 N 502063.692	E 90897.368 N 502078.985	E 90892.570 N 502088.244		E 90882.628 N 502087.938
RUNNING CHAINAGE	0.000	16.919	16.919	55.460	72.379	18.107	90.486	10.594	101.080	9.946	111.026	

LINE Line B01

STRUCTURE NAME	G1/B01	G2/B01	G3/B01	G4/B01	5/B01	OUT/B01
STRUCTURE DESCRIPTION	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	MANHOLE 1500mm DIA	HEADWALL
PIPE SIZE (mm)		375	375	375	450	900
PIPE CLASS		3	3	3	3	3
PIPE GRADE (%)		1.48%	0.69%	2.10%	4.72%	1.01%
PIPE SLOPE (1 in X)		67.68	145.95	47.65	21.19	99.46
FULL PIPE VELOCITY (m/s)		0.24	0.43	0.92	0.74	2.32
PART FULL VELOCITY (m/s)		1.32	1.18	2.17	2.99	3.18
DATUM RL	8.0					
H.G.L IN PIPE & W.S.E IN STRUCTURE	23.566	23.537 / 23.260 / 22.583	22.558	22.344 / 22.370	22.235 / 21.849 / 21.850	21.839 / 21.233 / 20.880	20.317 / 20.116 / 20.116	20.116
PIPE FLOW (Cumecs)		0.027	0.048	0.102	0.117	1.475		
PIPE CAPACITY AT GRADE (Cumecs)		0.213	0.145	0.254	0.620	1.823		
DEPTH TO INVERT		1.461	1.764	2.534	1.787	1.807	1.664	1.684	1.645	3.145	0.900	0.900
INVERT LEVEL OF DRAIN		23.420	23.170	22.400	22.020	22.000	21.620	21.600	21.100	19.600	19.500	19.500
DESIGN SURFACE LEVEL	24.881		24.934		23.807		23.284		22.745		20.400	
SETOUT COORDINATES	E 90884.107 N 502011.634	E 90900.749 N 502008.592		E 90966.740 N 502063.692	E 90897.368 N 502078.985	E 90892.570 N 502088.244		E 90882.628 N 502087.938
RUNNING CHAINAGE	0.000	16.919	16.919	55.460	72.379	18.107	90.486	10.594	101.080	9.946	111.026	

Line B01

STRUCTURE NAME	G1/B02	G2/B02	G3/B02	4/B02	5/B02	6/B02	7/B02	8/B02	9/B02	5/B01
STRUCTURE DESCRIPTION	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	GULLY PIT L.I.L; 2.4m Lintel; MK&C	MANHOLE 1050mm DIA	MANHOLE 1200mm DIA	MANHOLE 1350mm DIA	MANHOLE 1050mm DIA	MANHOLE 1200mm DIA	MANHOLE 1200mm DIA	MANHOLE 1500mm DIA
PIPE SIZE (mm)		375	375	450	525	525	600	600	750	750
PIPE CLASS		3	3	3	3	3	3	3	3	3
PIPE GRADE (%)		1.07%	1.44%	1.60%	2.72%	2.59%	2.41%	2.30%	1.35%	1.62%
PIPE SLOPE (1 in X)		93.46	69.59	62.59	36.74	38.58	41.57	43.52	74.35	61.65
FULL PIPE VELOCITY (m/s)		0.84	1.73	1.50	1.84	1.97	1.99	2.37	2.14	2.32
PART FULL VELOCITY (m/s)		1.65	2.16	2.42	3.37	3.36	3.51	3.58	3.19	3.50
DATUM RL	9.0									
H.G.L IN PIPE & W.S.E IN STRUCTURE	25.280	25.146 / 25.120 / 25.133	24.844	24.326 / 24.329	24.261 / 24.169 / 24.201	23.854 / 23.797 / 23.833	23.458 / 23.125 / 23.152	22.920 / 22.753 / 22.808	22.352 / 22.207 / 22.307	21.700 / 21.373 / 21.420	21.123 / 20.790 / 20.880	20.317
PIPE FLOW (Cumecs)		0.093	0.191	0.239	0.398	0.426	0.562	0.671	0.944	1.026		
PIPE CAPACITY AT GRADE (Cumecs)		0.181	0.210	0.361	0.710	0.693	0.953	0.931	1.292	1.418		
DEPTH TO INVERT		1.429	1.487	1.507	1.472	1.512	1.410	1.530	1.571	1.591	1.691	1.711	1.824	1.844	2.195	2.215	2.083	2.103	2.645	3.145
INVERT LEVEL OF DRAIN		24.120	24.020	24.000	23.370	23.330	23.120	23.000	22.820	22.800	21.920	21.900	21.420	21.400	21.120	21.100	20.520	20.500	20.100	19.600
DESIGN SURFACE LEVEL	25.549		25.507		24.842		24.530		24.391		23.611		23.244		23.315		22.603		22.745	
SETOUT COORDINATES	E 91013.456 N 501990.915	E 91011.555 N 501999.997		E 90968.257 N 502006.894	E 90955.182 N 502008.114	E 90952.648 N 502014.221		E 90956.884 N 502047.910	E 90959.988 N 502067.623	E 90959.764 N 502079.806	E 90917.169 N 502086.513		E 90892.570 N 502088.244
RUNNING CHAINAGE	0.000	9.346	9.346	43.844	53.190	13.145	66.335	6.614	72.949	33.954	106.903	19.956	126.859	12.185	139.044	43.120	182.164	24.660	206.824	

Line B02

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

Ryan Ashworth

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:1000 / 1:2000 HORIZONTAL (10 0 10 20 30 40 50m) A1 A3; 1:100 / 1:200 VERTICAL (2 1 0 2 4m) A1 A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

egis www.egis-group.com

PROJECT: Lilywood LANDINGS — STAGES 1A & 1B

DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION, USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: STORMWATER LONGITUDINAL SECTIONS SHEET 1 OF 3

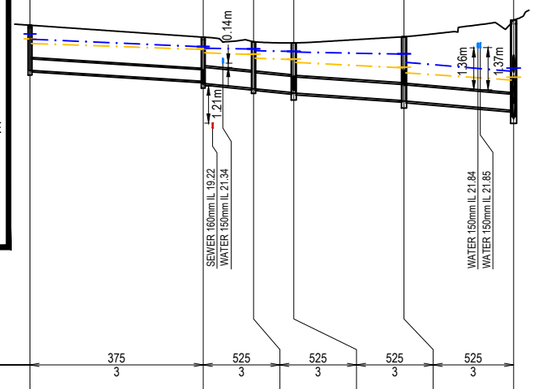
PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1420	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023

STRUCTURE NAME	G1/B03	G2/B03	3/B03	4/B03	5/B03	5/B01	F1/B04	F2/B04	3/B04	4/B02	G1/B05	4/B02	G1/B06	7/B02	G1/B07	7/B02	G1/B08	G2/B08	8/B02	G1/B09	G2/B09	8/B02	G1/B10	9/B02	G1/B11	9/B02
STRUCTURE DESCRIPTION	GULLY PIT L.I.L: 2.4m Lintel: MK8C	GULLY PIT L.I.L: 2.4m Lintel: MK8C	MANHOLE 1050mm DIA	MANHOLE 1200mm DIA	MANHOLE 1200mm DIA	MANHOLE 1500mm DIA	IPWEAQ FIELD INLET 600x900 TYPE 2B	IPWEAQ FIELD INLET 600x900 TYPE 2B	MANHOLE 1050mm DIA	MANHOLE 1050mm DIA	GULLY PIT L.I.L: 2.4m Lintel: MK8C	MANHOLE 1050mm DIA	GULLY PIT L.I.L: 3.6m Lintel: MK8C	MANHOLE 1050mm DIA	GULLY PIT (SAG) L.I.L: 2.4m Lintel: MK8C	MANHOLE 1050mm DIA	GULLY PIT L.I.L: 2.4m Lintel: MK8C	GULLY PIT L.I.L: 2.4m Lintel: MK8C	MANHOLE 1200mm DIA	GULLY PIT L.I.L: 2.4m Lintel: MK8C	GULLY PIT L.I.L: 2.4m Lintel: MK8C	MANHOLE 1200mm DIA	GULLY PIT (SAG) L.I.L: 2.4m Lintel: MK8C	MANHOLE 1200mm DIA	GULLY PIT L.I.L: 3.6m Lintel: MK8C	MANHOLE 1200mm DIA
PIPE SIZE (mm)		375	525	525	525	525		375	375	375		375		375		450		375	375		375	375		375		375
PIPE CLASS		3	3	3	3	3		3	3	3		3		3		3		3	3		3	3		3		3
PIPE GRADE (%)		0.62%	0.94%	0.91%	0.67%	0.84%		1.57%	1.35%	2.14%		2.11%		3.33%		2.82%		1.66%	4.32%		1.38%	3.44%		1.19%		1.48%
PIPE SLOPE (1 in X)		161.41	105.89	109.45	149.76	119.19		63.71	73.92	46.74		47.37		30.06		35.50		60.23	23.13		72.71	29.04		84.05		67.40
FULL PIPE VELOCITY (m/s)		0.92	1.14	1.13	1.40	1.60		0.34	0.56	0.56		0.91		0.46		0.40		0.99	1.61		0.81	0.92		0.38		0.47
PART FULL VELOCITY (m/s)		1.37	2.01	1.98	1.83	2.05		1.49	1.62	1.91		2.17		2.11		2.08		2.03	3.28		1.80	2.61		1.39		1.59
DATUM RL	7.0						10.0				10.0		8.0		8.0		8.0			8.0			8.0		8.0	
H.G.L IN PIPE & W.S.E IN STRUCTURE	22.129 21.978	21.787 21.807	21.675 21.621 21.636	21.499 21.457 21.469	21.362 21.184 21.206	21.023 20.790 20.880 20.317	24.281 24.239	24.229 24.229	24.214 24.203 24.206	24.179 24.169 24.201 23.854	24.376 24.201	24.169 24.201 23.854	22.803 22.755	22.753 22.808 22.352	22.805 22.757	22.753 22.808 22.352	22.929 22.639	22.565 22.603	22.278 22.207 22.307 21.700	22.979 22.759	22.532 22.538	22.485 22.207 22.307 21.700	21.430 21.358	21.373 21.420 21.123	21.494 21.385	21.373 21.420 21.123
PIPE FLOW (Cumecs)		0.102	0.246	0.245	0.302	0.347		0.038	0.062	0.062		0.100		0.050		0.063		0.109	0.178		0.089	0.102		0.042		0.052	
PIPE CAPACITY AT GRADE (Cumecs)		0.138	0.418	0.411	0.352	0.394		0.220	0.204	0.257		0.255		0.320		0.479		0.226	0.365		0.206	0.326		0.191		0.214	
DEPTH TO INVERT	1.475	1.435	1.510	1.514 1.534	1.620 1.640	2.077 2.097 2.945 3.145	1.273	1.283 1.303	1.333 1.353	1.410 1.530	1.430	1.430 1.530	1.481	1.524 1.844	1.475	1.624 1.844	1.439	1.481 1.501	1.715 2.215	1.329	1.403 1.423	1.715 2.215	1.429	1.423 2.103	1.425	1.483 2.103
INVERT LEVEL OF DRAIN	21.100	20.750 20.675	20.520 20.500	20.380 20.360	20.120 20.100	19.800 19.600	23.800	23.450 23.430	23.320 23.300	23.120 23.000	23.310	23.100 23.000	21.800	21.720 21.400	21.800	21.620 21.400	22.360	21.920 21.900	21.600 21.100	22.540	22.270 22.250	21.600 21.100	21.210	21.180 20.500	21.220	21.120 20.500
DESIGN SURFACE LEVEL	22.575	22.185	22.034	22.000	22.197	22.745	25.073	24.733	24.653	24.530	24.740	24.530	23.281	23.244	23.275	23.244	23.799	23.401	23.315	23.869	23.673	23.315	22.639	22.603	22.645	22.603
SETOUT COORDINATES	E 91016.122 N 502146.048	E 90960.317 N 502154.835	E 90943.922 N 502155.535	E 90935.541 N 502145.423	E 90912.295 N 502118.011	E 90892.570 N 502088.244	E 90917.788 N 502002.144	E 90940.064 N 502003.099	E 90948.188 N 502003.437	E 90955.182 N 502008.114	E 90961.012 N 502000.142	E 90955.182 N 502008.114	E 90957.623 N 502067.373	E 90959.988 N 502067.623	E 90966.365 N 502067.424	E 90959.988 N 502067.623	E 90989.705 N 502081.466	E 90963.528 N 502085.588	E 90959.764 N 502079.806	E 90997.301 N 502071.569	E 90977.909 N 502074.623	E 90959.764 N 502079.806	E 90917.636 N 502084.113	E 90917.169 N 502086.513	E 90920.338 N 502092.389	E 90917.169 N 502086.513
RUNNING CHAINAGE	0.000 56.493	56.493 72.905	16.413 86.039	13.134 121.980	35.941 157.738	35.758	0.000 22.297	22.297 30.428	8.131 38.841	8.414	0.000 9.948	9.948	0.000 2.405	2.405	0.000 6.390	6.390	0.000 26.500	26.500 33.438	6.938	0.000 19.630	19.630 38.505	18.874	0.000 2.522	2.522	0.000 6.740	6.740
LINE	Line B03						Line B04				Line B05		Line B06		Line B07		Line B08			Line B09			Line B10		Line B11	



LEGEND

- DESIGN SURFACE
- EXISTING SURFACE
- HYDRAULIC GRADE LINE (10% AEP ARI)
- HYDRAULIC GRADE LINE (1% AEP ARI)

NOTES:

1. NOTWITHSTANDING THE STORMWATER STRUCTURE LEVELS SHOWN, THE COVER OR GRATE LEVEL SHALL SUIT THE FINISHED SURFACE PROFILE.
2. THE PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY. THE CONTRACTOR SHALL ASSESS ANTICIPATED LOADS AND UPGRADE THE PIPE CLASSES IF NECESSARY IN ACCORDANCE WITH AS 3725-2007. CRACKED PIPES WILL NOT BE ACCEPTED.
3. REFER DRG 22-000082_1A-1B_1403 FOR STORMWATER NOTES.

BRIDGING NOTE:

REFER TO BRIDGING DETAIL ON DRG 22-000082_1A-1B_1402

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

Ryan Ashworth

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE

1:1000 10 0 10 20 30 40 50m A1
1:2000 HORIZONTAL A3

1:100 2 1 0 2 4m A1
1:200 VERTICAL A3

CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

egis

www.egis-group.com

PROJECT: Lilywood LANDINGS

STAGES 1A & 1B

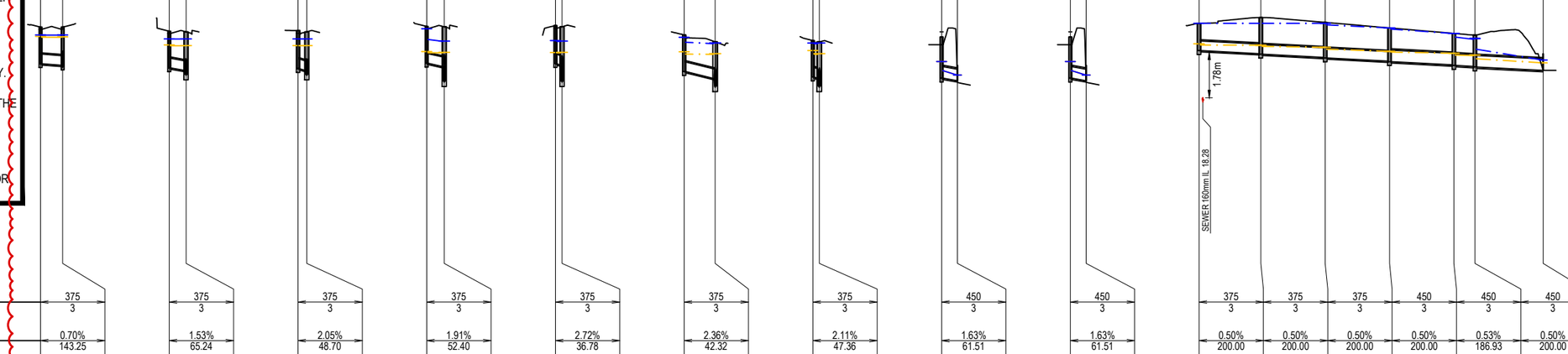
DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: STORMWATER LONGITUDINAL SECTIONS SHEET 2 OF 3

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1421	D

Moreton Bay Regional Council

STRUCTURE NAME	G1/B12	G2/B03	G1/B13	4/B03	G1/B14	4/B03	G1/B15	5/B03	G1/B16	5/B03	G1/B17	6/B02	G1/B18	6/B02	F1/B19	OUT/B19	F1/B20	OUT/B20	1/G1	2/G1	3/G1	4/G1	5/G1	6/G1	OUT/G1	F1/G2	OUT/G2
STRUCTURE DESCRIPTION	GULLY PIT L.I.L: 2.4m Lintel; MK&C	GULLY PIT L.I.L: 2.4m Lintel; MK&C	GULLY PIT (SAG) L.I.L: 2.4m Lintel; MK&C	MANHOLE 1200mm DIA	GULLY PIT (SAG) L.I.L: 2.4m Lintel; BK&C	MANHOLE 1200mm DIA	GULLY PIT L.I.L: 2.4m Lintel; MK&C	MANHOLE 1200mm DIA	GULLY PIT L.I.L: 2.4m Lintel; BK&C	MANHOLE 1200mm DIA	GULLY PIT L.I.L: 2.4m Lintel; MK&C	MANHOLE 1350mm DIA	GULLY PIT L.I.L: 2.4m Lintel; MK&C	MANHOLE 1350mm DIA	FIELD INLET 900x900 RAISED GRATE	HEADWALL	FIELD INLET 900x900 RAISED GRATE	HEADWALL	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE	MANHOLE 1050mm DIA	HEADWALL	FIELD INLET 600x600 RAISED GRATE	HEADWALL
PIPE SIZE (mm)		375		375		375		375		375		375		375		450		450		375	375	375	450	450	450		450
PIPE CLASS		3		3		3		3		3		3		3		3		3		3	3	3	3	3	3		3
PIPE GRADE (%)		0.70%		1.53%		2.05%		1.91%		2.72%		2.36%		2.11%		1.63%		1.63%		0.50%	0.50%	0.50%	0.50%	0.53%	0.50%		1.55%
PIPE SLOPE (1 in X)		143.25		65.24		48.70		52.40		36.78		42.32		47.36		61.51		61.51		200.00	200.00	200.00	200.00	186.93	200.00		64.35
FULL PIPE VELOCITY (m/s)		0.39		0.34		0.20		0.30		0.16		0.50		0.79		1.09		1.09		0.37	0.68	0.98	0.89	1.10	1.10		0.73
PART FULL VELOCITY (m/s)		1.15		1.48		1.40		1.54		1.45		1.92		2.09		2.26		2.26		1.01	1.18	1.27	1.37	1.47	1.43		2.00
DATUM RL	7.0		7.0		7.0		7.0		7.0		9.0		9.0		5.0		5.0		6.0							5.0	
H.G.L IN PIPE & W.S.E IN STRUCTURE	21.824	21.792 21.787 21.807	21.493	21.460 21.457 21.469	21.468	21.457 21.457 21.469	21.233	21.187 21.184 21.206	21.197	21.185 21.184 21.206	23.225	23.137 23.125 23.152	23.271	23.132 23.125 23.152	18.845	18.493 18.319 18.319	18.845	18.493 18.319 18.319	20.536	20.486 20.479 20.479	20.433 20.399 20.399	20.325 20.243 20.243	20.212 20.168 20.168	20.099 20.077 20.097	19.955 19.794 19.794	19.794	18.427	18.237 18.047 18.047	18.047
PIPE FLOW (Cumecs)		0.043		0.038		0.022		0.034		0.018		0.055		0.087		0.174		0.174		0.041	0.075	0.108	0.141	0.175	0.174		0.116
PIPE CAPACITY AT GRADE (Cumecs)		0.147		0.217		0.251		0.242		0.289		0.270		0.255		0.364		0.364		0.124	0.124	0.124	0.202	0.209	0.202		0.356
DEPTH TO INVERT	1.425	1.485	1.427	1.500	1.480	1.500	1.431	1.547	1.475	1.497	1.425	1.438	1.420	1.420	1.600	0.600	1.600	0.600	1.061	1.406	1.426	1.380	1.380	1.291	1.311	1.222	1.242	1.221	1.241	0.650	0.650	1.800	0.646	0.646
INVERT LEVEL OF DRAIN	20.760	20.700	20.600	20.500	20.570	20.500	20.780	20.650	20.770	20.700	22.458	22.173	22.244	22.191	18.200	18.100	18.200	18.100	20.271	20.151	20.131	20.006	19.986	19.861	19.841	19.716	19.696	19.652	19.632	19.500	19.500	18.000	17.870	17.870
DESIGN SURFACE LEVEL	22.185	22.185	22.027	22.000	22.050	22.000	22.211	22.197	22.245	22.197	23.883	23.611	23.663	23.611	19.800	18.700	19.800	18.700	21.332	21.557		21.367		21.152		20.938		20.874		20.150		19.800	18.516	
SETOUT COORDINATES	E 90961.654 N 502163.326	E 90960.317 N 502154.835	E 90941.593 N 502143.051	E 90935.541 N 502145.423	E 90935.060 N 502148.590	E 90935.541 N 502145.423	E 90918.798 N 502116.165	E 90912.295 N 502118.011	E 90911.061 N 502120.212	E 90912.295 N 502118.011	E 90961.519 N 502036.865	E 90956.884 N 502047.910	E 90954.484 N 502047.441	E 90956.884 N 502047.910	E 90863.827 N 502078.851	E 90859.136 N 502082.829	E 90863.018 N 502077.898	E 90858.327 N 502081.875	E 91079.230 N 502181.967	E 91055.522 N 502185.700		E 91030.826 N 502189.588		E 91006.131 N 502193.477		E 90981.435 N 502197.366		E 90973.364 N 502198.637		E 90950.238 N 502185.746		E 90945.430 N 502181.888		E 90937.803 N 502185.324
RUNNING CHAINAGE	0.000	8.595 8.595	0.000	6.524 6.524	0.000	3.409 3.409	0.000	6.812 6.812	0.000	2.574 2.574	0.000	12.050 12.050	0.000	2.496 2.496	0.000	6.151 6.151	0.000	6.151 6.151	0.000	24.000 24.000	25.000 49.000	25.000 74.000	25.000 99.000	8.171 107.171	26.475 133.646		0.000	8.365 8.365	
LINE	Line B12		Line B13		Line B14		Line B15		Line B16		Line B17		Line B18		Line B19		Line B20		Line G1							Line G2	



LEGEND

- DESIGN SURFACE
- EXISTING SURFACE
- HYDRAULIC GRADE LINE (10% AEP ARI)
- HYDRAULIC GRADE LINE (1% AEP ARI)

NOTES:

1. NOTWITHSTANDING THE STORMWATER STRUCTURE LEVELS SHOWN, THE COVER OR GRATE LEVEL SHALL SUIT THE FINISHED SURFACE PROFILE.
2. THE PIPE CLASSES HAVE BEEN DESIGNED FOR SERVICE LOADS ONLY. THE CONTRACTOR SHALL ASSESS ANTICIPATED LOADS AND UPGRADE THE PIPE CLASSES IF NECESSARY IN ACCORDANCE WITH AS 3725-2007. CRACKED PIPES WILL NOT BE ACCEPTED.
3. REFER DRG 22-000082_1A-1B_1403 FOR STORMWATER NOTES.

BRIDGING NOTE:

REFER TO BRIDGING DETAIL ON DRG 22-000082_1A-1B_1402

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:1000 / 1:2000 HORIZONTAL 10 0 10 20 30 40 50m A1 A3; 1:100 / 1:200 VERTICAL 2 1 0 2 4m A1 A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

www.egis-group.com

PROJECT: Lilywood LANDINGS — STAGES 1A & 1B

DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION, USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE: STORMWATER LONGITUDINAL SECTIONS SHEET 3 OF 3

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1422	D

Moreton Bay Regional Council

	LOCATION	CATCHMENT PROPERTIES			FULL AREA RUNOFF					PART AREA RUNOFF					INLET DESIGN									DRAIN DESIGN								HEADLOSSES							PART FULL		DESIGN LEVELS									
		fi	Ci	Cp	tc	I	A	CA	Q	tc	I	A	CA	Q	Qa								Qg	Qb		tc	I	CA	Qp	L	S		Vf	S/Do	Qg/Qo	Du/Do		Vf2/g	Ku	hu	Kw	hw	Sf	hf	dn	Vn									
DESIGN ARI	STRUCTURE No.	FRACTION IMPERVIOUS	COEFFICIENT OF RUNOFF IMPERVIOUS AREA	COEFFICIENT OF RUNOFF PERVIOUS AREA	TIME OF CONCENTRATION	RAINFALL INTENSITY	SUB-CATCHMENT AREA	EQUIVALENT IMPERVIOUS AREA	SUB-CATCHMENT DISCHARGE	TIME OF CONCENTRATION	RAINFALL INTENSITY	PARTIAL CATCHMENT AREA	EQUIVALENT IMPERVIOUS AREA	SUB-CATCHMENT DISCHARGE	FLOW IN K&C(INC. BYPASS)	FLOW WIDTH	FLOW DEPTH	FLOW DxV	ROAD GRADE AT INLET	ROAD XFALL AT INLET	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C x A)	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE SIZE	FULL PIPE VELOCITY	SUBMERGENCE RATIO	GRATE FLOW RATIO	DIAMETER RATIO	CHART(S) USED	VELOCITY HEAD	U/S HEAD LOSS COEFFICIENT	U/S HEAD LOSS	W.S.E COEFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEAD LOSS	NORMAL DEPTH	NORMAL DEPTH VEL.	PIPE U/S I.L	PIPE D/S I.L	PIPE U/S H.G.L	PIPE D/S H.G.L	W.S.E	GRATE LEVEL	FREEBOARD	STRUCTURE No.
Yrs					min	mm/h	ha	ha	L/s	min	mm/h	ha	ha	L/s	L/s	m	m		%	%		L/s	L/s		min	mm/hr	ha	L/s	m	%	mm	m/s					m	m	m	m	m	%	m	m	m/s	m	m	m	m	m	m	m	
10%	G1/B01	85	0.9	0.64	10	168	0.058	0.049	23	5	207	0.053	0.047	27	27	1.202	0.07	0.07	3.49	3	GULLY MK-S	27	0	G1/C1	5	207	0.047	27	16.919	1.48	375	0.24	1.08	1		G2	0.003	9.7	0.029		0.029	1.64	0.231	0.09	1.32	23.42	23.17	23.537	23.26	23.566	24.769	1.203	G1/B01
10%	G2/B01	85	0.9	0.64	10	168	0.045	0.039	18	5	207	0.042	0.037	21	21	1.099	0.063	0.06	3.91	3	GULLY MK-S	21	0	G3/B01	5.15	206	0.083	48	55.46	0.69	375	0.43	1.07	0.44	1	T10	0.01	2.27	0.022	2.66	0.025	0.39	0.262	0.148	1.18	22.4	22.02	22.558	22.344	22.583	24.821	2.238	G2/B01
10%	G3/B01	85	0.9	0.64	10	168	0.122	0.105	49	5	207	0.113	0.099	57	57	1.618	0.088	0.1	2.42	2.9	GULLY MK-S	57	0	G1/B10	5.85	200	0.183	102	18.107	2.1	375	0.92	1.36	0.54	1	G2/T3/T6	0.043	2.52	0.109	3.11	0.135	2.13	0.38	0.165	2.17	22	21.62	22.235	21.849	22.37	23.694	1.324	G3/B01
10%	G4/B01	85	0.9	0.64	10	168	0.035	0.03	14	5	207	0.032	0.028	16	16	0.861	0.058	0.06	4.54	2.64	GULLY MK-S	16	0	G1/B16	5.98	199	0.212	117	10.594	4.72	450	0.74	1.03	0.14	0.83	T1/T3	0.028	0.37	0.01	0.41	0.011	5.72	0.244	0.133	2.99	21.6	21.1	21.839	21.233	21.85	23.17	1.32	G4/B01
10%	5/B01	0																			MH1500				6.23	197	2.725	1475	9.946	1.01	900	2.32	1.62	0	1	T3/T6	0.274	1.72	0.472	2.05	0.562	2.03	0.061	0.616	3.18	19.6	19.5	20.317	20.116	20.88	22.621	1.742	5/B01
10%	OUT/B01																				HW outlet																											20.116	20.4		OUT/B01
10%	G1/B02	85	0.9	0.64	10	168	0.228	0.196	91	5	207	0.211	0.185	106	106	2.94	0.092	0.08	1.21	3	GULLY MK-S	93	13	G1/B05	5	207	0.185	93	9.346	1.07	375	0.84	3.09	1		G2	0.036	3.7	0.134		0.134	0.28	0.026	0.191	1.65	24.12	24.02	25.146	25.12	25.28	25.464	0.184	G1/B02
10%	G2/B02	85	0.9	0.64	10	168	0.245	0.21	98	5	207	0.226	0.198	114	114	3.031	0.095	0.08	1.19	3	GULLY MK-S	98	16	G3/B02	5.09	206	0.383	191	43.844	1.44	375	1.73	3.02	0.51	1	G1/T9	0.152	1.82	0.276	1.9	0.289	1.18	0.518	0.28	2.16	24	23.37	24.844	24.326	25.133	25.422	0.289	G2/B02
10%	G3/B02	85	0.9	0.64	10	168	0.077	0.066	31	5	207	0.072	0.063	36	52	2.024	0.067	0.06	1.97	3	GULLY MK-S	52	0	G1/B17	5.48	203	0.446	239	13.145	1.6	450	1.5	2.22	0.21	0.83	T1/T3	0.115	0.57	0.065	0.6	0.068	0.7	0.092	0.268	2.42	23.33	23.12	24.261	24.169	24.329	24.757	0.427	G3/B02
10%	4/B02	0																			MH1050				5.58	203	0.779	398	6.614	2.72	525	1.84	2.29	0	1	T6/T9	0.172	1.83	0.315	2.01	0.347	0.86	0.057	0.281	3.37	23	22.82	23.854	23.797	24.201	24.53	0.329	4/B02
10%	5/B02	0																			MH1050				5.61	202	0.793	426	33.954	2.59	525	1.97	1.97	0	1	T3/T6	0.197	1.72	0.339	1.9	0.376	0.98	0.332	0.298	3.36	22.8	21.92	23.458	23.125	23.833	24.391	0.558	5/B02
10%	6/B02	0																			MH1350				5.79	201	1.064	562	19.956	2.41	600	1.99	2.09	0	1	T1/T3	0.202	1.02	0.205	1.15	0.231	0.84	0.167	0.332	3.51	21.9	21.42	22.92	22.753	23.152	23.611	0.459	6/B02
10%	7/B02	0																			MH1050				5.88	200	1.243	671	12.185	2.3	600	2.37	2.35	0	1	T3	0.287	1.4	0.402	1.59	0.456	1.19	0.145	0.377	3.58	21.4	21.12	22.352	22.207	22.808	23.244	0.436	7/B02
10%	8/B02	0																			MH1200				5.85	200	1.732	944	43.12	1.35	750	2.14	1.81	0	1	T9/T10	0.233	2.17	0.506	2.61	0.607	0.76	0.41	0.476	3.19	21.1	20.52	21.7	21.373	22.307	23.315	1.008	8/B02
10%	9/B02	0																			MH1200				6.1	198	1.897	1026	24.66	1.62	750	2.32	1.4	0	1	T1/T3	0.275	0.91	0.25	1.08	0.297	1.35	0.385	0.473	3.5	20.5	20.1	21.123	20.79	21.42	22.603	1.183	9/B02
10%	G1/B03	85	0.9	0.64	10	168	0.243	0.208	97	5	207	0.225	0.197	113	113	3.353	0.104	0.07	0.69	3	GULLY MK-S	102	11	G2/B03	5	207	0.197	102	56.493	0.62	375	0.92	2.74	1		G1	0.044	3.46	0.151		0.151	0.34	0.192	0.24	1.37	21.1	20.75	21.978	21.787	22.129	22.49	0.361	G1/B03
10%	G2/B03	85	0.9	0.64	10	168	0.234	0.201	94	5	207	0.217	0.19	109	120	3.571	0.107	0.08	0.69	3	GULLY MK-S	107	13	G1/B13	5.75	201	0.464	246	16.413	0.94	525	1.14	2.16	0.42	1	T3/T6	0.066	1.69	0.112	1.99	0.131	0.33	0.054	0.29	2.01	20.675	20.52	21.675	21.621	21.807	22.1	0.293	G2/B03
10%	3/B03	0																			MH1050				5.89	200	0.464	245	13.134	0.91	525	1.13	2.16	0	1	T6/T9	0.065	1.87	0.122	2.09	0.136	0.32	0.042	0.292	1.98	20.5	20.38	21.499	21.457	21.636	22.034	0.398	3/B03
10%	4/B03	0																			MH1200				6.01	199	0.546	302	35.941	0.67	525	1.4	2.11	0	1	T1/T3	0.099	0.96	0.095	1.08	0.107	0.49	0.177	0.375	1.83	20.36	20.12	21.362	21.184	21.469	22	0.531	4/B03
10%	5/B03	0																			MH1200				6.38	196	0.637	347	35.758	0.84	525	1.6	2.11	0	1	T1/T3	0.131	1.23	0.162	1.4	0.183	0.65	0.233	0.383	2.05	20.1	19.8	21.023	20.79	21.206	22.197	0.991	5/B03
10%	F1/B04	85	0.9	0.64	10	168	0.106	0.091	42	5	207	0.098	0.086	49	19	2.197	0.033	0.02	1.52	3	F1-6x9 on-grade 50% Blockage	8	11	F2/B04	5	207	0.086	38	22.297	1.57	375	0.34	1.28	1		G1	0.006	7	0.042		0.042	0.05	0.01	0.105	1.49	23.8	23.45	24.239	24.229	24.281	25.073	0.792	F1/B04
10%	F2/B04	85	0.9	0.64	10	168	0.072	0.062	29	5	207	0.067	0.058	34	30	2.221	0.038	0.02	1.52	3	F1-6x9 on-grade 50% Blockage	10	20	LOST	5.19	206	0.144	62	8.131	1.35	375	0.56	2.13	0.21	1	T1	0.016	0.92	0.015		0.015	0.13	0.01	0.142	1.62	23.43	23.32	24.214	24.203	24.229	24.733	0.505	F2/B04
10%	3/B04	0																			MH1050				5.26	205	0.144	62	8.414	2.14	375	0.56	2.42	0	1	T3/T6	0.016	1.5	0.024	1.67	0.027	0.13	0.011	0.126	1.91	23.3	23.12	24.179	24.169	24.206	24.653	0.447	3/B04
10%	G1/B05	85	0.9	0.64	10	168	0.232	0.198	93	5	207	0.214	0.187	108	121	2.908	0.091	0.09	1.65	3.04	GULLY MK-S	100	20	G1/B21	5	207	0.187	100	9.948	2.11	375	0.91	2.84	1		G2	0.042	4.15	0.175		0.175	0.33	0.033	0.164	2.17	23.31	23.1	24.201	24.169	24.376	24.655	0.279	G1/B05
10%	G1/B06	85	0.9	0.64	10	168	0.084	0.072	33	5	207	0.077	0.068	39	50	2.461	0.079	0.05	0.86	3	GULLY MK-M	50	0	G1/B10	5	207	0.068	50	2.405	3.33	375	0.46	2.68	1		G2	0.011	4.51	0.048		0.048	0.08	0.002	0.101	2.11	21.8	21.72	22.755	22.753	22.803	23.196	0.393	G1/B06
10%	G1/B07	85	0.9	0.64	10	168	0.136	0.116	54	5	207	0.125	0.11	63	63		0.046		0.92	2.63	SAG MK-S	63	0	G1/B10	5	207	0.11	63	6.39	2.82	450	0.4	2.23	1		G2	0.008	6.02	0.048		0.048	0.05	0.003	0.11	2.08	21.8	21.62	22.757	22.753	22.805	23.19	0.386	G1/B07
10%	G1/B08	85	0.9	0.64	10	168	0.285	0.244	114	5	207	0.263	0.23	132	132	3.345	0.104	0.09	0.91	3	GULLY MK-S	109	23	G2/B08	5	207	0.23	109	26.5	1.66	375	0.99	1.77	1		G1	0.05	5.79	0.29		0.29	0.28	0.102	0.184	2.03	22.36	21.92	22.639	22.565	22.929	23.714	0.785	G1/B08
10%	G2/B08	85	0.9	0.64	10	168	0.1	0.086	40	5	207	0.093	0.081	47	70	2.304	0.075	0.07	1.86	3	GULLY MK-S	70	0	G1/B11	5.22	205	0.312	178	6.938	4.32	375	1.61	1.87	0.39	1	T6/T9	0.132	2.17	0.288	2.45	0.325	1.03	0.071	0.185	3.28	21.9	21.6	22.278	22.207	22.603	23.316	0.713	G2/B08
10%	G1/B09	85	0.9	0.64	10	168	0.204	0.175	82	5	207	0.189	0.165	95	95	3.223	0.1	0.07	0.6	3	GULLY MK-S	89	6	G2/B09	5	207	0.165	89	19.63	1.38	375	0.81	1.59	1		G1	0.033	6.61	0.22		0.22	1.15	0.258	0.173	1.8	22.54	22.27	22.759	22.532	22.979	23.784	0.805	G1/B09
10%	G2/B09	85	0.9	0.64	10	168	0.016	0.014	6	5	207	0.015	0.013	7	13	1.257	0.046	0.03	1.35	3	GULLY MK-S	13	0	G1/B07	5.18	206	0.178	102	18.874	3.44	375	0.92	1.14	0.13	1	T1/T3	0.043	1.1	0.048	1.24	0.054	1.47	0.335	0.144	2.61	22.25	21.6	22.485	22.207	22.538	23.588	1.049	G2/B09
10%	G1/B10	85	0.9	0.64	10	168	0.09	0.078	36	5	207	0.084	0.073	42	42		0.031		0.6	1.77	SAG MK-S	42	0	G1/B15	5	207	0.073	42	2.522	1.19	375	0.38	1.19	1		G2	0.007	9.7	0.072		0.072	-0.61	0.012	0.12	1.39	21.21	21.18	21.358	21.373	21.43	22.554	1.124	G1/B10
10%	G1/B11	85	0.9	0.64	10	168	0.112	0.096	45	5	207	0.103	0.09	52	52	2.522	0.081	0.05	0.79	3	GULLY MK-M	52	0	G1/B15	5	207	0.09	52	6.74	1.48	375	0.47	1.29	1		G2	0.011	9.7	0.109		0.109	0.17	0.053	0.126	1.59	21.22	21.12	21.385	21.373	21.494	22.56	1.066	G1/B11
10%	G1/B12	85	0.9	0.64	10	168	0.093	0.08	37	5	207	0.086	0.075	43	43	2.32	0.075	0.04	0.69	3	GULLY MK-S	43	0	G1/B14	5	207	0.075	43	8.595	0.7	375	0.39	2.84	1		G2	0.008	4.16	0.032		0.032	0.06	0.005	0.14	1.15	20.76	20.7	21.792	21.787	21.824	22.1	0.276	G1/B12
10%	G1/B13	85	0.9	0.64	10	168	0.054	0.046	22	5	207	0.05	0.044	25	38		0.029		0.1	3	SAG MK-S	38	0	G1/B14	5	207	0.044	38	6.524	1.53	375	0.34	2.38	1		G2	0.006	5.4	0.033		0.033	0.05	0.003	0.106	1.48	20.6	20.5	21.46	21.457	21.493	21.942	0.45	G1/B13
10%	G1/B14	85	0.9	0.64	10	168	0.047	0.04	19	5	207	0.043	0.038	22	22		0.009		0.1	3	SAG BK-S	22	0	LOST	5	207	0.038	22	3.409	2.05	375	0.2	2.39	1		G2	0.002	5.34	0.011		0.011	0.02	0.001	0.075	1.4	20.57	20.5	21.457	21.457	21.468	21.943	0.475	G1/B14
10%	G1/B15	85	0.9	0.64	10	168	0.072	0.062	29	5	207	0.067	0.059	34	34	2.131	0.07	0.04	0.75	2.98	GULLY MK-S	34	0	G1/B13	5	207	0.059	34	6.812	1.91	375	0.3	1.21	1		G2	0.005	9.7	0.046		0.046	0.04	0.003	0.094	1.54	20.78	20.65	21.187	21.184	21.233	22.126	0.893	G1/B15
10%	G1/B16	85	0.9	0.64	10	168	0.038	0.033	15	5	207	0.035	0.031	18	18	1.509	0.076	0.03	0.76	3.01	GULLY BK-S	18	0	G1/B14	5	207	0.031	18	2.574	2.72	375	0.16	1.14	1		G2	0.001	9.7	0.013		0.013	0.01	0	0.063	1.45	20.77	20.7	21.185	21.184	21.197	22.138	0.941	G1/B16
10%	G1/B17	85	0.9	0.64	10	168	0.119	0.102	48	5	207	0.11	0.096	55	55	2.016	0.067	0.06	2.34	3	GULLY MK-S	55	0	G1/B07	5	207	0.096	55	12.05	2.36	375	0.5	2.05	1		G2	0.013	6.81	0.088		0.088	0.1	0.012	0.115	1.92	22.458	22.173	23.137	23.125	23.225	23.798	0.573	G1/B17
10%	G1/B18	85	0.9	0.64	10	168	0.212	0.182	85	5	207	0.196	0.172	99	99	2.519	0.081	0.09	2.34	3	GULLY MK-S	87	11	G1/B06	5	207	0.172	87	2.496	2.11	375	0.79	2.74	1		G2	0.032	4.38	0.139		0.139	0.25	0.006	0.151	2.09	22.244	22.191	23.132	23.125	23.271	23.578	0.308	G1/B18
10%	F1/B19	0					0	0	0			0	0	0	780		0.15				RSIP-9x9	174	606	F1/B20	1	286	0	174	6.151	1.63	450	1.09	1.78	1		G1	0.061	5.76	0.352		0.352	2.83	0.041	0.219	2.26	18.2	18.1	18.493	18.319	18.845	20	1.155	F1/B19
10%	OUT/B19																				HW outlet																											18.319	18.7		OUT/B19
10%	F1/B20	0					0	0	0			0	0	0	1386		0.15				RSIP-9x9	174	1212	LOST	1	286	0	174	6.151	1.63	450	1.09	1.78	1		G1	0.061	5.76	0.352		0.352	2.83	0.041	0.219	2.26	18.2	18.1	18.493	18.319	18.845	20	1.155	F1/B20
10%	OUT/B20																				HW outlet																											18.319	18.7		OUT/B20
10%	G1/B21	85	0.9	0.64	10	168	0.017	0.015	7	5	207	0.016	0.014	8	28	1.625	0.056	0.04	1.85	3.13	GULLY MK-S	28	0	G1/B18	5	207	0.014	28	2.428	11.53	375	0.26	1.67	1		G2	0.003	8.77	0.03		0.03	0.03	0.001	0.056	2.77	23.2	22.92	23.798	23.797	23.827	24.346	0.519	G1/B21
10%	G1/C1	85	0.9	0.64	10	168	0.052	0.044	21	5	207	0.048	0.042	24	24	0.981	0.064	0.07	4.87	3.38	GULLY MK-S	24	0	G2/C2	5	207	0.042	24	24.505	6.33	375	0.22	1.05	1		G1	0.002	7	0.017		0.017	6.53	1.408	0.06	2.14	22.45	20.9	22.561	20.96	22.578	23.766	1.189	G1/C1
10%	2/C1	0																			MH1350				5.27	205	0.141	80	19.143	1.04	375	0.73	1.2	0	1	T9/T10	0.027	2.32	0.063	2.73	0.074	1.21	0.188	0.176	1.58	19.8	19.6	20.007	19.776	20.081	22.742	2.661	2/C1
10%	OUT/C1																				HW outlet																											19.776	20.15		OUT/C1
10%	1/C2	0																			PC				1	286	0	0	7.39	0.5	375	0					0	2	0		0	0	0	0	0	19.967	19.93	20.102	20.102	20.102	22.544	2.442	1/C2
10%	G2/C2	85	0.9	0.64	10	168	0.058	0.05	23	5	207	0.054	0.047	27	27	1.158	0.065	0.07	4.82	3.03	GULLY BK-S	27	0	G1/F1	5	207	0.047	27	18.062	0.5	375	0.24	1.08	1		G2	0.003	9.7	0.03		0.03	0.01	0.014	0.119	0.9	19.91	19.82	20.072	20.07	20.102	21.85	1.747	G2/C2
10%	G1/C3	85	0.9	0.64	10	168	0.064	0.055	26	5	207	0.06	0.052	30	30	1.197	0.066	0.08	5.17	2.97	GULLY BK-S	30	0	G1/F3	5	207	0.052	30	16.147	1.86	375	0.27	1.07	1		G1	0.004	7	0.026		0.026	2.07	0.268	0.09	1.48	20.5	20.2	20.624	20.29	20.65	21.85	1.199	G1/C3
10%	1/G1	85	0.9	0.64	10	168	0.089	0.076	35	5	207	0.082	0.072	41	41				5	207	MH	41	0		5	207	0.072	41	24	0.5	375	0.37	1.13	1		G1	0.007	7	0.05		0.05	0.03	0.019	0.149	1.01	20.271	20.151	20.486	20.479	20.536	21.332	0.796	1/G1
10%	2/G1	85	0.9	0.64	10	168	0.075	0.064	30	5	207	0.069	0.061	35	35				5.36	204	MH	35	0		5.36	204	0.133	75	25	0.5	375	0.68	1.12	0.46	1	T1	0.024	1.93	0.046		0.046	0.14	0.043	0.211	1.18	20.131	20.006	20.433	20.399	20.479	21.557	1.077	2/G1
10%	3/G1	85	0.9	0.64	10	168	0.075	0.064	30	5	207	0.069	0.061	35	35				5.73	201	MH	35	0		5.73	201	0.194	108	25	0.5	375	0.98	1.2	0.32	1	T1	0.049	1.51	0.074		0.074	0.33	0.087	0.272	1.27	19.986	19.861	20.325	20.243	20.399	21.367	0.968	3/G1
10%	4/G1	85	0.9	0.64	10	168	0.075	0.064	30	5	207	0.069	0.061	35	35				6.1	198	MH	35	0		6.1	198	0.255	141	25	0.5	450	0.89	1.07	0.24	0.83	T1	0.04	0.78	0.031		0.031	0.17	0.055	0.277	1.37	19.841	19.716	20.212	20.168	20.243	21.152	0.909	4/G1
10%	5/G1	85	0.9	0.64	10	168	0.081	0.069	32	5	207	0.075	0.065	38	38				6.43	196	MH	38	0		6.43	196	0.322	175	8.171	0.53	450	1.1	1.15	0.21	1	T1	0.062	1.12	0.069		0.069	0.27	0.027	0.316	1.47	19.696	19.652	20.099	20.077	20.168	20.938	0.77	5/G1
10%	6/G1	0																			MH1050				6.53	195	0.322	174	26.475	0.5	450	1.1	1.32	0	1	T3/T6	0.061	1.98	0.121	2.31	0.142	0.61	0.137	0.323	1.43	19.632	19.5	19.955	19.794	20.097	20.874	0.776	6/G1
10%	OUT/G1																				HW outlet																											19.794	20.15		OUT/G1
10%	F1/G2	0					0	0	0			0	0	0	174		0.15				RSIP-6x6	116	58	LOST	1	286	0	116	8.365	1.55	450	0.73	1.42	1		G1	0.027	7	0.19		0.19	2.28	0.081	0.177	2	18	17.87	18.237	18.047	18.427	20	1.573	F1/G2
10%	OUT/G2																				HW outlet																											18.047	18.516		OUT/G2

STORMWATER DRAINAGE CALCULATIONS - MINOR 10% AEP

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON

	LOCATION	CATCHMENT PROPERTIES			FULL AREA RUNOFF					PART AREA RUNOFF					INLET DESIGN										DRAIN DESIGN								HEADLOSSES								PART FULL		DESIGN LEVELS									
		fi	Ci	Cp	tc	I	A	CA	Q	tc	I	A	CA	Q	Qa							Qg	Qb		tc	I	CA	Qp	L	S		Vf	S/Do	Qg/Qo	Du/Do		Vf2/2g	Ku	hu	Kw	hw	Sf	hf	dn	Vn									
DESIGN ARI	STRUCTURE No.	FRACTION IMPERVIOUS	COEFFICIENT OF RUNOFF IMPERVIOUS AREA	COEFFICIENT OF RUNOFF PERVIOUS AREA	TIME OF CONCENTRATION	RAINFALL INTENSITY	SUB-CATCHMENT AREA	EQUIVALENT IMPERVIOUS AREA	SUB-CATCHMENT DISCHARGE	TIME OF CONCENTRATION	RAINFALL INTENSITY	PARTIAL CATCHMENT AREA	EQUIVALENT IMPERVIOUS AREA	SUB-CATCHMENT DISCHARGE	FLOW IN K&C(INC. BYPASS)	FLOW WIDTH	FLOW DEPTH	FLOW DxV	ROAD GRADE AT INLET	ROAD XFALL AT INLET	INLET TYPE	FLOW INTO INLET	BYPASS FLOW	BYPASS STRUCTURE No.	CRITICAL TIME OF CONC.	RAINFALL INTENSITY	TOTAL (C x A)	PIPE FLOW	REACH LENGTH	PIPE GRADE	PIPE SIZE	FULL PIPE VELOCITY	SUBMERGENCE RATIO	GRATE FLOW RATIO	DIAMETER RATIO	CHART(S) USED	VELOCITY HEAD	U/S HEAD LOSS COEFFICIENT	U/S HEAD LOSS	W.S.E COEFFICIENT	CHANGE IN W.S.E	PIPE FRICTION SLOPE	PIPE FRICTION HEAD LOSS	NORMAL DEPTH	NORMAL DEPTH VEL.	PIPE U/S I.L	PIPE D/S I.L	PIPE U/S H.G.L	PIPE D/S H.G.L	W.S.E	GRATE LEVEL	FREEBOARD	STRUCTURE No.
Yrs					min	mm/h	ha	ha	L/s	min	mm/h	ha	ha	L/s	L/s	m	m		%	%		L/s	L/s		min	mm/hr	ha	L/s	m	%	mm	m/s					m	m	m	m	m	%	m	m	m/s	m	m	m	m	m	m	m	
1%	G1/B01	85	1	0.77	10	294	0.058	0.056	45	5	370	0.053	0.052	54	54	1.637	0.085	0.09	3.49	3	GULLY MK-S	52	2	G1/C1	5	370	0.052	52	16.919	1.48	375	0.47	1.29	1		G2	0.011	9.7	0.108		0.108	1.71	0.222	0.126	1.59	23.42	23.17	23.584	23.296	23.692	24.769	1.077	G1/B01
1%	G2/B01	85	1	0.77	10	294	0.045	0.044	36	5	370	0.042	0.041	42	42	1.521	0.076	0.08	3.91	3	GULLY MK-S	42	0	G3/B01	5.15	367	0.094	93	55.46	0.69	375	0.85	1.26	0.45	1	T10	0.036	2.28	0.083	2.66	0.097	0.27	0.154	0.219	1.4	22.4	22.02	22.729	22.58	22.826	24.821	1.995	G2/B01
1%	G3/B01	85	1	0.77	10	294	0.122	0.118	96	5	370	0.113	0.111	114	114	2.146	0.107	0.14	2.42	2.9	GULLY MK-S	96	18	G1/B10	5.85	357	0.206	184	18.107	2.1	375	1.67	1.86	0.51	1	G2/T3/T6	0.142	1.88	0.267	2.28	0.324	1.91	0.372	0.237	2.51	22	21.62	22.314	21.967	22.637	23.694	1.057	G3/B01
1%	G4/B01	85	1	0.77	10	294	0.035	0.034	28	5	370	0.032	0.032	33	33	1.227	0.07	0.08	4.54	2.64	GULLY MK-S	33	0	G1/B16	5.98	355	0.238	215	10.594	4.72	450	1.35	1.1	0.15	0.83	T1/T3	0.093	0.44	0.041	0.48	0.044	6.08	0.158	0.183	3.54	21.6	21.1	21.927	21.283	21.971	23.17	1.199	G4/B01
1%	5/B01	0																			MH1500				6.23	351	3.057	1886	9.946	1.01	900	2.96	1.88	0	1	T3/T6	0.419	1.65	0.691	1.89	0.793	1.12	0.1	0.774	3.24	19.6	19.5	20.385	20.274	21.178	22.621	1.443	5/B01
1%	OUT/B01																				HW outlet																												20.274	20.4		OUT/B01
1%	G1/B02	85	1	0.77	10	294	0.228	0.22	180	5	370	0.211	0.207	213	213	4.496	0.119	0.12	1.21	3	GULLY MK-S	52	161	G1/B05	5	370	0.207	52	9.346	1.07	375	0.47	3.58	1		G2	0.011	3.18	0.035		0.035	0.09	0.008	0.137	1.42	24.12	24.02	25.427	25.418	25.462	25.464	0.002	G1/B02
1%	G2/B02	85	1	0.77	10	294	0.245	0.236	193	5	370	0.226	0.222	228	228	4.745	0.123	0.12	1.19	3	GULLY MK-S	121	107	G3/B02	5.09	368	0.429	171	43.844	1.44	375	1.55	3.79	0.7	1	G1/T9	0.123	2.02	0.249	2.04	0.251	0.96	0.419	0.257	2.12	24	23.37	25.169	24.75	25.42	25.422	0.002	G2/B02
1%	G3/B02	85	1	0.77	10	294	0.077	0.075	61	5	370	0.072	0.07	72	179	3.259	0.101	0.12	1.97	3	GULLY MK-S	100	79	G1/B17	5.48	362	0.5	264	13.145	1.6	450	1.66	3.16	0.37	0.83	T1/T3	0.14	0.88	0.124	0.89	0.126	0.86	0.112	0.286	2.47	23.33	23.12	24.627	24.514	24.752	24.757	0.005	G3/B02
1%	4/B02	0																			MH1050				5.58	361	0.874	429	6.614	2.72	525	1.98	2.91	0	1	T6/T9	0.112	1.73	0.194	1.88	0.21	0.55	0.037	0.294	3.43	23	22.82	24.32	24.284	24.53	24.53	0	4/B02
1%	5/B02	0																			MH1050				5.61	360	0.89	472	33.954	2.59	525	2.18	2.89	0	1	T3/T6	0.243	1.38	0.336	1.53	0.371	1.21	0.409	0.318	3.44	22.8	21.92	23.948	23.539	24.319	24.391	0.072	5/B02
1%	6/B02	0																			MH1350				5.79	358	1.193	622	19.956	2.41	600	2.2	2.78	0	1	T1/T3	0.247	0.73	0.18	0.84	0.208	1.03	0.205	0.354	3.59	21.9	21.42	23.359	23.154	23.567	23.611	0.044	6/B02
1%	7/B02	0																			MH1050				5.79	358	1.389	670	12.185	2.3	600	2.37	2.98	0	1	T1/T3	0.203	0.87	0.176	1.05	0.213	0.84	0.103	0.377	3.58	21.4	21.12	22.978	22.875	23.19	23.244	0.054	7/B02
1%	8/B02	0																			MH1200				5.85	357	1.943	989	43.12	1.35	750	2.24	2.44	0	1	T6/T9	0.255	1.92	0.49	2.13	0.545	0.79	0.34	0.492	3.22	21.1	20.52	22.385	22.045	22.929	23.315	0.386	8/B02
1%	9/B02	0																			MH1200				6.1	353	2.128	1316	24.66	1.62	750	2.98	2.17	0	1	T1/T3	0.453	1.38	0.625	1.57	0.711	1.4	0.344	0.571	3.64	20.5	20.1	21.42	21.075	22.13	22.603	0.473	9/B02
1%	G1/B03	85	1	0.77	10	294	0.243	0.235	192	5	370	0.225	0.221	227	227	5.492	0.134	0.1	0.69	3	GULLY MK-S	116	111	G2/B03	5	370	0.221	116	56.493	0.62	375	1.05	3.17	1		G1	0.056	3.03	0.17		0.17	0.44	0.246	0.263	1.4	21.1	20.75	22.119	21.873	22.289	22.49	0.201	G1/B03
1%	G2/B03	85	1	0.77	10	294	0.234	0.226	185	5	370	0.217	0.213	218	329	6.104	0.149	0.13	0.69	3	GULLY MK-S	58	272	G1/B13	5.75	358	0.52	174	16.413	0.94	525	0.8	2.29	0.31	1	T1/T3	0.033	1.42	0.047	1.61	0.053	0.16	0.027	0.236	1.84	20.675	20.52	21.826	21.799	21.879	22.1	0.221	G2/B03
1%	3/B03	0																			MH1050				5.89	356	0.52	170	13.134	0.91	525	0.79	2.48	0	1	T6/T9	0.032	1.77	0.056	1.93	0.061	0.16	0.021	0.236	1.81	20.5	20.38	21.743	21.723	21.804	22.034	0.229	3/B03
1%	4/B03	0																			MH1200				6.01	354	0.613	188	35.941	0.67	525	0.87	2.6	0	1	T1/T3	0.038	0.56	0.022	0.63	0.024	0.19	0.068	0.273	1.65	20.36	20.12	21.701	21.632	21.725	22	0.275	4/B03
1%	5/B03	0																			MH1200				6.38	349	0.715	387	35.758	0.84	525	1.79	2.94	0	1	T6/T9	0.163	1.64	0.268	1.7	0.277	0.81	0.289	0.422	2.07	20.1	19.8	21.365	21.075	21.642	22.197	0.556	5/B03
1%	F1/B04	85	1	0.77	10	294	0.106	0.102	83	5	370	0.098	0.096	99	69	3.538	0.053	0.04	1.52	3	F1-6x9 on-grade 50% Blockage	17	52	F2/B04	5	370	0.096	47	22.297	1.57	375	0.42	2.31	1		G1	0.009	4.16	0.038		0.038	0.07	0.016	0.117	1.58	23.8	23.45	24.627	24.611	24.665	25.073	0.408	F1/B04
1%	F2/B04	85	1	0.77	10	294	0.072	0.07	57	5	370	0.067	0.065	67	104	3.069	0.064	0.06	1.52	3	F1-6x9 on-grade 50% Blockage	21	83	LOST	5.19	367	0.162	81	8.131	1.35	375	0.74	3.15	0.31	1	T1	0.028	0.98	0.027		0.027	0.22	0.018	0.165	1.74	23.43	23.32	24.584	24.566	24.611	24.733	0.122	F2/B04
1%	3/B04	0																			MH1050				5.26	366	0.162	81	8.414	2.14	375	0.73	3.39	0	1	T3/T6	0.027	1.25	0.034	1.41	0.039	0.21	0.018	0.145	2.06	23.3	23.12	24.532	24.514	24.571	24.653	0.083	3/B04
1%	G1/B05	85	1	0.77	10	294	0.232	0.223	182	5	370	0.214	0.21	216	377	5.595	0.136	0.17	1.65	3.04	GULLY MK-S	91	285	G1/B21	5	370	0.21	91	9.948	2.11	375	0.83	3.58	1		G2	0.035	3.18	0.111		0.111	0.27	0.027	0.155	2.12	23.31	23.1	24.541	24.514	24.652	24.655	0.003	G1/B05
1%	G1/B06	85	1	0.77	10	294	0.084	0.081	66	5	370	0.077	0.076	78	488	6.854	0.168	0.16	0.86	3	GULLY MK-M	30	458	G1/B10	5	370	0.076	30	2.405	3.33	375	0.27	3.64	1		G2	0.004	3.1	0.012		0.012	0.03	0.001	0.078	1.82	21.8	21.72	23.155	23.154	23.166	23.196	0.029	G1/B06
1%	G1/B07	85	1	0.77	10	294	0.136	0.131	107	5	370	0.125	0.123	126	206		0.13		0.92	2.63	SAG MK-S	28	178	G1/B10	5	370	0.123	28	6.39	2.82	450	0.17	3.02	1		G2	0.002	3.77	0.006		0.006	0.01	0.001	0.073	1.64	21.8	21.62	23.155	23.154	23.16	23.19	0.03	G1/B07
1%	G1/B08	85	1	0.77	10	294	0.285	0.275	224	5	370	0.263	0.258	265	265	5.483	0.134	0.12	0.91	3	GULLY MK-S	142	123	G2/B08	5	370	0.258	142	26.5	1.66	375	1.29	3.05	1		G1	0.084	3.12	0.263		0.263	0.66	0.174	0.216	2.16	22.36	21.92	23.239	23.066	23.502	23.714	0.212	G1/B08
1%	G2/B08	85	1	0.77	10	294	0.1	0.097	79	5	370	0.093	0.091	94	217	3.882	0.111	0.13	1.86	3	GULLY MK-S	0	217	G1/B11	5.22	366	0.35	139	6.938	4.32	375	1.26	3.16	0	1	T6/T9	0.081	1.82	0.147	2.08	0.168	0.63	0.044	0.161	3.08	21.9	21.6	22.918	22.875	23.087	23.316	0.229	G2/B08
1%	G1/B09	85	1	0.77	10	294	0.204	0.197	161	5	370	0.189	0.185	190	190	5.249	0.13	0.09	0.6	3	GULLY MK-S	108	82	G2/B09	5	370	0.185	108	19.63	1.38	375	0.98	2.73	1		G1	0.049	3.48	0.169		0.169	0.38	0.074	0.193	1.88	22.54	22.27	23.392	23.318	23.562	23.784	0.222	G1/B09
1%	G2/B09	85	1	0.77	10	294	0.016	0.015	13	5	370	0.015	0.015	15	97	2.759	0.087	0.08	1.35	3	GULLY MK-S	87	10	G1/B07	5.18	367	0.2	194	18.874	3.44	375	1.76	2.87	0.45	1	T1/T3	0.157	1.35	0.213	1.41	0.222	1.22	0.231	0.209	3.07	22.25	21.6	23.106	22.875	23.327	23.588	0.26	G2/B09
1%	G1/B10	85	1	0.77	10	294	0.09	0.087	71	5	370	0.084	0.082	84	738		0.13		0.6	1.77	SAG MK-S	177	562	G1/B15	5	370	0.082	177	2.522	1.19	375	1.6	3.45	1		G2	0.131	3.32	0.433		0.433	1.01	0.026	0.284	1.97	21.21	21.18	22.07	22.045	22.503	22.554	0.05	G1/B10
1%	G1/B11	85	1	0.77	10	294	0.112	0.108	88	5	370	0.103	0.101	104	321	6.118	0.149	0.13	0.79	3	GULLY MK-M	177	144	G1/B15	5	370	0.101	177	6.74	1.48	375	1.6	3.52	1		G2	0.131	3.24	0.425		0.425	1.02	0.069	0.261	2.16	21.22	21.12	22.113	22.045	22.539	22.56	0.021	G1/B11
1%	G1/B12	85	1	0.77	10	294	0.093	0.09	73	5	370	0.086	0.084	87	87	3.028	0.095	0.06	0.69	3	GULLY MK-S	14	73	G1/B14	5	370	0.084	14	8.595	0.7	375	0.13	2.98	1		G2	0.001	3.85	0.003		0.003	0.01	0.001	0.078	0.84	20.76	20.7	21.873	21.873	21.876	22.1	0.224	G1/B12
1%	G1/B13	85	1	0.77	10	294	0.054	0.052	42	5	370	0.05	0.049	50	917		0.15		0.1	3	SAG MK-S	9	907	G1/B14	5	370	0.049	9	6.524	1.53	375	0.09	3	1		G2	0	3.8	0.001		0.001	0	0	0.053	0.98	20.6	20.5	21.723	21.723	21.724	21.942	0.218	G1/B13
1%	G1/B14	85	1	0.77	10	294	0.047	0.045	37	5	370	0.043	0.043	44	1024		0.15		0.1	3	SAG BK-S	13	1011	LOST	5	370	0.043	13	3.409	2.05	375	0.12	3.08	1		G2	0.001	3.71	0.003		0.003	0.01	0	0.058	1.2	20.57	20.5	21.723	21.723	21.725	21.943	0.218	G1/B14
1%	G1/B15	85	1	0.77	10	294	0.072	0.07	57	5	370	0.067	0.066	67	773	8.02	0.197	0.21	0.75	2.98	GULLY MK-S	177	595	G1/B13	5	370	0.066	177	6.812	1.91	375	1.61	3.57	1		G2	0.131	3.18	0.418		0.418	1.02	0.07	0.238	2.39	20.78	20.65	21.702	21.632	22.12	22.126	0.006	G1/B15
1%	G1/B16	85	1	0.77	10	294	0.038	0.037	30	5	370	0.035	0.035	35	35	2.026	0.091	0.05	0.76	3.01	GULLY BK-S	35	0	G1/B14	5	370	0.035	35	2.574	2.72	375	0.32	2.38	1		G2	0.005	5.41	0.029		0.029	0.04	0.001	0.089	1.78	20.77	20.7	21.633	21.632	21.662	22.138	0.476	G1/B16
1%	G1/B17	85	1	0.77	10	294	0.119	0.115	94	5	370	0.11	0.108	111	190	3.235	0.101	0.13	2.34	3	GULLY MK-S	120	70	G1/B07	5	370	0.108	120	12.05	2.36	375	1.09	3.55	1		G2	0.06	3.21	0.193		0.193	0.47	0.056	0.175	2.37	22.458	22.173	23.595	23.539	23.788	23.798	0.01	G1/B17
1%	G1/B18	85	1	0.77	10	294	0.212	0.205	167	5	370	0.196	0.192	198	454	5.621	0.137	0.2	2.34	3	GULLY MK-S	44	410	G1/B06	5	370	0.192	44	2.496	2.11	375	0.4	3.53	1		G2	0.008	3.23	0.026		0.026	0.06	0.002	0.105	1.72	22.244	22.191	23.54	23.539	23.566	23.578	0.012	G1/B18
1%	F1/B19	0					0	0	0			0	0	0	1100		0.15				RSIP-9x9	174	926	F1/B20	1	506	0	174	6.151	1.63	450	1.09	1.78	1		G1	0.061	5.76	0.352		0.352	2.83	0.041	0.219	2.26	18.2	18.1	18.493	18.319	18.845	20	1.155	F1/B19
1%	OUT/B19																				HW outlet																												18.319	18.7		OUT/B19
1%	F1/B20	0					0	0	0			0	0	0	2026		0.15				RSIP-9x9	174	1852	LOST	1	506	0	174	6.151	1.63	450	1.09	1.78	1		G1	0.061	5.76	0.352		0.352	2.83	0.041	0.219	2.26	18.2	18.1	18.493	18.319	18.845	20	1.155	F1/B20
1%	OUT/B20																				HW outlet																												18.319	18.7		OUT/B20
1%	G1/B21	85	1	0.77	10	294	0.017	0.017	14	5	370	0.016	0.016	16	302	4.919	0.125	0.15	1.85	3.13	GULLY MK-S	45	256	G1/B18	5	370	0.016	45	2.428	11.53	375	0.41	2.98	1		G2	0.009	3.84	0.033		0.033	0.07	0.002	0.07	3.18	23.2	22.92	24.285	24.284	24.318	24.346	0.028	G1/B21
1%	G1/C1	85	1	0.77	10	294	0.052	0.05	41	5	370	0.048	0.047	48	50	1.409	0.078	0.1	4.87	3.38	GULLY MK-S	49	1	G2/C2	5	370	0.047	49	24.505	6.33	375	0.45	1.19	1		G1	0.01	7	0.072		0.072	6.64	1.331	0.085	2.64	22.45	20.9	22.611	20.985	22.682	23.766	1.084	G1/C1
1%	2/C1	0																			MH1350				5.27	366	0.158	154	19.143	1.04	375	1.4	1.7	0	1	T9/T10	0.1	2.2	0.219	2.63	0.263	1.15	0.196	0.268	1.83	19.8	19.6	20.09	19.868	20.352	22.742	2.39	2/C1
1%	OUT/C1																				HW outlet																												19.868	20.15		OUT/C1
1%	1/C2	0																			PC				1	506	0	0	7.39	0.5	375	0					0	2	0		0	0	0	0	0	19.967	19.93	20.434	20.434	20.434	22.544	2.111	1/C2
1%	G2/C2	85	1	0.77	10	294	0.058	0.056	46	5	370	0.054	0.053	54	55	1.603	0.078	0.1	4.82	3.03	GULLY BK-S	52	3	G1/F1	5	370	0.053	52	18.062	0.5	375	0.47	1.4	1		G2	0.011	9.7	0.109		0.109	0.09	0.016	0.169	1.07	19.91	19.82	20.324	20.309	20.434	21.85	1.416	G2/C2
1%	G1/C3	85	1	0.77	10	294	0.064	0.062	51	5	370	0.06	0.058	60	60	1.639	0.08	0.11	5.17	2.97	GULLY BK-S	55	5	G1/F3	5	370	0.058	55	16.147	1.86	375	0.5	1.23	1		G1	0.013	7	0.088		0.088	2.15	0.255	0.122	1.75	20.5	20.2	20.67	20.322	20.757	21.85	1.092	G1/C3
1%	1/G1	85	1	0.77	10	294	0.089	0.086	70	5	370	0.082	0.081	83	83						MH	83	0		5	370	0.081	83	24	0.5	375	0.75	2.83	1		G1	0	3.35	0		0	0	0	0.224	1.2	20.271	20.151	21.332	21.332	21.332	21.332	0	1/G1
1%	2/G1	85	1	0.77	10	294	0.075	0.072	59	5	370	0.069	0.068	70	70						MH	70	0		5.36	364	0.149	151	25	0.5	375	1.36	3.2	0.46	1	T1	0	1.25	0		0	0	0	0.375	1.36	20.131	20.006	21.332	21.332	21.332	21.557	0.225	2/G1
1%	3/G1	85	1	0.77	10	294	0.075	0.072	59	5	370	0.069	0.068	70	70						MH	70	0		5.73	359	0.218	217	25	0.5	375	1.96	3.59	0.32	1	T1	0.062	0.97	0.06		0.06	0.48	0.12	0.375	1.96	19.986	19.861	21.272	21.152	21.332	21.367	0.035	3/G1
1%	4/G1	85	1	0.77	10	294	0.075	0.072	59	5	370	0.069	0.068	70	70						MH	70	0		6.1	353	0.287	281	25	0.5	450	1.77	2.91	0.24	0.83	T1	0.112	0.39	0.044		0.044	0.68	0.17	0.45	1.77	19.841	19.716	21.108	20.938	21.152	21.152	0	4/G1
1%	5/G1	85	1	0.77	10	294	0.081	0.078	64	5	370	0.075	0.073	75	75						MH	75	0		6.43	348	0.361	349	8.171	0.53	450	2.19	2.76	0.21	1	T1	0.176	0.81	0.143		0.143	1.07	0.088	0.45	2.19	19.696	19.652	20.795	20.708	20.938	20.938	0	5/G1
1%	6/G1	0																			MH1050				6.53	346	0.361	347	26.475	0.5	450	2.18	2.47	0	1	T3/T6	0.244	1.58	0.385	1.73	0.42	1.59	0.391	0.45	2.18	19.632	19.5	20.323	19.903	20.743	20.874	0.131	6/G1
1%	OUT/G1																				HW outlet																												19.903	20.15		OUT/G1
1%	F1/G2	0					0	0	0			0	0	0	174		0.15				RSIP-6x6	116	58	LOST	1	506	0	116	8.365	1.55	450	0.73	1.42	1		G1	0.027	7	0.19		0.19	2.28	0.081	0.177	2	18	17.87	18.237	18.047	18.427	20	1.573	F1/G2
1%	OUT/G2																				HW outlet																												18.047	18.516		OUT/G2

STORMWATER DRAINAGE CALCULATIONS - MAJOR 1% AEP

(INCLUDING 20% ABOVE STANDARD 1% AEP INTENTIES FOR CLIMATE CHANGE)

D

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT

DESIGN CHECK: CLR

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674

Ryan Ashworth

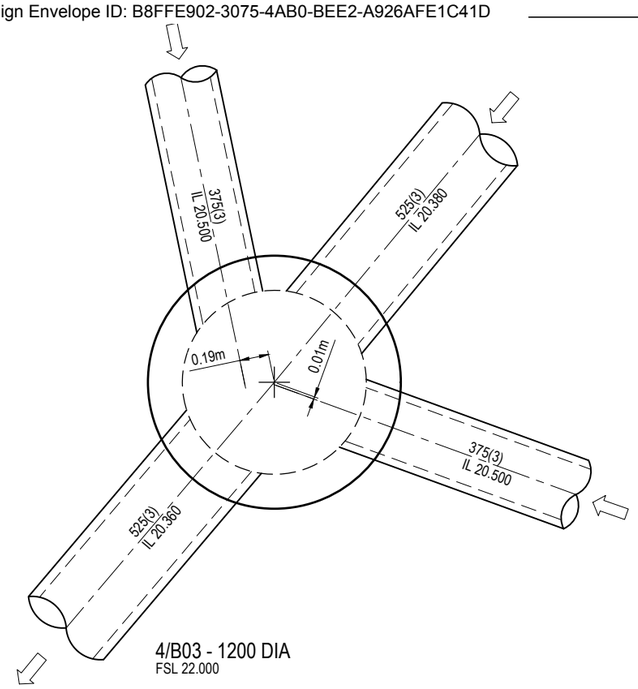
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE

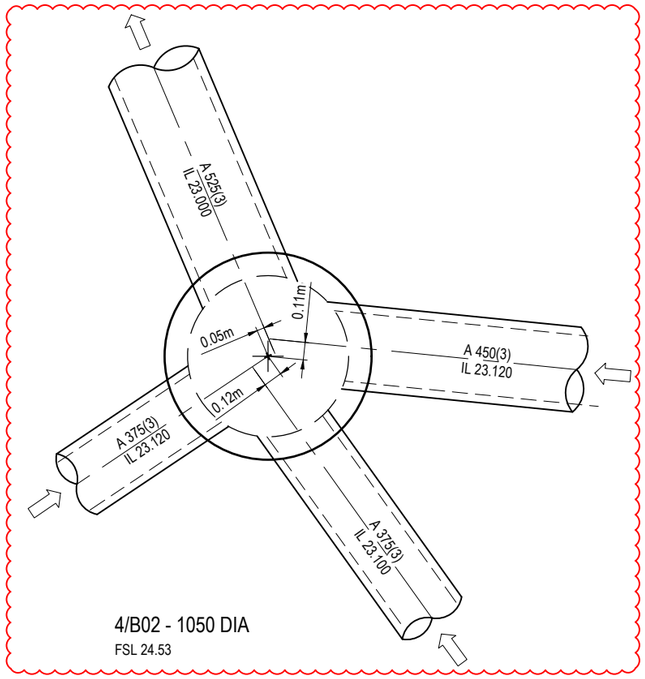
CLIENT: FOREVERLEN PTY LTD

LENNIUM GROUP

egis



4/B03 - 1200 DIA
FSL 22.000



4/B02 - 1050 DIA
FSL 24.53

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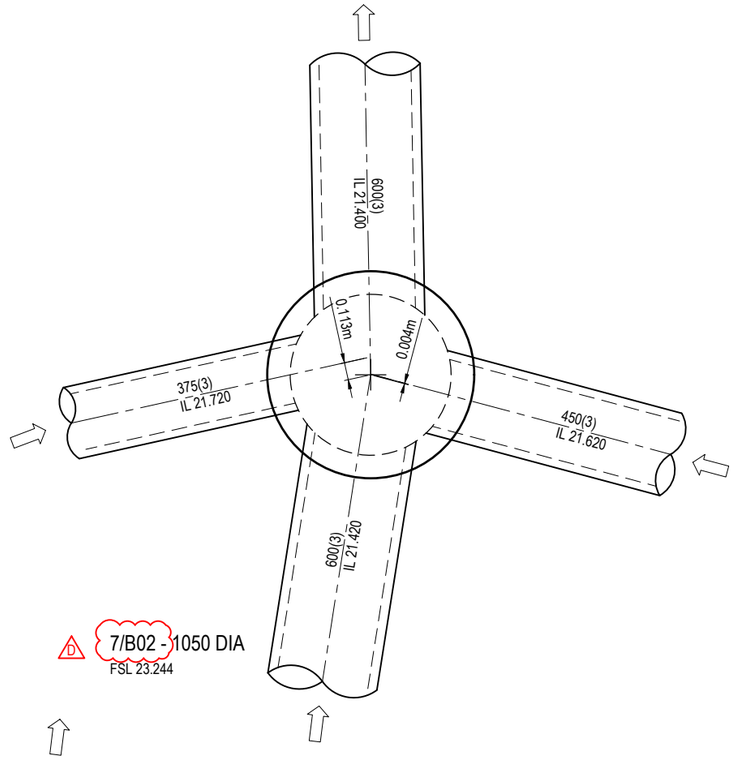

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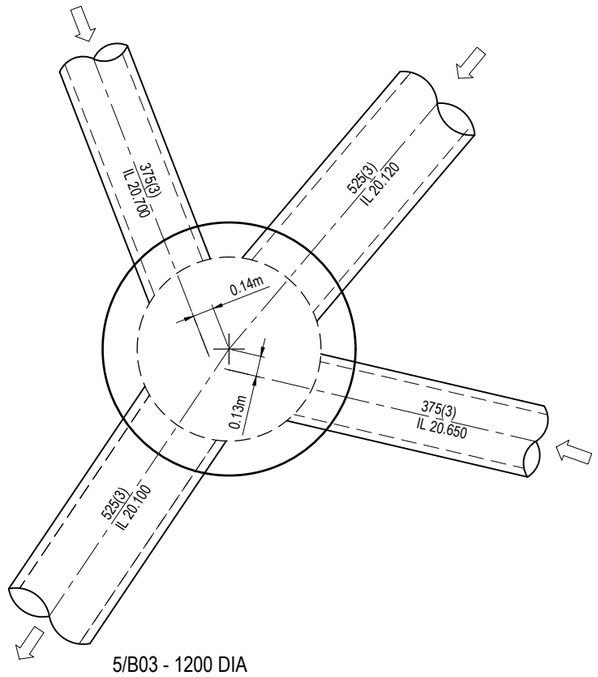

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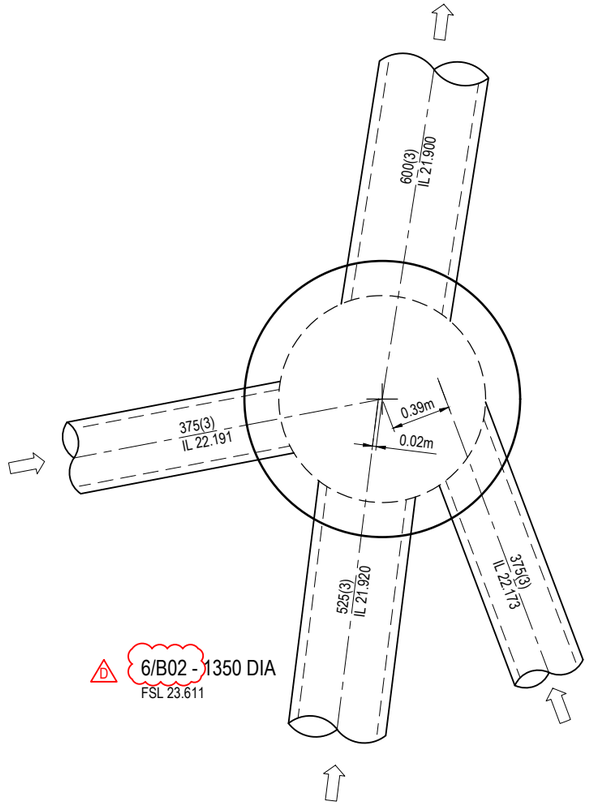


D 6/B02 - 1350 DIA
FSL 23.611

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:20 0.2 0 0.2 0.4 0.6 0.8 1m A1
1:40 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

egis

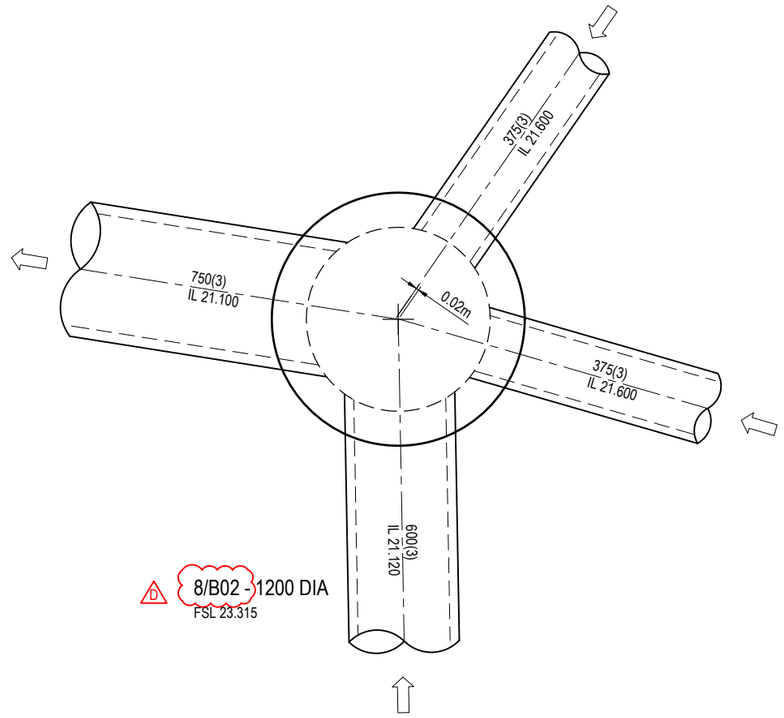
www.egis-group.com

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION, USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.

DRAWING TITLE
STORMWATER
STRUCTURES DETAILS
SHEET 1 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1440	D



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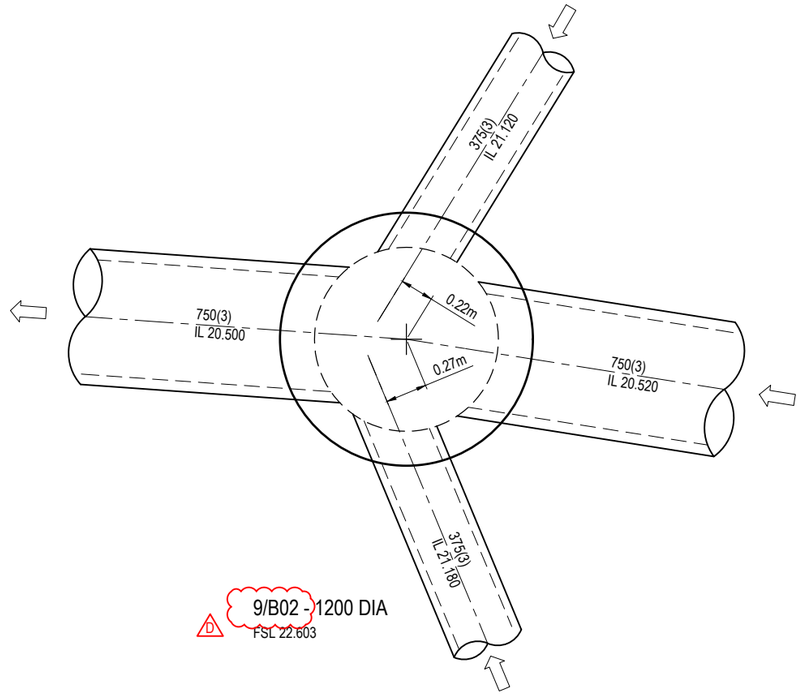
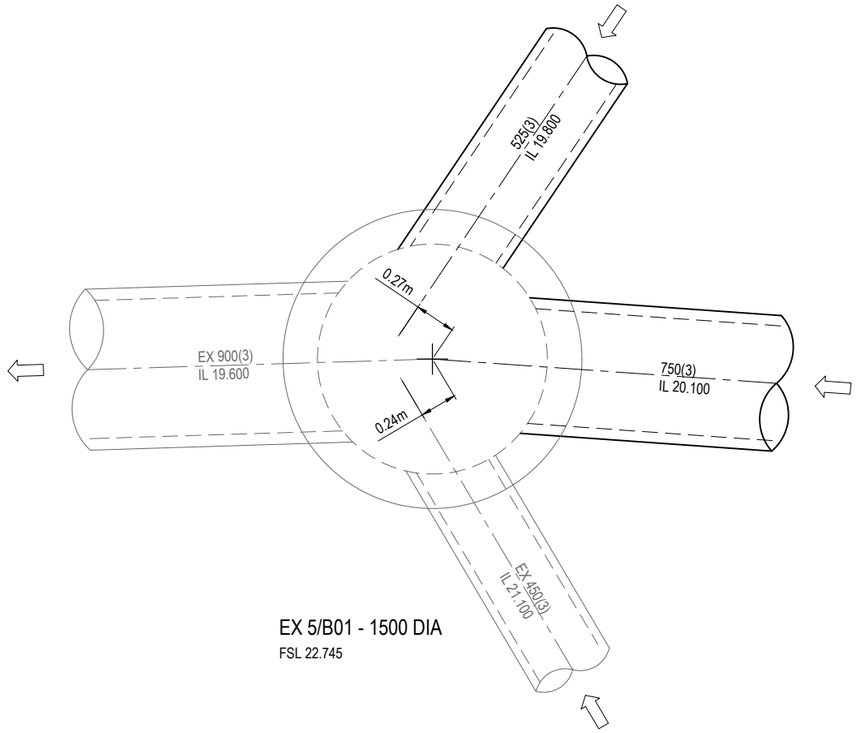
FSL 23.315



9/B02 - 1200 DIA
FSL 22.603



EX 5/B01 - 1500 DIA
FSL 22.745

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:20 0.2 0 0.2 0.4 0.6 0.8 1m A1
1:40 A3

CLIENT
FOREVERLEN PTY LTD
LENNIUM GROUP

PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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DRAWING TITLE
STORMWATER
STRUCTURES DETAILS
SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1441	D

CONCRETE OVERFLOW WEIR, REFER TYPICAL WEIR SECTIONS C & D ON DRG 22-000082_1A-1B_1701 & 1704 FOR DETAILS

BASIN FOREBAY AREA WITH 300mm HIGH NIB WALL

PROVIDE ENTRANCE BARRIER SINGLE SWING GATE FOR BIO-RETENTION BASIN ACCESS IN ACCORDANCE WITH IPWEA STD. DRG GS-047.

DRIVEWAY CROSS OVER, REFER IPWEAQ DRG No. RS-049.

3.5m WIDE CONCRETE DRIVEWAY BIO-BASIN ACCESS

BASE OF WEIR R.L.20.00

EXISTING 900Ø RCP

SCOUR ROCK PROTECTION 300mm WIDE SURROUNDING FOREBAY.100Ø ROCK SCOUR PROTECTION OVER GEOFABRIC TO PERIMETER OF FOREBAY

2/450Ø RCPs

2/900x900 TYPE 1 FIELD INLETS, REFER TO IPWEAQ STD DRG. DS-050.
I.L.18.200
S.L.19.800

BASIN RL 19.500

R:4.000
A:4.968

R:10.050
A:5.403

R:23.050
A:21.503

R:3.000
A:6.656

CLEANOUT POINT, REFER TO DRG 22-000082_1A-1B_1704 FOR CLEANOUT POINT DETAIL

BASIN FILTER MEDIA AREA

EXISTING 450Ø RCP

RL.20.15

RL.20.05

RL.20.00

ROAD 03

Install a forebay in accordance with DS-075 - CMB

LEGEND

- WORKS BOUNDARY
- STORMWATER DRAINAGE
- MAINTENANCE HOLE
- GULLY PIT
- OUTLET STRUCTURE
- FIELD INLET
- CONCRETE FOOTPATH
- PROPOSED KERB
- 66.0 — DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- EXISTING STORMWATER DRAINAGE
- EXISTING STORMWATER STRUCTURE
- PROPOSED SLEEPER RETAINING WALL
- PROPOSED BOULDER RETAINING WALL
- CONCRETE DRIVEWAY
- BIO-BASIN FOREBAY AREA
- BIO-RETENTION BASIN FILTER MEDIA
- SCOUR PROTECTION
- 100Ø SLOTTED AGI DRAIN, 0.5% MIN GRADE TO OUTLET PIT AS SHOWN.
- 150Ø UN-SLOTTED AGI DRAIN, 0.5% MIN GRADE TO OUTLET PIT AS SHOWN.
- C.O. CLEANOUT POINT
- 01 SETOUT POINT
- PROPOSED BATTERS
- PROPOSED WATER MAIN
- PROPOSED SEWERAGE RETICULATION
- PROPOSED TRUNK SEWER

BIO-RETENTION BASIN G1 DETAILS

PARAMETER	BASIN
FILTER SURFACE AREA (m^2)	350
FILTER SURFACE LEVEL (m)	19.50
TEMPORARY PONDING DEPTH (mm)	300
STORAGE VOLUME (m^3)	294
TOP OF EMBANKMENT (m)	20.15
EMERGENCY WEIR LEVEL (m)	20.00

BIO-BASIN G1 SETOUT TABLE

POINT ID	EASTING	NORTHING	LEVEL
1	90855.805	502070.318	19.500
2	90857.927	502065.382	19.500
3	90876.932	502073.667	19.500
4	90879.130	502078.532	19.500
5	90880.380	502086.493	19.500
6	90878.223	502086.427	19.500
7	90878.172	502088.075	19.500
8	90877.303	502090.675	19.500
9	90876.733	502091.485	19.500
10	90878.149	502092.481	19.500
11	90873.635	502091.347	19.500
12	90863.773	502079.716	19.500
13	90864.689	502078.940	19.500
14	90863.072	502077.033	19.500
15	90862.157	502077.809	19.500

BIO-BASIN G1 FOREBAY SETOUT TABLE

POINT ID	EASTING	NORTHING	LEVEL
F1	90881.657	502086.983	19.895
F2	90878.659	502086.890	19.500
F3	90878.620	502088.155	19.500
F4	90877.709	502090.881	19.500
F5	90877.360	502091.376	19.500
F6	90878.995	502092.528	19.642
F7	90881.011	502089.668	19.641
F8	90881.600	502088.832	19.808

NOTE:
REFER 22-000082-1A-1B-1704 FOR BIO-FILTRATION BASIN SUBSOIL DETAILS AND NOTES.

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
A	14.12.22	ISSUED FOR APPROVAL	IB	AA
B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:100 / 1:200 — 1 0 1 2 3 4 5m — A1 / A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

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PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

DISCLAIMER
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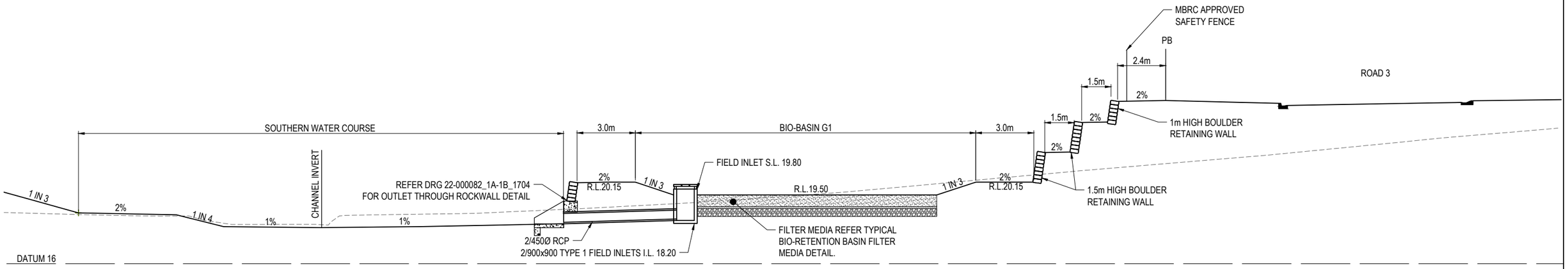
DRAWING TITLE: BIO-BASIN G1 LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1700	D

Moreton Bay Regional Council

Approved Subject to Conditions of Decision Notice DA/2023/3491

23/10/2023



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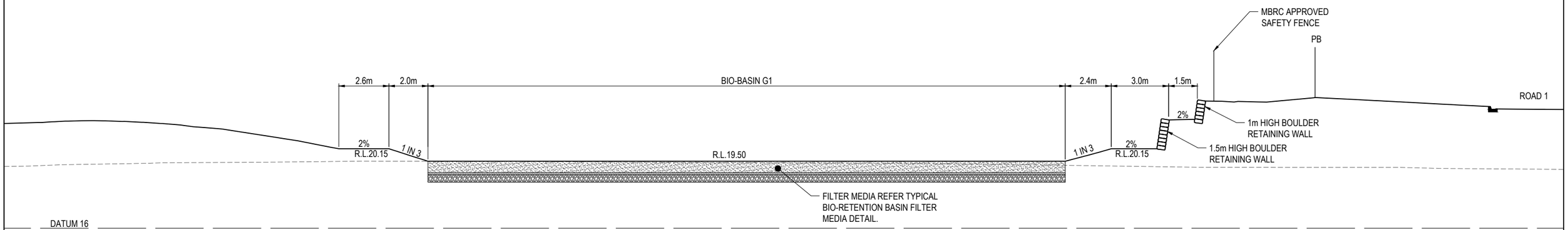

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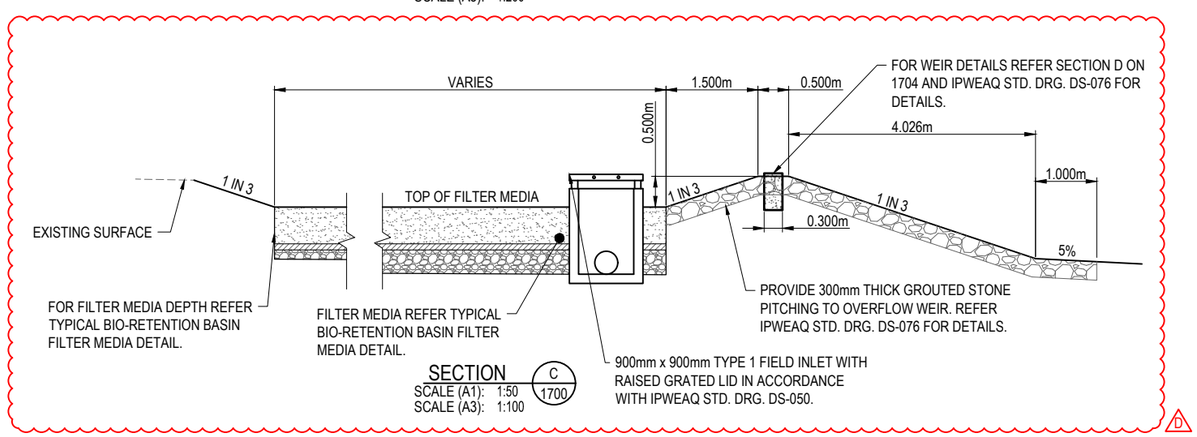

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REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	REVISED AS PER COUNCIL RFI	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED
RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE
1:50 1 0.5 0 1 2m A1
1:100 A3
1:100 1 0 1 2 3 4 5m A1
1:200 A3

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PROJECT
Lilywood LANDINGS
STAGES 1A & 1B

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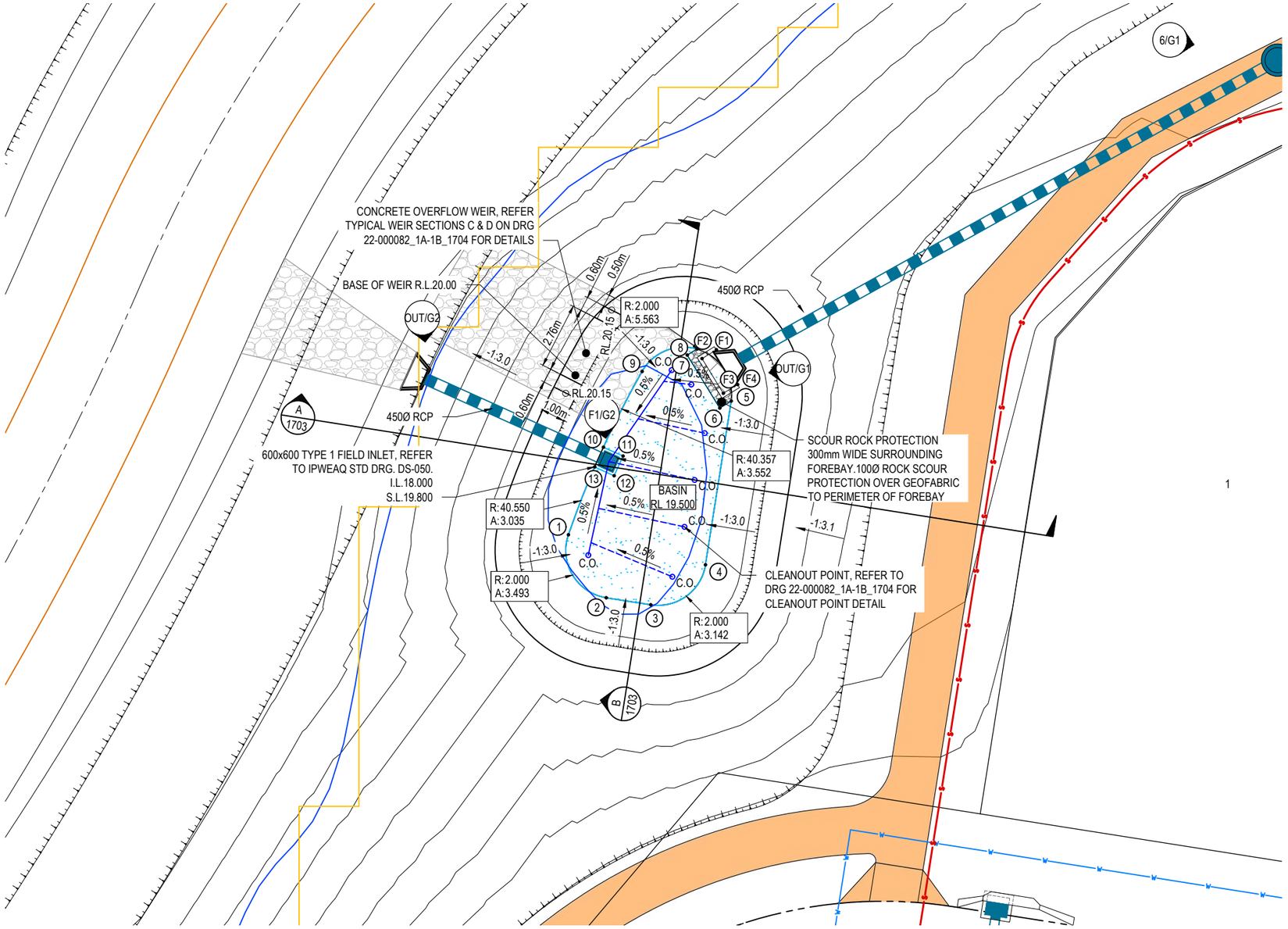
DRAWING TITLE
BIO-BASIN G1 SECTION PLAN

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1701	D

Moreton Bay Regional Council



LEGEND

- WORKS BOUNDARY
- STORMWATER DRAINAGE
- MAINTENANCE HOLE
- GULLY PIT
- OUTLET STRUCTURE
- FIELD INLET
- CONCRETE FOOTPATH
- PROPOSED KERB
- 66.0 — DESIGN SURFACE CONTOUR (0.50m INTERVALS)
- EXISTING STORMWATER DRAINAGE
- EXISTING STORMWATER STRUCTURE
- PROPOSED SLEEPER RETAINING WALL
- PROPOSED BOULDER RETAINING WALL
- CONCRETE DRIVEWAY
- BIO-BASIN FOREBAY AREA
- BIO-RETENTION BASIN FILTER MEDIA
- SCOUR PROTECTION
- 100Ø SLOTTED AGI DRAIN, 0.5% MIN GRADE TO OUTLET PIT AS SHOWN.
- 150Ø UN-SLOTTED AGI DRAIN, 0.5% MIN GRADE TO OUTLET PIT AS SHOWN.
- C.O. CLEANOUT POINT
- 01 SETOUT POINT
- PROPOSED BATTERS
- PROPOSED WATER MAIN

BIO-RETENTION BASIN G2 DETAILS

PARAMETER	BASIN
FILTER SURFACE AREA (m^2)	50
FILTER SURFACE LEVEL (m)	19.50
TEMPORARY PONDING DEPTH (mm)	300
STORAGE VOLUME (m^3)	54
TOP OF EMBANKMENT (m)	20.15
EMERGENCY WEIR LEVEL (m)	20.00

NOTE:
REFER 22-000082-1A-1B-1705 FOR BIO-FILTRATION BASIN SUBSOIL DETAILS AND NOTES.

BIO-BASIN G2 SETOUT TABLE

POINT ID	EASTING	NORTHING	LEVEL
1	90943.745	502178.830	19.500
2	90945.325	502176.203	19.500
3	90947.183	502175.911	19.500
4	90949.470	502177.575	19.500
5	90950.545	502184.409	0.000
6	90950.067	502184.115	19.500
7	90948.706	502186.330	19.500
8	90949.112	502186.580	19.502
9	90946.821	502185.645	19.500
10	90945.208	502182.482	19.500
11	90946.026	502182.113	19.500
12	90945.655	502181.292	19.500
13	90944.843	502181.660	19.500

BIO-BASIN G2 FOREBAY SETOUT TABLE

POINT ID	EASTING	NORTHING	LEVEL
F1	90949.921	502186.549	19.612
F2	90949.325	502186.182	19.500
F3	90950.215	502184.734	19.500
F4	90950.811	502185.100	19.600

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C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

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APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:100 / 1:200 — 1 0 1 2 3 4 5m — A1 / A3

CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP

PROJECT: Lilywood LANDINGS — STAGES 1A & 1B

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DRAWING TITLE: BIO-BASIN G2 LAYOUT PLAN

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1702	D

Moreton Bay Regional Council

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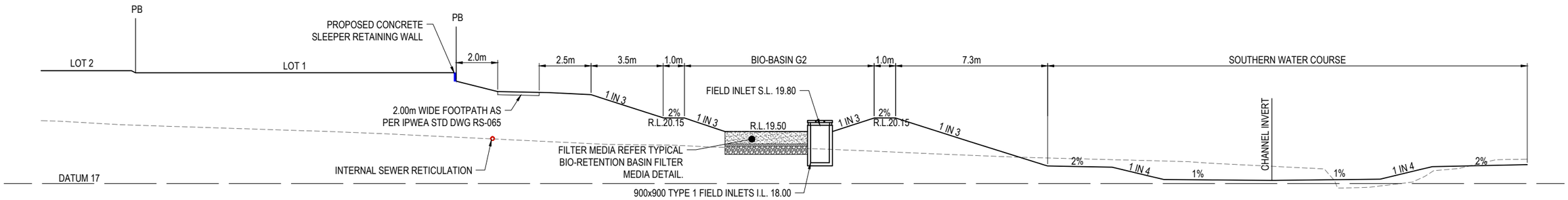
23/10/2023



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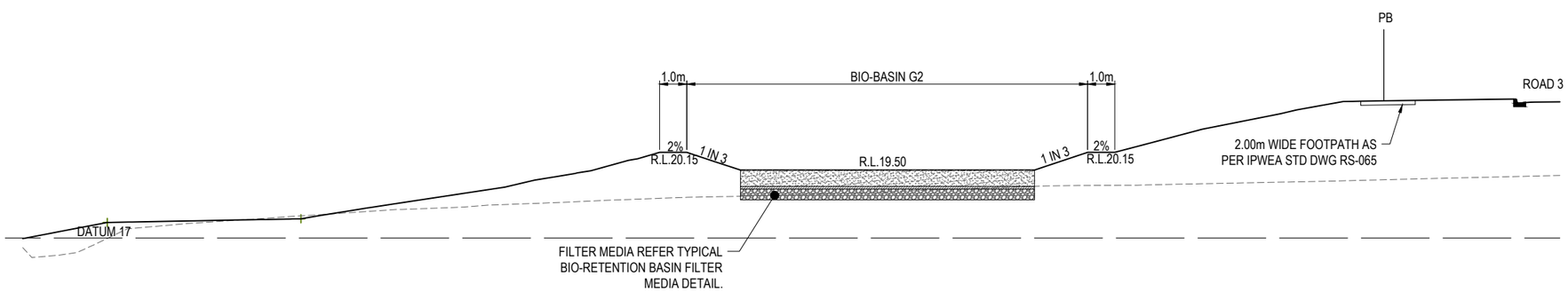

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SCALE (A3): 1:200

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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B	01.03.23	AMENDED COUNCIL COMMENTS	IB	AA
C	24.05.23	MINOR AMENDMENTS	IB	AA
D	06.10.23	UPDATE TO EGIS COVER PAGE	RT	AA

DRAWN CHECK: RT
DESIGN CHECK: AA

STATUS: ISSUED FOR APPROVAL

APPROVED: RYAN ASHWORTH RPEQ 19674
Ryan Ashworth
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD

SCALE: 1:100 / 1:200 — 1 0 1 2 3 4 5m — A1 / A3

CLIENT: FOREVERLEN PTY LTD
LENNIUM GROUP

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PROJECT: Lilywood LANDINGS
STAGES 1A & 1B

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DRAWING TITLE: BIO-BASIN G2 SECTION PLAN

PROJECT No.	DRAWING No.	REVISION
22-000082_1A-1B	1703	D

Moreton Bay Regional Council

BIO RETENTION PARTICLE SIZE DISTRIBUTION AND PROPERTIES GUIDE:

(SOURCE:BIOFILTRATION MEDIA GUIDELINES (VERSION 3.01), PREPARED BY THE FACILITY FOR ADVANCING WATER BIOFILTRATION (FAWB), JUNE 2009.)

MATERIAL COMPOSITION RANGE GUIDE:

CLAY AND SILT	<3%	(<0.05mm)
VERY FINE SAND	5-30%	(0.05-0.15mm)
FINE SAND	10-30%	(0.15-0.25mm)
MEDIUM TO COARSE SAND	40-60%	(0.25-1.0mm)
COARSE SAND	7-10%	(1.0-2.0mm)
FINE GRAVEL	<3.0%	(2.0-3.4mm)

IT IS ESSENTIAL THAT THE TOTAL CLAY AND SILT MIX IS LESS THAN 3% (w/w) TO REDUCE THE LIKELIHOOD OF STRUCTURAL COLLAPSE OF SUCH SOILS.

SOIL SPECIFICATIONS:

- TOTAL NITROGEN CONTENT - <1000mg/kg
- ORTHOPHOSPHATE CONTENT - <80mg/kg SOILS WITH TOTAL PHOSPHORUS CONCENTRATIONS >100mg/kg SHOULD BE TESTED FOR POTENTIAL LEACHING. WHERE PLANTS WITH MODERATE PHOSPHORUS SENSITIVITY ARE TO BE USED, TOTAL PHOSPHORUS CONCENTRATIONS SHOULD BE <20mg/kg)
- ORGANIC MATTER CONTENT - AT LEAST 3% (w/w). AN ORGANIC CONTENT LOWER THAN 3% IS LIKELY TO HAVE TOO LOW A WATER HOLDING CAPACITY TO SUPPORT HEALTHY PLANT GROWTH. IN ORDER TO COMPLY WITH BOTH THIS AND THE TOTAL NITROGEN AND ORTHOPHOSPHATE CONTENT REQUIREMENTS, A LOW NUTRIENT ORGANIC MATTER WILL BE REQUIRED.
- pH - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' 5.5-7.5 (pH 1:5 IN WATER)
- ELECTRICAL CONDUCTIVITY - AS SPECIFIED FOR 'NATURAL SOILS AND SOIL BLENDS' <1.2 dS/m.

BIO RETENTION INSTALLATION STANDARD NOTES:

THE PLACEMENT OF DRAINAGE, TRANSITION AND FILTER MEDIA LAYERS MUST BE UNDERTAKEN CAREFULLY TO ENSURE CORRECT DEPTH, SLOPE AND COMPACTION:
DEPTH: FILTER MEDIA SHOULD BE INSTALLED AND COMPACTED IN TWO LIFTS FOR DEPTHS OVER 500mm.
SLOPE: THE TOP SURFACE OF THE DRAINAGE LAYER, TRANSITION LAYER AND FILTER MEDIA LAYER SHOULD BE FLAT. A SPREADER BAR SHOULD LEVEL THE SURFACE OF EACH LAYER.
COMPACTION: THE FILTER MEDIA MUST BE LIGHTLY COMPACTED DURING INSTALLATION TO PREVENT THE MIGRATION OF FINE PARTICLES. THIS CAN BE ACHIEVED WITH A SINGLE PASS OF A LIGHT ROLLER SUCH AS A DRUM LAWN ROLLER. A VIBRATING PLATE CAN ALSO BE USED TO COMPACT SMALL BIO RETENTION SYSTEMS OR 'POZITRACK' BOBCATS CAN BE USED FOR LARGE SYSTEMS. ENSURE ONLY ONE COMPACTING PASS IS MADE OVER THE MEDIA FOR LIGHT COMPACTION.

CONTRACTOR TO ENSURE BIOFILTRATION FILTER MEDIA MEETS THE CRITERIA OUTLINED IN THE MARCH 2008 VERSION OF THE GUIDELINE SPECIFICATION FOR SOIL MEDIA IN BIORETENTION SYSTEMS (VERSION 2.01), FACILITY FOR ADVANCING WATER BIOFILTRATION.

BIO-RETENTION/DETENTION BASINS CONSTRUCTION SEQUENCE AND NOTES:

1. ESTABLISH SEDIMENT AND EROSION CONTROL MEASURES IN CATCHMENT, INCLUDING SILT FENCES, SEEDING OF ALLOTMENTS, & FULL WIDTH VERGE TURFING.
2. SURVEY BASIN LOCATION.
3. INSTALL OVERFLOW PIT AND ENSURE PIT CREST IS AT DESIGN LEVEL. THIS PIT CREST WILL THEN BE USED AS A DATUM FROM WHICH OTHER LEVELS WITHIN THE BASIN WILL BE MEASURED. THE PIT REQUIRES HOLES FOR DRAINAGE PIPE CONNECTIONS WHICH CAN BE DRILLED AT THIS STAGE OR AFTER STEP 5 BELOW.
4. CONSTRUCT KERB TURNOUTS.
5. EXCAVATE SURROUNDING LANDFORM TO DESIGN SUBSOIL LEVEL (ACHIEVING SURROUNDING LEVEL AT THIS STAGE REDUCES THE NEED FOR EARTHWORKS ADJACENT TO THE BASIN AFTER THEY HAVE BEEN CONSTRUCTED).
6. EXCAVATE BASIN TO DESIGN DEPTH ENSURING BASE OF POD HAS MINIMUM 0.25% GRADE TOWARDS PIT. ENSURE BASE OF BASIN IS FREE FROM DEBRIS.

SUPERINTENDENT INSPECTION AND SIGN OFF REQUIRED BEFORE PROCEEDING.

7. LINE SYSTEM WITH GEOFABRIC, AND EXTEND GEOFABRIC A MINIMUM OF 500 MM BEYOND TOP OF EXCAVATION. THESE ARE THE FLAPS REFERRED TO IN ITEM 13 BELOW.
8. PLACE DRAINAGE LAYER (USING CLEAN 5-7mm AGGREGATE) TO DESIGN LEVEL.
9. NOTE THAT CORRECT FUNCTIONING OF THE DRAINAGE PIPES IS CRITICAL TO THE PERFORMANCE OF THE BIORETENTION SYSTEM. DIG TRENCHES IN DRAINAGE LAYER AND PLACE DRAINAGE PIPES. ENSURE PIPES ARE LAID AT MIN 0.5% SLOPE WITH NO LOCALIZED DEPRESSIONS VERIFIED USING LEVEL OR STRING LINE. ALL JOINTS AND JUNCTIONS IN PIPES TO BE SEALED. CONNECT CLEAN OUT POINTS ENSURING TOP OF CLEAN OUT POINTS ARE NOT LESS THAN 50mm BELOW OVERFLOW PIT CREST.

SUPERINTENDENT INSPECTION AND SIGN OFF REQUIRED BEFORE PROCEEDING.

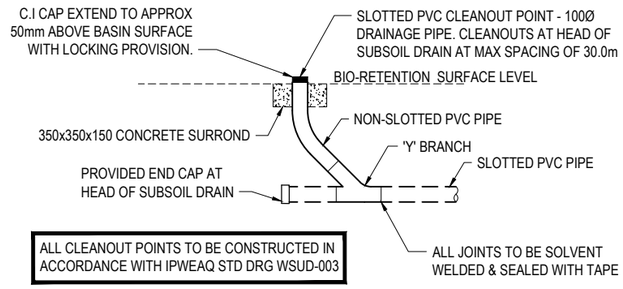
10. COVER DRAINAGE PIPES WITH DRAINAGE MEDIA, ENSURING DESIGN COVER.
11. PLACE TRANSITION LAYER (USING ONLY PRESCRIBED DRAINAGE MATERIAL: 2.0mm SAND) TO DESIGN LEVEL (REFER DRAWINGS).

SUPERINTENDENT INSPECTION AND SIGN OFF REQUIRED BEFORE PROCEEDING.

12. PLACE FILTER MEDIA (USING ONLY PRESCRIBED MATERIAL: 0.7mm SAND) TO DESIGN LEVEL (REFER DRAWINGS). SPREAD MATERIAL USING EXCAVATOR BUCKET OR HAND TOOLS TO OBTAIN LIGHT AND EVEN COMPACTION OF FILTER MEDIA. DO NOT DRIVE OVER FILTER MEDIA WITH ANY VEHICLE AS EXCESSIVE COMPACTION CAN IMPEDE DRAINAGE THROUGH THE FILTER MEDIA. FILTER MEDIA SURFACE MUST BE LEVEL (HORIZONTAL) AND FREE FROM LOCAL DEPRESSIONS AND SET AT 100mm BELOW PIT CREST (EXCEPT FOREBAY AREA WHICH IS 200mm). AS SOON AS FILTER MEDIA IS PLACED IT MUST BE IMMEDIATELY COVERED WITH A GEOFABRIC COVER WHICH MUST REMAIN IN PLACE AT ALL TIMES EXCEPT WHEN ACCESS TO FILTER MEDIA IS REQUIRED.THIS PROTECTIVE COVER IS ONLY TO BE REMOVED BY LANDSCAPERS IMMEDIATELY PRIOR TO PLANTING.
13. LAY EXCESS GEOFABRIC FLAPS FROM BASIN OUTWARD ACROSS ADJACENT SUBSOIL AND PLACE LANDSCAPING TOPSOIL ON TOP OF THIS GEOFABRIC AND AROUND BASIN AS PER DESIGNS.
14. INSTALL PROTECTIVE PLYWOOD BARRIERS ENSURING THE CREST IS AT DESIGN LEVEL (MIN 100mm ABOVE ELEVATION OF PIT CREST) AND EXTENDS LATERALLY TO BASIN BATTERS BY 300mm, AND VERTICALLY INTO THE FILTER MEDIA BY 200mm. THIS PLYWOOD BARRIER NEEDS TO REMAIN IN PLACE FOR 12 MONTHS AND PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING THE MAJORITY FOR THE BASIN AREA. AFTER 12 MONTHS ONCE THE VEGETATION IS ESTABLISHED AND THE ALLOTMENT CONSTRUCTION IS COMPLETE THESE PLYWOOD BARRIERS WILL BE TAKEN OUT AND THE SYSTEM BROUGHT ONLINE.
15. COVER INLET ZONE WITH PROTECTIVE GEOFABRIC ENSURING GEOFABRIC EXTENDS OVER CREST OF PROTECTIVE PLYWOOD BARRIER. COVER GEOFABRIC WITH MIN 50mm TOPSOIL SUITABLE FOR TURF GROWTH. SIMILAR TO THE PLYWOOD BARRIERS, THIS GEOFABRIC IS A TEMPORARY PROTECTIVE MEASURE TO PROTECT THE FILTER MEDIA IN THE INLET ZONE FROM BEING CLOGGED WITH CONSTRUCTION SEDIMENT, AND WILL BE REMOVED AFTER 12 MONTHS.
16. FLUSH DRAINAGE PIPES TO REMOVE ANY INITIAL INGRESS OF MATERIAL AND TO ENSURE ADEQUATE DRAINAGE.

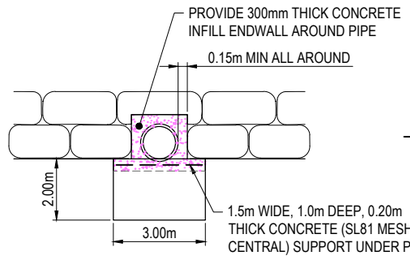
FINAL SUPERINTENDENT INSPECTION AND SIGN OFF

NOTE THAT BETWEEN STEPS 5 – 16 ABOVE THE BASINS WILL BE SUSCEPTIBLE TO STORM DAMAGE. THEREFORE ONCE COMMENCED PODS MUST BE COMPLETED AS SOON AS POSSIBLE TO MINIMISE THE RISK OF STORM DAMAGE.
INSPECTION IS REQUIRED IF RAINFALL EVENT OCCURS BETWEEN CONSTRUCTION STEPS 5 – 16 ABOVE.



CLEANOUT POINT DETAIL

1:20



OUTLET THROUGH ROCKWALL DETAIL

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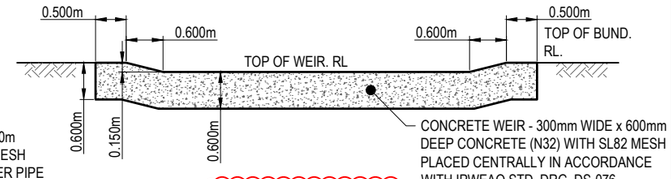

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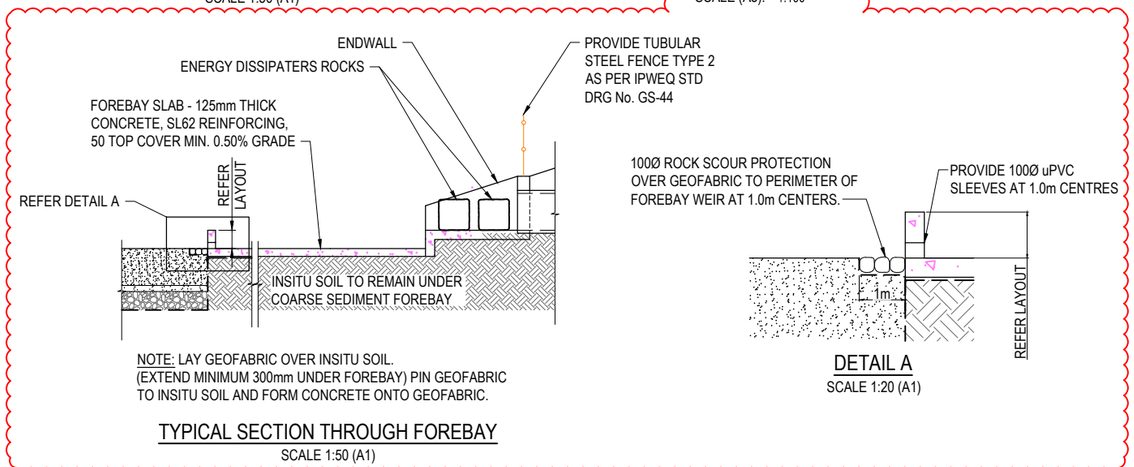
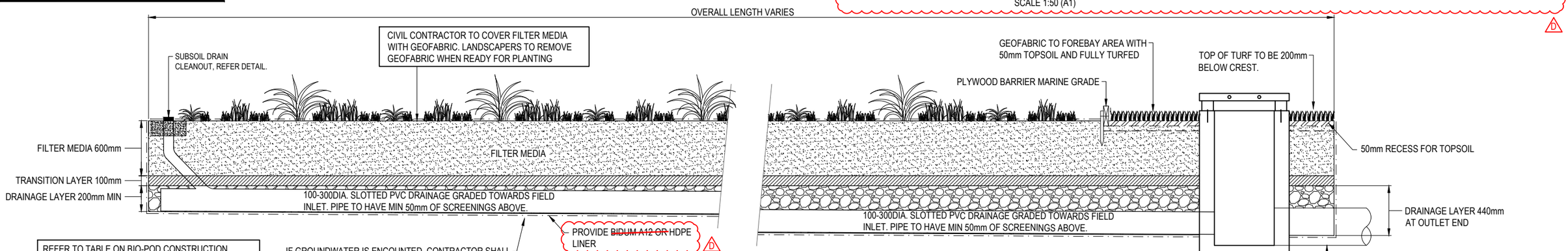


TYPICAL SECTION THROUGH FOREBAY

SCALE 1:50 (A1)

DETAIL A

SCALE 1:20 (A1)



TYPICAL BIO-RETENTION BASIN FILTER MEDIA DETAIL

1:20

REVISION	DATE	ISSUE DETAILS	DRAWN	DESIGN
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DRAWN CHECK: RT
DESIGN CHECK: AA
STATUS: ISSUED FOR APPROVAL
APPROVED: RYAN ASHWORTH RPEQ 19674
FOR & ON BEHALF OF CALIBRE PROFESSIONAL SERVICES PTY LTD
SCALE: 1:20 0.2 0 0.2 0.4 0.6 0.8 1m A1; 1:40 A3; 1:50 1 0.5 0 1 2m A1; 1:100 A3
CLIENT: FOREVERLEN PTY LTD — LENNIUM GROUP
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PROJECT: Lilywood LANDINGS — STAGES 1A & 1B
DISCLAIMER: ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE.
DRAWING TITLE: BIO-BASIN NOTES AND DETAILS
PROJECT No. 22-000082_1A-1B | DRAWING No. 1704 | REVISION D

ATTACHMENT 4

Appeal Rights

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 states—

(a) matters that may be appealed to—

(i) either a tribunal or the P&E Court; or

(ii) only a tribunal; or

(iii) only the P&E Court; and

(b) the person—

(i) who may appeal a matter (the ***appellant***); and

(ii) who is a respondent in an appeal of the matter; and

(iii) who is a co-respondent in an appeal of the matter; and

(iv) who may elect to be a co-respondent in an appeal of the matter.

(2) An appellant may start an appeal within the appeal period.

(3) The ***appeal period*** is—

(a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or

(b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or

(c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or

(d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or

(e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or

(f) for an appeal relating to the *Plumbing and Drainage Act 2018*—

(i) for an appeal against an enforcement notice given because of a belief mentioned in the *Plumbing and Drainage Act 2018*, section 143(2)(a)(i), (b) or (c)—5 business days after the day the notice is given; or

(ii) for an appeal against a decision of a local government or an inspector to give an action notice under the *Plumbing and Drainage Act 2018*—5 business days after the notice is given; or

(iii) for an appeal against a failure to make a decision about an application or other matter under the *Plumbing and Drainage Act 2018*—at anytime after the period within which the application or matter was required to be decided ends; or

(iv) otherwise—20 business days after the day the notice is given; or

(g) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.

(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.

(6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—

(a) the adopted charge itself; or

(b) for a decision about an offset or refund—

(i) the establishment cost of trunk infrastructure identified in a LGIP; or

(ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—

(a) is in the approved form; and

(b) succinctly states the grounds of the appeal.

(2) The notice of appeal must be accompanied by the required fee.

(3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

(a) the respondent for the appeal; and

(b) each co-respondent for the appeal; and

(c) for an appeal about a development application under schedule 1, section 1, table 1, item 1—each principal submitter for the application whose submission has not been withdrawn; and

(d) for an appeal about a change application under schedule 1, section 1, table 1, item 2—each principal submitter for the application whose submission has not been withdrawn; and

(e) each person who may elect to be a co-respondent for the appeal other than an eligible submitter for a development application or change application the subject of the appeal; and

(f) for an appeal to the P&E Court—the chief executive; and

(g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.

(4) The ***service period*** is—

(a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or

(b) otherwise—10 business days after the appeal is started.

(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).

(6) A person elects to be a co-respondent to an appeal by filing a notice of election in the approved form—

(a) if a copy of the notice of appeal is given to the person—within 10 business days after the copy is given to the person; or

(b) otherwise—within 15 business days after the notice of appeal is lodged with the registrar of the tribunal or the P&E Court.

(7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Non-appealable decisions and matters

(1) Subject to this chapter, section 316(2), schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.

(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.

(3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

(4) In this section—

decision includes—

(a) conduct engaged in for the purpose of making a decision; and

(b) other conduct that relates to the making of a decision; and

(c) the making of a decision or the failure to make a decision; and

(d) a purported decision; and

(e) a deemed refusal.

non-appealable, for a decision or matter, means the decision or matter—

(a) is final and conclusive; and

(b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the *Judicial Review Act 1991* or otherwise, whether by the Supreme Court, another court, any tribunal or another entity; and

(c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, any tribunal or another entity on any ground.

232 Rules of the P&E Court

(1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.

(2) However, the P&E Court may hear and decide an appeal even if the person has not complied with rules of the P&E Court.

ATTACHMENT 5

Infrastructure Charges Notice

In accordance with the Infrastructure Charges Resolution (No. 10) dated 5 October 2022 or as amended, there is no Infrastructure Charges applicable to the development.