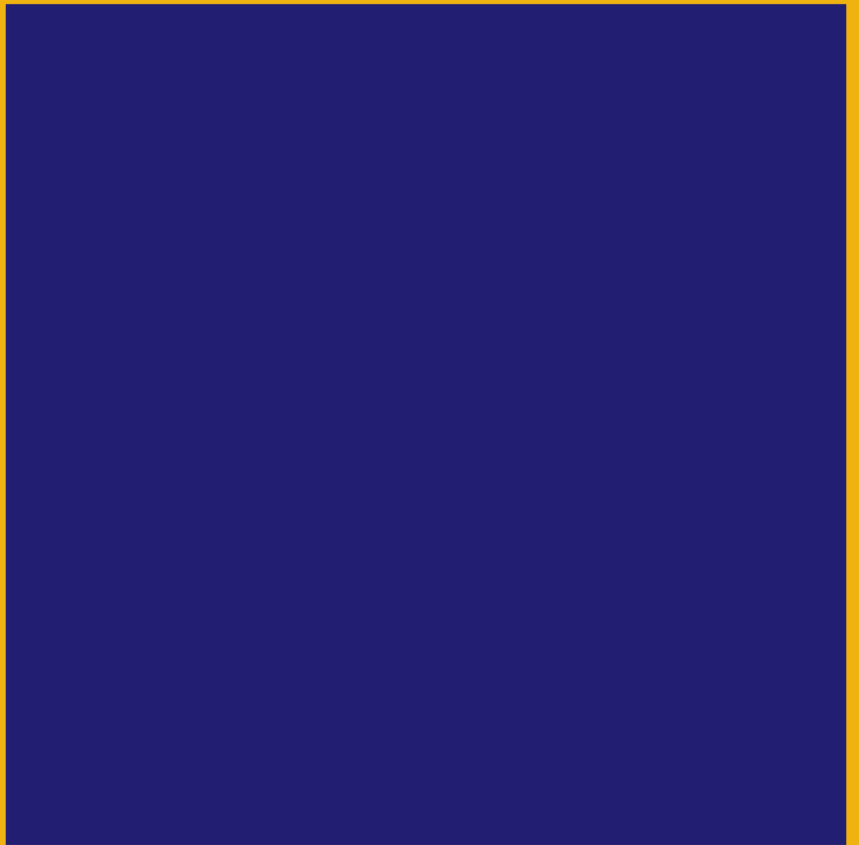
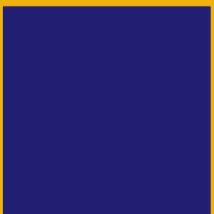
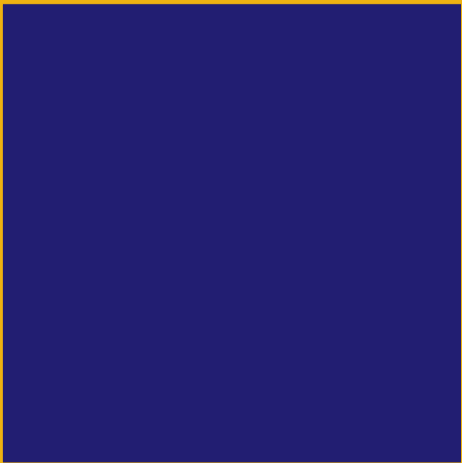


**29 STIRLING CRESCENT
HIGH WYCOMBE**

**STORMWATER
MANAGEMENT PLAN**

Porter



CONTENTS

1.0 INTRODUCTION	1
2.0 SITE LOCATION	1
3.0 THE EXISTING SITE	2
3.1 Landform	2
4.0 DEVELOPMENT LAYOUT	2
5.0 STORMWATER REQUIREMENTS	3
6.0 STORMWATER DESIGN	3
6.1 Underground Stormwater Retention Devices	3
6.2 Warehouse Drainage	3
6.3 Above Ground Storage	4
7.0 CONCLUSIONS	4

APPENDIX A - Feature Survey

APPENDIX B - Geotechnical Investigation

APPENDIX C - Proposed Development Layout

APPENDIX D - Stormwater Management Plan and Calculations

HISTORY AND STATUS OF THE DOCUMENT

Revision	Date issued	Author	Issued to	Revision type
Rev A	29/07/2024	Jamie King	City of Wanneroo	Engineering Approvals

1.0 INTRODUCTION

Porter Consulting Engineers has been engaged to prepare a Stormwater Management Plan to support the commercial development application for 29 Stirling Crescent, High Wycombe.

2.0 SITE LOCATION

The site is approximately 1ha in size and its location is shown below in Figure 1.



Figure 1 – Site Location

3.0 THE EXISTING SITE

3.1 Landform

The site is rectangular in shape and surrounded by the Stirling Crescent road reserve to the south-east, recently developed land to the west and sparsely developed residential land to the north and east.

Scanlan Surveys completed a level & feature survey and this is presented in **Appendix A**. The site has a gentle grade from east to west, subtle undulations. Existing surface levels range from RL22.5 along the western boundary up to RL23.65 in the east. There is an existing house and associated out buildings towards the rear of the lot. The FFL of the existing house is slightly elevated at ~RL24.

There are several mature trees and scattered vegetation across the lot. It is expected the majority of these trees will be cleared as part of the development works.

There is an existing man-made billabong on the site. Similarly to the development to the west, it is expected this billabong will be filled in as part of the proposed development works under the supervision of a Geotechnical Engineer.

Brown Geotechnical have completed a site Geotechnical Investigation to provide an understanding of the earthworks required to facilitate the proposed development, and to provide the soil and drainage design parameters for the site. This investigation report is presented in **Appendix B**, and identifies the natural soils beneath the site being medium grained, non-cohesive, well-draining sand. There is, however, some uncontrolled clayey sand fill that has been spread over the site. It is understood all uncontrolled fill will be removed from the site as part of the development works and will be replaced with clean free draining sand. Once the uncontrolled fill has been removed, the site will receive a Class A classification.

The Geotechnical Investigation noted groundwater being encountered within the test pits at about RL21.7m (or within 2m of the existing surface). This is consistent with the surveyed top water level within the billabong. The high groundwater levels found at the site maybe influenced by an underlying cemented coffee rock layer.

The Geotechnical Investigation also confirms that the drainage characteristics of the existing sandy soils are good, with a measured permeability rate of 5×10^{-4} m/s (or 43.2m/day).

4.0 DEVELOPMENT LAYOUT

The proposed development layout plan is presented in **Appendix C**.

Due to the presence of uncontrolled fill and high groundwater levels, remediation earthworks and lot filling is required to provide a Class A site and to accommodate onsite stormwater disposal. The extent of required filling is dependent on ensuring separation to groundwater and functionality of the underground stormwater retention devices.

It is expected retaining walls will be required along the boundaries of the site to facilitate the site being filled.

Crossover access will be provided to Stirling Crescent as per the normal Shire of Kalamunda standards.

5.0 STORMWATER REQUIREMENTS

The Geotechnical Investigation confirms the site's sandy soils are suitable for onsite stormwater disposal via soakwells (or similar devices). On that basis, the City of Kalamunda Stormwater Design Guidelines require onsite stormwater retention devices to be sized for the 1% AEP (1 in 100Yr) critical storm event. Underground retention structures sized for a minimum 5% AEP (1 in 20Yr) critical storm event can be combined with above ground storage (within hardstand/landscaped areas) as necessary.

The City's guidelines allow for a maximum design permeability rate of 5m/day and a minimum separation of 500mm to the sites expected maximum groundwater level to the base of the retention devices.

6.0 STORMWATER DESIGN

A Stormwater Management Plan (24-6-92/500) compliant with the above requirements is presented in **Appendix D**. It is proposed to utilise underground stormwater retention devices including soakwells and cellular structures combined with additional aboveground storage in accordance with the City's guidelines.

Note the maximum allowed design permeability rate of 5m/day has been assumed for the soils beneath the retention devices. This rate represents an 88% reduction to the measured permeability test results and is considered conservative.

6.1 Underground Stormwater Retention Devices

The Underground Stormwater Retention Devices will be set a minimum of 500mm above the expected maximum ground water level as shown. The exact type and location of the devices will be confirmed at detailed design stage and will be compliant with the above design requirements.

Compaction beneath the devices will be closely monitored to ensure over compaction is avoided and permeability is optimized.

6.2 Warehouse Drainage

The two Warehouses will have downpipes plumbed directly into the Underground Stormwater Retention Devices. The exact number and location of the downpipes is not yet known though will be confirmed during detailed design.

6.3 Above Ground Storage

In accordance with the City's guidelines, allowances have been made for some above ground storage within the existing hardstand and landscaped areas. The exact location of the inundated areas will be confirmed during detailed design.

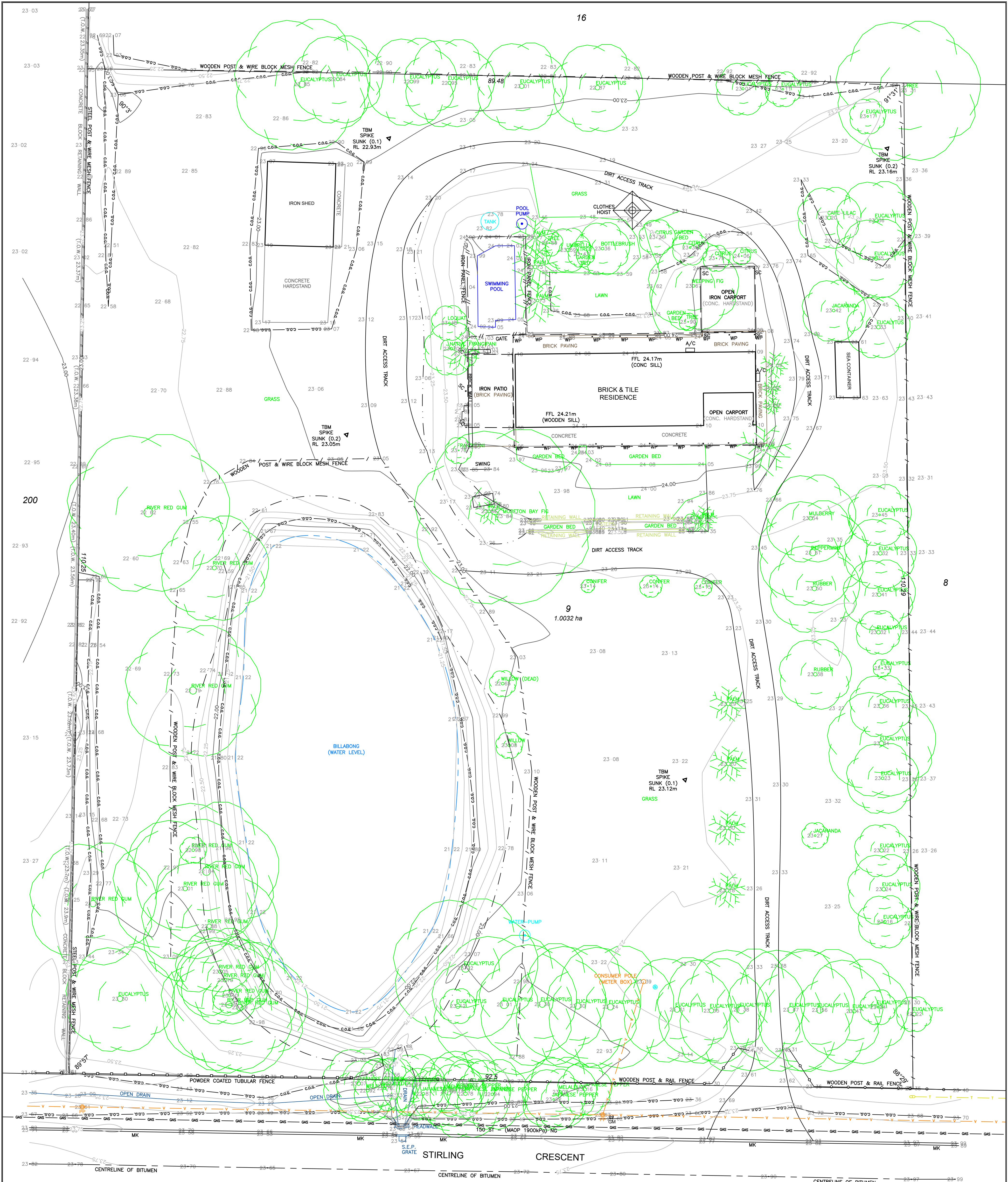
7.0 CONCLUSIONS

The Geotechnical Investigation confirms the site is suitable for onsite stormwater disposal provided the existing uncontrolled clayey sand fill is removed.

Filling and retaining is required to lift the site to allow sufficient clearance above the expected maximum groundwater levels.

A combination of Underground Stormwater Retention Devices and above ground storage have been allowed to cater for the 1% AEP critical storm event.

APPENDIX A - Feature Survey



SERVICE LOCATING QUALITY LEVEL

As per Standards Australia document AS5488 - 2013 Quality Levels, the positional accuracy of the following underground utilities meet Quality Level C (QL-C).
Comms & Fibre Optics. Visible ground infrastructure (Pits) located on site. Exact position of underground conduits not determined but positioned from Onecall (BYDA) information. Pot holing required to determine exact location and depth of the infrastructure.

As per Standards Australia document AS5488 - 2013 Quality Levels, the positional accuracy of the following underground utilities meet Quality Level D (QL-D).
Water. Pipes positioned by digital data extraction from WC Esinet Website.
Gas. Exact position of underground pipes not determined but positioned from Onecall (BYDA) information. Pot holing required to determine exact location and depth of the infrastructure.

LEGEND	
POWER	TERRAIN
POWER POLE	TOP OF BANK
OVERHEAD POWER LINES	BOTTOM OF BANK
	CHANGE OF GRADE
WATER	ROAD
WATER METER	MOUNTABLE KERB MK
WATER MAIN	VEGETATION
GAS	TREE
GAS MAIN	
COMMUNICATIONS	
COMMS PIT	
COMMS LINE	

SERVICE RECORD	
STATUS	LOCATED
	AVAILABLE
	NO SERVICE
	CONFIRM
SERVICE	
WATER	✓
SEWERAGE	✓
GAS	✓
TELSTRA	✓
POWER	✓
NOTE:	
SERVICES MARKED CONFIRM REQUIRE BUILDER/CLIENT TO CONFIRM POSITION ON SITE.	

SCALE 1:200 @ A1

NOTES

- This PLAN is current at the Date of Survey (19/02/2024).
- The cadastral boundary position has been determined from cadastral survey marks. A full re-establishment survey of the lot will be completed.
- Check Landgate's Diagram & Certificate of Title for any Encumbrances including Depth Limits, Easements, Caveats, Covenants etc.
- All SERVICES require verification from the relevant AUTHORITY - suggest contacting "Before You Dig Australia" for underground services & a site inspection.

PLAN OF:

PROJECT:
LOT 9 ON DIA 67603
29 STIRLING CRESCENT
HIGH WYCOMBE

CLIENT:

D & A JONES

DIAGRAM: 67603

C/T: 1689/342

CONTOUR AND FEATURE SURVEY

COPYRIGHT OF ALL OF THIS DRAWING IS RESERVED BY SCANLAN SURVEYS PTY LTD. PERMISSION TO USE THIS DATA IS GRANTED TO THE CLIENT/CONSULTANT ONLY FOR THE PURPOSE FOR WHICH THE DATA WAS AGREED. THE DATA SHALL NOT BE ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL OF SCANLAN SURVEYS PTY LTD. THE DRAWING IS THE PROPERTY OF SCANLAN SURVEYS PTY LTD AND ALL DIGITAL AND PAPER COPIES SHALL BE RETURNED UPON REQUEST.

HORIZONTAL DATUM: LOCAL PLANE

VERTICAL DATUM: AHD (SSM MV63 - RL 23.639m)

DRAWING: 8877/24/1

REVISION:



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26/02/2024

CHECKED BY:

RS

27/02/2024

APPROVED BY:

JS

27/02/2024

DRAWING FILE: 8877241.DWG

REVISION

DESCRIPTION

BY

DATE

APPENDIX B - Geotechnical Investigation



[Brown Geotechnical](#)

[Consulting Engineers – Land Development](#)
[Geotechnical/Acid Sulphate Soil/Groundwater Monitoring](#)

Our reference: 24040

22 July 2024

David Jones & Anita Jones
29 Stirling Crescent
High Wycombe WA 6057

C/- Planning Solutions
Attention: Joshua Carmody

Geotechnical Investigation – 29 Stirling Crescent, High Wycombe.

Dear Joshua

Introduction

Brown Geotechnical visited the above site on 2nd July 2024 to carry out a geotechnical investigation for a proposed commercial development including warehouses, offices and truck parking.

In addition to the three test holes previously carried out by Brown Geotechnical as part of the preliminary investigation for the area Structure Plan, four additional test holes were extended to a depth of 4m using an electric friction cone penetrometer (CPT) rig to allow for confirmation of soil depth and type across the site.

At the time of the investigation the site was occupied by an existing single storey residence and out-buildings. A large, approximately 1.5m deep, pond occupied the southern corner of the lot, and occasional medium to large tree were scattered across the property.

Brief

The report will address:

- Subsurface conditions,
- The existing soil classification in accordance with (AS2870-2011),
- Any earthworks required to obtain a classification suitable for development,
- Suitability of in-situ soil for use as engineering fill in the development,
- Soil bearing capacity and settlements,
- Retaining wall parameters,
- CBR for car park pavement design,
- Earthquake sub-soil class (AS1170.4-2007),
- Groundwater levels,
- Site permeability and drainage issues.

Laboratory Test Results

Table 1 – Geotechnical Test Results

Sample Location	Depth (m)	Fines (%)	Sand (%)	Gravel (%)	LL (%)	PL (%)
CPT4	0.5	43	57	0	39	17

Ground Conditions

The natural in-situ soil below the site is a medium grained, non-cohesive, well-draining sand. CPT 1 and 4 noted a very dense / cemented layer at approx. 2.5m to 3m. Experience in the area suggests this to be an iron cemented silty sand layer, locally known as coffee rock. It is usually approx. 0.5m thick. CPT2 and CPT3 pushed through the layer, though the zone still appears to be cemented.

The rear third of the site has a layer of clayey sand fill approx. 0.5m - 1m thick (see attached plan). The fill is compact and appears free from any deleterious materials but has some cohesive (plastic) fines, though only a small area was investigated. The area is raised 0.5m – 1.0m above the adjacent paddocks to the northwest. A sample taken at CPT4 has a moderate fines content, with low plasticity and low shrink swell potential.

The ground either side of the pond has a thin layer of fill to approx. 0.3m - 0.5m.

Site Classification

The site classification for the site will depend on whether the clayey sand fill is removed or retained.

If the clayey sand fill remains, specifically in the rear third of the site, it has been determined that the appropriate site classification for footing design in this area is Class 'S' in accordance with AS2870-2011 (refer Table 2) and following the earthworks and foundation considerations below.

If the clayey sand fill is removed, which is recommended, the site classification will be Class 'A'.

It is therefore considered that the land is suitable for development.

Table 2 - Definition of Site Classifications (Australian Standard AS2870-2011)

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites with only slight ground movement for moisture changes ($y_s < 20\text{mm}$).
M	Moderately reactive clay or silt sites, which can experience moderate ground movement from moisture changes (y_s 20–40mm).
H1	Highly reactive clay site, which can experience moderate to high ground movement from moisture changes (y_s 40–60mm)
H2	Highly reactive clay site, which can experience high ground movement from moisture changes (y_s 60–75mm)
E	Extremely reactive sites, which can experience extreme ground movement from moisture changes ($y_s > 75\text{mm}$)

y_s : Characteristic Surface Movement

Earthworks

All earthworks should be undertaken in accordance with AS3798-1996 "Guidelines on earthworks for commercial and residential developments".

Topsoil / Fill

Topsoil is not suitable for foundation support and should be removed. There are some trees across the site. Unless they are to be retained, they should be removed with the entire root bulb material. The excavations should then be backfilled with material exhibiting the same geotechnical properties as the surrounding soils, then compacted as stated below.

All uncontrolled materials associated with the demolition of the existing structures, including footings, etc, should be removed from site.

Proof Rolling and Site Compaction

Prior to footing placement or placing any additional fill on site, the sand should be proof rolled to achieve at least 98% SMDD.

Should the clayey sand fill be retained, or re-worked, it should be compacted to a dry density ratio of at least 95% MMDD. Compaction should be checked using nuclear dry density tests.

Imported Fill Material

Any sand fill imported to obtain site formation levels, should be compacted in layers not more than 300mm thick to at least 98% SMDD. In-situ density tests should be carried out to calibrate the PSP to specific densities of the compacted material. Moisture conditioning (wetting) of the sand may be required to optimise compaction. Imported sand should ideally contain less than 5% non-plastic fines to retain good drainage characteristics and should be compacted at optimum moisture content.

Following excavation for foundations, the bases of pad and strip footings should also be compacted to achieve at least 98% SMDD.

Earthwork Inspections

A geotechnical consultant should be engaged to inspect the site following the removal of topsoil, trees, buildings and other unsuitable materials, and to confirm the compaction of the subsurface following proof rolling. Inspections and auditing of the earthworks should be carried out by the geotechnical consultant to enable confirmation of the final site classification.

Pond Backfill

It is understood, following discussions with the owner, that the pond is man-made and does not contain a clay liner. It is assumed the water within the pond is natural groundwater at the natural groundwater level.

Prior to backfilling, the pond should be dewatered, and any fines and sludge removed. The excavations should then be backfilled with material exhibiting the same geotechnical properties as the surrounding soils, then compacted as stated above. Only following the backfill and compaction should the dewatering be stopped.

Note: On no account should sand fill be placed into standing water in an attempt to backfill the pond. Saturated soils cannot be compacted and may result in excessive settlement below the future development.

Suitability of Existing Soils for use in the Development

The in-situ sands on site have low fines, are medium grained, cohesionless and free draining. They will be suitable for use as engineering fill in the development.

The clayey sand fill may be retained, however will likely form an impermeable layer restricting drainage. Further inspection and testing of the fill should be carried out as it is uncovered during the development.

Note: If the clayey sand fill is retained below proposed building envelopes, care should be taken avoid placing pad and strip footing across area of differing soil types to avoid differential settlement.

Bearing Capacity

It is understood that approximately 1m of clean sand fill will be imported on to the site during the bulk earthworks. For the estimate bearing capacity purposes, we considered the fill to have been proof rolled to a dense condition.

The following allowable bearing pressures have been based on a dense sand and a Young's modulus, $E = 40$ MPa. Potential settlements should be taken into account for design bearing pressures.

Table 3 - Strip Footing Allowable Bearing Pressure and Estimated Settlement

Footing Depth (m)	Footing Width (m)	Allowable Bearing Pressure (kPa)	Estimated Settlement (mm)
0.5	0.5	125	<5
	1.0	150	5-10
	1.5	200	10-15

Table 4 - Pad Footing Allowable Bearing Pressure and Estimated Settlement

Footing Depth (m)	Footing Dimension (m)	Allowable Bearing Pressure (kPa)	Estimated Settlement (mm)
0.5	0.5 x 0.5	150	<5
	1.0 x 1.0	200	5-10
	1.5 x 1.5	250	10-15

The bearing pressures presented in Table 3 and 4 are also based on the following:

- Loading is isolated, vertical, non-eccentric, on level ground, and not influenced by any nearby cuttings or embankments,
- Factor of Safety of 2.5,
- It is recommended that the total settlement be limited to 15mm,
- Differential Settlement to be no greater than nominally half the total.

California Bearing Ratio

An average CBR correlation value of 18% for dense sand (in-situ) is considered adequate for access road and car park pavement design based on the CPT data.

For imported Perth sand fill, typical CBR values can vary from 12 to 20. Testing of additional imported fill should be carried out to determine more accurate values.

Earthquake Sub-Soil Class

The site Sub-Soil Class is considered as a Class C_e.

Retaining Wall Parameters

Assuming compaction / proof rolling of the soils has been carried out as stated above, the following retaining wall parameters have been based on a medium dense sand soil with $\phi=30^\circ$.

$$\gamma=18 \text{ kN/m}^3$$

$$K_o=0.50$$

$$K_a=0.29$$

$$K_p=4.$$

The parameters detailed above assume design of the retaining structure and compaction of the foundations are in accordance with AS 4678-2002, and that backfill material is composed of clean cohesionless sand.

Groundwater

Groundwater was encountered at approx. 1.5m bgl in the CPT probes. The preliminary investigation noted groundwater at 2.3m in TH19, below a 1m layer of fill. This equates to approximately the same level noted in CPT1 where there is no fill present.

The Perth groundwater map indicates the groundwater level to be approx. 19mAHD, or approx. 4m below ground level. The DoW notes these values can vary locally by up to 3m.

The layer of cemented sand / coffee rock seen in the CPT probes at approx. 2.5m could influence the local groundwater level, being an aquiclude to vertical drainage or causing perching of groundwater in sands above the layer.

For more accurate groundwater information, groundwater monitoring bores should be considered.

Permeability and Site Drainage

Drainage within the clayey sand fill will be poor. It is recommended that the material be removed if soakwells are required in the future development.

The drainage characteristics of the sand on site are good. The near surface soil permeability is 5×10^{-4} m/s. Soakwells will be suitable for stormwater runoff within the sand.

Permeability and drainage conditions may be reduced during earthworks due to compaction of in-situ and imported sands. Over compaction during earthworks can seriously reduce soil permeability and drainage potential. It is recommended that further permeability testing be carried out following the completion of earthworks.

Regards

Ken Brown

Senior Geotechnical Engineer
BROWN GEOTECHNICAL

Attachments: 1. Site and Test Location Plan
2. CPT Plots and Test Hole Logs
3. Laboratory Test Certificates
3. Conditions Relating to this Report

Brown Geotechnical

PO Box 278, Como, Western Australia 6952 Phone 0431 122 320 Email admin@browngeotechnical.com.au

Site and Test Location Plan



ELECTRIC FRICTION-CONE PENETROMETER

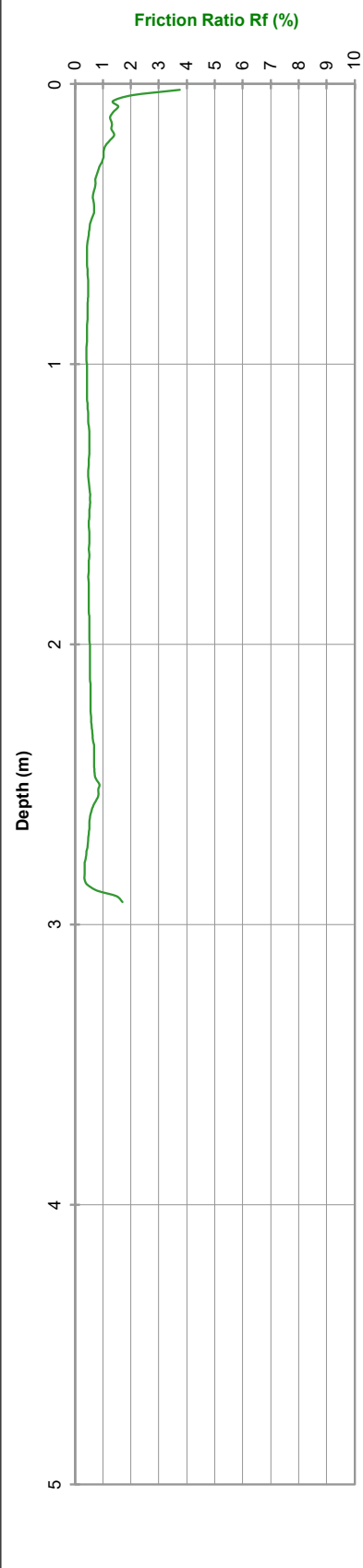
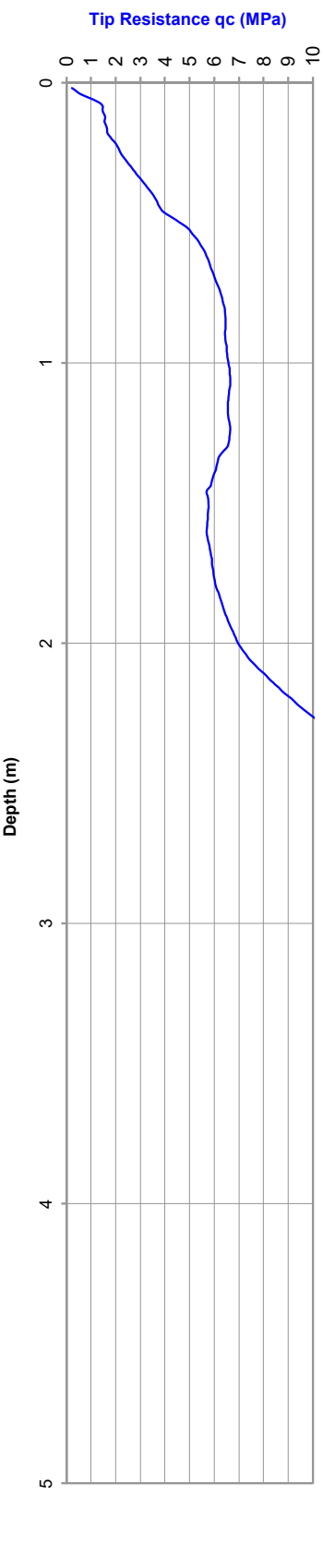
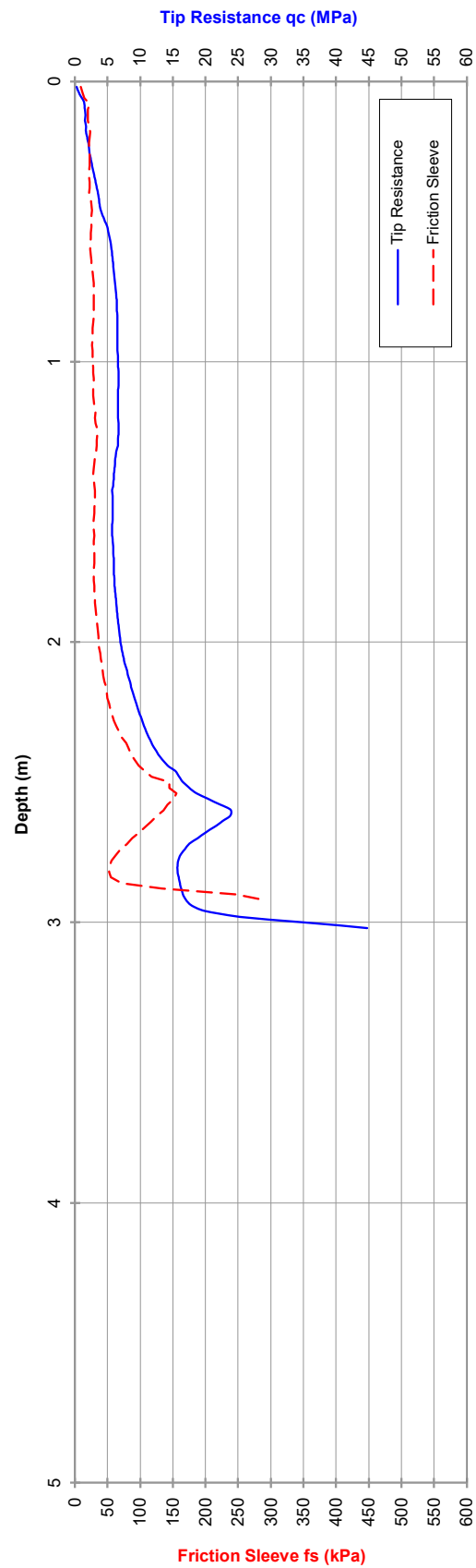
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PROJECT: 29 Stirling Crescent
LOCATION: High Wycombe

Job No.: 24024
RL (m):
Co-ords:

Probe I.D

CPT 01

02-Jul-24



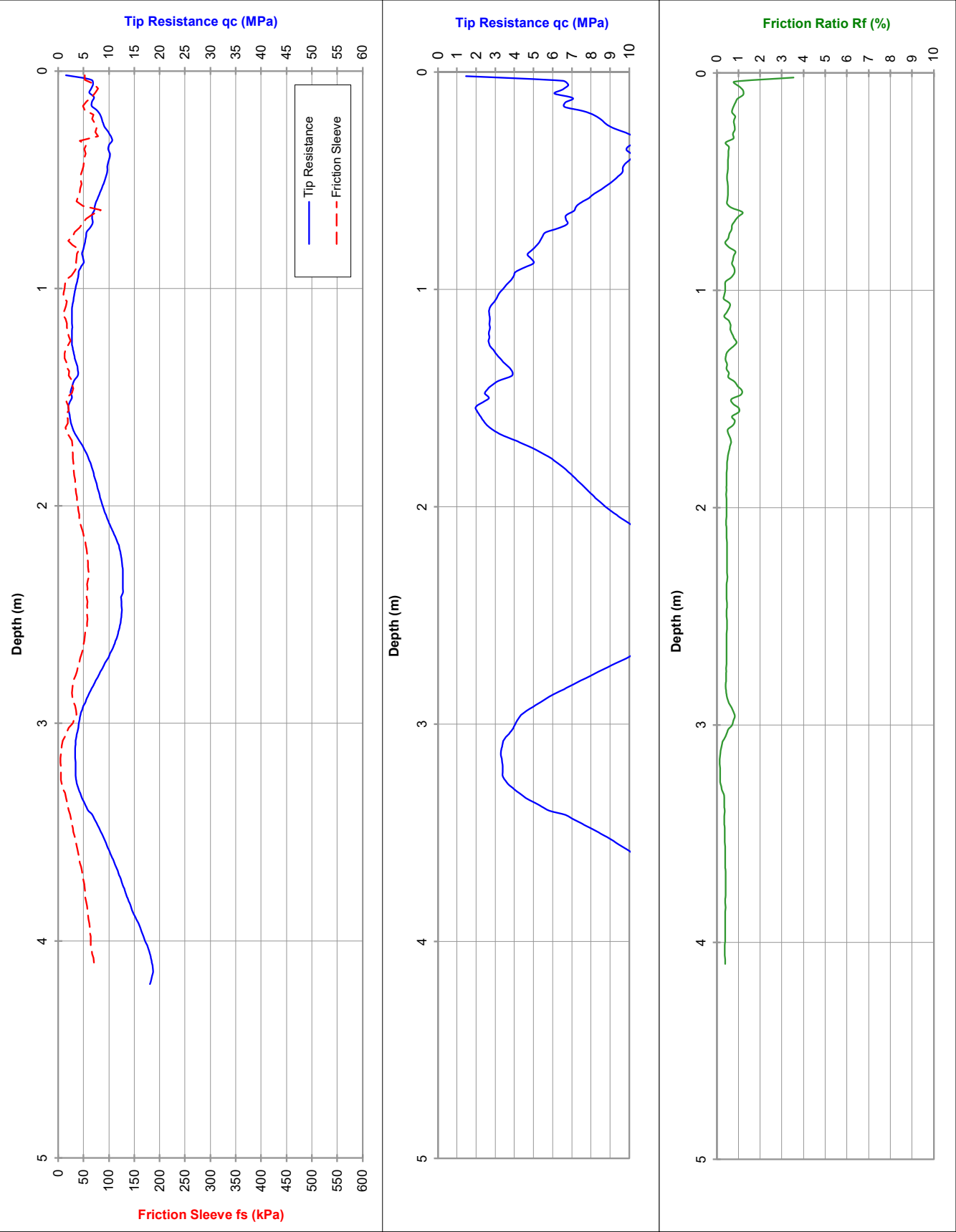
ELECTRIC FRICTION-CONE PENETROMETER

Probe I.D

CLIENT: Brown Geotechnical
PROJECT: 29 Stirling Crescent
LOCATION: High Wycombe

Job No.: 24024
RL (m):
Co-ords:

CPT 02
02-Jul-24



ELECTRIC FRICTION-CONE PENETROMETER

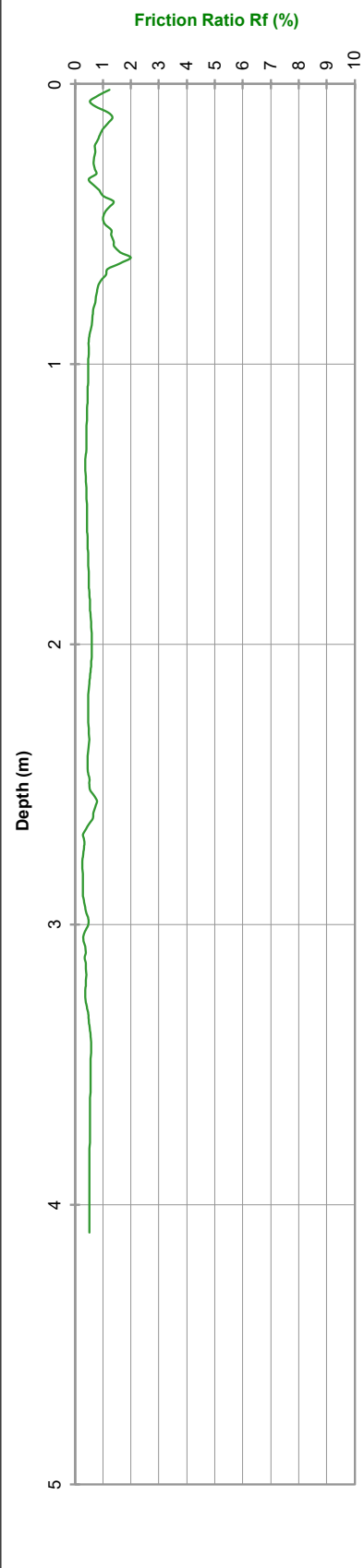
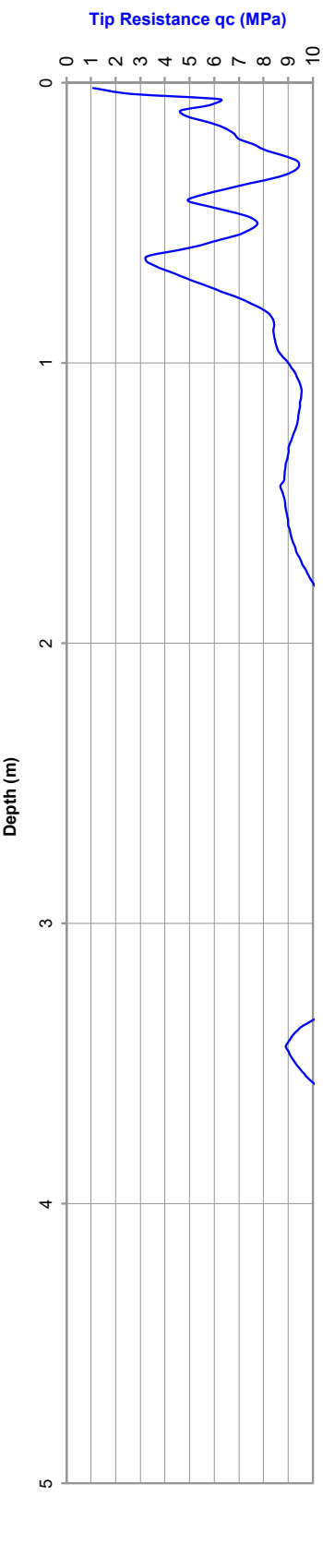
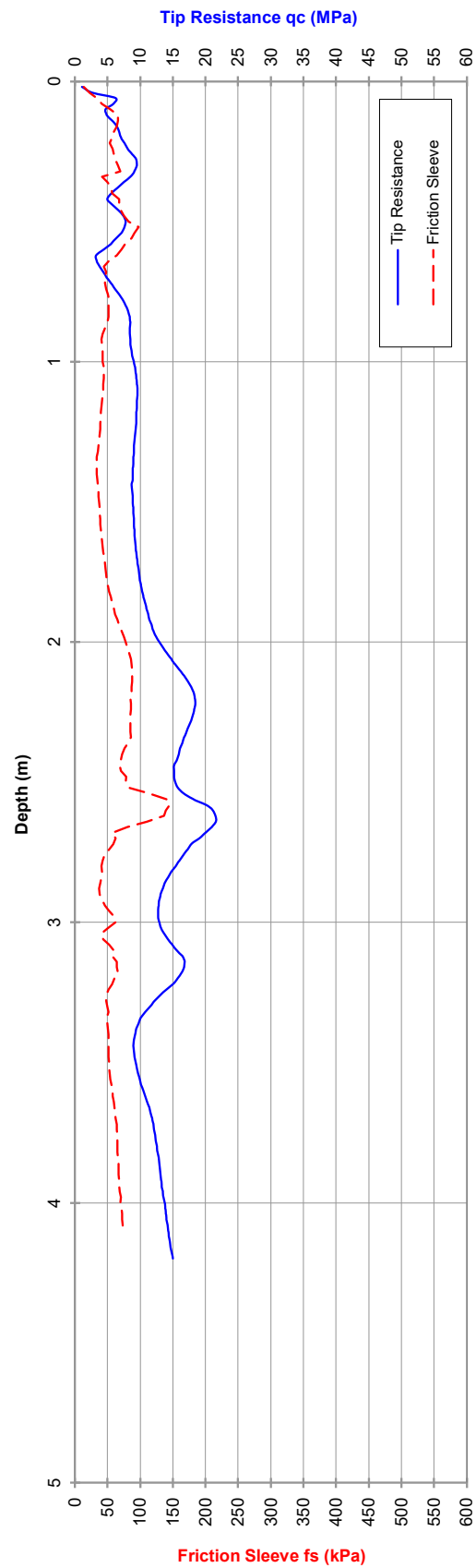
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PROJECT: 29 Stirling Crescent
LOCATION: High Wycombe

Job No.: 24024
RL (m):
Co-ords:

Probe I.D

CPT 03

02-Jul-24



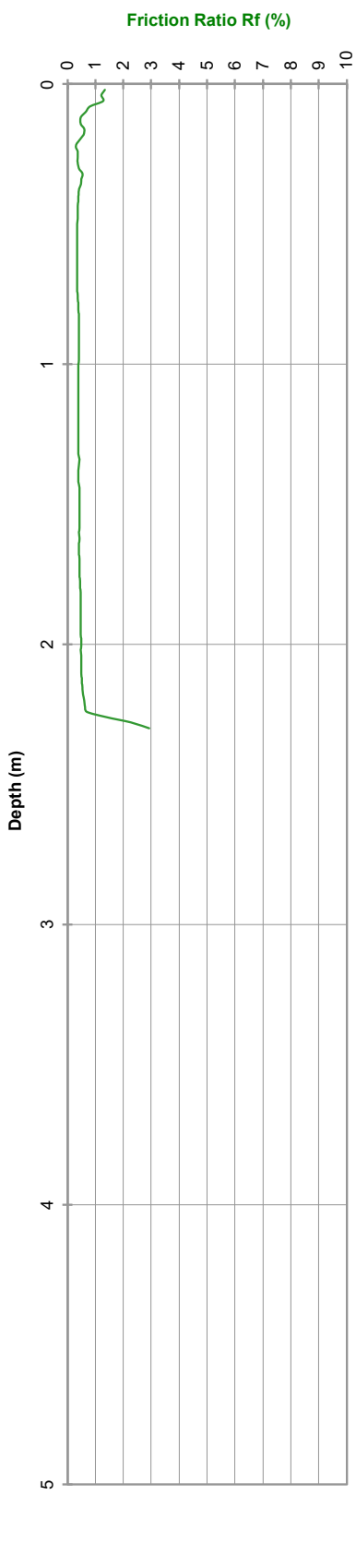
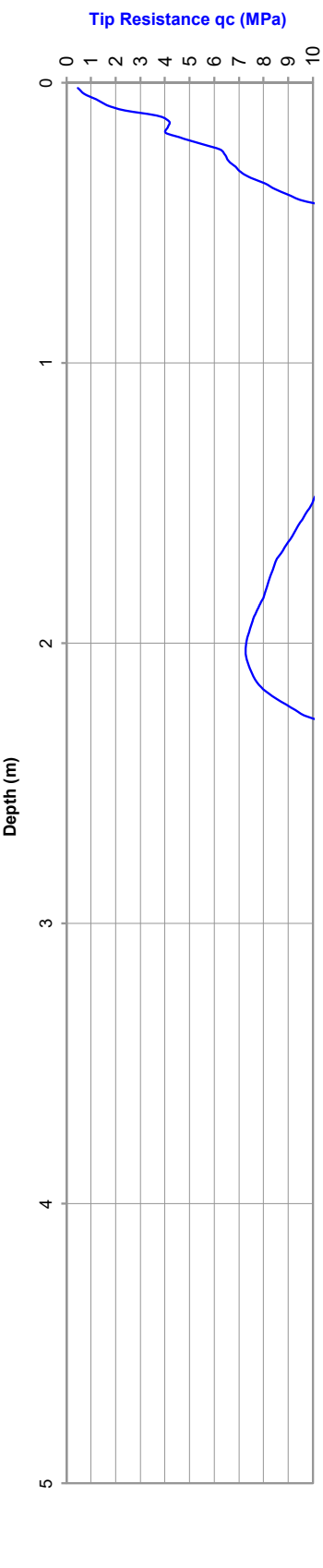
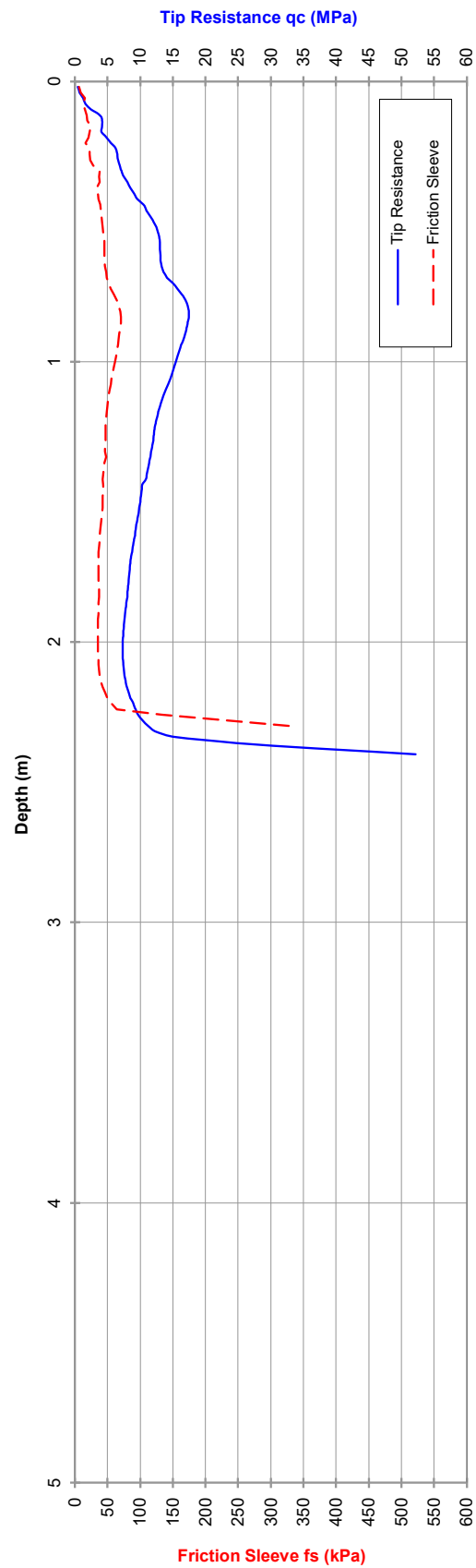
ELECTRIC FRICTION-CONE PENETROMETER

Probe I.D

CLIENT: Brown Geotechnical
PROJECT: 29 Stirling Crescent
LOCATION: High Wycombe

Job No.: 24024
RL (m):
Co-ords:

CPT 04
02-Jul-24



CLIENT

Marwon Pty Ltd

PROJECT NAME

Stirling Crescent/Hatch Court LSP

PROJECT NUMBER

14010

PROJECT LOCATION

High Wycombe

DATE STARTED

25/06/14

COMPLETED

25/06/14

R.L. SURFACE

23.1

DATUM

m AHD

DRILLING CONTRACTOR

SLOPE

90°

BEARING

EQUIPMENT

5 tonne excavator

HOLE LOCATION

31.993031S 116.00253E MGA

HOLE SIZE

0.5m x 1m

LOGGED BY

KB

CHECKED BY

KB

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
		23.0				TOPSOIL: Fine to medium, grey, silty sand, with rootlets, moist		
					FILL	FILL: Dense, grey & brown, sandy gravel fill		
			0.5		SP	SAND: Medium dense, medium, grey, trace silt, moist		
		22.5						
			1.0					
		22.0						
			1.5					
		21.5						
			2.0					
		21.0						
			2.5					
		20.5						
			3.0					
						Collapse Borehole TH18 terminated at 2.3m		

CLIENT Marwon Pty Ltd PROJECT NAME Stirling Crescent/Hatch Court LSP
PROJECT NUMBER 14010 PROJECT LOCATION High Wycombe

DATE STARTED 25/06/14 COMPLETED 25/06/14 R.L. SURFACE 24.0 DATUM m AHD
DRILLING CONTRACTOR _____ SLOPE 90° BEARING ---
EQUIPMENT 5 tonne excavator HOLE LOCATION 31.92991S 116.00179E MGA
HOLE SIZE 0.5m x 1m LOGGED BY KB CHECKED BY KB

NOTES _____

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Samples Tests Remarks	Additional Observations
						TOPSOIL: Fine to medium, grey, silty sand, with rootlets, moist		
						FILL: Dense, brown, clayey sand fill		
		23.5	0.5					
		23.0	1.0					
						SAND: Medium dense, medium, grey, trace silt, moist		
		22.5	1.5					
		22.0	2.0					
						wet below 2.3m		
		21.5	2.5					
						Borehole TH19 terminated at 2.5m		
		21.0	3.0					

NOTES

BOREHOLE / TEST PIT STIRLING HATCH.GPJ GINT AUSTRALIA.GDT 13/08/14



SOIL | AGGREGATE | CONCRETE | CRUSHING

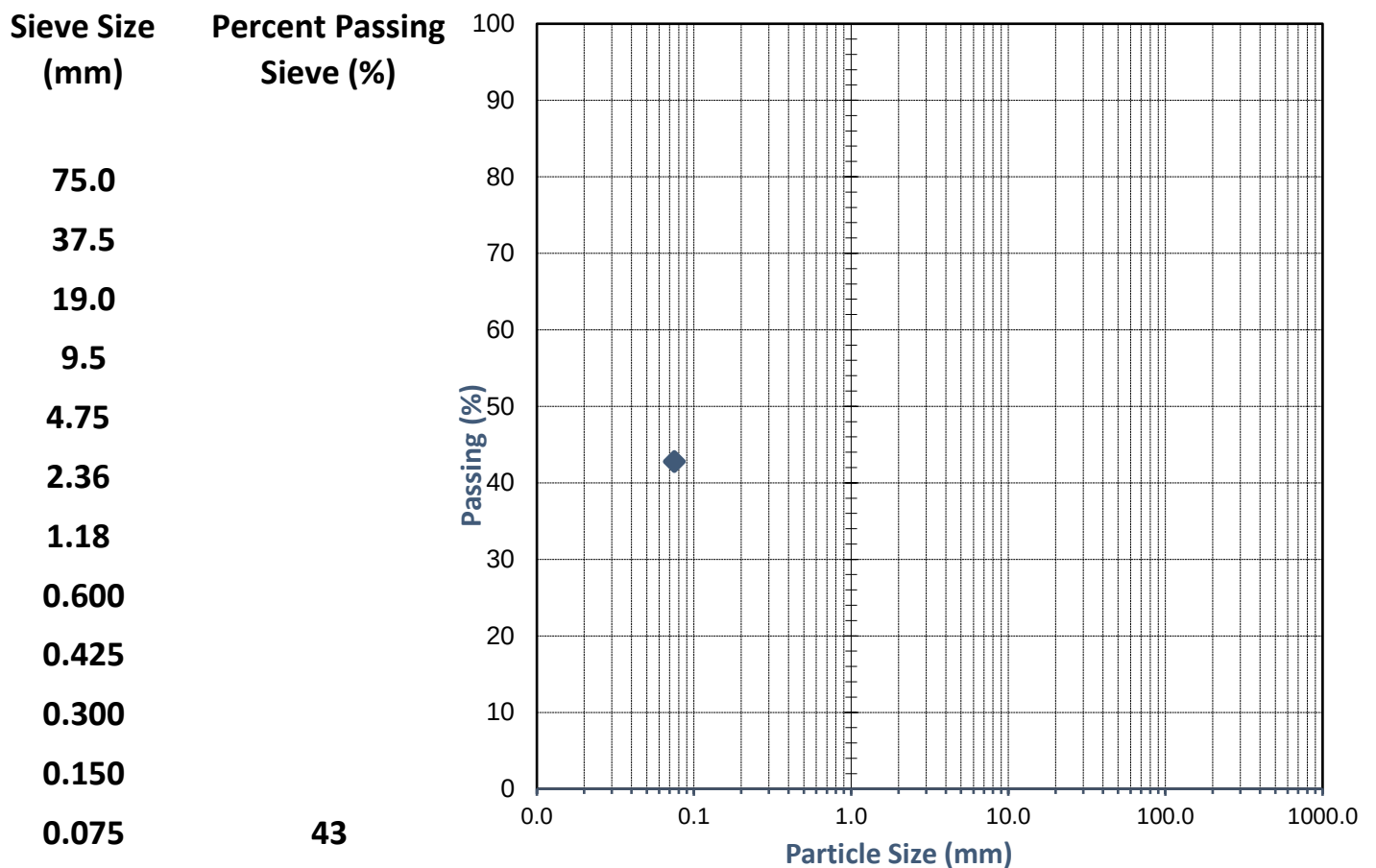
TEST REPORT - AS 1289.3.6.1 (% Fines)

Client:	Brown Geotechnical	Ticket No.	S13725
Client Address:	PO Box 278, Como WA 6952	Report No.	WG24.10365_1_%FINES
Project:	29 Stirling Crescent	Sample No.	WG24.10365
Location:	High Wycombe	Date Sampled:	2/07/2024
Sample Identification:	CPT4 - 0.5m	Date Tested:	04/07 - 05/07/2024

TEST RESULTS - Particle Size Distribution of Soil

Sampling Method:

Sampled by Client, Tested as Received



Comments: Clients request for the % Fines of Material passing 0.075mm only.

Approved Signatory:

Name: Natasha Bielawski

Date: 05/July/2024



Accreditation No. 20599
Accredited for compliance
with ISO/IEC 17025 - Testing

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WESTERN GEOTECHNICAL

& Laboratory Services

SOIL | AGGREGATE | CONCRETE | CRUSHING

TEST REPORT - AS 1289.3.1.2, 3.2.1, 3.3.1 & 3.4.1

Client:	Brown Geotechnical	Ticket No.	S13725
Client Address:	PO Box 278, Como WA 6952	Report No.	WG24.10365_1_PI
Project:	29 Stirling Crescent	Sample No.	WG24.10365
Location:	High Wycombe	Date Sampled:	2/07/2024
Sample Identification:	CPT4 - 0.5m	Date Tested:	5/07/2024

TEST RESULTS - Consistency Limits (Casagrande)

Sampling Method:

Sampled by Client, Tested as Received

History of Sample:

Oven Dried <50°C

Method of Preparation:

Dry Sieved

AS 1289.3.1.2	Liquid Limit (%)	39
AS 1289.3.2.1	Plastic Limit (%)	17
AS 1289.3.3.1	Plasticity Index (%)	22
AS 1289.3.4.1	Linear Shrinkage (%)	8.0
AS 1289.3.4.1	Length of Mould (mm)	250
AS 1289.3.4.1	Condition of Dry Specimen	-

Comments:

Approved Signatory:

Name: Cody O'Neill

Date: 08/July/2024



Accreditation No. 20599

Accredited for compliance

with ISO/IEC 17025 - Testing

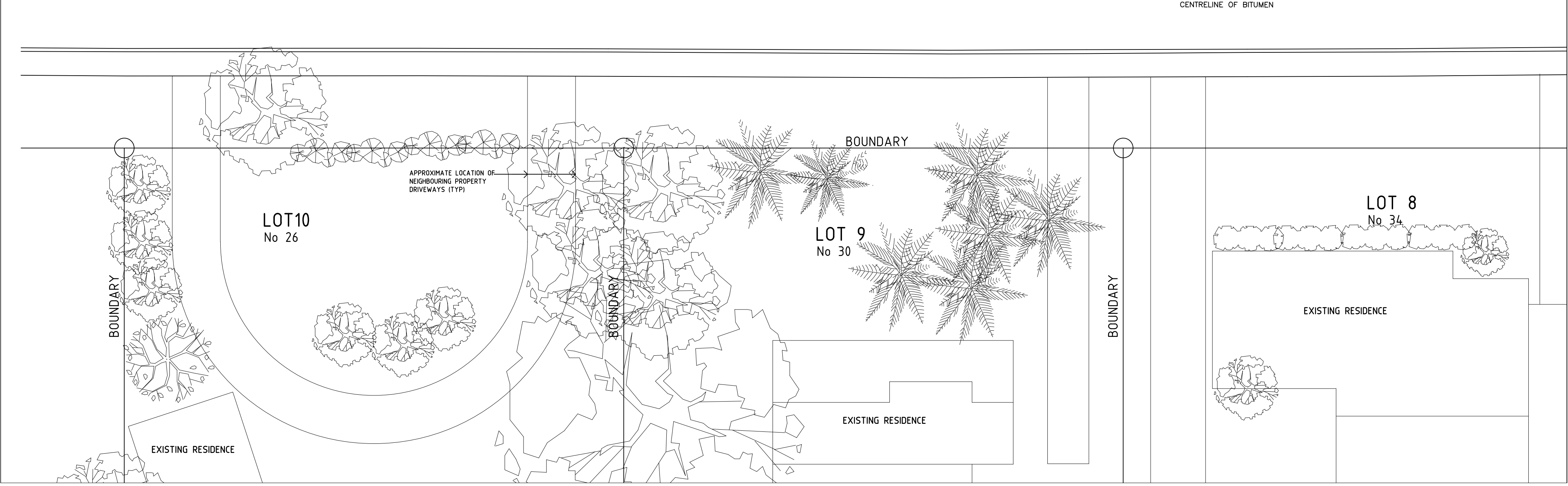
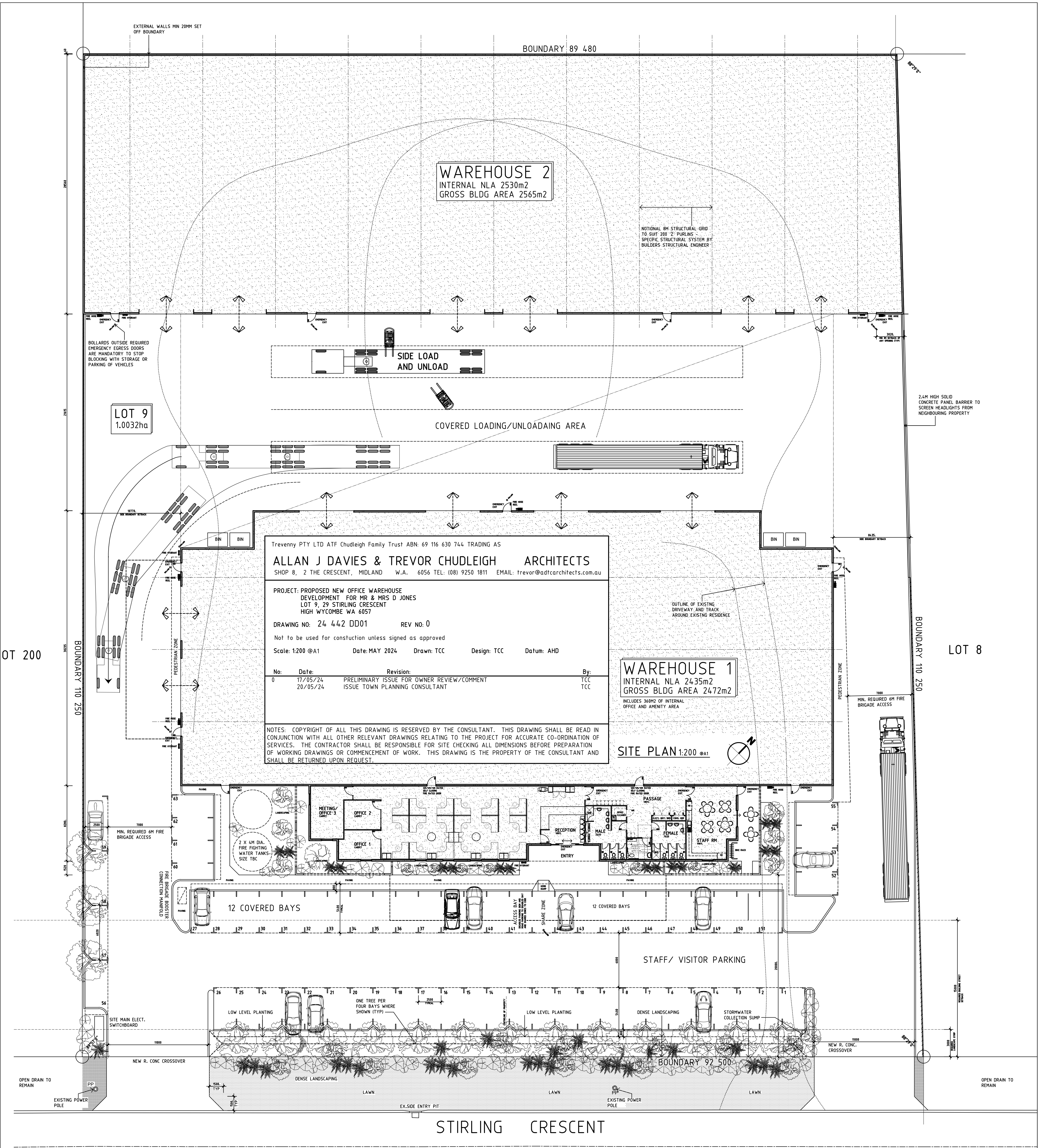
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APPENDIX C - Proposed Development Layout



Trevenny PTY LTD ATF Chudleigh Family Trust ABN: 69 116 630 744 TRADING AS

ALLAN J DAVIES & TREVOR CHUDLEIGH ARCHITECTS

SHOP 8, 2 THE CRESCENT, MIDLAND W.A. 6056 TEL: (08) 9250 1811 EMAIL: trevor@adfarchitects.com.au

PROJECT: PROPOSED NEW OFFICE WAREHOUSE DEVELOPMENT FOR MR & MRS D JONES

LOT 9, 29 STIRLING CRESCENT

HIGH WYCOMBE WA 6057

DRAWING NO: 24 442 DD02

REV No: 0

Not to be used for construction unless signed as approved

Scale: 1:100 @A1

Date: MAY 2024

Drawn: TCC

Design: TCC

Datum: LOCAL

No:	Date:	Revision:	By:
0	17/05/24	PRELIMINARY DESIGN DEVELOPMENT ISSUE FOR OWNER REVIEW AND COMMENT	TCC
	20/05/24	ISSUE TOWN PLANNING CONSULTANT	TCC

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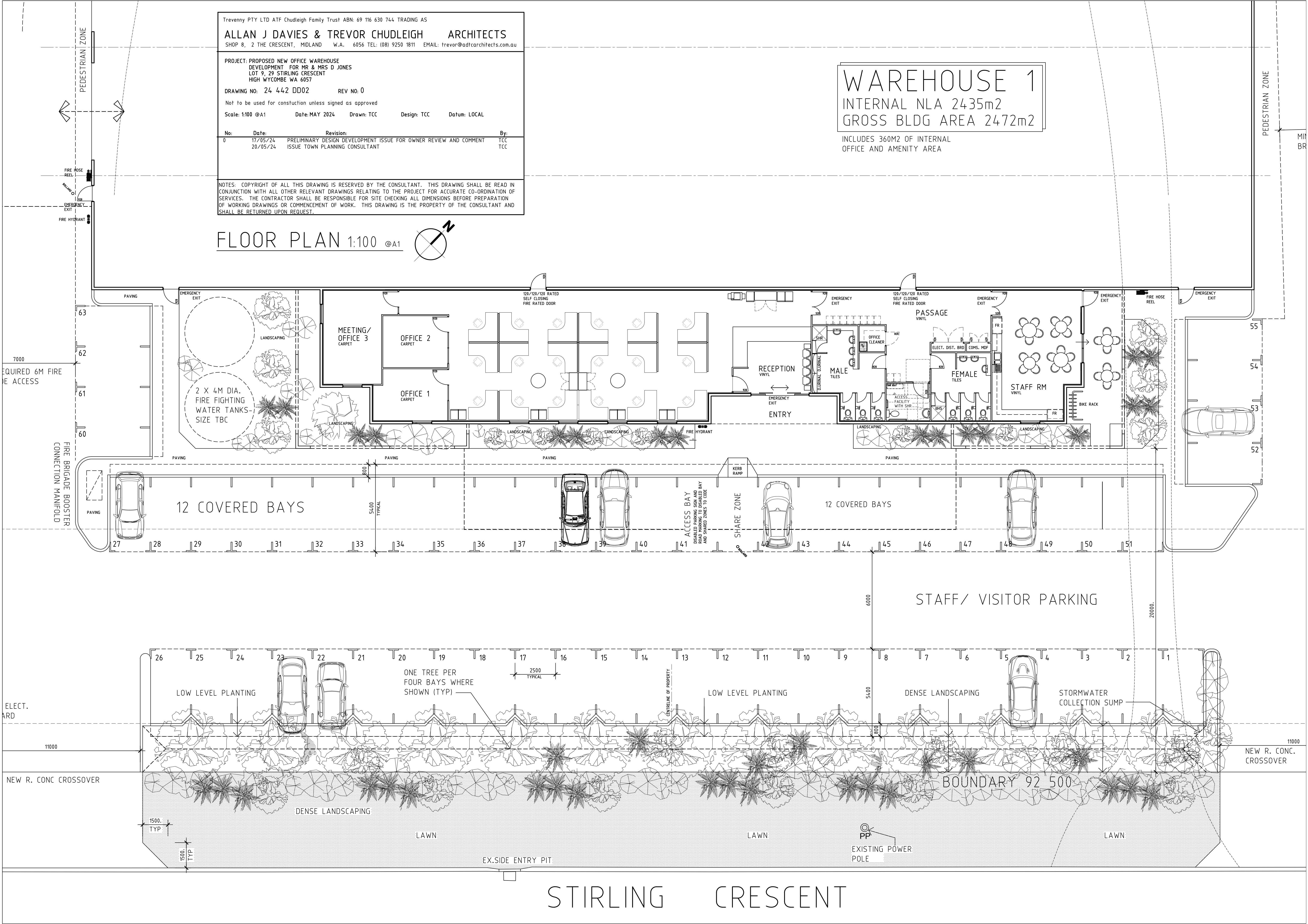
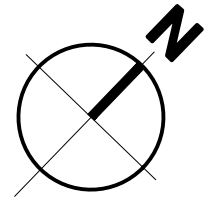
WAREHOUSE 1

INTERNAL NLA 2435m²

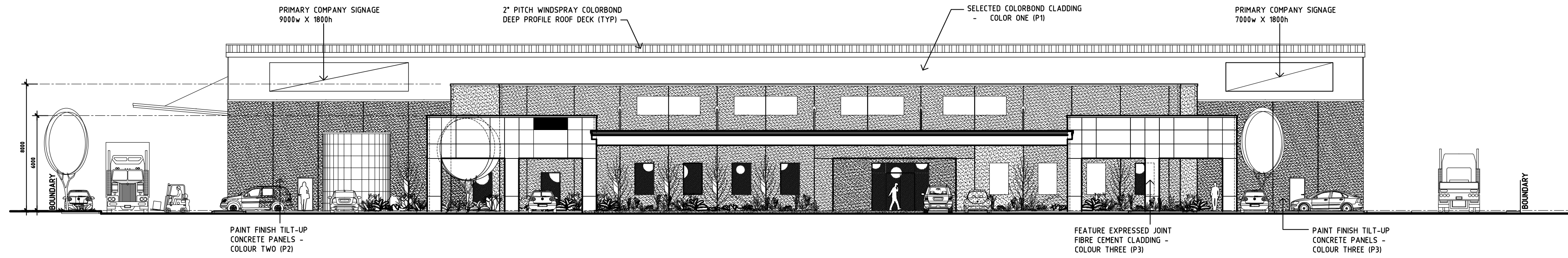
GROSS BLDG AREA 2472m²

INCLUDES 360M² OF INTERNAL OFFICE AND AMENITY AREA

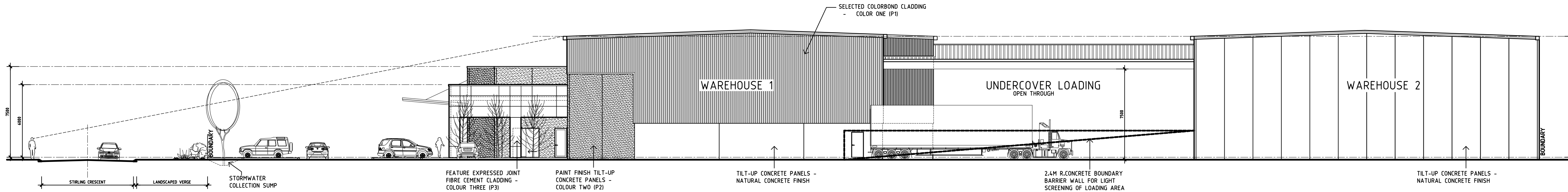
FLOOR PLAN 1:100 @A1



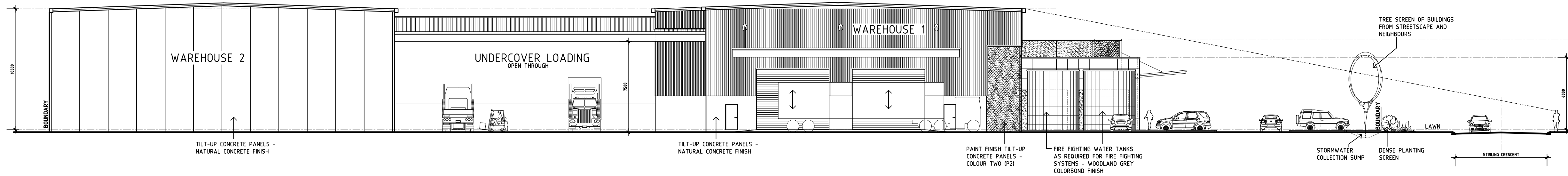
STIRLING CRESCENT



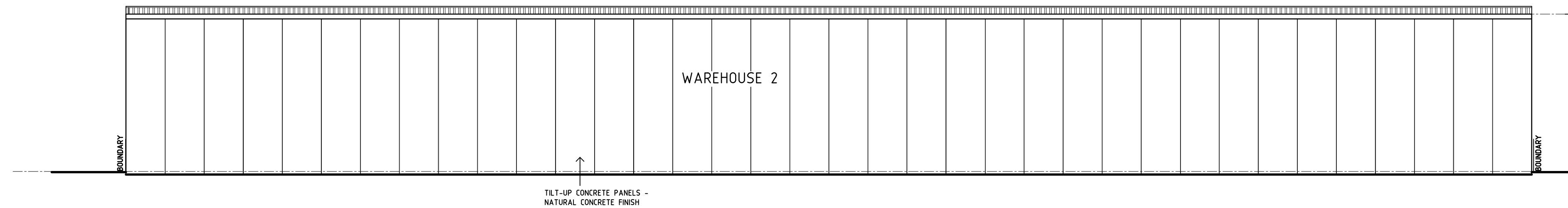
EAST ELEVATION 1:200 @A1
STIRLING CRESCENT



NORTHERN ELEVATION 1:200 @A1



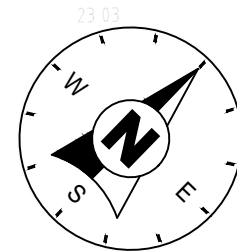
SOUTHERN ELEVATION 1:200 @A1



WEST ELEVATION 1:200 @A1

Trevenny PTY LTD ATF Chudleigh Family Trust ABN: 69 116 630 744 TRADING AS			
ALLAN J DAVIES & TREVOR CHUDLEIGH		ARCHITECTS	
SHOP 8, 2 THE CRESCENT, MIDLAND W.A. 6056 TEL: (08) 9250 1811 EMAIL: trevor@adtarchitects.com.au			
PROJECT: PROPOSED NEW OFFICE WAREHOUSE DEVELOPMENT FOR MR & MRS D JONES LOT 9, 29 STIRLING CRESCENT HIGH WYCOMBE WA 6057			
DRAWING NO: 24 442 DD03		REV NO: 0	
Not to be used for constnction unless signed as approved			
Scale: 1:200 @A1	Date: MAY 2024	Drawn: TCC	Design: TCC Datum: LOCAL
No:	Date:	Revision:	By:
0	17/05/24 20/05/24	PRELIMINARY DESIGN DEVELOPMENT ISSUE FOR OWNER REVIEW/COMMENT ISSUE TO PLANNING CONSULTANT	TCC TCC
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APPENDIX D - Stormwater Management Plan and Calculations



EXTERNAL WALLS 1100 200MM SET OFF
BOUNDARY

WAREHOUSE 2
INTERNAL NLA 2530m²

FFL
24.20

DRAINAGE CELLS
30m x 5m x 1m DEEP WITH MINIMUM
500mm SEPARATION TO MAXIMUM
GROUND WATER LEVEL

COVERED LOADING/UNLOADING AREA

WAREHOUSE 1
INTERNAL NLA 2435m²

FFL
24.20

DRAINAGE CELLS
30m x 5m x 1m DEEP WITH MINIMUM
500mm SEPARATION TO MAXIMUM
GROUND WATER LEVEL

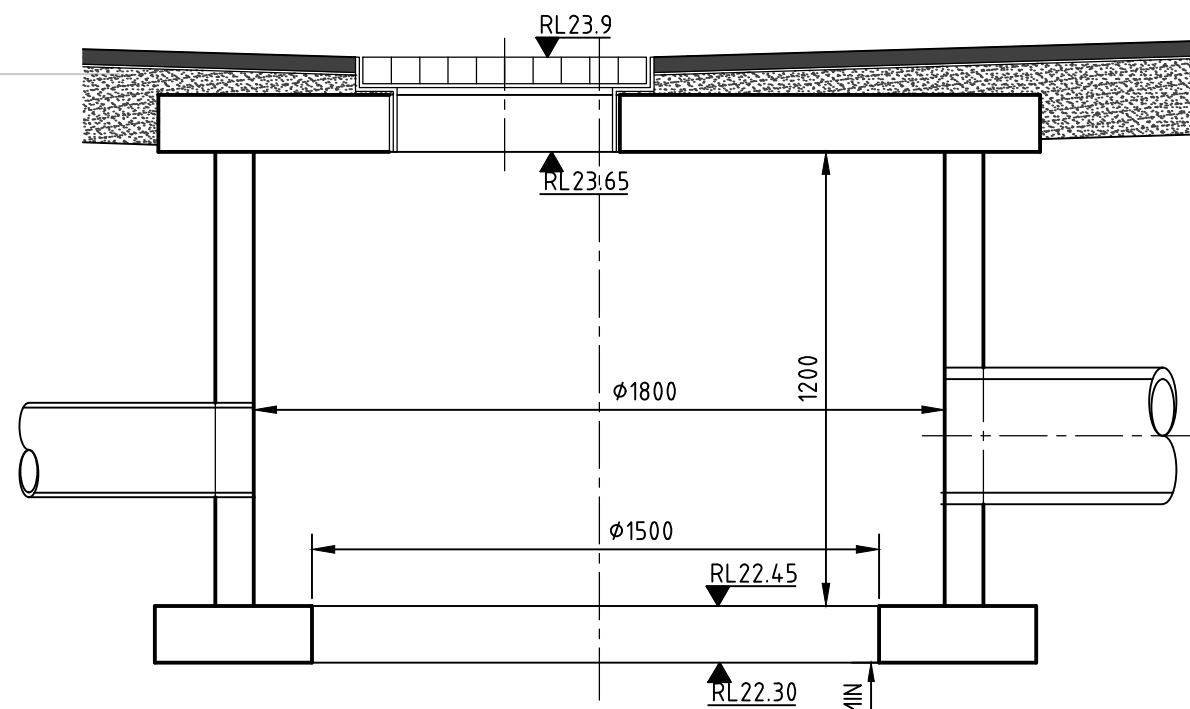
12 COVERED BAYS

12 COVERED BAYS

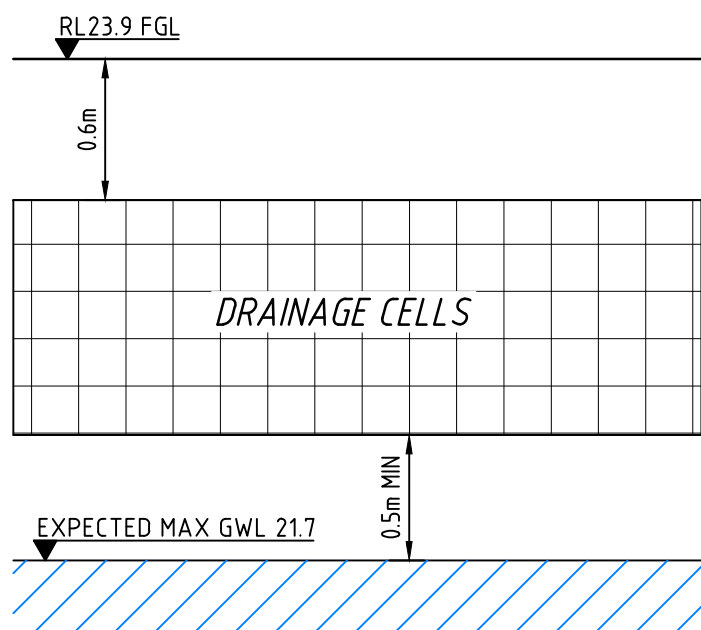
ONE TREE FOR
FOUR BAYS WHERE
SHOWN (TYP)

STIRLING CRESCENT

CAUTION HIGH PRESSURE GAS



TYPICAL SOAKWELL
NOT TO SCALE



TYPICAL DRAINAGE CELLS
NOT TO SCALE

LEGEND

- EXISTING GROUND CONTOUR
- EXISTING GROUND SPOT LEVEL
- PROPOSED FINISHED FLOOR LEVEL
- BOUNDARY
- PROPOSED RETAINING WALL
- UNDERGROUND STORAGE CELLS
- PROPOSED 300RCP DRAINAGE PIPE APPROXIMATE
- PROPOSED 225PVC DOWNPIPE DRAINAGE CONNECTION - APPROXIMATE
- EXISTING ROAD/ KERB
- EXISTING DRAINAGE - OPEN
- EXISTING WATER MAIN
- EXISTING POWER LINE
- EXISTING OVERHEAD POWER LINE AND POLE
- EXISTING TELECOMMUNICATIONS
- EXISTING VOCUS
- EXISTING HIGH PRESSURE GAS LINE
- 18m x 12m SOAKWELL (SW)
- PROPOSED DOWNPIPE APPROXIMATE LOCATION
- APPROXIMATE PROPOSED FINISHED LEVELS
- TRENCH GRATE

DRAINAGE CALCULATIONS

SITE LEVELS

MINIMUM FINISHED SURFACE LEVELS	23.9	m
MAXIMUM GROUND WATER LEVEL	21.25	m
FREEBOARD	0.5	m
AVAILABLE DEPTH OF DRAINAGE STRUCTURE	1.65	m

DESIGN SUMMARY

POST DEVELOPMENT	
ADP	1%
CRITICAL DESIGN STORM DURATION	6 hr
RAINFALL INTENSITY	14.6 mm/hr
AREA	1 ha
COEFFICIENT - POST DEVELOPMENT	0.90

STORMWATER VOLUMES

STORM VOLUME	792	m ³
STORAGE VOLUME AVAILABLE	341	m ³
INFILTRATION RATE	5	m/DAY
SOAKAGE VOLUME	400	m ³
ABOVE GROUND STORAGE	>51	m ³

STORAGE STRUCTURES

SOAKWELLS	16 No.	18m DIA X 12m DEEP	49	m ³
SOAKWELL INFILTRATION	16 No.	15m DIA AT BASE	51	m ³
STORAGE PIPE	18m	0.3m DIA	13	m ³
ABOVE GROUND STORAGE	>51m ³			
DRAINAGE CELLS	59.4 x 4.7m x 1m DEEP		280	m ³
DRAINAGE CELL SOAKAGE	59.4 x 4.7m x 1m DEEP		34.9	m ³
TOTAL STORAGE PROVIDED			793	m ³



PROJECT:

29 STIRLING CRESCENT HIGH WYCOMBE

ISSUED FOR APPROVAL

MEG

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CLIENT:

DAVID JONES AND
ANITA JONES

DRAWING:

STORMWATER MANAGEMENT PLAN

STATUS: FOR APPROVAL

SCALE: 1:250

DATE: Jul-24

DESIGN: JK

DRAWN: MEG

CHECK: APPD

DRAWING No:

24-6-92/500

FILE NAME: \24-06-092\ACAD\24692-500.dwg

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