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Concrib Pty Ltd
601 Boundary Road,
Richlands, QLD, 4076

Project Number: PTP/05398
Letter Number: PTP/05398 – 0001
Project Name: 473 Miles Platting Road, Rochedale

Email: gerry@concrib.com.au

Retaining Wall Design Parameters
Proposed Retaining Walls
473 Miles Platting Road, Rochedale

At the request of Concrib Pty Ltd (Concrib), Protest Engineering (Protest) carried out a site investigation at the above site on 24 August 2020. The purpose of the investigation was to assess ground conditions to provide retaining wall design parameters in accordance with '*AS 4678-2002 Earth-Retaining Structures*'. We understand that concrete sleeper retaining walls with a maximum height of 2 m will be constructed.

The attached drawings were provided by Concrib for review which indicates the locations and heights of the proposed retaining walls.

Bulk earthworks had commenced at the site and it is understood that the works are being undertaken under Level 1 supervision and testing in accordance with AS3798-2007. It is understood that any remaining bulk earthworks will also be undertaken and certified in accordance with AS3798-2007. If earthworks are not certified in accordance with AS3798-2007 Protest should be notified.

The fieldwork scope included three 100 mm diameter auger boreholes drilled to between 3.0 m and 4.5 m depth along the proposed wall alignments. Soil classification was undertaken in general accordance with the visual-tactile methods described in AS1726:2017 on recovered samples. A dynamic cone penetrometer test (DCP-AS1289.6.3.2) was undertaken adjacent to each borehole with the number of blows recorded at 100 mm depth intervals. Soil consistency and relative density described on the logs were inferred from the DCP results, pocket penetrometer results and published correlations. The log reports and the site plan indicating the approximate test locations and photos taken at the time of the inspection are attached.

In summary, the ground conditions encountered in the boreholes comprised moderately to well compacted fill from surface to between 0.5 m and 1.5 m depth underlain by natural sandy clays to termination depth of the bores. A localised clayey sand layer was encountered in Borehole 2 between 1.5 m and 1.7 m depth.

Groundwater was not encountered during drilling, though it should be noted that groundwater can fluctuate.

Based on the encountered ground conditions, and assuming that the Fill present has been placed and compacted under Level 1 supervision using engineered material, the unfactored drained parameters in Table 1 below have been inferred from the results of the DCP strength testing, visual and tactile assessment, and Tables D3 and D4 of Appendix D of AS4687-2002 and have been adopted for retaining wall design.

Table 1: Inferred Unfactored Geotechnical Parameters

Material	Unit Weight (t/m³)	Drained Friction Angle Φ'	Drained Cohesion C' (kPa)
"Controlled" clayey SAND FILL	1.8	35	0
"Controlled" sandy CLAY FILL	1.8	25	2
Stiff (or stronger) natural CLAY	1.9	26	5
Hard natural CLAY	1.9	28	8

The boreholes give a representation of what the soil profile is expected to be across the entirety of the site. It is possible for the soil profile to differ at locations not investigated and due to this Protest requires notification if any varying conditions are found during construction.

We trust this information is satisfactory for your current needs. Should you have any questions, please feel free to contact the undersigned.

Regards,

Protest Engineering **Reviewed by**

Sean Kelly
Branch Manager - Geotechnical Engineering

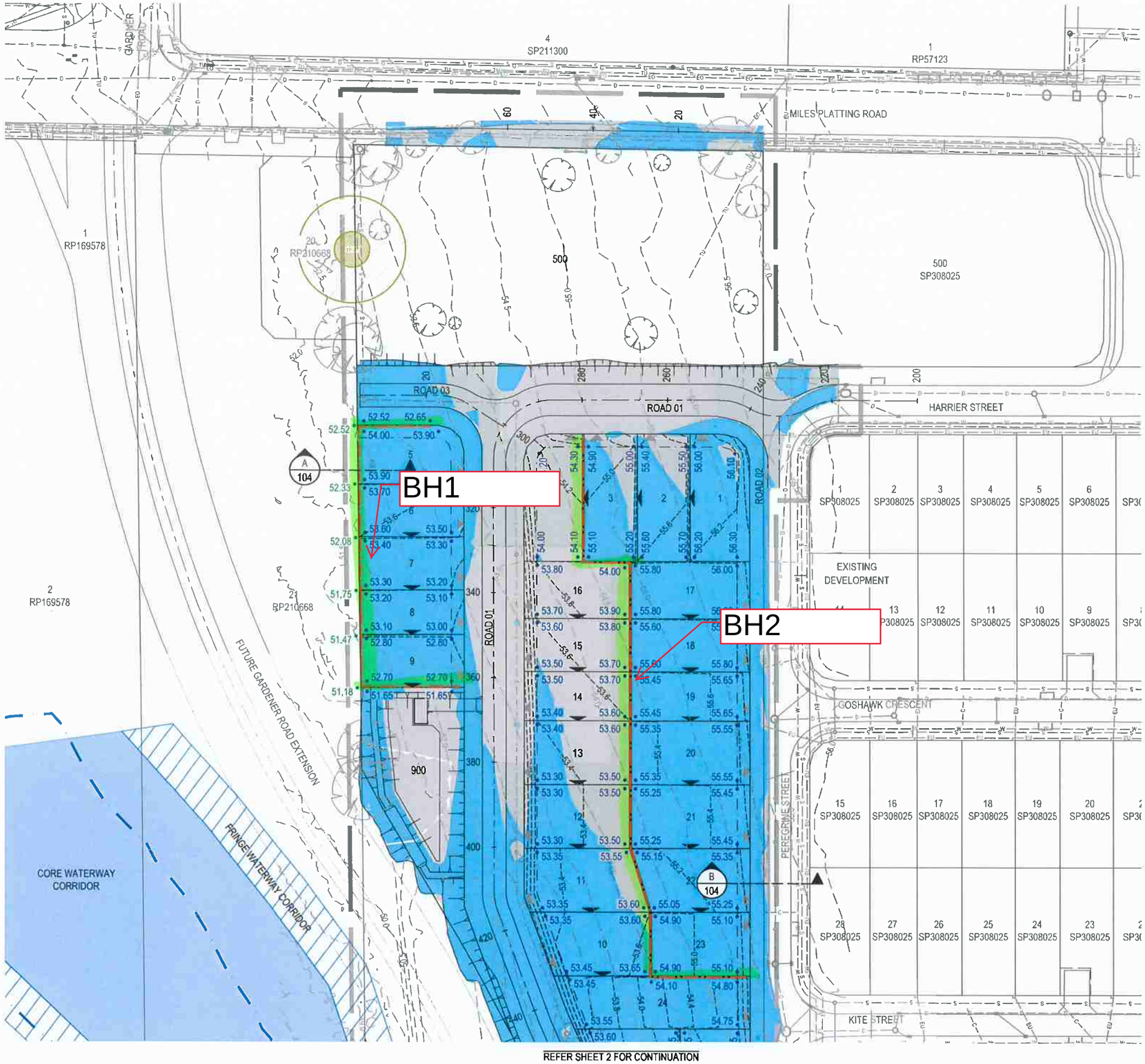
Colin Bruce
Principal Geotechnical Engineer

Attachments:

- Test Location Plan;
- Borehole Logs; and
- Client supplied drawings.

Figure 1: Site conditions

Figure 2: Site conditions



REFER SHEET 2 FOR CONTINUATION

LEGEND

- PROPOSED STAGE BOUNDARY
- 42.0 PROPOSED SURFACE CONTOUR
- 42.0 EXISTING SURFACE CONTOUR
- PROPOSED EARTHWORKS PAD SETBACK LINE
- PROPOSED CONCRETE SLEEPER RETAINING WALL
- PROPOSED BATTER
- PROPOSED DRAINAGE SWALE
- WATERWAY CORRIDOR Q100 EXTENTS
- •53.80 PROPOSED FINISHED SURFACE LEVEL (FSL) (INCLUDES TOPSOIL PLACEMENT)
- •52.64 EXISTING SURFACE LEVEL (ESL)
- PROPOSED AREA OF CUT
- PROPOSED AREA OF FILL
- INDICATIVE DRIVEWAY LOCATIONS
- ZERO LOT BOUNDARY
- D EXISTING STORMWATER DRAINAGE PIPE
- S EXISTING SEWERAGE MAIN
- W EXISTING WATER MAIN
- EU EXISTING ELECTRICAL CABLE U/G
- EO EXISTING ELECTRICAL CABLE O/H
- TU EXISTING TELECOMMUNICATION CABLE U/G
- G EXISTING GAS MAIN
- EXISTING TREE TO REMAIN - REFER VMP
- EXISTING TREE TO BE REMOVED - REFER VMP

WARNING! - EXISTING SERVICES

EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	18.06.20	KP	KP	ISSUED FOR CONSTRUCTION

DRAWN: KP
DESIGN: DB

STATUS: ISSUED FOR CONSTRUCTION

APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS • ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

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

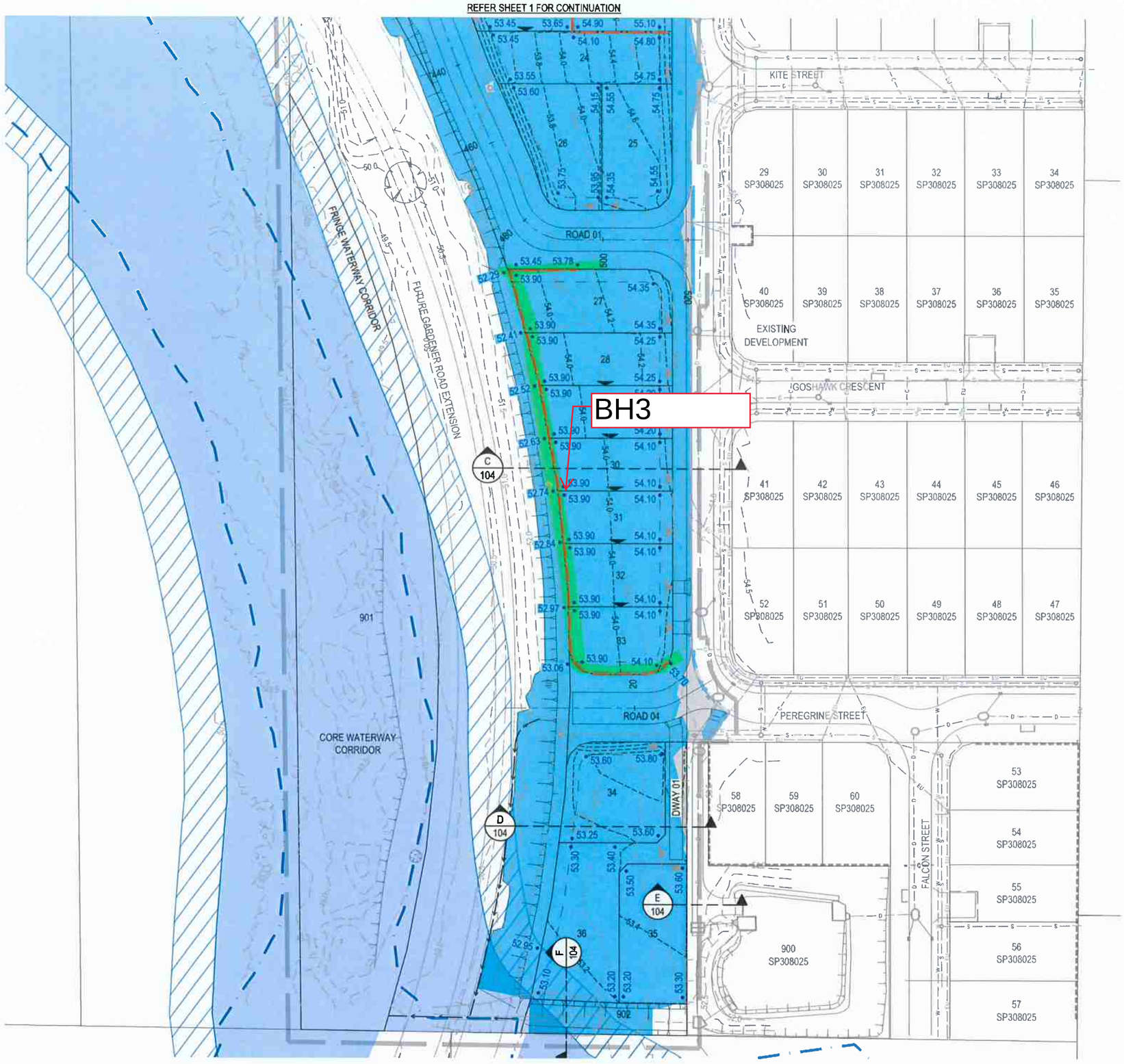
CLIENT: AVJENNINGS PROPERTIES LTD

ASSOCIATED CONSULTANT: SURVEYOR: WOLTER CONSULTING GROUP (07) 3666 5200

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT
473 MILES PLATTING ROAD ROCHEDALE

DRAWING TITLE: BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 2

PROJECT No. 18-0223 | DRAWING No. 102 | REVISION A



NOTE:

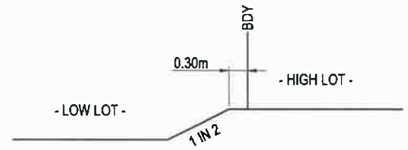
REFER SHEET 102 FOR LEGEND

WARNING! - EXISTING SERVICES

EXTREME CARE SHOULD BE TAKEN WHEN EXCAVATING IN THIS AREA. THE FOLLOWING EXISTING SERVICES ARE LIKELY TO BE PRESENT IN THE VICINITY OF THE SITE:

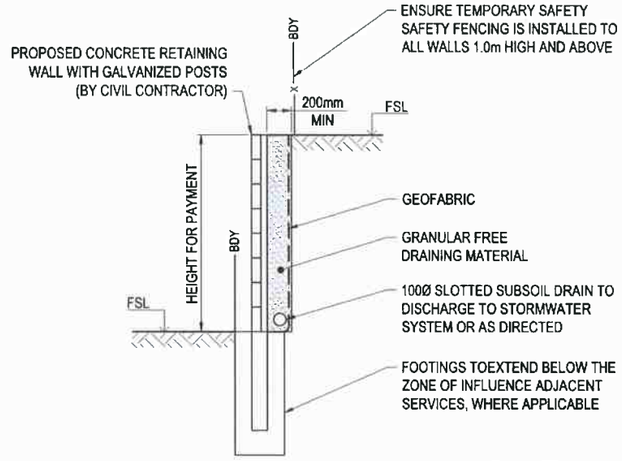
- ELECTRICAL CABLES
- TELECOMMUNICATIONS CABLES
- GAS MAINS
- WATER MAINS
- SEWER MAINS

THE CONTRACTOR SHOULD CONTACT THE SERVICE PROVIDER FOR FURTHER INFORMATION AND SATISFY THEMSELVES OF ANY SPECIFIC TREATMENT OR REQUIREMENTS.



TYPICAL STEP BETWEEN LOTS DETAIL

SCALE 1:50 (A1)
SCALE 1:100 (A3)



CONCRETE SLEEPER RETAINING WALL TYPICAL DETAIL

SCALE 1:25 (A1)
SCALE 1:50 (A3)

RETAINING WALL NOTES:

1. ALL RETAINING WALLS ARE TO BE DELIVERED UNDER DESIGN AND CONSTRUCTION ARRANGEMENT - FORMS 15 AND 16 CERTIFICATIONS ARE TO BE PROVIDED BY THE CONTRACTOR.
2. DESIGN OF WALLS TO CONSIDER ALL LOADS (FENCES, DWELLINGS ETC) AS WELL AS ASSOCIATED IMPACTS FROM ANY ADJACENT SERVICES - FOOTING DEPTHS TO BE EXTENDED AS REQUIRED.
3. GEOTECHNICAL CONDITIONS ARE TO BE CONFIRMED AND APPROPRIATELY CONSIDERED FOR ALL WALLS.
4. REFER LANDSCAPE DRAWINGS FOR FURTHER INFORMATION ON RETAINING WALLS, PARTICULARLY RELATING TO FINISHES.
5. TEMPORARY SAFETY FENCING TO BE INSTALLED BEHIND ALL WALLS 1.0m HIGH AND GREATER.

REV	DATE	DESIGN	DRAWN	REVISION DETAILS
A	18.06.20	KP	KP	ISSUED FOR CONSTRUCTION

DRAWN: KP
DESIGN: DB

STATUS: ISSUED FOR CONSTRUCTION

APPROVED: ANDREW NGO RPEQ 12329
FOR AND ON BEHALF OF PEAKURBAN PTY LTD

PEAKURBAN
DEVELOPMENT ENGINEERS + ADVISORS
ENQUIRIES@PEAKURBAN.COM.AU

SCALE: 1:500 A1 / 1:1000 A3

CLIENT: AVJENNINGS PROPERTIES LTD

ASSOCIATED CONSULTANT: SURVEYOR: WOLTER CONSULTING GROUP (07) 3666 5200

PROJECT NAME: PROPOSED RESIDENTIAL DEVELOPMENT
473 MILES PLATTING ROAD ROCHEDALE

DRAWING TITLE: BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 2

PROJECT No.	DRAWING No.	REVISION
18-0223	103	A

BOREHOLE 1

PROTEST ENGINEERING
Synergy // Efficiency // Productivity

CLIENT Concrib Pty Ltd
PROJECT Proposed Retaining Walls
LOCATION 473 Miles Platting Road, Roachedale
PROJECT NUMBER PTP/05398
DRILLER Protest Engineering **RIG** GT-10

DATE 24/08/2020
EASTING 511356 m
NORTHING 6949334 m
SURFACE ELEV.
LOGGER AS

RL (m)	Depth (m)	Drilling Method	Casing	Graphic Log	Material Description	Water	Strength (Consistency, Relative Density, Rock Strength)	Sampling & Testing: Type	Sampling & Testing: Results & Comments	Dynamic Penetrometer Test (blows per 100 mm)
	0.5				FILL CI/CH sandy CLAY, stiff, brown, medium to high plasticity, fine to medium grained, moist	No groundwater encountered at the time of drilling.	Stiff			18, 7, 3, 3, 2
	1.0				CI sandy CLAY, stiff, dark brown, medium plasticity, fine to medium grained, moist very stiff		Very Stiff			5, 8, 10, 14
	1.5				hard					
	2.0						Hard			
	2.5									
	3.0									
	3.5				Bore terminated at 3 m. Target depth achieved.					
	4.0									
	4.5									
	5.0									

Dynamic Penetrometer Test (blows per 100 mm): 5 10 15 20

Remarks:

BOREHOLE 2

PROTEST ENGINEERING
Synergy // Efficiency // Productivity

CLIENT Concrib Pty Ltd
PROJECT Proposed Retaining Walls
LOCATION 473 Miles Platting Road, Roachedale
PROJECT NUMBER PTP/05398
DRILLER Protest Engineering **RIG** GT-10

DATE 24/08/2020
EASTING 511412 m
NORTHING 6949249 m
SURFACE ELEV.
LOGGER AS

RL (m)	Depth (m)	Drilling Method	Casing	Graphic Log	Material Description	Water	Strength (Consistency, Relative Density, Rock Strength)	Sampling & Testing: Type	Sampling & Testing: Results & Comments	Dynamic Penetrometer Test (blows per 100 mm)
					FILL CI gravelly sandy CLAY, hard, brown, fine to medium grained sand, fine gravel, moist	No groundwater encountered at the time of drilling.	Hard			19, 8, 5, 8, 14, 10, 11, 9, 16
	0.5				FILL SC clayey SAND, medium dense, brown, fine to medium grained, medium plasticity fines, moist		Medium Dense			
	1.0				CI sandy CLAY, hard, red-brown, medium plasticity, fine to medium grained, moist		Hard			
	1.5									
	2.0									
	2.5									
	3.0									
	3.5									
	4.0									
	4.5				Bore terminated at 4.5 m. Target depth achieved.					
	5.0									

Dynamic Penetrometer Test (blows per 100 mm): 5 10 15 20

Remarks:

BOREHOLE 3

PROTEST ENGINEERING
Synergy // Efficiency // Productivity

CLIENT	Concrib Pty Ltd	**DATE**	24/08/2020
PROJECT	Proposed Retaining Walls	**EASTING**	511383 m
LOCATION	473 Miles Platting Road, Roachedale	**NORTHING**	6949408 m
PROJECT NUMBER	PTP/05398	**SURFACE ELEV.**	
DRILLER	Protest Engineering **RIG** GT-10	**LOGGER**	AS

RL (m)	Depth (m)	Drilling Method	Casing	Graphic Log	Material Description	Water	Strength (Consistency, Relative Density, Rock Strength)	Sampling & Testing: Type	Sampling & Testing: Results & Comments	Dynamic Penetrometer Test (blows per 100 mm)
	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0				FILL CI gravelly sandy CLAY, hard, brown, fine to medium grained sand, fine gravel, moist	No groundwater encountered at the time of drilling.	Hard			23, 26 >>, 10, 8, 6, 3, 7, 11, 9
	1.5				SC clayey SAND, medium dense, pale brown, fine to medium grained, medium plasticity fines, moist		Medium Dense			
	2.0, 2.5, 3.0, 3.5, 4.0				CI sandy CLAY, very stiff, red-brown, medium plasticity, fine to medium grained, moist		Very Stiff			
	4.5, 5.0				Bore terminated at 4 m. Target depth achieved.					

Dynamic Penetrometer Test scale: 5, 10, 15, 20

Remarks: