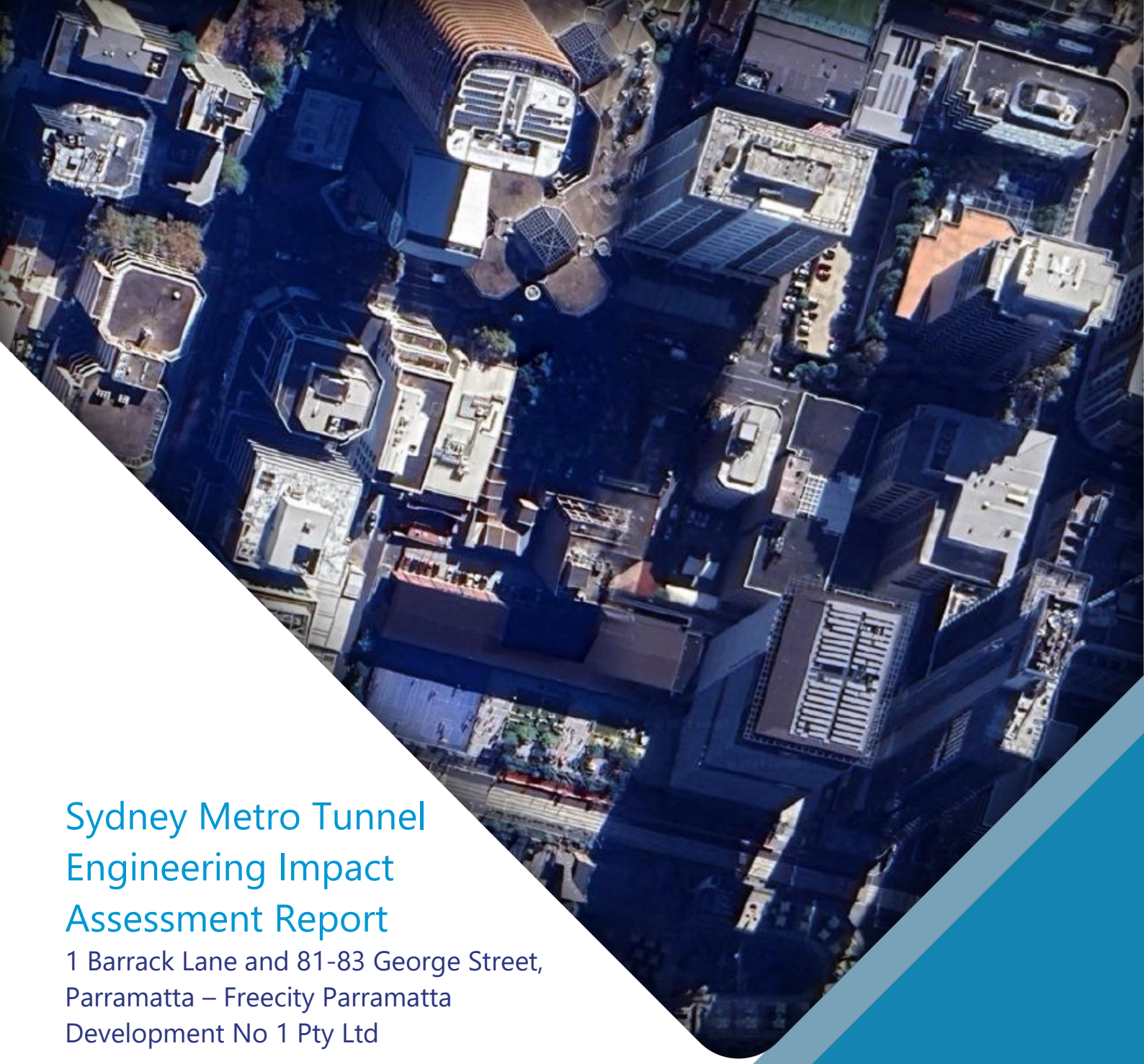

Sydney Metro Tunnel Engineering Impact Assessment Report

1 Barrack Lane and 81-83 George Street, Parramatta – Freecity Parramatta Development No 1 Pty Ltd

Job Number:	Revision:	Date of issue:
25055	P06	19 March 2026

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Report Amendment Register

Issue Ref	Amended Section (s)	Issue / Amendment Details	Author(s)	Reviewer	Date
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P02	All	Draft Issue – updated to external comments	JL	MO	23 October 2025
P03	All	SSDA Issue	JL	MO	29 October 2025
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1. Introduction

Robert Bird Group (RBG) have been appointed by Freecity Parramatta Development No 1 Pty Ltd to provide Structural and Civil Engineering Design services for the 1 Barrack Lane and 81-83 George Street, Parramatta mixed use Build-to-Rent (BTR) development. The Sydney Metro West Line tunnels are located to the south of the site, and the construction of the proposed structures requires an impact assessment in accordance with the Sydney Metro Underground Corridor Protection Guideline. This report is prepared with respect to the Sydney Metro tunnel interface in support of the State Significant Development Application (SSDA).

1.1 Purpose of this Report

This report has been prepared in accordance with the Sydney Metro Underground Corridor Protection Guidelines (the Guidelines) and presents an engineering assessment of the proposed development at 1 Barrack Lane and 81–83 George Street, Parramatta, on the Sydney Metro West Line tunnels. The assessment is intended to demonstrate that the proposed development and the associated construction works will have no adverse impact on the safety, structural integrity and safe and effective operation of the planned Metro infrastructure located to the south of the site.

This report outlines the key structural elements of the development and provides preliminary assessment of the proposal. A detailed engineering analysis will be provided following the completion of site-specific geotechnical investigations to further validate the impact on the Metro infrastructure.

1.2 Scope of this Report

In regards to the potential impact and risk on the Sydney Metro infrastructure the scope of this report covers:

- Permanent Structure Intent
- Construction Phasing
    - Demolition of existing building.
    - Temporary works for permanent structure.
    - Permanent structural frame.
- Geotechnical Modelling for both permanent structure intent and construction phasing

The requirements of engineering impact and risk assessment in accordance with Sydney Metro Underground Corridor Protection Technical Guidelines 2025 Requirements are summarised as follows:

Required items of the Engineering Impact Assessment Report	**Report Section**	**Preliminary Issue [P03]**	**Final Issue [P05]**
Details of the scope of the development	1 & 2	✓	✓
Survey plans	Appendix A-1	✓	✓
Structural plans, foundation layout, shoring and excavation plans, cross-sections with subsoil profile and Metro Infrastructure	Appendix A-2	✓ The plans and sections will be provided as sketches	✓
Column and foundation loads	Appendix A-2	-	✓
Geotechnical numerical modelling - predicted displacement and stress on the tunnels	5 & Appendix A-3	-	✓
Structural assessment of the tunnels	5 & Appendix A-4	-	✓
Sensitivity analysis	5 & Appendix A-3	-	✓
Assessment of the effects of construction techniques and methodology	4 & 5	✓	✓
Design assumptions, qualifications or limitations	5	-	✓
Recommendations regarding any planned preventative or remedial action	5	✓	✓
Risk Assessment	6	✓	✓

Table 1.1 SM Impact Assessment Requirements

2. Proposed Development

The SSDA seeks development consent for the demolition of existing structures and the construction of a 40-storey mixed use development with ground floor retail and a build-to-rent (BTR) tower. Specifically, the proposal comprises the following:

- The demolition of existing site structures and the removal of two trees,
- The construction of a forty storey mixed-use development comprising:
    - Site preparation works including preparatory earthworks.
    - A three storey podium including:
        - Ground floor: a flexible retail area and a retail tenancy, a build-to-rent lobby and management area, services and waste rooms, separate vehicle entries for residential use and service use, 4 parking spaces for service vehicles, bike repair facilities and 40 bicycle parking spaces,
        - First level: 32 car parking spaces, inclusive of 2 accessible spaces, 214 bicycle parking spaces, 7 motorcycle parking space, a residential storage area and services,
        - Second level: 39 car parking spaces, inclusive of 2 accessible spaces, 170 bicycle parking spaces, 7 motorcycle parking spaces, a residential storage area and services,
        - Upper podium level providing communal open space and amenities.
    - A thirty-seven (37) storey residential tower incorporating 383 BTR units
- Installation of a new substation and infrastructure connections as required.
- Associated landscaping and public domain works.
- Extended hours of construction.

The development is targeting a volumetric modular (VMC) style of construction for the residential levels supported by a more traditional concrete frame at the lower levels. This form of construction has specific considerations and will drive many aspects of the design both structurally and architecturally.

2.1 Site Location

The site is located at 1 Barrack Lane and 81–83 George Street, Parramatta, and is identified by the red outline at Figure 2.1 below. It comprises three allotments legally described as Lot 101 in DP 1110883, Lot 1 in DP 628004, and Lot 250 in DP 1287232.

The site has an area of 3,071m^2 and is bounded by George Street to the north and Barrack Lane to the west, with a George Street frontage of 38.17m and a Barrack Lane frontage of 65.1m.

To the southeast, the site adjoins the open car park of Arthur Phillip High School. The southern boundary steps back at the southwest corner, where the Warders Cottages are located. On the eastern side, the site is bounded by the driveway of 85 George Street, the landscaped area of The Stables, and the commercial building at 85 George Street near the southern end.

Figure 2.1 Site Boundary identified by Red Outline

2.2 Number of Storeys & Usage

The following components are the usage of different levels of the proposed development:

Level	Usage
Ground Level	Retail, a lobby, substation, waste room and loading zones
Level 1 - 2	Car parks, bike storage and plant rooms
Level 3	Amenities
Level 4 to 37	Built-to-Rent units
Level 38-39	Plant rooms

Table 2.1 Building Uses

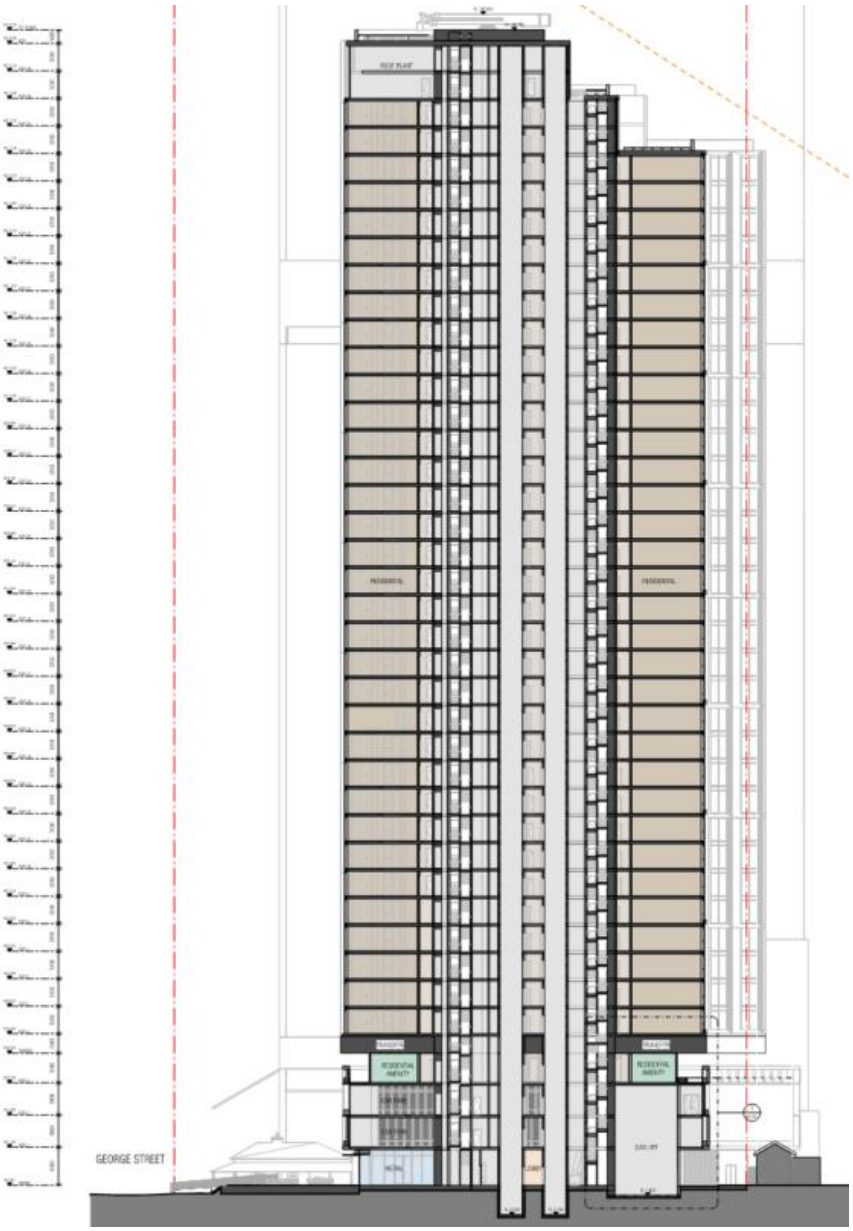


Figure 2.2 Building Overall Section

2.3 Sydney Metro West Line Tunnels

The site is located in close proximity to critical underground infrastructure associated with the Sydney Metro West Line project. Two metro tunnels run approximately 2 metres on plan from the site's boundary (See Figure 2.3) and are situated at a depth of around 24 metres below ground level, with the top of the tunnels at approximately RL -16.0 AHD.

No proposed structures or construction will be within the First Reserve Zone. While a small portion of the First Reserve Zone lies within the boundary of the proposed development site, it is located approximately 16 metres below ground level, with its top surface at RL -8.8 AHD.

In contrast, the Second Reserve Zone extends across the southern half of the site (refer to Figure 2.3). The precise location and extent of the site boundary, tunnels and the reserve zones are illustrated in the site survey provided in Appendix A-1.

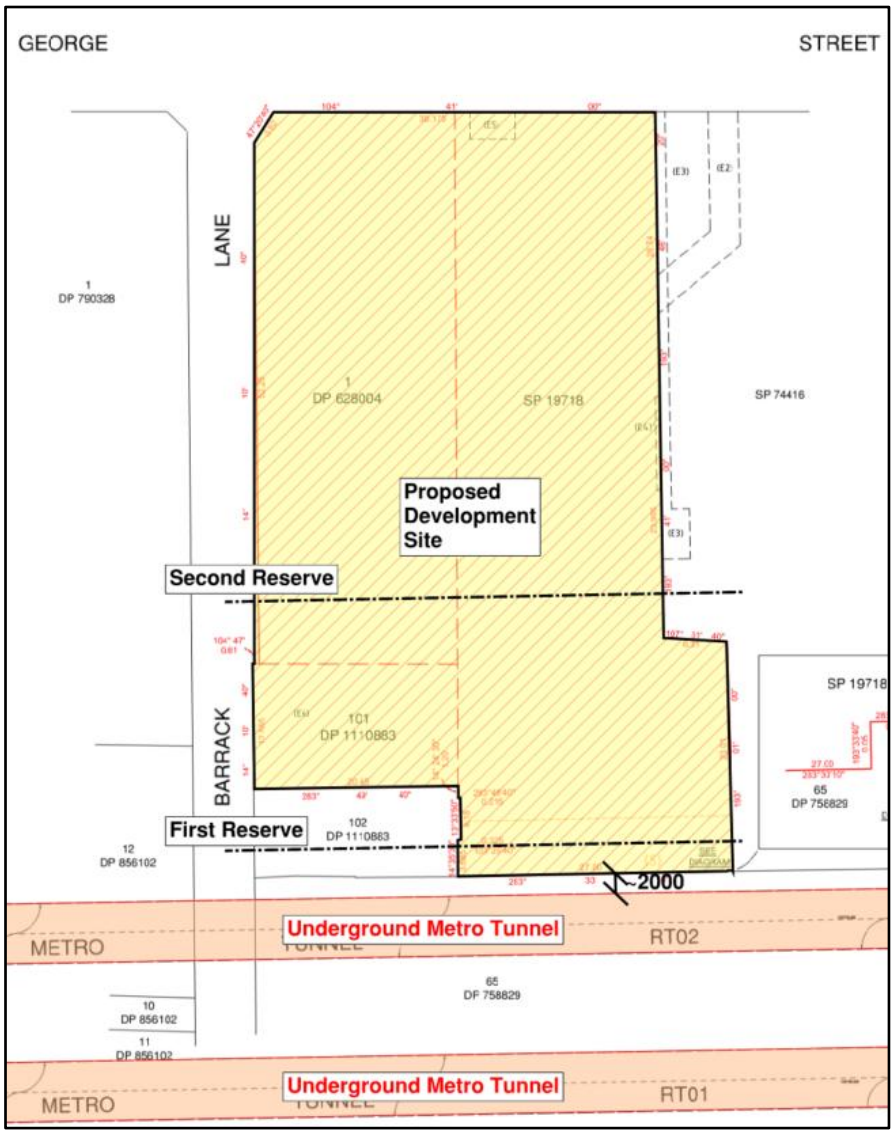


Figure 2.3 Proposed Development Site and Sydney Metro West Tunnels

2.4 Sydney Metro Defined Development Risk Profile

The risk profile of the proposed development has been assessed in accordance with the Sydney Metro Underground Corridor Protection Technical Guidelines 2025, which outlines a risk matrix for evaluating potential impacts on underground metro infrastructure.

No temporary or permanent structures associated with the proposed development will intrude into the First Reserve Zone. However, the southern portion of the proposed development will extend into the Second Reserve Zone, and the piles will be located less than 10 metres from the First Reserve Zone boundary and have excavation of approximately 3.5m for some pile cap construction. Based on the criteria defined in the Guidelines, this proximity and level of intrusion categorises the proposed development as **medium** risk.

Detailed Development Application (DA), Review of Environmental Factors (REF) or Environmental Impact Statement (EIS)			
Intrusion to First Reserve[2,3] (Temporary or Permanent)	Intrusion to Second Reserve[2,3] ✓ (Temporary or Permanent)		No intrusion into First or Second Reserves
	Less than 10m from the First Reserve ✓ or excavation greater than 2 m depth ✓	Greater than 10m from the First Reserve and no excavation greater than 2 m depth	
High	Medium	Low	Low

Table 2.2 Risk Matrix of the Proposed Development based on Table 6.1 of Sydney Metro Underground Corridor Protection Technical Guidelines 2025

2.5 Existing Structures

There is an existing development on the site that includes a four-storey office premises at 81 George Street, a three-storey commercial premises at 83 George Street, and a three-storey building at 1 Barrack Lane (see Figure 2.4). Images of the existing site are shown in Figure 2.5, Figure 2.6 & Figure 2.7 below. They will be demolished for the construction of the new development.

There are no record drawings on the existing buildings. However, it is expected the buildings have no basement and are sitting on shallow foundation.

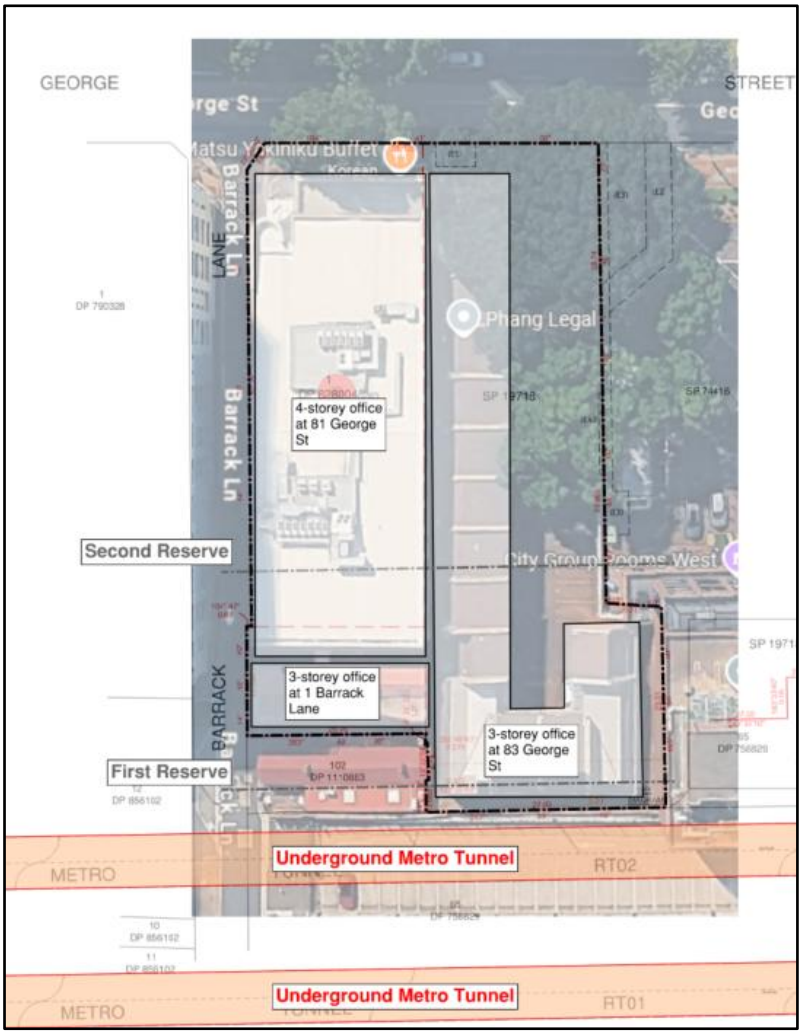


Figure 2.4 Existing Structures within the Proposed Development Site

Figure 2.5 4-storey office at 81 George St

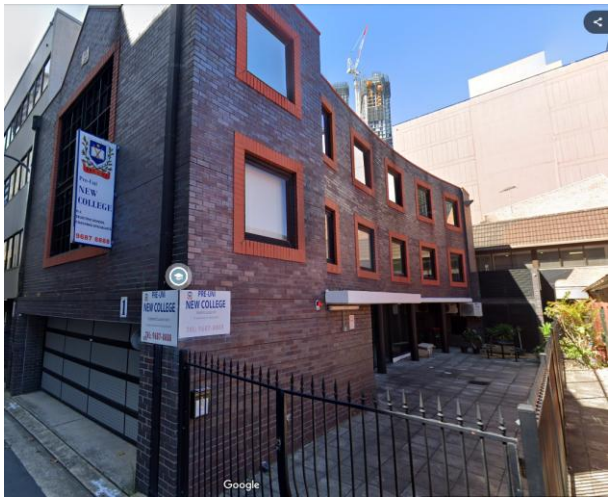


Figure 2.6 3-storey office at 1 Barrack Lane

Figure 2.7 3-storey office at 83 George St

2.6 Topography and Trees

The site's topography generally slopes down from the south towards the north-east, with gradients estimated to be less than 3 degrees. The ground level transitions from approximately RL 9.2m AHD at the southern boundary to RL 7.5m AHD in the north-east corner.

There are two existing trees within the site boundary, one of which is a heritage-listed Moreton Bay Fig located in the north-east corner. This tree is a significant landscape and cultural feature and must be preserved and protected throughout the development process.

A site survey is provided at Appendix A-2.

2.7 Adjacent Structures

The site is situated within the Parramatta CBD and is surrounded by a mix of mid-rise commercial buildings and heritage structures (See Figure 2.8). Several adjacent buildings present specific constraints:

Heritage Convict Drain: The brick barrel drain in Parramatta, which is believed to be built in the 1820s, has been observed in a number of excavations along George Street and nearby. Archaeological investigations in 1981 shows that the drain runs through the proposed site.

Heritage Structures: Two heritage-listed buildings are located immediately adjacent to the site sensitive to vibration and ground movement:

- *Convict Wall*: a low-level heritage wall forms part of the southern boundary line.
- *Warders Cottages*: A single-storey masonry structure built in the 1800s, located at the south-east corner of the site. It is believed to be founded on shallow footings.
- *Perth House and The Stables*: Another single-storey masonry structure from the 1800s, also likely supported by shallow foundations.

85 George Street: An eight-storey commercial building located to the east of the site, likely supported by a piled foundation and includes a basement car park. To reduce construction impact and provide adequate working space, the proposed development's podium columns are set back by 1 metre, with piles set back by 1.5 metres. Given the relatively low loads on the podium columns, the pile cap depth will be minimised to reduce excavation requirements.

Southern Boundary: The Convict Barrack Wall and a concrete fence along the southern boundary separates the site from the open car park of Arthur Phillip High School. The proposed development's columns are set back 3 metres from this boundary. Temporary retaining walls may be required to protect the existing fence during construction.

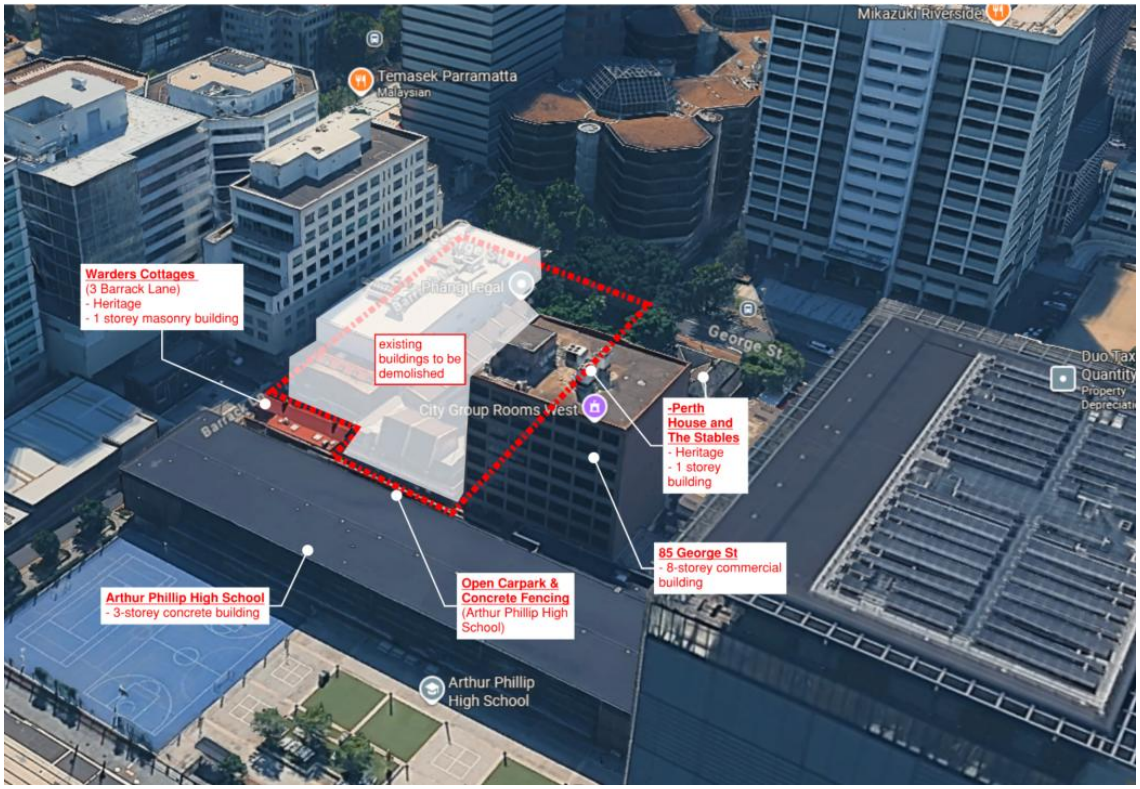


Figure 2.8 Adjacent Structures

2.8 Site Geology

Douglas Partners have completed three cored boreholes to a maximum depth of 15.1 m across the site. Refer to A-4 Geotechnical Modelling for Sydney Metro Tunnel for the geotechnical profile.

3. Structural System

The proposed structural system is a hybrid approach, combining traditional cast in-situ concrete with volumetric modular construction (see Figure *3.1*). The podium and central core will be constructed using cast in-situ concrete (See Figure 3.2), whereas the Build-to-Rent (BtR) units and roof plant rooms will be delivered as prefabricated volumetric modular units.

Unlike conventional construction methods where both the structure and finishes are built entirely on-site, this project adopts modular construction extensively. This approach is intended to enhance on-site efficiency, improve quality control, and significantly reduce overall construction time.

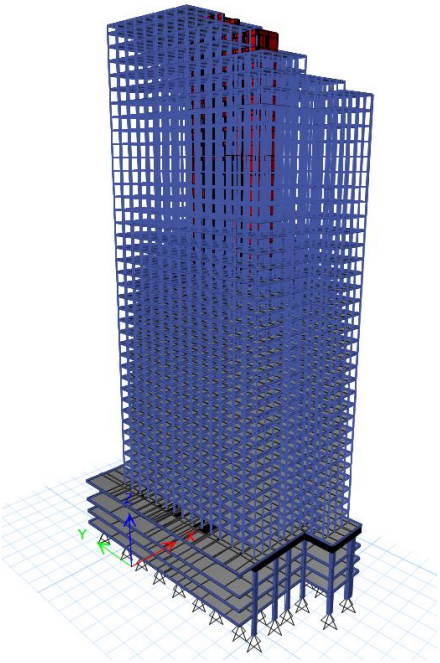


Figure 3.1 Overall Building Structure

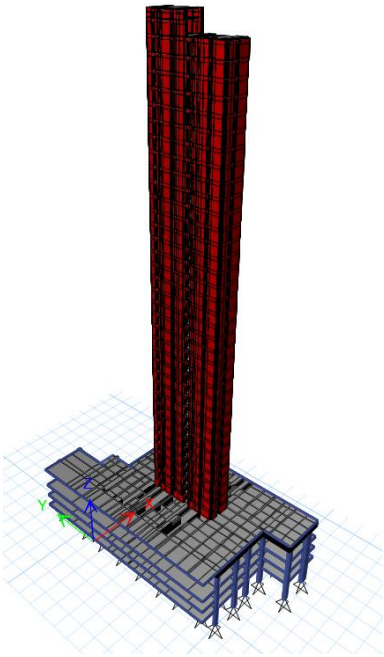


Figure 3.2 Cast in-situ podium and central core

3.1 Superstructure

The superstructure above L04 consists largely of volumetric modular units wrapped around a central RC core, refer to Figure 3.3 below.

These modules are fully fabricated and furnished off-site in a controlled factory environment. Each unit includes both structural steel framing, concrete flooring and architectural finishes. Upon delivery to site, the modules are installed directly onto the concrete podium and stacked above each other to the roof level.

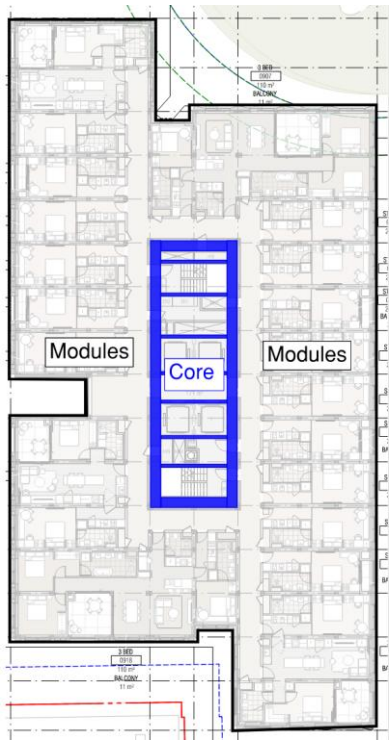


Figure 3.3 Typical level modules and the cast in-situ core layout

3.2 Podium

The lower floors consist of a traditional RC and PT frame up to L04. L04 acts as a transfer slab supporting the modules above. The podium roof (Level 4) will support all the gravity loads from the modules, which will then carry down to the foundation via the podium cast in-situ concrete columns.

3.3 Core

Centrally located within the development, the core comprises reinforced concrete walls and slabs, providing lateral and vertical stability for the entire building.

3.4 Ground Floor & Substructures

The ground floor slab levels are between RL 8.1 and 8.6, which are similar to the surrounding existing ground levels. The ground floor slab is proposed to be a suspended reinforced concrete slab spanning between pile caps.

The proposed development does not include a basement level but there will be localised areas where the slab lowers to accommodate lift pits and localised manholes. The substation is elevated circa 1m above the existing ground level, so deep excavation is not expected underneath the area.

Communication ducts, sewer, and water reticulation services are expected to be installed at depths between 700 mm and 1500 mm, based on preliminary estimates and early-stage design. These services will be routed beneath the ground slab and coordinated to avoid clashes with pile caps. It is anticipated that the excavation required for services will be shallower than that for the column pile caps.

The lift pit depth for the main tower passenger lifts is expected to reach a maximum of 3.4 metres. The core pile cap will be constructed below the lift pits, resulting in a maximum excavation depth of approximately 5.5

metres (excavation level +3.000). The 5.5-metre excavation of the main tower passenger lift pits will partially sit within the secondary reserves zone.

The car lift pit and bike lift pit are both located within the second reserve zone however they do not govern the excavation depths. The pile cap of the column adjacent to the car lift will be positioned beneath the car lift pit, resulting in a maximum excavation depth of approximately 3.65 metres (excavation level +4.850). The bike lift pit is shallower, and there are no pile caps beneath the lift. Its excavation depth is approximately 2.45 metres (excavation level +6.05).

3.5 Foundations

The foundation system for the proposed development will comprise cased bored or CFA piled foundations supporting the central concrete core and columns. It is anticipated that the piles will be founded in bedrock, with suitable socket lengths to provide adequate bearing capacity and long-term settlement control.

The piles are anticipated to be socketed into high-strength sandstone stratum, which is expected to be approximately 13m below ground level.

No piles will be constructed within the Sydney Metro First Reserve Zone. While some piles will be within the second reserve zone, the anticipated pile toes are expected to be located at least eight times the maximum pile diameter away from the Sydney Metro tunnels. Based on the anticipated extent of stress bulbs from the foundation piles, with the consideration of pile group effects, no adverse impact on the tunnels is expected. A detailed numerical geotechnical assessment will be carried out once the pile design is finalised prior to construction. Foundation plans are provided at Appendix A-2.

3.6 Structures within Second Reserve Zone

Approximately one-third of the proposed development footprint is located within the Second Reserve Zone. This includes a minor portion of the building core, as well as some tower and podium columns.

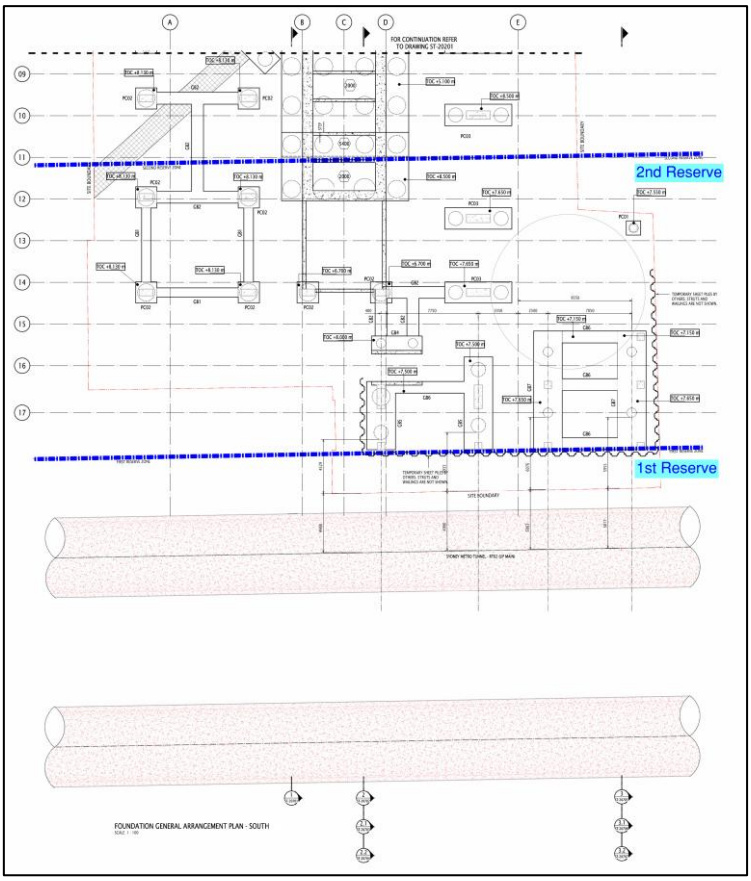


Figure 3.4 Structures within the Second Reserve Zone

The tower columns have been deliberately positioned outside the First Reserve Zone to mitigate potential impacts on the Sydney Metro tunnels. These columns will be supported by piled foundations located entirely within the Second Reserve Zone.

For the podium columns situated near or above the First Reserve Zone, support is provided via cantilevered pile caps. These caps are anchored by piles that are also located within the Second Reserve Zone, ensuring no direct structural loading is transferred into the First Reserve Zone. (See Figure 3.4 & Figure 3.5)

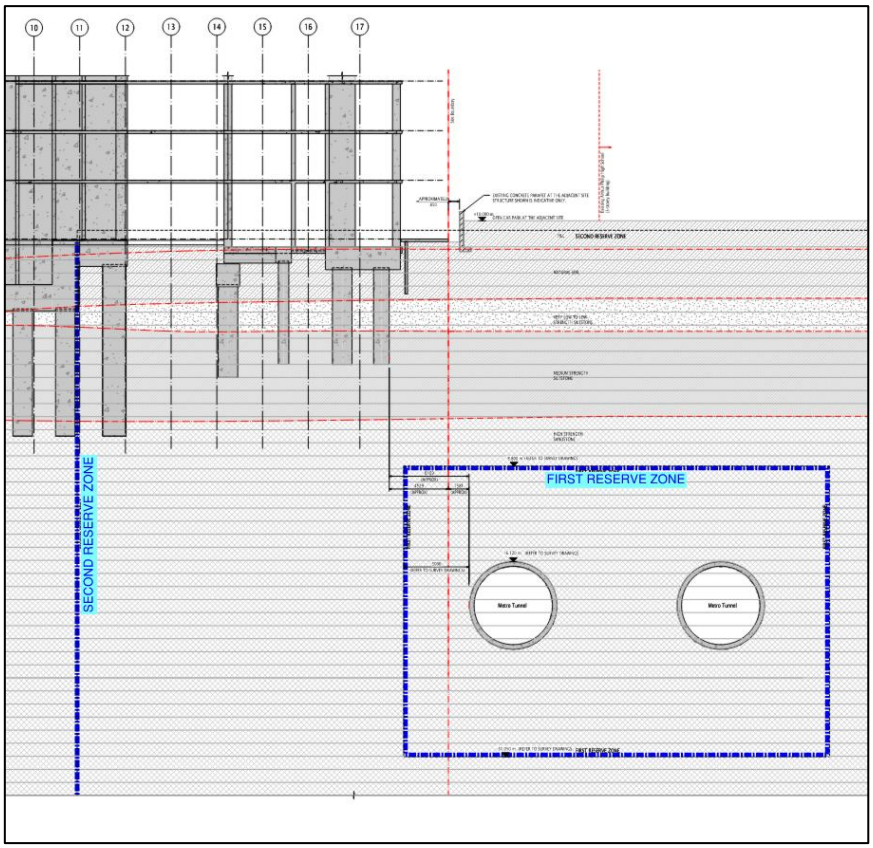


Figure 3.5 Structures and Piles near the First Reserve Zone

In terms of structural behaviour, lateral loads will primarily be resisted by the core, while the columns are designed to carry predominantly gravity loads. Consequently, the piles supporting these columns, including those near the First Reserve Zone, will experience minimal lateral loading.

To ensure safe clearance from existing infrastructure, all piles will maintain a minimum clear plan distance of 6,000 mm from the Sydney Metro tunnels. Additionally, the anticipated pile toe level is above the top level of the First Reserve Zone (which is RL -8.8). This results in a minimum separation of 17 m between the pile toe and the tunnel crown.

The geotechnical numerical analysis and structural assessment of the tunnels show that the impact of the construction of these structures to the tunnels are minimal.

3.7 Lift Pits within Second Reserve Zone

As outlined in Section 3.4, the excavation of the of main tower passenger lift is partially within Second Reserve Zone, whereas the car lift pit and bike lift pit are located within the Second Reserve Zone. The construction of the pits results in an excavation depth of 5.5 metres, 3.65 metres and 2.45 metres respectively.

The lift pit locations relative to the reserve zones are shown in the Figure 3.6 below.

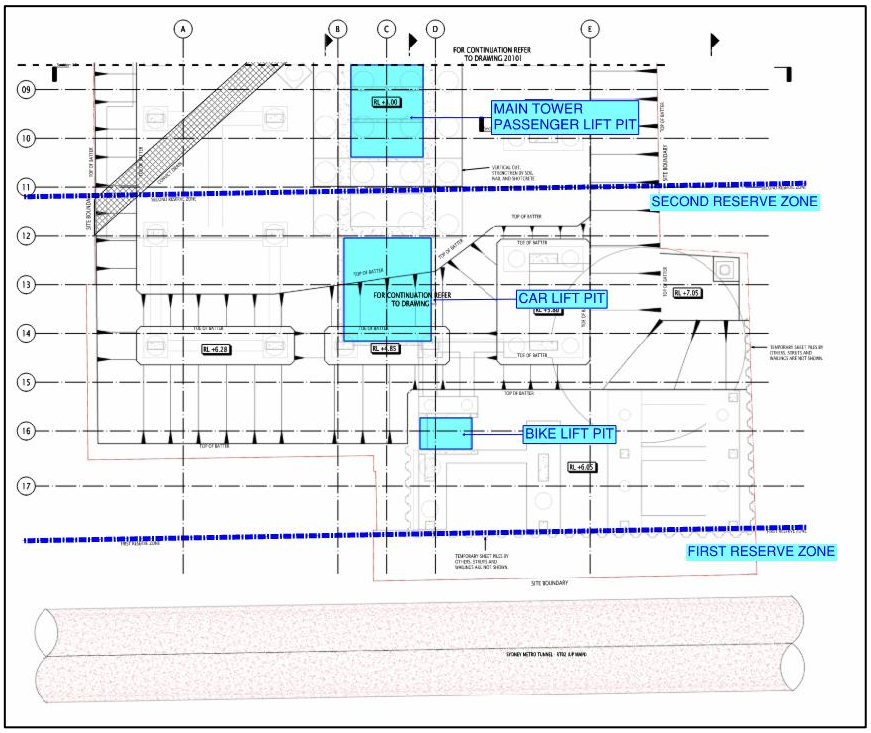


Figure 3.6 Lift Pits within Second Reserve Zone

The excavation of these lift pits have been considered in the geotechnical numerical modelling and structural assessment of the Sydney Metro Tunnels in Section 5.2 and 5.3. Both assessments conclude that the construction of these lift pits will not cause adverse impact to the tunnels.

4. Proposed Construction Staging

4.1 Demolition

All existing superstructures within the site are proposed to be fully demolished as part of the development works. At present, structural and foundation details of these buildings are not available, but based on their typology and age, they are expected to be supported by shallow foundations.

The site comprises three commercial buildings (see

Figure 4.1), ranging from three to four storeys in height:

- The 3-storey office building at 83 George Street is the closest structure to the Sydney Metro tunnel, located approximately 4 metres away on plan. It is a masonry building with no basement, and is anticipated to be founded on shallow footings.
- The 3-storey office building at 1 Barrack Lane is located approximately 13.5 metres away on plan from the tunnel. Similar to the other buildings, it does not include a basement and is likely supported by shallow foundations.
- The 4-storey office building at 81 George Street is situated approximately 20 metres away on plan from the tunnel. It also lacks a basement and is expected to be supported by shallow foundations.

The existing buildings on 81 George Street and 1 Barrack Lane are far away from the tunnels, and the demolition of these buildings will have minimal impact on the tunnel. Although the 83 George Street building is closer proximity to the tunnel, it is low-rise and the surcharge on the tunnel is low. It is expected the demolition will have no adverse impact on the tunnels.

Details of demolition strategy and methodology refer to Section 5.4.1.

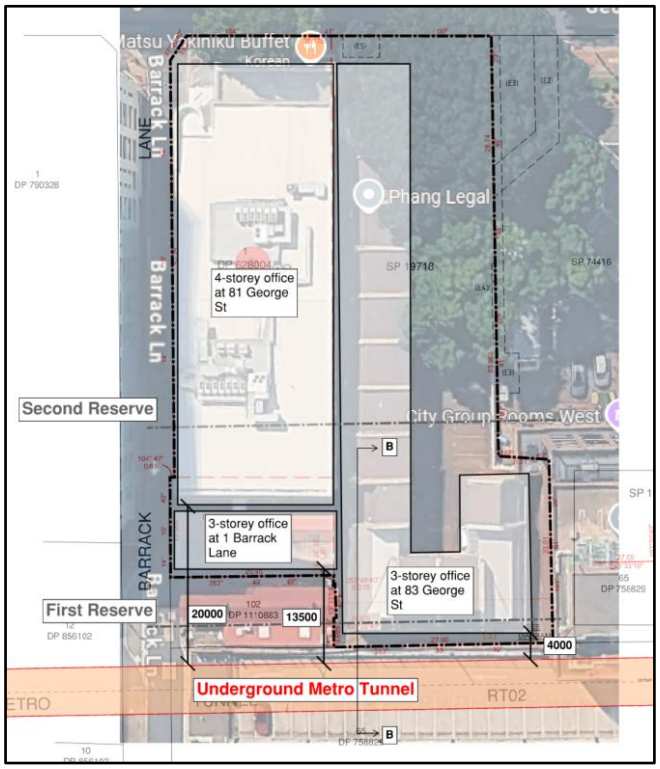


Figure 4.1 Plan Distance of Existing Buildings from Sydney Metro Tunnel

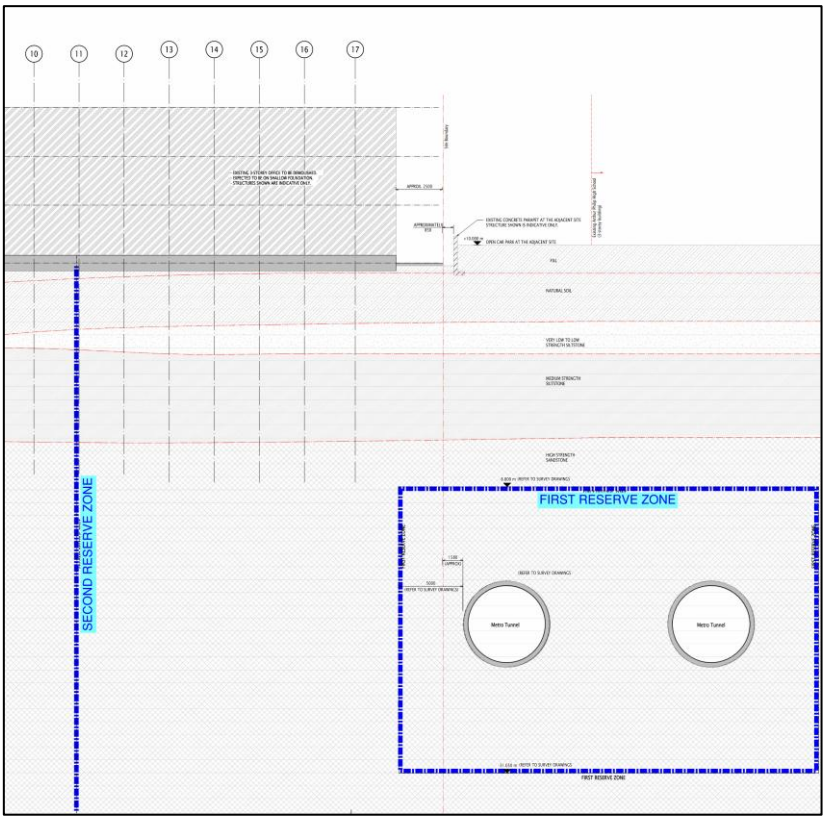


Figure 4.2 Section of Existing 83 George Street Building and Metro Tunnel

4.2 Foundation Construction

Following the demolition of the existing structures, cased bored/CFA pile installation will commence from the existing ground level prior to excavation works.

Details of pile construction technique and methodology refer to Section 5.4.2.

4.3 Shoring Installation and Excavation

As the proposed development does not include a basement, excavation will be limited to the construction of pile caps and underground services. The typical excavation depth for pile caps is approximately 3 metres, although deeper excavations will be required in localised areas, such as for lift pits.

At the rear of the site where it is closer to the tunnels, excavation is kept minimal to reduce impact on the tunnels and adjacent structures. While most excavation can be achieved by batter, temporary sheet pile walls will be installed at south-east corner of the site to control ground movement and protect adjacent structures. The sheet pile walls will be strutted to keep the toe level shallow to minimise impact to the tunnels.

Towards the north of the site, which is further away from the tunnels, a localised excavation of approximately 4m is required for the pile caps beneath the car lift pit.

The main tower passenger lift pit will be approximately 3.4 metres deep, with the core pile cap constructed beneath it, resulting in a maximum excavation depth of around 5.5 metres. The lift pit area will be excavated vertically with soil nail and shotcrete to strengthen the trench. The excavation is partially within the Second Reserve Zone.

Details of shoring wall construction technique and methodology refer to Section 5.4.3.

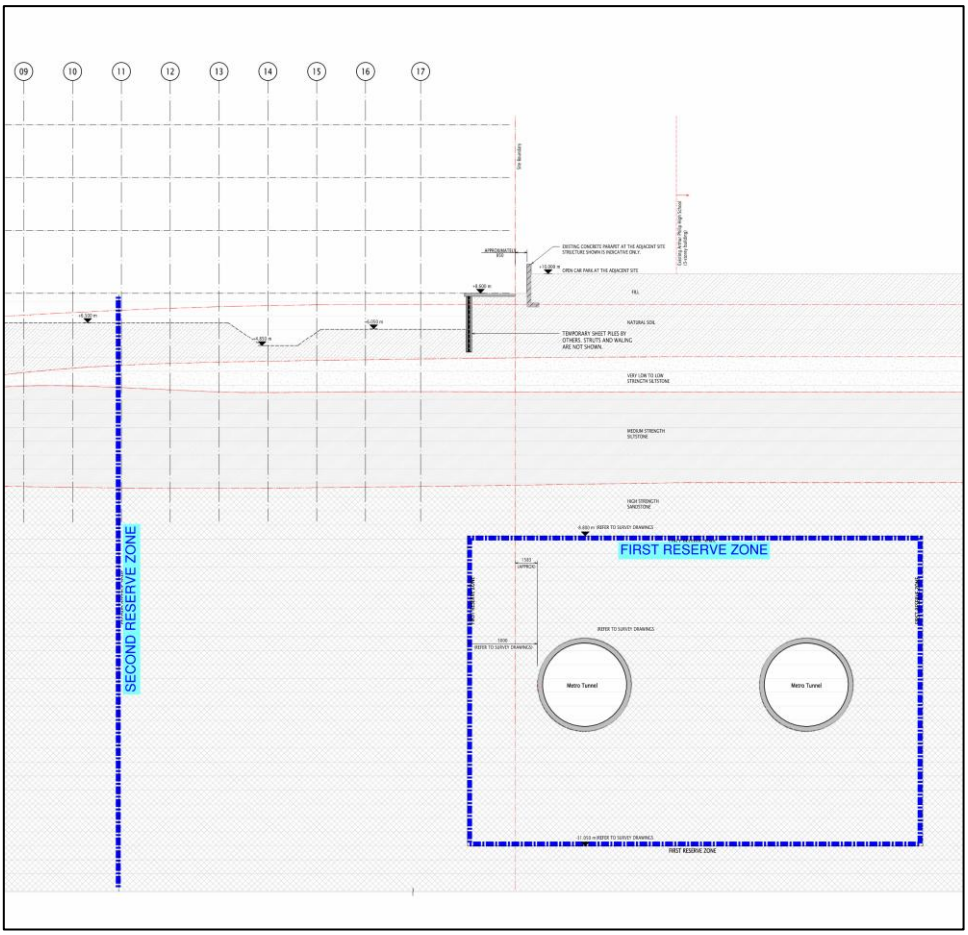


Figure 4.3 Setion of Excavation and Temporary Sheet Pile at the Southern End

4.4 Superstructure Construction

The podium structures will be constructed using cast in-situ concrete. Above the podium, VMC methodology will be employed for the typical floors.

Modules will not be temporarily stockpiled on ground slab of the First and Second Reserve Zone.

The tower crane location refers to Section 5.4.4.

5. Sydney Metro Tunnel Impact Assessment

5.1 Design Loads

5.1.1 Demolition

Due to the absence of structural and architectural drawings for the existing buildings, the surcharge loading has been estimated based on typical usage and construction materials. The estimated total surcharge loading is summarised in Table 5.1 below:

Building	Foundation	Total Surcharge Loading	
		DL + SDL (kPa)	LL (kPa)
81 George Street	Shallow Foundation	50	16
83 George Street	Shallow Foundation	37	12
1 Barrack Lane	Shallow Foundation	41	13

Table 5.1 Total Surcharge Loading of the Existing Buildings

5.1.2 Shoring and Excavation

As the proposed development does not include a basement level, excavation will be limited to the installation of pile caps and underground services. The maximum excavation depth in the second reserve zone is approximately 3m and increases to 4m towards north near the car lift pit.

The soldier piles will be installed as a cantilever near the southern boundary, with internal propping where required. Ground anchors are not anticipated to be required.

5.1.3 In-service (Pile and Column Loads)

The column and pile loads for the proposed structures are summarised in Appendix A-2.

5.2 Geotechnical Numerical Modelling

The geotechnical numerical modelling has been carried out by Douglas Partners to assess the impact of the proposed development on the metro tunnels. The modelling involves a ground–structure interaction analysis to estimate the ground movements and the structural actions on the tunnel linings induced by the proposed excavations and foundation loading. It is concluded that the induced movements will be within allowable limits. The modelling results have also been provided to SMEC for the structural assessment of the tunnels.

Refer to Appendix A-3 Report on Geotechnical Modelling for Sydney Metro Tunnel for the assessment details.

5.3 Structural Assessment of the Sydney Metro Tunnels

The structural assessment of the tunnels has been carried out by SMEC based on the lining structural actions predicted by the geotechnical numerical modelling. It is concluded that the resulting tunnel forces are within the tunnel structural capacity.

Refer to Appendix A-4 Assessment of Sydney Metro West (SMW) Segmental Lining Capacity for the assessment details.

5.4 Construction Techniques and Methodology

5.4.1 Demolition Methodology

Demolition of existing structures will proceed sequentially from north to south, as illustrated in Figure 5.1.

A 49-tonne excavator equipped with a pulveriser attachment will be used to minimise vibration and noise during demolition. A 30-tonne excavator will assist with processing and loading demolished materials into trucks for removal.

Foundation demolition will be carried out where required, using either a pulveriser or by "snapping" the piles with an excavator.

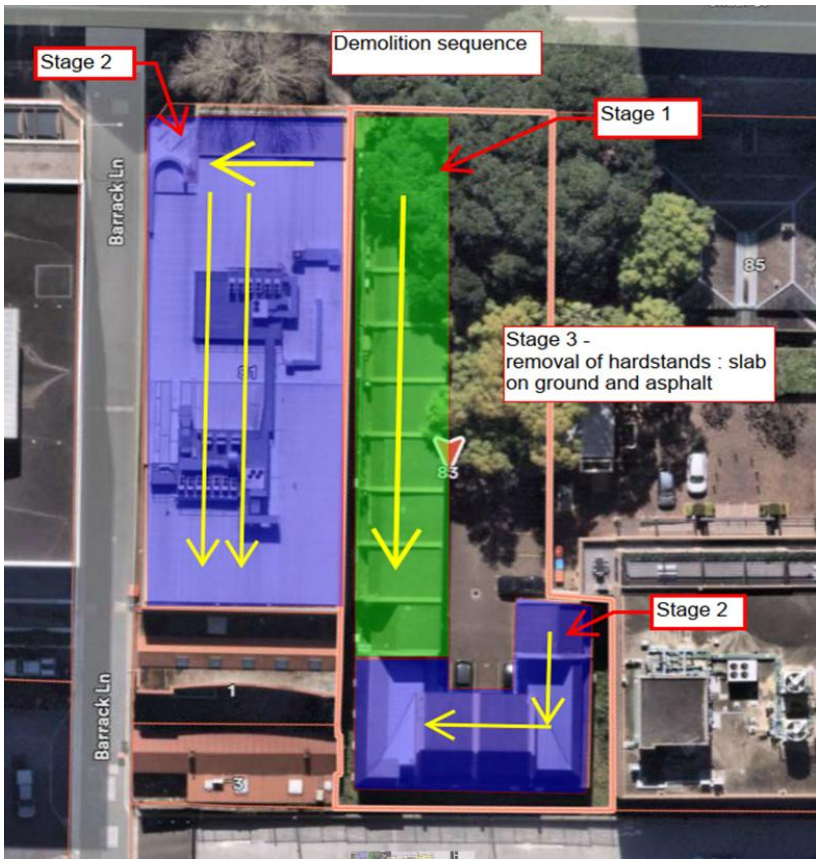


Figure 5.1 Demolition Sequence of the Existing Structures

5.4.2 Pile Construction Methodology

Bored piles will be installed using either cast-in-place bored piling with casings or continuous flight augers (CFA). In the case of CFA piling method, high-torque CFA piling rigs will be used to minimise the risk of removal soil overburden from around the augered hole.

5.4.3 Shoring Installation and Excavation Methodology

Temporary sheet pile walls will be installed near the southern and south-eastern site boundary to reduce the movement to the surrounding structures and metro tunnels.

5.4.4 Crane Location

The tower crane will be located outside the second reserve zone and will not have an impact on the metro tunnels.

5.5 Preventative Action

At this stage preventative actions have been undertaken in terms of design consideration such as minimised excavation, avoiding structure being placed within the First Reserve and minimising structure within the Second Reserve.

6. Risk Assessment

The table in Appendix A-5 documents the design, commercial and health and safety risks on the project. It has been prepared for the current stage and will be continuously reviewed and reassessed during future design and construction phases. The mitigation undertaken during this stage has been documented and then further mitigation noted. We have also included a suggested owner of the risks.

The risk ratings have been undertaken using a simple assessment system for likelihood (1 = very low; 2 = low; 3 = medium; 4 = high; 5 = very high) and severity (1 = very low; 2 = low; 3 = medium; 4 = high; 5 = very high).

The risk rating is the product of likelihood and severity, and the risk rating matrix is as follows:

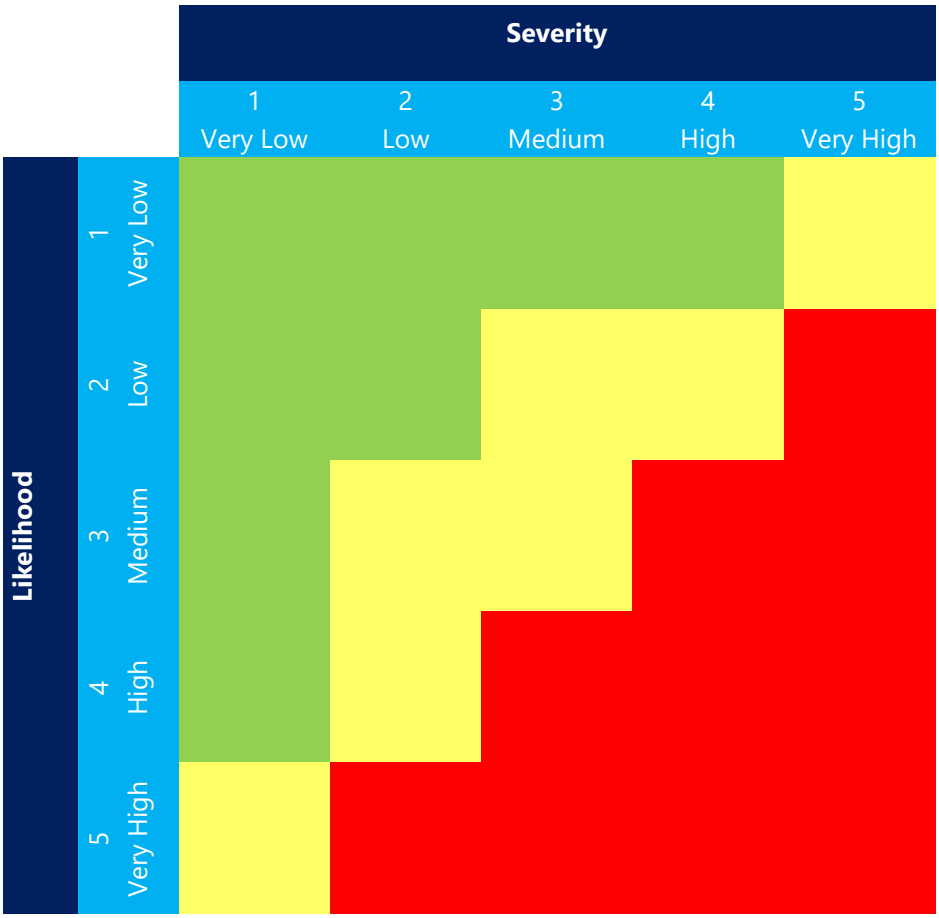


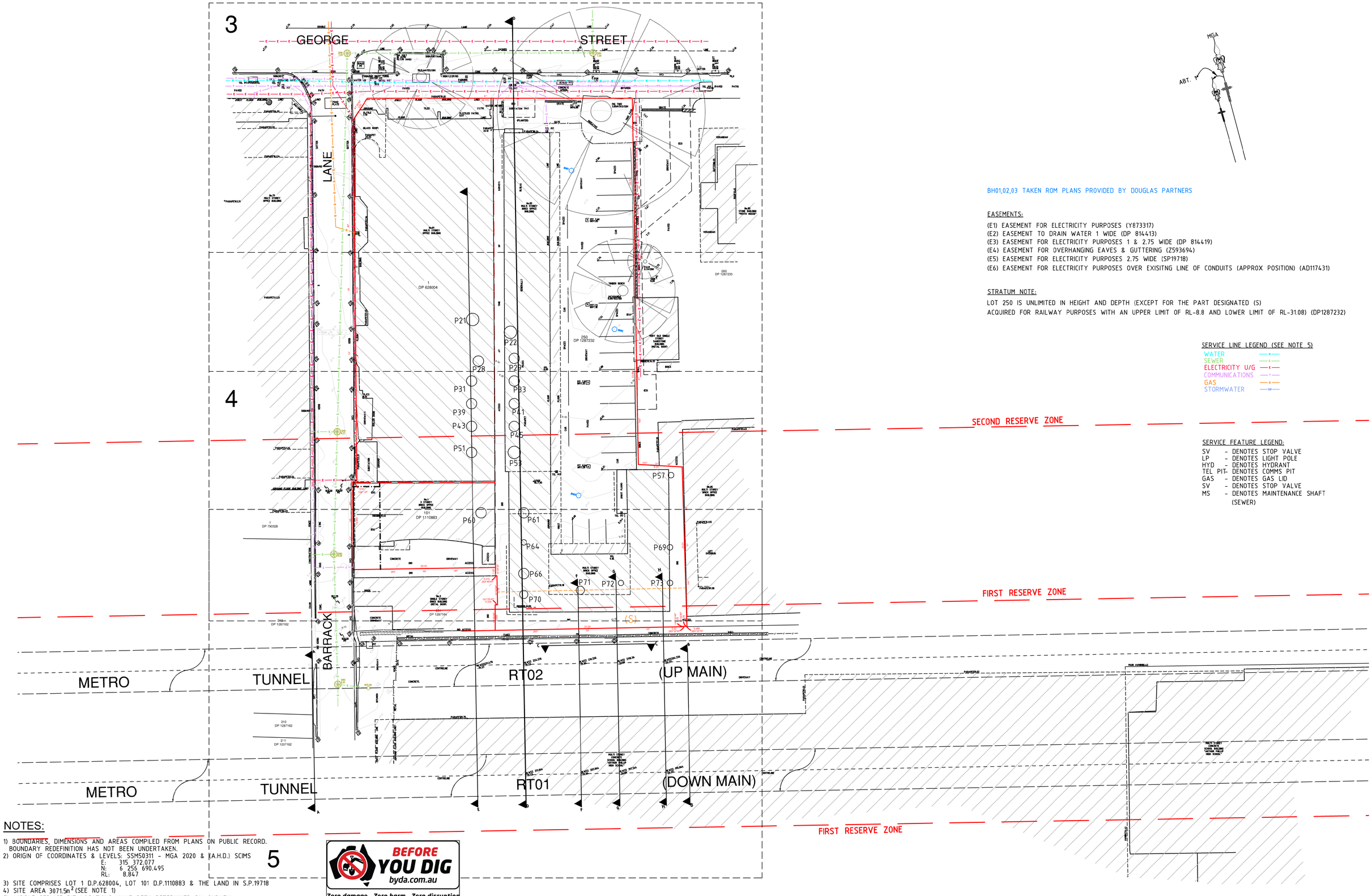
Table 6.1 Risk Rating Matrix

7. Conclusion

This report outlines the key construction activities and the new structures associated with the proposed development at 1 Barrack Lane and 81–83 George Street, Parramatta, including demolition, foundation construction, shoring installation, excavation, and superstructure works. These activities and the new structures have been assessed in relation to their potential impact on the adjacent Sydney Metro West Line tunnels.

The assessments indicate that the anticipated tunnel movements induced by the proposed development are low, and the structural capacity of the lining is not expected to be adversely affected.

A-1 Site Survey



BH01,02,03 TAKEN ROM PLANS PROVIDED BY DOUGLAS PARTNERS

EASEMENTS:

(E1) EASEMENT FOR ELECTRICITY PURPOSES (Y873317)
(E2) EASEMENT TO DRAIN WATER 1 WIDE (DP 814413)
(E3) EASEMENT FOR ELECTRICITY PURPOSES 1 & 2.75 WIDE (DP 814419)
(E4) EASEMENT FOR OVERHANGING EAVES & GUTTERING (Z593694)
(E5) EASEMENT FOR ELECTRICITY PURPOSES 2.75 WIDE (SP19718)
(E6) EASEMENT FOR ELECTRICITY PURPOSES OVER EXISITNG LINE OF CONDUITS (APPROX POSITION) (AD117431)

STRATUM NOTE:

LOT 250 IS UNLIMITED IN HEIGHT AND DEPTH (EXCEPT FOR THE PART DESIGNATED (S)
ACQUIRED FOR RAILWAY PURPOSES WITH AN UPPER LIMIT OF RL-8.8 AND LOWER LIMIT OF RL-31.08) (DP1287232)

SERVICE LINE LEGEND (SEE NOTE 5)

- WATER
- SEWER
- ELECTRICITY U/G
- COMMUNICATIONS
- GAS
- STORMWATER

SERVICE FEATURE LEGEND:

SV - DENOTES STOP VALVE
LP - DENOTES LIGHT POLE
HYD - DENOTES HYDRANT
TEL PIT- DENOTES COMMS PIT
GAS - DENOTES GAS LID
SV - DENOTES STOP VALVE
MS - DENOTES MAINTENANCE SHAFT (SEWER)

NOTES:

1) BOUNDARIES, DIMENSIONS AND AREAS COMPILED FROM PLANS ON PUBLIC RECORD. BOUNDARY REDEFINITION HAS NOT BEEN UNDERTAKEN.
2) ORIGIN OF COORDINATES & LEVELS: SSM50311 - MGA 2020 & (A.H.D.) SCIMS
   E: 315 372.077
   N: 6 256 690.495
   RL: 8.847
3) SITE COMPRISES LOT 1 D.P.628004, LOT 101 D.P.1110883 & THE LAND IN S.P.19718
4) SITE AREA 3071.5m² (SEE NOTE 1)
5) VISIBLE SERVICE PIT LOCATIONS HAVE BEEN DETERMINED BY SURVEY
   UNDERGROUND SERVICES HAVE NOT BEEN INVESTIGATED.
   SERVICES HAVE BEEN PLOTTED USING INFORMATION AS PROVIDED BY RELEVANT SERVICE AUTHORITIES VIA A DIAL BEFORE YOU DIG (DBYD) SEARCH.
   NO SURVEY OR UNDERGROUND SERVICE LOCATION FIELDWORK HAS BEEN CARRIED OUT.
   ALL RELEVANT AUTHORITIES SHOULD BE CONTACTED PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION ON OR IN PROXIMITY TO THE SITE.
6) (TK) DENOTES TOP OF KERB LEVEL.
   0.3ø10S,8H DENOTES TREE SIZE 0.3 TRUNK DIAMETER, 10 SPREAD, 8 HIGH.
7) TREE NAMES SHOWN CONSTITUTE OUR OPINION ONLY. IF TREE SPECIES IDENTIFICATION IS IMPORTANT FOR DESIGN OR HERITAGE REASONS THEY SHOULD BE DETERMINED BY A QUALIFIED ARBORIST.

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D	20.02.26	PILING ASSESSMENT INVESTIGATION; ADDTIONAL INFORMATION ADDED; METRO RESERVES ADDED

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ANDREW WHITFIELD
REGISTERED SURVEYOR
BOSSI ID No.8382

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CLIENT : FREECITY GROUP | DATE: 13-12-21 | SHEET 1

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GEORGE STREET

MGA

ABT.

LANE

BARRACK

1
DP 790328

1
DP 628004

SP 19718

SP 74416

104° 47' 0.61

47°20'40" 3.62

104° 41' 00" 38.175

(E5)

20' (E3) (E2)

28.74 46'

193° 00'

(E4)

23.985 41' (E3)

193°

107° 51' 40" 6.31

P57

40" 10' 14" 52.25

40" 10' 14" 12.555

(E6)

101
DP 1110883

P60 P61 P64 P66 P69 P70 P71 P72 P73 P21 P22 P28 P29 P31 P33 P39 P41 P43 P45 P51 P53

14° 24' 30" 1.20

20.45

283° 49' 40"

283° 49' 40" 0.215

14° 35' 30" 3.685

13° 33' 50" 4.18

0.335 103° 26' 40"

102
DP 1110883

27.00 33' 10" (S) SEE DIAGRAM

283°

SP 19718

SP 74416

283°33'30" 0.52

193°33'40" 0.05

0.05 13°33'40"

23.01 193° 01' 00"

27.00 283°33'10"

0.085 283°33'10"

65
DP 758829

DIAGRAM
N.T.S.

SECOND RESERVE ZONE

FIRST RESERVE ZONE

12
DP 856102

10
DP 856102

11
DP 856102

METRO TUNNEL RT02 (UP MAIN)

65
DP 758829

METRO TUNNEL RT01 (DOWN MAIN)

FIRST RESERVE ZONE

NOTES:

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GEORGE STREET

LANE

BARRACK LANE

No.79 MULTI STOREY OFFICE BUILDING

No.81 MULTI STOREY OFFICE BUILDING

No.83 MULTI STOREY BRICK OFFICE BUILDING

No.85 STONE BUILDING "PERTH HOUSE"

1 DP 628004

250 DP 1287232

260 DP 1287233

P21

P22

BH01

BH02

SUBSTATION 7907

FIG TREE 3.85ø/34S/32H

TREE BASE

PALM 0.7ø/20H

JACARANDA 0.8ø/15S/15H

TIMBER BENCH

VERY OLD SINGLE STOREY SANDSTONE BUILDING (METAL ROOF)

VERANDAH

ROOF 13.65

GUTTER 10.25

DRIVEWAY

SPACES

PAVED

CAR

GARDEN

BRICK WALL

CONCRETE APRON

SEALED PIT

KERB INLET PIT 7.05 INV 5.90

KERB INLET PIT 6.66 INV 6.01

KERB INLET PIT 6.66 INV 5.96

7.00 GUTTER

PIT 7.60 INV7.05

PIT 7.72 INV7.18

PIT 7.36 INV6.88

SMH 7.60

SMH 7.30

RM BOLT IN KERB RL7.66 (AHD)

RL18.46

PARAPET26.29

PARAPET33.55

PARAPET41.24

PARAPET45.31

PARAPET41.23

PARAPET22.56

PARAPET23.40

PARAPET19.25

PARAPET22.12

PARAPET18.24

PARAPET25.33

38.175

62.25

28.74

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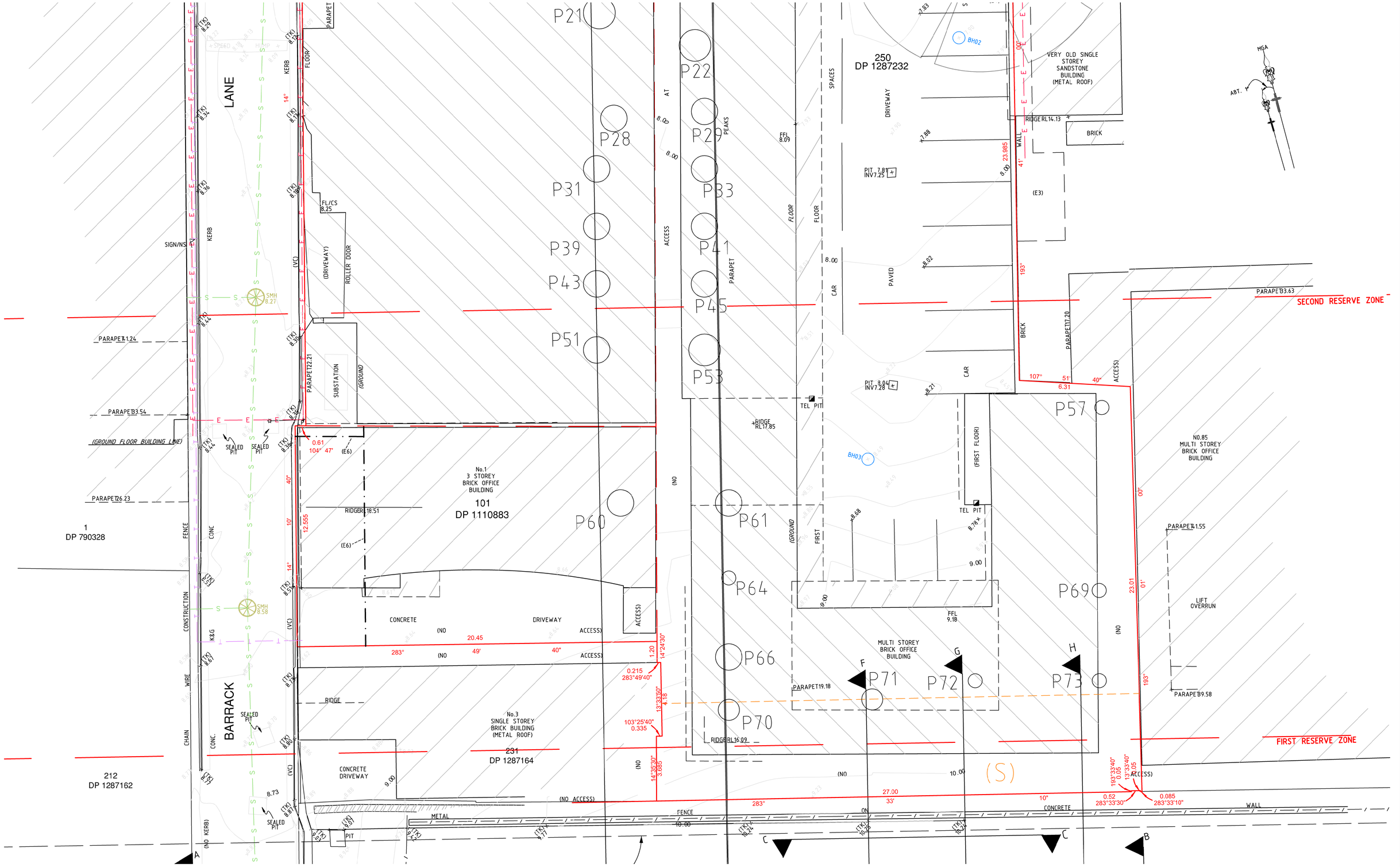

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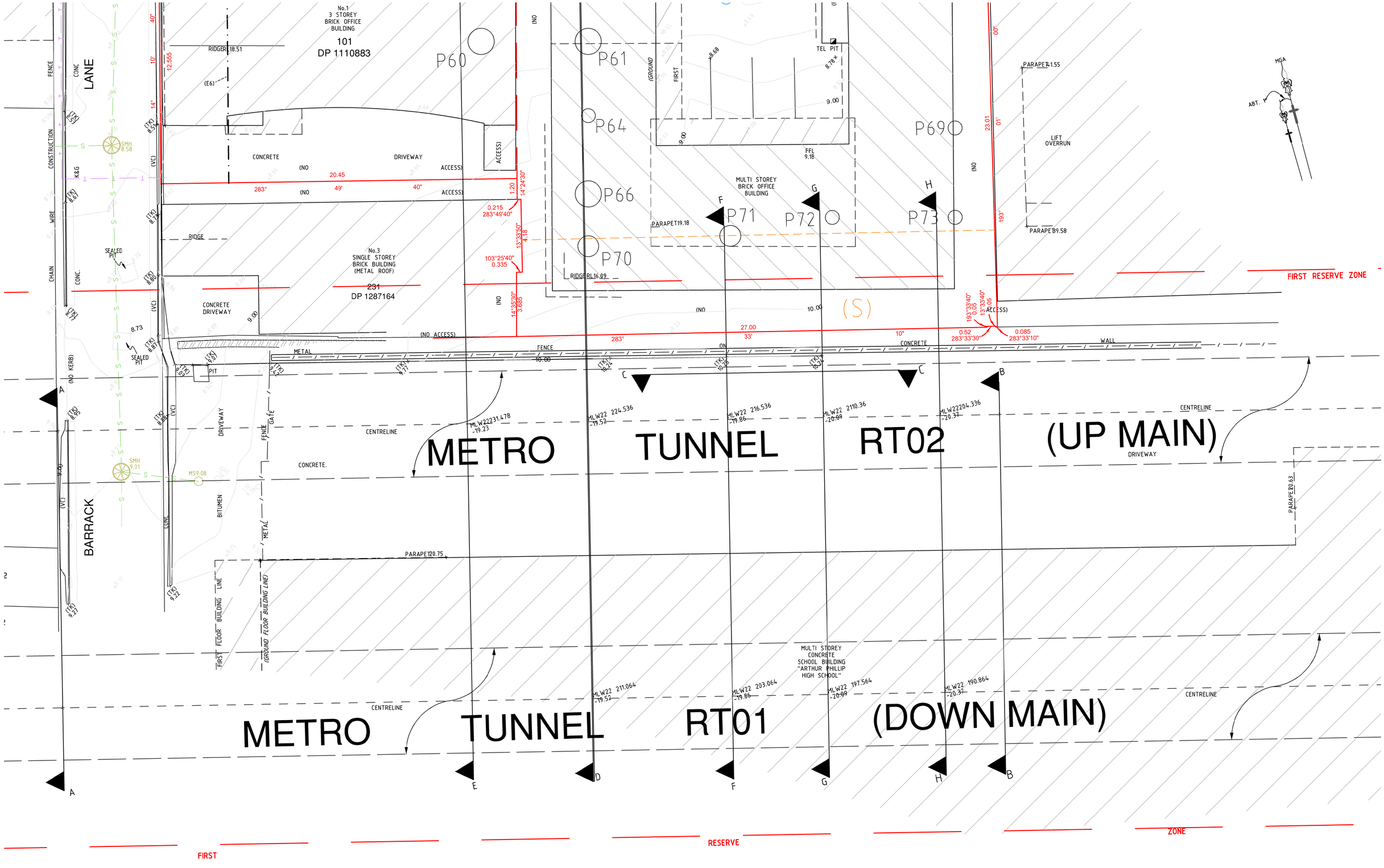

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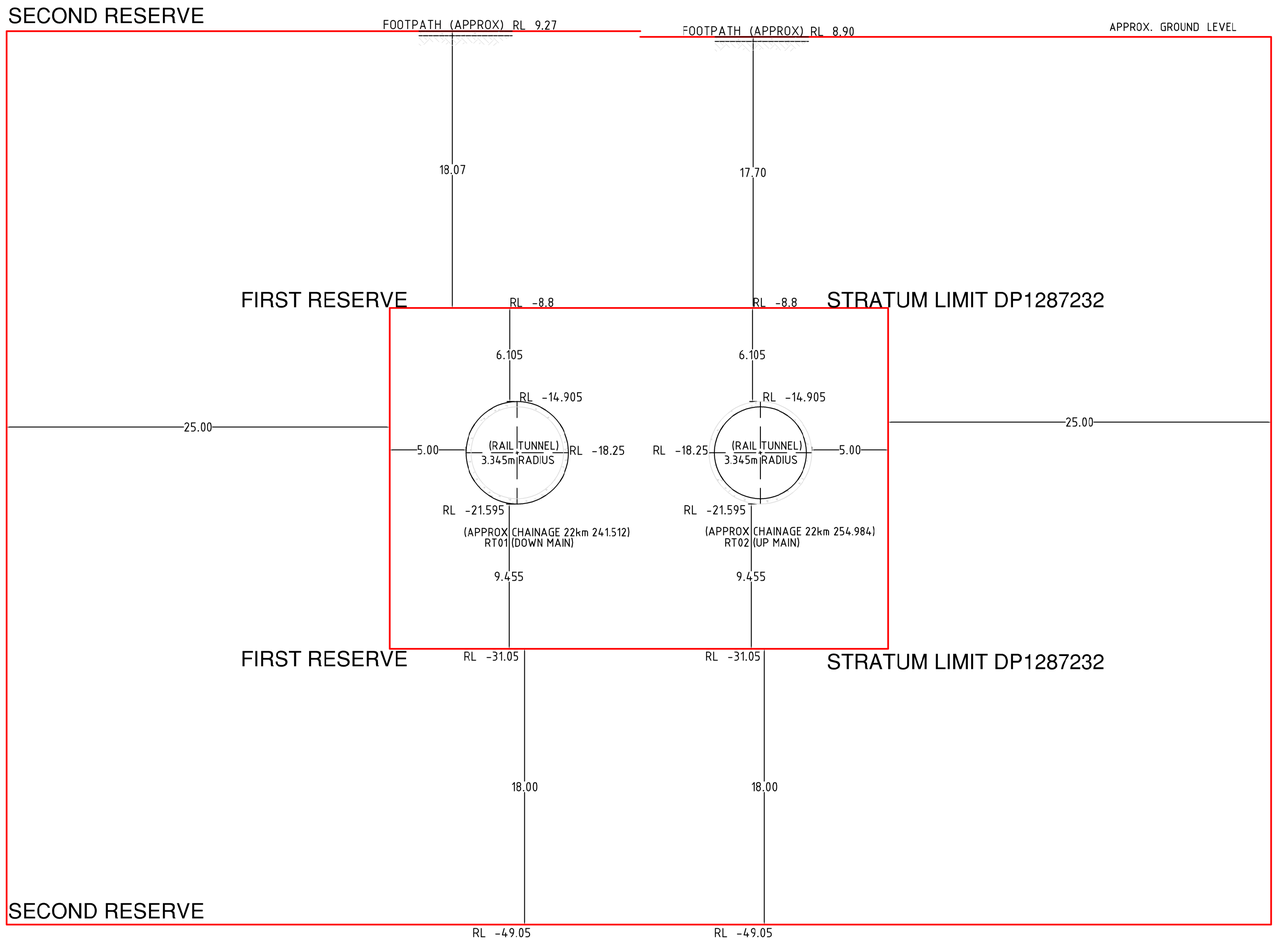

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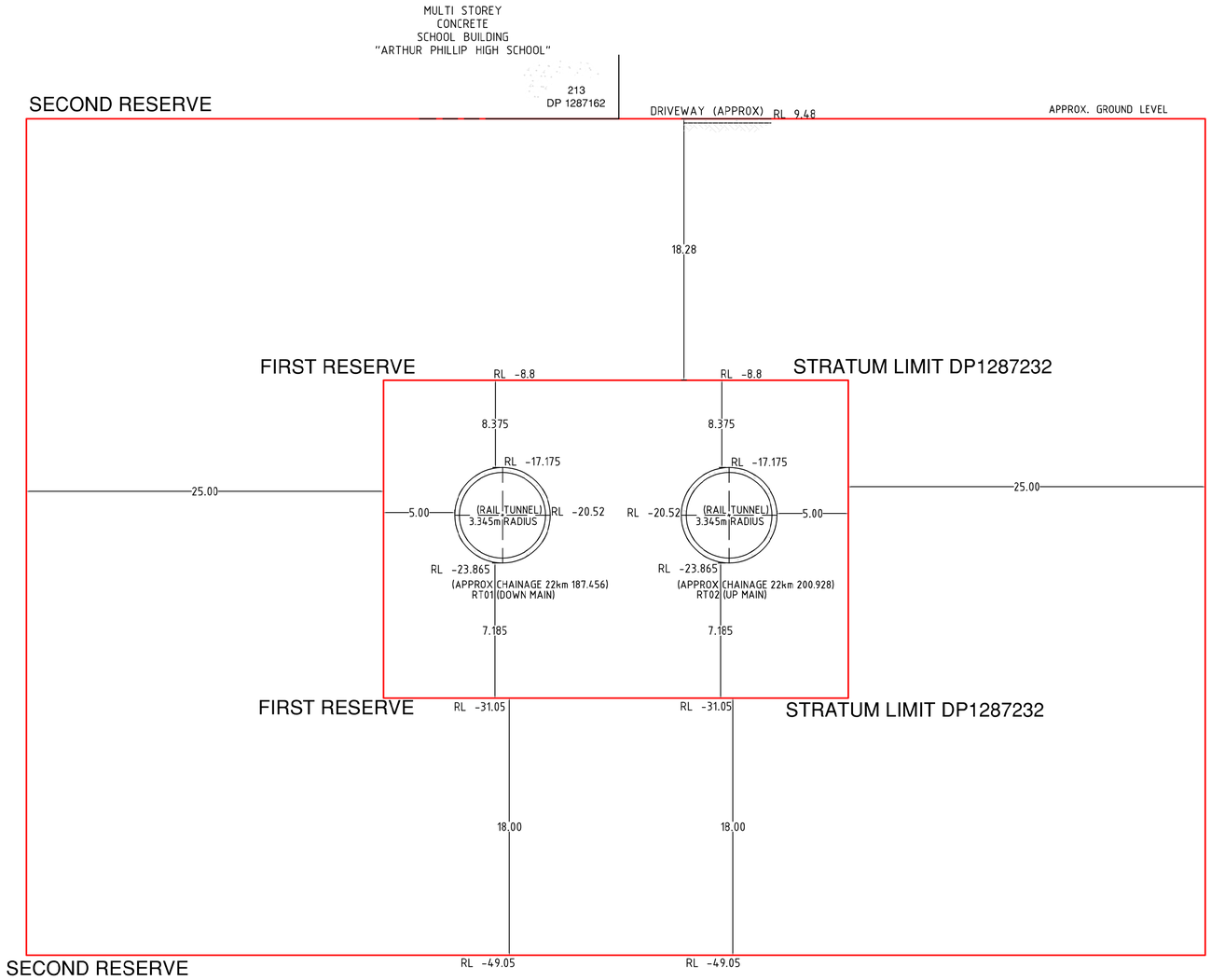

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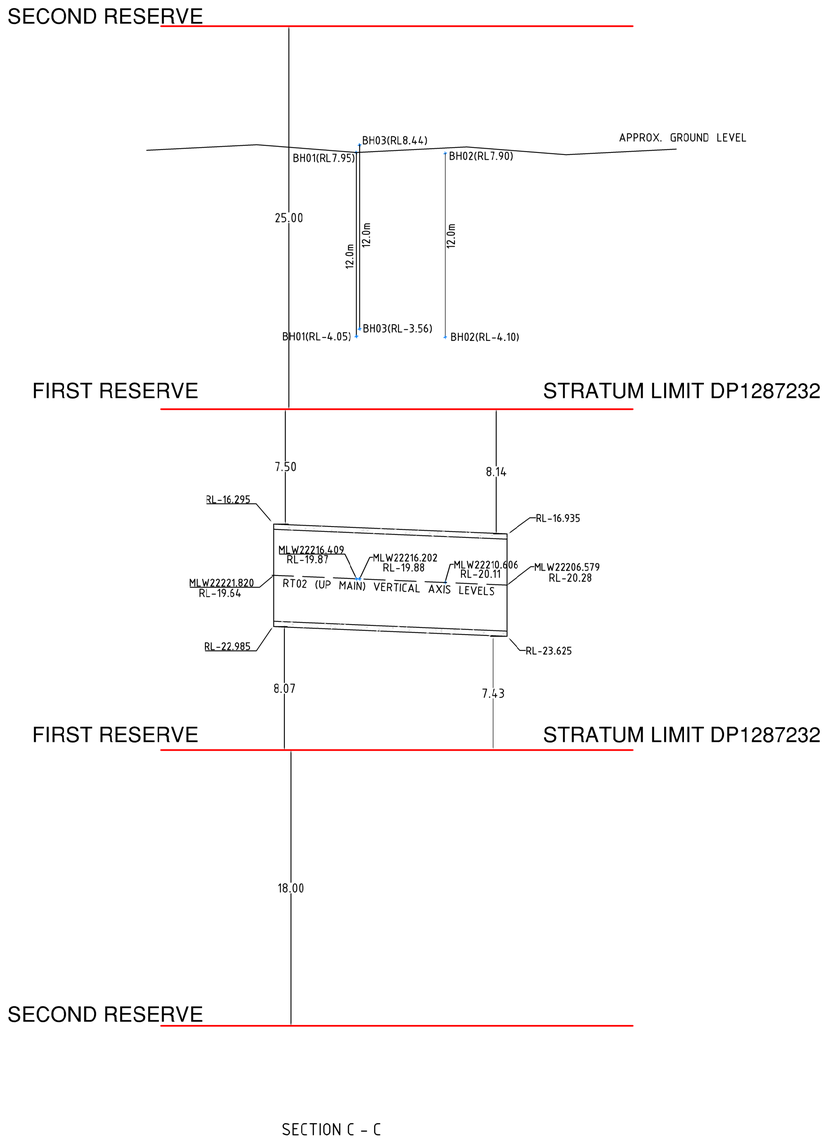

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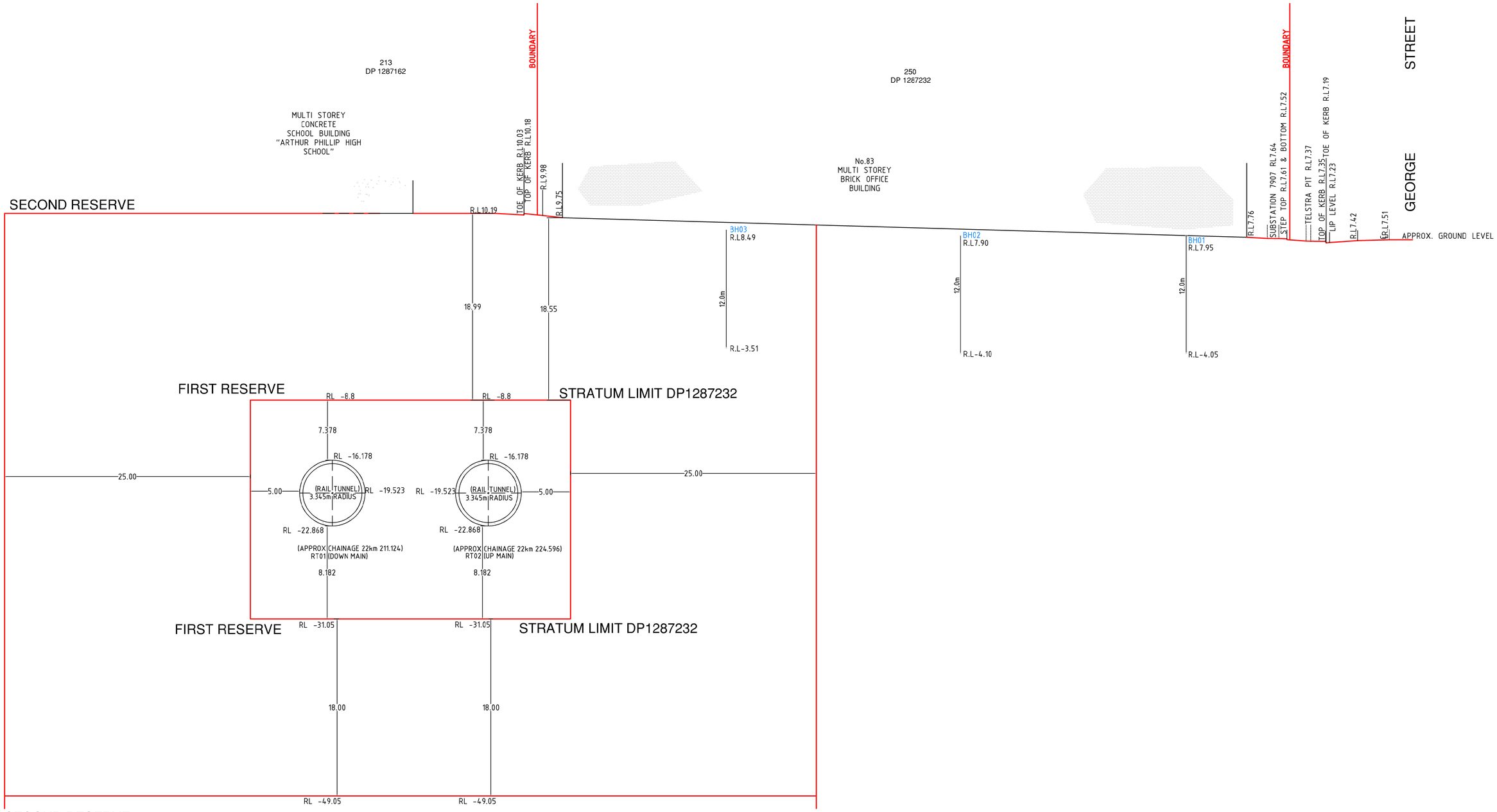

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D	20.02.26	PILING ASSESSMENT INVESTIGATION; ADDTIONAL INFORMATION ADDED; METRO RESERVES ADDED

SUPERVISING SURVEYOR:
A. Whitfield
ANDREW WHITFIELD
REGISTERED SURVEYOR
BOSSI ID No.8382

TITLE: PLAN SHOWING SELECTED DETAIL & LEVELS OVER No.81-83 GEORGE STREET, PARRAMATTA & SURROUNDS

LGA: CITY OF PARRAMATTA | REFERENCE: 29736
CLIENT : FREECITY GROUP | DATE: 13-12-21 | SHEET 9
SCALE (AT A1) 1:200 | DATUM : AHD | SURVEYOR: RW

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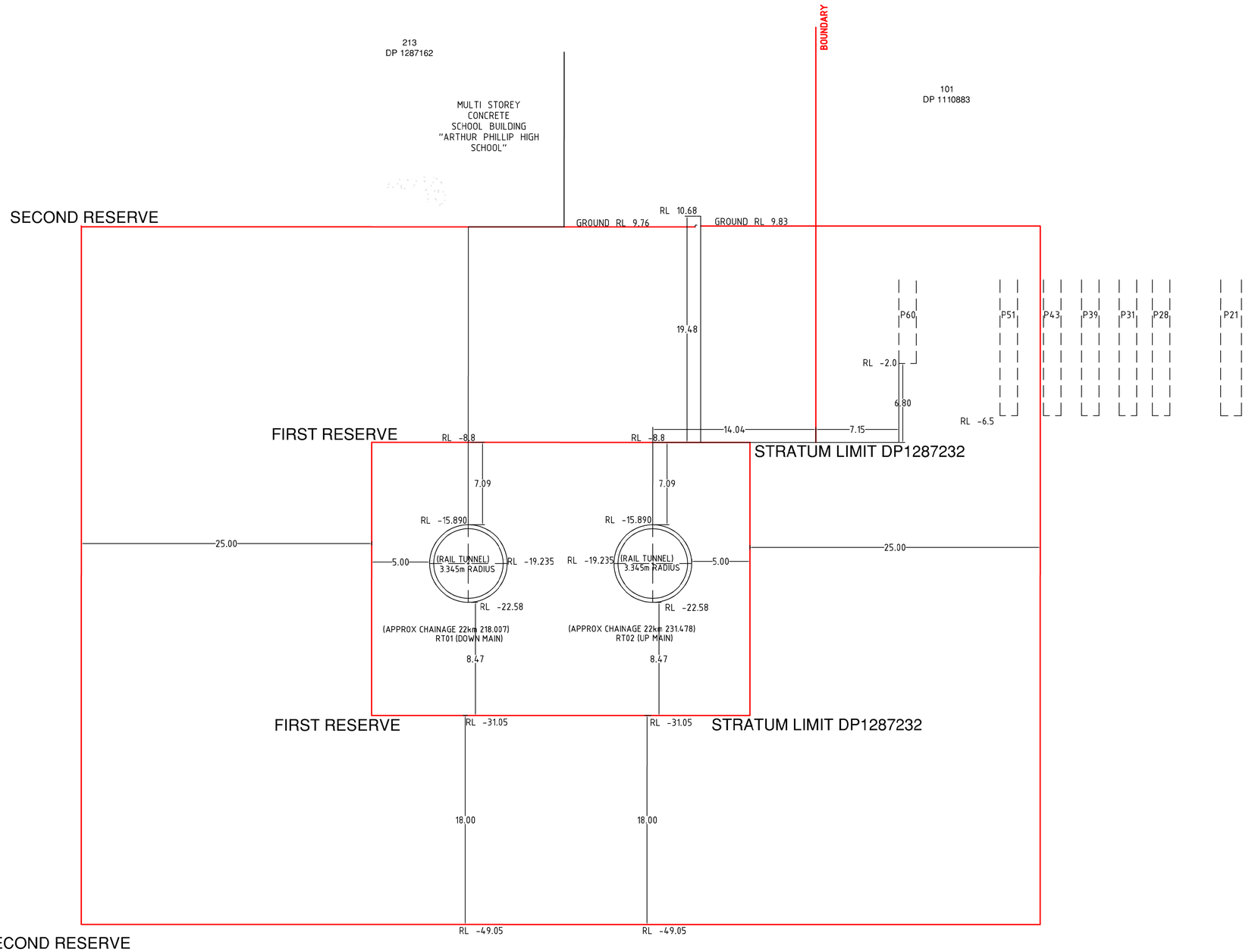

SECTION E - E

BEFORE YOU DIG byda.com.au
Zero damage - Zero harm - Zero disruption

ISSUE	DATE	AMENDMENT
A	25.01.22	LOT 101 DP1110883 ADDED TO SITE
B	4.08.25	DTM & CONTOURS ADDED
C	19.08.25	METRO TUNNELS ADDED AND LOTS DETAIL & EASEMENTS UPDATED
D	20.02.26	PILING ASSESSMENT INVESTIGATION; ADDTIONAL INFORMATION ADDED; METRO RESERVES ADDED

SUPERVISING SURVEYOR:
A. Whitfield
ANDREW WHITFIELD
REGISTERED SURVEYOR
BOSSI ID No.8382

TITLE: PLAN SHOWING SELECTED DETAIL & LEVELS OVER No.81-83 GEORGE STREET, PARRAMATTA & SURROUNDS

LGA: CITY OF PARRAMATTA | REFERENCE: 29736

CLIENT : FREECITY GROUP | DATE: 13-12-21 | SHEET 10

SCALE (AT A1) 1:200 | DATUM : AHD | SURVEYOR: RW

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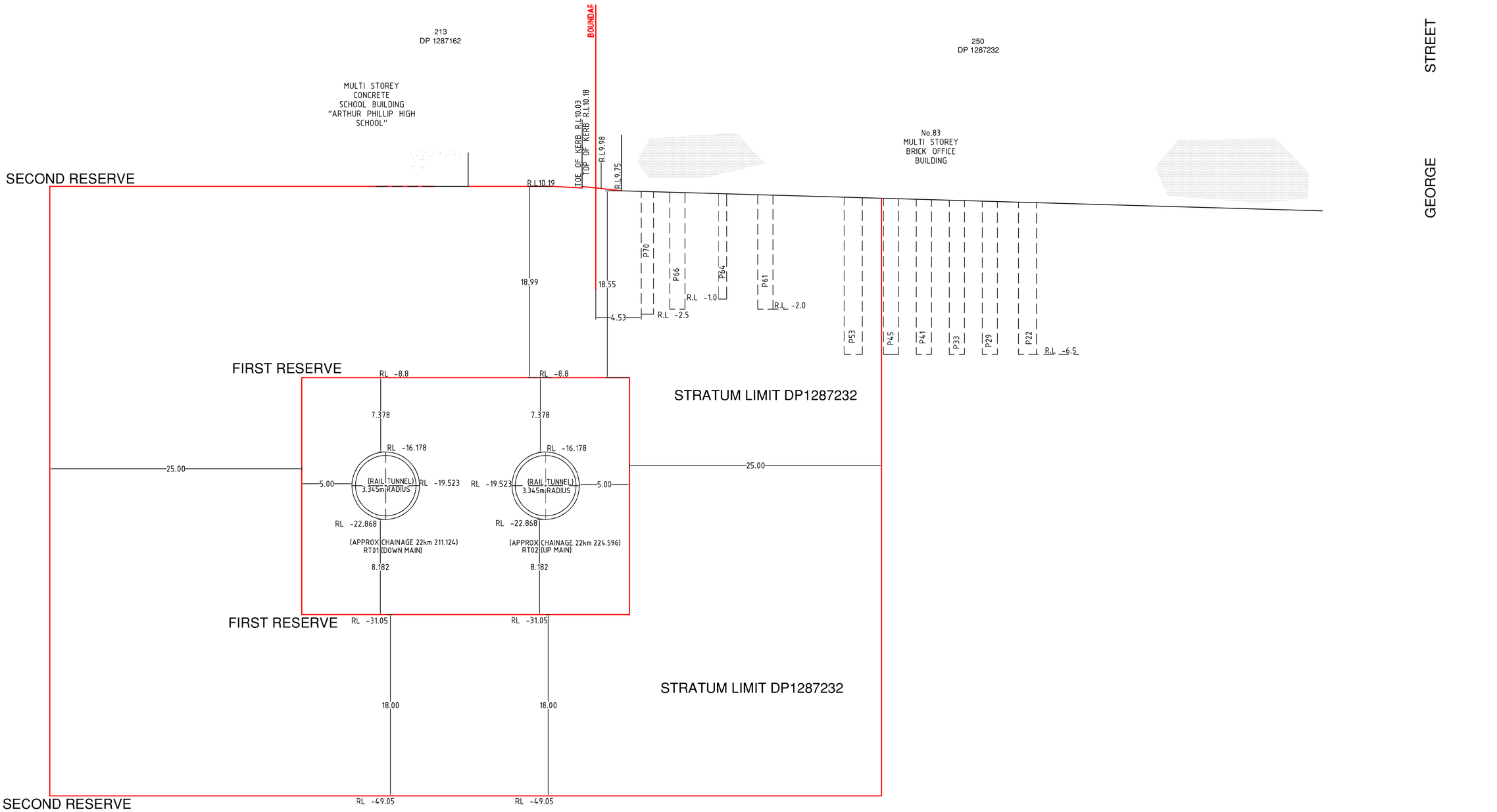

SECTION D – D

BEFORE YOU DIG
byda.com.au
Zero damage - Zero harm - Zero disruption

ISSUE	DATE	AMENDMENT
A	25.01.22	LOT 101 DP1110883 ADDED TO SITE
B	4.08.25	DTM & CONTOURS ADDED
C	19.08.25	METRO TUNNELS ADDED AND LOTS DETAIL & EASEMENTS UPDATED
D	20.02.26	PILING ASSESSMENT INVESTIGATION; ADDTIONAL INFORMATION ADDED; METRO RESERVES ADDED

SUPERVISING SURVEYOR:

ANDREW WHITFIELD
REGISTERED SURVEYOR
BOSSI ID No.8382

TITLE: PLAN SHOWING SELECTED DETAIL & LEVELS OVER No.81-83 GEORGE STREET, PARRAMATTA & SURROUNDS

LGA: CITY OF PARRAMATTA | REFERENCE: 29736

CLIENT : FREECITY GROUP | DATE: 13-12-21 | SHEET 11

SCALE (AT A1) 1:200 | DATUM : AHD | SURVEYOR: RW

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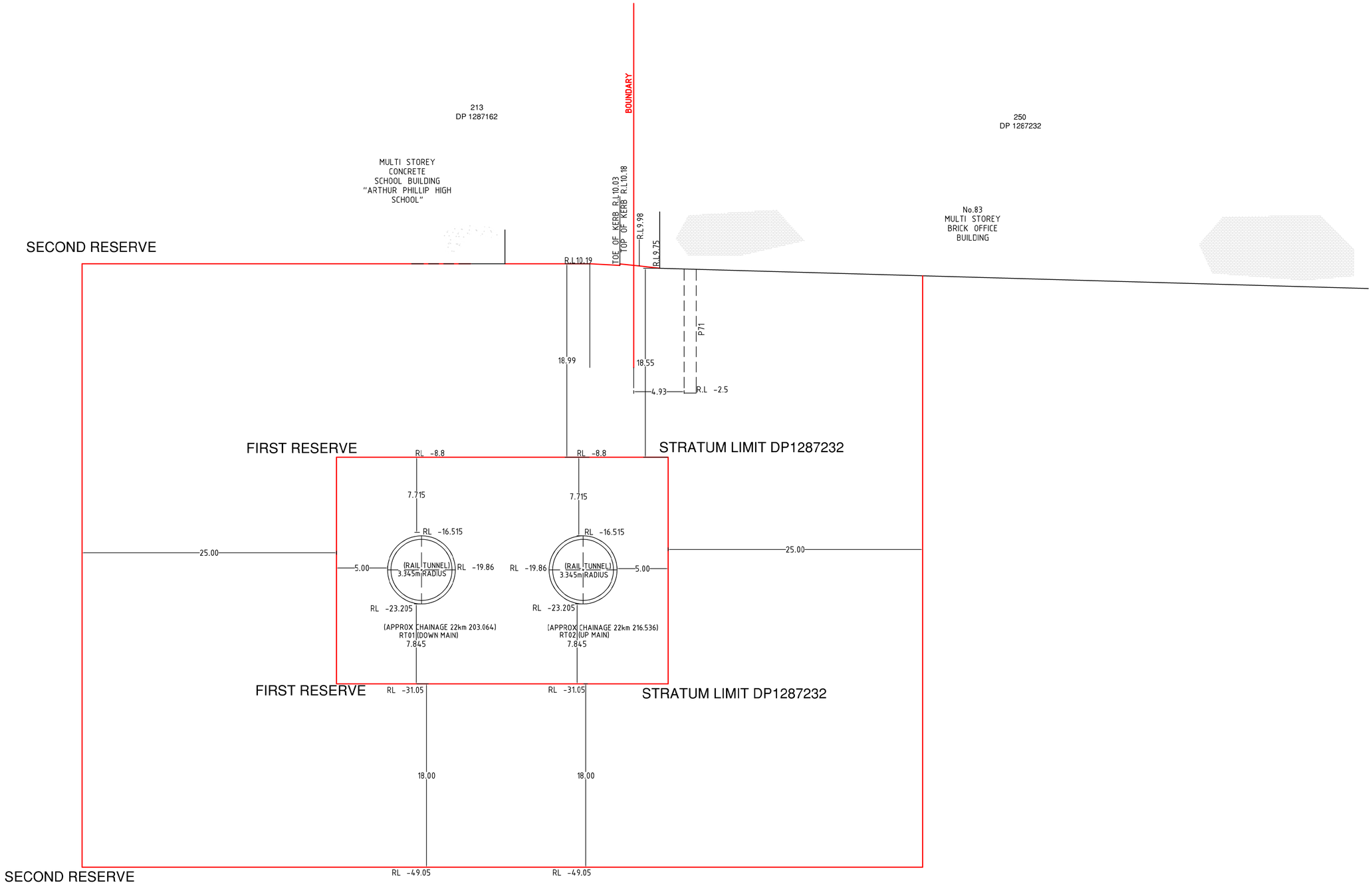

SECTION F - F

BEFORE YOU DIG byda.com.au
Zero damage - Zero harm - Zero disruption

ISSUE	DATE	AMENDMENT
A	25.01.22	LOT 101 DP1110883 ADDED TO SITE
B	4.08.25	DTM & CONTOURS ADDED
C	19.08.25	METRO TUNNELS ADDED AND LOTS DETAIL & EASEMENTS UPDATED
D	20.02.26	PILING ASSESSMENT INVESTIGATION; ADDTIONAL INFORMATION ADDED; METRO RESERVES ADDED

SUPERVISING SURVEYOR:

A. Whitfield

ANDREW WHITFIELD
REGISTERED SURVEYOR
BOSSI ID No.8382

TITLE: PLAN SHOWING SELECTED DETAIL & LEVELS OVER No.81-83 GEORGE STREET, PARRAMATTA & SURROUNDS

LGA: CITY OF PARRAMATTA | REFERENCE: 29736

CLIENT : FREECITY GROUP | DATE: 13-12-21 | SHEET 12

SCALE (AT A1) 1:200 | DATUM : AHD | SURVEYOR: RW

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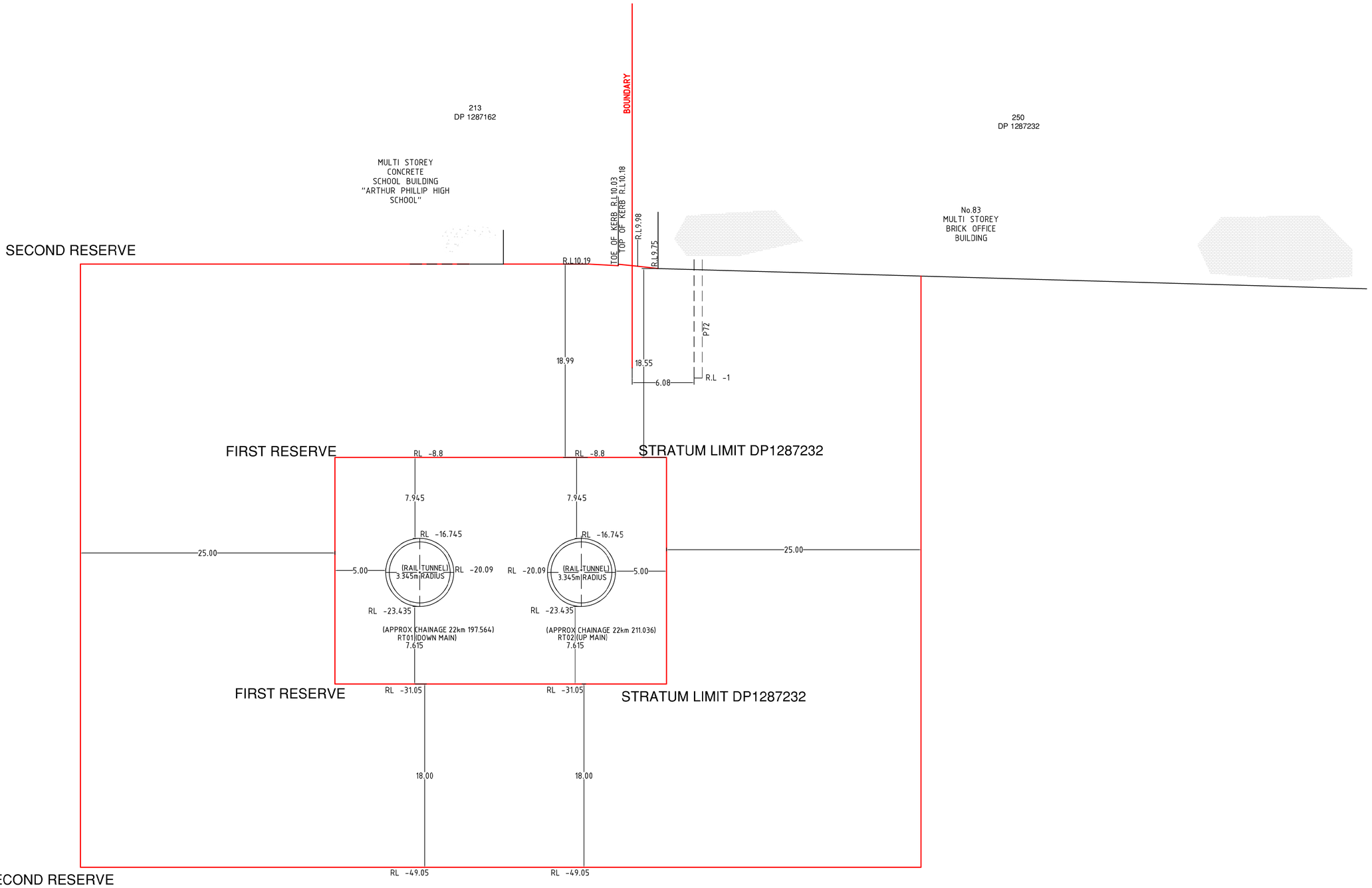

SECTION G - G

BEFORE YOU DIG byda.com.au
Zero damage - Zero harm - Zero disruption

ISSUE	DATE	AMENDMENT
A	25.01.22	LOT 101 DP1110883 ADDED TO SITE
B	4.08.25	DTM & CONTOURS ADDED
C	19.08.25	METRO TUNNELS ADDED AND LOTS DETAIL & EASEMENTS UPDATED
D	20.02.26	PILING ASSESSMENT INVESTIGATION; ADDTIONAL INFORMATION ADDED; METRO RESERVES ADDED

SUPERVISING SURVEYOR:

A. Whitfield

ANDREW WHITFIELD
REGISTERED SURVEYOR
BOSSI ID No.8382

TITLE: PLAN SHOWING SELECTED DETAIL & LEVELS OVER No.81-83 GEORGE STREET, PARRAMATTA & SURROUNDS

LGA: CITY OF PARRAMATTA | REFERENCE: 29736

CLIENT : FREECITY GROUP | DATE: 13-12-21 | SHEET 13

SCALE (AT A1) 1:200 | DATUM : AHD | SURVEYOR: RW

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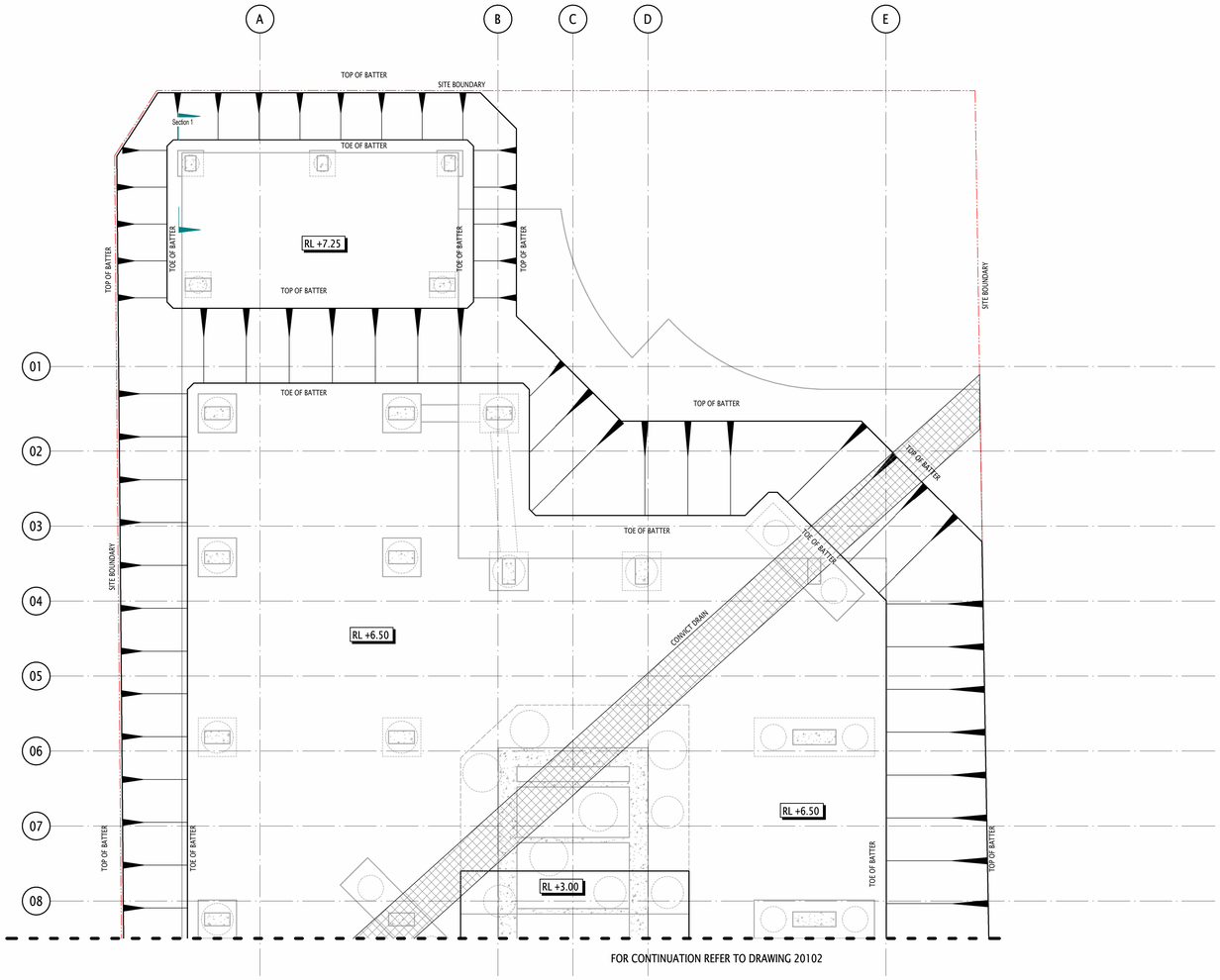
A-2 Structural Layout, Foundation and Cross-sectional Drawings



BULK EARTHWORK PLAN - NORTH
SCALE 1 : 100

NOTES:

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   REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION 233926.02.R.002.DFTA
4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
5. NATURAL GROUND LEVELS, METRO TUNNELS AND RESERVE ZONES THAT HAVE BEEN INDICATED ON RBG DRAWINGS ARE BASED ON NORTON SURVEY PARTNERS "PLAN SHOWING SELECTED DETAIL & LEVELS OVER NO 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS" DATED 13-12-23
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8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BULK EARTHWORK PLAN - NORTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

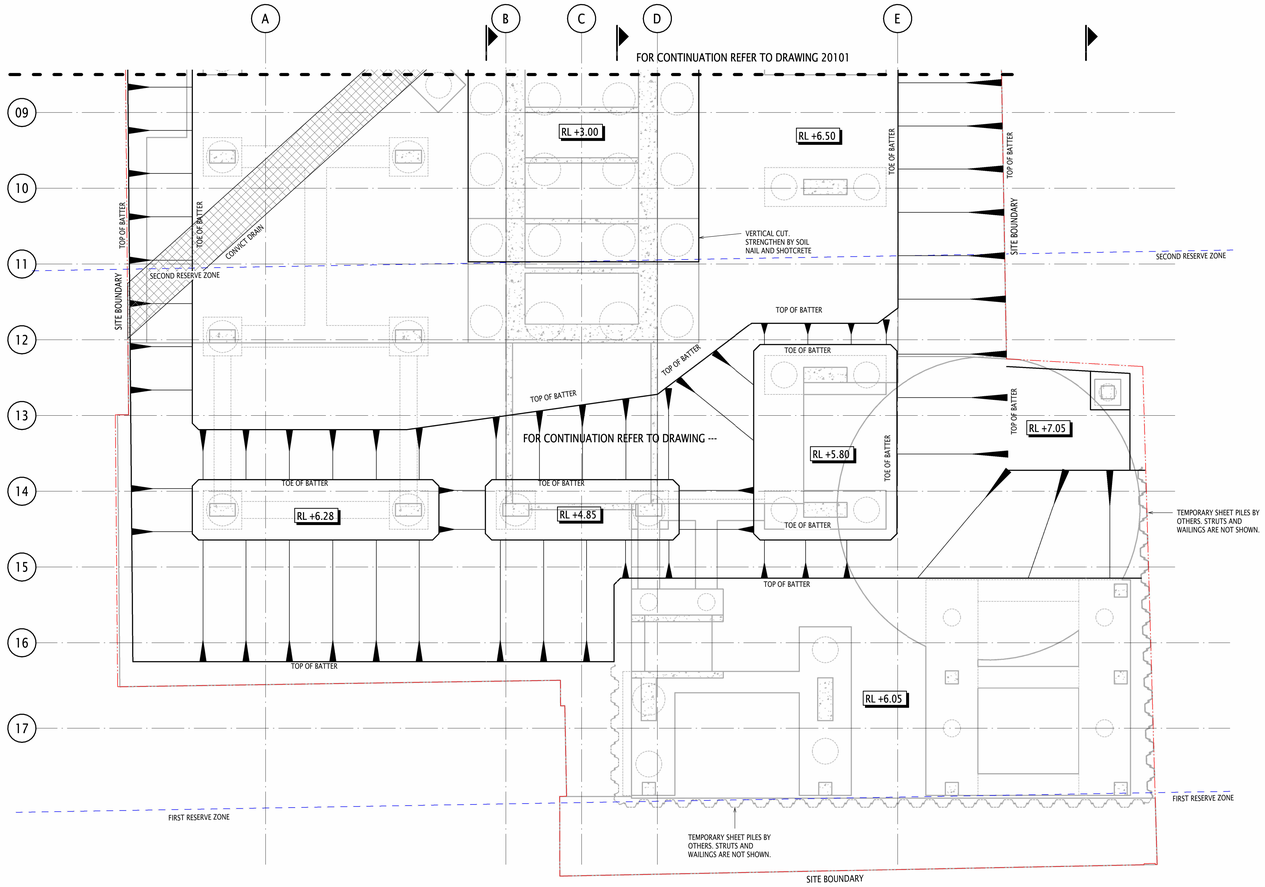
Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO

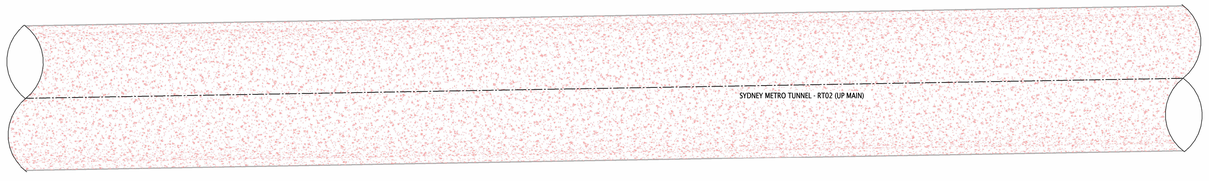
RBG Project Number
25055

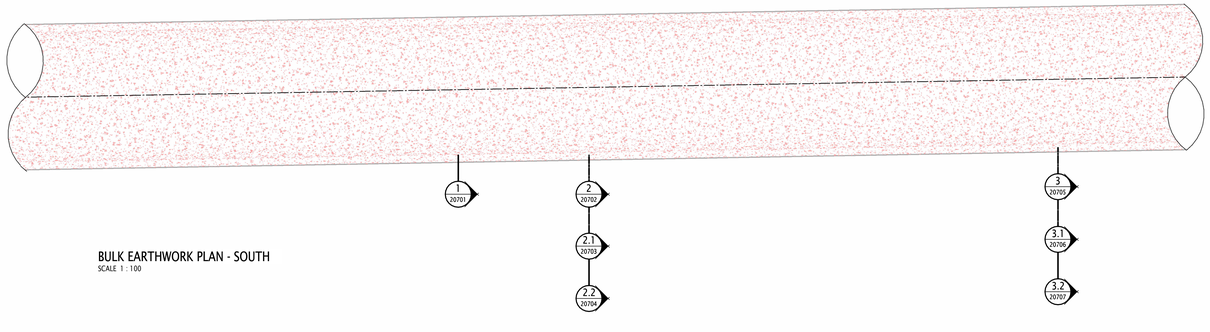
NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20101	P1

PRINT DRAWINGS IN COLOUR







BULK EARTHWORK PLAN - SOUTH
SCALE 1 : 100

NOTES:

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LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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ACN 010 880 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BULK EARTHWORK PLAN - SOUTH

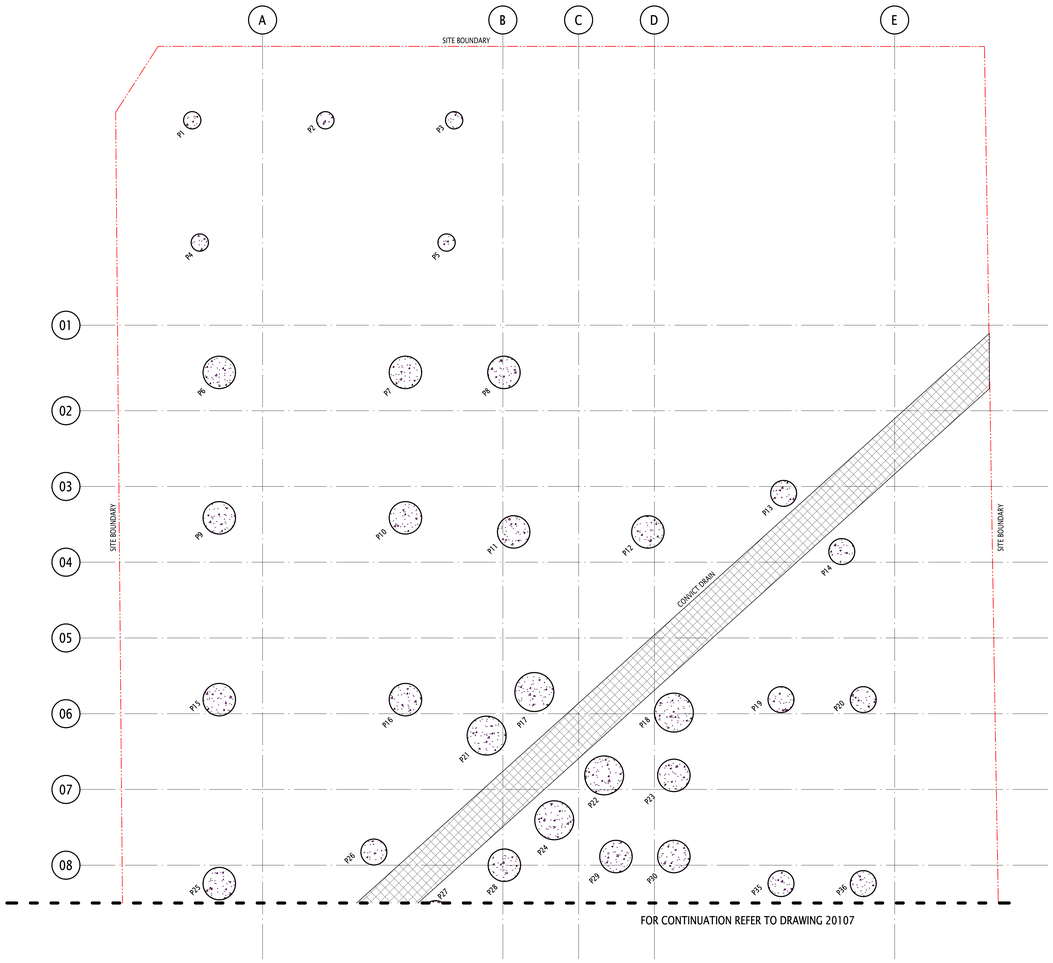
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO

RBG Project Number
25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20102	P1



FOUNDATION - PILE LAYOUT - NORTH
SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? LB — DENOTES BLOCKWORK AND TYPE REFER ST7.?? SERIES DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- RB? INLB
- DENOTES WET AREA SET DOWN
- DENOTES PENETRATION
- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
- DENOTES SUMP
- STEP — DENOTES SLAB STEP
- THK — DENOTES SLAB THICKNESS
- TAG / SIZE — DENOTES COLUMN NUMBER AND SIZE
- W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
- DENOTES SPAN DIRECTION
- S.J. — DENOTES SAWN JOINT
- T.J. — DENOTES TOOLED JOINT
- K.J. — DENOTES KEYED JOINT
- D.J. — DENOTES DOWELLED JOINT
- C.J. — DENOTES CONSTRUCTION JOINT
- E.J. — DENOTES EXPANSION JOINT
- DENOTES TEMPORARY SHEET PILES (BY OTHERS, STRUTTING NOT SHOWN)
- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MD	10/02/2026

Rev	Revision Description	By	App	Date

SCALE 1:1 1:2 1:3 1:4 1:5 1:6 1:7 1:8

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Client
Freecity Parramatta Development No 1 Pty Ltd

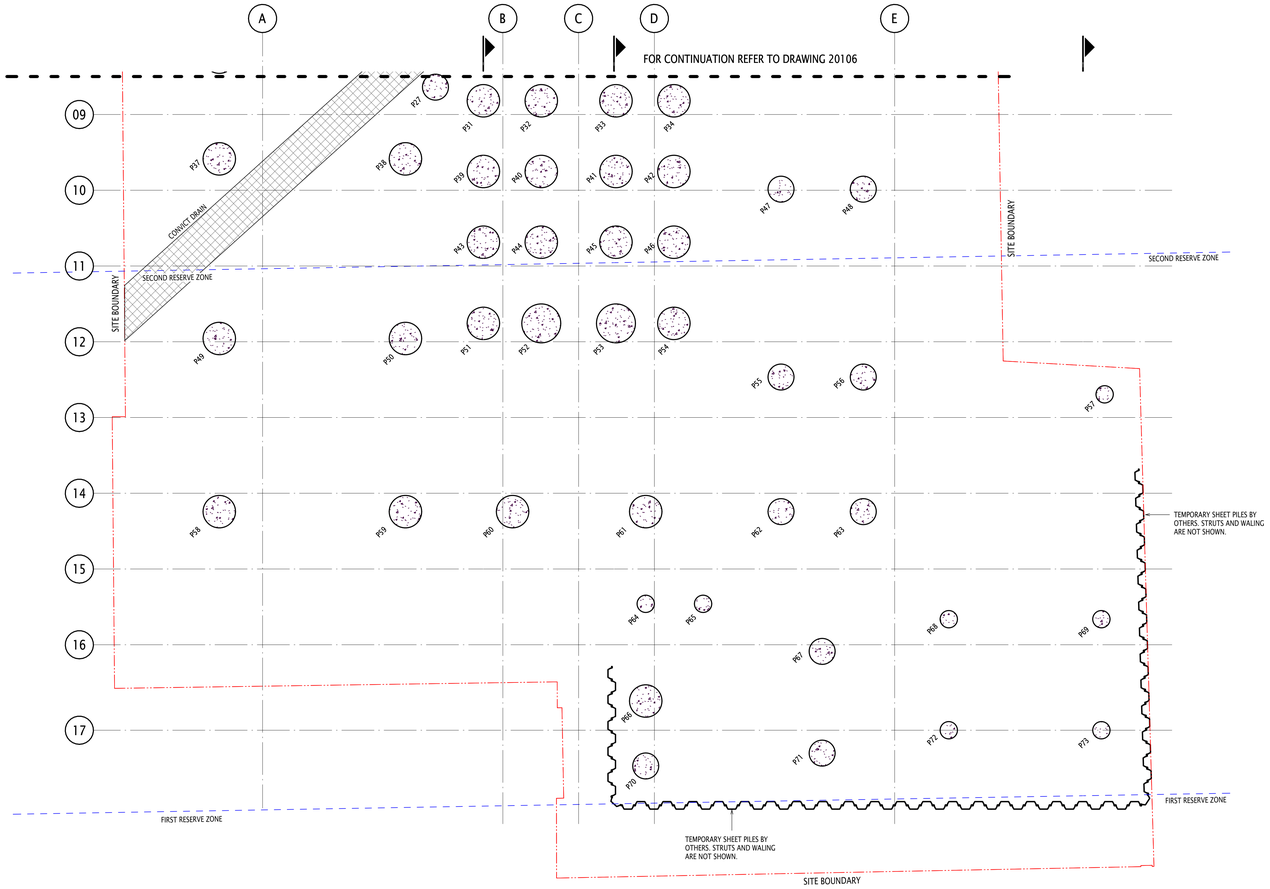
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
PILE LAYOUT - NORTH

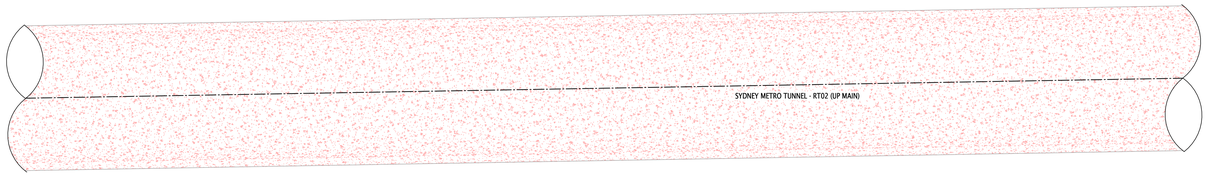
Project
1 Barrack Lane and 81-83 George Street, Parramatta

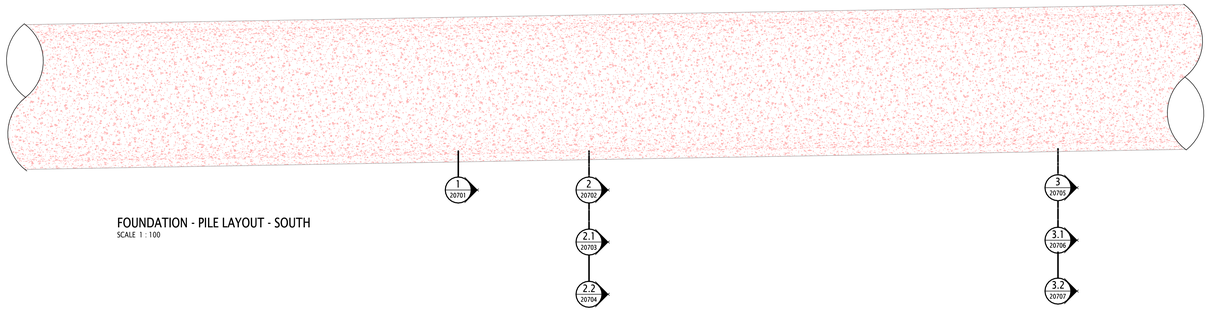
Scale at A0: 1 : 100
Date: 10/02/26
Drawn: HG
Designer: JL
Design Checker: -
Approved: MD
RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20106
Revision: P1







FOUNDATION - PILE LAYOUT - SOUTH

SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
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PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

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Client
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PILE LAYOUT - SOUTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20107	P1

PILE SCHEDULE

PILE MARK	PILE DIAMETER (mm)	ANTICIPATED TOP LEVEL OF MEDIUM MEDIUM STRENGTH ROCK (m)	MIN. SOCKETTED LENGTH (m)	ANTICIPATED PILE TOE LEVEL (m)
P1	800	-1.5	2.5	-4.00
P2	800	-1.5	2.5	-4.00
P3	800	-1.5	2.5	-4.00
P4	800	-1.5	2.5	-4.00
P5	800	-1.5	2.5	-4.00
P6	1500	-1	3.5	-4.50
P7	1500	-1	3.5	-4.50
P8	1500	-1	3.5	-4.50
P9	1500	-1	3.5	-4.50
P10	1500	-1	3.5	-4.50
P11	1500	-1	3.5	-4.50
P12	1500	-1	3.5	-4.50
P13	1200	-1	4.0	-5.00
P14	1200	-1	4.0	-5.00
P15	1500	0	3.5	-3.50
P16	1500	0	3.5	-3.50
P17	1800	0	6.5	-6.50
P18	1800	0	6.5	-6.50
P19	1200	0	4.0	-4.00
P20	1200	0	4.0	-4.00
P21	1800	0	6.5	-6.50
P22	1800	0	6.5	-6.50
P23	1500	0	6.5	-6.50
P24	1800	0	6.5	-6.50
P25	1500	1.5	3.5	-2.00
P26	1200	1.5	4.0	-2.50
P27	1200	1.5	4.0	-2.50
P28	1500	1.5	8.0	-6.50
P29	1500	1.5	8.0	-6.50
P30	1500	1.5	8.0	-6.50
P31	1500	1.5	8.0	-6.50
P32	1500	1.5	8.0	-6.50
P33	1500	1.5	8.0	-6.50
P34	1500	1.5	8.0	-6.50
P35	1200	1.5	4.0	-2.50
P36	1200	1.5	4.0	-2.50
P37	1500	1.5	3.5	-2.00
P38	1500	1.5	3.5	-2.00
P39	1500	1.5	8.0	-6.50
P40	1500	1.5	8.0	-6.50
P41	1500	1.5	8.0	-6.50
P42	1500	1.5	8.0	-6.50
P43	1500	1.5	8.0	-6.50
P44	1500	1.5	8.0	-6.50
P45	1500	1.5	8.0	-6.50
P46	1500	1.5	8.0	-6.50
P47	1200	1.5	4.0	-2.50
P48	1200	1.5	4.0	-2.50
P49	1500	1.5	3.5	-2.00
P50	1500	1.5	3.5	-2.00
P51	1500	1.5	6.5	-6.50
P52	1800	1.5	8.0	-6.50
P53	1800	1.5	8.0	-6.50
P54	1500	1.5	8.0	-6.50
P55	1200	1.5	4.0	-2.50
P56	1200	1.5	4.0	-2.50
P57	800	1.5	2.5	-1.00
P58	1500	1.5	3.5	-2.00
P59	1500	1.5	3.5	-2.00
P60	1500	1.5	3.5	-2.00
P61	1500	1.5	3.5	-2.00
P62	1200	1.5	4.0	-2.50
P63	1200	1.5	4.0	-2.50
P64	800	1.5	2.5	-1.00
P65	800	1.5	2.5	-1.00
P66	1500	1.5	3.5	-2.00
P67	1200	1.5	4.0	-2.50
P68	800	1.5	2.5	-1.00
P69	800	1.5	2.5	-1.00
P70	1200	1.5	4.0	-2.50
P71	1200	1.5	4.0	-2.50
P72	800	1.5	2.5	-1.00
P73	800	1.5	2.5	-1.00

SHEAR & TORSION LOADS UNDER THE CORE

LOAD COMBINATION	Vx	Vy	Mz
	kN	kN	kNm
WORKING WIND LOAD 1	4900	760	-4250
WORKING WIND LOAD 2	4900	750	23800
WORKING WIND LOAD 3	4900	-750	-4240
WORKING WIND LOAD 4	4900	-750	23810
WORKING WIND LOAD 5	-3920	1370	-19680
WORKING WIND LOAD 6	-3920	1370	5270
WORKING WIND LOAD 7	-3920	-1130	-19660
WORKING WIND LOAD 8	-3920	-1130	5290
WORKING WIND LOAD 9	1470	2250	-14090
WORKING WIND LOAD 10	1470	2250	10860
WORKING WIND LOAD 11	1470	-2500	-7810
WORKING WIND LOAD 12	1470	-2500	10900
WORKING WIND LOAD 13	-1710	2250	-17390
WORKING WIND LOAD 14	-1710	2240	7560
WORKING WIND LOAD 15	4900	-2490	-4230
WORKING WIND LOAD 16	-1960	-2500	7330
WORKING WIND LOAD 17	1470	1380	-26540
WORKING WIND LOAD 18	2700	750	33970
WORKING WIND LOAD 19	1470	-750	-26520
WORKING WIND LOAD 20	2700	-750	33980
WORKING WIND LOAD 21	-1710	1370	-29840
WORKING WIND LOAD 22	-1470	750	29640
WORKING WIND LOAD 23	-1720	-750	-29830
WORKING WIND LOAD 24	-1470	-760	29650
ULTIMATE WIND LOAD 1	9950	1330	-8500
ULTIMATE WIND LOAD 2	9950	1320	45290
ULTIMATE WIND LOAD 3	9950	-1310	-8480
ULTIMATE WIND LOAD 4	9950	-1320	45310
ULTIMATE WIND LOAD 5	-9450	1980	-32900
ULTIMATE WIND LOAD 6	-9450	1980	8950
ULTIMATE WIND LOAD 7	-9450	-2650	-32860
ULTIMATE WIND LOAD 8	-9450	-2660	8990
ULTIMATE WIND LOAD 9	3000	3970	-27090
ULTIMATE WIND LOAD 10	2990	3970	20740
ULTIMATE WIND LOAD 11	2990	-4400	-15060
ULTIMATE WIND LOAD 12	2990	-4410	20810
ULTIMATE WIND LOAD 13	-3490	3970	-33240
ULTIMATE WIND LOAD 14	-3490	3960	14590
ULTIMATE WIND LOAD 15	9950	-4400	-8450
ULTIMATE WIND LOAD 16	-4970	-4410	13250
ULTIMATE WIND LOAD 17	-2990	2430	-50970
ULTIMATE WIND LOAD 18	5970	1320	65420
ULTIMATE WIND LOAD 19	2990	-1310	-50940
ULTIMATE WIND LOAD 20	5960	-1320	65430
ULTIMATE WIND LOAD 21	-3970	2420	-57590
ULTIMATE WIND LOAD 22	-2990	1310	56920
ULTIMATE WIND LOAD 23	-3970	-1320	-57560
ULTIMATE WIND LOAD 24	-2990	-1330	56930
ULTIMATE EARTHQUAK LOAD	-32420	41970	-99230

PILE AXIAL LOAD SCHEDULE

Pile ID	WORKING AXIAL LOAD (kN)			ULTIMATE AXIAL LOAD (kN)				
	G + Q	G + Ψc Q + Ws	0.9G - Ws	1.35G	1.2G + 1.5Q	1.2G + Wu + ΨcQ	0.9G + Wu	G + E + ΨEQ
P1	1672	-	-	1887	2089	-	-	-
P2	1927	-	-	1909	2466	-	-	-
P3	957	-	-	1004	1213	-	-	-
P4	4522	-	-	4693	5740	-	-	-
P5	2262	-	-	2340	2873	-	-	-
P6	10141	-	-	10946	12779	-	-	-
P7	14149	-	-	14629	17973	-	-	-
P8	10023	-	-	10847	12625	-	-	-
P9	14793	-	-	15776	18684	-	-	-
P10	18935	-	-	18857	24212	-	-	-
P11	17492	-	-	18082	22219	-	-	-
P12	18250	-	-	19099	23130	-	-	-
P13	9846	-	-	10752	12379	-	-	-
P14	9846	-	-	10752	12379	-	-	-
P15	15315	-	-	16315	19348	-	-	-
P16	17362	-	-	16912	22285	-	-	-
P17	27821	28882	16207	31316	34773	36877	12579	34836
P18	17417	19540	10041	19724	21743	25701	6213	22251
P19	15674	-	-	16923	19751	-	-	-
P20	15674	-	-	16923	19751	-	-	-
P21	20475	23727	9161	23033	25594	32706	3931	26364
P22	28432	30696	17395	32128	35509	39684	12466	34944
P23	17201	20167	10192	19494	21469	27063	6760	19858
P24	29128	31692	17672	33224	36310	42127	13814	33931
P25	13497	-	-	14444	17036	-	-	-
P26	6799	-	-	6727	8703	-	-	-
P27	6799	-	-	6727	8703	-	-	-
P28	17939	20236	10541	20401	22375	26708	6737	20241
P29	11209	13426	6216	12793	13970	18168	3335	13784
P30	20261	23180	10715	23061	25266	32081	6625	23038
P31	14899	17554	8916	16951	18582	24874	6749	15864
P32	16533	19582	9238	18854	20611	26420	6237	18115
P33	15610	17812	9972	17954	19426	23621	7491	17505
P34	9775	11776	5216	11207	12172	15992	2958	11770
P35	14157	-	-	15577	17774	-	-	-
P36	14157	-	-	15577	17774	-	-	-
P37	12032	-	-	12924	15176	-	-	-
p38	12144			12305	15481	-	-	-
P39	7814	9081	4662	9002	9721	12806	3444	9472
P40	12337	13709	6882	14238	15342	18772	4538	14006
P41	13449	15903	7593	15483	16733	21315	4372	15481
P42	7993	9887	4704	9197	9946	13537	2952	9804
P43	14018	16231	7271	15995	17473	22872	4211	16662
P44	15200	17031	9378	17543	18902	23437	7313	18373
P45	15448	18653	9583	17772	19223	25172	7097	19034
P46	10406	13371	5354	11879	12970	18486	2352	13030
P47	13496	-	-	14842	16945	-	-	-
P48	13496	-	-	14842	16945	-	-	-
P49	12479	-	-	13145	15798	-	-	-
P50	13178	-	-	13472	16774	-	-	-
P51	13853	16499	6712	15865	17254	23621	3255	18653
P52	26835	29599	15569	30718	33426	40420	11280	35166
P53	25290	30743	14139	28808	31533	41434	9023	33670
P54	11722	15359	6040	13314	14624	21312	2895	15479
P55	13058	-	-	13832	16513	-	-	-
P56	13058	-	-	13832	16513	-	-	-
P57	5369	-	-	4770	6994	-	-	-
P58	16274	-	-	17879	20437	-	-	-
P59	18540	-	-	20065	23351	-	-	-
P60	17340	-	-	18710	21852	-	-	-
P61	17432	-	-	18288	22084	-	-	-
P62	15100	-	-	15928	19111	-	-	-
P63	15100	-	-	15928	19111	-	-	-
P64	1462	-	-	1262	1912	-	-	-
P65	1462	-	-	1262	1912	-	-	-
P66	13246	-	-	14978	16541	-	-	-
P67	9559	-	-	10935	11908	-	-	-
P68	2087	-	-	2085	2667	-	-	-
P69	4742	-	-	4478	6118	-	-	-
P70	1582	-	-	1584	2021	-	-	-
P71	11733	-	-	12852	14744	-	-	-
P72	5914	-	-	5603	7626	-	-	-
P73	2872	-	-	2980	3645	-	-	-

G DENOTES DEAD LOAD
Q DENOTES LIVE LOAD
Ws LIVE LOAD
Wu DENOTES SERVICE WIND LOAD
e DENOTES EARTHQUAKE LOAD

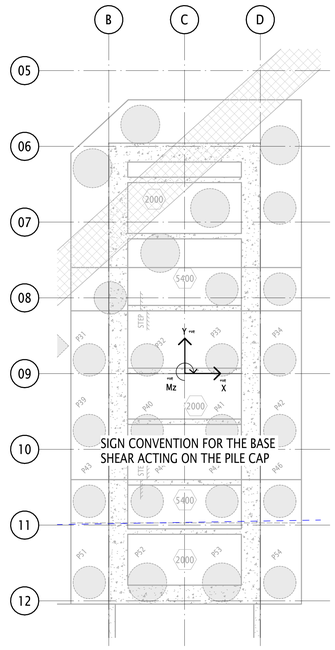
Ψc DENOTES COMBINATION FACTOR AS PER AS 1170.0
ΨE DENOTES EARTHQUAKE COMBINATION FACTOR AS PER AS 1170.0

NOTES FOR PILE AXIAL LOAD SCHEDULE

1. ALL PILES ARE IN COMPRESSION UNDER ALL WORKING AND ULTIMATE LOAD COMBINATIONS
2. THE EARTHQUAKE LOADS LISTED IN THE TABLE ARE DERIVED FROM THE DYNAMIC EARTHQUAKE LOAD CASE APPLIED SIMULTANEOUSLY IN BOTH THE X AND Y DIRECTIONS. AS SUCH, THERE IS NO REQUIREMENT TO COMBINE X AND Y DIRECTIONAL FORCES.
3. ALL EARTHQUAKE DESIGN ACTIONS DOCUMENTED IN THE TABLE REPRESENT DUCTILE DEMANDS (MU=2.0, SP=0.77).
4. ALL PILES ARE TO BE DESIGNED WITH 1% OF AXIAL LOAD AS LATERAL LOAD AND 5% OF AXIAL LOAD AS BENDING MOMENT DUE TO ECCENTRICITY.
5. ALL PILES UNDER COLUMNS ARE GOVERNED BY GRAVITY LOADS. AS SUCH, ONLY GRAVITY LOAD COMBINATIONS HAVE BEEN SHOWN.

NOTES FOR SHEAR & TORSION LOADS UNDER THE CORE

1. EARTHQUAKE IS REVERSIBLE.
2. THE EARTHQUAKE LOADS LISTED IN THE TABLE ARE DERIVED FROM THE DYNAMIC EARTHQUAKE LOAD CASE APPLIED SIMULTANEOUSLY IN BOTH THE X AND Y DIRECTIONS. AS SUCH, THERE IS NO REQUIREMENT TO COMBINE X AND Y DIRECTIONAL FORCES.
3. ALL EARTHQUAKE DESIGN ACTIONS DOCUMENTED IN THE TABLE REPRESENT DUCTILE DEMANDS (MU=2.0, SP=0.77). CONSEQUENTLY, SHEAR FORCES (Vx AND Vy) SHOULD BE INCREASED BY A FACTOR OF 2 TO ACCOMMODATE THE OVER-STRENGTH REQUIRED TO SAFEGUARD THE FOUNDATION, AS REQUIRED IN CLAUSE 14.6.6 OF AS3600-2018.
4. THE SHEAR & TORSION LOADS ARE APPLIED AT CENTROID OF THE CORE AND AT THE TOP OF PILE CAP.
Vx: SHEAR FORCE IN X DIRECTION
Vy: SHEAR FORCE IN Y DIRECTION
Mz: TORSIONAL BENDING MOMENT ABOUT Z AXIS



PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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Client
Freecity Parramatta Development No 1 Pty Ltd

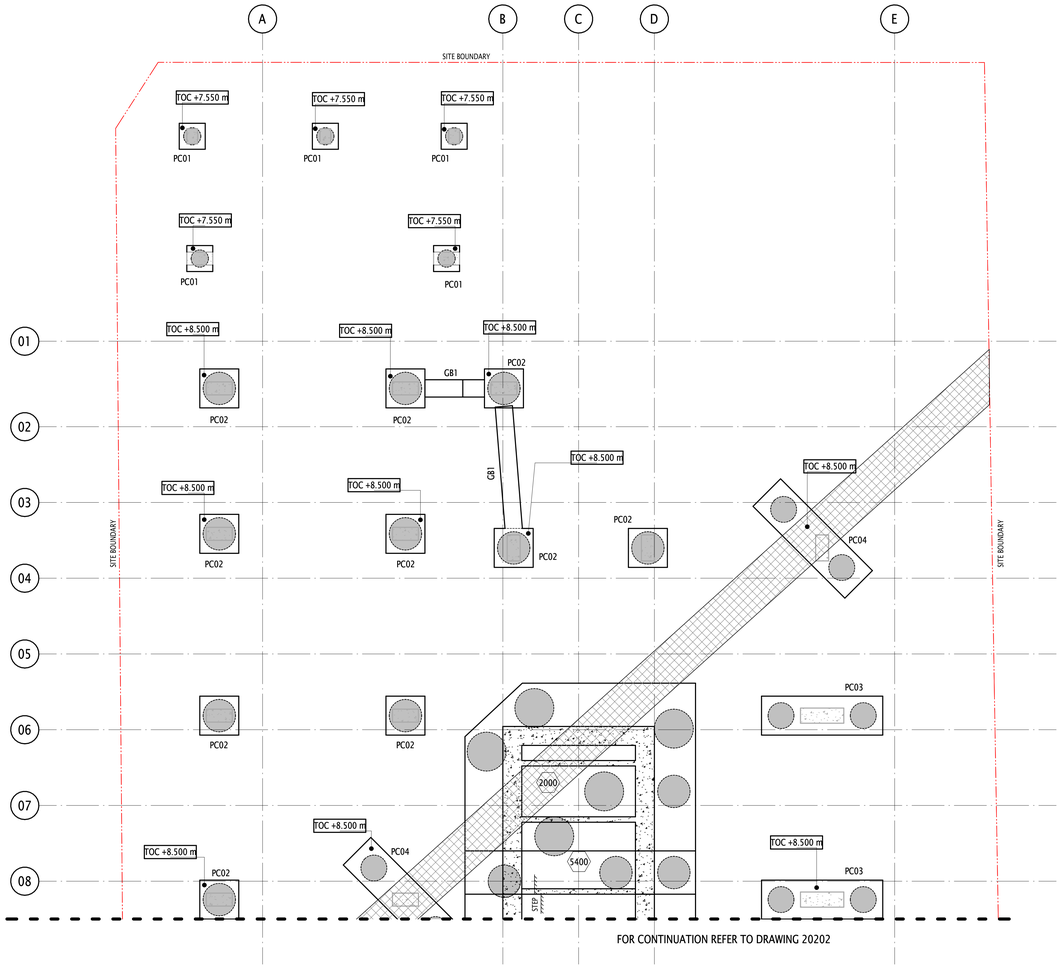
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
PILE SCHEDULE

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0: 1 : 100
Date: 10/02/26
Drawn: HG
Designer: JL
Design Checker: -
Approved: MO
RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20110
Revision: P1



FOUNDATION GENERAL ARRANGEMENT PLAN - NORTH
SCALE 1 : 100

PILE CAP SCHEDULE			
PILE CAP TYPE	PILE CAP LENGTH	PILE CAP WIDTH	PILE CAP DEPTH
PC01	1200	1200	1200
PC02	1800	1800	1750
PC03	5600	1800	1750
PC04	6000	1800	1750

GROUND BEAM SCHEDULE		
TYPE	WIDTH	DEPTH
GB1	800	600
GB2	1000	1250
GB4	1200	1250
GB5	2400	1750
GB6	1000	1750
GB7	2400	1500

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? GB — DENOTES BLOCKWORK AND TYPE REFER ST?-?? SERIES
- RB? WALL — DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- DENOTES WET AREA SET DOWN
- DENOTES PENETRATION
- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
- DENOTES SUMP
- STEP — DENOTES SLAB STEP
- THK — DENOTES SLAB THICKNESS
- TAG / SIZE — DENOTES COLUMN NUMBER AND SIZE
- W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
- DENOTES SPAN DIRECTION
- S.J. — DENOTES SAWN JOINT
- T.J. — DENOTES TOOLED JOINT
- K.J. — DENOTES KEYED JOINT
- D.J. — DENOTES DOWELLED JOINT
- C.J. — DENOTES CONSTRUCTION JOINT
- E.J. — DENOTES EXPANSION JOINT
- DENOTES TEMPORARY SHEET PILES (BY OTHERS; STRUTTING NOT SHOWN)
- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

NOTES:

1. ALL PILE AND PILE CAP SIZES SHOWN ARE PROVISIONAL AND SUBJECT TO THE GEOTECHNICAL ENGINEERS DESIGN INPUT
2. TEMPORARY SHEET PILES TO BE DESIGNED BY OTHERS
3. SET OUT OF TUNNELS BASED ON THE SITE SURVEY BY NORTON SURVEY PARTNERS
4. THE EXISTING CONVICT DRAIN ALIGNMENT IS INDICATIVE ONLY. THE ACTUAL DEPTH AND ALIGNMENT ARE TO BE VERIFIED BY SITE SURVEY. PILE AND PILE CAP DESIGN WILL BE REVIEWED ONCE THE SURVEY IS COMPLETED.

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

SCALE 10 15 14 16 12 18
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Client
Freecity Parramatta Development No 1 Pty Ltd

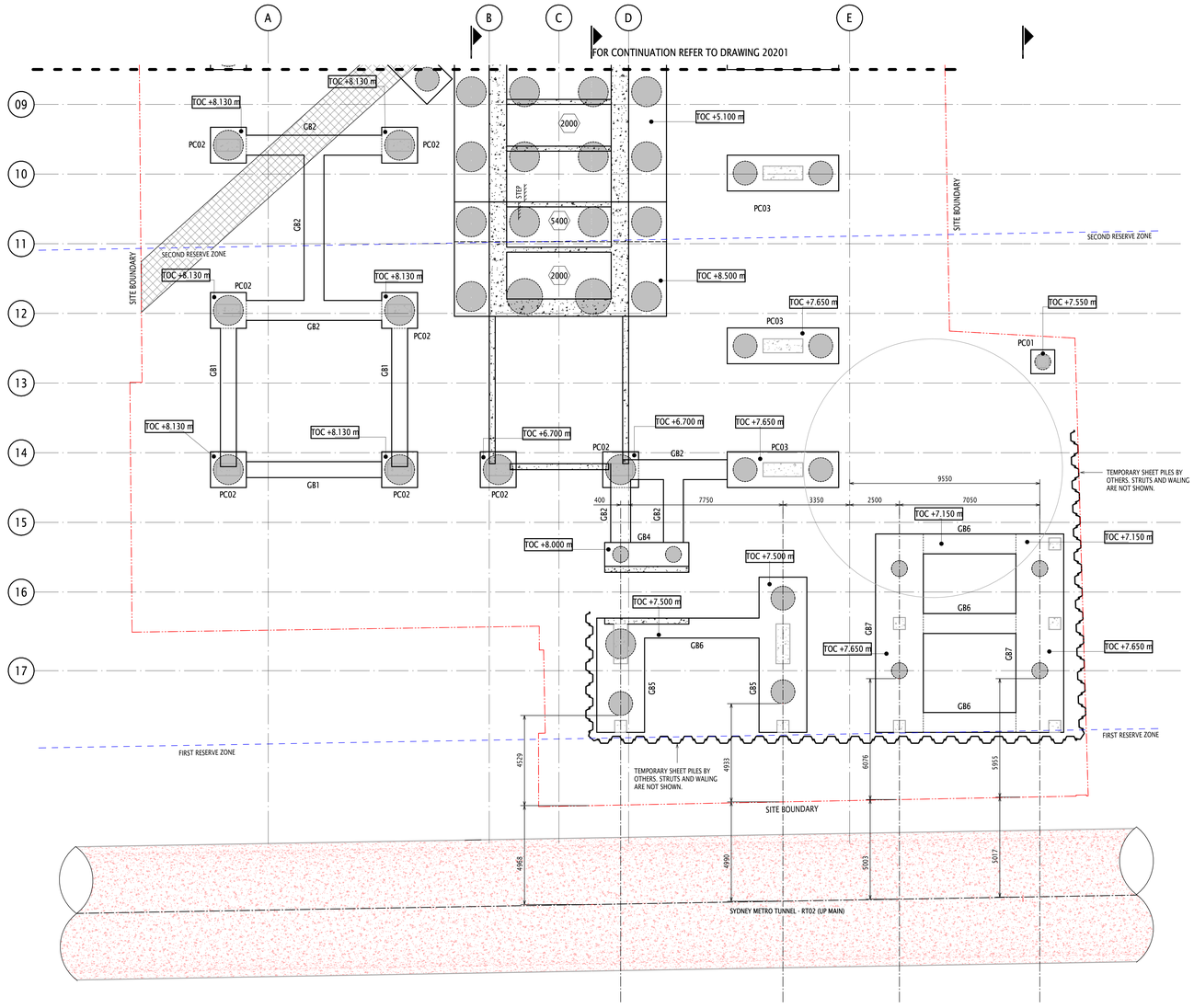
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
FOUNDATION PLAN - NORTH

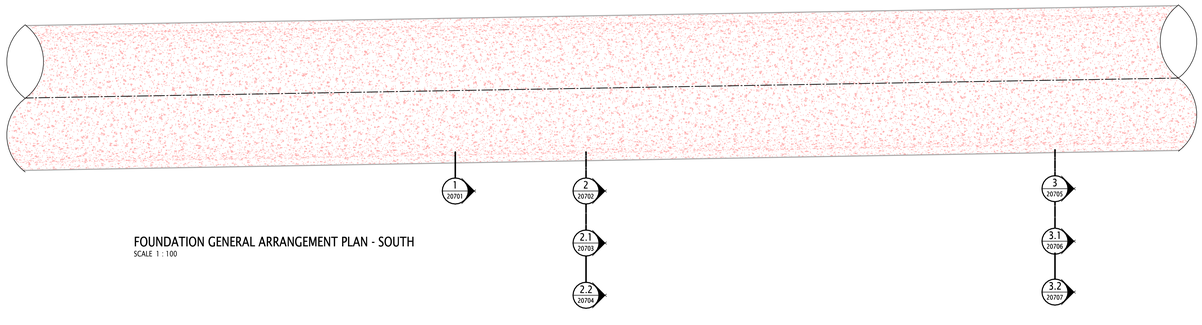
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0: 1 : 100
Date: 10/02/26
Drawn: HG
Designer: JL
Design Checker: -
Approved: MO
RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20201
Revision: P1





FOUNDATION GENERAL ARRANGEMENT PLAN - SOUTH
SCALE 1 : 100

PILE CAP SCHEDULE			
PILE CAP TYPE	PILE CAP LENGTH	PILE CAP WIDTH	PILE CAP DEPTH
PC01	1200	1200	1200
PC02	1800	1800	1750
PC03	5600	1800	1750
PC04	6000	1800	1750

GROUND BEAM SCHEDULE		
TYPE	WIDTH	DEPTH
GB1	800	600
GB2	1000	1250
GB4	1200	1250
GB5	2400	1750
GB6	1000	1750
GB7	2400	1500

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
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- DENOTES SUMP
- STEP — DENOTES SLAB STEP
- THK — DENOTES SLAB THICKNESS
- TAG / SIZE — DENOTES COLUMN NUMBER AND SIZE
- W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
- DENOTES SPAN DIRECTION
- S.J. — DENOTES SAWN JOINT
- T.J. — DENOTES TOOLED JOINT
- K.J. — DENOTES KEYED JOINT
- D.J. — DENOTES DOWELLED JOINT
- C.J. — DENOTES CONSTRUCTION JOINT
- E.J. — DENOTES EXPANSION JOINT
- DENOTES TEMPORARY SHEET PILES (BY OTHERS; STRUTTING NOT SHOWN
- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

NOTES:

1. ALL PILE AND PILE CAP SIZES SHOWN ARE PROVISIONAL AND SUBJECT TO THE GEOTECHNICAL ENGINEERS DESIGN INPUT
2. TEMPORARY SHEET PILES TO BE DESIGNED BY OTHERS
3. SET OUT OF TUNNELS BASED ON THE SITE SURVEY BY NORTON SURVEY PARTNERS
4. THE EXISTING CONVICT DRAIN ALIGNMENT IS INDICATIVE ONLY. THE ACTUAL DEPTH AND ALIGNMENT ARE TO BE VERIFIED BY SITE SURVEY. PILE AND PILE CAP DESIGN WILL BE REVIEWED ONCE THE SURVEY IS COMPLETED.

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MD	10/02/2026

Rev	Revision Description	By	App	Date

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Web: www.robertbird.com
ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

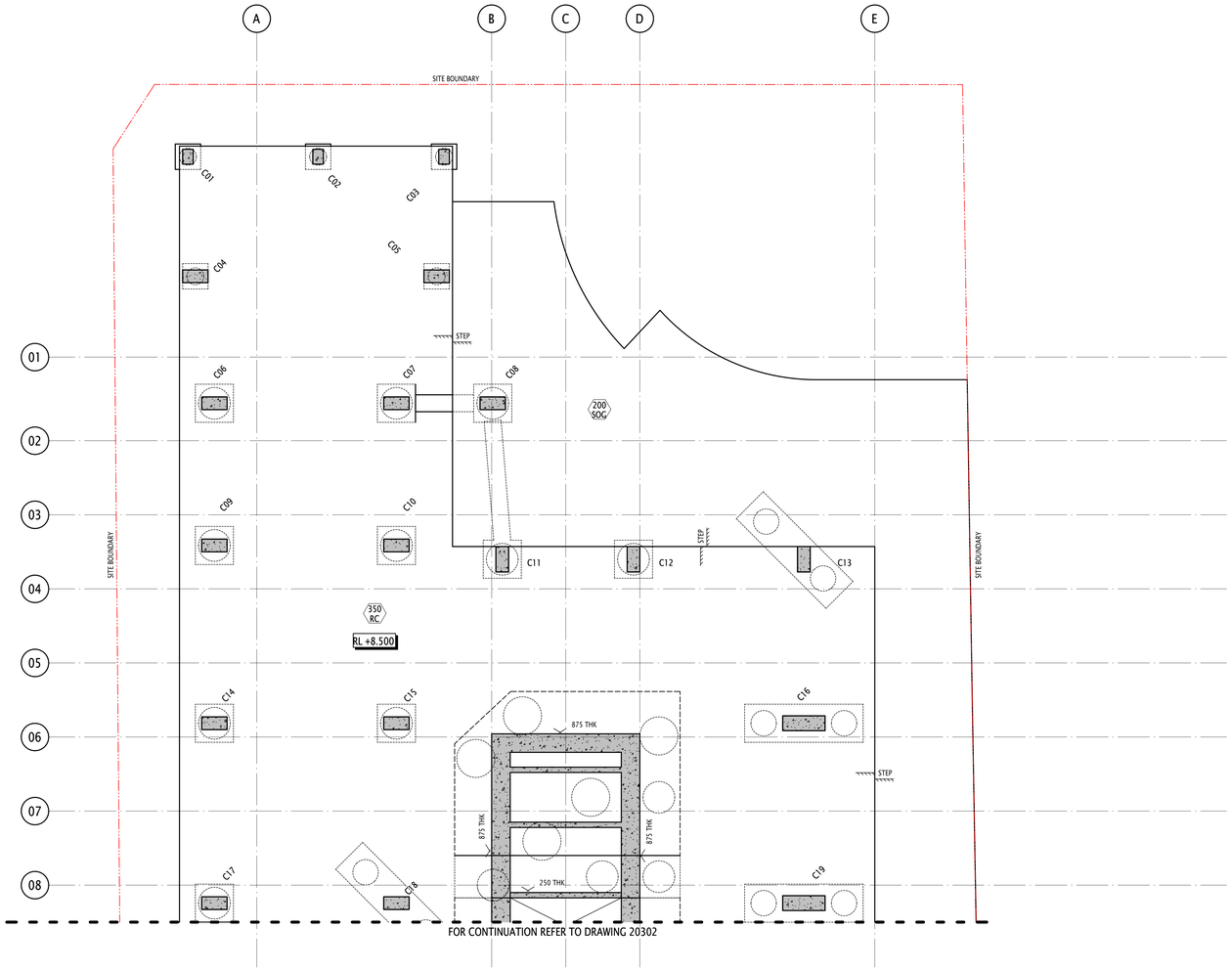
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
FOUNDATION PLAN - SOUTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MD
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20202	P1



GROUND FLOOR GENERAL ARRANGEMENT PLAN NORTH
SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? GB — DENOTES BLOCKWORK AND TYPE REFER SCF ?? SERIES DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- RB? INLB
- DENOTES WET AREA SET DOWN
- DENOTES PENETRATION
- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
- DENOTES SUMP
- STEP — DENOTES SLAB STEP
- THK — DENOTES SLAB THICKNESS
- TAG — DENOTES COLUMN NUMBER AND SIZE
- SIZE W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
- DENOTES SPAN DIRECTION
- S.J. — DENOTES SAWN JOINT
- T.J. — DENOTES TOOLED JOINT
- K.J. — DENOTES KEYED JOINT
- D.J. — DENOTES DOWELLED JOINT
- C.J. — DENOTES CONSTRUCTION JOINT
- E.J. — DENOTES EXPANSION JOINT
- DENOTES TEMPORARY SHEET PILES (BY OTHERS). STRUTTING NOT SHOWN
- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

SCALE (A1) 1:1 1:2 1:4 1:8 1:5 1:10

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ACN 010 880 248

Client
Freecity Parramatta Development No 1 Pty Ltd

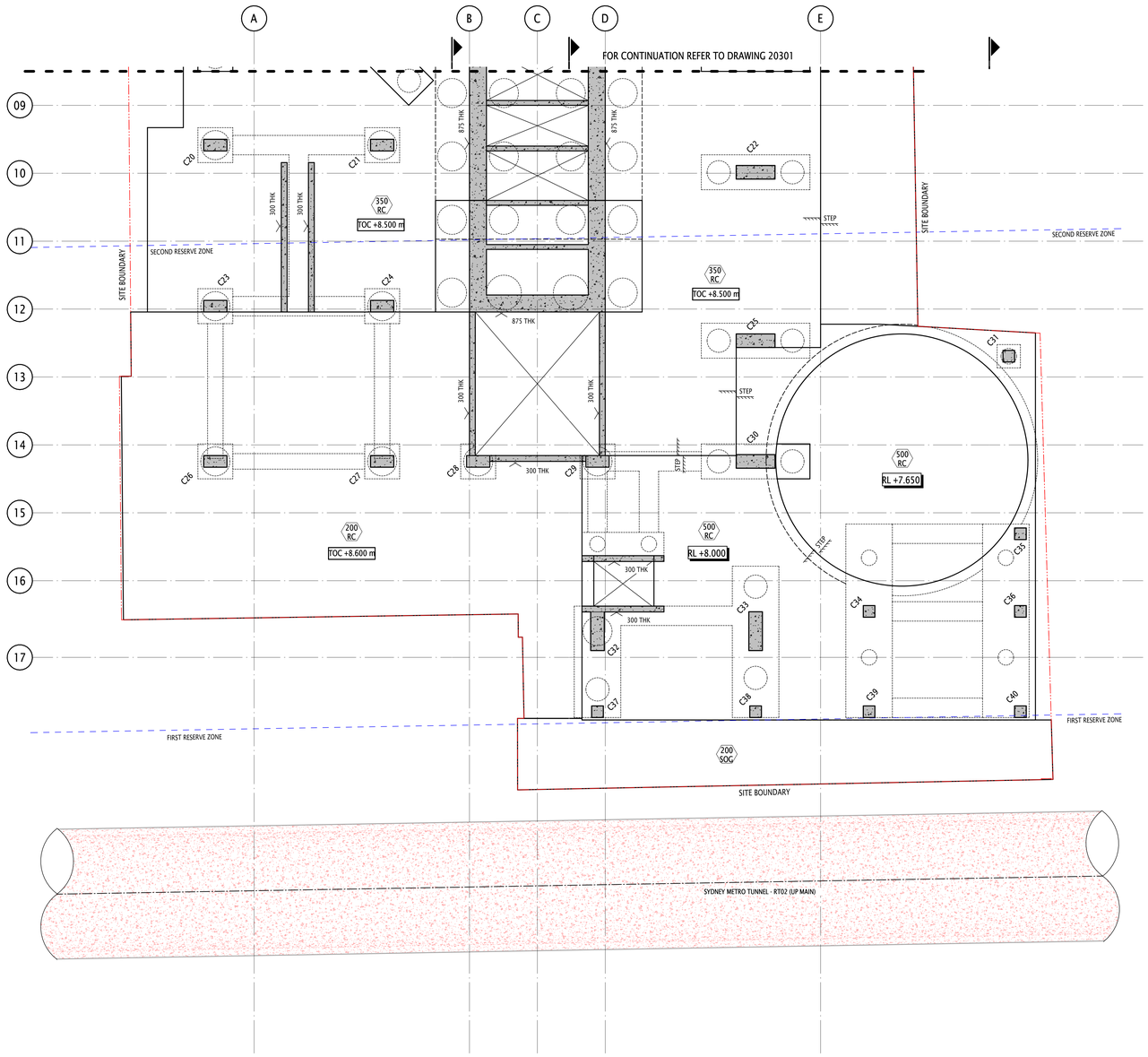
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
GROUND GENERAL ARRANGEMENT PLAN - NORTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20301	P1



GROUND FLOOR GENERAL ARRANGEMENT PLAN - SOUTH

SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? GB DENOTES BLOCKWORK AND TYPE REFER SCP ?? SERIES
- RB? INLB DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- DENOTES WET AREA SET DOWN
- DENOTES PENETRATION
- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
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- STEP DENOTES SLAB STEP
- THK DENOTES SLAB THICKNESS
- TAG DENOTES COLUMN NUMBER AND SIZE
- SIZE W? DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
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- DENOTES TEMPORARY SHEET PILES (BY OTHERS, STRUTTING NOT SHOWN
- TOC DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

SCALE (C) 0 1 2 3 4 5 6 7 8

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ACN 010 380 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
GROUND GENERAL ARRANGEMENT PLAN - SOUTH

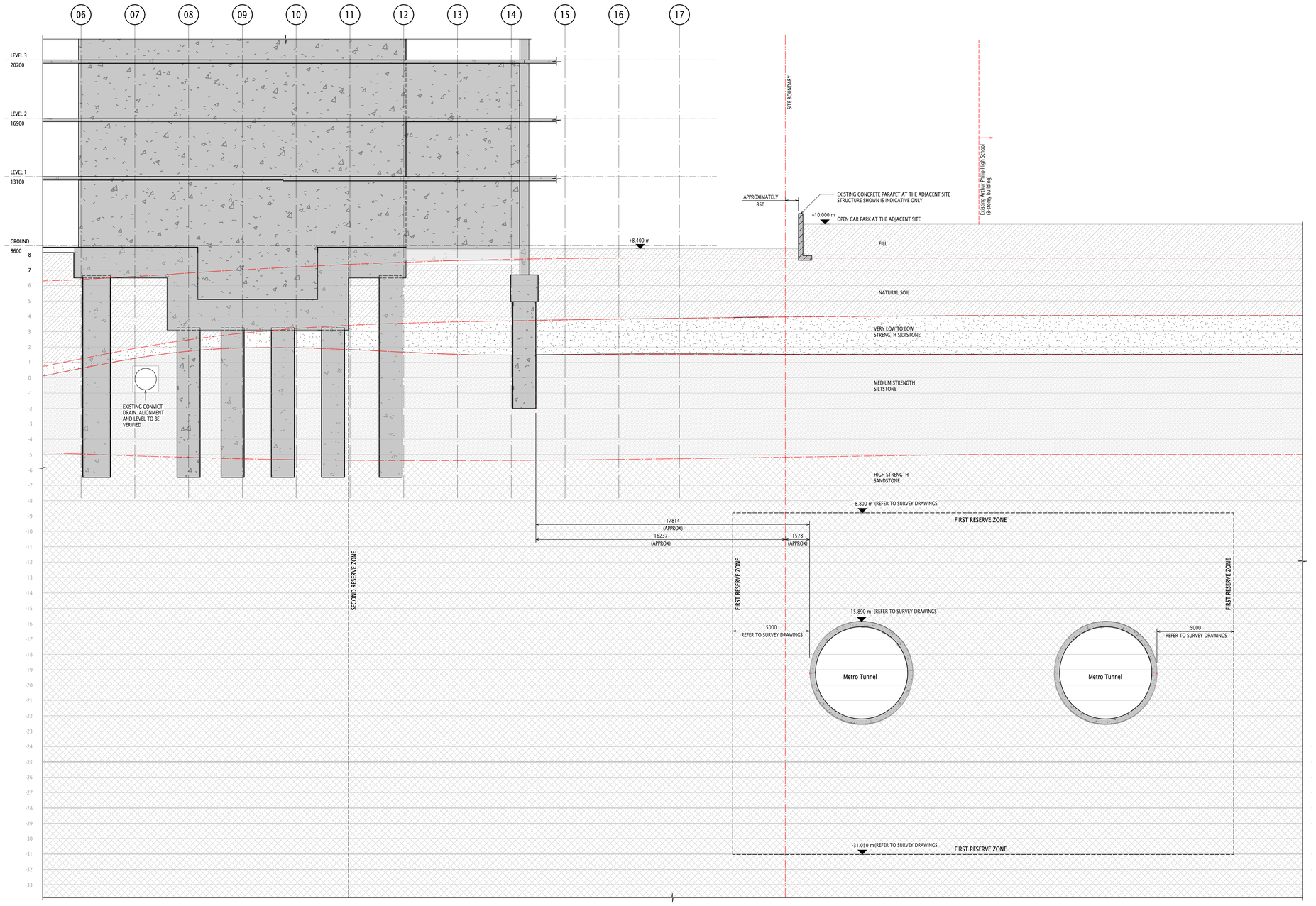
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20302	P1

PRINT DRAWINGS IN COLOUR



SECTION
SCALE 1 : 100

1
20102

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
2. REFER TO RBG GENERAL NOTES DRAWING FOR PROPOSED CONSTRUCTION SEQUENCE OF WORKS
3. ALL STRATA LEVELS THAT HAVE BEEN INDICATED BY ROBERT BIRD GROUP (RBG) ARE INDICATIVE AND HAVE BEEN INFERRED BY THE FOLLOWING GEOTECHNICAL REPORTS. REFER TO THESE REPORTS FOR A DETAILED DESCRIPTION OF THE ANTICIPATED STRATA.
   REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION 233926.02.R.002.DFTA
4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
5. NATURAL GROUND LEVELS, METRO TUNNELS AND RESERVE ZONES THAT HAVE BEEN INDICATED ON RBG DRAWINGS ARE BASED ON NORTON SURVEY PARTNERS "PLAN SHOWING SELECTED DETAIL & LEVELS OVER NO 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS" DATED 13-12-21
6. ALL EXISTING AND ADJACENT STRUCTURES SHOWN ARE INDICATIVE ONLY. NO RECORD DRAWINGS FOUND FOR THOSE STRUCTURES.
7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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ACN 010 880 248

Client
Freecity Parramatta Development
No 1 Pty Ltd

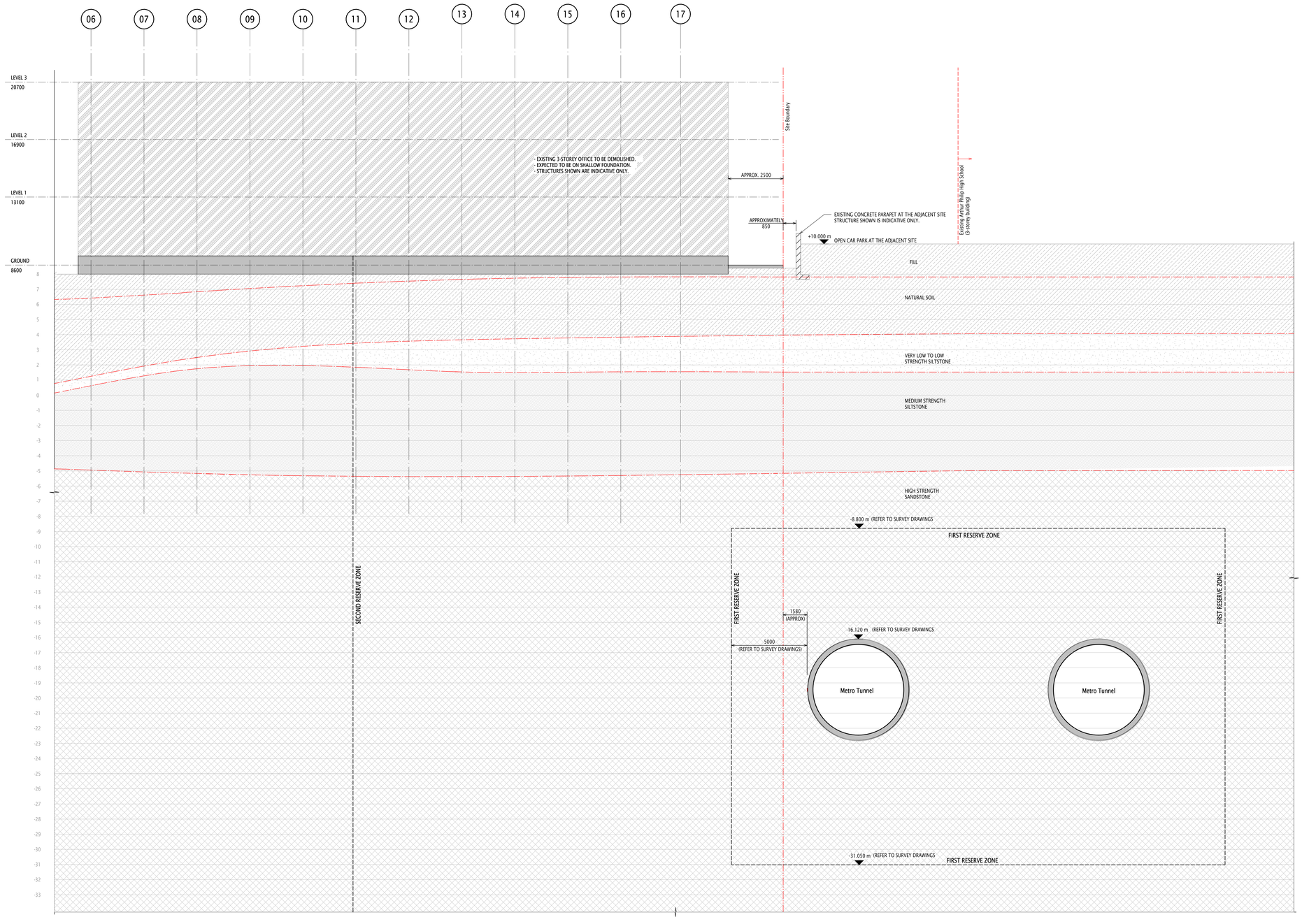
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 1

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20701	P1



SECTION 2 / 20102
SCALE 1 : 100

EXISTING PHASE

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
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   REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION 233926.02.R.002.DFTA
4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
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7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

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ACN 010 080 248

Client
Freecity Parramatta Development No 1 Pty Ltd

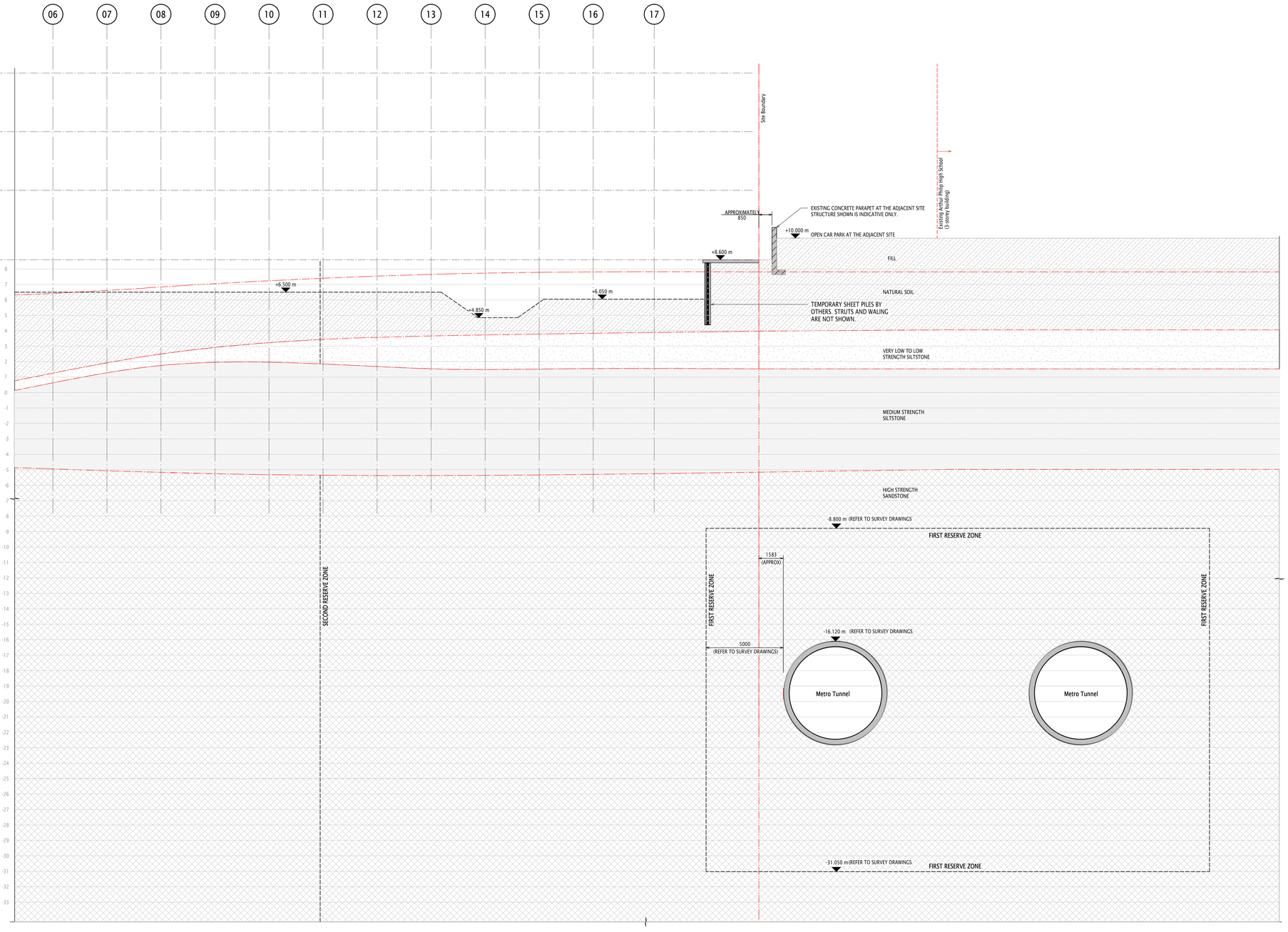
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 2

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20702	P1



SECTION 2.1 / 20102
SCALE 1 : 100

EXCAVATION PHASE

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
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4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
5. NATURAL GROUND LEVELS, METRO TUNNELS AND RESERVE ZONES THAT HAVE BEEN INDICATED ON RBG DRAWINGS ARE BASED ON NORTON SURVEY PARTNERS "PLAN SHOWING SELECTED DETAIL & LEVELS OVER NO 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS" DATED 13-12-21
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7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MD	10/02/2026

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Client
Freecity Parramatta Development No 1 Pty Ltd

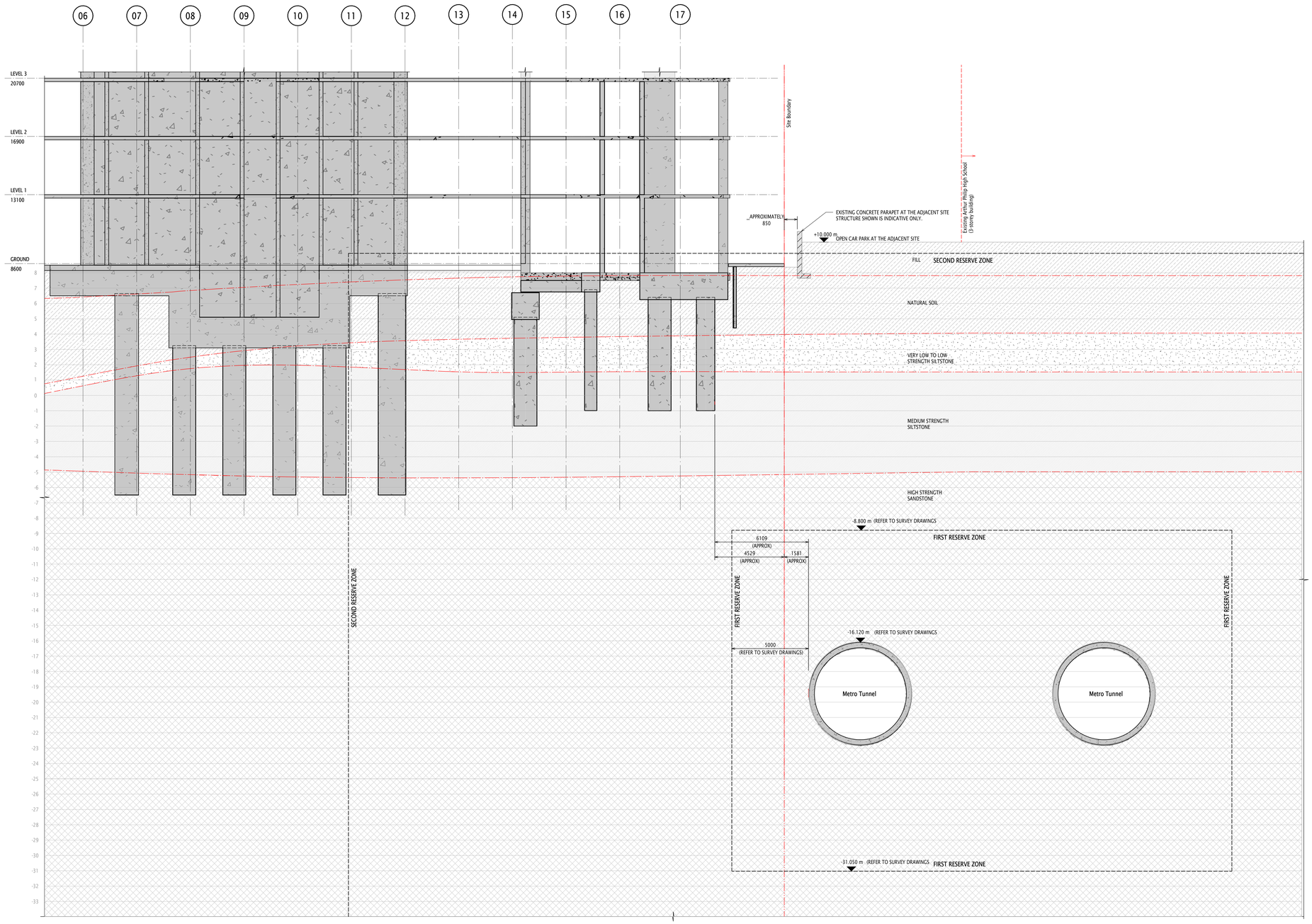
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK BUILDING SECTIONS - SHEET 3

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0: 1 : 100	Drawn: HG	Design Checker: -
Date: 10/02/26	Designer: JL	Approved: MD
		RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20703
Revision: P1



SECTION 2.2 / 20100
SCALE 1 : 100

COMPLETION PHASE

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
2. REFER TO RBG GENERAL NOTES DRAWING FOR PROPOSED CONSTRUCTION SEQUENCE OF WORKS
3. ALL STRATA LEVELS THAT HAVE BEEN INDICATED BY ROBERT BIRD GROUP (RBG) ARE INDICATIVE AND HAVE BEEN INFERRED BY THE FOLLOWING GEOTECHNICAL REPORTS. REFER TO THESE REPORTS FOR A DETAILED DESCRIPTION OF THE ANTICIPATED STRATA.
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TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
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SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 4

Project
1 Barrack Lane and 81-83 George Street, Parramatta

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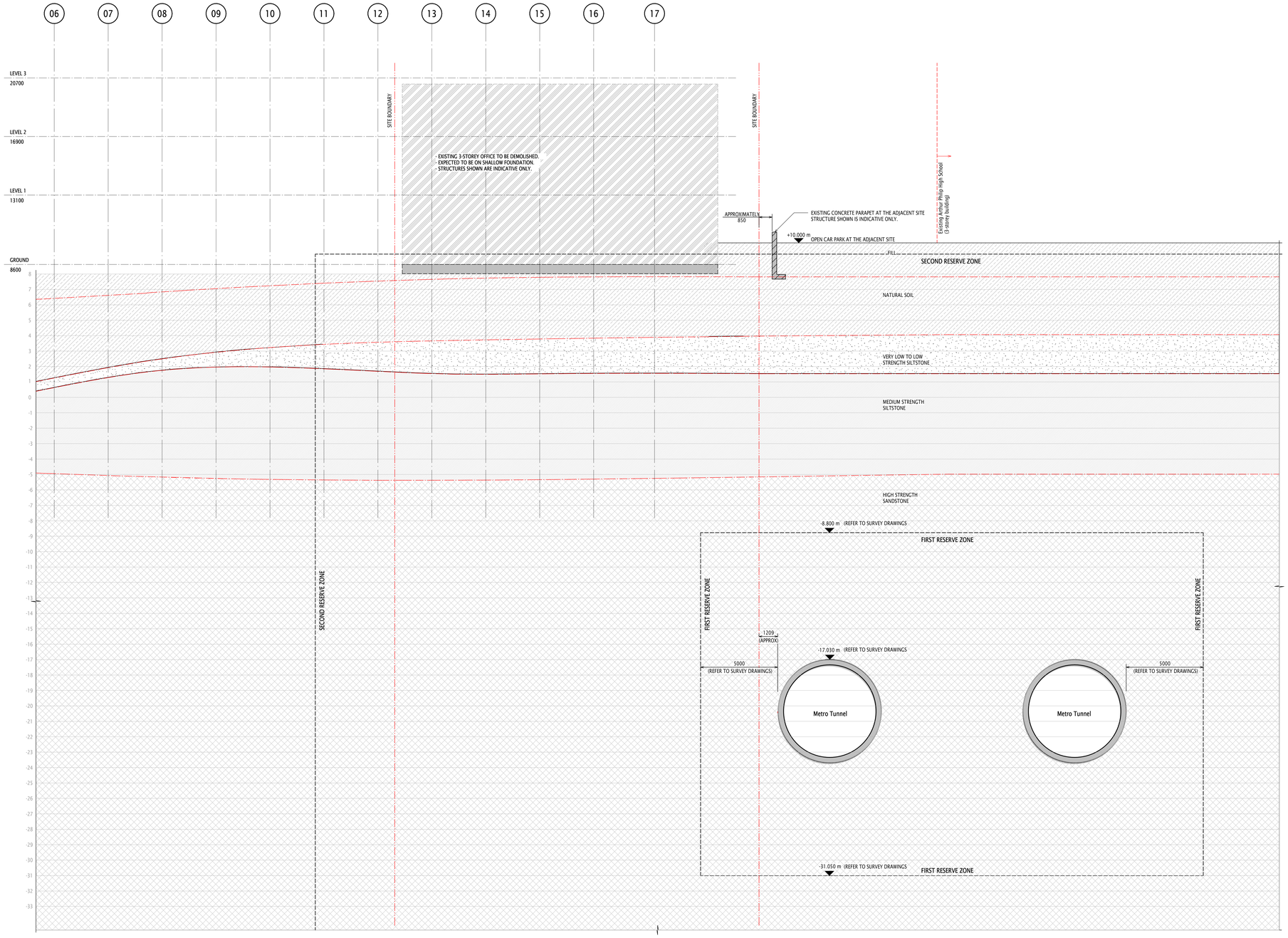

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SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 5

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1 Barrack Lane and 81-83 George Street, Parramatta

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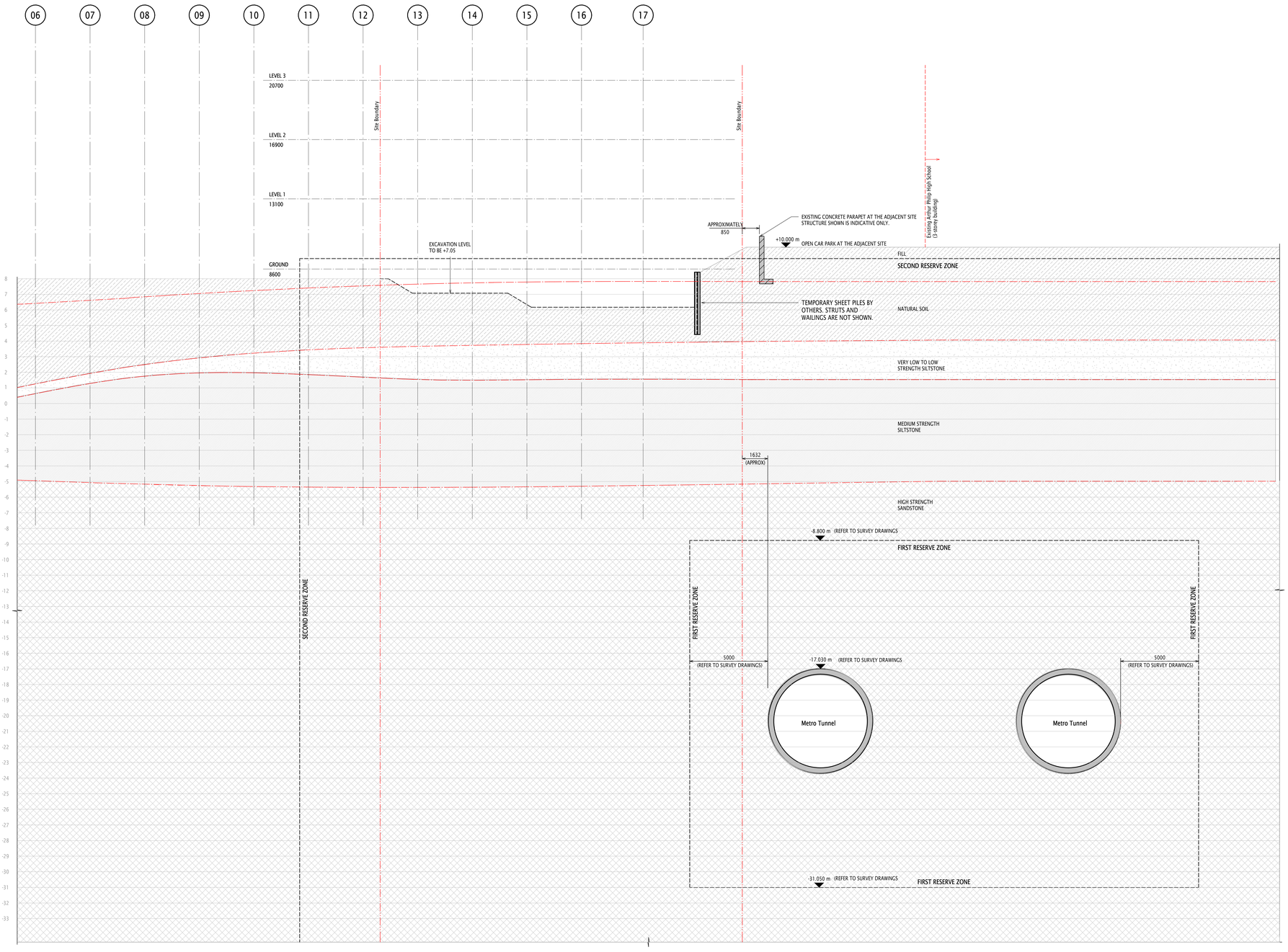

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SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 6

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1 Barrack Lane and 81-83 George Street, Parramatta

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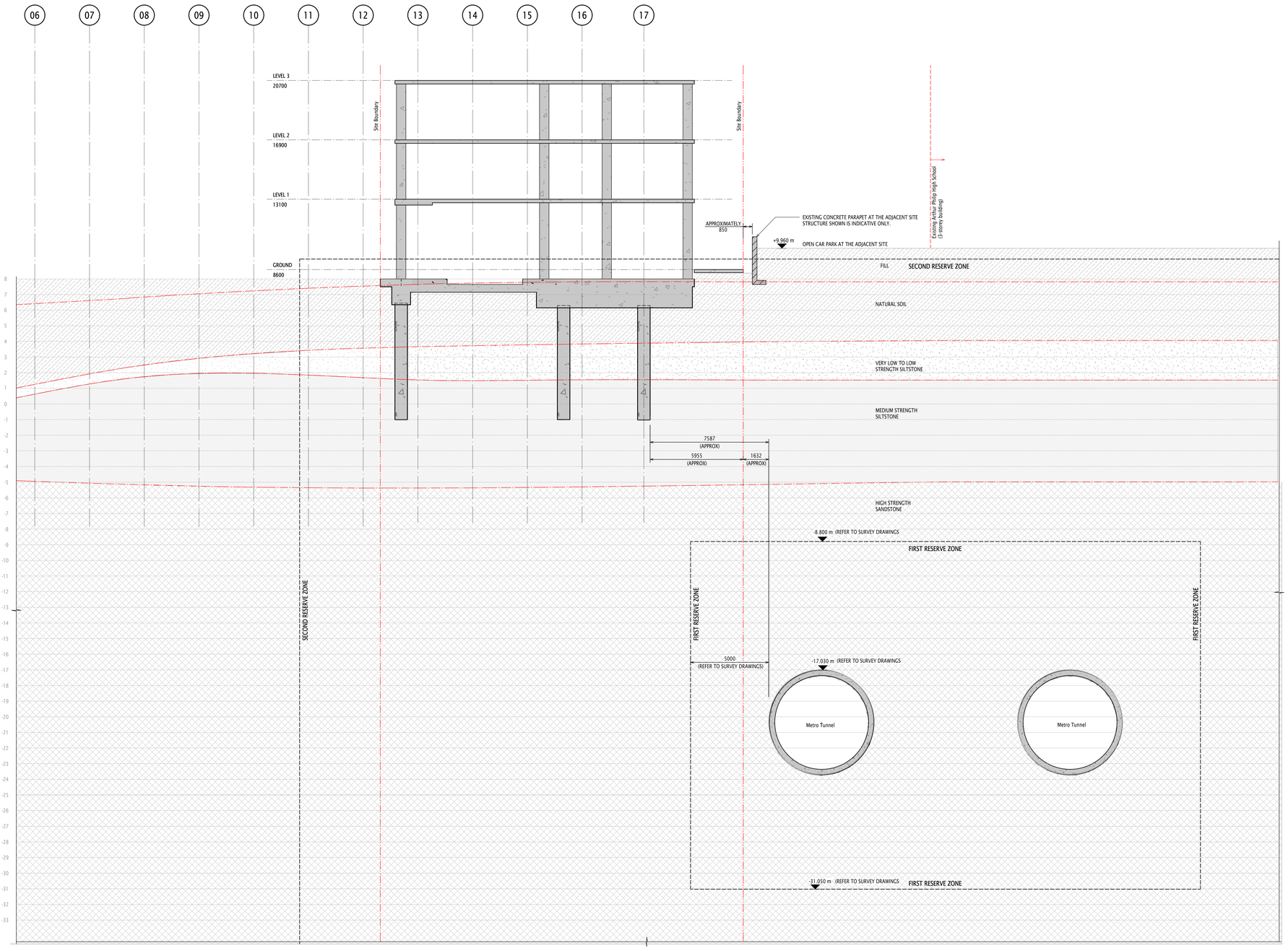

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SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
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1 Barrack Lane and 81-83 George Street, Parramatta

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25055-RBG-02-096-DR-ST-20707	P1

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A-3 Report on Geotechnical Modelling for Sydney Metro Tunnel

Douglas PARTNERS

GROUNDED EXPERTISE

Report on Geotechnical Modelling for Sydney Metro Tunnel

Proposed Redevelopment

81-83 George Street & 1 Barrack Lane, Parramatta NSW

Prepared for Freecity Parramatta Development No 1 Pty Ltd

Project 233926.02

23 February 2026

Douglas Partners Pty Ltd
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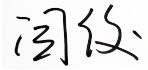
Author		23 February 2026
Reviewer		23 February 2026

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Douglas Partners acknowledges Australia's First Peoples as the Traditional Owners of the Land and Sea on which we operate. We pay our respects to Elders past and present and to all Aboriginal and Torres Strait Islander peoples across the many communities in which we live, visit and work. We recognise and respect their ongoing cultural and spiritual connection to Country.

Douglas PARTNERS | GROUNDED EXPERTISE

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Appendix A: About This Report

Appendix B: Drawings

Appendix C: PLAXIS 2D Output

Appendix D: Provided Documents

Report on Geotechnical Modelling for Sydney Metro Tunnel Proposed Redevelopment 81-83 George Street & 1 Barrack Lane, Parramatta NSW

1. Introduction

This report prepared by Douglas Partners Pty Ltd (Douglas) presents the results of a geotechnical modelling undertaken to assess the potential impact of a proposed redevelopment at 81-83 George Street & 1 Barrack Lane, Parramatta NSW (the site) on the adjacent Sydney Metro tunnels. The assessment was undertaken in accordance with Douglas' proposal dated 1 October 2025.

It is understood that the proposed development of the site includes the demolition of existing structures and the construction of a 40-storey mixed-use development with ground floor retail and a Build-to-Rent (BTR) tower.

Existing Sydney Metro tunnels are located adjacent to and below the south of the site. It is understood that the southern portion of the site is within the 2nd reserve of the Sydney Metro tunnels. It is also understood that no bulk excavation was proposed for the development. Excavations up to approximately 2 m depth below the existing ground surface are required for construction of pile caps and up to approximately 5 m depth for a lift core.

The objective of the geotechnical modelling was to undertake the ground-structure interaction analysis, in order to estimate the ground movements and structural actions of the tunnel linings induced by the proposed excavations and foundation loading within the 2nd reserve. It is understood that a structural/engineering impact assessment will be undertaken by Robert Bird Group (RBG) and SMEC based on the results of this geotechnical modelling.

The geotechnical finite element analysis software PLAXIS 2D was used to undertake the analysis. Details of the analysis, results and recommendations are provided in this report.

2. Background Information

Douglas has been provided with the following information for the preparation of this analysis and modelling report:

- Survey plan and sections prepared Norton Survey Partners, Reference: 29736, Sheets 1 to 9, Issue C, dated 19/08/25;
- Sydney Metro impact assessment drawing pack prepared by RBG, Job No: 25055, Revision P1 dated 10/02/2026;
- Advice on Metro lining stiffness by SMEC, email dated 15/01/2026.

3. Geology and Hydrogeology

A geotechnical investigation was previously carried out by Douglas. The borehole locations and one geotechnical cross-section (Section A-A') are presented in Appendix B.

The following preliminary geotechnical profile is inferred based on the results of Douglas' previous investigation on site.

Table 1: Summary of the Inferred Geotechnical Profile

Unit	Description	Reduced Levels (m. AHD) of Top of Units (1)
Unit 1 – Fill	Sandy and clayey fill under the concrete pavers with variable proportions of gravel and brick fragments	RL 7.7 – 8.3
Unit 2 – Natural Soil	Alluvial – typically, medium to high plasticity clay and low to medium plasticity sandy clay of stiff consistency, interbedded sand and clay layers below 5.5 m in BH1A, Residual – typically extremely weathered siltstone in form of hard, medium to high plasticity clay in BH3	RL 6.5 – RL 7.6
Unit 3 – Very low to low strength siltstone	Typically, moderately to highly weathered, some slightly weathered, very low to low strength siltstone (Ashfield Shale), with sections of fragmented rock, crushed zones and clay seams	RL -0.8 – RL 3.6
Unit 4 – Medium strength siltstone	Mostly fresh, fractured to slightly fractured, medium and medium to high strength siltstone (Ashfield Shale), with infrequent moderately dipping (20° to 40°) joints and less frequent adversely dipping joints (40° to 70°)	RL -1.1 – RL 1.3
Unit 5 – High to very high strength sandstone	Fresh, slightly fractured, high and very high strength, fine grained sandstone with siltstone lamination (Mittagong Formation) below 12.5 – 13 m depth, overlying high strength, medium to coarse grained sandstone, below approximately 14.5 m	RL -5.3 – RL -4.7

Notes: (1) As encountered in BH1A, BH2 and BH3 during Douglas' previous investigation; AHD = relative to Australian Height Datum

The groundwater level was measured at depths of between 3.5 m and 6.2 m (RL 4.3 m to RL 1.6 m), and possibly deeper towards the south of the site. It is expected that the current groundwater levels on site, particularly close to the southern portion, may be affected by the construction dewatering for the Metro tunnels and Sydney Metro Parramatta Station.

Notwithstanding the above, it should be noted that groundwater levels can vary and may fluctuate over time, particularly, following periods of heavy rainfall. Further long-term monitoring is being carried out for three months following the installation of data loggers in monitoring wells within BH1A, and BH2.

4. Existing Sydney Metro Tunnel

Based on the provided survey plan and cross sections, two existing Sydney Metro tunnels, Metro West Line between Clyde Junction cavern and Paramatta station, are located to the south of the site. Centre lines of the tunnels run from RL -18.25 m to RL -20.52 m from west to east along the site boundary with a tunnel radius of 3.345 m.

5. Proposed Works

Based on the drawings prepared by RBG, included in Appendix D, it is understood that foundations for the development comprises reinforced concrete piles supporting columns and a lift core. The closest foundation pile is about 10 m, horizontally away from the centre of the nearer Sydney Metro tunnel in plan. The pile group for lift core is about 30 m from the centre of the nearer tunnel.

In accordance with the pile schedule prepared by RBG, included in Appendix D, the foundation piles proposed under columns are typically 800 mm to 1500 mm in diameter with rock sockets of 2.5 m to 4.0 m into Unit 4 – medium strength siltstone. The proposed core piles are typically 1500 mm to 1800 mm in diameter with sockets throughout Unit 4 and a further 1.0 m into Unit 5 – high to very high strength sandstone.

Based on the load schedule provided by RBG, included in Appendix D, the pile vertical load cases comprise three cases under serviceability limit state (SLS) and five cases under ultimate limit state (ULS). Horizontal loads were only considered on the lift core and applied at the centre of the core base. A total of 24 wind load cases under both SLS and ULS were considered. Earthquake loads were only considered under ULS.

To accommodate the construction of the piles, excavations to RL 6.05 m and to RL 3.00 m are required for the pile caps and for the lift core, respectively, with the existing ground surface at approximately RL 8.6 m.

6. Numerical Analysis

6.1 Methodology

The numerical modelling was undertaken using PLAXIS 2D, a two-dimensional finite element program used for the modelling of soil, rock and structural behaviour. PLAXIS is ideally suited for modelling geotechnical problems that consist of several stages, such as sequential excavation, loading and unloading. Details of the modelling approach undertaken are summarised below:

- Review of available site data, investigation results, drawings and information provided in relation to the proposed development;
- Development of a representative geotechnical model;
- Selection of appropriate geotechnical parameters for each soil or rock layer;
- Development of a finite element model in PLAXIS 2D;
- Assessment of induced movements and structural actions of the tunnel lining due to the proposed excavation and foundation loading.

For the purposes of the geotechnical modelling, two cross sections (Section A and Section B) were modelled, at the locations of Section 3 and Section 2 as annotated in the Sydney Metro impact assessment drawings prepared by RBG. The section locations are shown in Drawing M1 in Appendix C.

6.2 Key Assumptions

The following key assumptions have been made in the numerical modelling:

- It is assumed that the excavations for the pile caps and lift core will be via temporary batters or supported with temporary shoring system. It is considered that the effect of the lateral ground movements associated with these excavations on the tunnels would be negligible. The soil and rock overlying the Unit 4 and Unit 5 rocks are modelled as linear elastic material and combined as one unit. Analysis and design of the batters and shoring system is outside the scope of this report;
- It is understood that the tunnels were constructed using TBM methods, with the final support provided by a precast segmental concrete lining. The β–method was adopted in PLAXIS 2D to simulate the three-dimensional effects during tunnelling and lining installation in the two-dimensional modelling space. The value of β adopted in the analysis was 0.5;
- The tunnel lining was modelled as a 260 mm thick plate with the axial stiffness (EA) of 9.048E03 MN/m and flexural stiffness (EI) of 32.6 MN m^2/m, as advised by SMEC;
- Given the very high stiffness of the core structure, the core base was modelled using “Plate” element in PLAXIS 2D with EI= 3.26E06 MN m2/m and EA = 3.48E05 MN/m (equivalent to a rigid body);
- An elastic model was adopted for all structural elements. It was assumed that the structural members have been designed to behave elastically.

6.3 Geotechnical Profile and Parameters

The geotechnical profile adopted was based on the information contained within the previous geotechnical report for the project. The geotechnical parameters and profile adopted for the various layers used in the analysis are summarised in Table 2.

Table 2: Geotechnical Profile and Parameters for Various Strata Used in the PLAXIS 2D Analysis

Unit (1)	Material Model	γ (kN/m^3)	E’ (MPa)	ν’	c’ (kPa)	ϕ’ (deg)	Ultimate Shaft Adhesion (kPa)	Ultimate End Bearing (kPa)	RL of top of Unit (m, AHD)
Unit 1 to Unit 3	Linear Elastic	18	10	0.3	-	-	ignored	--	8.6
Unit 4	Mohr Coulomb	24	1,000	0.2	250	40	800	60,000	1.3
Unit 5		24	2,000	0.2	500	50	1500	70,000	-5.0

Notes: E’ = Young’s Modulus, ν' = Poisons ratio, γ = unit weight, c’ = drained cohesion, ϕ’ = drained friction angle
(1) Soil/rock units described in Table 1.

The properties were assessed based on the results of the previous geotechnical investigation within the site and Douglas' experience in similar materials in Sydney. The adopted geotechnical model and model geometry of the model sections is shown in Drawings M2 to M3 in Appendix C.

6.4 Pile Geometry and Loads

The pile foundations and loadings through the model sections are explicitly modelled. Note that the verification of the pile design is not within the scope of this assessment.

These piles were modelled using "Embedded Beam Row" elements in PLAXIS. The spacings for the "Embedded Beam Row" were adopted based on the average pile distances (perpendicular to the model sections) in the pile layout drawings prepared by RBG. A total of seven core pile rows were modelled in Section B, which were connected by a rigid "Plate" element simulating the core base. We were advised by RBG that the provided vertical loads on the core piles were the "envelope" values. The modelled footing geometry is summarised in Table 3.

The footing loads were adopted based on the load schedule provided by RBG. The modelled equivalent 2D loads were converted in accordance with the spacings of the modelled embedded beams. The loads on the core were converted to per m value based on the core width of 12 m. The modelled footing loads are summarised in Table 4.

Table 3: Modelled Footing Geometry in PLAXIS 2D

Section	Pile No.	Pile Diameter (m)	Average Spacing (m)	Pile Toe RL (m, AHD)
A	P73	0.8	7	-1.2
	P69	0.8	7	-1.2
	P57	0.8	7	-1.2
B	P70	1.2	8	-2.7
	P66	1.5	8	-2.2
	P64	0.8	2	-1.2
	P61	1.5	8	-2.2
	Core	1.5/1.8	3	-6.0

Table 4: Modelled Footing Loads in PLAXIS 2D

Section	Pile No.	Max Fv SLS (kN)(1)		Max Fv ULS (kN) (1)		Max Vy Wind SLS (kN) (1)		Max Vy Wind USL (kN) (1)		Max Earthquake Vy ULS (kN) (1)	
		Per pile	Per m	Per pile	Per m	Per pile	Per m	Per pile	Per m	Per pile	Per m
A	P73	2872	410	3645	521	Not applicable					
	P69	4742	677	6118	874						
	P57	5369	767	6994	999						
B	P70	1582	198	2021	253						
	P66	13246	1656	16541	2068						
	P64	1462	731	1912	956						
	P61	17432	2179	22084	2761						
	Core	--	40361	--	54600	--	208	--	368	--	3498

Note: (1) For the purpose of this assessment, only the maximum vertical load cases and the maximum horizontal load cases applied towards the tunnels were modelled.
Max Fv SLS = Maximum vertical load in SLS on foundation piles G+Q and on core piles $G+\psi_c Q+W_s$
Max Fv ULS = Maximum vertical load in ULS on foundation piles 1.2G+1.5Q and on core piles $1.2G+W_u+pQ$
Max Wind Vy SLS = Maximum wind horizontal load in SLS on core piles Wind SLS_11, 12 and 16
Max Wind Vy ULS = Maximum wind horizontal load in ULS on core piles Wind ULS_12 and 16
Max Earthquake Vy ULS = Maximum earthquake horizontal load in ULS

6.5 *In-situ* Stress

The initial horizontal stresses in soil were calculated by applying the 'at-rest' earth pressure coefficient K_0 (i.e. $\sigma_h = K_0 \times \sigma_v$). Based on the recommended rock stress relationship for Ashfield Shale and Hawkesbury Sandstone by Pells (2002)[1], the following in-situ stress relationship was adopted for rock and was modelled by simulating large overburden pressures:

Unit 4 – Medium strength siltstone:

$\sigma_{H\,(NS)} = 2.0 \times \sigma_v + 0.5MPa$

$\sigma_{h\,(EW)} = 0.7 \times \sigma_{H\,(NS)}$

$\sigma_v = \gamma \times H$

Unit 5 – High to very high strength sandstone:

$\sigma_{H\,(NS)} = 2.0 \times \sigma_v + 1.5MPa$

$\sigma_{h\,(EW)} = 0.7 \times \sigma_{H\,(NS)}$

$\sigma_v = \gamma \times H$

where,

$\sigma_{H\,(NS)}$	= horizontal stress in north-south direction (major horizontal in-situ stress direction)
$\sigma_{h\,(EW)}$	= horizontal stress in east-west direction (adopted for this assessment)
σ_v	= vertical stress in y direction
γ	= unit weight
H	= depth below surface (m)

The initial horizontal stresses in the combined Unit 1 to Unit 3 layer were calculated by applying the 'at-rest' earth pressure coefficient K_0 (i.e. $\sigma_h = K_0 \times \sigma_v$). A value of $K_0 = 0.5$ was adopted for the soils.

6.6 Modelling Sequence and Adopted Surcharges

The general construction sequence adopted for the analysis is summarised as follows:

1. Set up geological models and run to equilibrium. (initial condition);
2. Generate rock in-situ stress by applying volumetric strain;
3. Reset displacements, excavate for tunnels, Relieve rock in-situ stress with (1-β) value = 0.5;
4. Install tunnel lining and relieve rock in-situ stress completely with (1-β) value = 1.0;
5. Reset displacements, excavate for pile caps and lift core;
6. Install piles;

[1] Pells, P.J.N (2002), Developments in the design of tunnels and caverns in the Triassic rocks of the Sydney region, International Journal of Rock Mechanics & Mining Sciences, volume 39, page 569-587, 2002..

7.1 Apply vertical loads in SLS;

7.2 Apply vertical loads and wind loads in SLS (only for Section B);

7.3 Apply vertical loads in ULS;

7.4 Apply vertical loads and wind loads in ULS (only for Section B);

7.5 Apply vertical loads and earthquake loads in ULS (only for Section B).

7. Analysis Results

Plots of the total displacement contours under vertical loads in SLS are presented in Drawings M4 and M5, in Appendix C. The maximum induced movement and structural actions in the tunnel lining are summarised in Table 5.

Table 5: Summary of Tunnel Lining Actions

Location	Stage (1)	Maximum lining Displacement (mm)	Maximum Axial Force (kN/m) (2)	Maximum Shear Force (kN/m)	Maximum Moment (kN.m/m)
Section A	4	--	2474	37.6	24.4
	5	0.3 (heave)	2447	39.1	25.0
	7.1	0.2 (settlement)	2481	39.4	25.6
	7.3	0.4 (settlement)	2490	39.2	25.7
Section B	4	--	2442	34.4	22.9
	5	0.5 (heave)	2404	40.6	25.2
	7.1	2.8 (settlement)	2757	43.6	29.1
	7.2	2.8 (settlement)	2762	43.6	29.2
	7.3	3.8 (settlement)	2876	43.8	30.2
	7.4	3.8 (settlement)	2876	43.8	30.2
	7.5	4.4 (settlement)	2962	44.1	31.4

Note: (1) model stages described in Section 6.6
(2) positive value = in compression

8. Comments

In accordance with Section 5.1.2 of "Sydney Metro Underground Corridor Protection Technical Guidelines dated July 2025", it is required that "for metro running tunnels that are supported by a precaset concrete segmental lining, the allowable total movement in any direction is 10 mm or 1:2000 whichever is less".

Based on the results of the geotechnical modelling, the maximum induced movement anywhere around the tunnels is predicted to be less than 3 mm in SLS. Given the half of the southern site boundary is about 25 m long, it is expected the differential movement of the tunnel lining would be less than 3 mm in 25 m. Therefore, it is considered that the total movement and differential movement induced by the proposed development would be acceptable by the Sydney Metro Guidelines.

It is understood that the tunnel and structural impact will be carried out by RBG and SMEC using the predicted results provided in this report.

9. Limitations

Douglas Partners Pty Ltd (Douglas) has prepared this report for this project at 81-83 George Street & 1 Barrack Lane, Parramatta NSW in accordance with Douglas' proposal dated 1 October 2025. The work was carried out under Douglas' Engagement Terms. This report is provided for the exclusive use of Freecity Parramatta Development No 1 Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of Douglas, does so entirely at its own risk and without recourse to Douglas for any loss or damage. In preparing this report Douglas has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after Douglas' field testing has been completed.

Douglas' advice is based upon the conditions encountered during previous investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

The assessment of atypical safety hazards arising from this advice is restricted to the geotechnical components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by Douglas. This is because this report has been written as advice and opinion rather than instructions for construction.

Appendix A

About this Report

About this Report

November 2023

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

continued next page

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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Appendix B

Drawings

REV	DESCRIPTION/COMMENT	DATE	DRAWN BY
0	INITIAL ISSUE	09.10.2025	MN

SCALE: 0 5 10 15 20 25 m — 1:500 @ A3

Douglas PARTNERS
OFFICE: SYDNEY
96-98 Hermitage Rd, West Ryde NSW 2114
(02)9809 0666

CLIENT: **Freecity Parramatta Development No 1 Pty Ltd**

NOTE:
1: Basemap from Metromap (Dated 04.09.2025)
2: Tunnel alignment and reserve alignments from North Survey Partners, Ref.29736, Issue C and A, respectively, (Dated 19.08.2025) & (25.01.2022)

COORDINATE REFERENCE SYSTEM: GDA2020 / MGA zone 56

PROJECT NAME: **Proposed Mixed-Use Development**

PROJECT ADDRESS: **81-83 George St & 1 Barrack Ln, Parramatta**

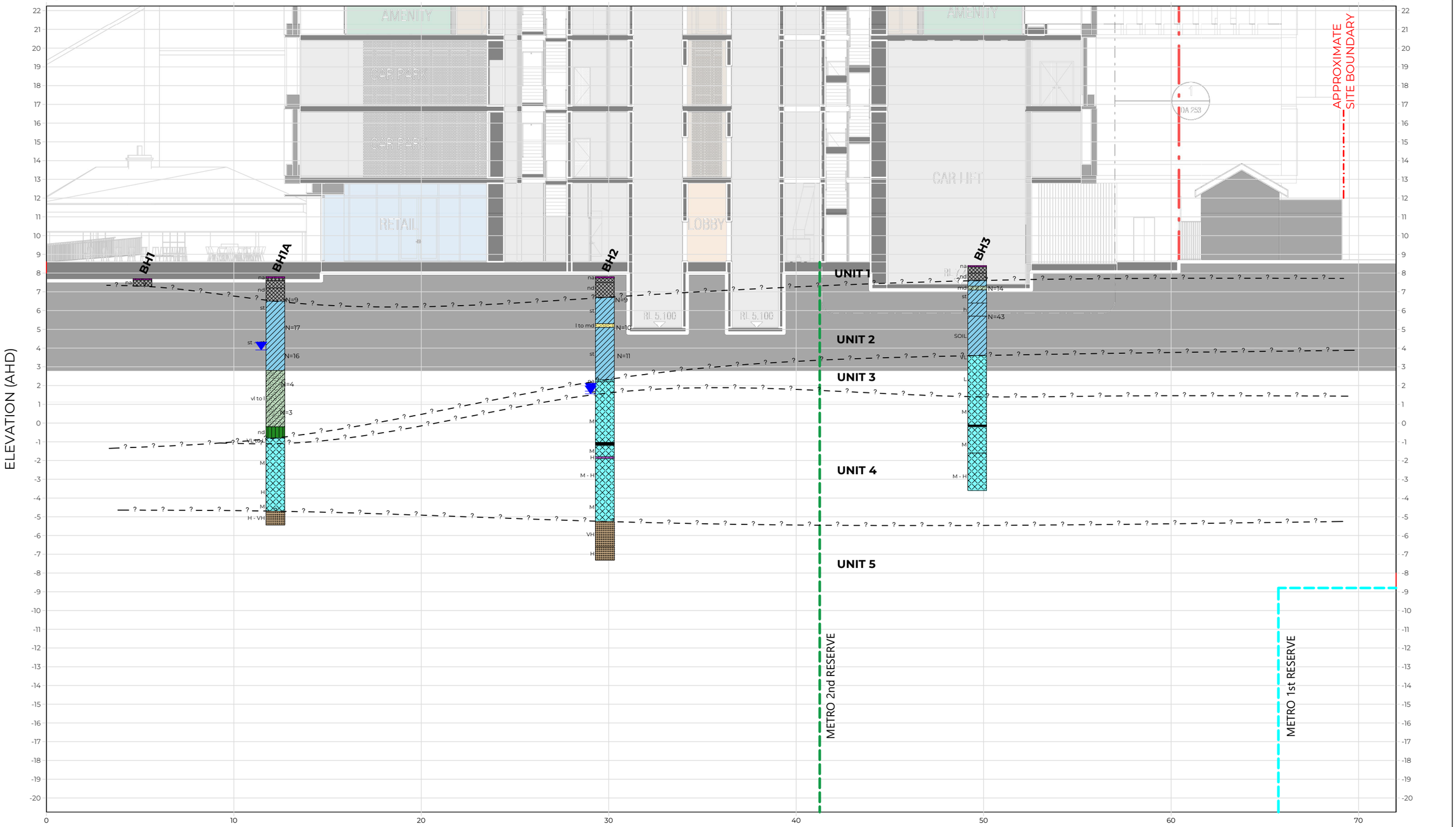
DRAWING TITLE: **Test Location Plan**

PROJECT NO: **233926.02**

DRAWING NO: **1**

REVISION: **0**

P:\233926.02 - PARRAMATTA, 81-83George St&1 Barrack GEO\7.0 Drawings\7.3 QGIS\233926.02.qgz



LEGEND

- CI-CH - Medium to High Plasticity CLAY
- DOLERITE
- SAND
- SILTSTONE
- CONCRETE
- FILL
- SANDSTONE
- NO CORE
- ML - Low Plasticity SILT
- SC - Clayey SAND

TESTS / OTHER

- N - Standard penetration test value
- — ? — — - Interpreted geotechnical boundary
- ▼ - Water Level

ROCK STRENGTH

- VL - Very Low
- L - Low
- M - Medium
- H - High
- VH - Very High
- EH - Extremely High

CONSISTENCY (COHESIVE SOILS)

- vs - Very Soft
- s - Soft
- f - Firm
- st - Stiff
- vst - Very Stiff
- h - Hard

COMPACTION (anthropogenically modified soil)

- na - Not applicable
- nd - No data
- pc - Poorly compated
- mc - Mostly compacted
- wc - Well compacted
- vc - Variably compacted

REV	DESCRIPTION/COMMENT	DATE	DRAWN BY
0	Initial Issue	25.09.2025	MN
1	Updates on Architectural documents	27.10.2025	MN

SCALE: 0 4
Horizontal Scale 1:200
Vertical Exaggeration = 1.0

Douglas PARTNERS
OFFICE: SYDNEY
96-98 Hermitage Rd, West Ryde NSW 2114
(02) 9809 0666

CLIENT:
Freecity Parramatta Development No 1 Pty Ltd

NOTES
1. Subsurface conditions are accurate at the borehole locations only. Variations in subsurface conditions may occur between borehole locations. Interpreted strata boundaries are approximate and should be used as a guide only.
2. Summary logs only and should be read in conjunction with detailed logs.
3. Base section from FK Australia, Job No. 25013, Drawing No. DA250 (Dated 07.10.2025)

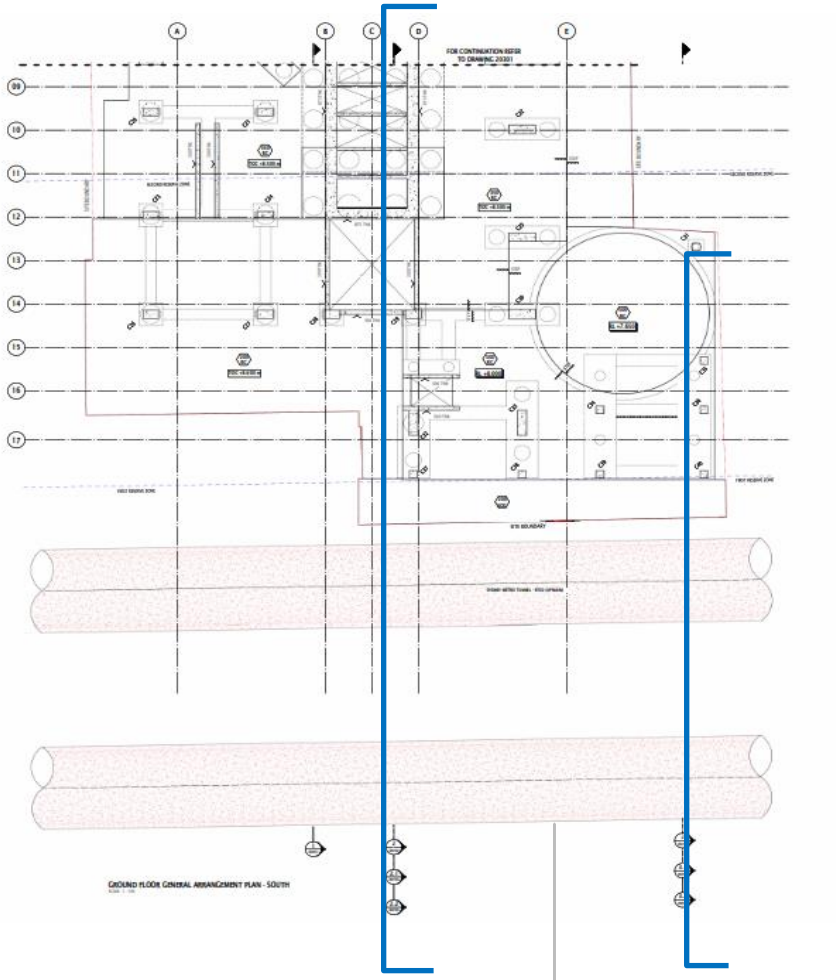
PROJECT NAME:
Proposed Mixed-Use Development
PROJECT ADDRESS:
81-83 George St & 1 Barrack Ln, Parramatta

DRAWING TITLE:
Geological Cross Section A-A'

PROJECT No: **233926.02**
DRAWING No: **2**
REVISION: **1**

Appendix C

PLAXIS 2D Output



Douglas PARTNERS GROUNDED EXPERTISE	CLIENT:	Freecity Parramatta Development No 1 Pty Ltd	**Section Location**	PROJECT No:	233926.02
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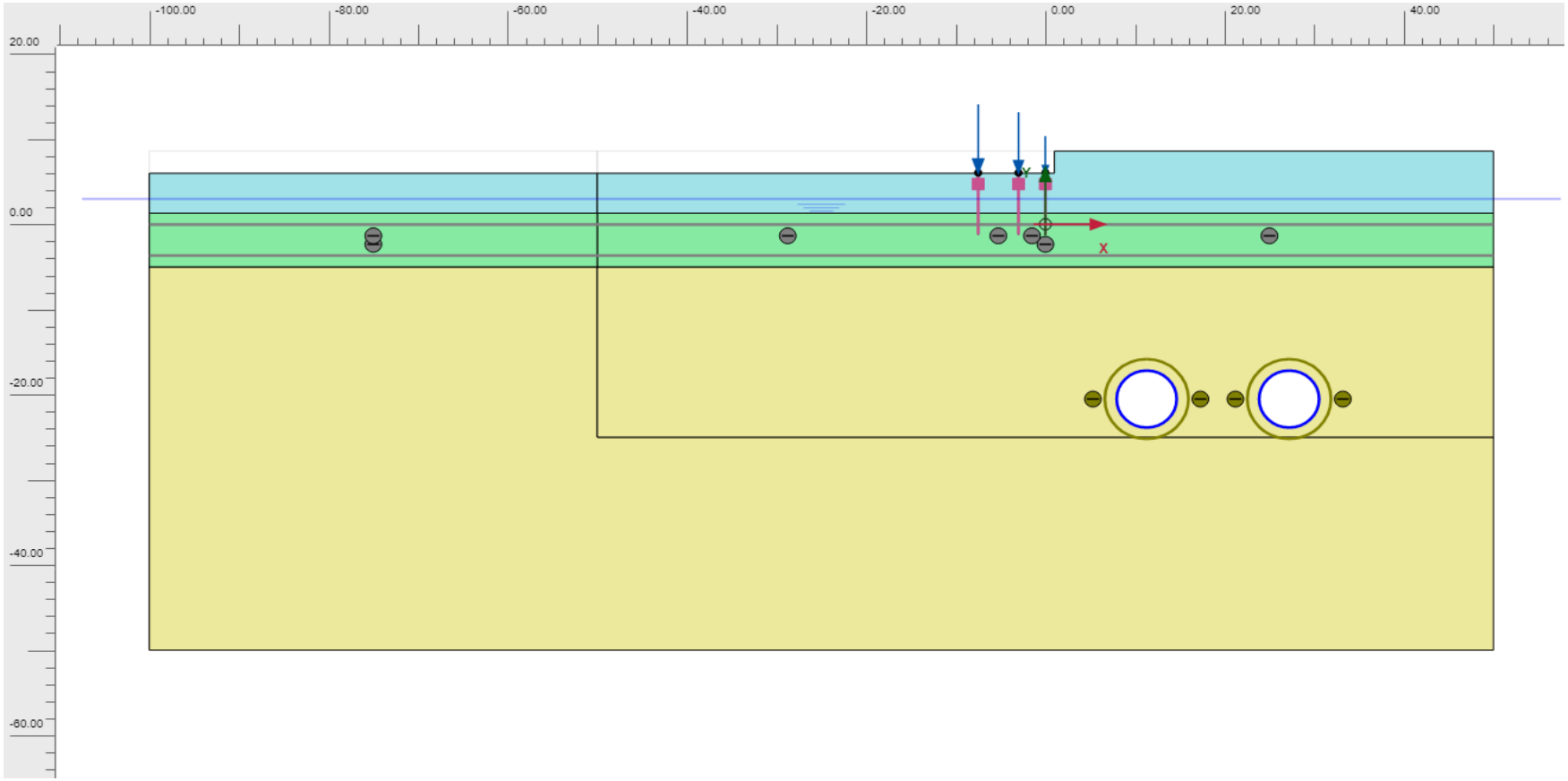
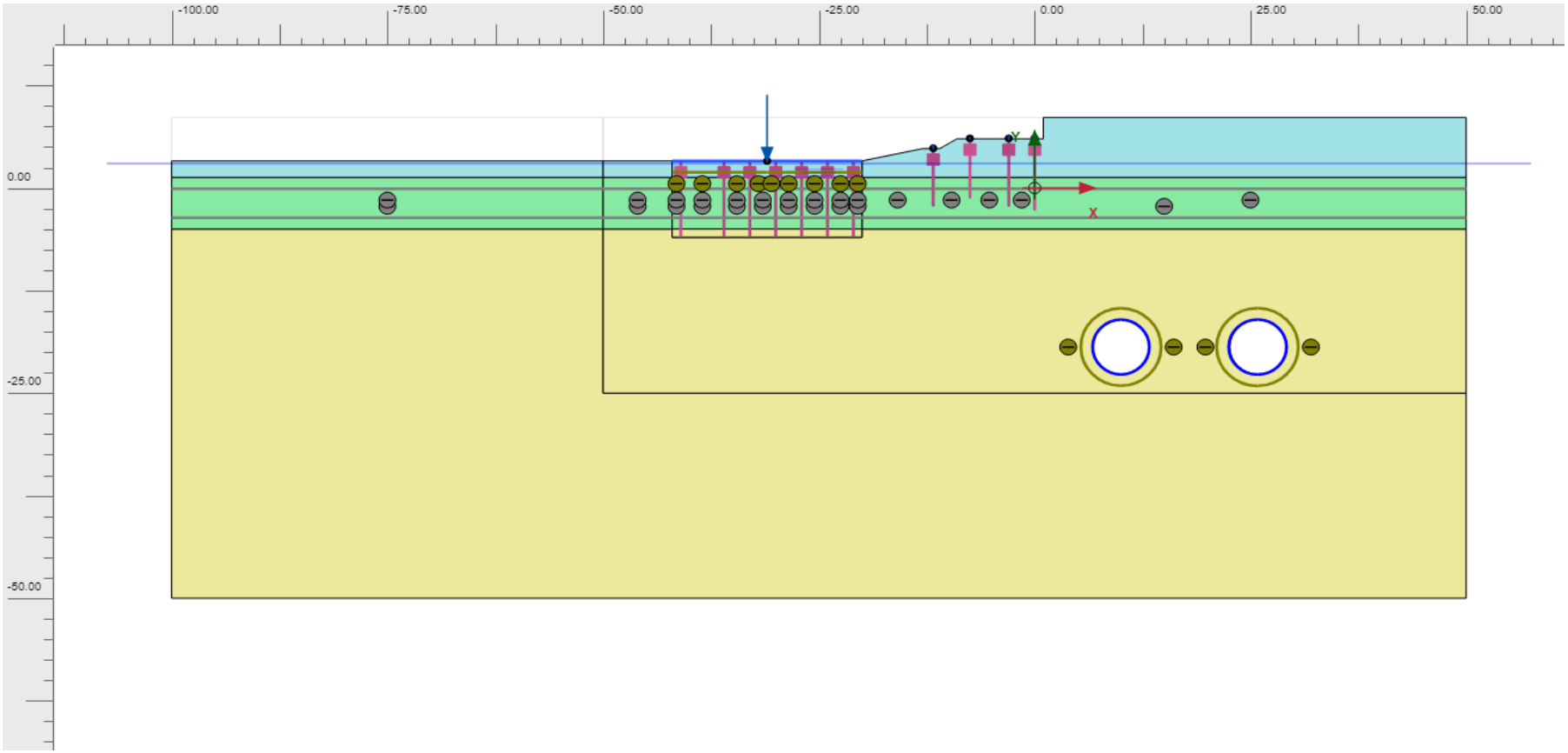
	DATE:	23 Feb 2026		REVISION:	1



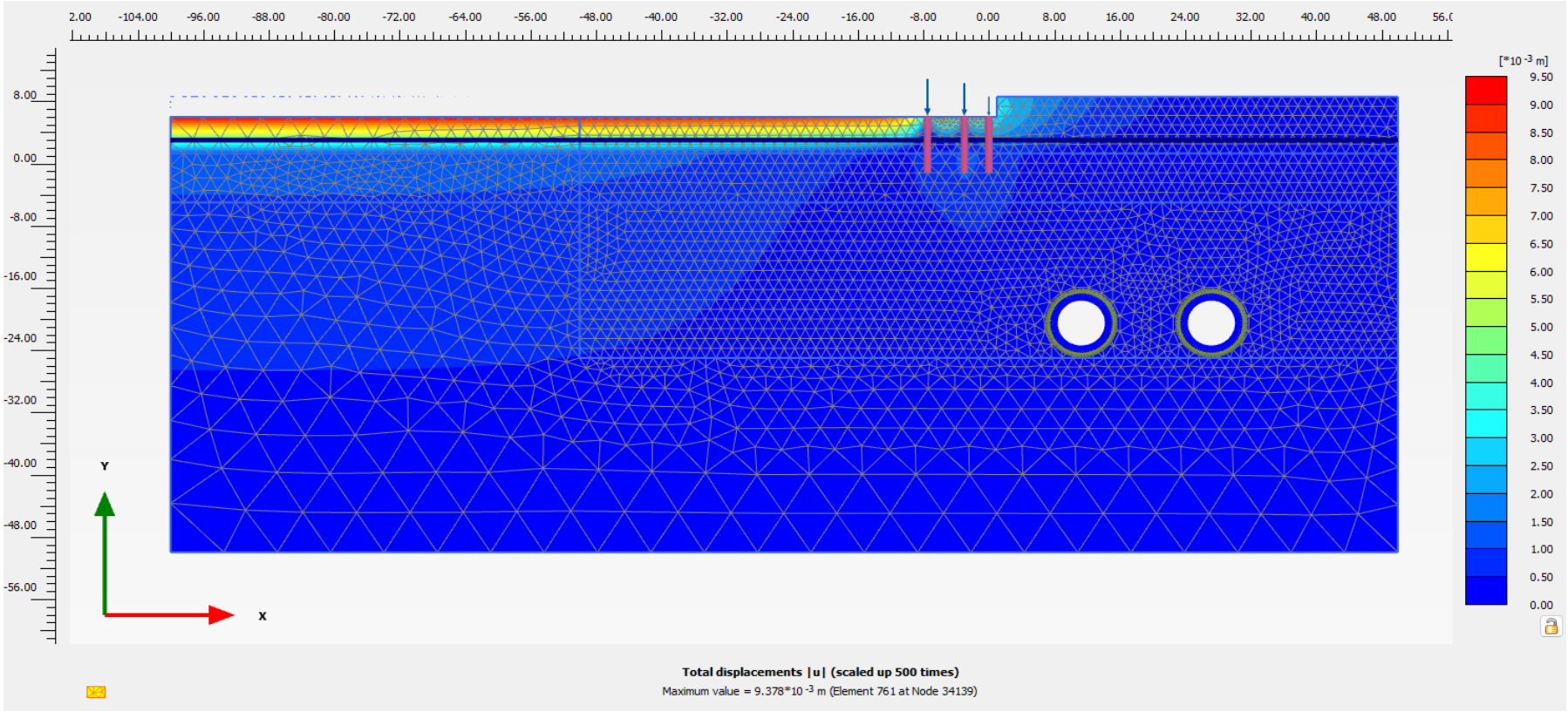
SECTION A

Douglas PARTNERS GROUNDED EXPERTISE	CLIENT:	Freecity Parramatta Development No 1 Pty Ltd	**Adopted Model Geometry at Section A**	PROJECT No:	233926.02
	OFFICE:	Sydney	**81-83 George St & 1 Barrack Ln, Parramatta NSW**	DWG No:	M2
	DATE:	28 Jan 2026		REVISION:	0



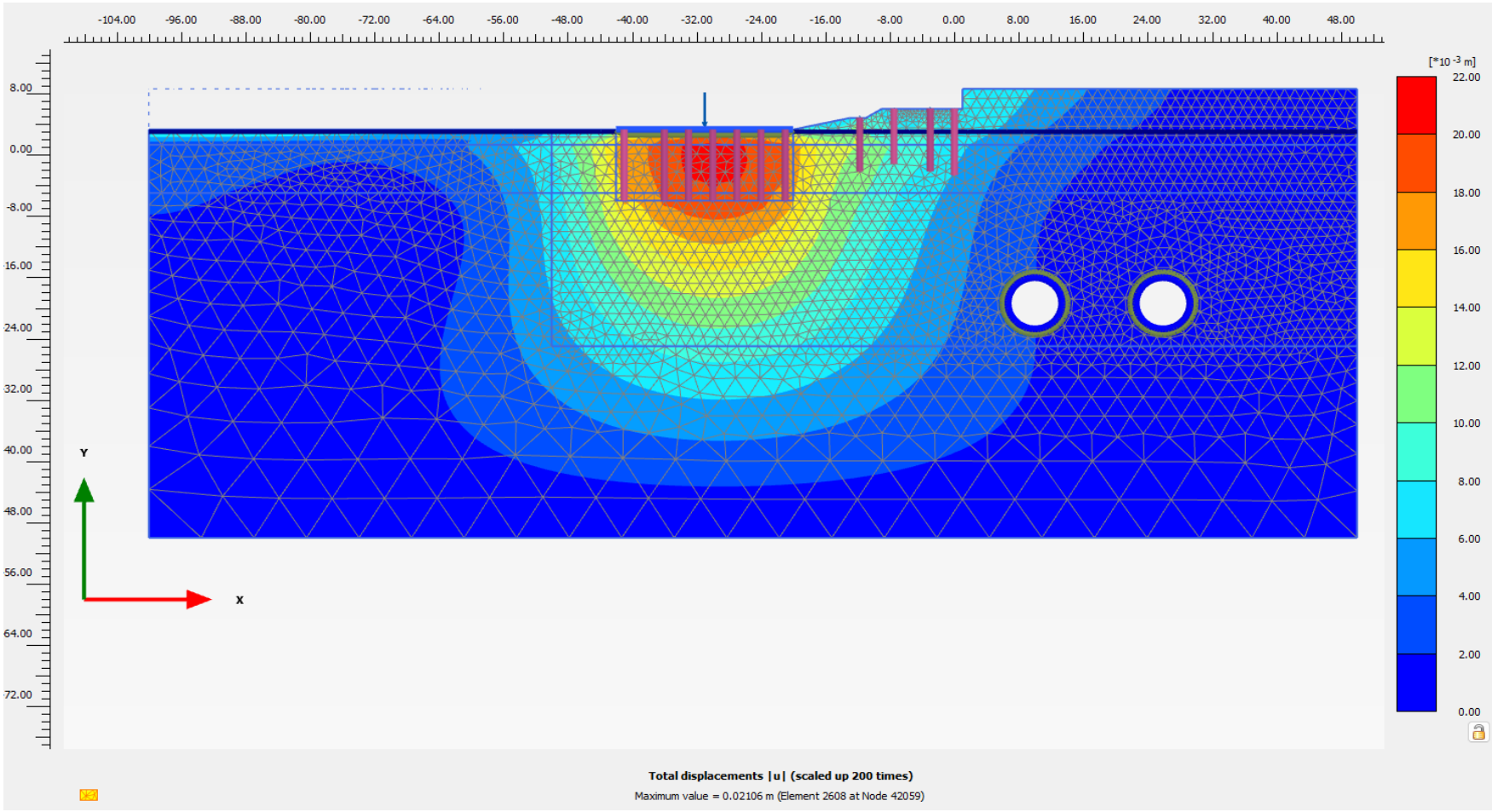
SECTION B

Douglas PARTNERS GROUNDED EXPERTISE	CLIENT:	Freecity Parramatta Development No 1 Pty Ltd	**Adopted Model Geometry at Section B**	PROJECT No:	233926.02
	OFFICE:	Sydney	**81-83 George St & 1 Barrack Ln, Parramatta NSW**	DWG No:	M3
	DATE:	28 Jan 2026		REVISION:	0



SECTION A

Douglas PARTNERS GROUNDED EXPERTISE	CLIENT:	Freecity Parramatta Development No 1 Pty Ltd	**Total Displacement Contour at Section A under SLS vertical load**	PROJECT No: 233926.02
	OFFICE:	Sydney	**81-83 George St & 1 Barrack Ln, Parramatta NSW**	DWG No: M4
	DATE:	28 Jan 2026		REVISION: 0

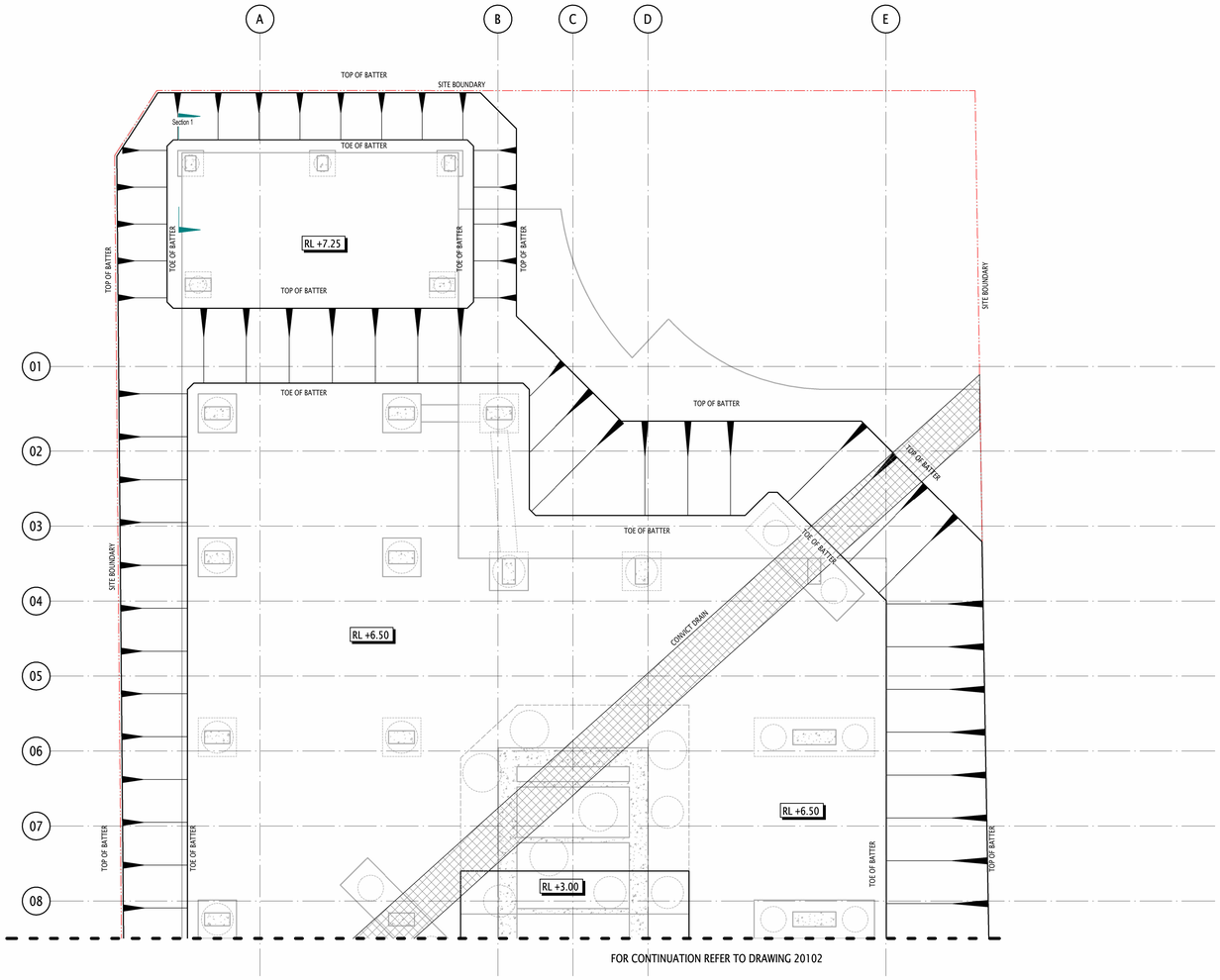


SECTION B

Douglas PARTNERS GROUNDED EXPERTISE	CLIENT: Freecity Parramatta Development No 1 Pty Ltd	**Total Displacement Contour at Section B under SLS vertical load**	PROJECT No: 233926.02
	OFFICE: Sydney	**81-83 George St & 1 Barrack Ln, Parramatta NSW**	DWG No: M5
	DATE: 28 Jan 2026		REVISION: 0

Appendix D

Provided Documents



BULK EARTHWORK PLAN - NORTH
SCALE 1 : 100

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
2. REFER TO RBG GENERAL NOTES DRAWING FOR PROPOSED CONSTRUCTION SEQUENCE OF WORKS
3. ALL STRATA LEVELS THAT HAVE BEEN INDICATED BY ROBERT BIRD GROUP (RBG) ARE INDICATIVE AND HAVE BEEN INFERRED BY THE FOLLOWING GEOTECHNICAL REPORTS. REFER TO THESE REPORTS FOR A DETAILED DESCRIPTION OF THE ANTICIPATED STRATA.
   REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION 233926.02.R.002.DFTA
4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
5. NATURAL GROUND LEVELS, METRO TUNNELS AND RESERVE ZONES THAT HAVE BEEN INDICATED ON RBG DRAWINGS ARE BASED ON NORTON SURVEY PARTNERS "PLAN SHOWING SELECTED DETAIL & LEVELS OVER NO 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS" DATED 13-12-23
6. ALL EXISTING AND ADJACENT STRUCTURES SHOWN ARE INDICATIVE ONLY. NO RECORD DRAWINGS FOUND FOR THOSE STRUCTURES.
7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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REFER TO GENERAL NOTES UNLESS NOTED OTHERWISE

Structural, Civil & Construction Engineering Consultant
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Web: www.robertbird.com
ACN 010 060 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BULK EARTHWORK PLAN - NORTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

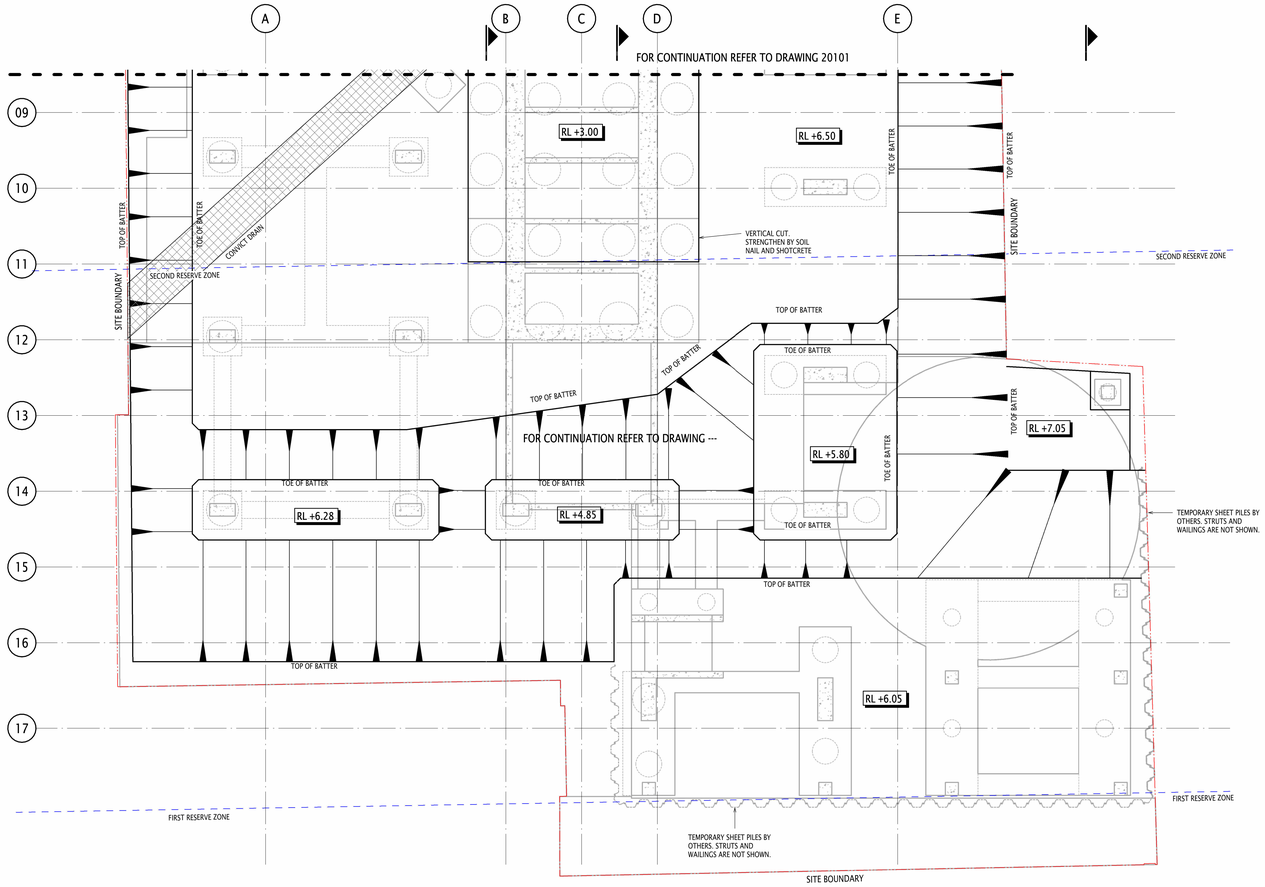
Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO

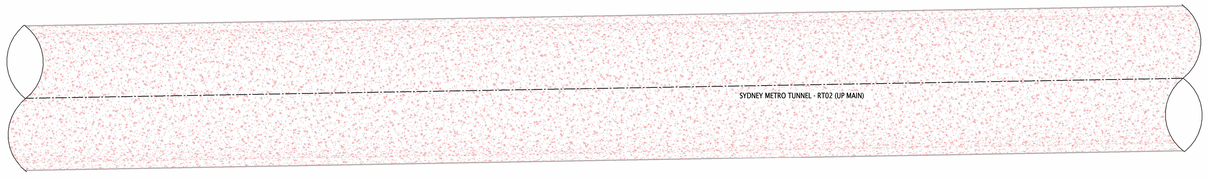
RBG Project Number
25055

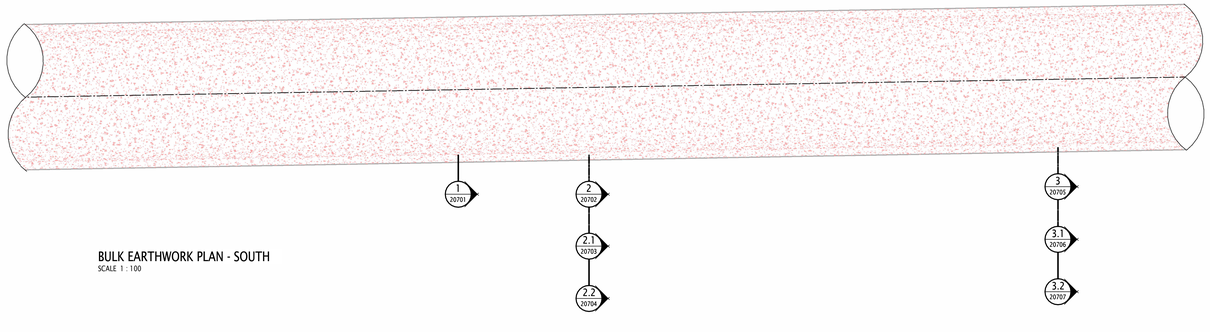
NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20101	P1

PRINT DRAWINGS IN COLOUR







BULK EARTHWORK PLAN - SOUTH
SCALE 1 : 100

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
2. REFER TO RBG GENERAL NOTES DRAWING FOR PROPOSED CONSTRUCTION SEQUENCE OF WORKS
3. ALL STRATA LEVELS THAT HAVE BEEN INDICATED BY ROBERT BIRD GROUP (RBG) ARE INDICATIVE AND HAVE BEEN INFERRED BY THE FOLLOWING GEOTECHNICAL REPORTS. REFER TO THESE REPORTS FOR A DETAILED DESCRIPTION OF THE ANTICIPATED STRATA.
   REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION 233926.02.R.002.DFTA
4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
5. NATURAL GROUND LEVELS, METRO TUNNELS AND RESERVE ZONES THAT HAVE BEEN INDICATED ON RBG DRAWINGS ARE BASED ON NORTON SURVEY PARTNERS "PLAN SHOWING SELECTED DETAIL & LEVELS OVER NO 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS" DATED 13-12-21
6. ALL EXISTING AND ADJACENT STRUCTURES SHOWN ARE INDICATIVE ONLY. NO RECORD DRAWINGS FOUND FOR THOSE STRUCTURES.
7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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ACN 010 880 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BULK EARTHWORK PLAN - SOUTH

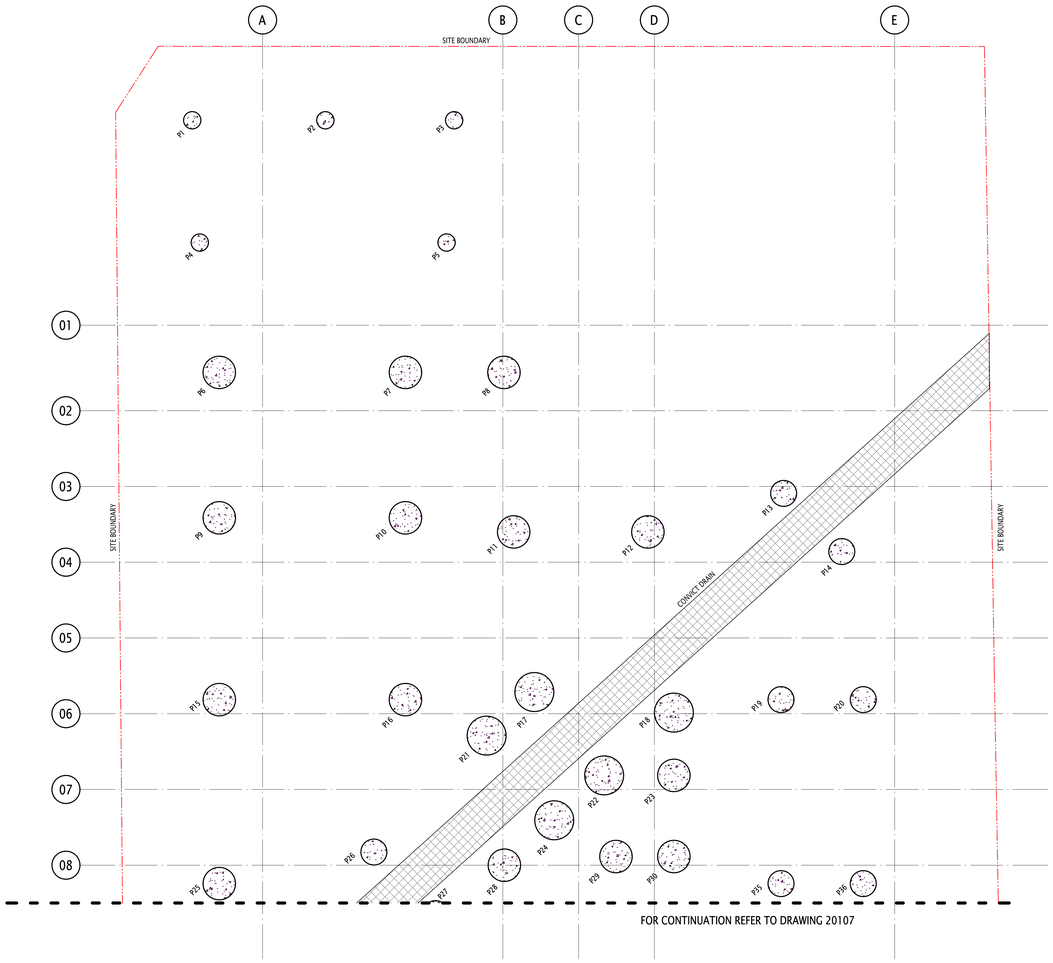
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO

RBG Project Number
25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20102	P1



FOUNDATION - PILE LAYOUT - NORTH
SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? LB — DENOTES BLOCKWORK AND TYPE REFER ST7.?? SERIES DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- RB? INLB
- DENOTES WET AREA SET DOWN
- DENOTES PENETRATION
- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
- DENOTES SUMP
- STEP — DENOTES SLAB STEP
- THK — DENOTES SLAB THICKNESS
- TAG / SIZE — DENOTES COLUMN NUMBER AND SIZE
- W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
- DENOTES SPAN DIRECTION
- S.J. — DENOTES SAWN JOINT
- T.J. — DENOTES TOOLED JOINT
- K.J. — DENOTES KEYED JOINT
- D.J. — DENOTES DOWELLED JOINT
- C.J. — DENOTES CONSTRUCTION JOINT
- E.J. — DENOTES EXPANSION JOINT
- DENOTES TEMPORARY SHEET PILES (BY OTHERS, STRUTTING NOT SHOWN)
- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MD	10/02/2026

Rev	Revision Description	By	App	Date

SCALE 1:1 1:2 1:3 1:4 1:5 1:6 1:7 1:8

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ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

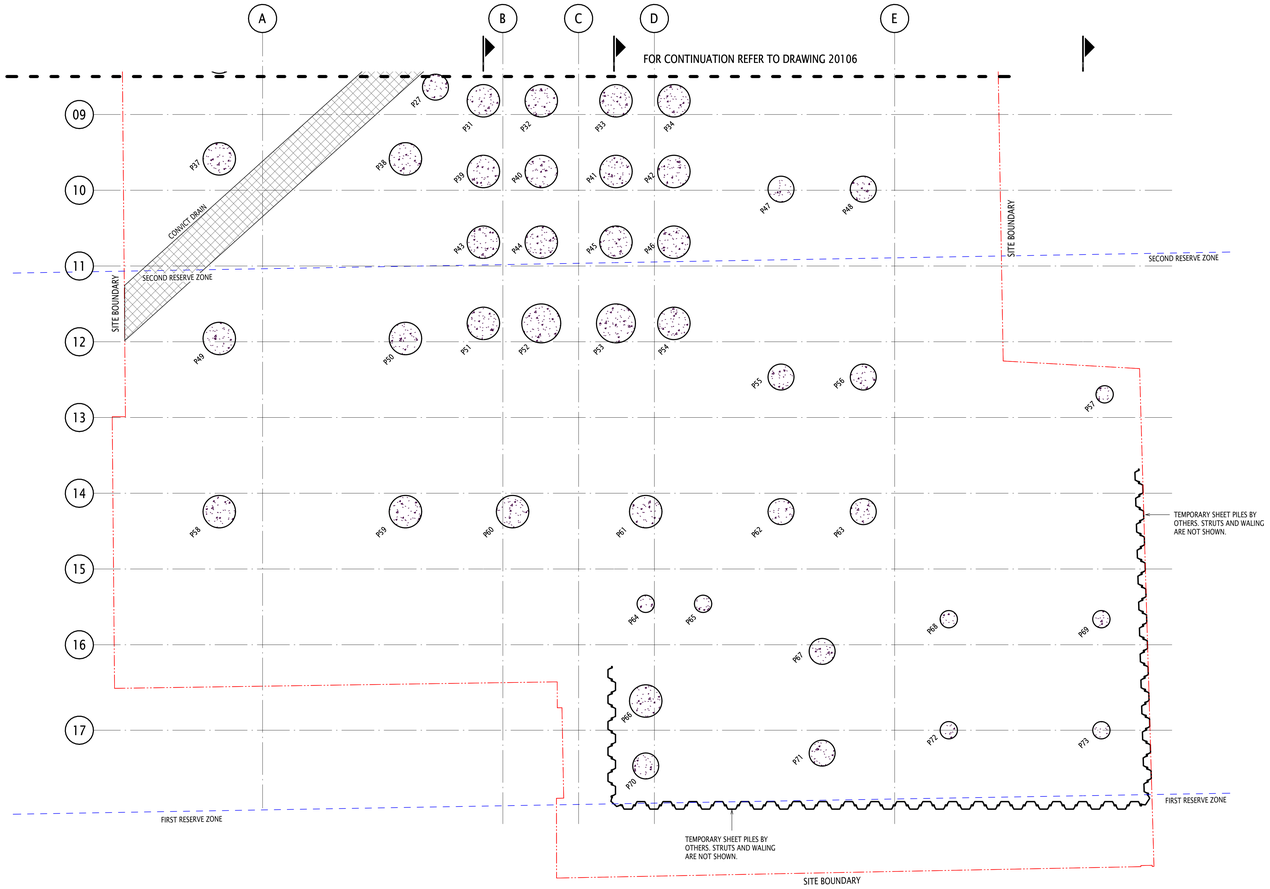
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
PILE LAYOUT - NORTH

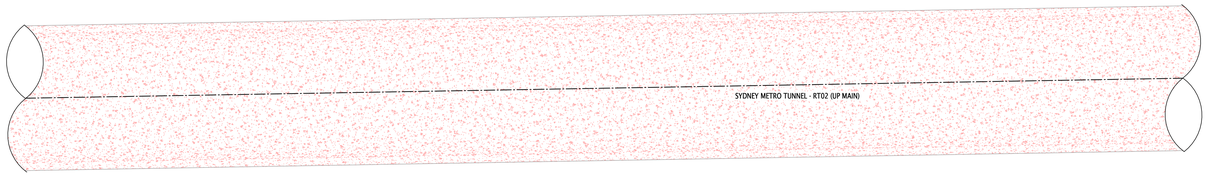
Project
1 Barrack Lane and 81-83 George Street, Parramatta

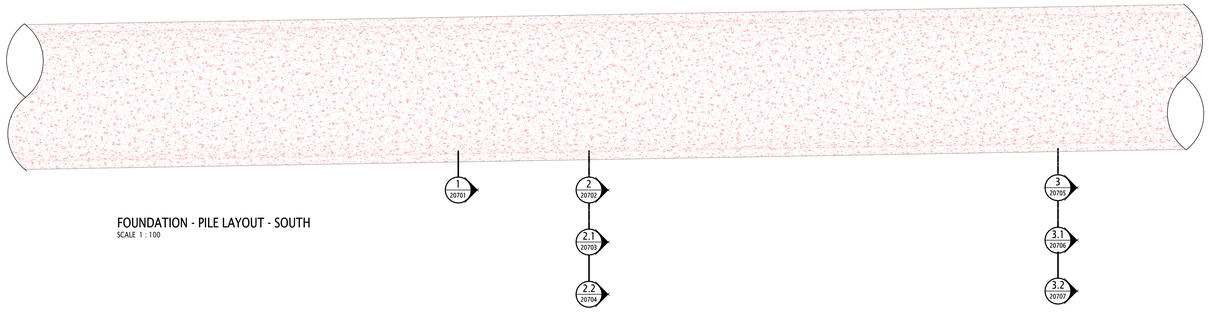
Scale at A0: 1 : 100
Date: 10/02/26
Drawn: HG
Designer: JL
Design Checker: -
Approved: MD
RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20106
Revision: P1







FOUNDATION - PILE LAYOUT - SOUTH

SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? LB — DENOTES BLOCKWORK AND TYPE REFER S77.?? SERIES DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
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- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
PILE LAYOUT - SOUTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20107	P1

PILE SCHEDULE

PILE MARK	PILE DIAMETER (mm)	ANTICIPATED TOP LEVEL OF MEDIUM MEDIUM STRENGTH ROCK (m)	MIN. SOCKETTED LENGTH (m)	ANTICIPATED PILE TOE LEVEL (m)
P1	800	-1.5	2.5	-4.00
P2	800	-1.5	2.5	-4.00
P3	800	-1.5	2.5	-4.00
P4	800	-1.5	2.5	-4.00
P5	800	-1.5	2.5	-4.00
P6	1500	-1	3.5	-4.50
P7	1500	-1	3.5	-4.50
P8	1500	-1	3.5	-4.50
P9	1500	-1	3.5	-4.50
P10	1500	-1	3.5	-4.50
P11	1500	-1	3.5	-4.50
P12	1500	-1	3.5	-4.50
P13	1200	-1	4.0	-5.00
P14	1200	-1	4.0	-5.00
P15	1500	0	3.5	-3.50
P16	1500	0	3.5	-3.50
P17	1800	0	6.5	-6.50
P18	1800	0	6.5	-6.50
P19	1200	0	4.0	-4.00
P20	1200	0	4.0	-4.00
P21	1800	0	6.5	-6.50
P22	1800	0	6.5	-6.50
P23	1500	0	6.5	-6.50
P24	1800	0	6.5	-6.50
P25	1500	1.5	3.5	-2.00
P26	1200	1.5	4.0	-2.50
P27	1200	1.5	4.0	-2.50
P28	1500	1.5	8.0	-6.50
P29	1500	1.5	8.0	-6.50
P30	1500	1.5	8.0	-6.50
P31	1500	1.5	8.0	-6.50
P32	1500	1.5	8.0	-6.50
P33	1500	1.5	8.0	-6.50
P34	1500	1.5	8.0	-6.50
P35	1200	1.5	4.0	-2.50
P36	1200	1.5	4.0	-2.50
P37	1500	1.5	3.5	-2.00
P38	1500	1.5	3.5	-2.00
P39	1500	1.5	8.0	-6.50
P40	1500	1.5	8.0	-6.50
P41	1500	1.5	8.0	-6.50
P42	1500	1.5	8.0	-6.50
P43	1500	1.5	8.0	-6.50
P44	1500	1.5	8.0	-6.50
P45	1500	1.5	8.0	-6.50
P46	1500	1.5	8.0	-6.50
P47	1200	1.5	4.0	-2.50
P48	1200	1.5	4.0	-2.50
P49	1500	1.5	3.5	-2.00
P50	1500	1.5	3.5	-2.00
P51	1500	1.5	6.5	-6.50
P52	1800	1.5	8.0	-6.50
P53	1800	1.5	8.0	-6.50
P54	1500	1.5	8.0	-6.50
P55	1200	1.5	4.0	-2.50
P56	1200	1.5	4.0	-2.50
P57	800	1.5	2.5	-1.00
P58	1500	1.5	3.5	-2.00
P59	1500	1.5	3.5	-2.00
P60	1500	1.5	3.5	-2.00
P61	1500	1.5	3.5	-2.00
P62	1200	1.5	4.0	-2.50
P63	1200	1.5	4.0	-2.50
P64	800	1.5	2.5	-1.00
P65	800	1.5	2.5	-1.00
P66	1500	1.5	3.5	-2.00
P67	1200	1.5	4.0	-2.50
P68	800	1.5	2.5	-1.00
P69	800	1.5	2.5	-1.00
P70	1200	1.5	4.0	-2.50
P71	1200	1.5	4.0	-2.50
P72	800	1.5	2.5	-1.00
P73	800	1.5	2.5	-1.00

SHEAR & TORSION LOADS UNDER THE CORE

LOAD COMBINATION	Vx	Vy	Mz
	kN	kN	kNm
WORKING WIND LOAD 1	4900	760	-4250
WORKING WIND LOAD 2	4900	750	23800
WORKING WIND LOAD 3	4900	-750	-4240
WORKING WIND LOAD 4	4900	-750	23810
WORKING WIND LOAD 5	-3920	1370	-19680
WORKING WIND LOAD 6	-3920	1370	5270
WORKING WIND LOAD 7	-3920	-1130	-19660
WORKING WIND LOAD 8	-3920	-1130	5290
WORKING WIND LOAD 9	1470	2250	-14090
WORKING WIND LOAD 10	1470	2250	10860
WORKING WIND LOAD 11	1470	-2500	-7810
WORKING WIND LOAD 12	1470	-2500	10900
WORKING WIND LOAD 13	-1710	2250	-17390
WORKING WIND LOAD 14	-1710	2240	7560
WORKING WIND LOAD 15	4900	-2490	-4230
WORKING WIND LOAD 16	-1960	-2500	7330
WORKING WIND LOAD 17	1470	1380	-26540
WORKING WIND LOAD 18	2700	750	33970
WORKING WIND LOAD 19	1470	-750	-26520
WORKING WIND LOAD 20	2700	-750	33980
WORKING WIND LOAD 21	-1710	1370	-29840
WORKING WIND LOAD 22	-1470	750	29640
WORKING WIND LOAD 23	-1720	-750	-29830
WORKING WIND LOAD 24	-1470	-760	29650
ULTIMATE WIND LOAD 1	9950	1330	-8500
ULTIMATE WIND LOAD 2	9950	1320	45290
ULTIMATE WIND LOAD 3	9950	-1310	-8480
ULTIMATE WIND LOAD 4	9950	-1320	45310
ULTIMATE WIND LOAD 5	-9450	1980	-32900
ULTIMATE WIND LOAD 6	-9450	1980	8950
ULTIMATE WIND LOAD 7	-9450	-2650	-32860
ULTIMATE WIND LOAD 8	-9450	-2660	8990
ULTIMATE WIND LOAD 9	3000	3970	-27090
ULTIMATE WIND LOAD 10	2990	3970	20740
ULTIMATE WIND LOAD 11	2990	-4400	-15060
ULTIMATE WIND LOAD 12	2990	-4410	20810
ULTIMATE WIND LOAD 13	-3490	3970	-33240
ULTIMATE WIND LOAD 14	-3490	3960	14590
ULTIMATE WIND LOAD 15	9950	-4400	-8450
ULTIMATE WIND LOAD 16	-4970	-4410	13250
ULTIMATE WIND LOAD 17	-2990	2430	-50970
ULTIMATE WIND LOAD 18	5970	1320	65420
ULTIMATE WIND LOAD 19	2990	-1310	-50940
ULTIMATE WIND LOAD 20	5960	-1320	65430
ULTIMATE WIND LOAD 21	-3970	2420	-57590
ULTIMATE WIND LOAD 22	-2990	1310	56920
ULTIMATE WIND LOAD 23	-3970	-1320	-57560
ULTIMATE WIND LOAD 24	-2990	-1330	56930
ULTIMATE EARTHQUAK LOAD	-32420	41970	-99230

PILE AXIAL LOAD SCHEDULE

Pile ID	WORKING AXIAL LOAD (kN)			ULTIMATE AXIAL LOAD (kN)				
	G + Q	G + Ψc Q + Ws	0.9G - Ws	1.35G	1.2G + 1.5Q	1.2G + Wu + ΨcQ	0.9G + Wu	G + E + ΨEQ
P1	1672	-	-	1887	2089	-	-	-
P2	1927	-	-	1909	2466	-	-	-
P3	957	-	-	1004	1213	-	-	-
P4	4522	-	-	4693	5740	-	-	-
P5	2262	-	-	2340	2873	-	-	-
P6	10141	-	-	10946	12779	-	-	-
P7	14149	-	-	14629	17973	-	-	-
P8	10023	-	-	10847	12625	-	-	-
P9	14793	-	-	15776	18684	-	-	-
P10	18935	-	-	18857	24212	-	-	-
P11	17492	-	-	18082	22219	-	-	-
P12	18250	-	-	19099	23130	-	-	-
P13	9846	-	-	10752	12379	-	-	-
P14	9846	-	-	10752	12379	-	-	-
P15	15315	-	-	16315	19348	-	-	-
P16	17362	-	-	16912	22285	-	-	-
P17	27821	28882	16207	31316	34773	36877	12579	34836
P18	17417	19540	10041	19724	21743	25701	6213	22251
P19	15674	-	-	16923	19751	-	-	-
P20	15674	-	-	16923	19751	-	-	-
P21	20475	23727	9161	23033	25594	32706	3931	26364
P22	28432	30696	17395	32128	35509	39684	12466	34944
P23	17201	20167	10192	19494	21469	27063	6760	19858
P24	29128	31692	17672	33224	36310	42127	13814	33931
P25	13497	-	-	14444	17036	-	-	-
P26	6799	-	-	6727	8703	-	-	-
P27	6799	-	-	6727	8703	-	-	-
P28	17939	20236	10541	20401	22375	26708	6737	20241
P29	11209	13426	6216	12793	13970	18168	3335	13784
P30	20261	23180	10715	23061	25266	32081	6625	23038
P31	14899	17554	8916	16951	18582	24874	6749	15864
P32	16533	19582	9238	18854	20611	26420	6237	18115
P33	15610	17812	9972	17954	19426	23621	7491	17505
P34	9775	11776	5216	11207	12172	15992	2958	11770
P35	14157	-	-	15577	17774	-	-	-
P36	14157	-	-	15577	17774	-	-	-
P37	12032	-	-	12924	15176	-	-	-
p38	12144			12305	15481	-	-	-
P39	7814	9081	4662	9002	9721	12806	3444	9472
P40	12337	13709	6882	14238	15342	18772	4538	14006
P41	13449	15903	7593	15483	16733	21315	4372	15481
P42	7993	9887	4704	9197	9946	13537	2952	9804
P43	14018	16231	7271	15995	17473	22872	4211	16662
P44	15200	17031	9378	17543	18902	23437	7313	18373
P45	15448	18653	9583	17772	19223	25172	7097	19034
P46	10406	13371	5354	11879	12970	18486	2352	13030
P47	13496	-	-	14842	16945	-	-	-
P48	13496	-	-	14842	16945	-	-	-
P49	12479	-	-	13145	15798	-	-	-
P50	13178	-	-	13472	16774	-	-	-
P51	13853	16499	6712	15865	17254	23621	3255	18653
P52	26835	29599	15569	30718	33426	40420	11280	35166
P53	25290	30743	14139	28808	31533	41434	9023	33670
P54	11722	15359	6040	13314	14624	21312	2895	15479
P55	13058	-	-	13832	16513	-	-	-
P56	13058	-	-	13832	16513	-	-	-
P57	5369	-	-	4770	6994	-	-	-
P58	16274	-	-	17879	20437	-	-	-
P59	18540	-	-	20065	23351	-	-	-
P60	17340	-	-	18710	21852	-	-	-
P61	17432	-	-	18288	22084	-	-	-
P62	15100	-	-	15928	19111	-	-	-
P63	15100	-	-	15928	19111	-	-	-
P64	1462	-	-	1262	1912	-	-	-
P65	1462	-	-	1262	1912	-	-	-
P66	13246	-	-	14978	16541	-	-	-
P67	9559	-	-	10935	11908	-	-	-
P68	2087	-	-	2085	2667	-	-	-
P69	4742	-	-	4478	6118	-	-	-
P70	1582	-	-	1584	2021	-	-	-
P71	11733	-	-	12852	14744	-	-	-
P72	5914	-	-	5603	7626	-	-	-
P73	2872	-	-	2980	3645	-	-	-

G DENOTES DEAD LOAD
Q DENOTES LIVE LOAD
Ws LIVE LOAD
Wu DENOTES SERVICE WIND LOAD
e DENOTES EARTHQUAKE LOAD

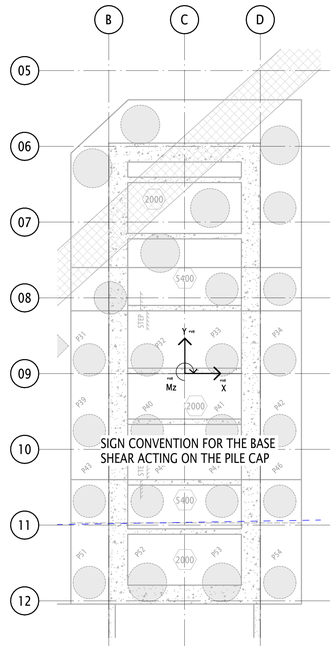
Ψc DENOTES COMBINATION FACTOR AS PER AS 1170.0
ΨE DENOTES EARTHQUAKE COMBINATION FACTOR AS PER AS 1170.0

NOTES FOR PILE AXIAL LOAD SCHEDULE

1. ALL PILES ARE IN COMPRESSION UNDER ALL WORKING AND ULTIMATE LOAD COMBINATIONS
2. THE EARTHQUAKE LOADS LISTED IN THE TABLE ARE DERIVED FROM THE DYNAMIC EARTHQUAKE LOAD CASE APPLIED SIMULTANEOUSLY IN BOTH THE X AND Y DIRECTIONS. AS SUCH, THERE IS NO REQUIREMENT TO COMBINE X AND Y DIRECTIONAL FORCES.
3. ALL EARTHQUAKE DESIGN ACTIONS DOCUMENTED IN THE TABLE REPRESENT DUCTILE DEMANDS (MU=2.0, SP=0.77).
4. ALL PILES ARE TO BE DESIGNED WITH 1% OF AXIAL LOAD AS LATERAL LOAD AND 5% OF AXIAL LOAD AS BENDING MOMENT DUE TO ECCENTRICITY.
5. ALL PILES UNDER COLUMNS ARE GOVERNED BY GRAVITY LOADS. AS SUCH, ONLY GRAVITY LOAD COMBINATIONS HAVE BEEN SHOWN.

NOTES FOR SHEAR & TORSION LOADS UNDER THE CORE

1. EARTHQUAKE IS REVERSIBLE.
2. THE EARTHQUAKE LOADS LISTED IN THE TABLE ARE DERIVED FROM THE DYNAMIC EARTHQUAKE LOAD CASE APPLIED SIMULTANEOUSLY IN BOTH THE X AND Y DIRECTIONS. AS SUCH, THERE IS NO REQUIREMENT TO COMBINE X AND Y DIRECTIONAL FORCES.
3. ALL EARTHQUAKE DESIGN ACTIONS DOCUMENTED IN THE TABLE REPRESENT DUCTILE DEMANDS (MU=2.0, SP=0.77). CONSEQUENTLY, SHEAR FORCES (Vx AND Vy) SHOULD BE INCREASED BY A FACTOR OF 2 TO ACCOMMODATE THE OVER-STRENGTH REQUIRED TO SAFEGUARD THE FOUNDATION, AS REQUIRED IN CLAUSE 14.6.6 OF AS3600-2018.
4. THE SHEAR & TORSION LOADS ARE APPLIED AT CENTROID OF THE CORE AND AT THE TOP OF PILE CAP.
Vx: SHEAR FORCE IN X DIRECTION
Vy: SHEAR FORCE IN Y DIRECTION
Mz: TORSIONAL BENDING MOMENT ABOUT Z AXIS



PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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SCALE 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

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ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

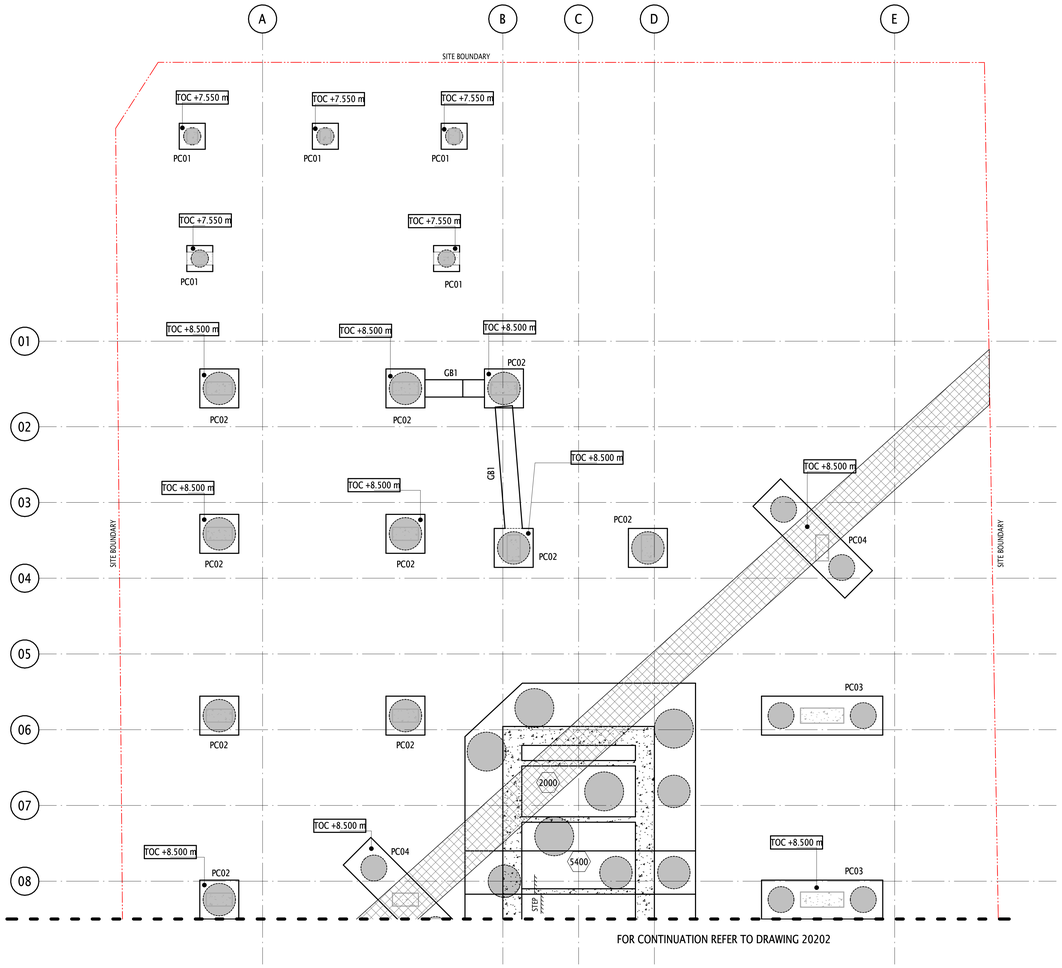
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
PILE SCHEDULE

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0: 1 : 100
Date: 10/02/26
Drawn: HG
Designer: JL
Design Checker: -
Approved: MO
RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20110
Revision: P1



FOUNDATION GENERAL ARRANGEMENT PLAN - NORTH
SCALE 1 : 100

PILE CAP SCHEDULE			
PILE CAP TYPE	PILE CAP LENGTH	PILE CAP WIDTH	PILE CAP DEPTH
PC01	1200	1200	1200
PC02	1800	1800	1750
PC03	5600	1800	1750
PC04	6000	1800	1750

GROUND BEAM SCHEDULE		
TYPE	WIDTH	DEPTH
GB1	800	600
GB2	1000	1250
GB4	1200	1250
GB5	2400	1750
GB6	1000	1750
GB7	2400	1500

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? GB — DENOTES BLOCKWORK AND TYPE REFER ST?-?? SERIES
- RB? WALL — DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- DENOTES WET AREA SET DOWN
- DENOTES PENETRATION
- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
- DENOTES SUMP
- STEP — DENOTES SLAB STEP
- THK — DENOTES SLAB THICKNESS
- TAG / SIZE — DENOTES COLUMN NUMBER AND SIZE
- W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
- DENOTES SPAN DIRECTION
- S.J. — DENOTES SAWN JOINT
- T.J. — DENOTES TOOLED JOINT
- K.J. — DENOTES KEYED JOINT
- D.J. — DENOTES DOWELLED JOINT
- C.J. — DENOTES CONSTRUCTION JOINT
- E.J. — DENOTES EXPANSION JOINT
- DENOTES TEMPORARY SHEET PILES (BY OTHERS; STRUTTING NOT SHOWN)
- TOC — DENOTES TOP OF CONCRETE
- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

NOTES:

1. ALL PILE AND PILE CAP SIZES SHOWN ARE PROVISIONAL AND SUBJECT TO THE GEOTECHNICAL ENGINEERS DESIGN INPUT
2. TEMPORARY SHEET PILES TO BE DESIGNED BY OTHERS
3. SET OUT OF TUNNELS BASED ON THE SITE SURVEY BY NORTON SURVEY PARTNERS
4. THE EXISTING CONVICT DRAIN ALIGNMENT IS INDICATIVE ONLY. THE ACTUAL DEPTH AND ALIGNMENT ARE TO BE VERIFIED BY SITE SURVEY. PILE AND PILE CAP DESIGN WILL BE REVIEWED ONCE THE SURVEY IS COMPLETED.

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

SCALE 10 15 14 16 12 18
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Client
Freecity Parramatta Development No 1 Pty Ltd

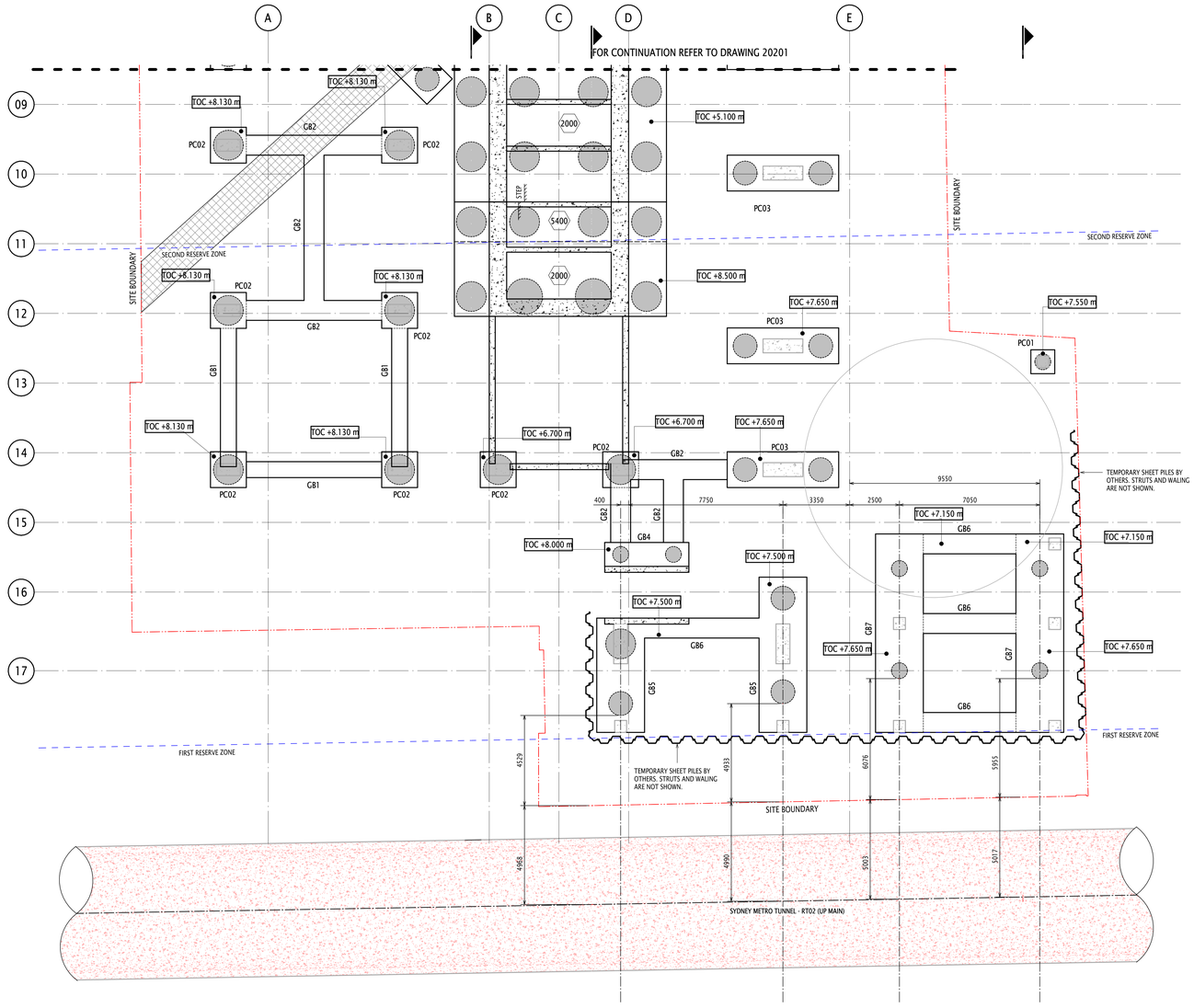
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
FOUNDATION PLAN - NORTH

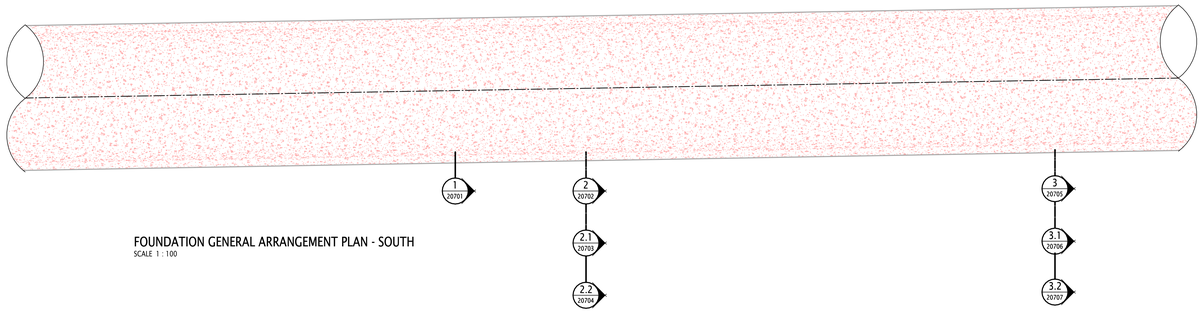
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0: 1 : 100
Date: 10/02/26
Drawn: HG
Designer: JL
Design Checker: -
Approved: MO
RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20201
Revision: P1





FOUNDATION GENERAL ARRANGEMENT PLAN - SOUTH
SCALE 1 : 100

PILE CAP SCHEDULE			
PILE CAP TYPE	PILE CAP LENGTH	PILE CAP WIDTH	PILE CAP DEPTH
PC01	1200	1200	1200
PC02	1800	1800	1750
PC03	5600	1800	1750
PC04	6000	1800	1750

GROUND BEAM SCHEDULE		
TYPE	WIDTH	DEPTH
GB1	800	600
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GB4	1200	1250
GB5	2400	1750
GB6	1000	1750
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- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
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- RB? LB — DENOTES BLOCKWORK AND TYPE REFER ST?? SERIES
- RB? INLB — DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- DENOTES WET AREA SET DOWN
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- DENOTES EXTENT OF PROVISIONAL SERVICE PIPE PENETRATION ZONE INCLUDING FIRE COLLARS. PROVIDE TRIMMING REINFORCEMENT TO STANDARD DETAILS. SERVICES SHOP DRAWINGS TO BE SUBMITTED FOR RBG REVIEW
- DENOTES SUMP
- STEP — DENOTES SLAB STEP
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- W? — DENOTES WALL NUMBER & DIRECTION ELEVATION IS VIEWED
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- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

NOTES:

1. ALL PILE AND PILE CAP SIZES SHOWN ARE PROVISIONAL AND SUBJECT TO THE GEOTECHNICAL ENGINEERS DESIGN INPUT
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PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MD	10/02/2026

Rev	Revision Description	By	App	Date

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ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

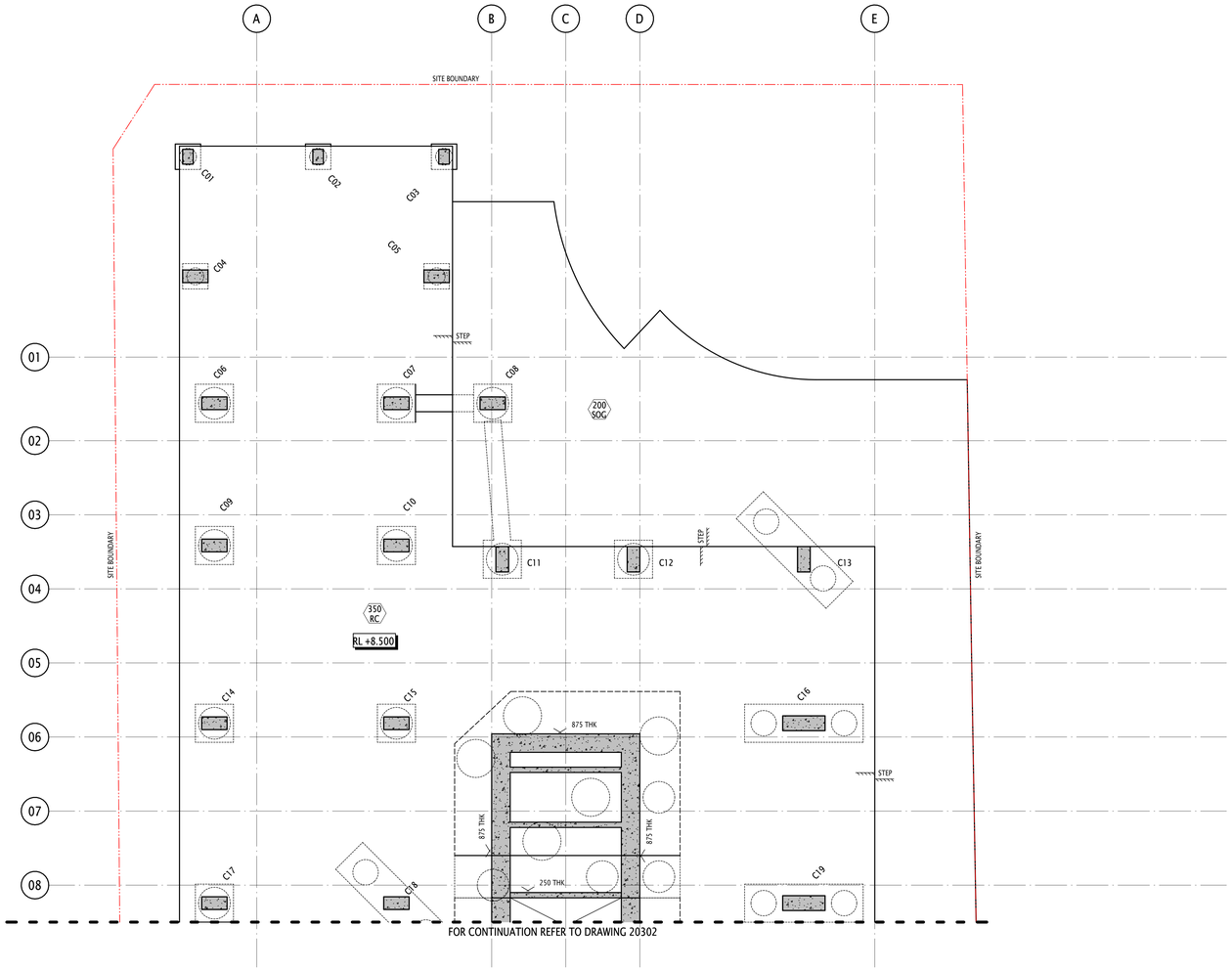
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
FOUNDATION PLAN - SOUTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MD
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20202	P1



GROUND FLOOR GENERAL ARRANGEMENT PLAN NORTH
SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
- DENOTES PRECAST ELEMENT OVER
- RB? GB — DENOTES BLOCKWORK AND TYPE REFER SCF ?? SERIES DRAWINGS FOR SCHEDULE AND TYPICAL DETAILS
- RB? INLB
- DENOTES WET AREA SET DOWN
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- DENOTES EXISTING CONVICT DRAIN

NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

SCALE (A1) 1:1 1:2 1:4 1:8 1:5 1:10

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Web: www.robertbird.com
ACN 010 880 248

Client
Freecity Parramatta Development No 1 Pty Ltd

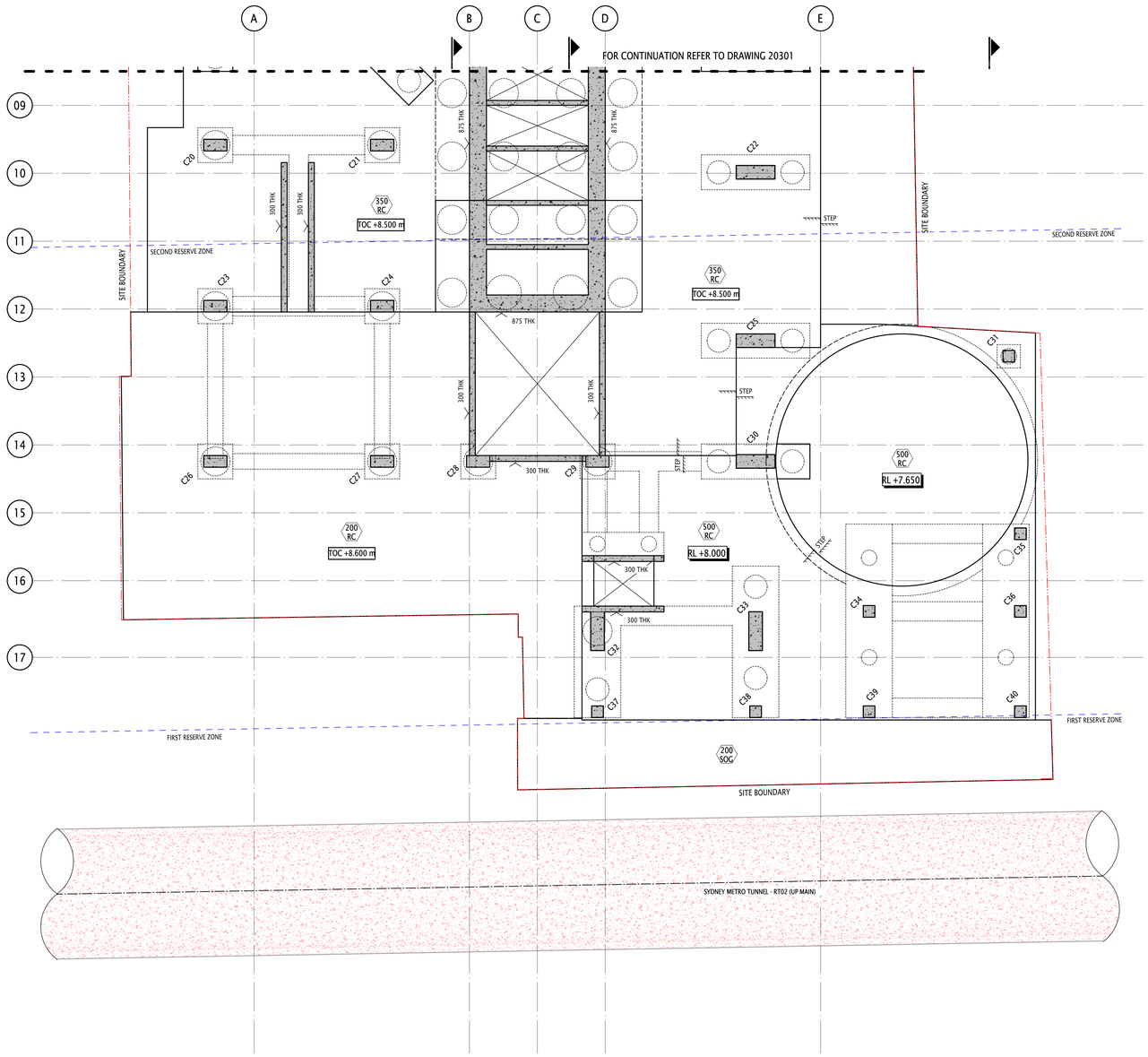
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
GROUND GENERAL ARRANGEMENT PLAN - NORTH

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20301	P1



GROUND FLOOR GENERAL ARRANGEMENT PLAN - SOUTH

SCALE 1 : 100

GENERAL ARRANGEMENT LEGEND:

- DENOTES INSITU CONCRETE ELEMENT OVER
- DENOTES LOAD BEARING ELEMENT UNDER
- DENOTES LOAD BEARING ELEMENT UNDER AND INSITU CONCRETE ELEMENT OVER
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NOTE: REFER ARCHITECTS DRAWINGS FOR ALL STEPS AND FALLS IN SLABS

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

SCALE (C) 0 1 2 3 4 5 6 7 8

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Web: www.robertbird.com
ACN 010 380 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
GROUND GENERAL ARRANGEMENT PLAN - SOUTH

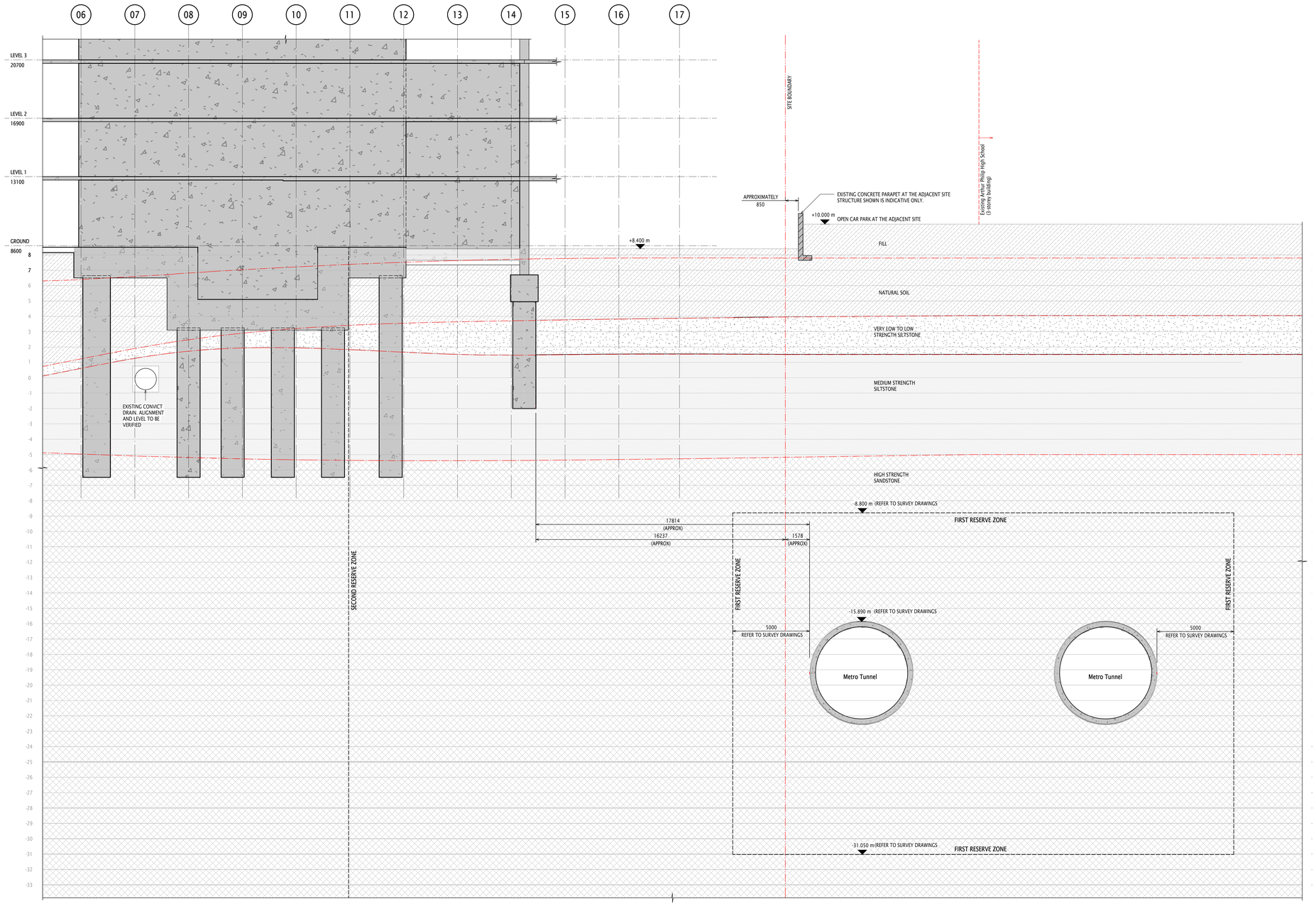
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20302	P1

PRINT DRAWINGS IN COLOUR



SECTION
SCALE 1 : 100

1
20102

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
2. REFER TO RBG GENERAL NOTES DRAWING FOR PROPOSED CONSTRUCTION SEQUENCE OF WORKS
3. ALL STRATA LEVELS THAT HAVE BEEN INDICATED BY ROBERT BIRD GROUP (RBG) ARE INDICATIVE AND HAVE BEEN INFERRED BY THE FOLLOWING GEOTECHNICAL REPORTS. REFER TO THESE REPORTS FOR A DETAILED DESCRIPTION OF THE ANTICIPATED STRATA.
   REPORT ON PRELIMINARY GEOTECHNICAL INVESTIGATION 233926.02.R.002.DFTA
4. REFER TO GEOTECHICAL REPORTS FOR ACTUAL ROCK AND SOIL TYPES TO JUDGE EASE OF EXCAVATION.
5. NATURAL GROUND LEVELS, METRO TUNNELS AND RESERVE ZONES THAT HAVE BEEN INDICATED ON RBG DRAWINGS ARE BASED ON NORTON SURVEY PARTNERS "PLAN SHOWING SELECTED DETAIL & LEVELS OVER NO 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS" DATED 13-12-21
6. ALL EXISTING AND ADJACENT STRUCTURES SHOWN ARE INDICATIVE ONLY. NO RECORD DRAWINGS FOUND FOR THOSE STRUCTURES.
7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

Rev	Revision Description	By	App	Date

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Fax: (07) 3319 2799
Email: brisbane@robertbird.com.au
Web: www.robertbird.com
ACN 010 880 248

Client
Freecity Parramatta Development
No 1 Pty Ltd

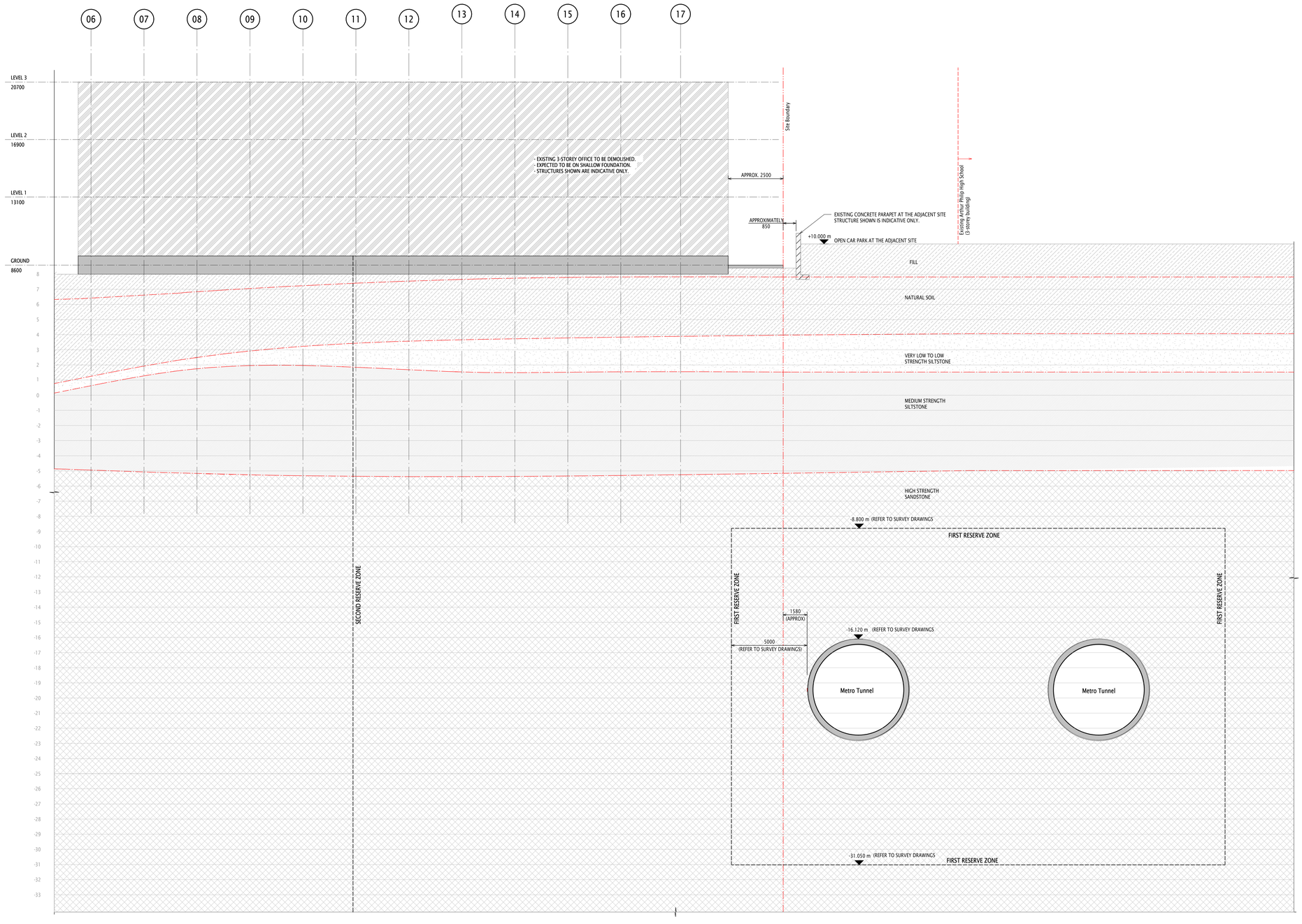
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 1

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20701	P1



SECTION 2 / 20102
SCALE 1 : 100

EXISTING PHASE

NOTES:

1. DRAWINGS TO BE READ IN COLOUR ONLY.
2. REFER TO RBG GENERAL NOTES DRAWING FOR PROPOSED CONSTRUCTION SEQUENCE OF WORKS
3. ALL STRATA LEVELS THAT HAVE BEEN INDICATED BY ROBERT BIRD GROUP (RBG) ARE INDICATIVE AND HAVE BEEN INFERRED BY THE FOLLOWING GEOTECHNICAL REPORTS. REFER TO THESE REPORTS FOR A DETAILED DESCRIPTION OF THE ANTICIPATED STRATA.
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7. ALL PILE LENGTHS ARE ADVISED BY GEOTECHNICAL ENGINEER.
8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

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Web: www.robertbird.com
ACN 010 080 248

Client
Freecity Parramatta Development No 1 Pty Ltd

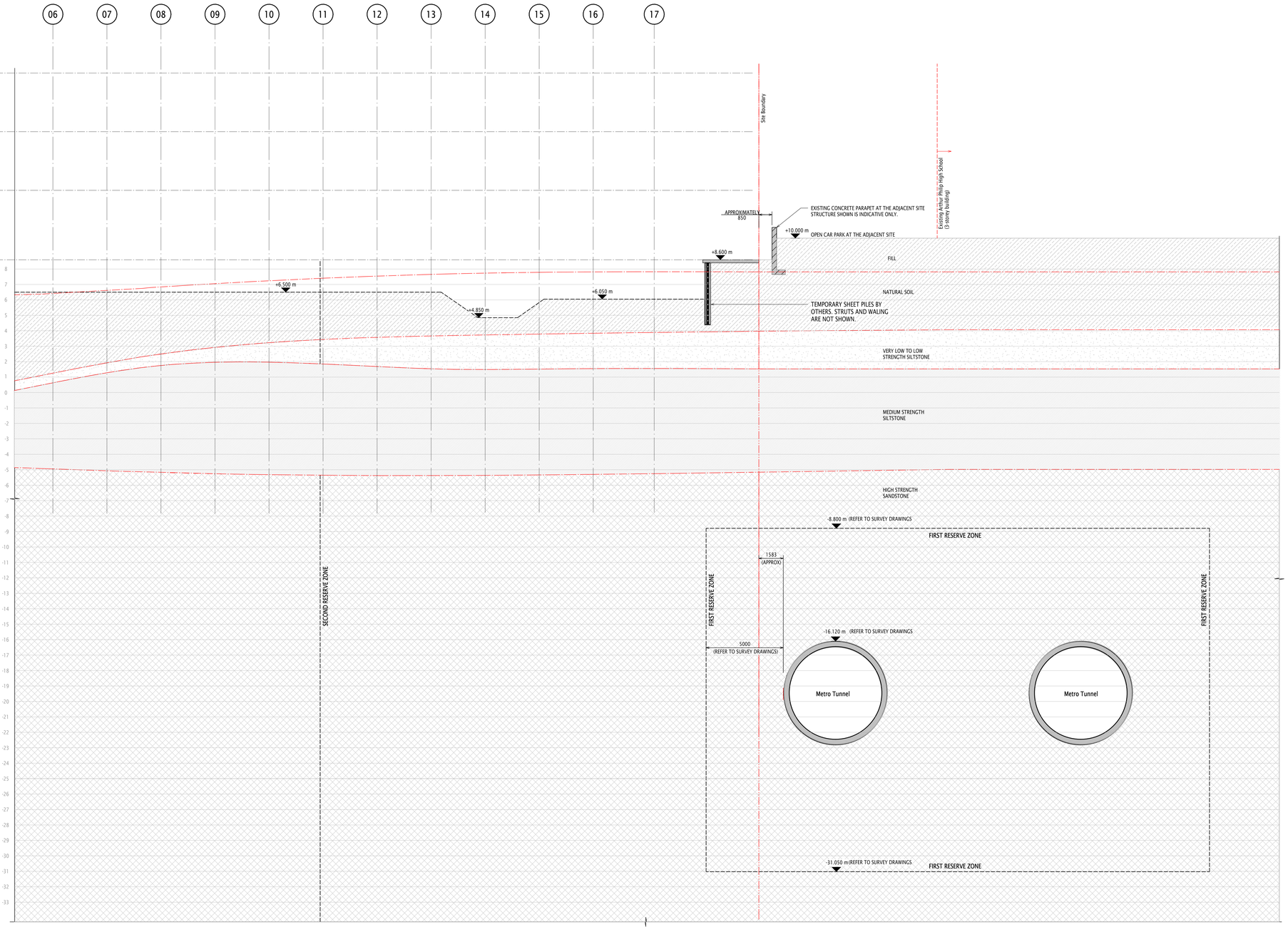
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 2

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20702	P1



SECTION 2.1 / 20102
SCALE 1 : 100

EXCAVATION PHASE

NOTES:

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8. SHEET PILES ARE TEMPORARY AND DESIGNED BY OTHERS. STRUTS AND WALINGS NOT SHOWN.

LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MD	10/02/2026

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ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

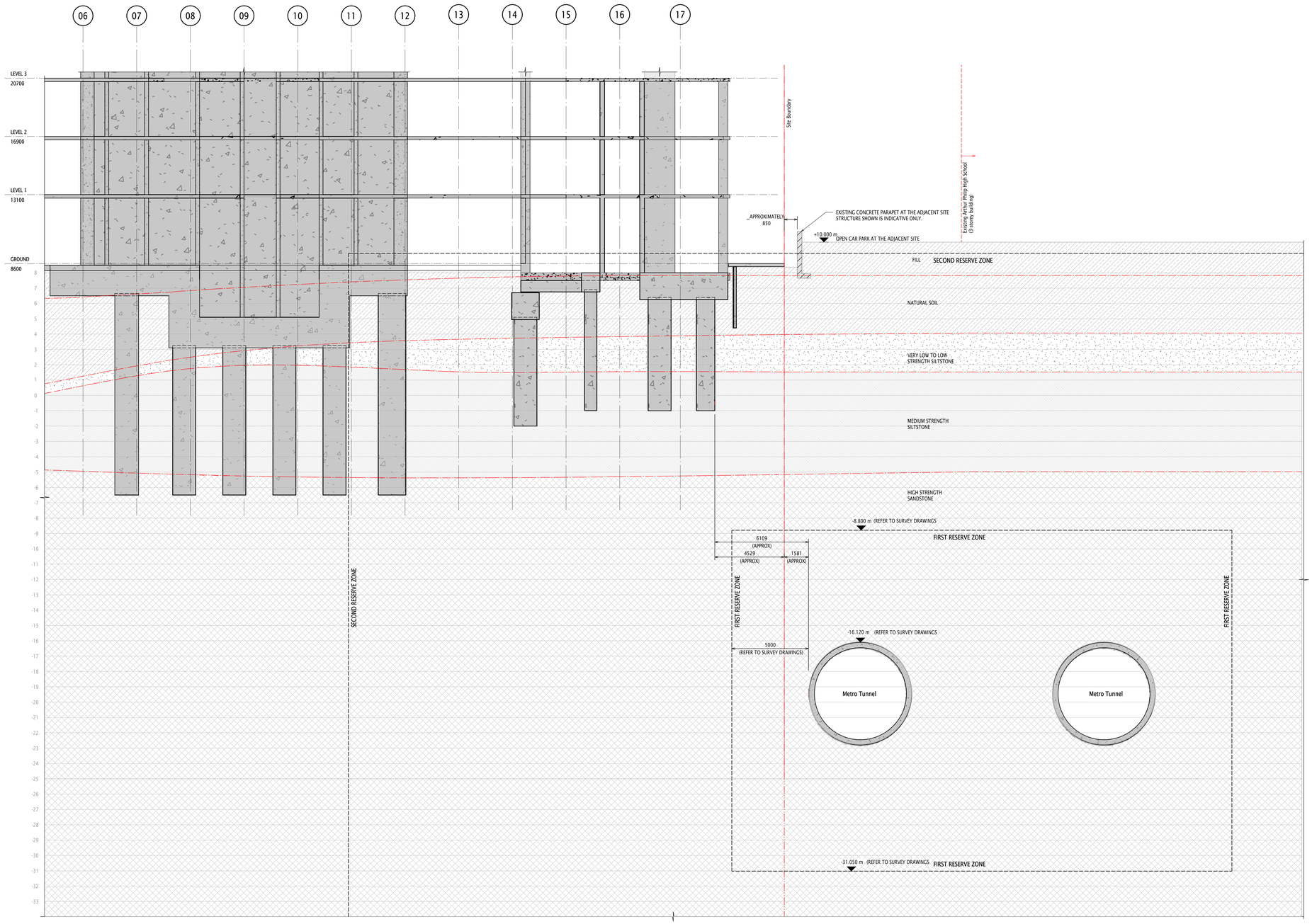
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK BUILDING SECTIONS - SHEET 3

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0: 1 : 100	Drawn: HG	Design Checker: -
Date: 10/02/26	Designer: JL	Approved: MD
		RBG Project Number: 25055

NOT FOR CONSTRUCTION

Drawing Number: 25055-RBG-02-096-DR-ST-20703
Revision: P1



SECTION 2.2 / 20100
SCALE 1 : 100

COMPLETION PHASE

NOTES:

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LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HG	MO	10/02/2026

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ACN 010 880 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 4

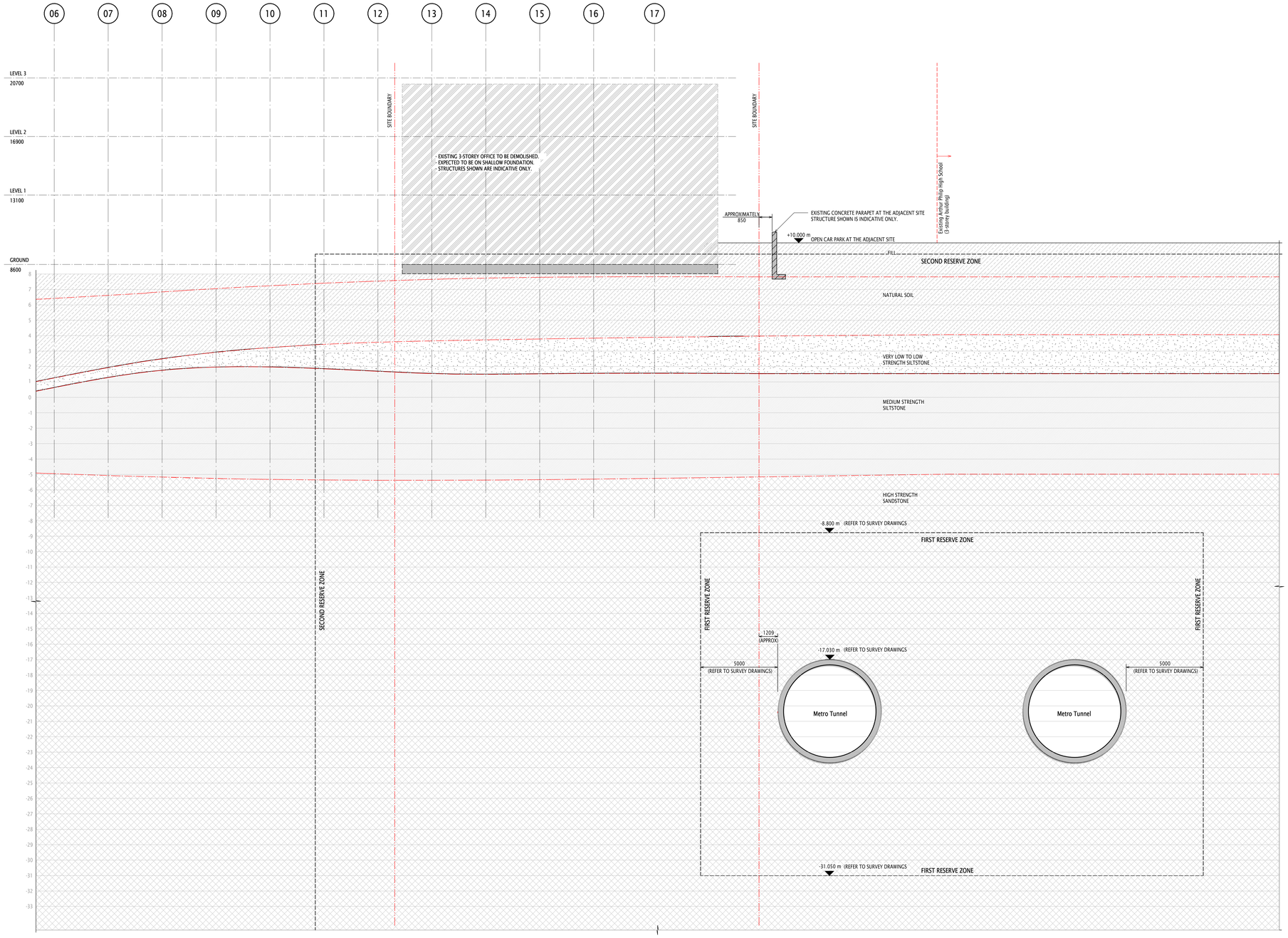
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HG	-
Date	Designer	Approved
10.02.26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20704	P1

PRINT DRAWINGS IN COLOUR



SECTION 3
SCALE 1 : 100 20102

EXISTING PHASE

NOTES:

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LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HC	MO	10/02/2026

Rev	Revision Description	By	App	Date

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ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 5

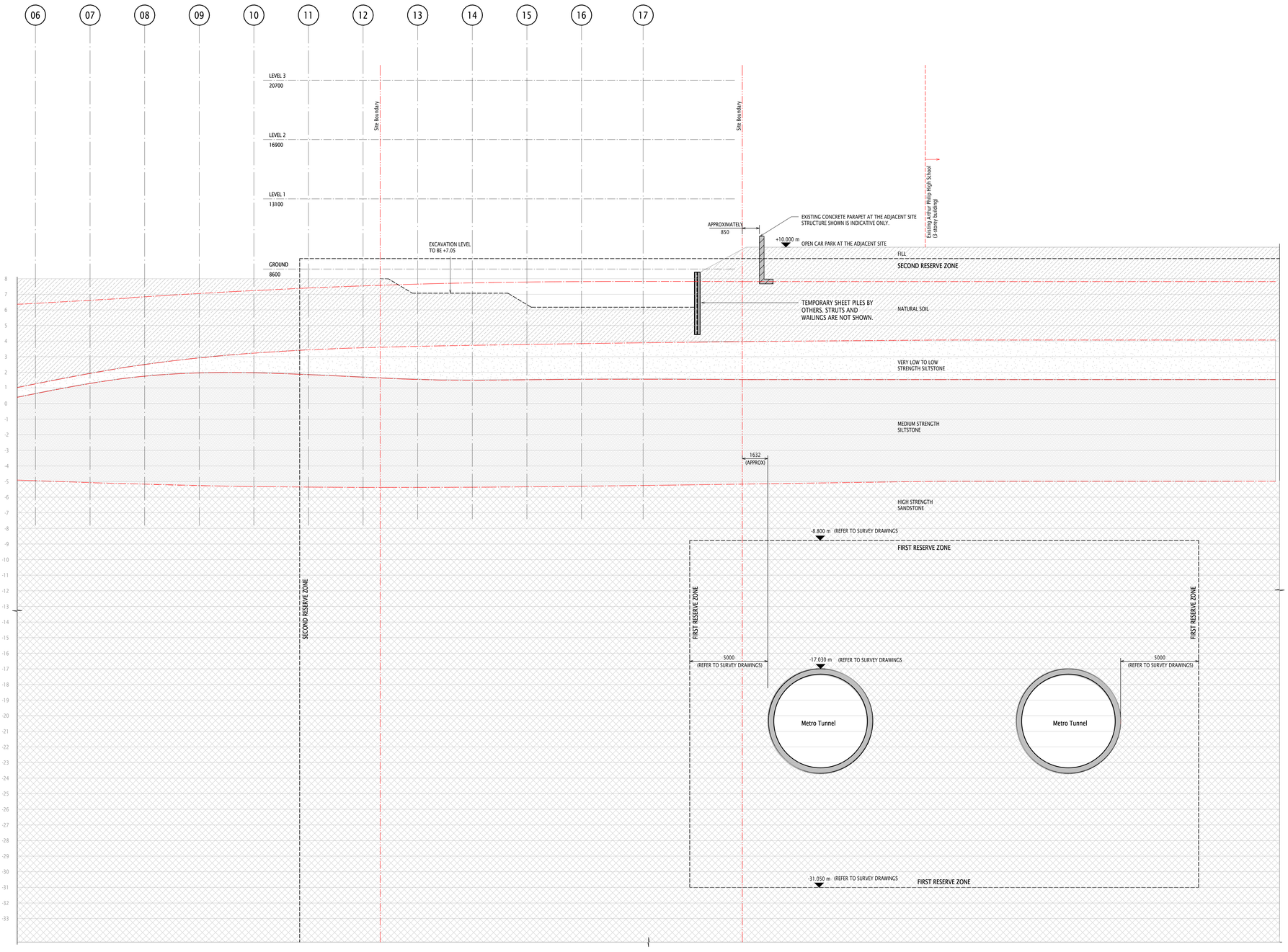
Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HC	-
Date	Designer	Approved
10/02/26	JL	MO

RBG Project Number
25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20705	P1



SECTION 3.1 / 20102
SCALE 1 : 100

EXCAVATION PHASE

NOTES:

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LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

PRINT DRAWINGS IN COLOUR

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HC	MO	10/02/2026

Rev Revision Description By App Date

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ACN 010 580 248

Client
Freecity Parramatta Development No 1 Pty Ltd

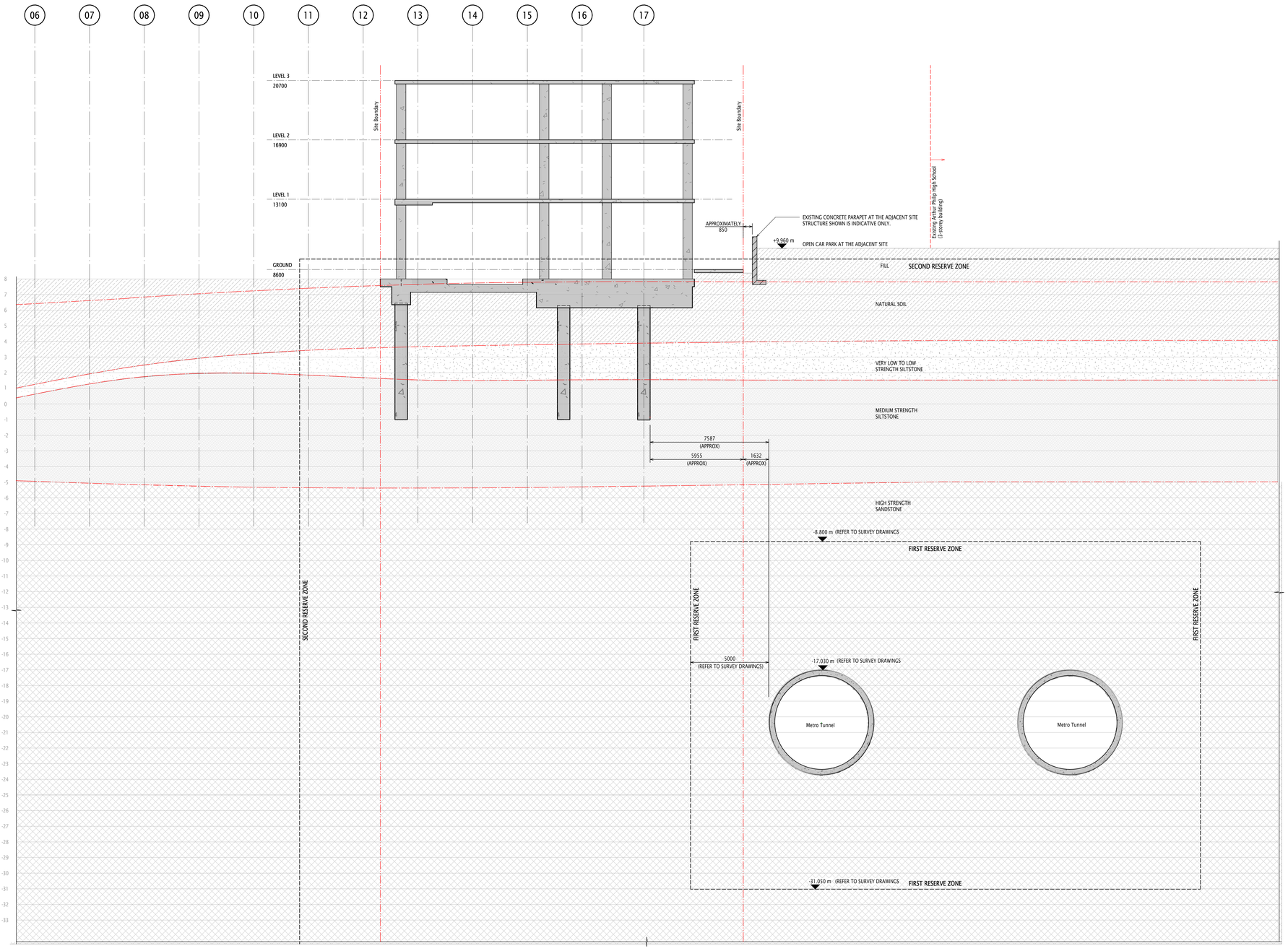
Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 6

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HC	-
Date	Designer	Approved
10/02/26	JL	MO
		RBG Project Number
		25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20706	P1



SECTION 3.2
SCALE 1 : 100

COMPLETION PHASE

NOTES:

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LEGEND:

MP — DENOTES MONITORING POINT

SW? — DENOTES SHORING WALL NUMBER & DIRECTION ELEVATION IS VIEWED

TOP OF BATTER
DENOTES BATTER LINE REFER GEOTECHNICAL REPORT FOR VERIFICATIONS
TOE OF BATTER

LEGEND:

- DENOTES FILL / NATURAL SOIL
- DENOTES ANTICIPATED LOW STRENGTH SLITSTONE
- DENOTES ANTICIPATED MEDIUM STRENGTH SLITSTONE
- DENOTES ANTICIPATED HIGH STRENGTH SLITSTONE

Rev	Revision Description	By	App	Date
P1	FOR INFORMATION	HC	MO	10/02/2026

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Freecity Parramatta Development No 1 Pty Ltd

Title
SYDNEY METRO IMPACT ASSESSMENT DRAWING PACK
BUILDING SECTIONS - SHEET 7

Project
1 Barrack Lane and 81-83 George Street, Parramatta

Scale at A0	Drawn	Design Checker
1 : 100	HC	-
Date	Designer	Approved
10/02/26	JL	MO

RBC Project Number
25055

NOT FOR CONSTRUCTION

Drawing Number	Revision
25055-RBG-02-096-DR-ST-20707	P1

PRINT DRAWINGS IN COLOUR

A-4 Assessment of Sydney Metro West (SMW) Segmental Lining Capacity

Technical Memorandum

Memo No.	30013103-TUN-MEM-001_01	Date of Issue	10 February 2026
Subject	Assessment of Sydney Metro West (SMW) Segmental Lining Capacity	Discipline	TUN
Project Title	Proposed Redevelopment: 81-83 George Street & 1 Barrack Lane, Parramatta NSW	Project No.	30013103
Document No.	30013103-TUN-MEM-001_01	Revision	01
Author	Nathaniel Saw		
Reviewed by	Adrian Yao	Approved by	Tong Joo Sia
Prepared for	Robert Bird Group (RBG)	Attention to	Joshua Leung
Attachments	NA		

1. Introduction

The proposed redevelopment at 81-83 George Street & 1 Barrack Lane, Parramatta NSW (the site) includes the demolition of existing structures and the construction of a 40-storey mixed-use development with ground floor retail and a Build-to-Rent (BTR) tower. It's understood the existing Sydney Metro West (SMW) tunnels are located adjacent to and below the south of the site and the southern portion of the site is within the 2nd reserve of the SMW tunnels.

1.1 Scope of Works

This technical memorandum has been prepared to present the assessment of SMW segmental lining capacity based on the results of geotechnical modelling at selected tunnel sections prepared by Douglas Partners (DP) [Ref. 3].

2. Reference Documents

The following reference documents were provided to SMEC for the preparation of this document.

Table 1: List of documents received for reference.

Item No.	Document number / Document Name	Document Description	Date Received
1	Drawings WTPTU0007	DP SWD-07 - RUNNING TUNNELS - SEGMENTS CLEAR OF CROSS PASSAGES OPENINGS	15/12/2025
2	Drawing SMWSTWTP-GLO-SWD-TU000-TU-DRG-070551 Rev. 05	TUNNELS SPECIFIC_ TUNNEL STRUCTURES_ RUNNING TUNNELS_ SCHEMATIC OVERVIEW RING TYPES	15/12/2025
3	Report 233926.02.R.008.Rev0	Report on Geotechnical Modelling for Sydney Metro Tunnel	30/01/2025

This Memorandum is confidential and is intended for the addressee only.
If you have received this Memorandum in error, please contact the sender.

Item No.	Document number / Document Name	Document Description	Date Received
4	Drawings 29736-1 Issue C	PLAN SHOWING SELECTED DETAIL & LEVELS OVER No. 81-83 GEORGE STREET, PARRAMATTA & SURROUNDS	02/02/2026

3. Assessment Information

3.1 Overview of SMW Segmental Lining

The design information about SMW segmental lining detailed on drawings in Ref. 1 is summarized in Table 2 below.

Table 2: Summary of SMW Segmental Lining Design Information

Element	Descriptions
Tunnel inner diameter	6.2m
Segment thickness	260mm
Segment concrete characteristic compressive strength (cylinder)	50MPa
Steel fibre reinforced concrete (SFRC) segments	a) Characteristic tensile splitting strength of 5.0 MPa b) Characteristic flexural tensile strength of limit of proportionality (LOP) value of 5.0 MPa c) Characteristic residual flexural tensile strength at C_{mod} of 0.5mm $f_{R,1}$ value of 3.5 MPa d) Characteristic residual flexural tensile strength at C_{mod} of 3.5mm $f_{R,4}$ value of 3.0 MPa
Steel bar reinforced concrete (RC) segments	a) Radial main reinforcement N16-100 EF b) Concrete cover 65mm for extrados and 50mm for intrados

3.2 Segment Type and Resulting Tunnel Forces for Selected Analysed Sections by DP

Based on the analysed sections as detailed in the assessment prepared by DP [Ref. 3], the corresponding segment type are summarised in Table 3 below.

Table 3: Segment Type at Analysed Sections

Analysed Section	Tunnel Alignment	Approximate Chainage	Segment Type
Section A	Up main	22km 204	Ring type 1- SFRC
	Down main	22km 192	Ring type 2- Steel bar RC
Section B	Up main	22km 227	Ring type 1- SFRC
	Down main	22km 214	Ring type 1- SFRC

The resulting tunnel forces based on the Geotechnical finite element analysis considering the proposed redevelopment prepared by DP are summarised in their report [Ref. 3] specifically Section 7.

Considering the approximate tunnel chainage and the close proximity of the boundary between Type 1 (SFRC) and Type 2 (steel bar RC) segments, the tunnel capacity assessment for Sections A and B has been undertaken considering both SFRC and steel bar RC segments.

4. Assessment Outcome

The tunnel segmental lining structural capacity has been assessed based on the components listed below:

- M-N interaction diagram (ULS)
- Shear (ULS)
- Crackwidth (SLS) (Note: assessed based on conservative assumption of 0.1mm crackwidth)
- Radial joint bearing (ULS & SLS)
- Radial joint bursting (ULS & SLS)

Based on the assessment outcome, the resulting tunnel forces as detailed in Section 3 above for both Section A and B are well within the segmental lining design capacity for both Type 1 (SFRC) and Type 2 (steel bar RC).

5. Conclusions

Based on the information provided and the assessment outcomes detailed in this technical memorandum, it is concluded that the structural capacity of SMW tunnel segmental lining is not expected to be compromised by the proposed redevelopment.

A-5 Risk Assessment

Hazard/Risk Register

Job No: 25055
Job Name: 1 Barrack Lane and 81-83 George Street
Doc Ref: 25055-RBG-ZZ-XX-RP-ST-00007
Date: 13.03.2026

Robert Bird Group
Member of the Surbana Jurong Group

Category:
SID = Safety in Design;
P = Project; E = Environmental; D = Design

VL = Very low;
L = Low;
M = Medium;
H = High;
VH = Very high

VL = Very low;
L = Low;
M = Medium;
H = High;
VH = Very high

Status:
L = Live;
C = Closed

						Unmitigated Risk Score						Current Residual Risk Score					
Ref	Category	Raised By	Subject	Hazard/Risk Description	Consequence	Likelihood	Severity	Score	Actions/Mitigation During Concept/DA Application Stage	Risk/Hazard Owner	Residual Likelihood	Residual Severity	Residual Score	Residual Risk Comments at Design Development Stage	Drg Note? *Enter Drg ref*	Status
1	D	RBG	Lack of Existing Building Structural Information	There are no structural drawings for the existing buildings on site. The loads are estimated based on their usage and building materials.	The estimated loads may not match exactly the actual loads, which may affect the assessment of the stress changes and displacement of the metro tunnels during the demolition of these existing buildings.	H	L	8	The stress changes and displacement will be assessed using the upper and lower bound of the estimated loads.	Freecity	L	L	4	Risk that the existing building structure does not align with assumptions made at Concept Stage and the geotechnical Ground Movement Assessment(GMA) needs to be re-done.		L
2	D	RBG	Lack of Existing Building Foundation Information	No information exists on the existing structure foundation system. Shallow foundation are expected but other foundation types are possible.	Deeper footings or pile foundation may result in larger stress changes and displacement of the metro tunnels during demolition of these existing buildings	L	M	6	Geotechnical SM Impact Assessment to use upper and lower bound estimates for different foundation system	Douglas Partners	L	L	4	Risk that the existing building foundations do not align with assumptions made at Concept Stage and the geotechnical Ground Movement Assessment(GMA) needs to be re-done.		L
3	D	RBG	Lack of Convict Drain Information	The location and depth of the convict drain is unknown.	A shallow convict drain may affect the column and foundation layout as well as potentially the architectural scheme. It may affect the excavation strategy, which may in turn affect the tunnel impact assessment.	H	H	16	It is expected the convict drain is located far away from the metro tunnels. Changes on the proposed development design and excavation strategy will not have a big impact on the tunnel impact assessment. Carrying out a survey to locate the convict drain before the demolitioin works so that any changes to the tunnel impact assessment can be captured before the construction would be appropriate.	Freecity	H	H	16	The risk remains that the Convict Drain interferes with the design more than it currently does. This could affect the architectural layout.		L
4	D	RBG	Site Extent Covers First and Second Reserve Zone	One third of the site sits on the first and second reserve zone. Structures within the zones may impose additional loads on the metro tunnels.	If the proposed foundation is close to the tunnels and the foundation loads are high, the additional stress and displacement may exceed the values the tunnels allowed for.	M	VH	15	Tower columns are set back from the tunnels to minimise the loads transferring to the tunnels and to be outside of the First Reserve. Also, the heavy plant rooms and water tanks have been moved away from the tunnels to minimise the loads. Finite-element model assessment with data obtained from the site-specific geotechnical investigation has been carried out and concludes that the risk of adverse effects on the metro tunnels is low.	FK/RBG/Douglas Partners	VL	L	2	Nothing significant		L
5	P	RBG	Heavy Duty Crane	Heavy duty crane is required to lift the modules.	Construction loads from the crane supports will be high and may adversely impact on the metro tunnels.	M	M	9	The tower crane will be positioned outside the first and second reserve zone to minimise the construction loads transferring to the tunnels.	Freecity	VL	VL	1	Reassessment required if the crane is relocated back within the second reserve zone		
6	P	RBG	Foundation Construction within the Second Reserve Zone	Construction of piles may induce ground displacement and vibration.	The ground displacement and vibration may affect the structural integrity and operation of the tunnels.	M	H	12	The piles will be at least eight times the pile diameter away from the metro tunnels. Based on the extent of stress bulbs, it is expected there is no adverse impact on the tunnels To avoid soil decompression, high-torque CFA piling rigs or cased-secand piling methods should be used for pile construction. Monitor ground movement at the pre-determined monitoring location to ensure the movement matches expected values.	Freecity/Douglas Partners	M	L	6	Vibration and ground movement induced by the pile construction may have impact on the tunnel.		
7	SID	RBG	Excavation within Second Reserve Zone	Excavation within the second reserve zone may change the stress acting on the tunnels and induce displacement.	Large reduction of stress will induce a large displacement and hence the structural integrity of the tunnels.	M	H	12	No basement has been proposed to minimise the excavation extent. Deep lift pits and substructures are positioned away from the tunnels to minimise excavation. A detailed Sydney Metro Imapct Assessment including a GMA has been undertaken and concludes the risk of adverse effects on the metro tunnels is low.	Freecity	VL	H	4	A low risk remains that construction activity will adversely affect the metro assets. This should be managed on site.		
8	P	RBG	Temporary Shoring Wall Installation within the Second Reserve Zone	Installation of temporary shoring walls within the second reserve zone may induce ground displacement and vibration.	The ground displacement and vibration may affect the structural integrity and operation of the tunnels.	M	H	12	Excavation levels have been minimised through using slim structural solutions. A detailed Sydney Metro Imapct Assessment including a GMA has been undertaken and concludes the risk of adverse effects on the metro tunnels is low. No ground anchors will be used. This can keep the construction further away from the tunnels and minimise disturbance.	Freecity	VL	VL	1	Nothing significant		
9	P	RBG	Unforeseen Underground Structures during Excavation	Unforeseen underground structures during excavation may be encountered during excavation. Drilling and breaking of these hard structures may induce ground displacement and vibration.	The ground displacement and vibration may affect the structural integrity and operation of the tunnels.	M	L	6	Number of piles has been minimised in the Concept Design	Freecity	M	L	6	The risk remains that unknown in ground obstruction exists.		
10	P	RBG	Groundwater Drawdown	If the excavation level is lower than the groundwater table, dewatering will be required.	Ground settlement may occur if the water drawdown is significant	L	M	6	Groundwater was measured 3.5m to 6.2m below ground during ground investigation. Excavation is generally higher than the groundwater except the lift pits. Dewatering is generally not required.	Freecity/RBG/Douglas Partners	L	L	4	Groundwater is higher than measured and dewatering is required.		
11	D	RBG	Dyke Crossing at Bed Rock	A geological dyke has been mapped in the vicinity of the site. Piles should be avoided to be founded on or adjacent to the dyke crossing	Allowable bearing capacity of the dyke crossing and the adjacent rock will be lower and the piles may need to be redesigned.	M	H	12	A geotechnical investigation has been undertaken and recommends the below action. - Predrilling at the pile location before the pile construction. - If required reassess the impacts on the tunnels with the information. - If required relocate the columns or piles if necessary.	RBG/Douglas Partners	L	L	4	Pile depth and location do not align with the assumptions made in Concept Stage.		
12	SID	RBG	Core Lift Pit Location	The excavation for the core pile cap underneath the lift pits is usually deeper than other pile caps.	Deeper excavation may induce larger ground movement and hence may have a bigger impact on the Sydney Metro Tunnels	M	H	12	The lifts inside the core are positioined outside the Second Reserve Zone such that the excavation within the zone is minimised.	FK/RBG/Collective	VL	VL	1	The tower lift pits are located outside the second reserve zone such that the risk to the tunnels are minimal.		

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