

29th October 2021

Joelle Khnouf
Development Assistant
Deicorp Pty Ltd
Level 3/161 Redfern Street,
Redfern NSW 2016

Dear Joelle,

**Showground Station Precinct Development
RE: Development Near Rail Corridor**

Summary

The Protection Zone around rail corridors is divided into two classifications: "First Reserve" and "Second Reserve". Excavation and construction works are generally not possible within the First Reserve, while works within the Second Reserve are normally possible subject to a detailed engineering assessment.

The principle elements for assessment are to confirm the ground loadings and ensure that the rail asset is not adversely affected by the proposed development works. Assessment also entails demonstrating that the presence of the rail will not adversely affect the proposed development (noise, vibration etc.). Other requirements are subject to further assessment.

The relevant document for works around the Sydney Metro rail corridor is the *Sydney Metro Underground Corridor Protection Technical Guidelines (2021)*. These guidelines stipulate the specific requirements and provides technical and procedural guidelines to be followed for new developments near existing and future Sydney Metro rail underground infrastructure during development planning, designing, construction and operating stages.

For the purpose of assessing the effects of adjacent proposed developments, the Guideline defines underground metro infrastructures to include, but is not limited to, the following:

- running tunnels and interconnecting cross passages
- station caverns and adits
- crossover caverns
- station boxes and shafts
- nozzle enlargements
- spur tunnel junctions
- services facility shafts and
- dive and portal structures.

Proposed Development

The proposed Doran Drive Showground Precinct Development is adjacent to an underground section of the Sydney Metro Northwest.

Figures 4.1 and 4.2 in *Sydney Metro Underground Corridor Protection Technical Guidelines (2021)* sets out the zones that form the First Reserve and Second Reserve around Underground Metro infrastructure.

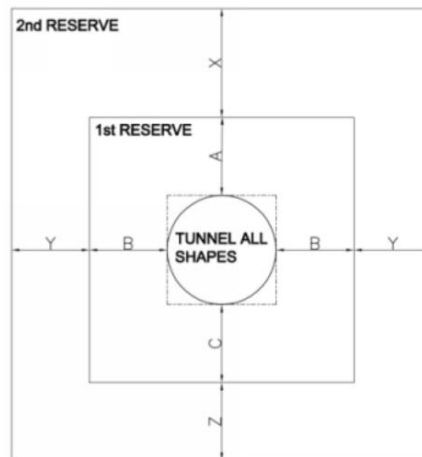


Figure 1: Guideline Figure 4.1 (Protection Reserves for Metro Tunnels and Caverns)

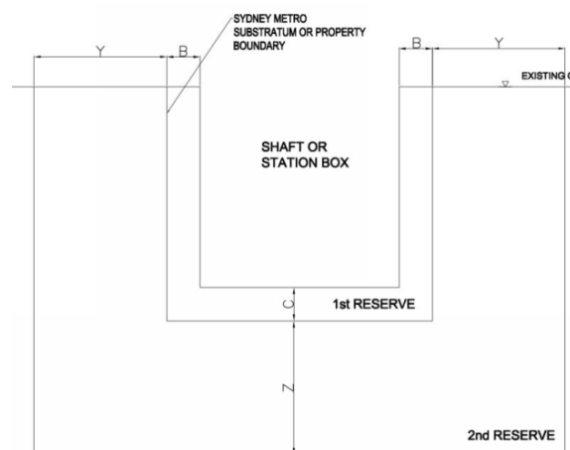


Figure 2: Guideline Figure 4.2 Protection Reserves for shafts and station boxes

Furthermore tables 4.1 to 4.4 in *Sydney Metro Underground Corridor Protection Technical Guidelines (2021)* define the first and second reserves as follows. Those relevant to Doran Drive have been highlighted below.

First Reserve Boundary	Tunnel Reserve Dimension (m)	Station Box reserve Dimension (m)
Top (A)	The greater of the following: • 5 m from the crown of tunnel or cavern or • Support zone based on $\frac{1}{3}$* tunnel width plus • 1 metre ($\frac{1}{3}W+1$) or • Extent of Sydney Metro substratum above crown	
Side (B)	The greater of the following: • 5 m from side wall of tunnel or cavern or • Lateral extent of Sydney Metro substratum	• Lateral extent of Sydney Metro substratum or property boundary

Bottom (C)	The greater of the following: • 5 m below the invert of the tunnel or cavern or • Extent of Sydney Metro substratum below invert	The greater of the following: • 5 m below the invert of the shafts or boxes or • Extent of Sydney Metro substratum below invert
Second Reserve Boundary		
Top (A+X)	The greater of the following: • $1.5 \times (W+H)$ or • $A + 25$ or • Where 'W' and 'H' are width and height of the existing rail tunnel	N/A
Side (B+Y)	The greater of the following: • W or • $B + 25$	• $B + 25$
Bottom (C+Z)	$C + 1.5 \times (W_n + H_n)$ Where 'W _n ' and 'H _n ' are width and height of new tunnel under the existing metro tunnel or cavern	• $B + 25$

The proposed Doran Drive Showground Precinct Development is located outside the Protection Zone of the underground Metro infrastructure. The development boundary measures approximately 40 metres from the mapped centreline of the dual track structure (SixMaps). The lateral offset from the property boundary of the Metro is approximately 26m. This exceeds the First and Second Reserve offsets – noting tunnel and metro box infrastructure are understood from architectural Plan (DA-310-501 Rev 01) not to exceed the northern property boundary of the station property (Lot 50 DP1253217). A visual representation is shown below in Figure 3.

Due to the distance from the metro property boundary, the proposed development site:

- Is not located within the protection reserve.

Final building design should confirm no portion of the structural design ingress into the 1st or 2nd reserve – or identify and evaluate any potential impacts as set out in *Sydney Metro Underground Corridor Protection Technical Guidelines (2021)*. The development of this future precinct was considered as a part of the Showground Station design and the adjacent roads and frontages are already completed.

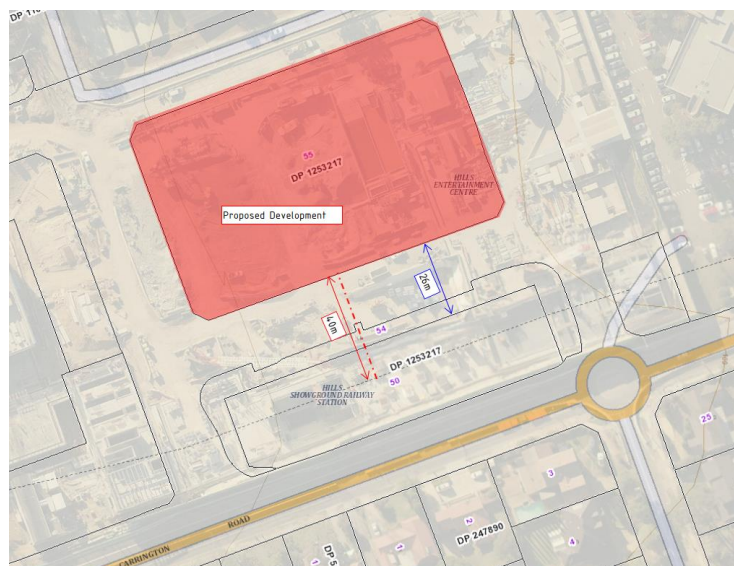


Figure 3: Distance of proposed development from track centreline and property boundary

It is recommended that construction access to the proposed development off Mandala Parade is limited for as far as practicable and that the key elements of the *Sydney Metro Underground Corridor Protection Technical Guidelines (2021)* Sections 7, 8 and 9 are incorporated into the Construction Management Plan.

If you require any further information, please don't hesitate to contact me on the details below.

Yours faithfully



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