

Ref: SY222286-00-ST-LE3-1
 24 February 2023

Peter Antoniou
 C & M Antoniou Pty Ltd
 7 Yulong Close
 Sydney NSW 2170

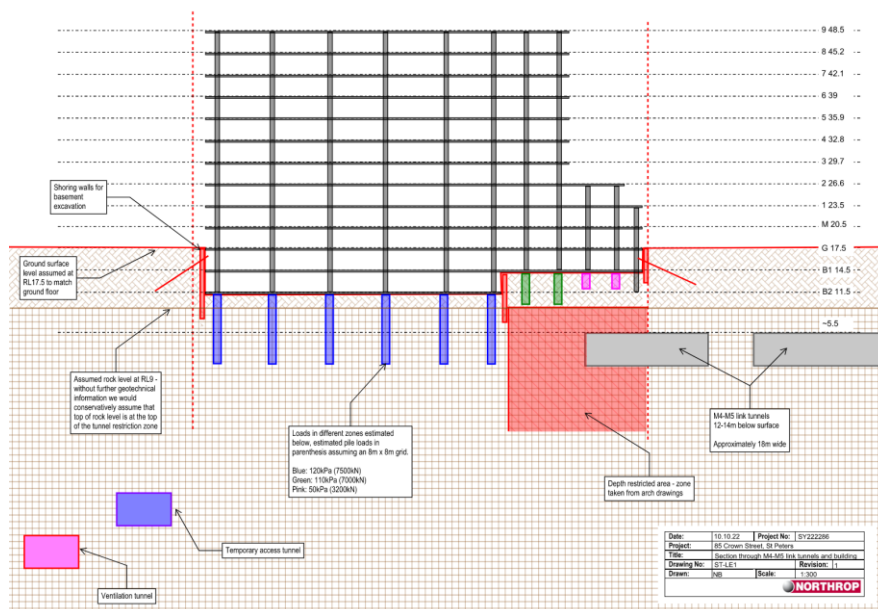
Dear Peter,

Re: 75-85 Crown Street and 116 Princess Highway, St Peters – Review of building relationship to M4-M5 link tunnels

This letter is a summary of the structural engineering investigations and enquiries regarding the relationship between the proposed project at 75-85 Crown Street and 116 Princess Highway, St Peters, and the M4-M5 link tunnels as part of our engagement to C & M Antoniou.

The project consists of a 2 storey basement, with 10 levels of residential units above. The M4-M5 link tunnels encroach within the eastern site boundary; above the tunnels the basement depth is limited to one storey and there are 3 residential levels above. There are also ventilation and temporary access tunnels adjacent to the western site boundary.

Documentation was prepared by Northrop to describe the relationship between the proposed building and the tunnels, and preliminary estimates of loading were prepared. This documentation was issued to Transport for NSW (TfNSW) for comment.



Section through tunnels and building prepared by Northrop (see Appendix A)

TfNSW, provided return comments which required that as part of any future development application, an engineering appraisal would need to be prepared and issued for their review and assessment to ensure load limits, depth and ground movements during excavation can be withstood by the tunnels. This engineering assessment has not been carried out, but will need to be carried out by a

geotechnical engineer to confirm that the proposed development does not adversely impact the tunnels.

We note that the tunnels are situated within the bedrock. This is favourable for the development, as the stiffness of the rock would indicate that it is less likely for the excavation and piling loads to cause excessive movement of the tunnel excavations or damage the linings. These movements and stresses in the linings will need to be confirmed in detail in the engineering assessment.

Although this cannot be taken directly as an approval of the proposed development and there may be some limitations on the development imposed by TfNSW, in their correspondence TfNSW has not noted that any part of the proposed development is expressly forbidden by TfNSW guidelines.

Yours faithfully,

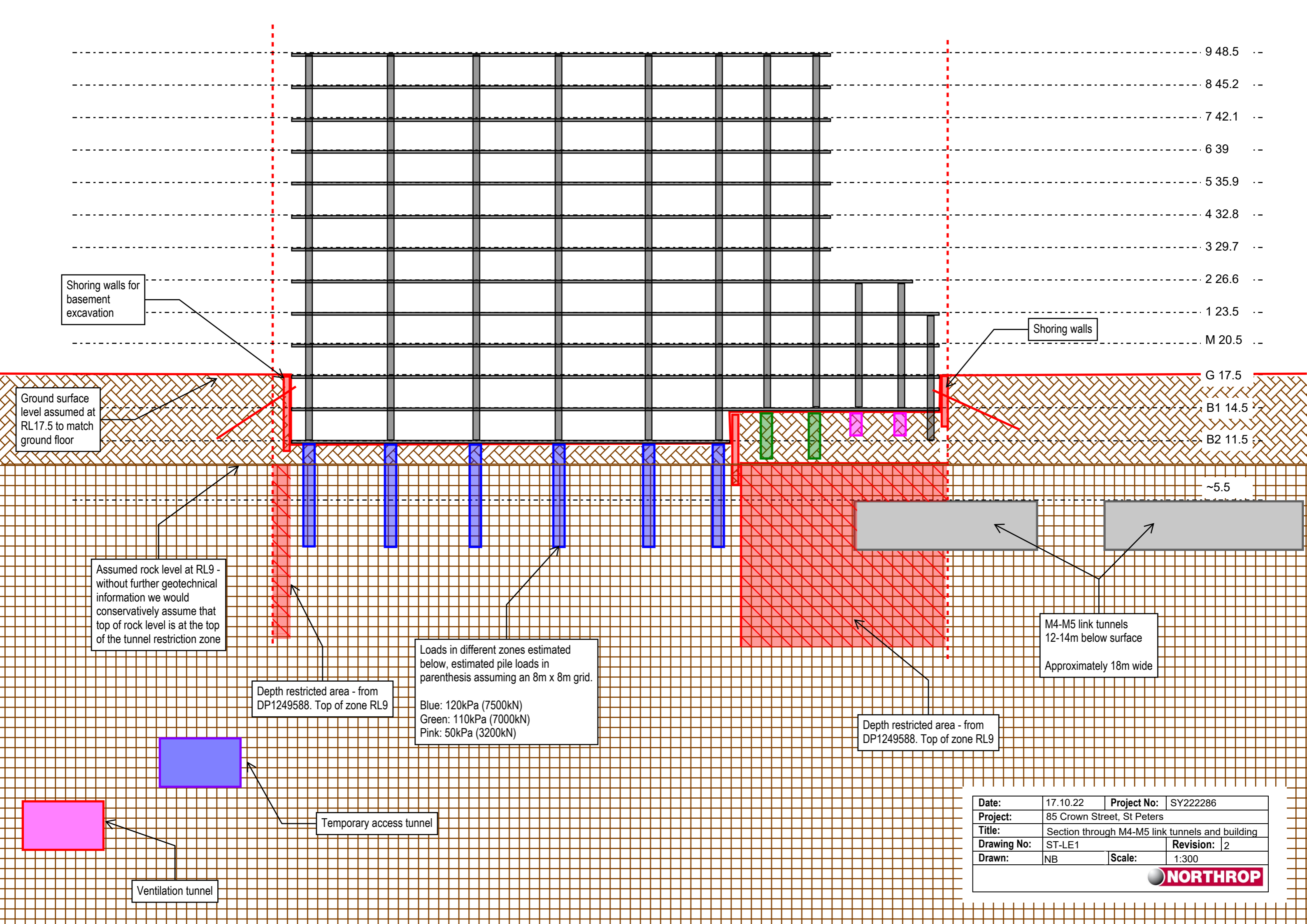
A handwritten signature in blue ink, appearing to be "N. Boey", with a light blue glow effect around the lines.

Nicholas Boey

Principal | Structural Engineer
BE (Civil) (Hons) BDesArch MIEAust CPEng NER

On behalf of Northrop Consulting Engineers Pty Ltd

Appendix A – Section through development



9 48.5
 8 45.2
 7 42.1
 6 39
 5 35.9
 4 32.8
 3 29.7
 2 26.6
 1 23.5
 M 20.5
 G 17.5
 B1 14.5
 B2 11.5

Shoring walls for basement excavation

Shoring walls

Ground surface level assumed at RL 17.5 to match ground floor

Assumed rock level at RL9 - without further geotechnical information we would conservatively assume that top of rock level is at the top of the tunnel restriction zone

Depth restricted area - from DP1249588. Top of zone RL9

Loads in different zones estimated below, estimated pile loads in parenthesis assuming an 8m x 8m grid.
 Blue: 120kPa (7500kN)
 Green: 110kPa (7000kN)
 Pink: 50kPa (3200kN)

Depth restricted area - from DP1249588. Top of zone RL9

M4-M5 link tunnels 12-14m below surface
 Approximately 18m wide

Temporary access tunnel

Ventilation tunnel

Date:	17.10.22	Project No:	SY222286
Project:	85 Crown Street, St Peters		
Title:	Section through M4-M5 link tunnels and building		
Drawing No:	ST-LE1	Revision:	2
Drawn:	NB	Scale:	1:300

