MELBOURNE METRO RAIL PROJECT ENVIRONMENT EFFECTS STATEMENT INQUIRY AND ADVISORY COMMITTEE

MMRA TECHNICAL NOTE

TECHNICAL NOTE NUMBER:	061
DATE:	26 September 2016
PRECINCT:	CBD North and Western Portal
EES/MAP BOOK REFERENCE:	N/A
SUBJECT:	Response to the 'Matters for further consideration and/or clarification' request dated 12 September 2016 (vi) Lloyd Street Temporary Access Ramp

NOTE:

1. This Technical Note has been prepared with the assistance of AJM to respond to issues raised by the Inquiry and Advisory Committee (**"IAC"**) in the 'Matters for further consideration and/or clarification' request dated 12 September 2016.

2. For ease of reference, this Technical Note sets out each relevant request made by the IAC followed by a response from MMRA.

Request:

3. The IAC has requested:

   Whether the increase in consolidation is likely to be caused by the construction of the possible Lloyd Street temporary access (earthen) ramp and whether consequent ground movement effects on nearby residential and commercial properties has been assessed.

Response:

4. The temporary access ramp at the rear of the 50 Lloyd Street Business Estate, discussed in Technical Note 009, would provide access from Tennyson Street to Bakehouse Drive within the business estate.

5. At Tennyson Street, the ground conditions adjacent to the Melbourne Metro rail alignment comprise a layer of fill overlying basalt of the Older Volcanics. Groundwater has been encountered at levels approximately 7 m below the surface level of the business estate. These aspects are shown in Figure 1 in Attachment A, which consists of extracts from the Interpreted Geological Setting EES Summary Report – July 2016 Update. While no investigations have been conducted for the Project towards the northern side of the business estate, the regional model indicates that ground conditions similar to those adjacent to the rail alignment extend to the north.

6. Given these conditions, excavation into the existing slope between Tennyson Street and the business estate would be expected to have no effect on the groundwater table, and therefore there would be no consolidation due to drawdown of the groundwater.

7. Two options for the construction of the proposed ramp are described in Technical Note 048; building the ramp between retaining walls formed by piles or the use of a reinforced earth retaining wall in front of the existing slope.

8. Under the first option, the ramp would be formed by cutting into the existing batter which separates the level area of the estate from the higher levels of Tennyson Street. Opposite Altona Street, the level difference is approximately 3 m. This difference increases as Tennyson Street rises to the north-east. The position of the ramp would mean that there is only minor filling required, and the net effect would be an 'unloading'. It is not expected that the unloading would have any effect on the adjacent residential buildings on the western side of Tennyson Street, nor on the industrial buildings in the business estate.

9. With regard to the movement behind the retaining wall, the predicted ground movements associated with the deeper cut and cover structure under Childers Street have been reviewed for guidance. The cut and cover tunnels would be in similar ground conditions, although deeper. The ground movement predictions for the cut and cover tunnels are shown in Figure 2. The width of the road reserve in Tennyson Street is approximately 16 m, and this is greater than the offset from the cut and cover wall to the 5 mm settlement contour in the Childers Street assessments. Therefore, the settlement effects on the residences on the western side of Tennyson Street are expected to be negligible.

10. The option for the reinforced earth ramp in front of the existing slope has not been described in any detail in Technical Note 048. However, the level information indicates that the ramp would be approximately 3 m high at the southern end, reducing in height to the north. As the ramp would be over 10 m from the industrial buildings of the business estate, with the deeper strata under the possible surface fill being rock, the effects on the industrial buildings are expected to be negligible.

11. Consequently, while the potential ground movement effects from the temporary access ramp for the 50 Lloyd Street Business Estate have not been assessed formally for the EES, an overview of the ramp options and the expected ground conditions indicates that any impacts on the residences in Tennyson Street, and the industrial buildings in the business park are expected to be negligible.

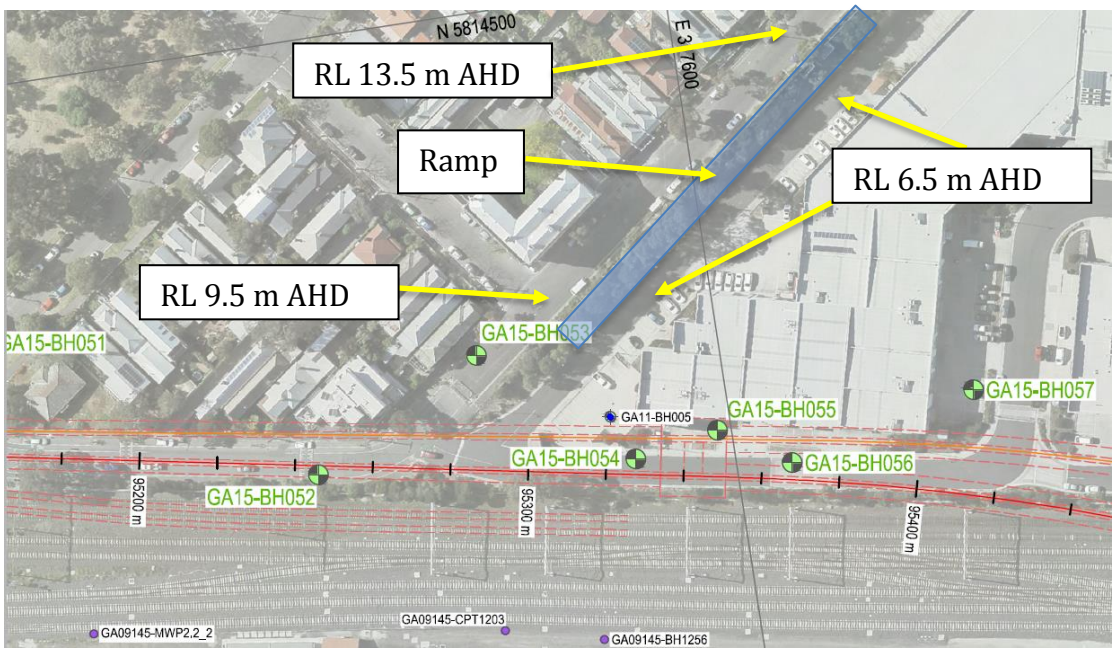
CORRESPONDENCE:

No correspondence.

ATTACHMENTS:

A. Figure 1 Extracts from Geological Long Section Drg 1525532-331-R-003 with plan marked up to show current approximate surface levels and the position of the proposed temporary access ramp &
Figure 2 Extract from Ground Movement and Land Stability report, MMR-AJM-UGAA-DR-NN-500431, Settlement Contours, Sheet 2 of 15.

Attachment A



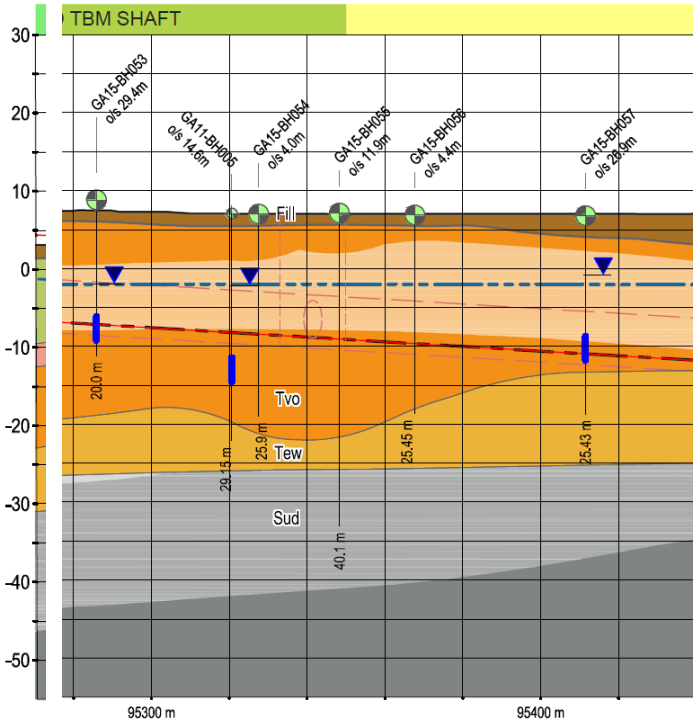


Figure 1 Extracts from Geological Long Section Drg 1525532-331-R-003 with plan showing current approximate surface levels

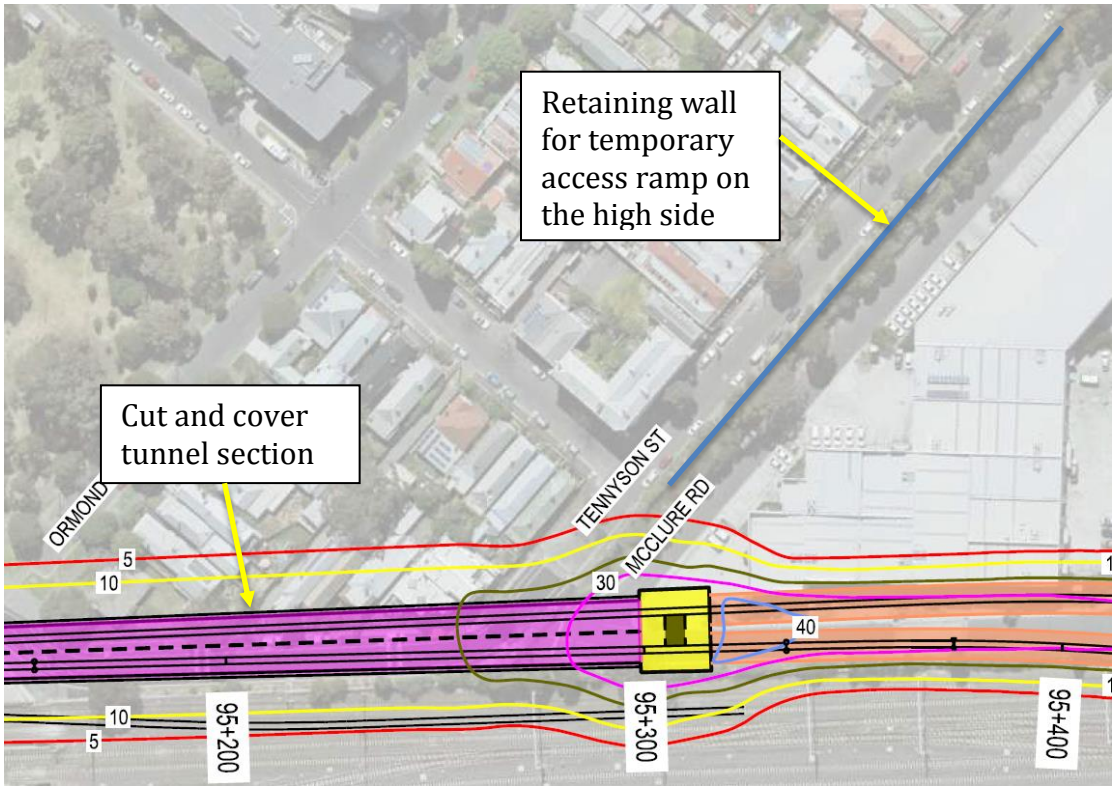


Figure 2 Extract from Ground Movement and Land Stability report, MMR-AJM-UGAA-DR-NN-500431, Settlement Contours, Sheet 2 of 15, marked up to show the line of the retaining high-side wall of the retaining wall option for the ramp