

3 June 2016

Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Attention: Simon Truong

Dear Sir/Madam,

**CBD RAIL LINK (ZONE B – TUNNEL) – 175-177 CLEVELAND STREET AND 1-5
WOODBURN STREET, REDFERN (SSD 15_7064)**

I am writing to you concerning the above State Significant Development Application that was referred to Sydney Trains.

It is understood that the development, the subject of this State Significant Development Application (SSD), involves a Mixed Use Hotel, Residential and Retail development at 175-177 Cleveland Street and 1-5 Woodburn Street, Redfern for a part 5 part 6 storey building containing one retail tenancy facing Eveleigh Street; hotel accommodation with 78 rooms facing Cleveland Street and Eveleigh Street and associated retail shop; and a residential flat building containing 29 apartments facing Woodburn Street.

Whilst this proposal does not trigger the need for concurrence in accordance with Clauses 86 and Clause 88 of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP). Sydney Trains nonetheless has taken into account the statutory requirements under these provisions in its assessment of the proposed development.

There are concerns about the potential impacts of the proposed development on the structural integrity and the safe, effective operation and maintenance of the proposed CBDRL and existing rail corridor. The placing of any foundations, other structures and building loads in or near these corridors may affect the structural integrity and operation of these corridors.

In this regard, Sydney Trains has taken the above matters into consideration and requests that your Department impose the conditions provided in Attachment A.

Should you have any questions or require additional information, please contact me on 8575 0780 (in relation to the existing corridor) or Denise Thornton on (02) 8667 8668 or dthornton@mecone.com.au (in relation to the CBDRL)

Yours sincerely



Jim Tsirimiagos
Town Planning Manager

Attachment A

CBD Rail Link (Zone B – Tunnel)

1. The following items are to be submitted to Transport for NSW in relation to the proposed CBDRL for review and endorsement prior to the issuing of a Construction Certificate:
 - a. All structures must be designed, constructed and maintained so as to avoid any damage or other interference, which may occur as a result of noise and vibration from (future) railway operations. The Acoustic Report must be updated to consider noise and vibration from a future underground rail tunnel alignment. The Proponent must incorporate in the development all the measures recommended in the report.
 - b. The design and construction of the basement levels, foundations and ground anchors for the approved development are to be completed to the satisfaction of TfNSW. The developer shall develop their foundation design, and any encroachment into Exclusion Zones 4 and 5 must comply with the limitations of the Structure Exclusion Zones as indicated in drawing 482749-281 Rev 1. Cross sectional drawings showing the proposed basement excavation and structural design of sub ground support adjacent to the rail corridor should be included for the proposed foundations. All ground anchors and rockbolts within the CBDRL protection zone adjacent to the bulk excavation face shall be temporary anchors, of removable type or fibreglass type, to avoid obstruction of any future CBDRL construction.
 - c. A Geotechnical or Structural engineer is to verify that movements and stresses of the ground/structure interaction are within expected limitations for the proposed foundations, the rail corridor rock mass and the future excavation of the rail tunnels. The ground/structure interaction modelling and analysis should be completed using appropriate empirical and/or numerical methods (e.g. finite element analysis).
2. All structures must be designed, constructed and maintained so as to avoid any damage or other interference, which may occur as a result of stray electrical currents, electromagnetic effects and the like from railway operations.
3. Any contamination issues encountered during the development of the site (e.g. demolition of existing structure) are to be resolved taking cognizance of the future railway (tunnel alignment).

4. All structures must be designed, constructed and maintained so as to ensure that liquids and gases cannot transfer into the Proposed Rail Link.
5. All structures must be designed, constructed and maintained so as to allow for the future demolition of any part of the project without damaging or otherwise interfering with the Proposed Rail Link or rail operations in any location. Where a part of the structure is to be retained because its demolition would damage or otherwise interfere with the Proposed Rail Link and train operations, that part of the structure must have a minimum design life of 100 years.
6. No modifications may be made to the approved design without the consent of TfNSW.
7. TfNSW, and persons authorised by it for this purpose, are entitled to inspect the site of the approved development and all structures to enable it to consider whether those structures on that site have been or are being constructed and maintained in accordance with these conditions of consent, on giving reasonable notice to the principal contractor for the approved development or the owner or occupier of the part of the site to which access is sought.

Existing Rail Corridor

1. The following items are to be submitted to Sydney Trains in relation to the existing corridor for review and endorsement prior to the issuing of a Construction Certificate:
 - *Geotechnical and Structural report/drawings that meet Sydney Trains requirements. The Geotechnical Report must be based on actual borehole testing conducting on the site closest to the rail corridor.*
 - *Construction methodology with construction details pertaining to structural support during excavation. The Applicant is to be aware that Sydney Trains will not permit any rock anchors/bolts (whether temporary or permanent) within its land or easements.*
 - *Cross sectional drawings showing the tunnel easement, tunnel location, sub soil profile, proposed basement excavation and structural design of sub ground support adjacent to the rail corridor. All measurements are to be verified by a Registered Surveyor.*
 - *Detailed Survey Plan showing the relationship of the proposed developed with respect to Sydney Trains easement and tunnel location.*
 - *If required by Sydney Trains, an FE analysis which assesses the different stages of loading-unloading of the site and its effect on the rock mass surrounding the rail corridor.*

Any conditions issued as part of Sydney Trains approval/certification of the above documents will also form part of the consent conditions that the Applicant is required to comply with.

2. If required by Sydney Trains, prior to the commencement of works, prior to the issue of the Occupation Certificate, or at any time during the excavation and construction period deemed necessary by Sydney Trains, a joint inspection of the rail infrastructure and property in the vicinity of the project is to be carried out by representatives from Sydney Trains and the Applicant. These dilapidation surveys will establish the extent of any existing damage and enable any deterioration during construction to be observed. The submission of a detailed dilapidation report will be required unless otherwise notified by Sydney Trains.
3. An acoustic assessment is to be submitted to Council prior to the issue of a construction certificate demonstrating how the proposed development will comply with the Department of Planning's document titled "Development Near Rail Corridors and Busy Roads- Interim Guidelines".
4. Prior to the issue of a Construction Certificate the Applicant is to engage an Electrolysis Expert to prepare a report on the Electrolysis Risk to the development from stray currents. The Applicant must incorporate in the development all the measures recommended in the report to control that risk. A copy of the report is to be provided to the Principal Certifying Authority with the application for a Construction Certificate.
5. The design, installation and use of lights, signs and reflective materials, whether permanent or temporary, which are (or from which reflected light might be) visible from the rail corridor must limit glare and reflectivity to the satisfaction of Sydney Trains. The Principal Certifying Authority is not to issue the Construction Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied.
6. If required by Sydney Trains, prior to the issue of a Construction Certificate a Risk Assessment/Management Plan and detailed Safe Work Method Statements (SWMS) for the proposed works are to be submitted to Sydney Trains for review and comment on the impacts on rail corridor. The Principal Certifying Authority is not to issue the Construction Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied.
7. If required by Sydney Trains, a track monitoring plan (including instrumentation and the monitoring regime during excavation and construction phases) is to be submitted to Sydney Trains for review and endorsement prior to the issuing of a Construction Certificate. The Principal Certifying Authority is not to issue a Construction Certificate until

written confirmation has been received from Sydney Trains advising of the need to undertake the track monitoring plan, and if required, that it has been endorsed.

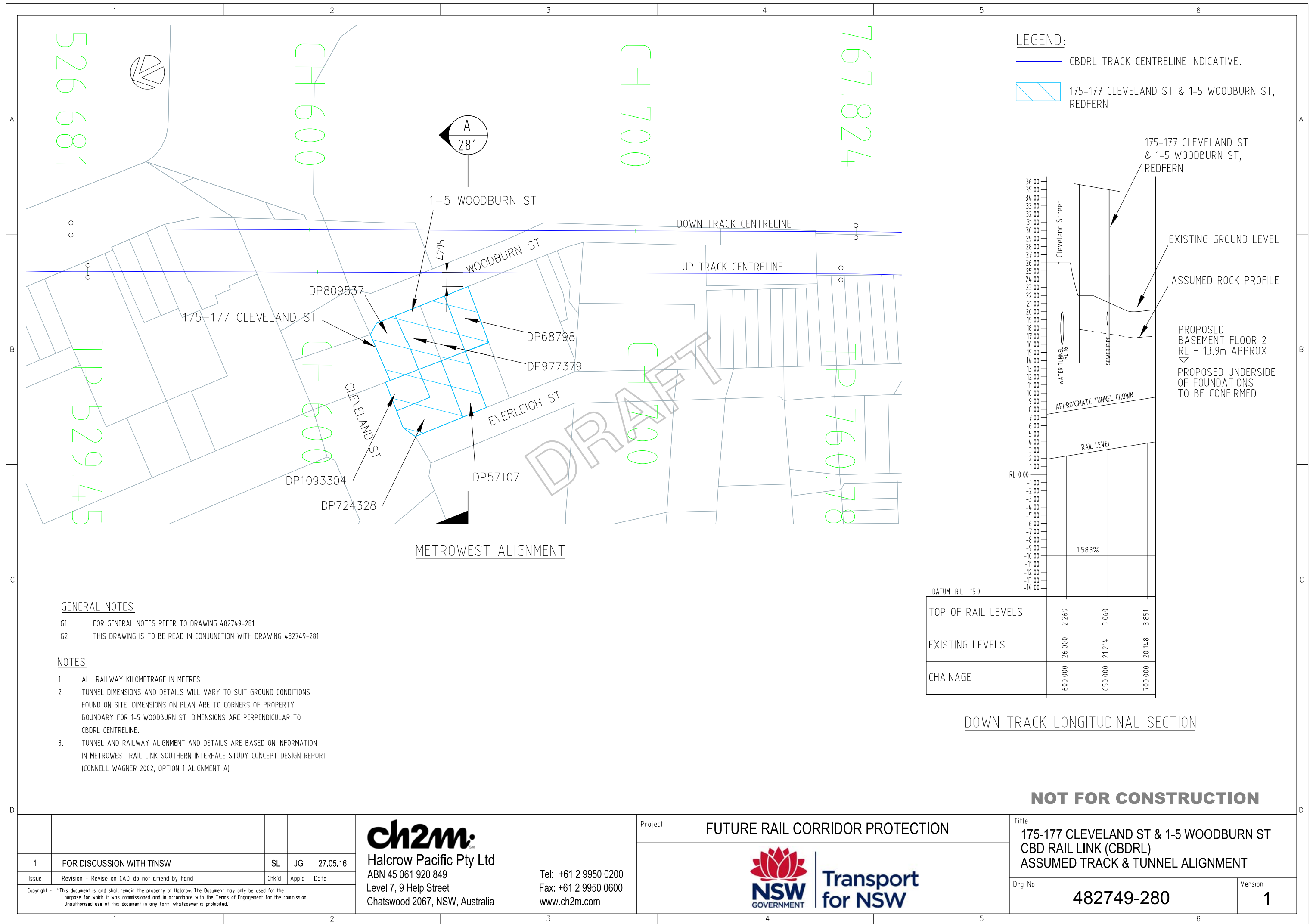
8. Unless advised by Sydney Trains in writing, all excavation, shoring and piling works within 25m of the rail corridor are to be supervised by a geotechnical engineer experienced with such excavation projects.
9. No rock anchors/bolts are to be installed into Sydney Trains property or easements.
10. Prior to the issuing of an Occupation Certificate the Applicant is to submit as-built drawings to Sydney Trains and Council. The as-built drawings are to be endorsed by a Registered Surveyor confirming that there has been no encroachment into Sydney Trains property or easements, unless agreed to be these authorities. The Principal Certifying Authority is not to issue the final Occupation Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied
11. Prior to the issue of a Construction Certificate the Applicant is to contact Sydney Trains Rail Corridor Management Group to determine the need for public liability insurance cover. If insurance cover is deemed necessary this insurance be for sum as determined by Sydney Trains and shall not contain any exclusion in relation to works on or near the rail corridor, rail infrastructure. The Applicant is to contact Sydney Trains Rail Corridor Management Group to obtain the level of insurance required for this particular proposal. Prior to issuing the Construction Certificate the Principal Certifying Authority must witness written proof of this insurance in conjunction with Sydney Trains written advice to the Applicant on the level of insurance required.
12. Prior to the issue of a Construction Certificate the Applicant is to contact Sydney Trains Rail Corridor Management Group to determine the need for the lodgement of a Bond or Bank Guarantee for the duration of the works. The Bond/Bank Guarantee shall be for the sum determined by Sydney Trains. Prior to issuing the Construction Certificate the Principal Certifying Authority must witness written advice from Sydney Trains confirming the lodgement of this Bond/Bank Guarantee.
13. Sydney Trains or Transport for NSW (TfNSW), and persons authorised by those entities for the purpose of this condition, are entitled to inspect the site of the development and all structures to enable it to consider whether those structures have been or are being constructed and maintained in accordance with the approved plans and these conditions of consent, on giving reasonable notice to the principal contractor for the development or the owner or occupier of the part of the site to which access is sought.

14. Prior to the issuing of a Construction Certificate the Applicant is to submit to Sydney Trains a plan showing all craneage and other aerial operations for the development and must comply with all Sydney Trains requirements. If required by Sydney Trains, the Applicant must amend the plan showing all craneage and other aerial operations to comply with all Sydney Trains requirements. The Principal Certifying Authority is not to issue the Construction Certificate until written confirmation has been received from the Sydney Trains confirming that this condition has been satisfied.
15. Copies of any certificates, drawings, approvals/certification or documents endorsed by, given to or issued by Sydney Trains must be submitted to Council for its records prior to the issuing of a Construction Certificate.
16. Any conditions issued as part of Sydney Trains approval/certification of any documentation for compliance with the Sydney Trains conditions of consent, those approval/certification conditions will also form part of the consent conditions that the Applicant is required to comply with.

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Attachment B

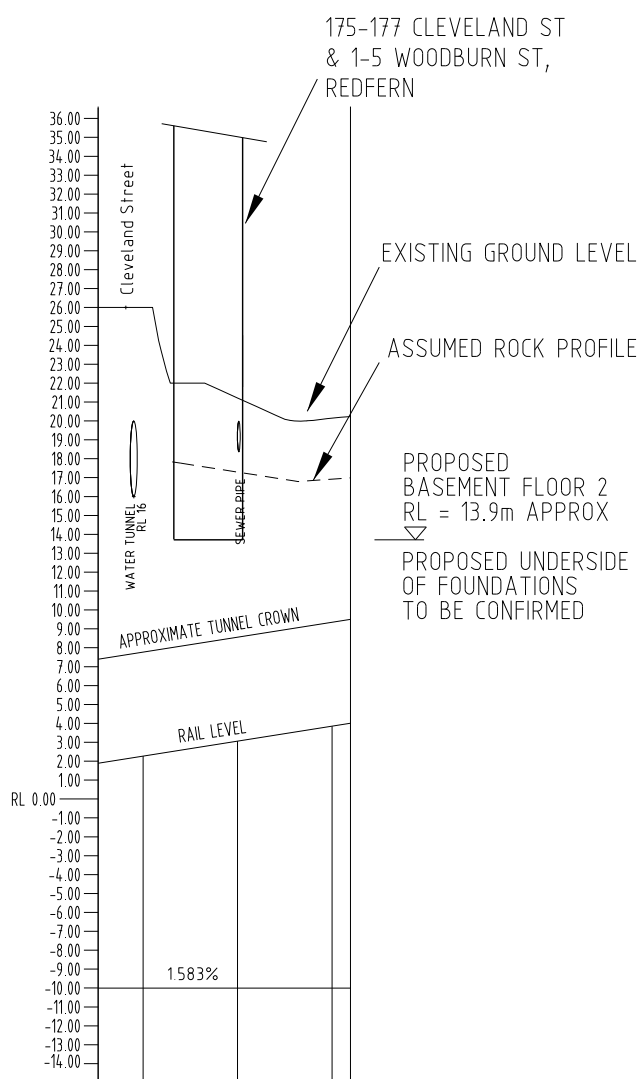
Drawings 482749-281 Rev 1 and 482749-281 Rev 1



LEGEND:

— CBDRL TRACK CENTRELINE INDICATIVE.

175-177 CLEVELAND ST & 1-5 WOODBURN ST, REDFERN



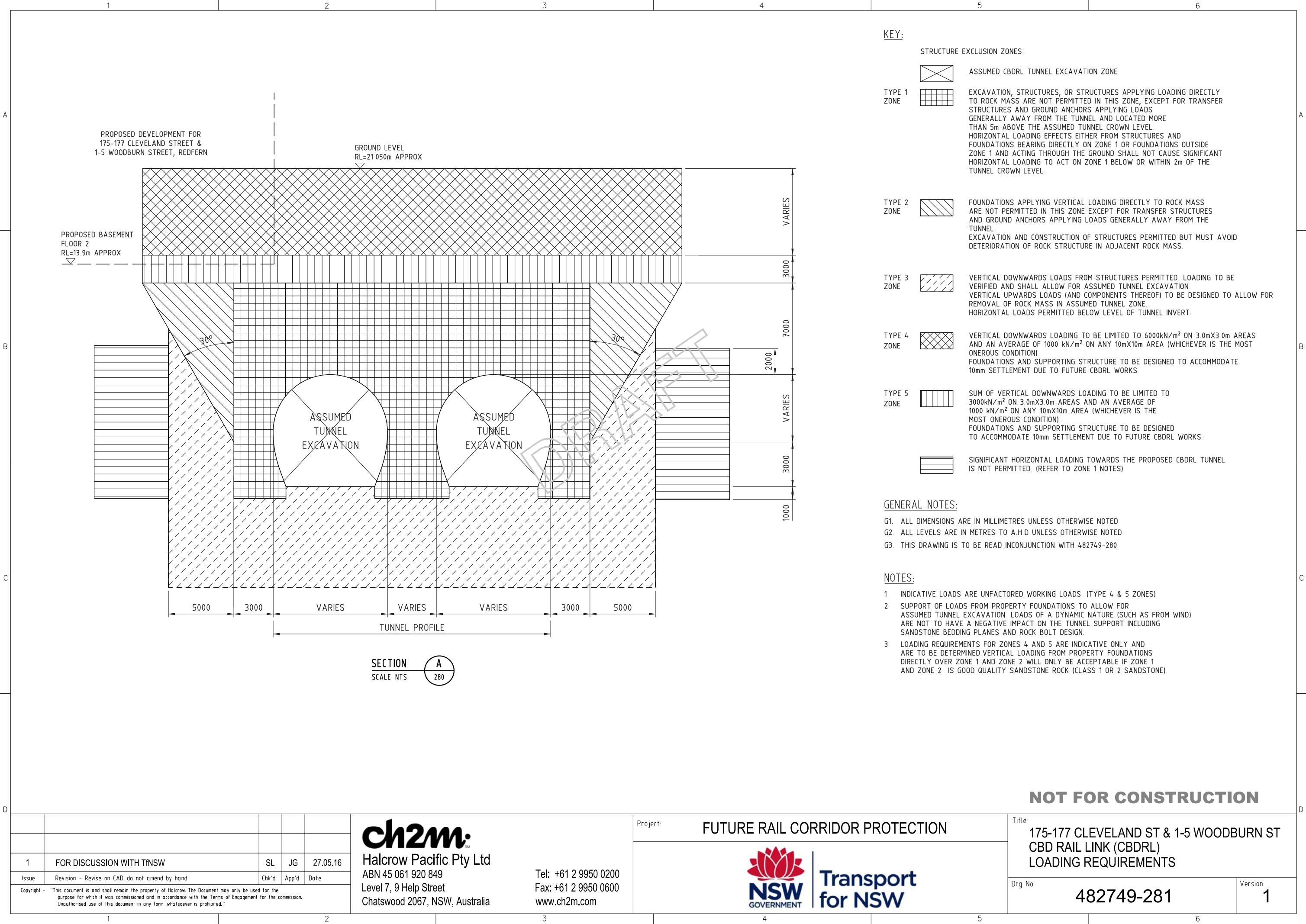
TOP OF RAIL LEVELS	2 269	3 060	3 851
EXISTING LEVELS	26 000	21 214	20 148
CHAINAGE	600 000	650 000	700 000

DOWN TRACK LONGITUDINAL SECTION

- GENERAL NOTES:
- G1. FOR GENERAL NOTES REFER TO DRAWING 482749-281
- G2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING 482749-281.
- NOTES:
- ALL RAILWAY KILOMETRAGE IN METRES.
 - TUNNEL DIMENSIONS AND DETAILS WILL VARY TO SUIT GROUND CONDITIONS FOUND ON SITE. DIMENSIONS ON PLAN ARE TO CORNERS OF PROPERTY BOUNDARY FOR 1-5 WOODBURN ST. DIMENSIONS ARE PERPENDICULAR TO CBDRL CENTRELINE.
 - TUNNEL AND RAILWAY ALIGNMENT AND DETAILS ARE BASED ON INFORMATION IN METROWEST RAIL LINK SOUTHERN INTERFACE STUDY CONCEPT DESIGN REPORT (CONNELL WAGNER 2002, OPTION 1 ALIGNMENT A).

NOT FOR CONSTRUCTION

<div> <div> <div>1</div> <div>FOR DISCUSSION WITH TfNSW</div> <div>SL</div> <div>JG</div> <div>27.05.16</div> </div> <div> <div>Issue</div> <div>Revision - Revise on CAD do not amend by hand</div> <div>Chk'd</div> <div>App'd</div> <div>Date</div> </div> </div>					<div> <div> <div>ch2m</div> <div>Halcrow Pacific Pty Ltd</div> <div>ABN 45 061 920 849</div> <div>Level 7, 9 Help Street</div> <div>Chatswood 2067, NSW, Australia</div> </div> <div> <div>Tel: +61 2 9950 0200</div> <div>Fax: +61 2 9950 0600</div> <div>www.ch2m.com</div> </div> </div>		<div> <div>Project:</div> <div>FUTURE RAIL CORRIDOR PROTECTION</div> </div>		<div> <div>Title</div> <div>175-177 CLEVELAND ST & 1-5 WOODBURN ST CBD RAIL LINK (CBDRL) ASSUMED TRACK & TUNNEL ALIGNMENT</div> </div>	
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KEY:

- STRUCTURE EXCLUSION ZONES:
- TYPE 1 ZONE
- TYPE 2 ZONE
- TYPE 3 ZONE
- TYPE 4 ZONE
- TYPE 5 ZONE
- ASSUMED CBDRL TUNNEL EXCAVATION ZONE
- EXCAVATION, STRUCTURES, OR STRUCTURES APPLYING LOADING DIRECTLY TO ROCK MASS ARE NOT PERMITTED IN THIS ZONE, EXCEPT FOR TRANSFER STRUCTURES AND GROUND ANCHORS APPLYING LOADS GENERALLY AWAY FROM THE TUNNEL AND LOCATED MORE THAN 5m ABOVE THE ASSUMED TUNNEL CROWN LEVEL. HORIZONTAL LOADING EFFECTS EITHER FROM STRUCTURES AND FOUNDATIONS BEARING DIRECTLY ON ZONE 1 OR FOUNDATIONS OUTSIDE ZONE 1 AND ACTING THROUGH THE GROUND SHALL NOT CAUSE SIGNIFICANT HORIZONTAL LOADING TO ACT ON ZONE 1 BELOW OR WITHIN 2m OF THE TUNNEL CROWN LEVEL.
- FOUNDATIONS APPLYING VERTICAL LOADING DIRECTLY TO ROCK MASS ARE NOT PERMITTED IN THIS ZONE EXCEPT FOR TRANSFER STRUCTURES AND GROUND ANCHORS APPLYING LOADS GENERALLY AWAY FROM THE TUNNEL. EXCAVATION AND CONSTRUCTION OF STRUCTURES PERMITTED BUT MUST AVOID DETERIORATION OF ROCK STRUCTURE IN ADJACENT ROCK MASS.
- VERTICAL DOWNWARDS LOADS FROM STRUCTURES PERMITTED. LOADING TO BE VERIFIED AND SHALL ALLOW FOR ASSUMED TUNNEL EXCAVATION. VERTICAL UPWARDS LOADS (AND COMPONENTS THEREOF) TO BE DESIGNED TO ALLOW FOR REMOVAL OF ROCK MASS IN ASSUMED TUNNEL ZONE. HORIZONTAL LOADS PERMITTED BELOW LEVEL OF TUNNEL INVERT.
- VERTICAL DOWNWARDS LOADING TO BE LIMITED TO 6000kN/m² ON 3.0mX3.0m AREAS AND AN AVERAGE OF 1000 kN/m² ON ANY 10mX10m AREA (WHICHEVER IS THE MOST ONEROUS CONDITION). FOUNDATIONS AND SUPPORTING STRUCTURE TO BE DESIGNED TO ACCOMMODATE 10mm SETTLEMENT DUE TO FUTURE CBDRL WORKS.
- SUM OF VERTICAL DOWNWARDS LOADING TO BE LIMITED TO 3000kN/m² ON 3.0mX3.0m AREAS AND AN AVERAGE OF 1000 kN/m² ON ANY 10mX10m AREA (WHICHEVER IS THE MOST ONEROUS CONDITION). FOUNDATIONS AND SUPPORTING STRUCTURE TO BE DESIGNED TO ACCOMMODATE 10mm SETTLEMENT DUE TO FUTURE CBDRL WORKS.
- SIGNIFICANT HORIZONTAL LOADING TOWARDS THE PROPOSED CBDRL TUNNEL IS NOT PERMITTED. (REFER TO ZONE 1 NOTES)

GENERAL NOTES:

- G1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED
- G2. ALL LEVELS ARE IN METRES TO A.H.D UNLESS OTHERWISE NOTED
- G3. THIS DRAWING IS TO BE READ INCONJUNCTION WITH 482749-280.

NOTES:

1. INDICATIVE LOADS ARE UNFACTORED WORKING LOADS. (TYPE 4 & 5 ZONES)
2. SUPPORT OF LOADS FROM PROPERTY FOUNDATIONS TO ALLOW FOR ASSUMED TUNNEL EXCAVATION. LOADS OF A DYNAMIC NATURE (SUCH AS FROM WIND) ARE NOT TO HAVE A NEGATIVE IMPACT ON THE TUNNEL SUPPORT INCLUDING SANDSTONE BEDDING PLANES AND ROCK BOLT DESIGN.
3. LOADING REQUIREMENTS FOR ZONES 4 AND 5 ARE INDICATIVE ONLY AND ARE TO BE DETERMINED VERTICAL LOADING FROM PROPERTY FOUNDATIONS DIRECTLY OVER ZONE 1 AND ZONE 2 WILL ONLY BE ACCEPTABLE IF ZONE 1 AND ZONE 2 IS GOOD QUALITY SANDSTONE ROCK (CLASS 1 OR 2 SANDSTONE).

NOT FOR CONSTRUCTION

1	FOR DISCUSSION WITH TfNSW	SL	JG	27.05.16
Issue	Revision - Revise on CAD do not amend by hand	Chk'd	App'd	Date
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Project: FUTURE RAIL CORRIDOR PROTECTION

 **Transport for NSW**

Title: 175-177 CLEVELAND ST & 1-5 WOODBURN ST
CBD RAIL LINK (CBDRL)
LOADING REQUIREMENTS

Drg No: 482749-281

Version: 1