Metro Body of Knowledge

Planning Approval Environmental Review Form

SM-22-00008046

Sydney Metro – Metro Body of Knowledge (MBoK)

Assessment Name:	TfNSW85 – Additional impact to heritage items along the SWM alignment.
Prepared by:	Sydney Metro
Prepared for:	Sydney Metro, All C&SW contracts
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Environmental Review

1. Proposed works and justification

An environmental review is applicable to design changes which are consistent with the conditions of approval and would have negligible impacts on the community and/or the environment. This environmental review is required to demonstrate compliance with the conditions of approval and the Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR) and Sydenham to Bankstown Submissions Report. A description of activities is listed in Table 1 and an assessment provided in Section 2.

Table 1 Description of proposed works

Description	Overview
Location of works	As part of the Sydenham to Bankstown project, Sydney Metro are planning to complete errant and hostile vehicle mitigation treatments at station bridges, non-station bridges and critical locations along the Southwest Metro corridor (i.e. along the T3 Bankstown Line between Sydenham and Bankstown Stations). There are six heritage items that were not originally included in the EIS and SPIR, including: 1) Dulwich Hill – Turpentine - Ironbark Forest Understory (Inner West LEP 2022 (I1222)) 2) Hurlstone Park – Duntroon Street Heritage Conservation Area (Inner West LEP 2022 (C3)) 3) Hurlstone Park – Crinan Street Shops Heritage Conservation Area Inner West LEP 2022 (C2) 4) Hurlstone Park – Floss Street Heritage Conservation Area (Inner West LEP 2022 (C4)) 5) Hurlstone Park – Inter war building - The Chambers (Inner West LEP 2022 (I177)) 6) Canterbury – Melford Street Heritage Conservation Area (Canterbury-Bankstown LEP 2023 (C5)) A Statement of Heritage Impacts (SoHI) for the Southwest Metro Errant and Hostile Vehicles Project was completed in November 2024 to determine whether any additional impacts to heritage would occur as a result of the security works, beyond what was assessed in the EIS, SPIR and Submissions Report (refer Appendix A). The SoHI identified that only 'Turpentine - Ironbark Forest Understory' (Inner West Local Environmental Plan I1222) would be subject to negligible visual impacts with neutral impacts to the other five heritage items. The 'Turpentine - Ironbark Forest Understory' is located near Dulwich Hill Station and was not listed on the Inner West Council local environment plan (LEP) at the time the EIS, SPIR and Submissions Report were prepared. The stand of trees is located on the southern side of the rail corridor adjacent to Dudley Street between Wardell Road and School Parade. See Figures 2-20 of Appendix A for locations of heritage items.
Scope of works	The scope of the Errant and Hostile Vehicle Project includes bridge safety treatments and the installation of off-bridge barriers. The bridge works would include the removal of existing safety barriers and screens, and the installation of new concrete and steel rail barriers, vertical safety screens, and associated modifications of bridge fabric. Whilst security measures are considered under the planning approval the specifics of the Errant and Hostile Vehicle measures were not known at the

	time and an additional heritage item, that may be impacted by the works, has since been listed, the 'Turpentine - Ironbark Forest Understory'. This environmental review considers the additional impacts to the heritage item 'Turpentine - Ironbark Forest Understory' from the additional security measures proposed by the Errant and Hostile Vehicle Project.
Justification for works	Sydney Metro have undertaken a Corridor Intrusion Risk Assessment (CIRA) to identify locations along the southwest corridor vulnerable to the risk of errant and/or hostile vehicles entering the rail corridor. The assessment recommended infrastructure upgrades as treatments to mitigate the risk of errant and hostile vehicles. The objective of the SWM4 project is the design and construction of errant and hostile vehicle mitigation treatments for SWM. The project includes security upgrades to the southwest corridor rail and station infrastructure and adjacent road network infrastructure to enable the conversion from heavy rail to meet minimum operating standards for automated Metro operations.
Timeframe for works	Construction commenced early October 2024 and will progress for a period of approximately 12 months
Work hours, workforce and equipment / machinery	The location and general scope of each set of overbridge and non-bridge works is outlined in Table 10 of Appendix A. **Bridge locations** The degree of work varies across the 15 overbridge sites, based on the structural condition of the existing overbridge and the ability to integrate and/or accommodate the planned works. Most locations would require remedial works to the bridges, and installation of new safety infrastructure in place of existing safety screens and rails. The new safety infrastructure would include a combination of TL3 and TL4 concrete and steel rail barrier systems, new integrated vertical safety screens, new bollards, and the modification of existing bridge elements such as paving, footpaths, kerbs, retaining walls, parapet walls, and balustrades. In some locations piling and the construction of piling caps would be needed to support new safety infrastructure. It is noted that not all of these works will be required at every location. **Non-bridge locations** The treatment is to design different types of barriers to mitigate risks associated with road vehicles intruding into the rail corridor and causing derailment of Sydney Metro and ARTC trains. The road barriers typically include TL3 post and beam barriers, TL4 steel post and beam barriers, TL3 concrete barriers, TL4 concrete barriers, and TL5 concrete barriers. The installation of these barriers would require ground penetrations where they are installed. The installation of new barriers would involve the removal of existing fences in these locations where present. **Equipment** The equipment required at bridge worksites is identified in Appendix E – Noise and Vibration assessment of the SPIR, Table 5 and would consist of the following: - Concrete Pump - Concrete Truck/ Agitator - Diamond Saw - Franna Crane - Mobile Crane - Truck (12-15 tonne) - Water tanker (8000 litre) **Work Hours**

	Most work will be undertaken during standard construction hours, however due to road occupancy license requirements (where needed) and to reduce impacts on the community and businesses works may need to be undertaken out of hours.

2. Consistency with Conditions of Approval

The following table outlines whether the proposed changes would be consistent with the relevant Conditions of Approval.

Table 2 Comparison of the proposal with relevant elements of the Approved Project

Relevant elements of the Approved Project	Proposed Change
Section 1.1.3 of Appendix B (Preferred project description) of the Sydenham to Bankstown Submissions Report Upgrading bridges along the rail corridor … Generally, the bridge upgrade works would consist of providing enhanced protection to existing bridge piers, installation of anti-throw screens, vertical protection screens, vehicle collision barriers and general maintenance work ….	No change. The proposed works are to facilitate the works as detailed in the Approved Project.
Technical Paper 3 – Non-Aboriginal heritage impact assessment identifies the heritage items identified at the time the EIS was prepared that are located within or in close proximity of the Sydenham to Bankstown project.	Six heritage items in the vicinity of the planned works were identified in the Statement of Heritage Impact (SoHI) Report that were not included in the Approved Project.
EMM NAH2 The project design would maximise the retention and legibility of heritage buildings, structures, fabric, spaces and vistas that are individually significant and contribute to the overall heritage significance of the Bankstown Line.	A SOHI Report is provided for the proposed works in Appendix A. Of the relevant heritage items, six have been identified in the vicinity of the planned works that were not included in the Approved Project. However, it has been assessed that the impacts to most of these items would be neutral. Only 'Turpentine - Ironbark Forest Understory' (Inner West Local Environmental Plan I1222) would be subject to negligible visual impacts, however, this is considered to be consistent with the existing level of impacts from the broader project.

3. Environmental review

The following table provides a risk review of the potential environmental impacts of the proposed works.

Table 3 Environmental review

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)
Is the proposal to take place outside of the construction footprint of the project	N	The proposed Errant and Hostile Vehicle works and the additional heritage item, ('Turpentine - Ironbark Forest Understory') are within the construction footprint (refer Figure 2.1 of Appendix B (Preferred project description) of the Sydenham to Bankstown Submissions Report. A SOHI (Appendix A) was prepared for the proposed work to assess potential impacts to heritage items, including items listed on the SHR, and areas of archaeological potential. The location and general scope of each set of overbridge and non-bridge works is outlined in Table 10 of Appendix A.
Is the location of works within the existing EPL premise boundary	N	An environmental protection licence (EPL) would not be required for the works.
Will the works take longer than 2 weeks to complete.	Y	The proposed Errant and Hostile Vehicle works are expected to take longer than two weeks to complete.
Does the work require OOHW approval	Y	Bridge works will be undertaken during the 12-month shutdown of the T3 Bankstown Line. Works to bridges may require Road Occupancy Licences to be obtained from councils to ensure safety of workers and the public. As a result, some out of hours works may be required for bridge safety treatments and the installation of off-bridge barriers. Out of hours works would be managed in accordance with the projects OOHW protocol (Condition E25) and the Sydney Metro City and Southwest Construction Noise and Vibration Impact Statement (CNVIS) (Condition E27).
Will the works impact an EEC or threatened species	N	The clearing of EEC and impacts to threatened species are not required.
Will works impact on native vegetation	N	The clearing of native vegetation is not required.
Will the works impact on habitat trees	N	No clearing is proposed.
Will clearing of non EECs or ground disturbance be of High / moderate condition vegetation. What is the area of impact	N	No clearing is proposed.
Will the works result in medium / high noise or vibration impacts Will noise and vibration impacts on sensitive receivers be greater than that predicted in the EIA	Y	The proposed works were identified in Section 8.1.3 of the EIS and have been accounted for in Appendix E – Noise and Vibration assessment of the SPIR. The works involve remedial works to the bridges, and installation of new safety infrastructure. At Dulwich Hill, Hurlstone Park and Canterbury there is potential for NML exceedances of >20dB. The proposed change to heritage impacts within this environmental review are not expected to generate any additional noise above those already assessed as part of the Approved Project.

		Receivers that have the potential to be affected by the works would be notified in accordance with the Community Communication Strategy (Condition B2).
Will the works result in medium/ high air quality impacts	N	Similar to the Approved Project, the works have the potential to cause impacts to air quality through dust generation from remedial works to the bridges, and installation of new safety infrastructure, and emissions from plant and machinery. Any emissions or dust generated by the works are anticipated to be localised and minimal and will be managed in accordance with existing conditions and mitigation measures identified for the Approved Project
Will the activity be located adjacent to or in close proximity to sensitive receivers	Y	Sensitive Receivers have been identified in Appendix E – Noise and Vibration assessment of the SPIR. There is potential for minor impacts to sensitive receivers at Dulwich Hill (Table 12) and Hurlstone Park (Table 15). Receivers that have the potential to be affected by the works would be notified in accordance with the Community Communication Strategy.
Would there be additional impact from what was predicted in the EIS on an Aboriginal / Historic heritage site as a result of the works	Y	The SOHI (Appendix A) has identified six heritage items in the vicinity of the planned works that were not included in the EIS and SPIR, including: 1) Turpentine - Ironbark Forest Understory (Inner West LEP 2022 (I1222)) 2) Duntroon Street Heritage Conservation Area (Inner West LEP 2022 (C3)) 3) Crinan Street Shops Heritage Conservation Area Inner West LEP 2022 (C2) 4) Floss Street Heritage Conservation Area (Inner West LEP 2022 (C4)) 5) Inter war building - The Chambers (Inner West LEP 2022 (I177)) 6) Melford Street Heritage Conservation Area (Canterbury-Bankstown LEP 2023 (C5)) However, it has been assessed that the impacts to most of these items would all be neutral. Only 'Turpentine - Ironbark Forest Understory' (Inner West LEP I1222) would be subject to negligible visual impacts from where new rail barriers are installed within its curtilage, nophysical impacts are anticipated. The 'Turpentine - Ironbark Forest Understory' was not assessed as part of the Approved Project because it was listed on the LEP after the time of assessment. Given its proximity to Dulwich Hill Station, it would already be visually impacted by the project. Therefore, it is considered that the negligible visual impacts to the heritage item are consistent with the existing project. It has been assessed that the works would generally cause little to no impacts to archaeological remains, and the overall impact to significant archaeological remains would be nil. This is within the approved archaeological impact level for the project, with the Archaeological Assessment and Research Design Report (AARD) identifying that the project would generally have a minor impact on potential archaeological remains. Recommendations and mitigation measures have been provided in Section 6.2 of the SOHI in Appendix A.
Are works within 10m of a watercourse	N	The proposed works are not within 10 metres of a watercourse.

Are works in an area of known contamination	N	No known contamination exists within the proposed area.
Will the works result in temporary or long-term traffic impacts	N	The proposed remedial works to the bridges, and installation of new safety infrastructure would not result in temporary or long-term traffic impacts. Works to bridges may require Road Occupancy Licences to be obtained from councils as needed to ensure safety of workers and the public. Some temporary pedestrian traffic control measures may be required to allow the works to take place. Pedestrian management would be implemented in accordance with the CTMP.
Will the works result in visual impacts to sensitive receivers	Y	Similar to the Approved Project, there would be minor visual impacts associated with construction works, remedial works to the bridges, and installation of new safety infrastructure, plant and equipment and any temporary fencing and safety measures implemented. The project would adopt all appropriate mitigation measures to minimise visual intrusiveness to these receivers where possible.
Will the works involve significant earthworks	N	The works would involve remedial works to the bridges, and installation of new safety infrastructure and can be managed appropriately by the existing conditions of approval and environmental mitigation measures.

4. Recommendation

Based on the above assessment, and with reference to the Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR), including the conditions of approval and associated CEMP and plans, it is recommended that:

✓	The proposed design/construction change is consistent with the Approved Project Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR) including the conditions of approval, has negligible impacts on the community and environment and no further assessment is required.
	The proposed design/construction change is likely to be consistent with the Approved Project Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR), however more than a negligible impact on the community and environment may result and further assessment in the form of a Planning Approval Consistency Assessment form is required to be completed and submitted to the Planning team for the proposed design/ construction change.
	The proposed design/ construction change is not substantially the same as the Approved Project and is considered a radical transformation. A new planning pathway should be considered.

5. Certification

The above information provides a true and fair review of the proposed works.

Prepared by (signed):

Isabella Caruso

Date: 19.12.2024

Name: Isabella Caruso

Position: Planning Approval Officer, Sydney Metro

6. Endorsement

I have reviewed the above review and provide the following endorsement:

✓	The proposed design/construction change is consistent with the Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR), has negligible impacts on the community and environment and no further assessment or modification of the planning approval is required.
	The proposed design/construction change is likely to be consistent with the Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR), however more than negligible impacts are expected on the community and environment and further assessment is required.
	The proposed design/construction change constitutes a project modification and requires further assessment and approval.

This endorsement is conditional on the following:

1. All works will be carried out in accordance with the Sydenham to Bankstown Environmental Impact Statement (EIS) and Sydenham to Bankstown Submissions and Preferred Infrastructure Report (SPIR) and the Project Conditions of Approval.
2. All works will be carried out in accordance with the approved Construction Environmental Management Plan and any relevant sub plans.

Signed:	
Endorsed by:	Ashe Earl-Peacock, A/Director Planning Approvals
Date:	20/12/2024

Appendix A – Statement of Heritage Impact: Southwest Metro Errant and Hostile Vehicles Project

Statement of Heritage Impact

Report to Martinus and Sydney Metro

November 2024

artefact

Artefact Heritage and Environment
ABN 73 144 973 526
Suite 56, Jones Bay Wharf
26-32 Pirrama Road
Pyrmont NSW 2009
Australia

+61 2 9518 8411
office@artefact.net.au

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Project name:	Southwest Metro Errant and Hostile Vehicles Project
Author:	Sabrina Roesner, Jayden van Beek, Jennifer Castaldi, Scott MacArthur
Project manager:	Scott MacArthur
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EXECUTIVE SUMMARY

The Southwest Metro Project involves upgrading the 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13-kilometre-long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station. The project was approved as a Critical State Significant Infrastructure project (CSSI 8256) under the *Environmental Planning & Assessment Act 1979* by the Minister for Planning on 12 December 2018, and the Minister's Conditions of Approval were granted. On 22 October 2020 a modification to the project (CSSI-8256-Mod-1) was approved for a revised station design for Bankstown Station.

As part of the project, Sydney Metro are planning to complete errant and hostile vehicle mitigation treatments at station bridges, non-station bridges and critical locations along the Southwest Metro corridor. The scope of this Errant and Hostile Vehicle Project includes the installation of anti-throw screens, concrete bollards, and rail barriers along the alignment, as well as other associated works where required.

Martinus, on behalf of Sydney Metro, have engaged Artefact Heritage and Environment to provide assessments and heritage advice relating to the planned works. This Statement of Heritage Impact has been prepared to identify the impacts that would result from the project and would inform the Construction Heritage Management Plan and be incorporated into the project Construction Environmental Management Plan.

Overview of findings

Planned errant and hostile vehicle treatment works would be undertaken at 15 bridge locations and 66 non-bridge locations along the SWM alignment. It has been identified that these works would be located within or near 27 heritage items or archaeological catchments that include a combination of local and State heritage items, including three items listed on the State Heritage Register. It has been identified that the planned works would cause physical and visual impacts to some of these heritage items.

The works at these locations would generally involve bridge safety treatments and the installation of off-bridge barriers. The bridge works would include the removal of existing safety barriers and screens, and the installation of new concrete and steel rail barriers, vertical safety screens, and associated modifications of bridge fabric. It has been identified that these works would cause impacts to significant fabric at some of the heritage items.

Overall, it has been assessed that the errant and hostile vehicle mitigation treatments would typically cause negligible to minor impacts to heritage items where bridge works are undertaken within heritage curtilages. Works to the Canterbury Road Bridge at Canterbury Station would have a moderate adverse impact to the bridge element as a result of the demolition of the existing brick parapet wall, but this would be partially mitigated by the salvage and reuse of the bricks for the fascia of the new barriers. For the remaining heritage items in the vicinity, it has been assessed that the proposed works would typically result in neutral physical impacts and neutral to negligible visual impacts. The material threshold would not be exceeded at any of the heritage items.

Of the relevant heritage items, six have been identified in the vicinity of the planned works that were not included in the *Sydney Metro City and Southwest – Sydenham to Bankstown Environmental Impact Statement* and *Submissions and the Sydney Metro City and Southwest – Sydenham to Bankstown Upgrade Preferred Infrastructure Report*. However, it has been assessed that the impacts to most of these items would be neutral. Only 'Turpentine - Ironbark Forest Understory' (Inner West Local Environmental Plan I1222) would be subject to negligible visual impacts, however, this is considered to be consistent with the existing level of impacts from the broader project.

It has been identified that works would be undertaken within the archaeological Marrickville, Canterbury, Belmore, and Lakemba Station Catchments. However, works would be limited to areas of Archaeological Management Zone (AMZ) 2 and AMZ 3 where little to no significant archaeological remains are expected to be present. The remaining work locations would be limited to the Bankstown Line Catchment (AMZ 3), which has been assessed as having nil to low potential. Overall, it is expected that there would be nil impacts to significant non-Aboriginal archaeological remains. There would be no harm to the area of Aboriginal archaeological potential, S2B PAD01.

Overall, it is assessed that the errant and hostile vehicle works are consistent with the existing project approvals and impact levels.

Recommendations and mitigation measures

The following recommendations are made to assist with the mitigation and management of heritage impacts associated with the works.

Built heritage

Prior to construction

- If changes to the scope of the works occur, further heritage assessment will be required to capture the additional impacts. In particular, this report will need to be updated when the Stage 3 design documentation is available
- The general requirements for the installation of new structures and required new services from the following documents should be considered:
    - *How to Carry out Work on Heritage Buildings & Sites* (NSW Heritage Office, 2002)
    - *Sydney Trains Heritage Technical Notes: Fixing Methods at Heritage Sites*
    - *Sydney Trains Heritage Technical Notes: Installation of New Electrical and Data Services at Heritage Sites* (Sydney Trains 2017)

a) In the first instance, retain and conserve elements of high heritage significance where possible

b) As part of the proposed works, condition inspections should be undertaken prior to, during and following completion of the work. Any repair works to heritage significant fabric should reinstate “like for like” and match the existing fabric. The repair works should be undertaken in consultation with the nominated Heritage Architect in accordance with REMM NAH 20, and Heritage NSW where appropriate, and should be documented

- A Photographic Archival Recording (PAR) of the areas impacted by the works is not recommended as these works have been captured in the PARs previously prepared for the project in accordance with REMM NAH 13
- Opportunities for the implementation of heritage interpretation at the stations in accordance with the Heritage Interpretation Strategies that have been prepared for the project should be considered as part of the detailed design process. This may include the installation of artwork on new barriers or bollards
- New services and equipment are to be rationalised and should not cover decorative fabric. Design for installation of services would be verified and/or revised in consultation with a Heritage Architect once final designs are available for review.

During construction

- All staff, including design professionals and tradespeople, involved in the works within or in the vicinity of heritage items that would be impacted, as assessed in this report, must receive a heritage induction and briefing prior to the commencement of works. The heritage induction should cover the heritage significance of the heritage items, identification of significant fabric and the recommendations and mitigation methods included in this report. This would apply to the following heritage items:
    - Marrickville Station
    - Dulwich Hill Station
    - South Dulwich Hill Conservation Area
    - Turpentine-Ironbark Forest Understorey
    - Canterbury Station
    - Hurlstone Park Station
    - Belmore Station
    - Lakemba Station
    - Wiley Park Station
    - Punchbowl Station
- All works to, and in the vicinity of significant heritage fabric must be coordinated with the heritage architect in accordance with REMM NAH20, to ensure they are conducted in accordance with relevant heritage controls in this SoHI and other heritage related documents
- Works on Albermarle Street Bridge must take care to avoid impacts to the Depression era brick paving. If temporary laydown areas or access paths are required near to, or over the brick paving, then impact protection measures must be implemented to protect the paving, such as coverings or ramps.
- If Depression era bricks need to be removed temporarily, the minimum number of bricks should be removed and then reinstated in the same herringbone pattern as existing, without grout or mortar. If mortar or grout is required for the relaying of the pavers, the materials should match existing and no cementitious materials are to be used
- When removing the original brick parapet walls at the Canterbury Road Bridge:
    - Masonry deconstruction and reconstruction should be conducted by tradespeople with demonstrated experience in managing and repairing heritage masonry, under the advice and supervision of the contractor's heritage architect
    - Salvage of brickwork should be conducted by hand as much as possible, with the least number of vertical saw cuts provided. Saw cuts should be conducted between brick courses and not through brick courses wherever possible
    - Salvaged brickwork should be managed with care following removal to ensure inadvertent damage does not occur to bricks during transport and storage

c) Salvaged bricks are to be stored by the contractor in a secure dry location nominated by Sydney Metro

  - As not all bricks are expected to be salvaged intact, new replacement brick would be required. Replacement bricks must be appropriately matched in colour, dimensions, texture, type of aggregate and the range of colour and aggregate variation to existing brick
  - Brick matching should be conducted with on-site comparison of existing and replacement bricks, with a moderate sample size of replacement brick, to ensure that matching qualities are met
  - Bricks should be re-laid in the original pattern and bond as the existing parapet and retaining walls where possible, including existing angled sills and soffit courses
  - New brick and original brick should be installed in consolidated sections and not intermixed, so that new and original fabric can be discerned.
  - Additional time should be allotted during the construction program for the reconstruction works if hand deconstruction and reconstruction is not tenable during existing possession period estimates
- The bricks removed from demolished parapet walls at non-heritage listed bridges (Duntroon Street and Livingston Road bridges) are not required to be salvaged or reused. These bricks are not of heritage significance, and as they are painted, their compatibility with other bricks salvaged for reuse at heritage sites cannot be determined
- Where compressive filler material is planned be used between new concrete paths and existing brick masonry of parapet walls, the new material should be carefully installed so as to retain the integrity of the fabric it adjoins.
- When undertaking works in close proximity to significant fabric, impact or splash protection should be used where necessary to ensure that the surrounding fabric is not impacted. This may include the use of sound/construction blankets, geofabric, or other protective materials
- All works must be conducted in accordance with the relevant provisions of the Construction Heritage Management Plan and in the Construction Environmental Management Plan for the project
- Known items of heritage significance are to be labelled on Environmental Control Maps
- The following mitigation measures need to be undertaken during construction to protect heritage significant fabric in accordance with the *TfNSW Temporary works and protection at heritage sites during construction fact sheet*:[1]
  - Avoid accidental damage to significant fabric with thorough planning, site-specific inductions and physical protection measures
  - No construction materials are to be stockpiled or stored against heritage items or trees. Clear delineation must be provided
  - Vibration monitoring is to be undertaken in accordance with the required standards for works in the vicinity of heritage elements
- The following mitigation measures need to be undertaken during construction of the new fence (CI 109) within and adjoining the Turpentine-Ironbark Forest Understorey to prevent impacts to sensitive vegetation:

[1] Transport for NSW, 2023. *The Temporary works and protection at heritage sites during construction fact sheet EMF-HE-FS-0166*.

  - The Turpentine-Ironbark Forest Understorey is to be labelled on Environmental Control Maps
  - Ensure that the works do not impact any significant vegetation (including trees and grasses) thorough planning, site-specific inductions and physical protection measures
  - Implement any additional environmental controls necessary to protect the endangered ecological community and in accordance with best practice guidelines[2]
  - Maintain any existing Sydney Trains grass 'no-mow' zones in the vicinity of the works.
- Existing penetrations into original fabric should be utilised where introduced fabric (new services and equipment) is to be located. Any existing penetrations that would not be utilised for new works should be repaired and made good
- Above ground service installation should endeavour to use existing penetrations and entry points to structures. Services should not cover significant fabric or areas of detailing wherever possible. Services should not introduce large noticeable structures or items in areas of significant detailing or within significant view lines. During detailed design, services should adhere to the principles and guidelines outlined in the *Heritage Technical Note, Installation of New Electrical and Data Services at Heritage Sites* (Sydney Trains, 2017) to prevent minor cumulative impacts to fabric from occurring due to ad hoc service design solutions. Service design solutions should avoid ad hoc solutions which can cause further physical and visual impacts to heritage significant fabric
- Undertake all demolition work, removal of modern accretions and the like carefully and by hand to avoid damage to surrounding heritage fabric
- Existing penetrations are to be used where possible when introducing new services and equipment to limit change to heritage fabric
- Following removal of any modern elements, redundant penetrations, accretions and the like, repair and make good fabric as required and in accordance with best practice conservation techniques in consultation with specialist tradespeople and the heritage architect
- Where necessary clean all heritage fabric of dirt, organic growth, guano and other debris using low pressure warm water, biocide and a stiff bristle (non-ferrous) brush. Do not use aggressive or harsh chemicals, sand blasting or other abrasive means
- Allow for making good all existing surfaces exposed after removal of existing fixtures and fittings
- Unexpected or undocumented dilapidation of fixtures or materials discovered during the works should be brought to the attention of the nominated heritage consultant and heritage architect.

Archaeology

d) It is recommended that excavations for the works be managed under the *Sydney Metro Unexpected Heritage Finds Procedure* and *Exhumation Management Procedure* in accordance with the management strategies for AMZ 3 as outlined in the Archaeological Assessment & Research Design and in the Aboriginal Cultural Heritage Assessment Report

[2] Department of Environment & Climate Change NSW, 2008. *Best practice guidelines: Sydney Turpentine-Ironbark Forest*. Accessed online at: https://www.environment.nsw.gov.au/resources/threatenedspecies/08528tsdssydturpironforestbpg.pdf.

e) Works would be undertaken within AMZ 2 at Marrickville Station, Belmore Station, and Lakemba Station. However, as the excavations would be minor in nature and limited to areas not expected to contain significant archaeology, it is considered that archaeological monitoring would not be necessary. It is recommended that management of these excavations under AMZ 3 would be sufficient as outlined in the appended Archaeological Method Statement

f) The location of the historical station archaeological catchments and the area of Aboriginal archaeological potential, S2B PAD01, must be shown on Environmental Control Maps

g) The boundaries of S2B PAD01 must be marked out before undertaking works for CI-085 to ensure that excavations do not enter the mapped area of the PAD.

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FIGURES

TABLES

1.0 INTRODUCTION

1.1 Project background

The Southwest Metro Project (SWM) involves upgrading the 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13-kilometre-long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station. The project will improve accessibility for customers and meet the standards required for metro operations. The project will enable Sydney Metro to operate beyond Sydenham, to Bankstown. The project was approved as a Critical State Significant Infrastructure project (CSSI 8256) under the *Environmental Planning & Assessment Act 1979* by the Minister for Planning on 12 December 2018, and the Minister's Conditions of Approval (CoA) were granted. On 22 October 2020 a modification to the project (CSSI-8256-Mod-1) was approved for a revised station design for Bankstown Station.

As part of SWM, Sydney Metro are planning to complete errant and hostile vehicle mitigation treatments at station bridges, non-station bridges and critical locations along the Southwest Metro corridor. The scope of this Errant and Hostile Vehicle Project includes the installation of anti-throw screens, concrete bollards, and rail barriers along the alignment, as well as other associated works where required.

Martinus, on behalf of Sydney Metro, have engaged Artefact Heritage and Environment (Artefact) to provide assessments and heritage advice relating to the planned works required for the Southwest Metro Errant and Hostile Vehicle Project. This Statement of Heritage Impact (SoHI) has been prepared to identify the impacts that would result from the project and would inform the Construction Heritage Management Plan (CHMP) and be incorporated into the project Construction Environmental Management Plan (CEMP).

1.2 Study area

The planned works would be undertaken along the SWM alignment between Sydenham Station and Bankstown Station (not inclusive) (Figure 1). The works would be located within the intersections of 15 bridges along the alignment, as well as 66 individual locations along the corridor where safety improvements are required. These works are located within the Local Government Areas (LGAs) of Inner West Council and Canterbury-Bankstown Council.

For the purpose of this assessment, the study area boundary has been defined as a 25-metre buffer around the SWM project area. The project area and the buffer are collectively referred to as the study area in this report unless otherwise stated. This approach has been taken to maintain consistency with the assessment methodology for the original Sydney Metro City and Southwest – Sydenham to Bankstown Environmental Impact Statement (EIS) and Submissions and the Sydney Metro City and Southwest – Sydenham to Bankstown Upgrade Preferred Infrastructure Report (SPIR).

The location of the planned works that are in the vicinity of listed heritage items are illustrated in 2.4.

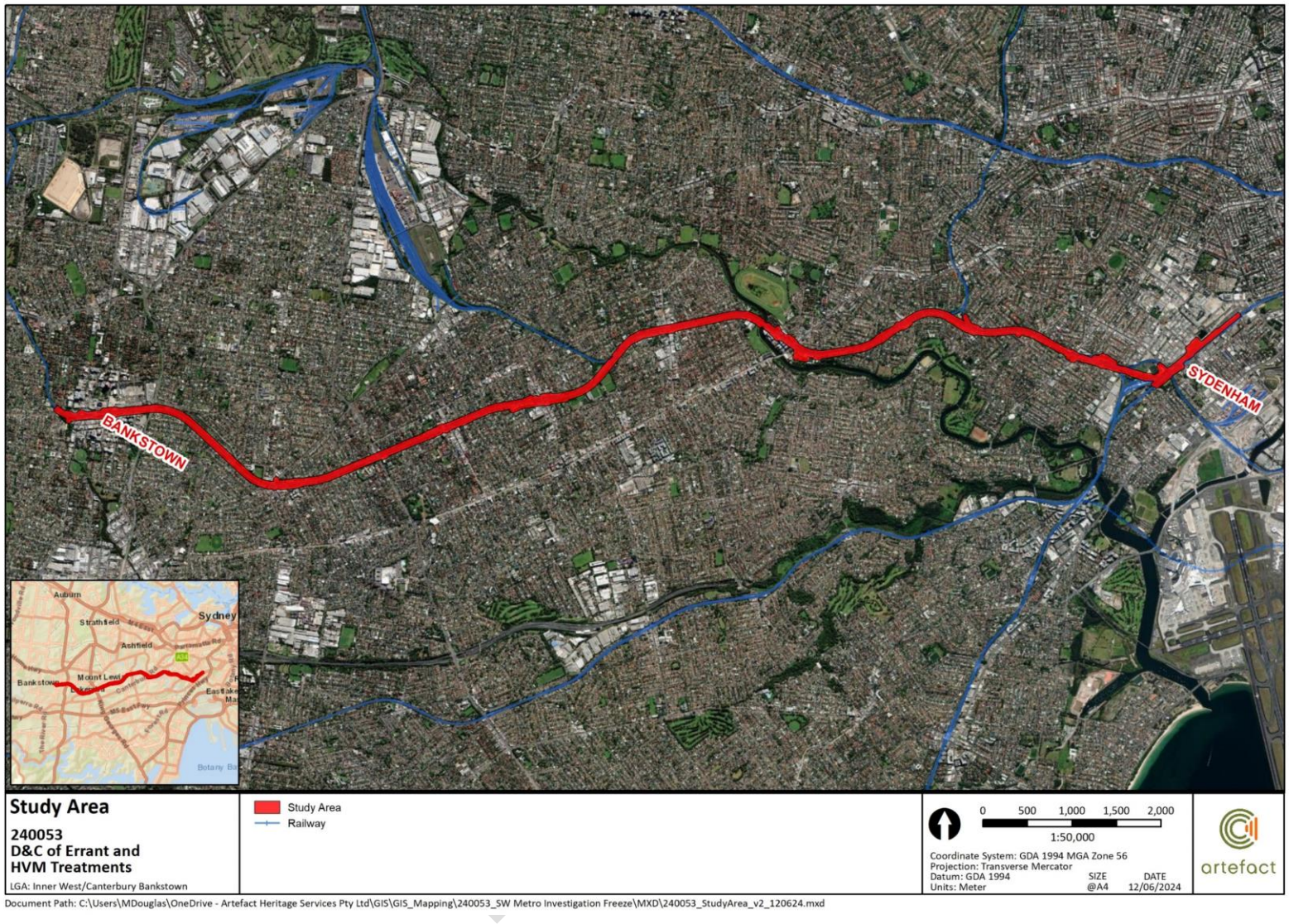


Figure 1: Project alignment

1.3 Assessment methodology

This report has been informed by, and has been prepared in accordance with, relevant heritage guidelines and standards including:

- Assessing heritage significance Guidelines for assessing places and objects against the Heritage Council of NSW criteria (Department of Planning and Environment, 2023)
- Guidelines for preparing a statement of heritage impact (Department of Planning and Environment, 2023)
- Material Threshold Policy (Department of Planning and Environment, 2022)
- Investigating Heritage Significance Guidelines (NSW Government, 2021)
- Levels of Heritage Significance (NSW Heritage Office, 2008)
- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance Australia (ICOMOS 2013).

This report has been informed by and has taken into consideration the existing project assessments and approvals, including:

- Sydney Metro City & Southwest – Sydenham to Bankstown: Technical Paper No 3: Non-Aboriginal Heritage Impact Assessment[3]
- Sydney Metro City & Southwest – Sydenham to Bankstown: Technical Paper No 4: Aboriginal Heritage Impact Assessment[4]
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment[5]
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Archaeological Assessment & Research Design (AARD)[6]
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Aboriginal Cultural Heritage Assessment Report (ACHAR)[7]
- CoA and Revised Environmental Management Measures (REMMs) for CSSI 8256 and CSSI-8256-Mod-1
- Individual station Detailed Design Heritage Impact Assessments prepared for SWM.

[3] Artefact Heritage, 2017. *Sydney Metro City & Southwest – Sydenham to Bankstown: Technical Paper No 3: Non-Aboriginal Heritage Impact Assessment*. Report to Transport for NSW
[4] Artefact Heritage, 2017. *Sydney Metro City & Southwest – Sydenham to Bankstown: Technical Paper No 4: Aboriginal Heritage Impact Assessment*. Report to Transport for NSW
[5] Artefact Heritage, 2018a. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment.* Report to Transport for NSW.
[6] Artefact Heritage, 2018b. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Historical Archaeological Assessment & Research Design*. Report to Transport for NSW.
[7] Artefact Heritage, 2018c. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Aboriginal Cultural Heritage Assessment Report.* Report to Transport for NSW.

1.4 Limitations

This SoHI is primarily based on the historical and archaeological research provided in the existing heritage reports for SWM. Detailed background information from these documents has not been replicated in this report. Summaries of the findings of the existing reports are provided where necessary in this report.

This report is based on the Stage 1 and Stage 2 designs for the Errant and Hostile Vehicle Project that are available at the time of the preparation of this report. It is anticipated that there will be design refinements and changes made for the Stage 3 detailed designs. This report acknowledges the Errant and Hostile Vehicle Project SoHIs (2024) that have been prepared by Purcell for Aurecon for the railway station overbridges. This SoHI has been prepared separately to the SOHIs prepared by Purcell, and as a result it is expected that there may be minor differences in the assessment outcomes.

1.5 Authorship

This report has been prepared by Sabrina Roesner (Senior Heritage Consultant), Jennifer Castaldi (Senior Associate), and Jayden van Beek (Technical Specialist), with input and review provided by Scott MacArthur (Principal), all from Artefact Heritage.

2.0 HERITAGE ITEMS

2.1 Overview

This section identifies the heritage items that are located within or in close proximity (within 25m) of the planned works. Detailed summaries of these items were provided in the previous assessments and are not replicated in this section.

2.2 Identification of heritage listed items

Heritage listed items were identified through a search of relevant state and federal statutory and non-statutory heritage registers/databases:

- World Heritage List (WHL)
- Commonwealth Heritage List (CHL)
- National Heritage List (NHL)
- State Heritage Register (SHR)
- Section 170 Heritage and Conservation Registers
- NSW State Heritage Inventory database
- Local Environmental Plans (LEPs).

2.3 Summary of heritage listings

The results of the register searches undertaken on 5 June 2024 are presented in Table 1. The distance of the relevant work locations to each heritage item is also provided. The heritage curtilages of these items and the nearby works are shown in Section 2.4.

It is noted that the register listing details for some items are different from the EIS and SPIR assessments due to changes to LGA boundaries and government agency registers, such as the Transport Asset Holding Entity (formerly Railcorp) Section 170 Heritage and Conservation Register. In the case of ‘Turpentine - Ironbark Forest Understory’ near Dulwich Hill Station, this item was not listed on the LEP at the time the EIS and SPIR were prepared.

Heritage items in Table 1 that are in bold are items that were not identified in the register search results in the EIS and SPIR impact assessments.

Table 1: Results of register searches for the study area

Item	Listings	Significance	Distance to works
Marrickville Railway Station Group	• SHR (01186) • TAHE s170 Register (SHI 4801091) • Inner West LEP 2022 (I1241)	State	Within Illawarra Rd Bridge
Inter-War Group Heritage Conservation Area—Hollands Avenue; Jocelyn Avenue and Woodbury Street	• Inner West LEP 2022 (C67)	Local	17m N of Livingstone Rd Bridge
South Dulwich Hill Heritage Conservation Area	• Inner West LEP 2022 (C107)	Local	Within CI-158, CI-164 CI-020 and Albermarle St Bridge, adjacent to Wardell Rd Bridge
Dulwich Hill Railway Station Group	• TAHE s170 Register (SHI 4801909) • Inner West LEP 2022 (I1024)	Local	Within CI-019, CI-159 CI-021, and Wardell Rd Bridge
Turpentine - Ironbark Forest Understory	• **Inner West LEP 2022 (I1222)**	**Local**	**Within CI-019**
Gladstone Hall, including interiors	• Inner West LEP 2022 (I1008)	Local	20m S of CI-027
Duntroon Street Heritage Conservation Area	• **Inner West LEP 2022 (C3)**	**Local**	**3m NW of Garnet St Bridge works**
Crinan Street Shops Heritage Conservation Area	• **Inner West LEP 2022 (C2)**	**Local**	**23m N of Duntroon St Bridge**
Floss Street Heritage Conservation Area	• **Inner West LEP 2022 (C4)**	**Local**	**13m S of Duntroon St Bridge**
Inter war building - The Chambers	• **Inner West LEP 2022 (I177)**	**Local**	**20m S of Duntroon St Bridge**
Hurlstone Park Railway Station Group	• TAHEs170 Register (SHI 4802051) • Canterbury-Bankstown LEP 2023 (I175)	Local	Adjacent to Duntroon St Bridge
Melford Street Heritage Conservation Area	• **Canterbury-Bankstown LEP 2023 (C5)**	**Local**	**Adjacent to Melford St Bridge**
Canterbury Railway Station Group	• SHR (01109) • TAHE s170 Register (SHI 4801100) • Canterbury-Bankstown LEP 2023 (I90)	State	Within Canterbury Rd Bridge

Item	Listings	Significance	Distance to works
Inter-War Hotel (former Hotel Canterbury)	• Canterbury-Bankstown LEP 2023 (I91)	Local	14m SE of Canterbury Rd Bridge
Federation Post Office Building (former Canterbury Post Office)	• Canterbury-Bankstown LEP 2023 (I89)	Local	16m NE of Canterbury Rd Bridge
Federation house	• Canterbury-Bankstown LEP 2023 (I84)	Local	24m S of CI-058
Federation villa	• Canterbury-Bankstown LEP 2023 (I85)	Local	21m S of CI-060
Inter war commercial building - Station House	• Canterbury-Bankstown LEP 2023 (I65)	Local	23m S of CI-061
Campsie Railway Station Group	• TAHE s170 Register (SHI 4801101) • Canterbury-Bankstown LEP 2023 (I63)	Local	Within CI-075 and 8m E of CI-077
Belmore Railway Station Group	• SHR (01081) • TAHE s170 Register (SHI 4801084) • Canterbury-Bankstown LEP 2023 (I33)	State	Within CI-086 and Burwood Rd Bridge
Federation House (former station master's cottage)	• Canterbury-Bankstown LEP 2023 (I32)	Local	6m W of Burwood Rd Bridge
Post-war bus shelter and public lavatories	• Canterbury-Bankstown LEP 2023 (I51)	Local	Within CI-086, 20m E of Burwood Rd Bridge
Lakemba Railway Station Group	• TAHE s170 Register (SHI 4801916) • Canterbury-Bankstown LEP 2023 (I208)	Local	Within CI-106 and Haldon St Bridge, 12m W of CI-103
Wiley Park Railway Station Group	• TAHE s170 Register (SHI 4801946) • Canterbury-Bankstown LEP 2023 (I236)	Local	Within CI-119, CI-120, CI-121, and King Georges Rd Bridge
Lakemba Water Pumping Station (WP0003)	• Sydney Water s170 Register (SHI 4570136) • Canterbury-Bankstown LEP 2023 (I235)	Local	21m S of CI-121
War memorial and street trees	• Canterbury-Bankstown LEP 2023 (I222)	Local	23m SW of CI-127
Punchbowl Railway Station Group	• TAHE s170 Register (SHI 4802067) • Canterbury-Bankstown LEP 2023 (I226)	Local	Within CI-136 and Punchbowl Rd Bridge, 20m E of CI-141

2.4 Heritage curtilages

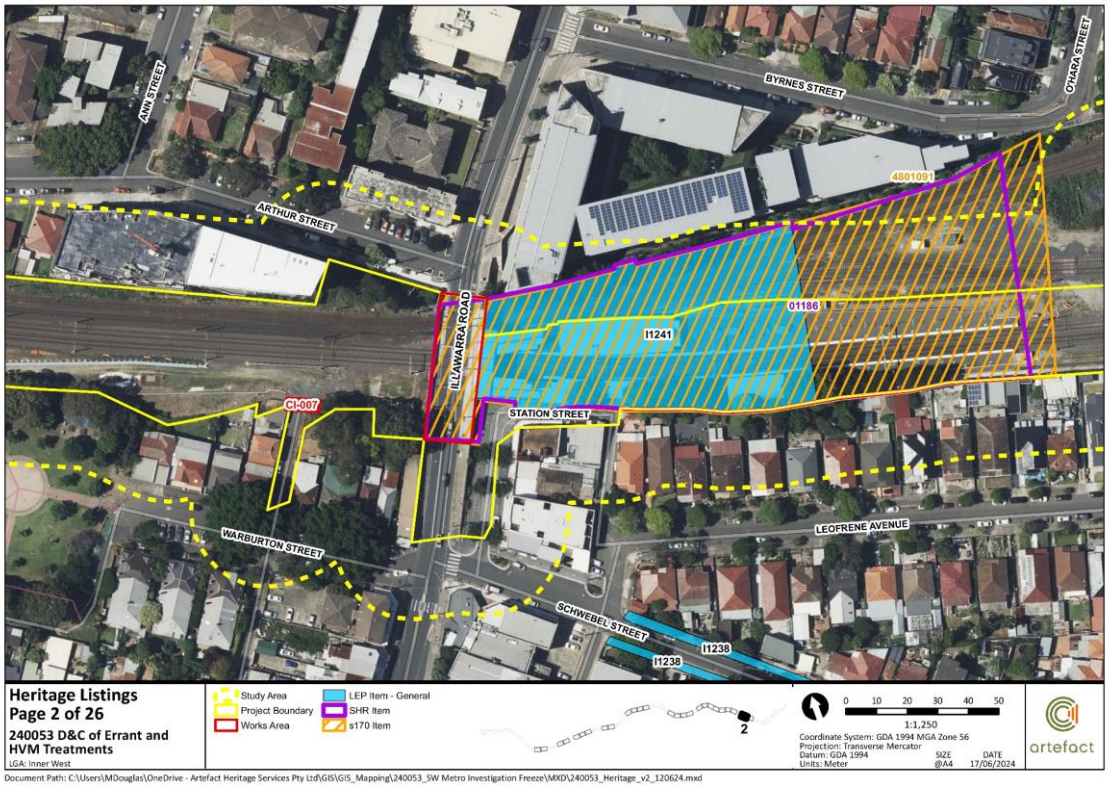


Figure 2: Heritage items near Illawarra Road Bridge

Figure 3: Heritage Items near Livingstone Road Bridge

Figure 4: Heritage items near Albermarle Street Bridge

Figure 5: Heritage items near Wardell Road Bridge

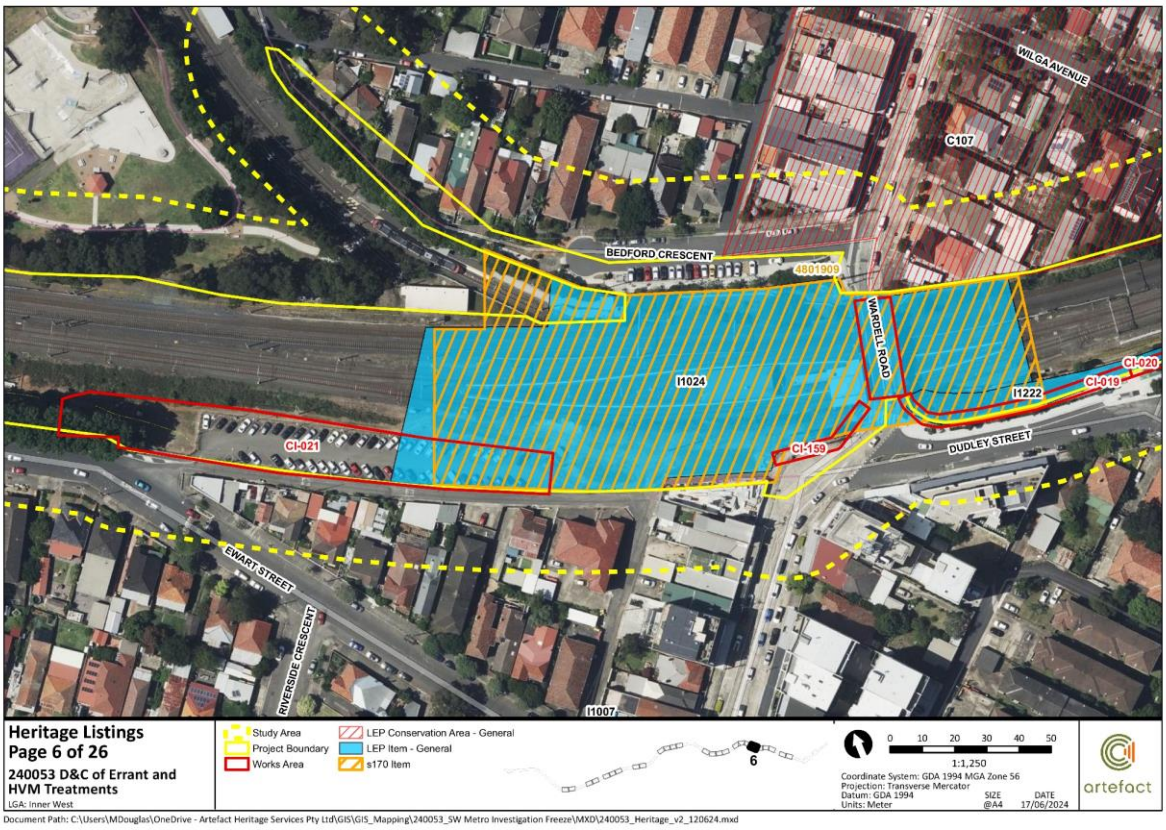


Figure 6: Heritage items near Wardell Road Bridge

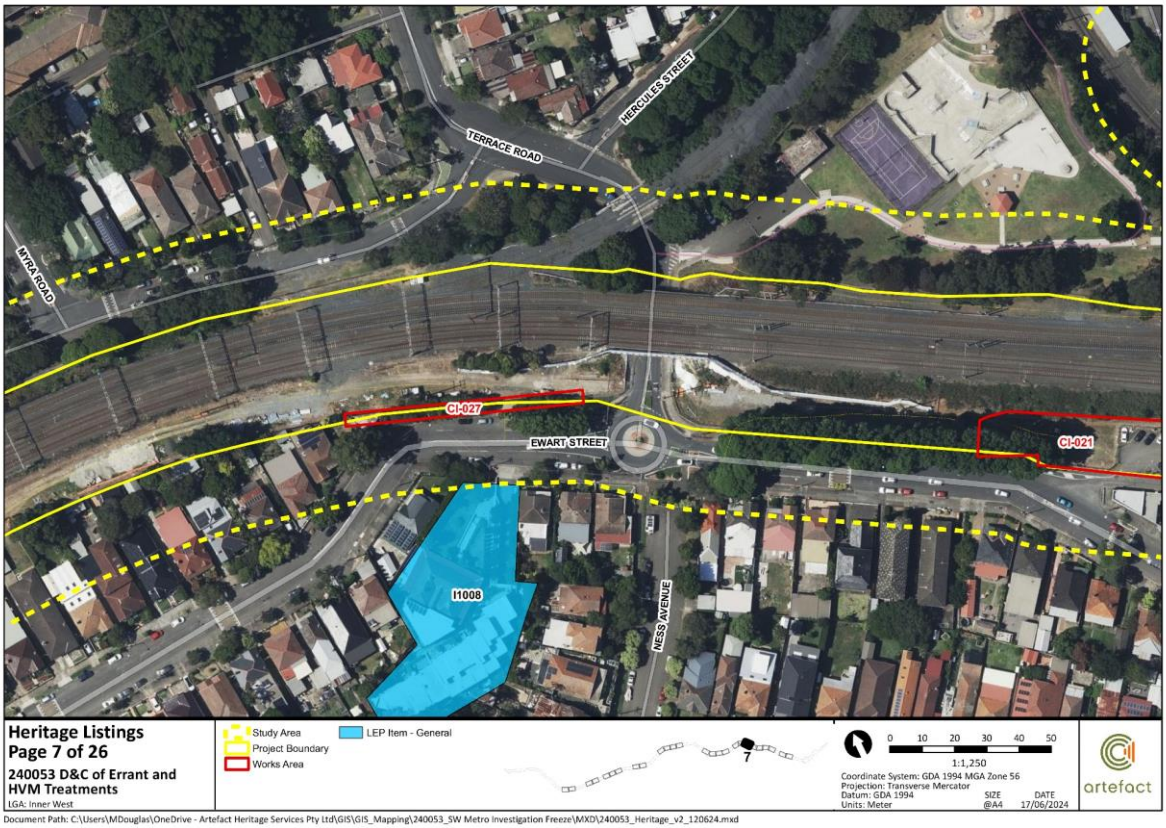


Figure 7: Heritage items near Ewart Street

Figure 8: Heritage items near Garnet Street

Figure 9: Heritage items near Duntroon Street

Figure 10: Heritage items near Melford Street

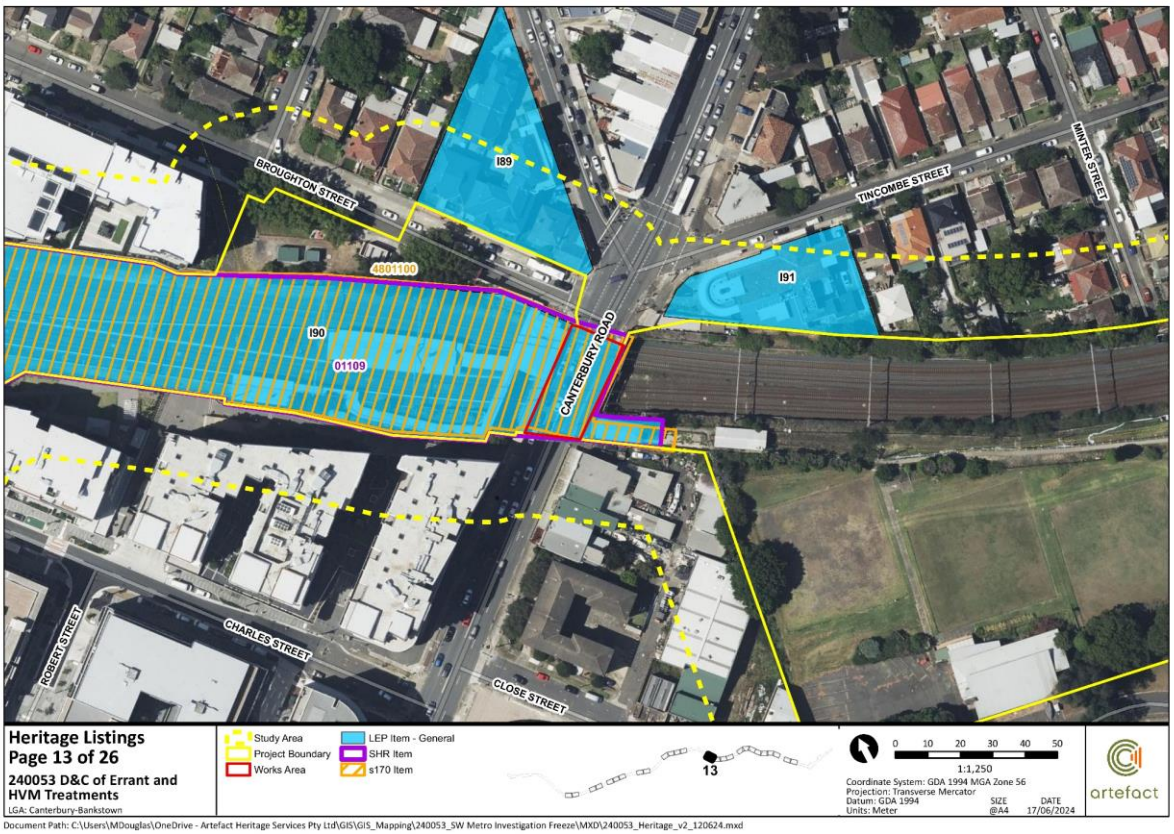


Figure 11: Heritage items near Canterbury Road

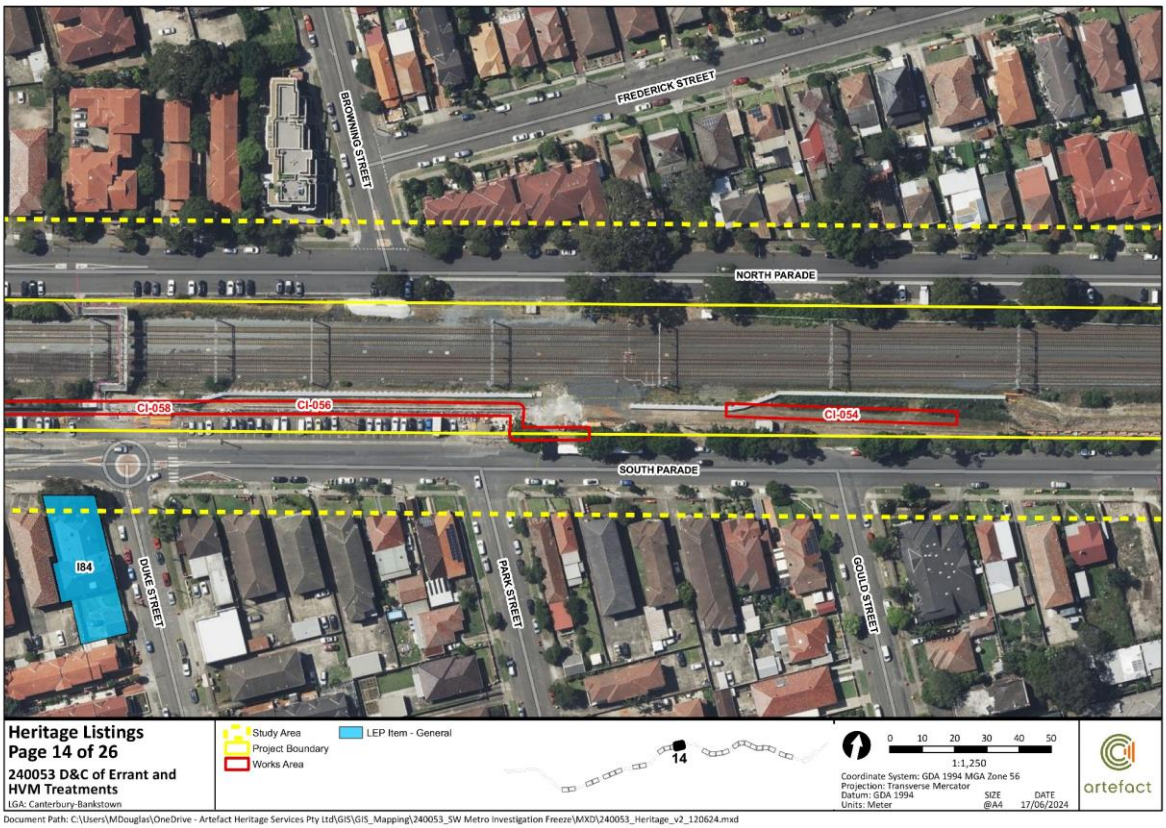


Figure 12: Heritage items near South Parade

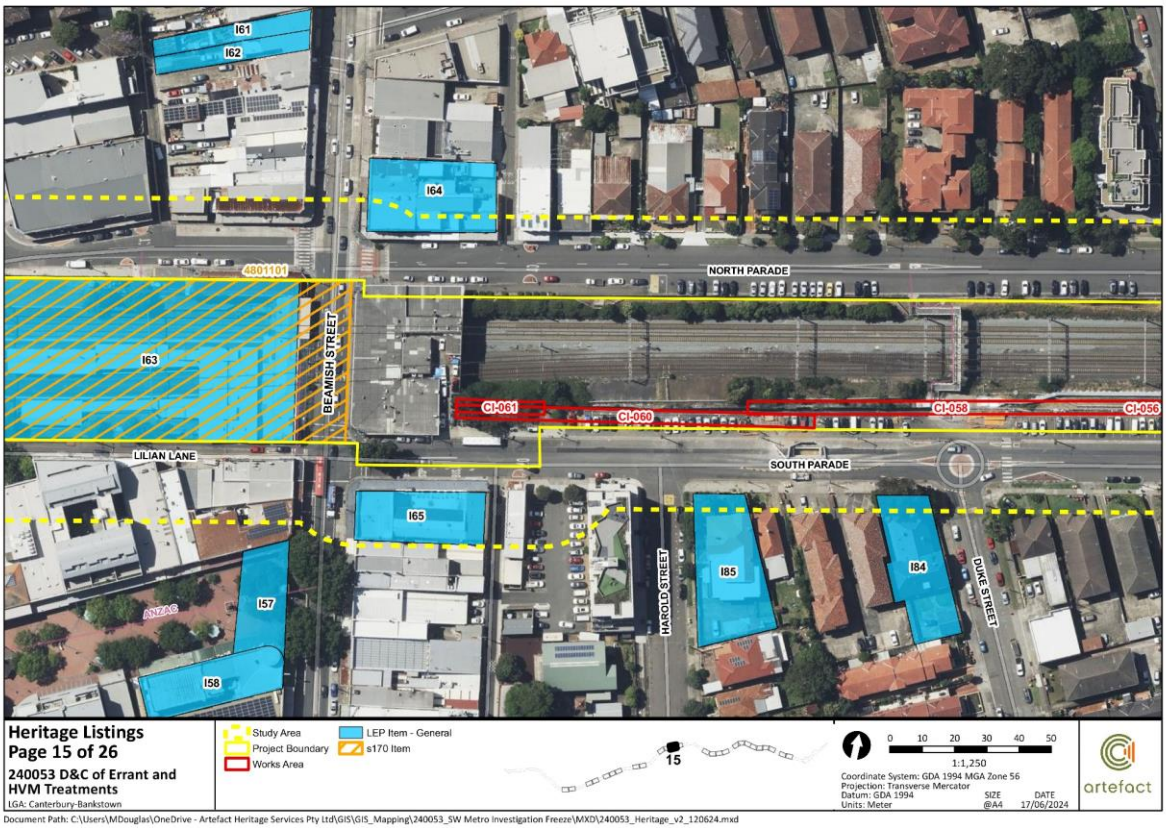


Figure 13: Heritage items near South Parade

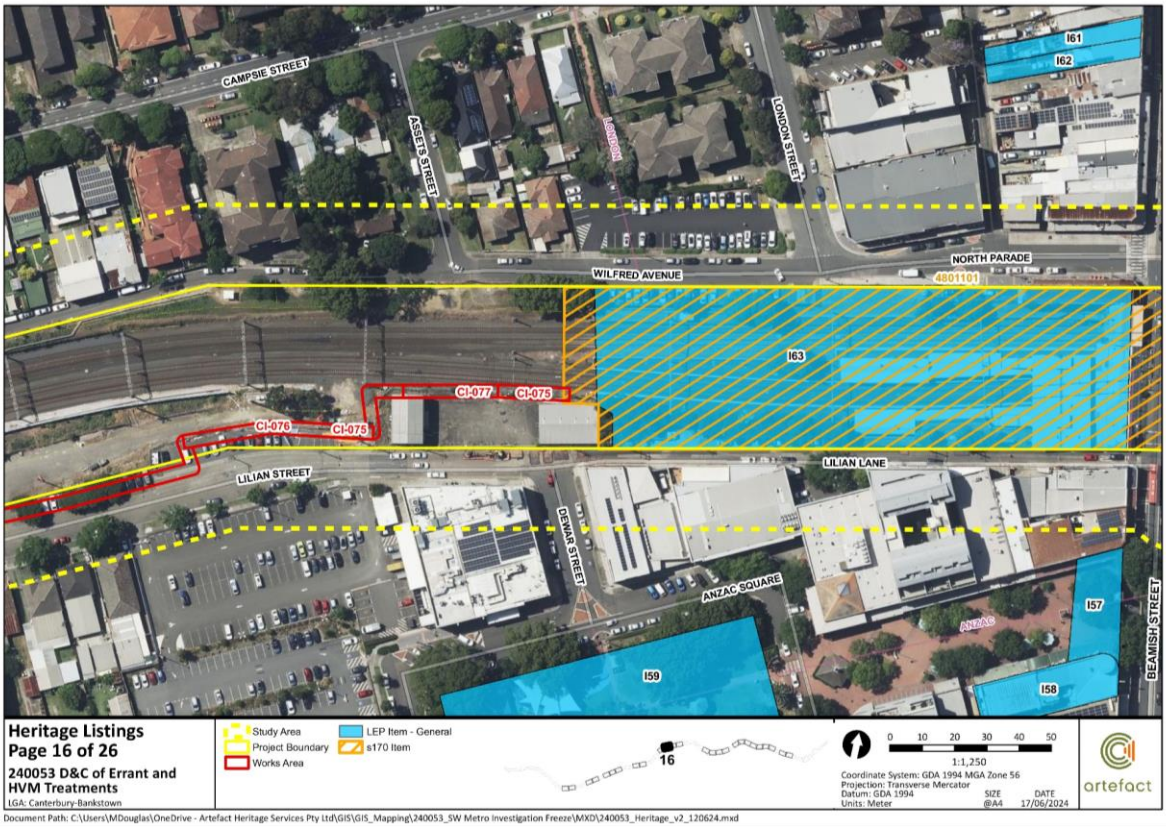


Figure 14: Heritage items Lilian Lane

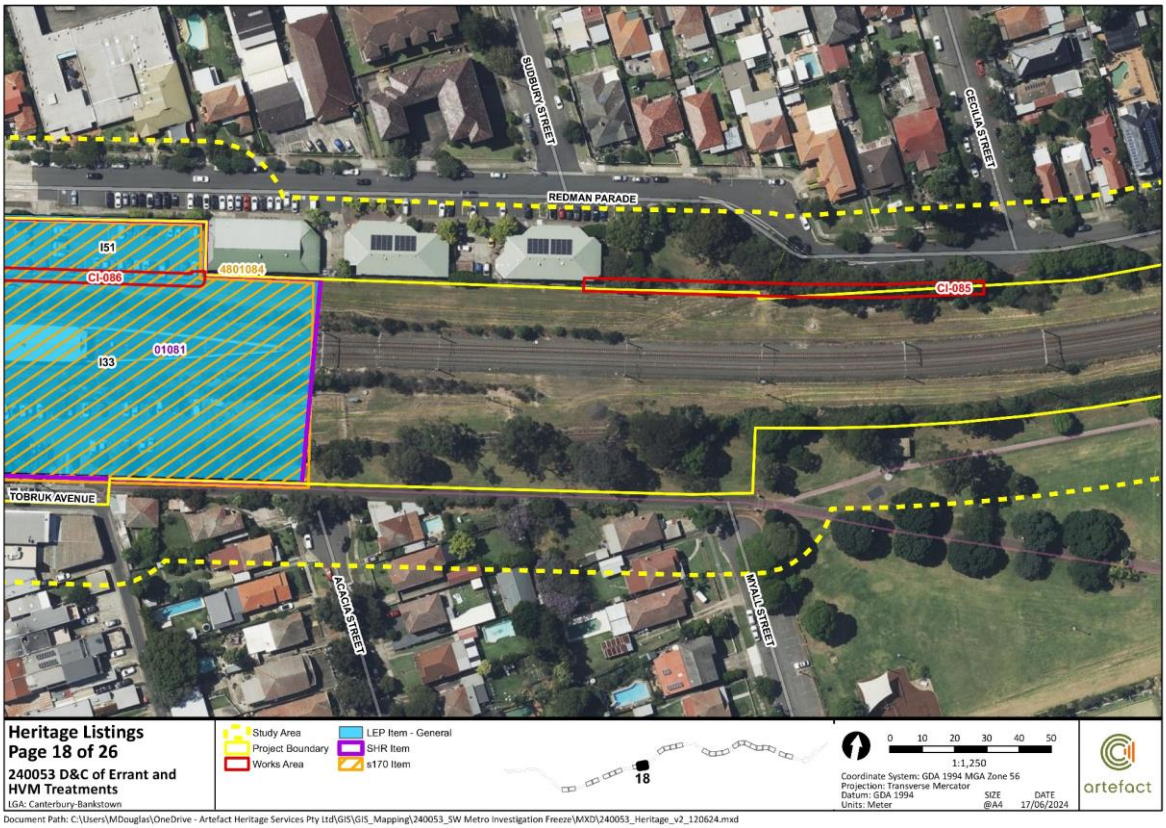


Figure 15: Heritage items near Redman Parade

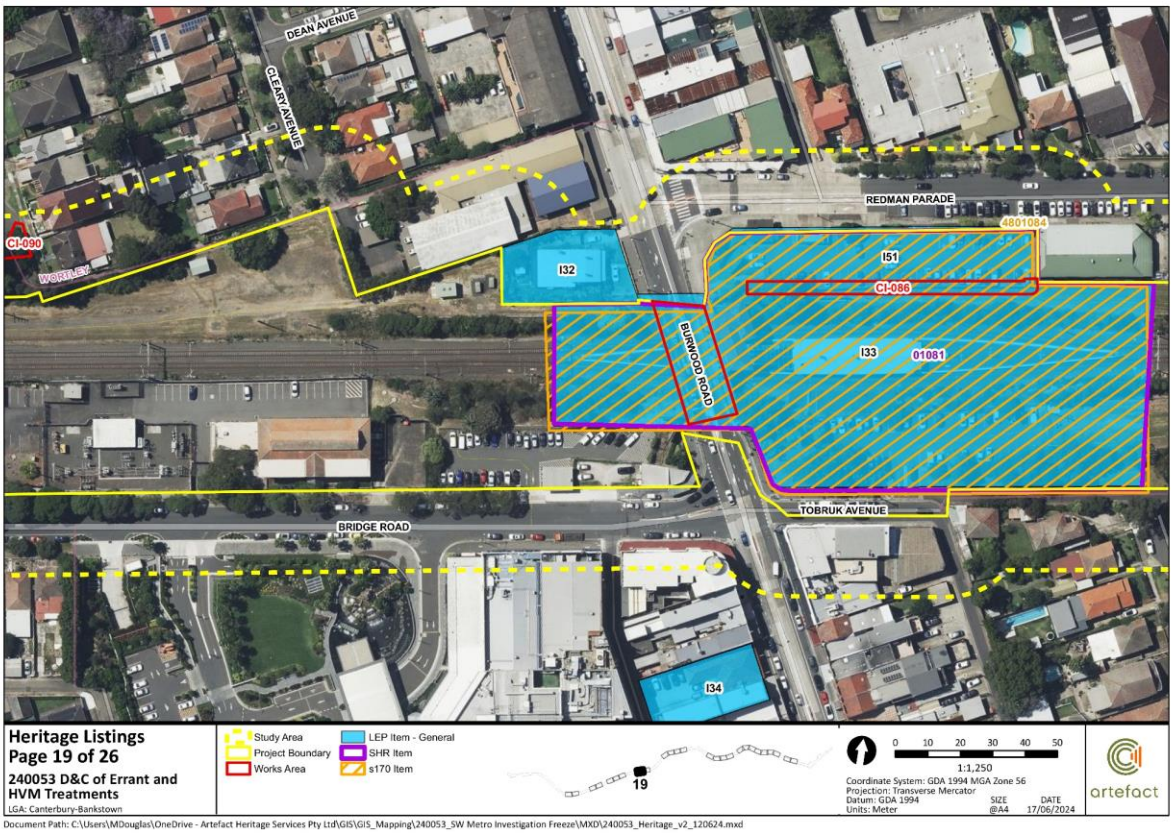


Figure 16: Heritage items near Burwood Road

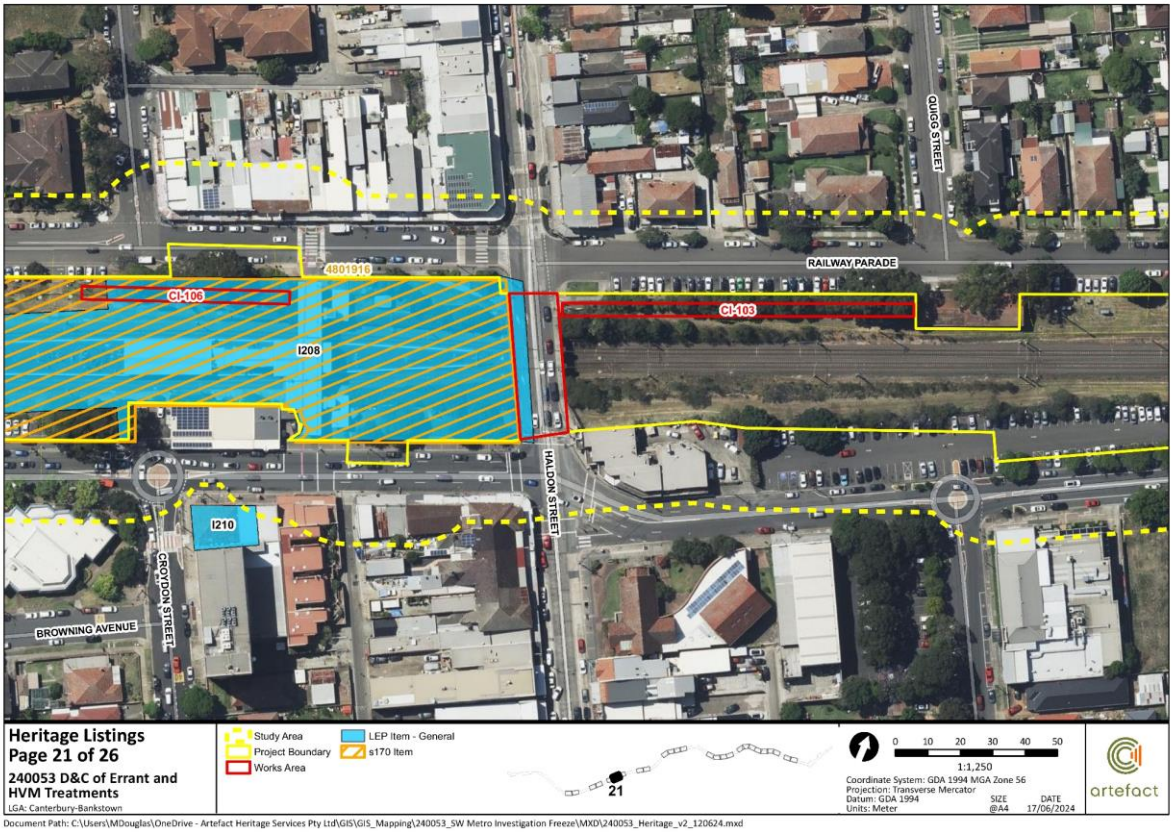


Figure 17: Heritage items near Haldon Street

Figure 18: Heritage items near King Georges Road

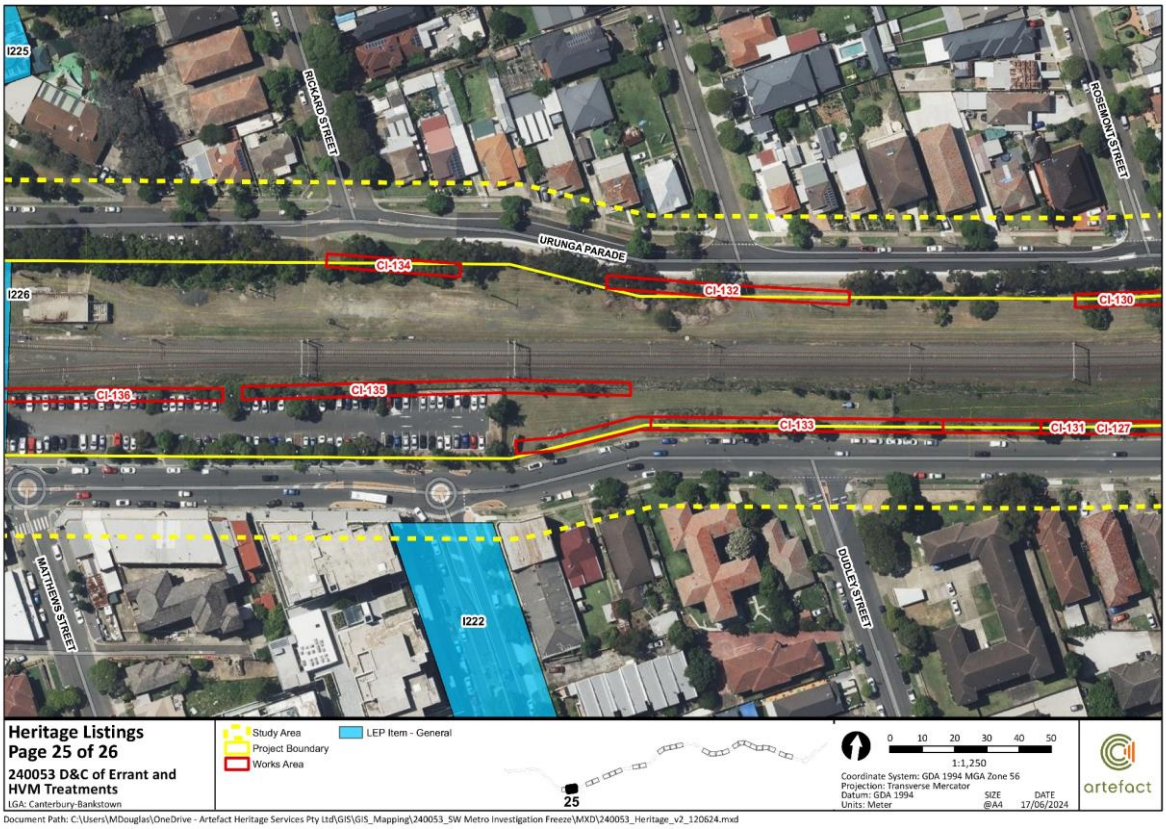


Figure 19: Heritage items near Dudley Street

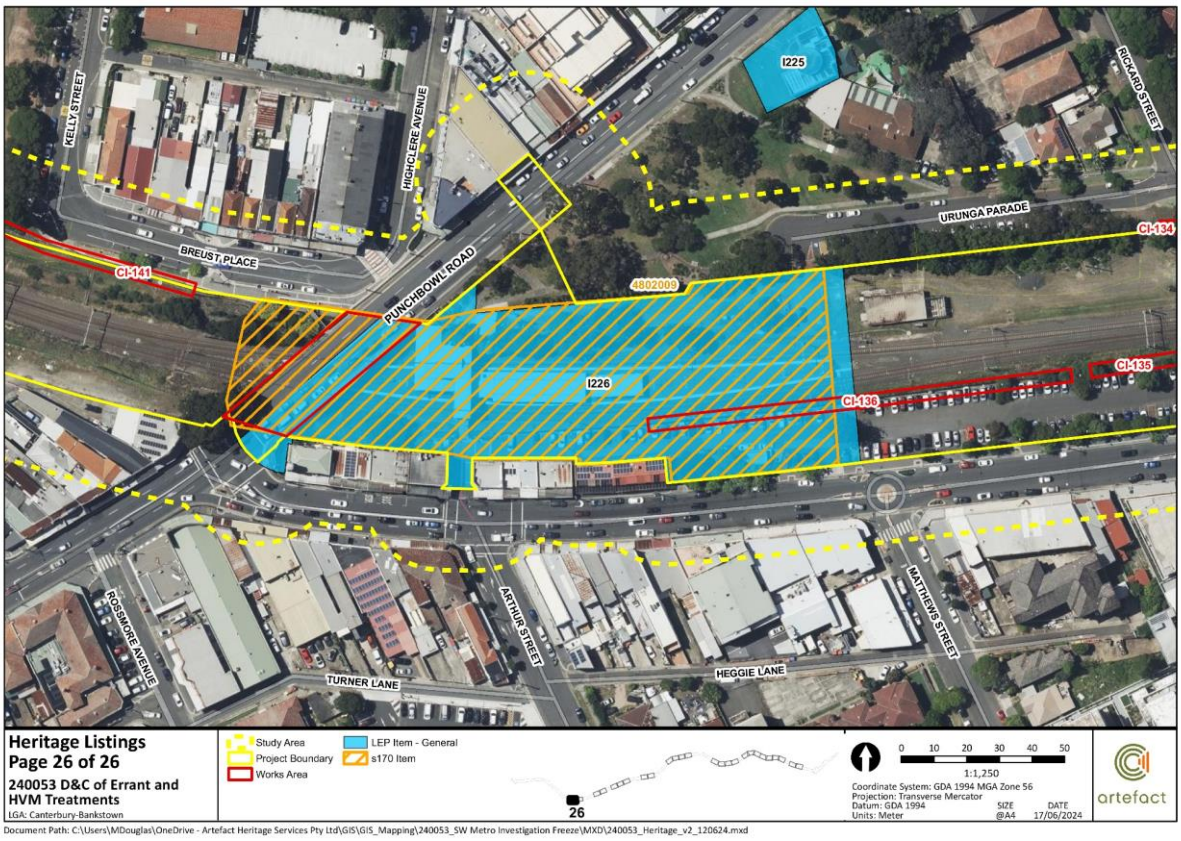


Figure 20: Heritage items near Punchbowl Road

3.0 ARCHAEOLOGICAL ASSESSMENT

3.1 Introduction

Assessments of non-Aboriginal archaeological potential and archaeological management strategies have been sourced from the SWM AARD.[8] The AARD identified four archaeological station catchments (Marrickville, Canterbury, Belmore, and Lakemba), with the remainder of the project alignment being within the Bankstown Line Catchment. These archaeological catchments were divided into management zones based on the level of assessed archaeological potential and significance.

The areas of Aboriginal archaeological potential have been sourced from the SWM ACHAR.

3.2 Marrickville Station Catchment

3.2.1 Potential archaeological remains at Marrickville Station

The AARD predicted archaeological remains of local significance to be present at Marrickville Station. A summary of the archaeological potential and significance of predicted remains is provided in Table 2 and the location of these archaeological resources is provided in Figure 21.

Table 2: Summary of areas with potential for significant archaeological remains for Marrickville Station[9]

Phase	Archaeological resource	Potential	significance
1 (1788-1850s)	• Archaeological features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters	Nil-low	Unlikely to reach the threshold for local significance
2 (1850s – 1890s)	• Archaeological features associated with farming such as fence or shed postholes, field drains and isolated artefacts, drains or culverts associated with the former creek	Nil-low	Unlikely to reach the threshold for local significance
3 (1890s – 1920s)	• Archaeological remains associated with the early phase of railway infrastructure such as culverts, ceramic service pits, utilities such as woodstave sewer or ceramic pipes; brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. • Identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services, original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings • Moderate potential for footings of former platform canopies • Low potential for former level crossing at the current Illawarrra Road overbridge	Moderate-high	Local

[8] Artefact 2018b.
[9] Artefact 2018b: Table 3-4.

Phase	Archaeological resource	Potential	significance
	• Archaeological remains of the former Earlwood tram line that ran across Illawarra Road overbridge such as tram tracks and associated infrastructure		
	• Low potential for footings of former coal loading and storage facilities • Low potential for archaeological remains of the former sleeper bridge such as bridge footings	Low	Unlikely to reach the threshold for local significance
4 (1930s – present)	• Archaeological remains associated with upgrades such as utilities and drainage • Footings associated with the commuter car parking structure and the Illawarra Road footbridge • Footings of signalling huts and boxes	Moderate-high	Unlikely to reach the threshold for local significance
	• Archaeological remains associated with the WWII air raid shelter such as the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts	Moderate	Local

3.2.2 Archaeological management strategy for works at Marrickville Station

The AARD assessed potential impacts to archaeological resources at Marrickville Station from the works required as part of the project. The archaeological management policies are outlined in Table 3 and the location of the archaeological management zones are illustrated in Figure 22.

Table 3: Summary of archaeological management requirements at Marrickville Station Catchment[10]

Phase	Potential archaeology	Management zone	Mitigation
1 (1788-1850s)	Nil to low potential for archaeological features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure
2 (1850s – 1890s)	Nil to low potential for archaeological features associated with farming such as fence or shed postholes, field drains and isolated artefacts, drains or culverts associated with the former creek. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure
3 (1890s – 1920s)	Moderate to high potential for potentially local significant archaeological remains associated with the early phase of railway infrastructure such as culverts, ceramic service pits, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services,	1	• AMS • Salvage excavations

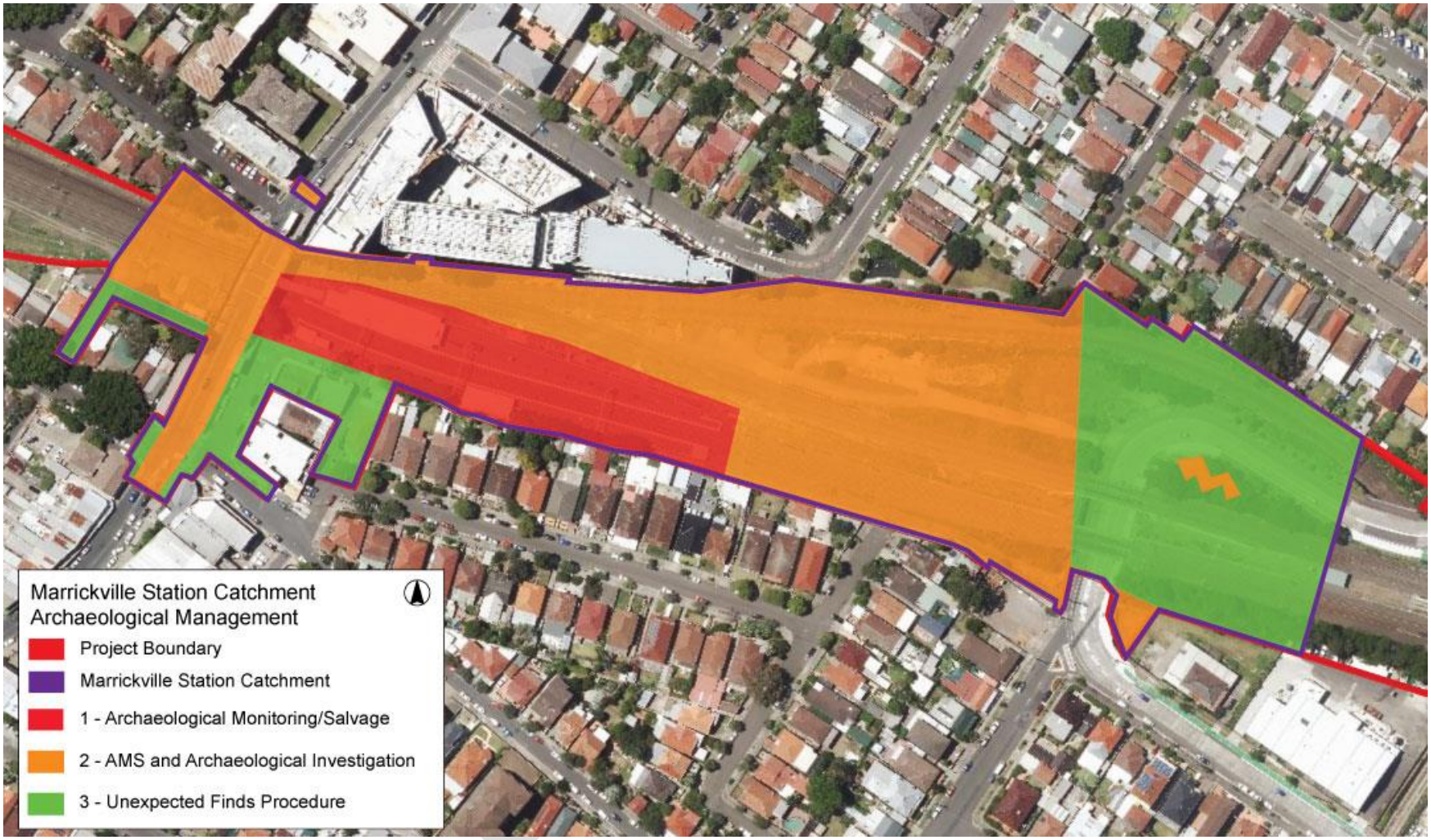
[10] Artefact 2018b: Table 8-2.

Phase	Potential archaeology	Management zone	Mitigation
	original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings. Moderate potential for footings of former platform canopies Low potential for former level crossing at the current Illawarra Road overbridge. Moderate potential for archaeological remains of the former Earlwood tram line that ran across Illawarra Road overbridge such as tram tracks and associated infrastructure		
	Low potential for footings of former coal loading and storage facilities Low potential for archaeological remains of the former sleeper bridge such as bridge footings.	3	• Unexpected Finds Procedure
4 (1930s – present)	Moderate to high potential for archaeological remains associated with upgrades such as utilities and drainage, footings of signalling huts and boxes, and footings associated with the commuter car parking structure and the Illawarra Road footbridge. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure
	Moderate potential for locally significant archaeological remains associated with the WWII air raid shelter such as the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts.	2	• AMS • Test/Salvage Excavations

Figure 21: Archaeological potential for Marrickville Station Catchment[11]

[11] Artefact 2018b: Figure 3-23.

Figure 22: Marrickville Station Catchment archaeological management zones[12]



[12] Artefact 2018b: Figure 8-1.

3.3 Canterbury Station Catchment

3.3.1 Potential archaeological remains at Canterbury Station

The AARD predicted archaeological remains of State and local significance to be present at Canterbury Station (including the Canterbury Construction Site). A summary of the archaeological potential and significance of predicted remains is provided in Table 4, and the location of these archaeological resources is provided in Figure 23 and Figure 24.

Table 4: Summary of areas with potential for significant archaeological remains for Canterbury Station[13]

Phase	Archaeological resource	Potential	Significance
1 (1788-1841)	• Archaeological features associated with land clearance such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters.	Nil-low	Unlikely to reach the threshold for local significance
2 (1841 – 1855)	• Archaeological remains of timber slab huts, outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works • Archaeological remains of the outbuildings such as footings, timber slabs remnants, stone fireplaces, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fencelines, and yard surfaces • Evidence of small scale mining activities • Archaeological evidence of farming includes fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters • Archaeological remains of early residential cottages including wells, cisterns and refuse pits	Moderate to High	Potentially State
3 (1855 – 1895)	• Archaeological remains of early residential cottages including wells, cisterns and refuse pits • Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Blackett and Co Canterbury Engineering Works	Moderate to High	Potentially local
4 (1895-1943)	• Archaeological remains and evidence of early railway construction including rails, refuse pits, drains and timber sleepers • Archaeological remains of former platform structures • Archaeological remains of the former race platform and retaining wall • Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings • Archaeological remains of early infrastructure such as culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track • Archaeological remains associated with the early phase of minor railway buildings (such as toilets)	Moderate	Potentially local

[13] Artefact 2018b: Table 4-3.

Phase	Archaeological resource	Potential	Significance
	prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track • It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.		
5 (1943-present)	• Archaeological remains associated with upgrades such as utilities and drainage	Moderate to high	Unlikely to reach the threshold for local significance

3.3.2 Archaeological management strategy for works at Canterbury Station

The AARD assessed potential impacts to archaeological resources at Canterbury Station from the works required as part of the project. The archaeological management policies are outlined in Table 5 and the location of the archaeological management zones are illustrated in Figure 25.

Table 5: Summary of archaeological management requirements at Canterbury Station Catchment[14]

Phase	Potential archaeology	Management zone	Mitigation
1 (1788-1841)	Nil to low potential for archaeological features associated with land clearance such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance	3	• Unexpected Finds Procedure
2 (1841 – 1855)	Moderate to high potential for potentially State significant archaeological remains of timber slab huts, outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works. Archaeological remains of the outbuildings such as footings, timber slabs remnants, stone fireplaces, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fence lines, and yard surfaces. Evidence of small scale mining activities, archaeological evidence of farming includes fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Archaeological remains of early residential cottages including wells, cisterns and refuse pits.	1	• AMS • Salvage excavations
3 (1855 – 1895)	Moderate to high potential for potentially locally significant archaeological remains of early residential cottages including wells, cisterns and refuse pits. Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Blackett and Co Canterbury Engineering Works.	1	• AMS • Salvage excavations

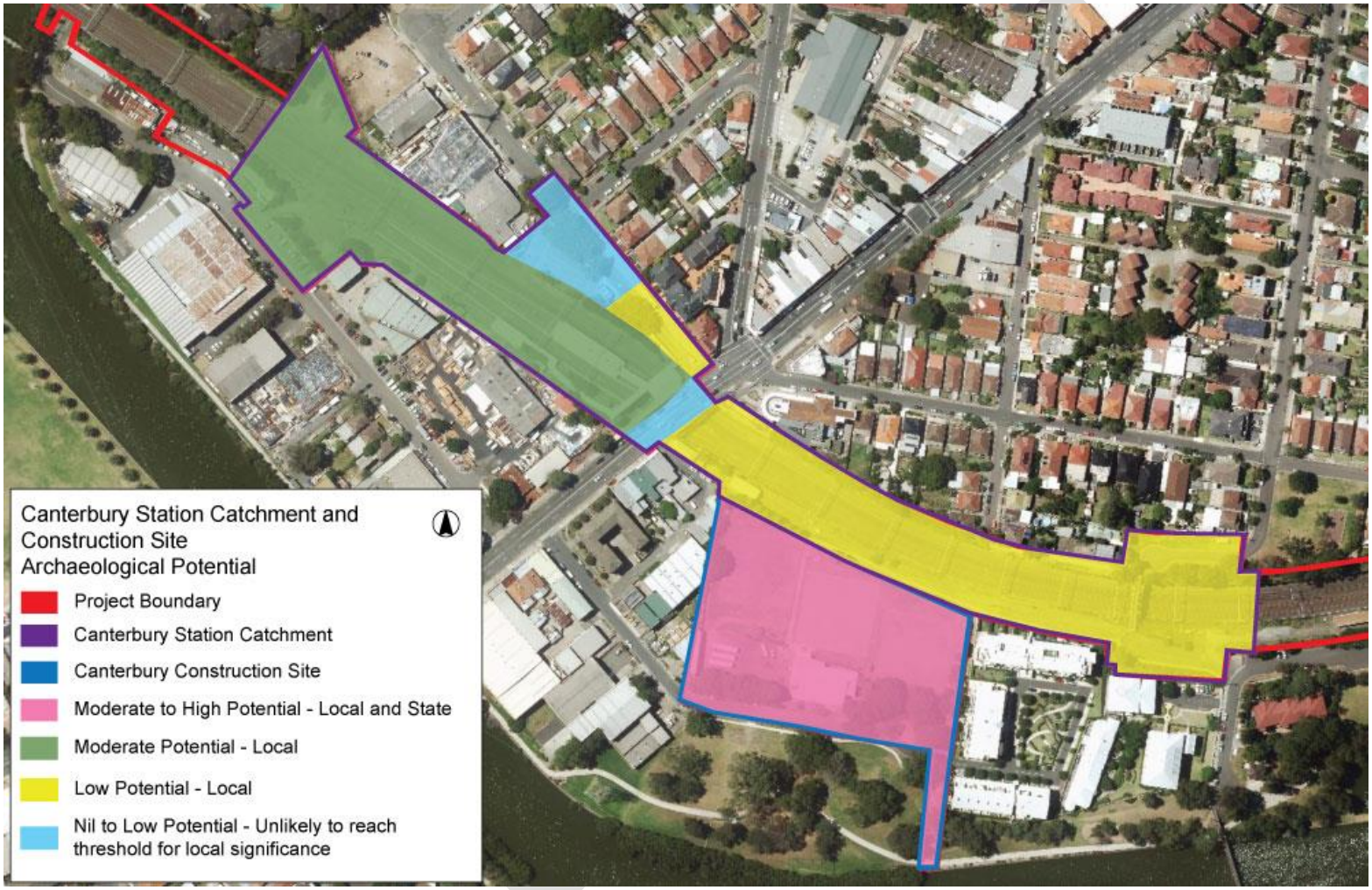
[14] Artefact 2018b: Table 8-3.

Phase	Potential archaeology	Management zone	Mitigation
4 (1895-1943)	Moderate potential for locally significant archaeological remains and evidence of early railway construction including rails, refuse pits, drains and timber sleepers. Archaeological remains of former platform structures. Archaeological remains of the former race platform and retaining wall. Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings. Archaeological remains of early infrastructure such as culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track. Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.	2	• AMS • Test/Salvage Excavations
5 (1943-present)	Moderate to high potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure

Figure 23: Location of the former historical structures within the Canterbury Station Catchment, including the Canterbury Construction Site[15]

[15]Artefact 2018b: Figure 4-20.

Figure 24: Archaeological potential for Canterbury Station Catchment[16]



[16]Artefact 2018b: Figure 4-22.

Figure 25: Canterbury Station Catchment archaeological management zones[17]

[17] Artefact 2018b: Figure 8-2.

3.4 Belmore Station Catchment

3.4.1 Potential archaeological remains at Belmore Station

The AARD predicted archaeological remains of local significance to be present at Belmore Station. A summary of the archaeological potential and significance of predicted remains is provided in Table 6 and the location of these archaeological resources is provided in Figure 26.

Table 6: Summary of areas with potential for significant archaeological remains for Belmore Station[18]

Phase	Archaeological resource	Potential	Significance
1 (1788-1880s)	• Archaeological features associated with low intensity land use such as grazing and farming including tree boles, fence line postholes, field drains and isolated artefact scatters	Nil-low	Unlikely to reach the threshold for local significance
2 (1880s – 1920s)	• Archaeological features associated with continued grazing and farming including fence line and shed postholes, field drains, isolated artefact scatters and drain culverts • Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track • Archaeological remains associated with the railway station goods shed and goods platform occupying land to near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit and other rail infrastructure • Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes and the brick culvert • Archaeological remains of former platform structures • Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs • Archaeological remains of tank located to the north of the station	Nil-low	Potentially Local
3 (1930s – present)	• Archaeological remains associated with upgrades such as utilities and drainage	Moderate	Unlikely to reach the threshold for local significance

[18] Artefact 2018b: Table 5-3.

3.4.2 Archaeological management strategy for works at Belmore Station

The AARD assessed potential impacts to archaeological resources at Belmore Station from the works required as part of the project. The archaeological management policies are outlined in Table 7 and the location of the archaeological management zones are illustrated in Figure 27.

Table 7: Summary of archaeological management requirements at Belmore Station Catchment[19]

Phase	Potential archaeology	Management zone	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure
2 (1880s – 1920s)	Low to moderate potential for Archaeological features associated with continued grazing and farming include fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts. Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains associated with the railway station goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure. Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures. Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station. Archaeological remains of the early goods shed and siding have the potential to reach local significance.	2	• AMS • Monitoring or test / salvage excavations
3 (1930s – present)	Moderate potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure

[19] Artefact 2018b: Table 5-4.

Figure 26: Archaeological potential for Belmore Station Catchment[20]

[20]Artefact 2018b: Figure 5-10.

Figure 27: Belmore Station Catchment archaeological management zones[21]

[21] Artefact 2018b: Figure 8-3.

3.5 Lakemba Station Catchment

3.5.1 Potential archaeological remains at Lakemba Station

The AARD predicted archaeological remains of local significance to be present at Lakemba Station. A summary of the archaeological potential and significance of predicted remains is provided in Table 8 and the location of these archaeological resources is provided in Figure 28.

Table 8: Summary of areas with potential for significant archaeological remains for Lakemba Station[22]

Phase	Archaeological resource	Potential	Significance
1 (1788-1880s)	• Initial land owners associated with moderately sized land grants used for agricultural and pastoral purposes • Archaeological features associated with low intensity land use such as timber getting, grazing and farming including tree boles, fence line postholes, field drains and isolated artefact scatters	Nil-low	Unlikely to reach the threshold for local significance
2 (1880s – 1909)	• Establishment of the Taylor House (Lakemba). Stables and potential outbuildings • Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts	Low	Potentially Local
3 (1909 – 1919)	• Archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track	Low - Moderate	Potentially Local
4 (1919 – present)	• Archaeological remains associated with station and rail corridor upgrades such as utilities and drainage	Moderate	Unlikely to reach the threshold for local significance

3.5.2 Archaeological management strategy for works at Lakemba Station

The AARD assessed potential impacts to archaeological resources at Lakemba Station from the works required as part of the project. The archaeological management policies are outlined in Table 9 and the location of the archaeological management zones are illustrated in Figure 29.

Table 9: Summary of archaeological management requirements at Lakemba Station Catchment[23]

Phase	Potential archaeology	Management zone	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological remains associated with the initial land owners associated with moderately sized grants used for agricultural and pastoral purposes. Archaeological features associated	3	• Unexpected Finds Procedure

[22] Artefact 2018b: Table 6-3.
[23] Artefact 2018b: Table 5-4.

Phase	Potential archaeology	Management zone	Mitigation
	with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.		
2 (1880s – 1909)	Low potential for locally significant archaeological remains associated with the establishment of the Taylor House (Lakemba), stables and potential outbuildings. Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts.	3	• Unexpected Finds Procedure
3 (1909 – 1919)	Low to moderate potential for locally significant archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track.	2	• AMS • Monitoring or test / salvage excavation
4 (1919 – present)	Moderate potential for archaeological remains associated with station and rail corridor upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance	3	• Unexpected Finds Procedure

Figure 28: Archaeological potential for Lakemba Station Catchment[24]

[24]Artefact 2018b: Figure 6-18.

Figure 29: Lakemba Station Catchment archaeological management zones[25]

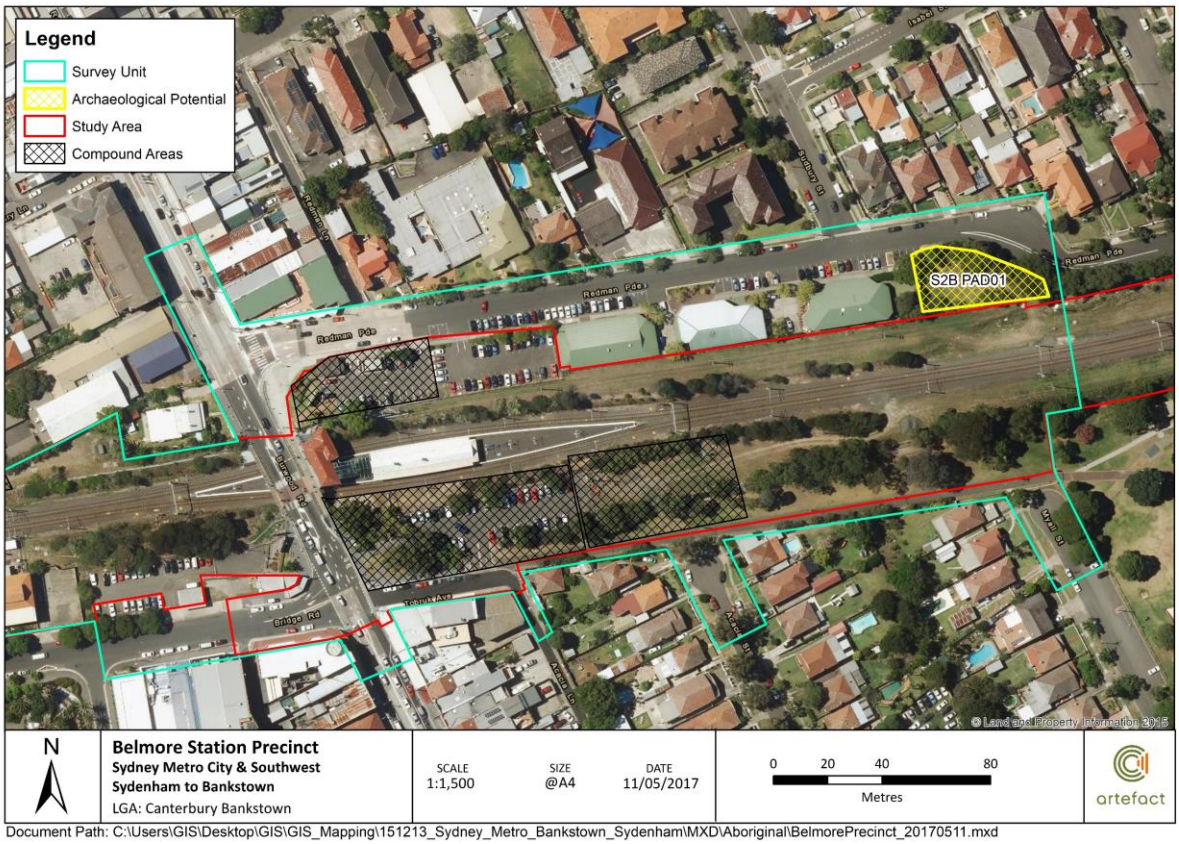
[25] Artefact 2018b: Figure 8-4.

3.6 Aboriginal archaeological potential

The ACHAR prepared for the project did not identify any previously recorded Aboriginal sites located along the project alignment. The ACHAR did however identify two areas of Aboriginal potential archaeological deposit (PAD), S2B PAD01 and S2B PAD02. S2B PAD01 consisted of a small grassed area (Lot 11/DP802657) located between the rail corridor and Redman Parade to the east of Belmore Station, near Sudbury Street. S2B PAD01 was assessed as having low to moderate potential, and the indicative archaeological significance was considered to be low to moderate. S2B PAD02 consisted of the south-western corner of Warren Park to the north of Punchbowl Station. It was assessed as having low to moderate potential, and the indicative archaeological significance was considered to be moderate. Subsequent archaeological test excavation undertaken at S2B PAD02 as part of the wider SWM project did not identify any subsurface Aboriginal objects and determined that S2B PAD02 was not a site.[26] S2B PAD01 was not planned to be impacted by the project however, and as a result archaeological test excavations have never been undertaken to verify if subsurface Aboriginal objects are present.

The remainder of the project alignment outside of S2B PAD01 and S2B PAD02 was assessed as having nil to low archaeological potential.

Figure 30: Location of S2B PAD01[27]



[26] Artefact, 2024. *Sydney Metro City & Southwest – Southwest Metro: Package 5 & 6. Aboriginal Heritage Report*. Report to Downer Group on behalf of Sydney Metro.
[27] Artefact 2018c: Figure 7.

4.0 PROPOSED WORKS

4.1 Introduction

This section provides a summary of the planned errant and hostile vehicle treatment works required for the project. The works are divided between planned overbridge locations and the non-bridge locations located along the project alignment.

4.2 Bridge locations

The planned errant and hostile vehicle treatment works include activities at 15 overbridge locations across the overall Bankstown line. The degree of work varies in complexity across the 15 overbridge sites, based on the structural condition of the existing overbridge and the ability to integrate and/or accommodate the planned works. Most locations would require remedial works to the bridges, and installation of new safety infrastructure in place of existing safety screens and rails. The new safety infrastructure would include a combination of TL3 and TL4 concrete and steel rail barrier systems, new integrated vertical safety screens, new bollards, and the modification of existing bridge elements such as paving, footpaths, kerbs, retaining walls, parapet walls, and balustrades. In some locations piling and the construction of piling caps would be needed to support new safety infrastructure. It is noted that not all of these works will be required at every location.

The location and general scope of each set of overbridge works and summary of heritage constraints is outlined in Table 10. More details of the works planned at individual bridge locations is provided as part of the impact assessments in Section 5.2.1.

4.3 Non-bridge locations

The planned errant and hostile vehicle treatment works have divided the 66 non-bridge locations into east and west package across the overall Bankstown line. The east package focuses on the non-bridge area from Marrickville Station to Lakemba Station, whilst the west package focuses on the non-bridge area from Lakemba Station to Bankstown Station.

The treatment is to design different types of barriers to mitigate risks associated with road vehicles intruding into the rail corridor and causing derailment of Sydney Metro and ARTC trains. The road barriers typically include TL3 post and beam barriers, TL4 steel post and beam barriers, TL3 concrete barriers, TL4 concrete barriers, and TL5 concrete barriers. The installation of these barriers would require ground penetrations where they are installed. The installation of new barriers would involve the removal of existing fences in these locations where present.

The location and scope of each non-bridge works and summary of heritage constraints is outlined in Table 10.

Figure 31: East and west package areas for non-bridge locations (Source: Aurecon, *DP941 Non-bridge areas – East Design Report*, p. 11)

4.4 Project justification

Sydney Metro have undertaken a Corridor Intrusion Risk Assessment (CIRA) to identify locations along the southwest corridor vulnerable to the risk of errant and/or hostile vehicles entering the rail corridor. The assessment recommended infrastructure upgrades as treatments to mitigate the risk of errant and hostile vehicles. The objective of the SWM4 project is the design and construction of errant and hostile vehicle mitigation treatments for SWM, the result of the CIRA, and comprises the security upgrades to the southwest corridor rail and station infrastructure and adjacent road network infrastructure to enable the conversion from heavy rail to meet minimum operating standards for automated Metro operations.

4.5 Summary of work locations

Table 10 provides a summary of the work locations and identifies which ones feature heritage constraints that are assessed for impact in this report. Locations with heritage constraints are shaded grey. The remaining locations are not located within 25m of any heritage items and are located within the Bankstown Line Catchment.

Table 10: Summary of work locations and heritage constraints

Location type	Reference	Adjacent / referring station precinct	Road name / location	Barrier classification	Recommended treatment option	Package	Approx. barrier length (m)	Heritage constraints
Bridge	921	Marrickville	Illawarra Road	TL3	Concrete and steel rail barrier and bollard installations	East	52	Heritage item Marrickville Station Catchment
Bridge	931	Southwest Metro Corridor (SMC)	Livingstone Road	TL3	Steel rail barrier installation	East	35	Heritage item
Bridge	932	SMC	Albermarle Street	TL3	Concrete and steel rail barrier, and safety screen installation	East	30	Heritage item
Bridge	933	Dulwich Hill	Garnet Street	TL3 & TL4	Concrete and steel rail barrier installation	East	26	Heritage item
Bridge	922	Dulwich Hill	Wardell Road	TL4	Steel rail barrier, bollard and safety screen installation. Remove extant safety screens	East	34	Heritage item
Bridge	923	Hurlstone Park	Duntroon Street	TL4	Concrete barrier, bollard and safety screen installation. Remove extant safety screens	East	32	Heritage item
Bridge	934	Hurlstone Park	Melford Street	TL3, TL4 & TL5	Concrete and steel rail barrier installation	East	26	Heritage item
Bridge	924	Canterbury	Canterbury Road	TL4	Concrete barrier and safety screen installation. Remove extant brick parapet wall	East	32	Heritage item Canterbury Station Catchment
Bridge	935	SMC	Loch Street	TL3 & TL4	Steel rail barrier installation	West	35	N/a
Bridge	925	Belmore	Burwood Road	TL4	Concrete and steel rail barrier, bollard and safety screen installation. Remove extant safety screens	East	33	Heritage item Belmore Station Catchment

Location type	Reference	Adjacent / referring station precinct	Road name / location	Barrier classification	Recommended treatment option	Package	Approx. barrier length (m)	Heritage constraints
Bridge	936	SMC	Moreton Street	TL3 & TL4	Concrete and steel rail barrier, and safety screen installation. Remove extant safety screens	East	28	N/a
Bridge	926	Lakemba	Haldon Street	TL4 and TL5	Concrete and steel rail barrier, and safety screen installation. Remove extant safety screens	West	43	Heritage item Lakemba Station Catchment
Bridge	927	Wiley Park	King Georges Road	TL4	Concrete and steel rail barrier, and safety screen installation. Remove extant safety screens	West	32	Heritage item
Bridge	928	Punchbowl	Punchbowl Road	TL4	Steel rail barrier and safety screen installation. Remove extant safety screens	West	48	Heritage item
Bridge	937	SMC	Stacey Street	TL3 & TL4	Concrete and steel rail barrier installation	West	273	N/a
Non-bridge	CI-004	Marrickville	Riverdale Avenue	TL5	Type F concrete barrier	East	20	Marrickville Station Catchment
Non-bridge	CI-007	Marrickville	Wooley Lane	TL4	Ezy-guard steel rail barrier	East	14	Marrickville Station Catchment
Non-bridge	CI-008	SMC	Randall Street	TL4	Ezy-guard steel rail barrier	East	50	N/a
Non-bridge	CI-164	SWC	Albermarle Street northbound east side	TL3	Ezy-guard steel rail barrier	East	12	Heritage item
Non-bridge	CI-158	SWC	Albermarle Street	TL5	Type F concrete barrier	East	14	Heritage item
Non-bridge	CI-019	Dulwich Hill	Dudley Street	TL4	Ezy-guard steel rail barrier	East	85	Heritage item
Non-bridge	CI-020	SWC	School Parade	TL3	Ezy-guard steel rail barrier	East	41	Heritage item
Non-bridge	CI-159	Dulwich Hill	Wardell Road	TL5	Type F concrete barrier	East	19	Heritage item

Location type	Reference	Adjacent / referring station precinct	Road name / location	Barrier classification	Recommended treatment option	Package	Approx. barrier length (m)	Heritage constraints
Non-bridge	CI-021	Dulwich Hill	Ewart Lane carpark		Bollards and wheel stops	East	54	Heritage item
Non-bridge	CI-026	SWC	Garnet Street	TL3	Ezy-guard steel rail barrier	East	40	N/a
Non-bridge	CI-027	SWC	Ewart Street	TL3	Ezy-guard steel rail barrier	East	63	Heritage item
Non-bridge	CI-036	SWC	Keir Avenue	TL4	Ezy-guard steel rail barrier	East	32	N/a
Non-bridge	CI-167	SWC	Melford Street northbound eastside	TL5	Type F concrete barrier	East	29	N/a
Non-bridge	CI-039	SWC	Sugar House Road	TL3	Ezy-guard steel rail barrier	East	75	Canterbury Station Catchment
Non-bridge	CI-054	SWC	Gould Street	TL5	Type F concrete barrier	East	69	N/a
Non-bridge	CI-056	SWC	Park Street	TL5	Type F concrete barrier	East	95	N/a
Non-bridge	CI-058	SWC	Duke Street and South Parade roundabout	TL4	Ezy-guard steel rail barrier	East	121	Heritage item
Non-bridge	CI-060	SWC	Harold Street	TL5	Type F concrete barrier	East	63	Heritage item
Non-bridge	CI-061	SWC	Beamish Lane	TL5	Type F concrete barrier	East	34	Heritage item
Non-bridge	CI-074	SWC	Lilian Lane west	TL5	Type F concrete barrier	East	160	N/a
Non-bridge	CI-075	Campsie	Lilian Lane carpark near Dewar Street	TL3	Ezy-guard steel rail barrier	East	86	Heritage item
Non-bridge	CI-076	SWC / Campsie	Lilina Street between Carrington and Dewar Streets	TL3	Ezy-guard steel rail barrier	East	237	N/a
Non-bridge	CI-077	Campsie	Dewar Street	TL5	Type F concrete barrier	East	40	Heritage item
Non-bridge	CI-078	SWC	Carrington Street	TL5	Type F concrete barrier	East	55	N/a

Location type	Reference	Adjacent / referring station precinct	Road name / location	Barrier classification	Recommended treatment option	Package	Approx. barrier length (m)	Heritage constraints
Non-bridge	CI-079	SWC	Loftus Street (south)	TL5	Type F concrete barrier	East	51	N/a
Non-bridge	CI-085	SWC	Redman Parade (chicane)	TL3	Ezy-guard steel rail barrier	East	72	Belmore Station Catchment Aboriginal heritage
Non-bridge	CI-086	Belmore	Redman Parade	TL3	Ezy-guard steel rail barrier	East	82	Heritage item Belmore Station Catchment
Non-bridge	CI-090	SWC	Wortley Avenue		Bollards	East	10	Belmore Station Catchment
Non-bridge	CI-093	SWC	Brande Street	TL4	Ezy-guard steel rail barrier	East	93	N/a
Non-bridge	CI-094	SWC	Peel Street (north)	TL5	Type F concrete barrier	East	85	N/a
Non-bridge	CI-095	SWC	Peel Street (south)	TL3	Ezy-guard steel rail barrier	East	82	N/a
Non-bridge	CI-097	SWC	Taylor Street (south)	TL5	Type F concrete barrier	East	89	N/a
Non-bridge	CI-161	SWC	Moreton Street roundabout	TL5	Type F concrete barrier	East	64	N/a
Non-bridge	CI-162	SWC	Moreton Street southbound west	TL5	Type F concrete barrier	East	16	N/a
Non-bridge	CI-166	SWC	Moreton Street southbound east	TL5	Type F concrete barrier	East	16	N/a
Non-bridge	CI-098	SWC	Dennis Street (south)	TL5	Type F concrete barrier	West	65	N/a
Non-bridge	CI-100	SWC	Taylor Street (north)	TL5	Type F concrete barrier	West	87	N/a
Non-bridge	CI-101	SWC	Dennis Street (north)	TL5	Type F concrete barrier	West	73	N/a

Location type	Reference	Adjacent / referring station precinct	Road name / location	Barrier classification	Recommended treatment option	Package	Approx. barrier length (m)	Heritage constraints
Non-bridge	CI-103	SWC	Railway Parade Lakemba East carpark 2	TL3	Ezy-guard steel rail barrier	West	109	Heritage item Lakemba Station Catchment
Non-bridge	CI-106	Lakemba	Croydon Street north	TL5	Type F concrete barrier	West	91	Heritage item Lakemba Station Catchment
Non-bridge	CI-113	SWC	Kathleen Street	TL5	Type F concrete barrier	West	104	N/a
Non-bridge	CI-114	SWC	Alice Street north	TL4	Ezy-guard steel rail barrier	West	65	N/a
Non-bridge	CI-115	SWC	Alice Street south	TL5	Type F concrete barrier	West	87	N/a
Non-bridge	CI-117	SWC	The Boulevarde Lakemba	TL3	Ezy-guard steel rail barrier	West	220	N/a
Non-bridge	CI-119	Wiley Park	Wiley Lane	TL3	Ezy-guard steel rail barrier	West	17	Heritage item
Non-bridge	CI-120	Wiley Park	Shadforth Street	TL4	Ezy-guard steel rail barrier	West	120	Heritage item
Non-bridge	CI-121	Wiley Park	The Boulevarde carpark Wiley Park	TL3	Ezy-guard steel rail barrier	West	45	Heritage item
Non-bridge	CI-124	SWC	Defoe Street	TL3	Ezy-guard steel rail barrier	West	72	N/a
Non-bridge	CI-125	SWC	Faux Street	TL5	Type F concrete barrier	West	72	N/a
Non-bridge	CI-127	SWC	The Boulevarde Wiley Park	TL3	Ezy-guard steel rail barrier	West	288	N/a
Non-bridge	CI-128	SWC	Robinson Street north	TL5	Type F concrete barrier	West	94	N/a
Non-bridge	CI-129	SWC	Robinson Street south	TL5	Type F concrete barrier	West	67	N/a

Location type	Reference	Adjacent / referring station precinct	Road name / location	Barrier classification	Recommended treatment option	Package	Approx. barrier length (m)	Heritage constraints
Non-bridge	CI-130	SWC	Rosemont Street north	TL5	Type F concrete barrier	West	77	N/a
Non-bridge	CI-131	SWC	Rosemont Street south	TL5	Type F concrete barrier	West	74	N/a
Non-bridge	CI-132	SWC	Dudley Street north	TL5	Type F concrete barrier	West	80	N/a
Non-bridge	CI-133	SWC	Dudley Street south	TL5	Type F concrete barrier	West	84	N/a
Non-bridge	CI-134	SWC	Rickard Street	TL4	Ezy-guard steel rail barrier	West	56	N/a
Non-bridge	CI-136	Punchbowl	Matthews Street	TL5	Type F concrete barrier	West	135	Heritage item
Non-bridge	CI-141	SWC / Punchbowl	Kelly Street / Breust Place	TL5	Type F concrete barrier	West	85	Heritage item
Non-bridge	CI-143	SWC	Stansfield Avenue	TL3	Ezy-guard steel rail barrier	West	106	N/a
Non-bridge	CI-145	SWC	Gardenia Avenue	TL5	Type F concrete barrier	West	68	N/a
Non-bridge	CI-146	SWC	Carnation Avenue	TL5	Type F concrete barrier	West	90	N/a
Non-bridge	CI-147	SWC	Wattle Street roundabout	TL3	Ezy-guard steel rail barrier	West	119	N/a
Non-bridge	CI-150	SWC	Stacey Street exit ramp	TL5	Type F concrete barrier	West	86	N/a
Non-bridge	CI-151	SWC	Lady Cutler Avenue	TL4	Ezy-guard steel rail barrier	West	88	N/a
Non-bridge	CI-153	SWC	East Terrace roundabout	TL3	Ezy-guard steel rail barrier	West	73	N/a
Non-bridge	CI-135	SWC	The Broadway	TL5	Type F concrete barrier	West	130	Heritage item

5.0 HERITAGE IMPACT ASSESSMENT

5.1 Introduction

This section provides an assessment of the heritage impacts that would occur as a result of the planned errant and hostile vehicle treatment works. This includes assessments of physical, visual, and archaeological impacts.

It is anticipated that heritage items would generally only be physically impacted by works involving treatments to heritage listed overbridges. For other work locations involving heritage items, it is expected that the works would primarily either be located outside of the heritage curtilages, and therefore would not cause physical impacts, or would be located within the heritage curtilages but would not be physically impacting significant fabric. Therefore, impacts to these items would be reduced compared to the heritage listed bridges. It is expected that potential impacts to significant non-Aboriginal archaeological remains would be limited to work locations within the four archaeological station catchments. Based on these expectations, the discussion of heritage impacts has been separated into two groups:

- Heritage items where bridge works are planned, or where works are planned on bridges adjacent to heritage listed station groups (discussed in Section 5.2.1)
- Remaining work locations within or near heritage items or archaeological catchments (discussed in Section 5.2.2).

Work locations that are not close to any heritage items within the study area are not expected to cause any heritage impacts. In addition, where works are located within the Bankstown Line Catchment, which was assessed as generally having nil to low archaeological potential, it is expected that there would be little to no impacts to significant archaeology. As a result, works that are not located within 25m of a heritage item and are located within the Bankstown Line Catchment, as identified in Table 10, do not require detailed assessment and are not discussed further in this section.

5.2 Heritage impact assessment

5.2.1 Heritage items involving bridge works

This section provides a detailed impact assessment for the heritage items that contain bridge works. An individual assessment is provided for each heritage item. Each assessment provides a physical description of the associated bridge, and a summary of the planned treatment works.

5.2.1.1 Marrickville Station

Heritage item

Marrickville Railway Station is listed on the following heritage registers as an item of State heritage significance:

- SHR as “Marrickville Railway Station Group” (SHR 01186)
- TAHE S170 Register as “Marrickville Railway Station Group” (SHI 4801909)
- Inner West LEP 2022 as “Marrickville Railway Station Group, including interiors” (LEP I1241).

Physical description

The Illawarra Road Bridge, which runs northeast- southwest above Marrickville Station consists of steel girders and a concrete slab supported on central brick piers and side brick abutments.[28] The existing barriers between the road and the rail corridor consist of painted brick parapet walls with steel mesh throw screens fixed to the top of the parapet walls on the eastern side of the road. The kerbing along the bridge consists of modern concrete sections and earlier sections of trachyte and sandstone.

Figure 32: Illawarra Road Bridge (Source: Google maps)

Assessment of significance

The following statement of heritage significance has been extracted from the SHR listing:

> *The railway station at Marrickville is significant as it is a station on the Sydenham to Bankstown Line which was constructed to relieve congestion on the Main South Line as well as to encourage suburban development and the growth of agriculture in the late 19th and early 20th century. The highly intact main platform building represents the period of transition from the boom time of the 1880s to the standardisation of NSW railway building design from the 1890s onwards, while the booking office on Platform 2 reflects a later period of expansion in the first quarter of the 20th century. Marrickville Railway Station is significant at a State level as the platform building demonstrates the high level of aesthetic design of the pre-1900 standard buildings, which included the use of polychromatic brickwork, decorative dentil coursing, ornate awning brackets and carved bargeboards. The platform building is intact and is representative of a small group of such ornate platform buildings including Canterbury and Belmore on the Bankstown Line. The platform building on platform 2 provides an interesting contrast, demonstrating the simpler design of the standard platform buildings of the 1910/20s. Also of significance is the intactness of the weatherboard booking office which is unusual for being one of the few examples of a booking office located on a platform with street entry only and no access from the footbridge or overbridge, though the structure itself is representative of a standard design.*[29]

The following description and assessment of the Illawarra Bridge has been derived from the *Sydney Metro and Southwest – Marrickville Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*.[30] The Illawarra Road Bridge is in good condition and is of high significance. The bridge has undergone minor alterations, with the original access stairs from the overbridge to platform 1 retaining the original steel stringers, but the installation of new concrete treads and steel balustrades. The later stairs to the south were constructed from steel stringer supported on steel columns and precast concrete treads.

[28] Heritage NSW, 2024. "Marrickville Railway Station Group". *SHI database no. 5012096*, accessed online at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=5012096.
[29] Heritage NSW, 2024. "Marrickville Railway Station Group". *SHI database no. 5012096*.
[30] Artefact, 2020. *Sydney Metro City and Southwest – Marrickville Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

The heritage impact assessment identified the following significant views at Marrickville Station that relate to the bridge:

- Views from Illawarra Road of masonry parapet of bridge (high)
- Views from Arthur Street looking south and east towards masonry parapet, wing walls and retaining walls of Illawarra Road overbridge (high).

It is noted that while the bridge forms part of the SHR and s170 curtilages of Marrickville Station, it is not included as part of the LEP curtilage of the item.

Planned works

The Illawarra Road Bridge design package includes the implementation of barrier treatments to provide adequate protection to the Sydney Metro corridor. The approximate total required barrier length is 52m. The preferred option is the use of an on-structure concrete bridge barrier at the edge of the traffic lane, and an off-structure steel beam barrier at the edge of the traffic lane. The works would include:

- Sawcut and remove existing asphalt and kerb along the west side of the bridge
- Install TL3 on structure concrete bridge barrier supported on a concrete strip footing
- Install TL3 off structure steel beam barrier, including a TL3 w-beam barrier, TL3 w-beam to three-beam transition barrier, a TL3 three-beam barrier, and a three-beam to concrete barrier connection.
- Relocation of light poles to the top of the concrete barrier.

Bollards are also proposed to be installed on the city (east) of the bridge in front of the station entrance. The installation would consist of 12 rated or unrated bollards. They would be spaced at 1200mm around the front of the station entrance with an offset of 2000mm from the kerb edge.

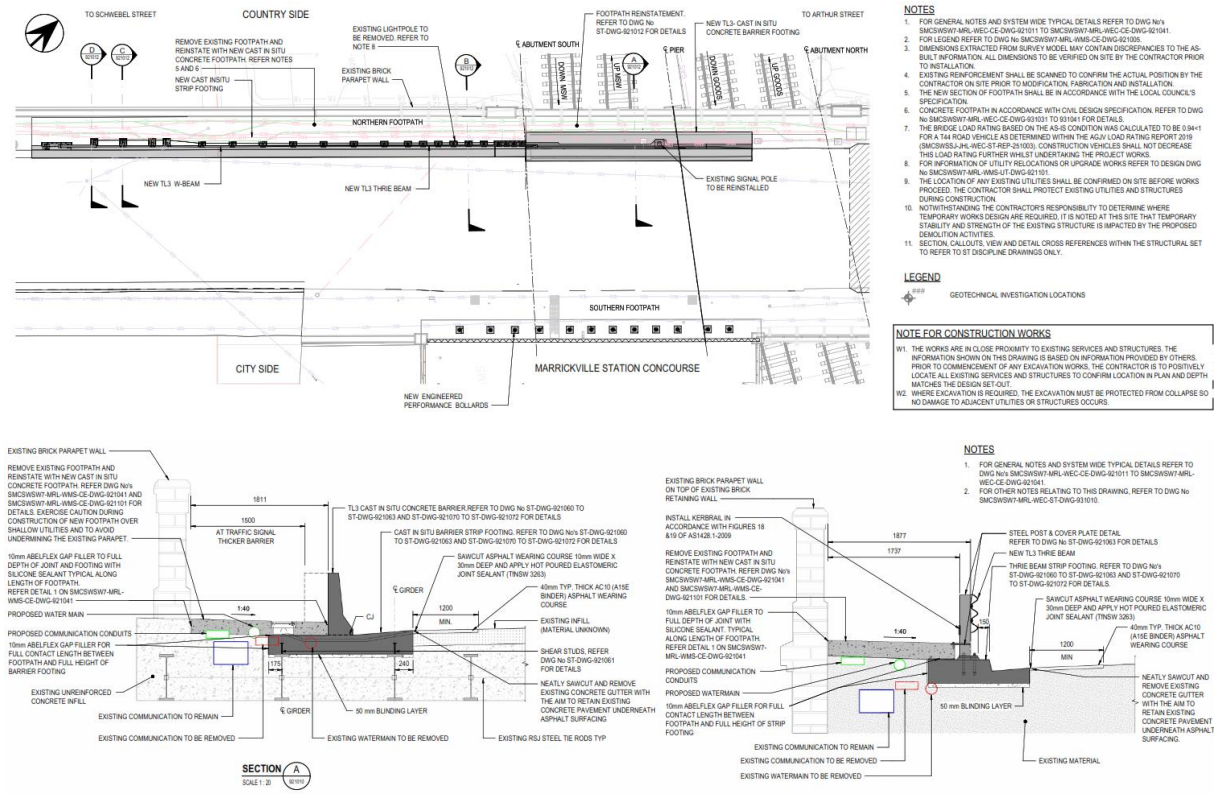


Figure 33: Plan of treatment works for Illawarra Street Bridge (Source: Aurecon 2024, provided by ARCH Artifex)

Archaeological potential

Illawarra Road Bridge is within the Marrickville Station Catchment and is identified in the AARD as an area of moderate to high potential for archaeological remains of local significance and as AMZ 2 (AMS and archaeological investigation). Archaeological remains are likely to consist of remains of the Earlwood Tram Line beneath the extant road surface.

Heritage impacts

Physical:
The proposed works would be undertaken on the bridge, which has been identified as an element of high significance within the station group. However, it is noted that impacts would largely be limited to newer fabric of the bridge. The new barriers and bollards would require impacts to the concrete kerbs, asphalt surfaces, and timber beam light posts, though this fabric contributes less to the significance of the bridge element. These features would be set back from the extant brick parapet wall (by 1500-1750mm) and would not impact it. The works would not affect the overall structure or foundations of the bridge. Impacts to significant fabric would primarily occur where the works on the country side of the bridge would remove about 34m of earlier trachyte/sandstone kerbing along the southern side of the heritage item. This would be limited to a relatively small area of the overall station group though, and some sections of earlier kerbing would remain after the works. Overall, it is assessed that the works would cause a **minor** physical impact to the fabric of the Illawarra Road Bridge, and a **minor** physical impact to the significance of Marrickville Station. The heritage item would not be materially affected by the works.

Visual:
The treatment works would be located on Illawarra Road Bridge, which is part of the significant views of the station group, namely views from Illawarra Road of the masonry parapet of the bridge, and views from Arthur Street looking towards the masonry parapet, wing walls and retaining walls of Illawarra Road Bridge. These views are considered to be of high significance. The works would install new barriers in close proximity to the brick parapet, as well as bollards in front of the station entrance. However, the brick parapet would be retained and would not be physically impacted by the new barriers. Furthermore, the barriers would be located below the height of the parapet wall. As a result, although the works would introduce visual clutter close to the brick parapet that would cause a visual impact, the significant views of the parapet would be retained. The removal of extant trachyte/sandstone kerbing along the countryside of the bridge would also cause a visual impact. However, this would be limited to a relatively small area of the overall station group, and is located at ground level where it is less visually noticeable. Sections of earlier kerbing would still be present within the station group following the completion of the works. Overall, it is assessed that the works would cause a **minor** visual impact.

Archaeology: Ground disturbing works would be undertaken within the area of moderate to high archaeological potential as identified in the AARD. However, the ground disturbance would be minor in nature, and would primarily be limited to the footpath areas of the bridge rather than being within the extant road surface where archaeological remains associated with the former Earlwood Tram Line would be present. Based on this, it is unlikely that substantial and intact archaeological remains would be encountered by the planned works, and as a result there would be little to no impacts to archaeological remains. Overall, it is assessed that there would be **nil** impacts to significant archaeological remains.

5.2.1.2 South Dulwich Hill Heritage Conservation Area

Heritage item

The Albermarle Street Overbridge is encompassed in the South Dulwich Hill Conservation Area, which is listed as a Heritage Conservation Area (HCA) of local significance on the Inner West LEP 2022 (item no.C107).

Physical description

Albermarle Street Overbridge consists of a concrete road deck atop girders which span between the embankments on either side of the rail corridor. The girders are supported by metal piers. A metal balustrade and safety fence line each side of the road deck. The brick footpath on the eastern side of Albermarle Street is part of the extensive brick paving that was laid in the Great Depression as part of the Employment Relief Schemes in the 1930s.

Figure 34: Albermarle Street Overbridge, with Depression era brick paving visible on the right (east) side (Source: Google Maps)

Assessment of significance

The following statement of heritage significance has been extracted from the LEP listing:

> *The South Dulwich Hill Heritage Conservation Area is of historical significance as an area developed in the Federation period as a series of c. 1910 subdivisions in the vicinity of the Wardell Road (now Dulwich Hill) Railway Station which opened in 1889. The Area is of aesthetic significance for its many good quality individual examples and small groups of Federation bungalows that retain original timber joinery, window hoods and detailing to gables and verandas to a quality and consistency rare in the Council area. The area includes excellent examples of the Marrickville Iron Palisade fence, particularly in Cannonbury Grove. The area contains a good collection of a locally significant variation of the 'standard' Federation bungalow design with a low ridgeline set parallel to the street alignment. The Area also includes streetscapes of a high quality. This quality is derived from the consistency of subdivision pattern, setbacks, built forms, roof volumes, materials, detailing, and garden spaces. The built forms of the area are representative of the Marrickville area in the early years of the 20th Century as it transformed from a dense urban to detached suburban cultural landscape which includes detached late Federation bungalows and wide lots allowing asymmetrical siting of houses to provide for a side driveway (later development).*[31]

The Albermarle Street Overbridge has not been identified as a contributory item in the HCA. It has previously been assessed that the Depression era paving surfaces 'contribute strongly to the textural and aesthetic qualities of the area'.[32] As a result the Marrickville DCP 2011 identifies brick paved footpaths associated with the Depression as being one of the core heritage values/elements of the locally significant HCA.

Planned works

Bridge works

The treatment works on Albermarle Street Bridge would include the following:

- Reconstruction of the concrete base slab integrated with an edge beam to facilitate installation of a steel 3 rail barrier on the Albermarle Street Bridge
- Installation of new safety screens to be integrated with the barrier system
- Installation of abutting concrete transition traffic barriers.

Non-bridge works

[31] Heritage NSW, 2022. "South Dulwich Hill Conservation Area". *SHI database no. 2030484*, accessed online at: online at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=2030484.
[32] Paul Davies Pty Ltd Architects Heritage Consultants 2009: 29-32

The following non-bridge works are also located within or close to the heritage curtilage:

- CI-008 – Installation of Ezy-guard steel rail barriers
- CI-158 – Installation of concrete barriers
- CI-164 – Installation of Ezy-guard steel rail barriers.

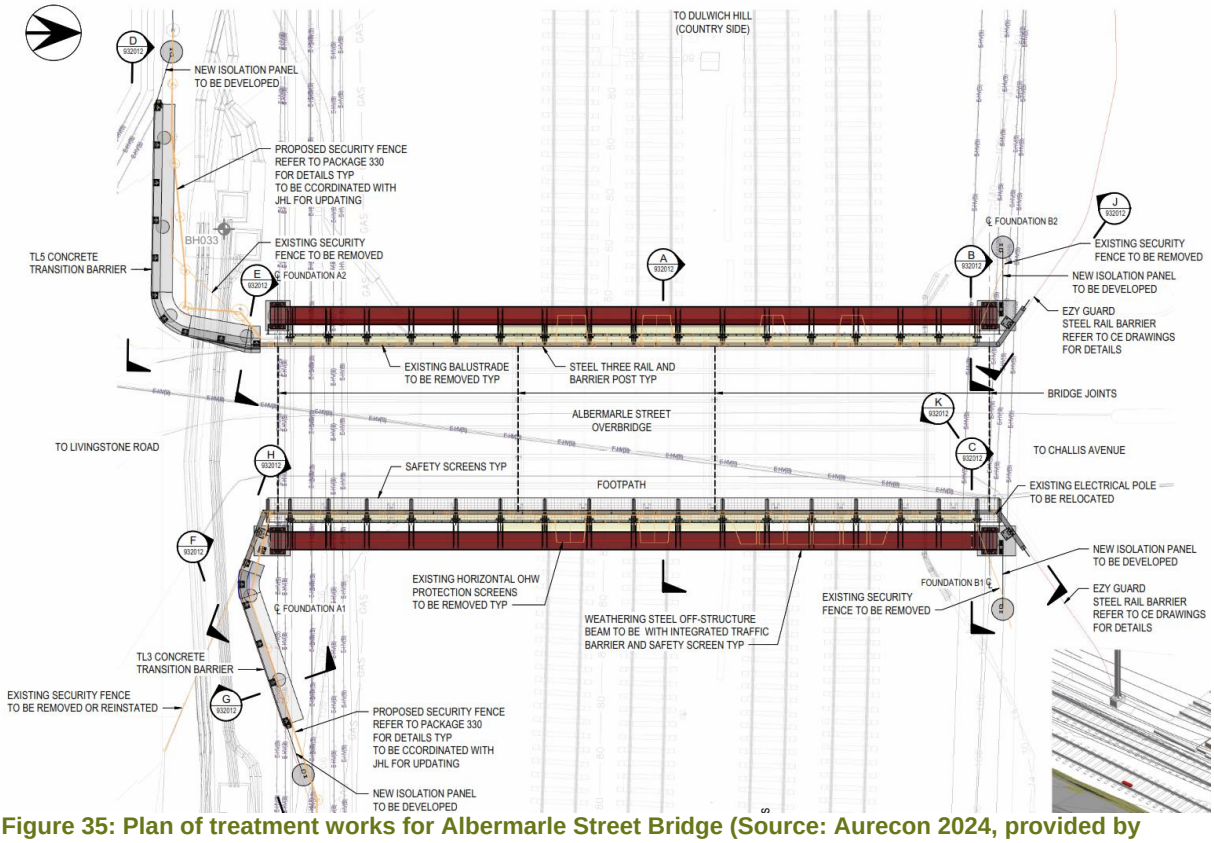


Figure 35: Plan of treatment works for Albermarle Street Bridge (Source: Aurecon 2024, provided by ARCH Artifex)

Archaeological potential

The Albermarle Street Bridge area of the South Dulwich Hill HCA is located within the Bankstown Line Catchment which was assessed in the AARD as generally having nil to low archaeological potential and was identified as Archaeological Management Zone (AMZ) 3 (Unexpected Finds Procedure). No archaeological potential has been identified in association with the bridge deck itself.

Heritage impacts

Physical:
The works would primarily be undertaken on the bridge, which is not identified as a contributory element in the South Dulwich Hill HCA. The works would not affect the overall structure or foundations of the bridge. As a result, the modifications to the bridge itself would cause neutral physical heritage impacts to the South Dulwich Hill HCA. The Depression era brick paving immediately to the south of the bridge on the east side however is considered to be significant fabric. The installation of the concrete transition barriers and steel rail barriers in this location, including the movement of plant and equipment, may impact the brick paving in the process. This may include the need to temporarily remove a portion of the brick paving. However, it is expected that the impacts would be limited to a localised area of paving, which would be minimal in relation to the overall HCA. Overall, it is assessed that the physical impact to the HCA would be **negligible**, and the heritage item would not be materially affected by the works.

Visual:
Although the bridge itself is not considered to be a significant element, the works would involve the installation of anti-throw screens and barriers that would be visible in the localised area, which would cause a visual impact. The Depression era brick paving contributes to the aesthetic qualities of the HCA, therefore removal of part of the paving would also cause a visual impact. However, the impacts would only be visible within a very small portion of the HCA and would not interrupt significant views of the urban landscape. The overall aesthetic and setting of the HCA would be retained. Overall, it is assessed that the visual impact to the HCA would be **negligible**.

Archaeology: Works would be limited to the Bankstown Line Catchment (AMZ 3), and no archaeological potential has been identified in association with the bridge deck. As a result, it is expected that archaeological impacts would be **nil**.

5.2.1.3 Dulwich Hill Station

Heritage item

Dulwich Hill Railway Station is listed on the following heritage registers as an item of local heritage significance:

- TAHE S170 Register as "Dulwich Hill Railway Station Group" (SHI 4801909)
- Inner West LEP 2022 as "Dulwich Hill Railway Station Group, including interiors" (LEP I1024).

Physical description

The Wardell Road Overbridge consists of a modern, pre-stressed concrete road deck spanning between lateral concrete beams. These beams bear on the original face brick platform and the embankment piers on each side.[33]

Figure 36: Wardell Road Overbridge (Source: Google maps)

Assessment of significance

The following statement of significance has been extracted from the TAHE s170 listing:

> *Dulwich Hill Railway Station has local historical significance as it is one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. While the original 1895 station buildings are no longer extant, the replacement 1935 group of structures including both the overhead booking office and the platform building are significant as they represent typical examples of the Inter-War*

[33] Heritage NSW, 2022. "Dulwich Hill Railway Station Group". *SHI database no. 4801909*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801909.

Eclectic style utilised by NSW Railways. The overhead booking office is of high significance and rare as it retains its original configuration and much of its original fabric.

The Dulwich Hill footbridge is of high heritage significance as a typical example of a 1935 platform access stair with a timber overhead booking office attached. The stair is substantially intact including balusters and newels.[34]

The Wardell Road Bridge is included as part of the above heritage listings. The *Sydney Metro City and Southwest – Dulwich Hill Metro Station Detailed (Revised stage 3) Design Heritage Impact Assessment* assessed the Wardell Road Overbridge as being in good condition and as an element of moderate significance within the station group.[35]

The heritage impact assessment identified the following significant views at Dulwich Hill Station that relate to the bridge:

- Views from Wardell Road overbridge of the overhead booking office (high significance)
- Views from Wardell Road overbridge of platform building (high significance)
- Views from Wardell Road (west) of platform building and overhead booking office (moderate significance).

Planned works

Bridge works

The treatment works on Wardell Road Bridge at Dulwich Hill Station would include the following:

- Upgrade existing footpath and kerbs to allow traffic barrier addition, kerb and footpath reconstruction and level tie-in
- Removal of existing balustrade and horizontal safety screens
- Installation of a new three rail barrier with sloped ends and termination barriers
- Installation of new glazed vertical protection screens with integrated OWH safety screen and handrail
- Installation of about 29 bollards, to be spaced 1200mm edge to edge and set back 600mm from the kerb
- Installation of 7 bollards across the Ewart Lane station entry.

Non-bridge works

The following non-bridge works are also located within the heritage curtilage:

- CI-019 – Installation of Ezy-guard steel rail barriers
- CI-159 – Installation of concrete barriers
- CI-021 – Installation of bollards.

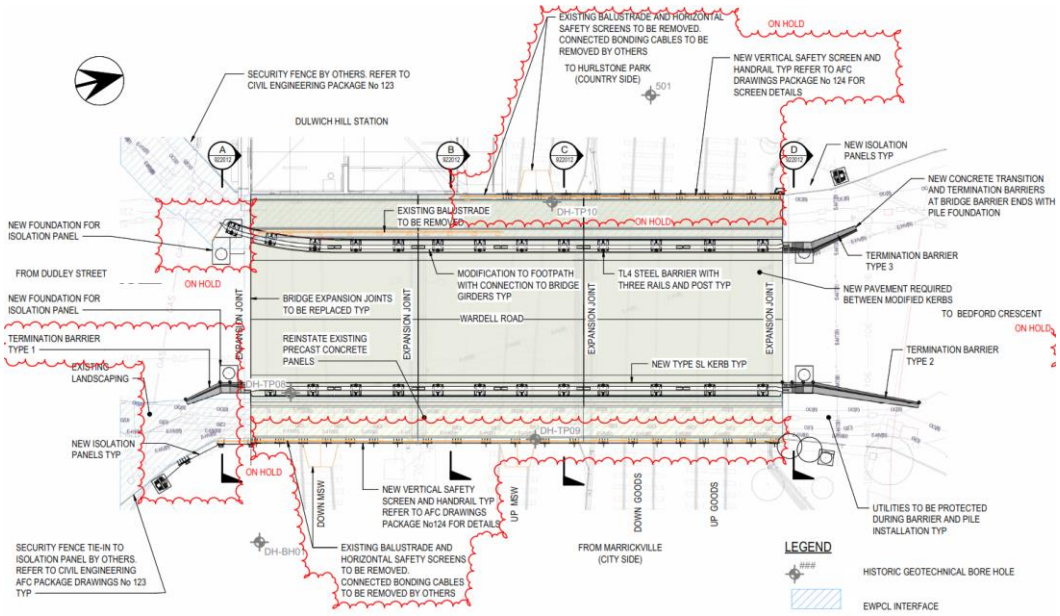


Figure 37: Plan of treatment works for Wardell Road Bridge (Source: Aurecon 2024, provided by ARCH Artifex)

[34] Heritage NSW, 2022. "Dulwich Hill Railway Station Group". *SHI database no. 4801909*.
[35] Artefact, 2020. *Sydney Metro City and Southwest – Dulwich Hill Metro Station Detailed (Revised stage 3) Design Heritage Impact and Consistency Assessment*. Report to Metron T2M.

Archaeological potential

Dulwich Hill Station, including Wardell Road Bridge, is part of the Bankstown Line Catchment which was assessed in the AARD as generally having nil to low archaeological potential and identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The proposed works would be undertaken on the bridge, which has been identified as an element of moderate significance within the station group. However, the works would be limited to areas of the current concrete road deck and footpath, and the non-original fabric of the existing horizontal safety screens. The works would not alter the brick piers and abutments on either side of the rail corridor. The works would not affect the overall structure or foundations of the bridge. Similarly, non-bridge barriers and bollards to be installed would be limited to non-significant footpaths. Overall, it is assessed that the works would cause a **negligible** physical impact to the fabric of the Wardell Road Bridge, and a **negligible** physical impact to the significance of Dulwich Hill Station. The heritage item would not be materially affected by the works.

Visual:
The treatment works would be located on Illawarra Road Bridge, which is part of the significant views of the station group, namely views from the bridge towards the overhead booking office and platform building. New barriers and vertical screens would be installed on the bridge which would introduce new elements to the area. However, the new throw screens would be constructed of glazed panels, significantly retaining the existing view lines from Wardell Road towards the station platform building and overhead booking office. The new throw screens and barriers along Wardell bridge would be consistent with the replacement of existing non-original fabric with a contemporary design that is sympathetic to the existing view lines from the roadway towards the station buildings. Although the height of the throw screens would be partially increased, the proposed materials, siting, and form of these elements helps to mitigate the impact to the visual relationships formed within the station. The new features would not impact the ability to understand the role of the station in the development of Dulwich Hill. Overall, it is assessed that the works would cause a **minor** visual impact.

Archaeology: Ground disturbing activities for the Wardell Road Bridge works and installation of non-bridge rail barriers would be minor in nature and would be limited to areas assessed as having nil to low archaeological potential. Therefore, it is expected that there would be little to no impacts to archaeology. Overall, it is assessed that impacts to significant archaeological remains would be **nil**.

5.2.1.4 Hurlstone Park Station

Heritage item

Hurlstone Park Railway Station is listed on the following heritage registers as an item of local heritage significance:

- TAHE s170 Heritage Inventory Register as “Hurlstone Park Railway Station Group” (SHI 4802051)
- Canterbury Bankstown LEP 2023 as “Victorian and Federation Railway station buildings” (LEP I175).

Physical description

The Hurlstone Park overbridge consists of steel girders supported on face brick embankments and central brick piers, and modern balustrading.[36]

[36] Heritage NSW, 2022. “Hurlstone Park Railway Station Group”. *SHI database no. 4802051*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4802051.

Figure 38: Duntroon Street Bridge (Source: Google Maps)

Assessment of significance

The following statement of heritage significance has been extracted from the TAHE s170 listing:

> *Hurlstone Park Railway Station has local historical significance as it is one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. The platform buildings, footbridge and stairs are significant as examples of the designs used by NSW Railways during the period 1910 to 1920. The wayside platform buildings are good examples of their type, being relatively intact, with the original 1915 men's toilet on Platform 2, although long disused, still retaining its original configuration.*[37]

The Duntroon Street bridge is excluded from the s170 and LEP listing as the bridge has undergone upgrades which has resulted in the general loss of integrity.[38] It is noted though that the *Sydney Metro City and Southwest – Hurlstone Park Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment* identified that the adjacent footbridge and deck were of moderate and low significance respectively, and the face brick abutments that support the overbridge are considered to be elements of high heritage significance.[39] The Heritage Impact Assessment did not include the road deck of the bridge as part of this element, however, it did identify views of the platform station from the Duntroon Street overbridge as a view line of high significance at the station.

Planned works

The treatment works on Duntroon Street Bridge at Hurlstone Park Station would include the following:

- Removal of the existing buried concrete slab, balustrade, northern end of brick parapet wall, and concrete infill of the bridge
- Removal of existing horizontal safety screens
- Installation of traffic barriers and cast-insitu concrete slabs
- Installation of new TL4 concrete barriers on the city (east) side of the bridge
- Installation of new glazed vertical protection screens. The new protection screens and rail traffic barrier would be supported by a new off-structure box girder beam
- Installation of new bollards to country side of the bridge.

[37] Heritage NSW, 2022. "Hurlstone Park Railway Station Group". *SHI database no. 4802051*.
[38] Heritage NSW, 2022. "Hurlstone Park Railway Station Group". *SHI database no. 4802051*.
[39] Artefact, 2020. *Sydney Metro City and Southwest – Hurlstone Park Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

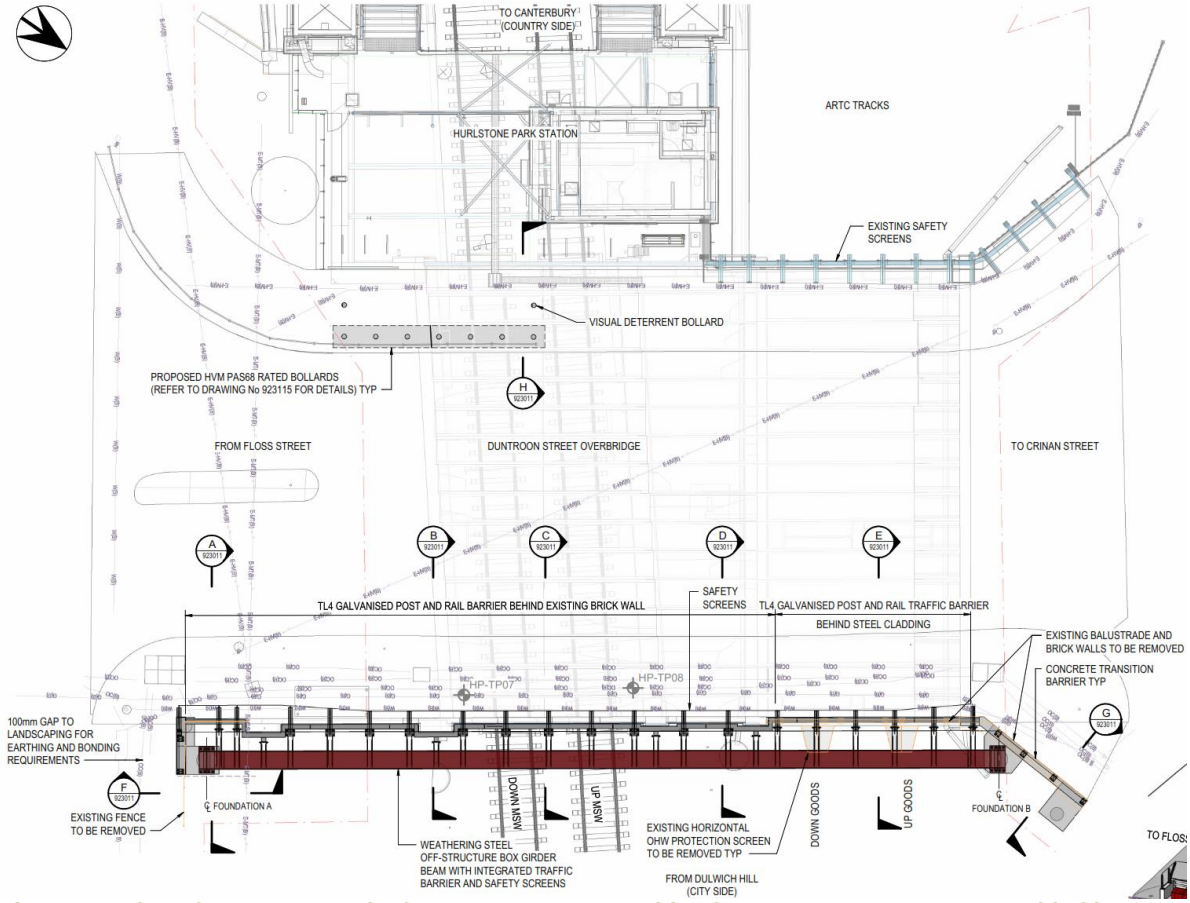


Figure 39: Plan of treatment works for Duntroon Street Bridge (Source: Aurecon 2024, provided by ARCH Artifex)

Archaeological potential

Hurlston Park Station, including Duntroon Street Bridge, is part of the Bankstown Line Catchment which was assessed in the AARD as generally having nil to low archaeological potential and identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The works would involve the removal of the northern section of the brick parapet wall on Duntroon Street Bridge, as well as the removal of the existing buried concrete slab and penetrations for the installation of the new off-structure box girder beam and the concrete barriers. However, these are not considered to be contributory elements to the station group. The works would not impact the face brick abutments that support the bridge, and they would not impact the adjacent footbridge or overhead booking office. As a result, no significant fabric would be modified as part of the treatment works. Overall, it is assessed that the works would cause a **neutral** physical impact to the significance of Hurlstone Park Station and the heritage item would not be materially affected by the works.

Visual:
The new throw screens, off-structure box girder beam, barriers and bollards would be installed on the Duntroon Street Bridge which is situated at the entrance to Hurlstone Park Station. This would introduce new material within a visible area, with the throw screens being taller than the existing horizontal safety screens. However, the new features would be largely replacing elements that also do not contribute to the significant setting of the station, with no modifications to the adjacent significant elements. Although the throw screens would be more visible from the platforms, the significant views of the platform buildings from Duntroon Street would be retained and the general setting of the station would not be interrupted. The new off-structure box girder beam and part of the rail barrier would be located on the opposite side of the bridge to the station which would help obscure them from view. The northern section of the existing brick parapet wall would be removed, however, the majority of the parapet wall would be retained. Overall, it is assessed that the works would cause a **negligible** visual impact.

Archaeology: Ground disturbing activities for the Duntroon Street Bridge works would be minor in nature and would be limited to areas assessed as having nil to low archaeological potential. Therefore, it is expected that there would be little to no impacts to archaeology. Overall, it is assessed that impacts to significant archaeological remains would be **nil**.

5.2.1.5 Canterbury Station

Heritage item

Canterbury Railway Station is listed on the following heritage registers as an item of State heritage significance:

- SHR as "Canterbury Railway Station Group" (SHR 01109)
- TAHE s170 Register as "Canterbury Railway Station Group" (SHI 4801100)
- Canterbury Bankstown LEP 2023 as "Canterbury Station Group" (LEP I90).

Physical description

The Canterbury Road Bridge consists of a jack arched brick and concrete deck support by steel girders. The girders are supported by concrete and brick abutments and span the Up and Down Line. The parapet walls lining the road deck are brick.

Figure 40: Canterbury Road Bridge (Source: Google maps)

Assessment of significance

The following statement of heritage significance has been extracted from the SHR listing:

> *Canterbury Railway Station possesses historical significance as it is a station on the Sydenham to Bankstown Line which was constructed to relieve congestion on the Main South Line as well as to encourage suburban development and the growth of agriculture in the late 19th and early 20th century. The main platform building represents the period of transition from the boom time of the 1880s to the standardisation of NSW railway building design from the 1890s onwards.*
>
> *Canterbury Railway Station is significant at the state level as the Platform 1 Building demonstrates the high level of aesthetic design of the pre-1900 standard railway buildings,*

which included the use of polychromatic brickwork, decorative dentil coursing, ornate awning brackets and carved bargeboards. This platform building is relatively intact and is representative of a small group of such ornate platform buildings including Marrickville and Belmore on the Bankstown Line.

The Canterbury signal box is of historical significance as it is representative of the development of railway signalling technology in the first decades of the 20th century. As it was is intact internally it is capable of providing information about the workings of a signal box of this era.[40]

The Canterbury Road Bridge is included as part of the above heritage listings. The *Sydney Metro City and Southwest – Canterbury Metro Station Detailed (Revised stage 3) Design Heritage Impact Assessment* assessed the overbridge as being in good condition and as an element of high significance within the station group.[41]

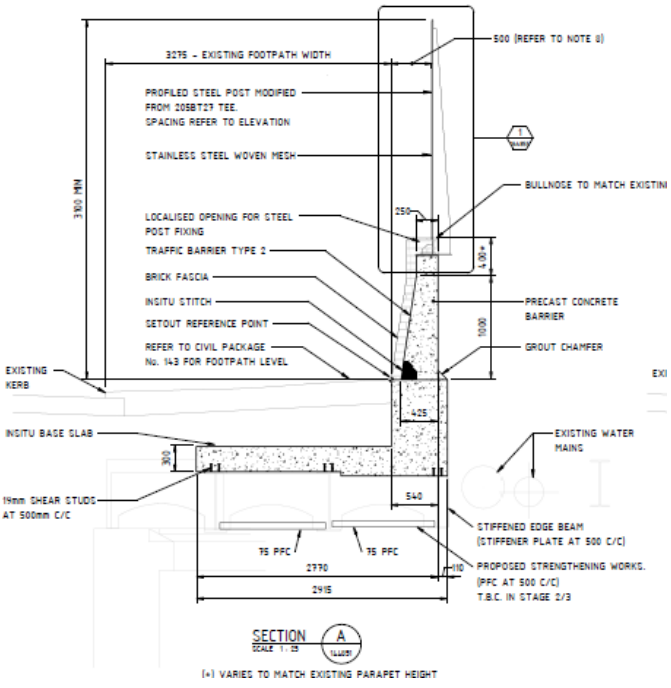
The heritage impact assessment identified the following significant views at Canterbury Station that relate to the bridge:

- Views from platform 2 towards exposed sandstone adjacent to brick masonry retaining wall against Canterbury Road (high significance)
- Views from Canterbury Road towards the Signal box (high significance).

Planned works

The treatment works on Canterbury Road Bridge at Canterbury Station would include the following:

- Removal of existing brick parapet walls on the city (east) and country (west) sides of the bridge
- Installation of new TL4 concrete barriers with salvaged brick fascia on the road side
- Demolition, replacement and regrading of existing concrete footpath
- Blast clean and repair the top flange of the bridge girders and weld shear studs to the flange
- Demolition of existing footpath canopy roof and columns
- Installation of new protection screens
- Installation of new security fencing
- Piling and the construction of piling caps
- Installation of new utilities which may be fixed to the brickwork of the bridge.



[40] Heritage NSW, 2024. "Canterbury Railway Station Group". *SHI database no. 5011966*, accessed online at: https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5011966.
[41] Artefact, 2020. *Sydney Metro City and Southwest – Canterbury Hill Metro Station Detailed (Revised stage 3) Design Heritage Impact and Consistency Assessment*. Report to Metron T2M.

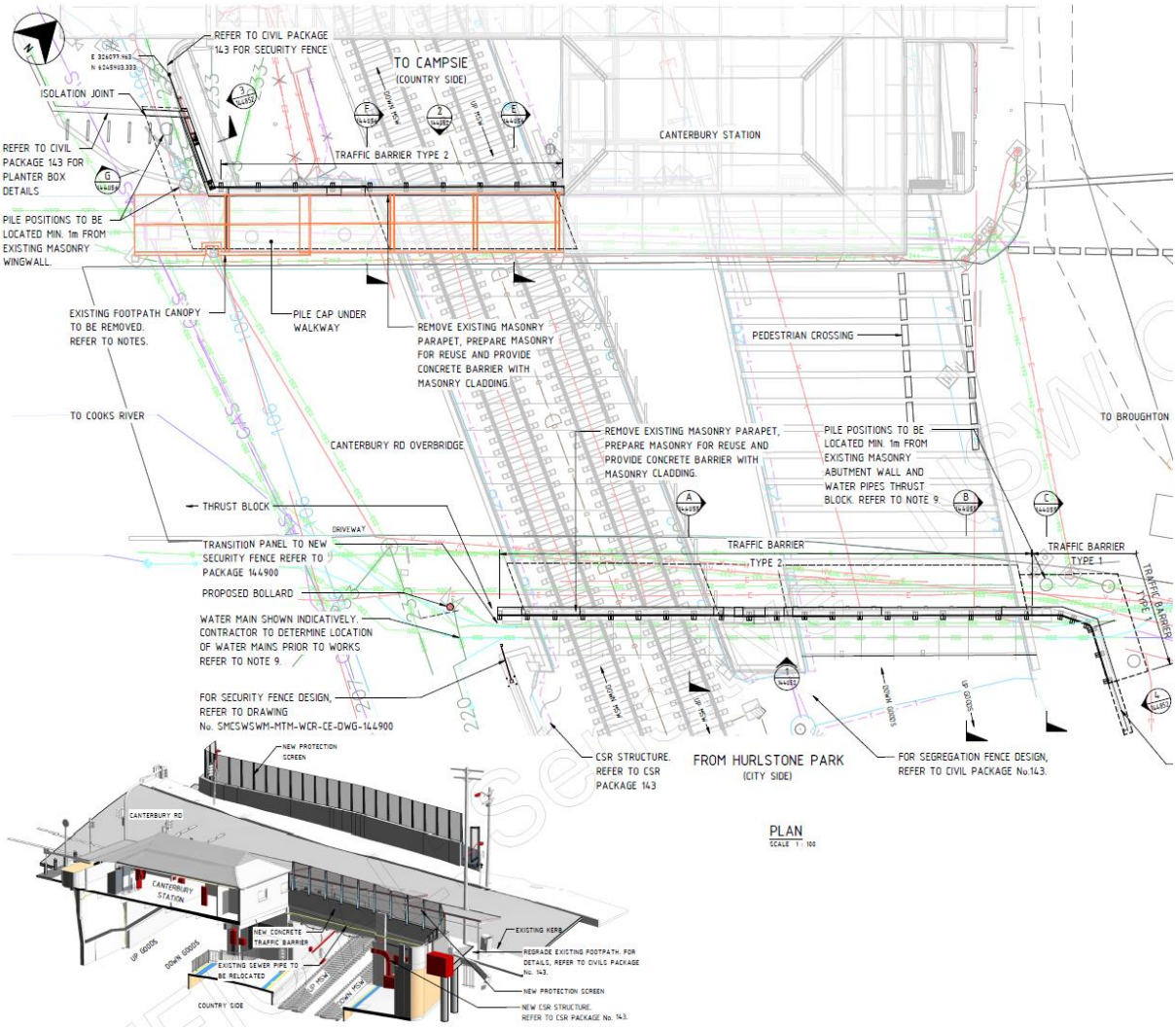


Figure 41: Plans of treatment works for Canterbury Road Bridge (Source: Metron T2M 2022, provided by ARCH Artifex)

Archaeological potential

Canterbury Road Bridge is within the Canterbury Station Catchment and was identified in the AARD as an area of nil to low potential for archaeological remains that are unlikely to reach the threshold of local significance, and identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The main impact from the Canterbury Road Bridge treatment works would be caused by the removal of the existing brick parapet walls along the city and country sides of the bridge. The parapet walls are considered to be elements of high heritage significance, and a contributing element within the SHR listed Canterbury Railway Station. The removal of original significant parapet fabric along each side of the Canterbury Road would be considered a physical impact on heritage fabric. Although it is proposed that bricks of the parapet wall would be salvaged to reuse for the fascia of the new concrete barrier, there would be a reduced number of bricks present, and if the salvage rate is not high enough then it might not be possible to complete the fascia using only salvaged bricks. The removal of this would result in a **moderate** physical impact to the parapet brickwork and bridge element overall.

The steel girders, supporting the parapet, would be inspected, cleaned, and shear studs would be welded to the top flange. The steel girders are considered elements of high heritage significance as original elements of the bridge and a contributing element within the SHR listed Canterbury Railway Station. The cleaning and protective

works are considered necessary maintenance and are unlikely to cause physical damage to these structures. As such, these works would result in a **negligible** physical impact to the bridge element.

The works would include the removal of the existing footpath canopy along the northbound Canterbury Road footpath, south of the Canterbury Station building. The canopy, constructed in the late 1980s, is not considered an element of heritage significance within the Canterbury Road Bridge, nor is it a contributing element within the SHR listed Canterbury Railway Station. As such, the removal of the canopy would be considered a **negligible** physical impact to the bridge element.

The installation of utilities on Canterbury Road Bridge, such as sewer pipes, may require that the services be fixed to the existing masonry walls along the bridge and rail corridor. These are considered to be part of the element of high significance and would cause a physical impact to heritage fabric at the attachment points. It is expected though that any penetration points would be small in size and would not impact the surrounding brickwork. As such, new penetrations would be considered a **negligible** physical impact to the bridge element.

Overall, it is assessed that the works would cause a **moderate** physical impact to the fabric of the Canterbury Road Bridge, and a **moderate** physical impact to the SHR listed Canterbury Station. However, as material from the brick parapet walls would be salvaged and reused, it is considered that the impacts to Canterbury Station would not exceed the material threshold.

Visual:
The main visual impact from the Canterbury Road Bridge treatment works would again be caused by the removal of the existing brick parapet walls. The parapet walls would be replaced by new concrete barriers which would run at the base of the Canterbury Road-level brick parapets and would be a visible element within Canterbury Station, particularly from the surrounding streetscape. These would be feature a brick fascia comprised of salvaged bricks from the parapet walls, which would help the new concrete barriers blend in with the existing setting. However, it is possible that a sufficient number of bricks cannot be salvaged in suitable condition to allow the full cladding of the concrete barrier with original brickwork, and that new brick might be required for fascia. Reinstated brickwork which is attached to the exterior of the concrete barriers are considered difficult to restore with the original bond, angling and patterning of the existing parapet walls. As such, it is considered likely that even with the brick fascia on the concrete barriers the setting of Canterbury Road Bridge would be significantly altered in appearance from its current original state.

Further visual impacts would occur as a result of the installation of new protection screens, which would extend above the height of the concrete barriers, the construction of the piling cap structure, and where new utilities are installed. These would be visible within public areas. Although not a significant element, the demolition of the existing footpath canopy roof would also alter the current visual setting of the Canterbury Road Bridge to a lesser degree. Although the significant views identified for the station would be retained, the combination of works would adversely impact the current station setting.

Overall, it is assessed that the works would cause a **moderate** visual impact.

Archaeology: Ground disturbing activities for the Canterbury Road Bridge works would be minor in nature and would be limited to areas assessed as having nil to low archaeological potential. Therefore, it is expected that there would be little to no impacts to archaeology. Overall, it is assessed that impacts to significant archaeological remains would be **nil**.

5.2.1.6 Belmore Station

Heritage item

Belmore Railway Station is listed on the following heritage registers as an item of State heritage significance:

- SHR as “Belmore Railway Station Group” (SHR 01081)
- TAHE s170 Register as “Belmore Railway Station Group” (SHI 4801084)
- Canterbury Bankstown LEP 2023 as “Federation railway station buildings” (LEP I33).

Physical description

The Burwood Road Bridge consists of a prestressed concrete road deck, support by concrete abutments on either side and a central brick pier which was part of the original overbridge.[42] The existing barriers between the road and the rail corridor are steel mesh screens fixed to the concrete pavement.

Figure 42: Burwood Road Bridge (Source: Google maps)

Assessment of significance

The following statement of heritage significance has been extracted from the SHR listing:

> *Belmore Station is of State significance as it was the initial terminus station on the Sydenham to Bankstown Line which had been constructed to relieve congestion on the Main South Line as well as to promote agriculture and suburban growth. The platform building represents the period of transition from the boom time of the 1880s to the standardisation of NSW railway building design of the 1890s onwards and the high level of aesthetic design of pre-1900 standard railway buildings, which included the use of polychromatic brickwork, decorative dentil coursing, ornate awning brackets and carved bargeboards. The building is relatively intact and is representative of a small group of such ornate platform buildings including Canterbury and Marrickville on the Bankstown Line.*[43]

The Burwood Road Bridge is located within the mapped curtilages of the above heritage listings. However, the SHR listing notes that the overbridge is excluded from the property boundary, and states that the bridge is not a significant element. The *Sydney Metro City and Southwest – Belmore Metro Station Detailed (Revised stage 3) Design Heritage Impact Assessment* assessed the overbridge as being in good condition but as an element of little significance within the station group.[44]

The heritage impact assessment identified the following significant views at Canterbury Station that relate to the bridge:

- Views on Burwood Road towards the overhead booking office (exceptional significance)
- Views from the Redman Parade carpark of the platform 1 building and overhead booking office (moderate significance).

Planned works

[42] Heritage NSW, 2024. "Belmore Railway Station Group". *SHI database no. 5045375*, accessed online at: https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5045375.
[43] Heritage NSW, 2024. "Belmore Railway Station Group". *SHI database no. 5045375*.
[44] Artefact, 2020. *Sydney Metro City and Southwest – Belmore Metro Station Detailed (Revised stage 3) Design Heritage Impact and Consistency Assessment*. Report to Metron T2M.

Bridge works

The treatment works on Burwood Road Bridge at Belmore Station would include the following:

- Removal of existing balustrade that would be reinstalled
- Removal of existing horizontal safety screens
- Installation of new concrete barriers that tie into existing boundary fences
- Installation of off-structure beam, supported on 600mm diameter piles, with TL4 steel post and three rail barrier
- Installation of new glass and angled mesh safety screens to be integrated with new barriers and off-structure beam
- Installation of 17 new bollards
- Modification of existing footpath and installation of new concrete panels.

Non-bridge works

The following non-bridge works are also located within the heritage curtilage:

- CI-086 – Installation of Ezy-guard steel rail barriers

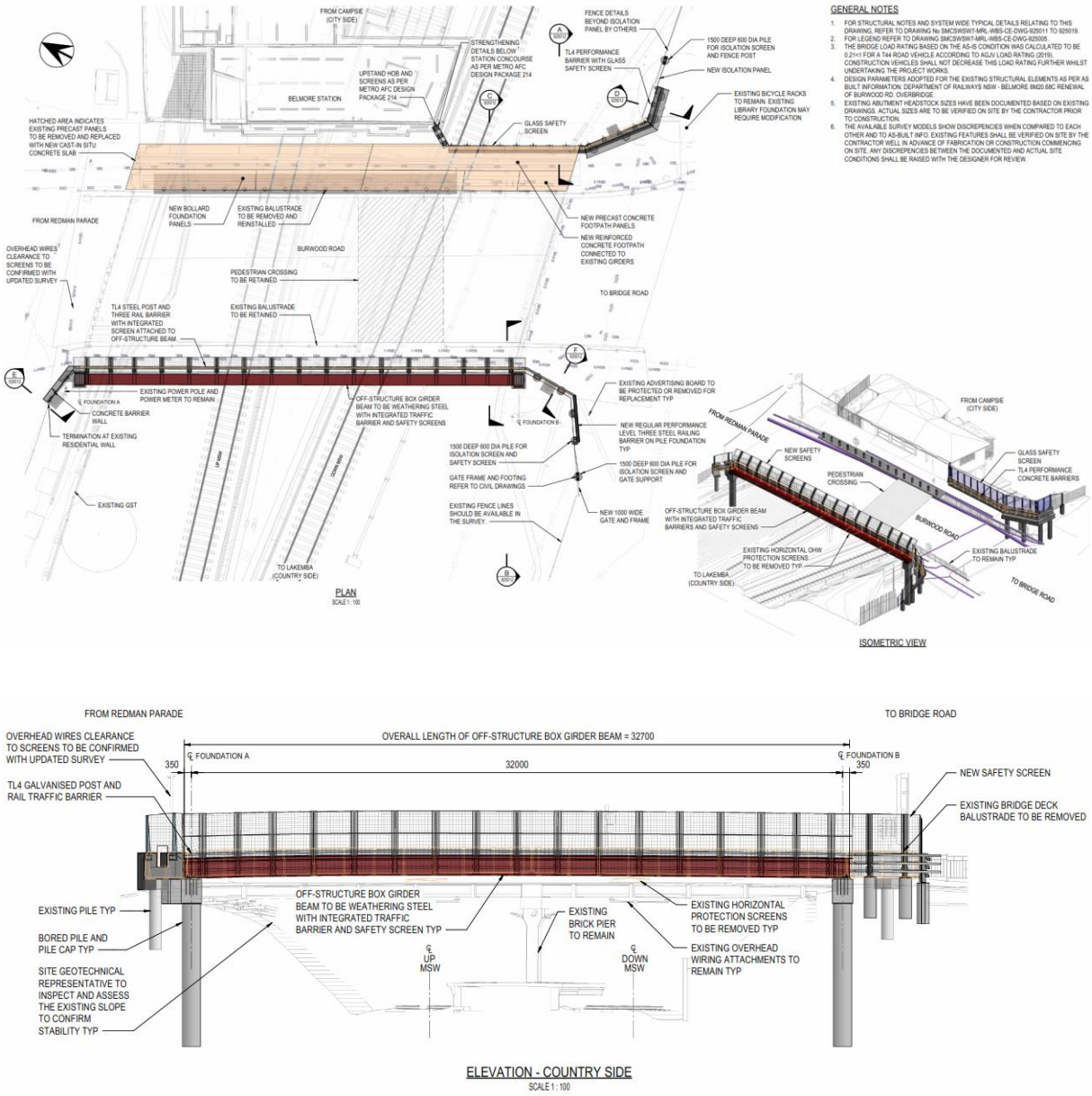


Figure 43: Plans of treatment works for Burwood Road Bridge (Source: Aurecon 2024, provided by ARCH Artifex)

Archaeological potential

Burwood Road Bridge is within the Belmore Station Catchment and is mapped in the AARD as part of an area of low to moderate potential for archaeological remains that would potentially meet the threshold for local significance, and as part of the area identified as AMZ 2 (AMS and archaeological investigation). Those areas of archaeological potential are associated with Phase 2 (1880-1920); however, the archaeological potential is primarily associated with the rail corridor rather than Belmore Road Bridge. The AARD notes that there is moderate potential for post 1930 archaeological remains associated with utilities and drainage which were assessed as not meeting the threshold for local significance. The location of CI-086 is outside of the rail corridor in an area assessed as having nil to low archaeological potential that was identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The proposed works would be undertaken on Burwood Road Bridge, which is excluded from the heritage curtilages of Belmore Station and has been identified as an element of little to no significance within the station group. As a result, the removal of the existing horizontal safety screens, the modifications to the concrete footpath, and the installation of new barriers and bollards along the concrete bridge deck and pavement would not impact any significant elements. The works would not affect the overall structure or foundations of the bridge, and piles to support the off-structure beam would be limited to the non-significant rail embankment. Similarly, the non-bridge barriers and safety screens to be installed would not be attached to any significant fabric or structures, such as the adjacent overhead booking office. Overall, it is assessed that the works would cause a **negligible** physical impact to the fabric of the Burwood Road Bridge, and **neutral** physical impact to the significance of Belmore Station. The heritage item would not be materially affected by the works.

Visual:
The new throw screens, barriers and bollards would be installed on the Burwood Road Bridge which is situated at the entrance to Belmore Station. This would introduce new material within a visible area, with the throw screens being taller than the existing horizontal safety screens. However, the bride is not considered to be part of the station listings and is of little to no significance, and the new features would be replacing elements that also do not contribute to the significant setting of the station, with no modifications to the adjacent significant elements. Although the throw screens would be more visible from the platforms, the significant views on Burwood Road towards the overhead booking office (exceptional significance) would be retained and the general setting of the station would not be interrupted. Similarly, the installation of new barriers on the edge of the Redman Parade carpark would be replacing existing non-significant fencing and would not interrupt views of the platform 1 station building and overhead booking office (moderate significance). Overall, it is assessed that the works would cause a **negligible** visual impact.

Archaeology: Although the works on Burwood Road Bridge would be located within an area mapped in the AARD as having low to moderate archaeological potential (AMZ 2), as noted above this potential is primarily associated with the rail corridor underneath the bridge. Archaeological potential associated with the road deck of the bridge itself is likely to be limited to non-significant services and utilities. Excavations for the bridge works in the rail corridor would generally be limited to the piling close to the base of the bridge. However, this is an area that typically features a higher level of previous ground disturbance associated with the bridge construction and utility installations. Therefore, it is unlikely that significant archaeology would be present in the localised positions of the piles. In addition, ground disturbance for the installation of rail barriers at CI-086 would be limited to an area of nil to low potential (AMZ 3). Therefore, considering the minor nature of the ground disturbing activities it is unlikely that substantial archaeological remains would be encountered by the works, and as a result there would be little to no impacts to archaeological remains. Overall, it is assessed that there would be **nil** impacts to significant archaeological remains.

5.2.1.7 Lakemba Station

Heritage item

Lakemba Railway Station is listed on the following heritage registers as an item of local heritage significance:

- TAHE s170 Register as "Lakemba Railway Station Group" (SHI 4801916)
- Canterbury-Bankstown LEP 2023 as "Federation railway station buildings" (LEP I208).

Physical description

Haldon Street overbridge is a two span concrete girder structure, stretching approximately 27m.

Figure 44: Haldon Street Bridge (Source: Google maps)

Assessment of significance

The following statement of heritage significance has been extracted from the TAHE s170 listing:

> *Lakemba Railway Station has local historical significance as it was one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. The station reflects the extension of the line to Bankstown in 1909 and the platform building, and associated stairs reflect the development of suburbs in the area after World War I. The platform building and stairs are also significant as examples of the design and technology of these structures built by NSW Railways between 1910 and the 1950s.*[45]

The Haldon Street Bridge is not within the curtilage of the s170 listings. It is located partially within the LEP curtilage of the heritage item, however, the LEP listing does not include the bridge as part of its description of the station group. The bridge is not identified as a significant element in the *Sydney Metro City and Southwest – Lakemba Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*.[46] The heritage impact assessment did however identify the following significant views at Lakemba Station that relate to the bridge:

[45] Heritage NSW, 2022. "Lakemba Railway Station Group". *SHI database no. 4801916*, accessed online at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801916.
[46] Artefact, 2020. *Sydney Metro City and Southwest – Lakemba Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

- Views from the Haldon Street overbridge looking west towards the city-end of the station island platform (high significance)
- Views from Railway Parade, in the vicinity of the intersection of Croydon Street, which allow clear south-facing views of the island platform and platform station building (high significance)
- Views from Railway Parade of public gardens between the pedestrian concourse and Haldon Street to the north of the rail corridor (high significance)
- Views from the Boulevarde of public gardens and war memorial between the pedestrian concourse and Haldon Street to the south of the rail corridor (high significance).

Planned works

Bridge works
The treatment works on Haldon Street Bridge at Lakemba Station would include the following:

- Removal of existing fencing on both sides of the bridge
- Installation of new TL4 post and rail barriers with concrete barrier to kerb and gutter transitions
- Modification of existing concrete footpath associated with barrier installation work
- Installation of new bollards to station entrances.

Non-bridge works
The following non-bridge works are also located within or close to the heritage curtilage:

- CI-103 – Installation of Ezy-guard steel rail barriers
- CI-106 – Installation of concrete barriers.

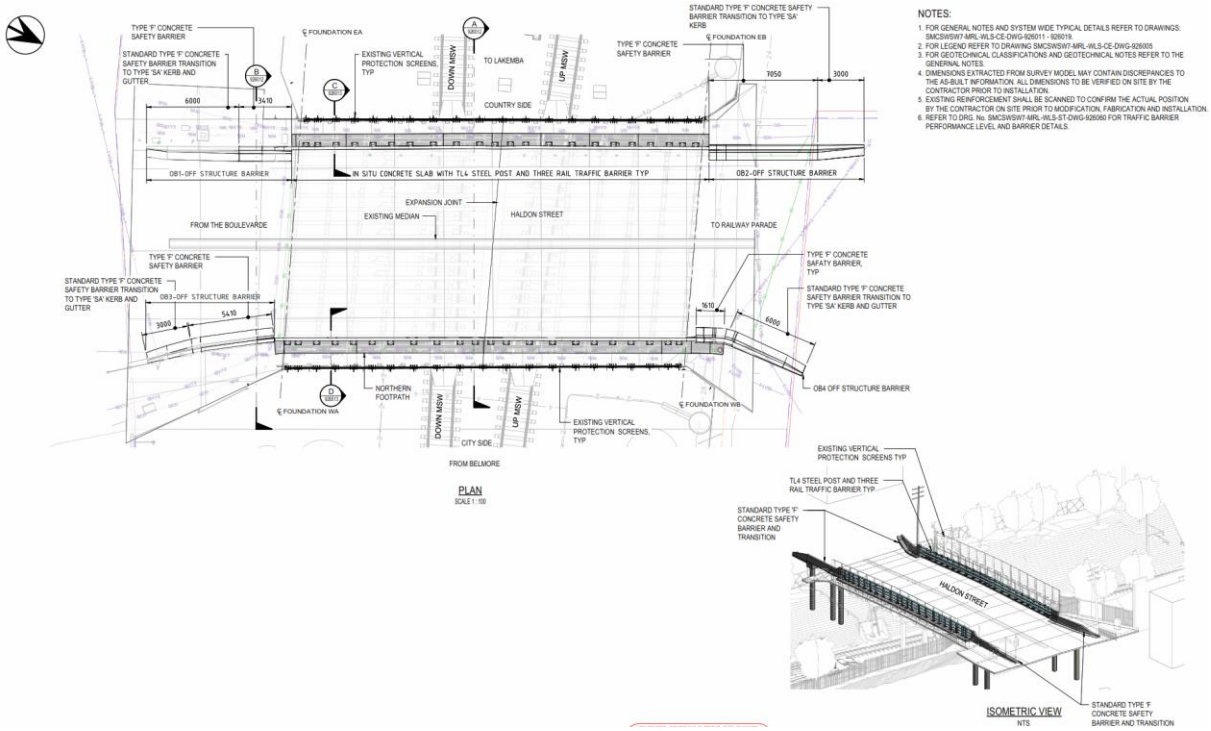


Figure 45: Plan of treatment works for Haldon Street Bridge (Source: Metron T2M 2022, provided by ARCH Artifex)

Archaeological potential

Haldon Street Bridge and CI-106 and CI-103 are within the Lakemba Station Catchment. CI-106 is located within an area assessed as having low to moderate potential for archaeological remains of local significance, CI-103 is located within an area assessed as having low potential for archaeological remains of local significance, and the area of Haldon Street Bridge is assessed as having nil to low potential to contain archaeology that is unlikely to reach the threshold for local significance. CI-106 is within an area identified as AMZ 2 (AMS and archaeological investigation), while Haldon Street Bridge and CI-103 are both located within an area identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The works on Haldon Street Bridge would involve the removal of existing fencing on both sides of the bridge and the modification of the adjacent concrete footpath. However, the bridge and its associated components are not considered to be part of the station group. As a result, the removal of the existing fencing, the modifications to the concrete footpath, and the installation of new barriers along the concrete bridge deck and pavement would not cause any physical impacts to significant fabric. Similarly, the new non-bridge rail barriers and bollards that would be installed within and/or near the curtilage of the station group would be located along the edges of grassed embankments or modern concrete footpaths and would not impact any significant fabric. Overall, it is assessed that the works would cause a **neutral** long-term physical impact to the significance of Lakemba Station and the heritage item would not be materially affected by the works.

Visual:
The new concrete and steel rail barriers would be installed on Haldon Street Bridge which is visible from the station. This would introduce new material within a visible area. However, the new features would be replacing/installed alongside elements that also do not contribute to the setting of the station, such as existing vertical safety screens which are more visually noticeable. Although the new elements would be visible from the platforms, the significant views to and from Haldon Street, the station, and the surrounding streetscape such as Railway Parade would be retained, and the general setting of the station would not be interrupted. Non-bridge rail barriers would be limited to the northern edge of the station group and outside the heritage curtilage to the east, typically in locations where existing fences are present. As a result, these would generally also be consistent with the existing station setting and would have minimal impacts on streetscape views. New bollards to the station entrances are minor in scale and would not be visible in any significant views. Overall, it is assessed that the works would cause a **negligible** visual impact.

Archaeology: Works for Haldon Street Bridge and at CI-103 would be limited to areas assessed as having nil to low and low archaeological potential respectively. In addition to having low archaeological potential, the ground disturbing activities for these works would also be limited. Therefore, it is not expected that significant archaeological remains would be impacted. Ground disturbing works for the installation of concrete barriers at CI-106 would be located within an area of low to moderate archaeological potential. However, the barriers would be located at the top of the rail embankment, and a review of the AARD and historical plans has not identified the presence of any historical structures in this location. Therefore, given the minor nature of ground disturbance required for the installation, it is unlikely that substantial and intact archaeology would be encountered and there would be little to no impacts. Overall, it is assessed that there would be **nil** impacts to significant archaeological remains.

5.2.1.8 Punchbowl Station

Heritage item

Punchbowl Railway Station is listed on the following heritage registers as an item of local heritage significance:

- TAHE s170 Register as "Punchbowl Railway Station Group" (SHI 4802009)
- Canterbury Bankstown LEP 2023 as "Federation railway station building" (LEP I226).

Physical description

Punchbowl Road overbridge, constructed in 1979, is a two span concrete girder bridge spanning approximately 48 metres.[47]

Figure 46: Punchbowl Road Bridge (Source: Google Maps)

Assessment of significance

The following statement of heritage significance has been extracted from the s170 listing:

> *Punchbowl Railway Station has local historical significance as it was one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. The station reflects the extension of the line to Bankstown in 1909 and the overhead booking office, footbridge and stairs, reflect the development of suburbs in the area during the Interwar period.*[48]

The Punchbowl Road Bridge is located within the mapped s170 curtilage of Punchbowl Station and partially within the LEP curtilage. However, it is noted that the bridge is excluded from the above heritage listings.[49] The

[47] AECOM, 2017. *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*. Accessed online at: https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf.
[48] Heritage NSW, 2022. "Punchbowl Railway Station Group". *SHI database no. 4802009*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4802009.
[49] Heritage NSW, 2022. "Punchbowl Railway Station Group". *SHI database no. 4802009*.

Sydney Metro City and Southwest – Punchbowl Metro Station Detailed (Revised stage 3) Design Heritage Impact Assessment did not identify Punchbowl Road Overbridge as being a significant element within the station group.[50] However, it did identify the following significant views at Punchbowl Station that relate to the bridge:

- Views from Punchbowl Road to platform stairways and existing overhead booking office, which are partially obscured by new fabric (moderate significance)
- Views from Punchbowl Road overbridge to the existing overhead booking office which are partially obstructed by new fabric (moderate significance).

Planned works

Bridge works

The treatment works on Punchbowl Road Bridge at Punchbowl Station would include the following:

- Removal of existing horizontal protection screens and traffic barriers
- Installation of new TL4 three rail steel traffic barriers atop reconstructed reinforced concrete upstand, with w-beam transitions and kerb and gutter transitions
- Installation of new vertical protection screens to be integrated with new barriers
- Modification of existing concrete footpath associated with barrier installation work, with reconstructed reinforced concrete upstand
- Installation of new fencing at Warren Park entry
- Installation of new bollards, bicycle hoops, street furniture and landscaping at The Boulevard entry.

Non-bridge works

The following non-bridge works are also located within or close to the heritage curtilage:

- CI-136 – Installation of concrete barriers
- CI-141 – Installation of concrete barriers.

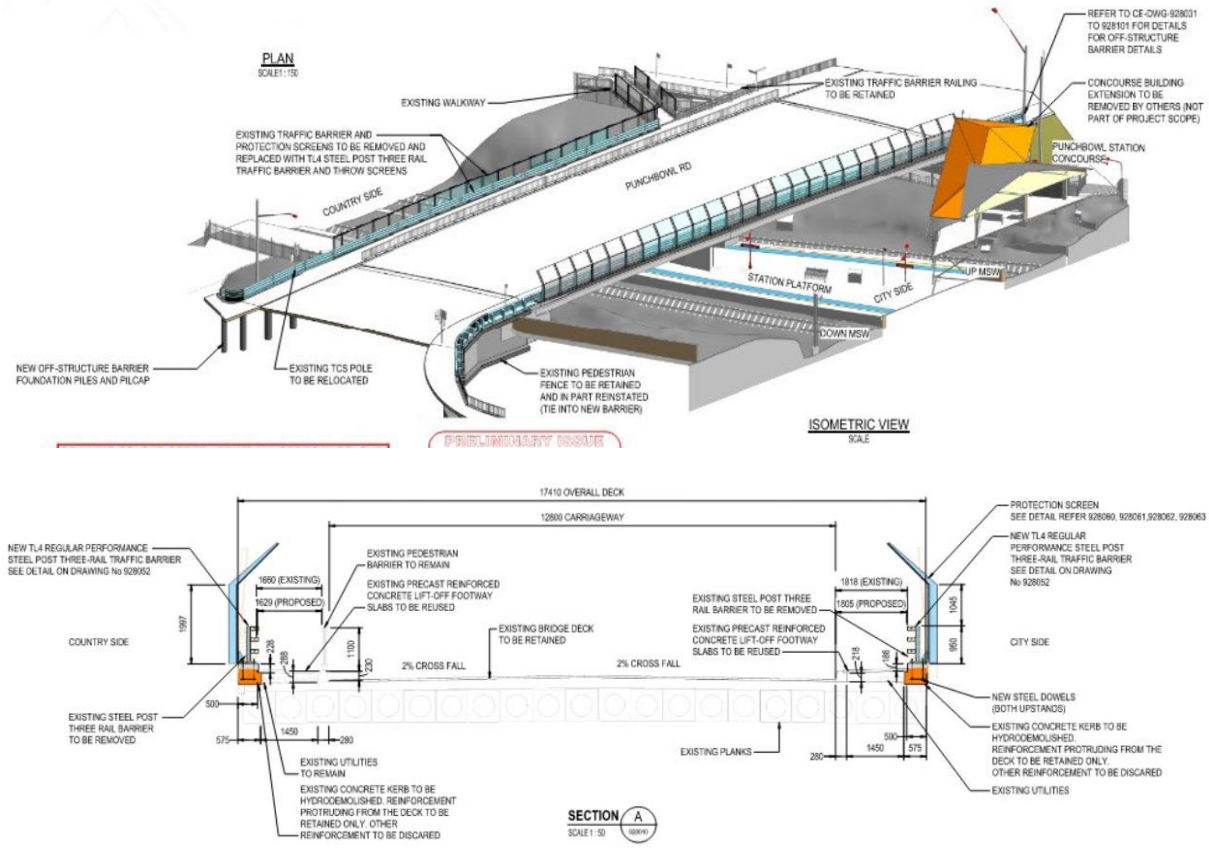


Figure 47: Plan of treatment works for Punchbowl Road Bridge (Source: Aurecon 2024, provided by ARCH Artifex)

Archaeological potential

[50] Artefact, 2020. *Sydney Metro City and Southwest – Punchbowl Metro Station Detailed (Revised stage 3) Design Heritage Impact and Consistency Assessment*. Report to Metron T2M.

Punchbowl Station, including Punchbowl Road Bridge, is part of the Bankstown Line Catchment which was assessed in the AARD as generally having nil to low archaeological potential and identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The works on Punchbowl Road Bridge would involve the removal of existing horizontal safety screens on both sides of the bridge and the modification of the adjacent concrete footpath and retaining walls. However, the bridge and its associated components are not considered to be part of the station group. As a result, the removal of the existing safety screens, the modifications to the concrete footpath and retaining walls, and the installation of new barriers along the concrete bridge deck would not cause any physical impacts to significant fabric. Similarly, the new non-bridge rail barriers, bollards and additional street furniture that would be installed within the curtilage of the station group would be located along the edge of the rail embankment or modern concrete carpark/footpaths and would not impact any significant fabric. Overall, it is assessed that the works would cause a **neutral** long-term physical impact to the significance of Punchbowl Station and the heritage item would not be materially affected by the works.

Visual:
The new safety screens and steel rail barriers would be installed on Punchbowl Road Bridge which is visible from the station. This would introduce new material within a visible area, with the safety screens being taller than the existing horizontal safety screens. However, the new features would be replacing elements that also do not contribute to the setting of the station, and station entrance is located off the bridge. Although the safety screens would be more visible from the platforms, the significant views from Punchbowl Road to the platform stairways and existing overhead booking office would be retained, and the general setting of the station would not be interrupted. Non-bridge rail barriers, bollards, and street furniture would typically be limited to the edges of the station group, with barriers generally being installed in locations where existing fences are present. These elements would be minor in scale. As a result, these would generally also be consistent with the existing station setting and would have minimal impacts on streetscape views. Overall, it is assessed that the works would cause a **negligible** visual impact.

Archaeology: Ground disturbing activities for the Punchbowl Road Bridge works and installation of non-bridge rail barriers along the edge of the rail corridor would be minor in nature and would be limited to areas assessed as having nil to low archaeological potential. Therefore, it is expected that there would be little to no impacts to archaeology. Overall, it is assessed that impacts to significant archaeological remains would be **nil**.

5.2.1.9 Wiley Park Station

Heritage item

Wiley Park Railway Station is listed on the following heritage registers as an item of local heritage significance:

- TAHE s170 Register as "Wiley Park Railway Station Group" (SHI 4801946)
- Canterbury Bankstown LEP 2023 as "Interwar railway station building" (LEP I236).

Physical description

The King Georges overbridge is a three span concrete girder structure spanning approximately 31 metres.[51]

Figure 48:King Georges Road Bridge (Source: Google Maps)

Assessment of significance

The following statement of heritage significance has been extracted from the s170 listing:

> *Wiley Park Railway Station is historically significant at a local level as it was the last of the stations erected on the Sydenham to Bankstown Line which had been built to relieve congestion on the Main Southern Line and to promote agriculture and suburban development in the late 19th and early 20th centuries. The brick platform building and overhead booking office reflect the need to service the growing population in the area in the 1930s. The station is significant as unlike other stations in the Metro network it was a station which was not financed and constructed by the State Government, but by the Local Council. While the overall integrity of the complex has been compromised by alterations and additions the overhead booking office and brick waiting room on platform 2 have a moderate level of integrity and are representative of the Inter-War Railway Domestic style utilised by NSW Railways at the time.*[52]

The 1974 King George Street Bridge is not within the curtilage of the above heritage listings. The bridge is not identified as a significant element in the *Sydney Metro City and Southwest – Wiley Park Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*.[53] The heritage impact assessment did however identify views from King Georges Road at the entrance to the overhead booking office as one of the significant view lines at the station (moderate significance).

Planned works

[51] AECOM, 2017.
[52] Heritage NSW, 2022. "Wiley Park Railway Station Group". *SHI database no. 4801946*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801946.
[53] Artefact, 2020. *Sydney Metro City and Southwest – Wiley Park Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Bridge works

The treatment works on King Georges Street Bridge at Wiley Park Station would include the following:

- Removal of the existing precast concrete slabs and footpath slabs
- Removal of existing horizontal safety rails/screens and balustrades
- Installation of new cast insitu concrete barriers and steel post and three rail barriers with sloped ends and termination barriers
- Installation of new safety screens, consisting of a combination of stainless steel woven mesh and plexiglass panels
- Clean and paint existing kerbside balustrade
- Installation of new piles, pile cap, and associated concrete barrier and integrated vertical protection screens
- Installation of 11 new bollards to the station entrance.

Non-bridge works

The following non-bridge works would also be located within or close to the heritage curtilage:

- CI-119 – installation of Ezy-guard steel rail barriers
- CI-120 – installation of Ezy-guard steel rail barriers
- CI-121 – installation of Ezy-guard steel rail barriers.

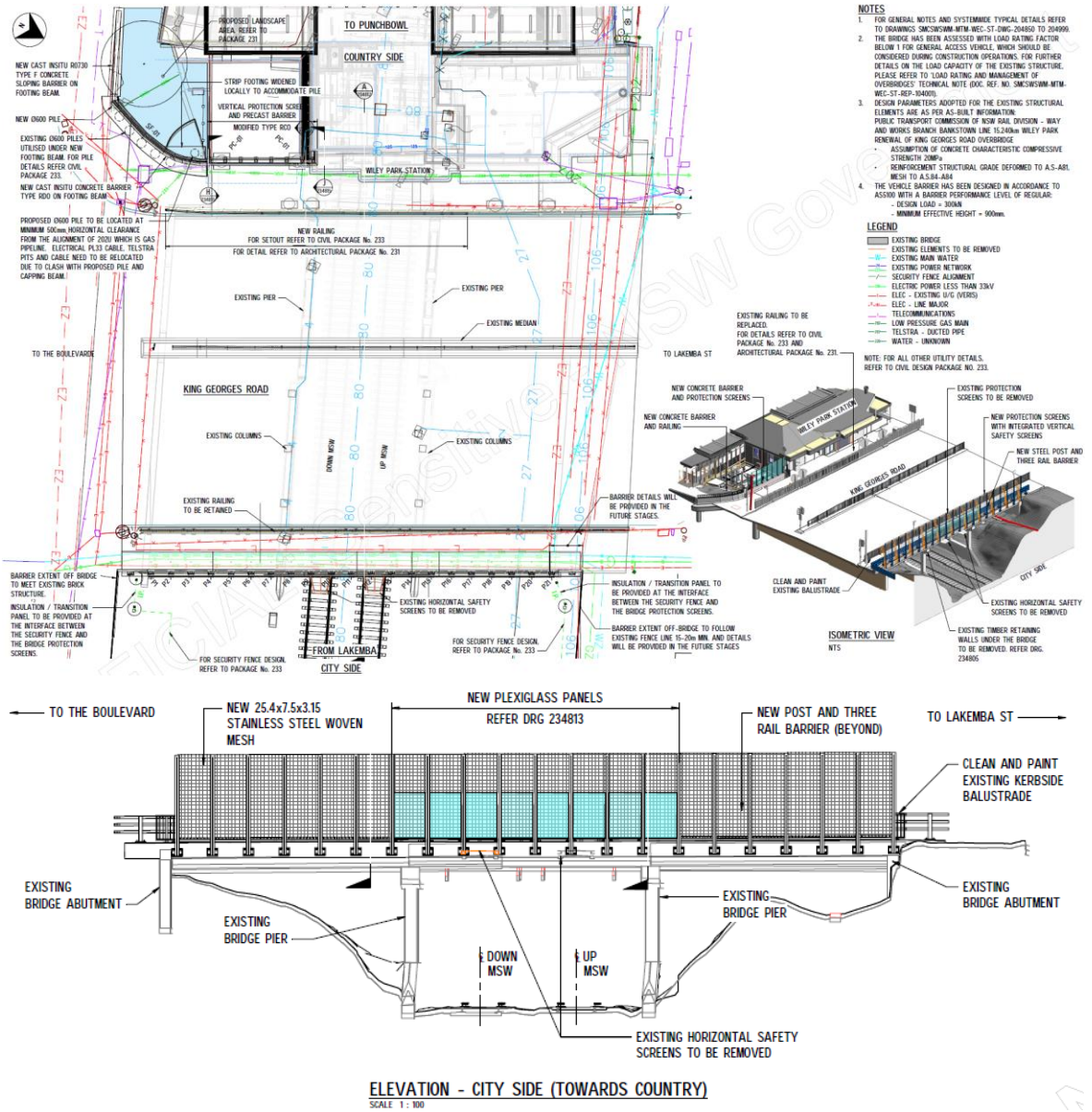


Figure 49: Plans of treatment works for King Georges Road Bridge (Source: Metron T2M 2022, provided by ARCH Artifex)

Archaeological potential

Wiley Park Station, including King Georges Road Bridge, is part of the Bankstown Line Catchment which was assessed in the AARD as generally having nil to low archaeological potential and identified as AMZ 3 (Unexpected Finds Procedure).

Heritage impacts

Physical:
The works on King Georges Road Bridge would involve the removal of existing concrete slabs, safety rails/screens, and balustrades. However, the bridge and its associated components are not considered to be part of the station group. The works would not impact the adjacent footbridge, which is an element of moderate significance. As a result, no significant fabric would be modified as part of the bridge treatment works. Similarly, the new non-bridge rail barriers and bollards that would be installed within the curtilage of the station group would be located along the edges of grassed embankments or modern concrete footpaths. It is not expected that these would cause any long-term impacts to the landscape/natural features associated with the station group, which are considered to be elements of high significance. Overall, it is assessed that the works would cause a **neutral** long-term physical impact to the significance of Wiley Park Station and the heritage item would not be materially affected by the works.

Visual:
The new safety screens and concrete and steel rail barriers would be installed on the King Georges Road Bridge which is situated at the entrance to Wiley Park Station. This would introduce new material within a visible area, with the safety screens being taller than the existing horizontal safety screens/rails. However, the new features would be replacing elements that also do not contribute to the setting of the station, with no modifications to the adjacent significant elements. Although the safety screens would be more visible from the platforms, the significant views from King Georges Road would be retained and the general setting of the station would not be interrupted. This would be helped by the use of sections of glazed protection screens. Non-bridge rail barriers bollards would be limited to the edges of the station group, with the barriers typically in locations where existing fences are present. As a result, these would generally also be consistent with the existing station setting and would not detract from the landscape/natural features. Overall, it is assessed that the works would cause a **negligible** visual impact.

Archaeology: Ground disturbing activities for the King Georges Road Bridge works and installation of non-bridge rail barriers along the edge of the rail corridor would be minor in nature and would be limited to areas assessed as having nil to low archaeological potential. Therefore, it is expected that there would be little to no impacts to archaeology. Overall, it is assessed that impacts to significant archaeological remains would be **nil**.

5.2.2 Remaining works near heritage items

Concise impact assessments for the remaining heritage items that would not be directly modified by the planned works are provided in Table 11.

Table 11: Assessment of impacts to heritage items near work locations

Heritage item	Relevant work locations	Impacts
Inter-War Group Heritage Conservation Area—Hollands Avenue; Jocelyn Avenue and Woodbury Street	Livingstone Rd Bridge	Physical: **Neutral**. Works would be located outside of the heritage item.
		Visual: **Neutral**. The works on Livingstone Road Bridge would only be visible from the very edge of the conservation area, and would not adversely affect the streetscape setting outside of the heritage curtilage. There would be no interruptions to the views to or from the overall conservation area
		Archaeological: **Nil**
Turpentine - Ironbark Forest Understory	CI-019 Wardell Rd Bridge	Physical: **Neutral**. The new rail barrier would be located in the same location as the existing fencing. The existing vegetation associated with the heritage item would not need to be removed to facilitate the installation. The vegetation also would not be impacted by the adjacent bridge works on Wardell Road
		Visual: **Negligible**. The new rail barrier would be installed within the curtilage of the heritage item, which would be taller than the existing fence in this location. However, the significant vegetation present would still be visible, and the installation of rail barriers in the same location of the existing fence would generally be visually consistent with the existing setting. Similarly, the throw screen, bollard, and footpath treatment works on Wardell Road Bride would not adversely effect the visual setting of the heritage item
		Archaeological: **Nil**. No potential archaeological remains have been identified in association with the heritage item
Gladstone Hall, including interiors	CI-027	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The new rail barrier would not interrupt views towards the heritage item. There is an existing fence along the edge of the rail corridor, so the installation of rail barriers in the same location would be visually consistent with the existing setting
		Archaeological: **Nil**
Duntroon Street Heritage Conservation Area	Garnet St Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The works on Garnet Street Bridge would only be visible from the very edge of the conservation area, and would not adversely affect the streetscape setting outside of the heritage curtilage. There would be no interruptions to the views to or from the overall conservation area
		Archaeological: **Nil**
Crinan Street Shops Heritage	Duntroon St Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage

Heritage item	Relevant work locations	Impacts
Conservation Area		Visual: **Neutral**. The works on Duntroon Street Bridge would only be visible from the very edge of the conservation area, and would not adversely affect the streetscape setting outside of the heritage curtilage. There would be no interruptions to the views to or from the overall conservation area
		Archaeological: **Nil**
Floss Street Heritage Conservation Area	Duntroon St Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The works on Duntroon Street Bridge would only be visible from the northern edge of the conservation area, and would not adversely affect the streetscape setting outside of the heritage curtilage. There would be no interruptions to the views to or from the overall conservation area
		Archaeological: **Nil**
Inter war building - The Chambers	Duntroon St Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The works on Duntroon Street Bridge would only be visible from the northern side of the heritage item. There would be no interruptions to the views to or from the heritage item, and would not adversely affect views between the surrounding conservation area and nearby station
		Archaeological: **Nil**
Melford Street Heritage Conservation Area	Melford St Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The works on Melford Street Bridge would only be visible from the southern edge of the conservation area, and would not adversely affect the streetscape setting outside of the heritage curtilage. There would be no interruptions to the views to or from the overall conservation area
		Archaeological: **Nil**
Inter-War Hotel (former Hotel Canterbury)	Canterbury Rd Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The works on Canterbury Road Bridge would only be visible from a small portion of the heritage item, and would not interrupt views to or from the heritage item
		Archaeological: **Nil**
Federation Post Office Building (former Canterbury Post Office)	Canterbury Rd Bridge	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The works on Canterbury Road Bridge would only be visible from a small portion of the heritage item, and would not interrupt views to or from the heritage item
		Archaeological: **Nil**
Federation house	CI-058	Physical: **Neutral**. Works would be located outside of the heritage curtilage

Heritage item	Relevant work locations	Impacts
		Visual: **Neutral**. The new rail barrier would not interrupt views towards the heritage item, and due to surrounding vegetation and buildings the barrier would only be visible from the northern edge of the heritage item. There is an existing fence along the edge of the rail corridor, so the installation of rail barriers in the same location would be visually consistent with the existing setting
		Archaeological: **Nil**
Federation villa	CI-060	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The new concrete barrier would not interrupt views towards the heritage item. There is an existing fence along the edge of the rail corridor, so the installation of concrete barriers in the same location would be visually consistent with the existing setting
		Archaeological: **Nil**
Inter war commercial building - Station House	CI-061	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The new concrete barrier would not interrupt views towards the heritage item. There is an existing fence along the edge of the rail corridor that is partially obscured by vegetation, so the installation of concrete barriers in the same location would be visually consistent with the existing setting
		Archaeological: **Nil**
Campsie Station	CI-075 and CI-077	Physical: **Neutral**. A short section of new rail barrier would be installed within the western margin of the s170 curtilage of the station (outside of the LEP curtilage). The barrier would be limited to the rail corridor however and would not impact any significant fabric
		Visual: **Negligible**. The new rail barrier would be installed within the curtilage of the heritage item, and since it would start about 13m from the end of the platform it would be visible to the public. However, this would only affect a small part of the overall station group, and it would replace an existing fence in the same location. It would be consistent with overall setting of the station group, and as result the visual impact would be minimal
		Archaeological: **Nil**. Campsie Station was identified as being part of the Bankstown Line Catchment which was assessed in the AARD as generally having nil to low archaeological potential. Only localised ground disturbance would be required to install the rail barrier; therefore it is expected that there would be little to no impacts to significant archaeology
Federation House (former station master's cottage)	Burwood Rd Bridge	Physical: **Neutral**. New concrete barrier wall would be installed within the heritage curtilage and would terminate against an existing residential wall. However, it the barrier wall would be separated by a 10mm air gap and would not be structurally connected to the building. As a result, there would be no physical impacts to the structure
		Visual: **Negligible**. The planned bollards, concrete barrier, and taller mesh screens on Burwood Road Bridge would not interrupt views to and from the heritage item, with current views being partially obscured by existing vegetation and with the building being set back. They would not interrupt the visual relationship between the former station master's cottage and Belmore Station on the other side of the road. The installation of a new concrete barrier adjacent to the building would

Heritage item	Relevant work locations	Impacts
		introduce new visible fabric, but it would be relatively minor in scale and would have limited impact on the overall setting of the heritage item
		Archaeological: **Nil**
Post-war bus shelter and public lavatories	CI-086 Burwood Rd Bridge	Physical: **Neutral**. Works at CI-086 would be located along the southern edge of the heritage curtilage about 13m south of the bus shelter and lavatory structures, while the Burwood Road Bridge works would be about 25m away from the structures
		Visual: **Negligible**. New fencing would be installed along the edge of the heritage item. However, existing fencing is already present along the edge of the rail corridor, therefore, the installation of new barriers in the same location would be consistent with the existing setting. Views to the significant structures would not be interrupted by the new barriers. Similarly the planned bollards and concrete barrier on Burwood Road Bridge would be in keeping with the existing setting, and views towards them from the bus shelter and public lavatories would be partially obscured by the station buildings
		Archaeological: **Nil**. No potential archaeological remains have been identified in association with the heritage item
Lakemba Pumping Station (WP0003)	CI-121	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The new rail barrier would only be visible from the northern edge of the heritage item and would not interrupt views towards the heritage item. There are existing fences along the boundary of the heritage item and the station on the opposite side of the road, so the installation of rail barriers in the same location would be visually consistent with the existing setting
		Archaeological: **Nil**
War memorial and street trees	CI-135	Physical: **Neutral**. Works would be located outside of the heritage curtilage
		Visual: **Neutral**. The new rail barrier would be fully obscured except along the northern edge of the heritage item and would not interrupt views towards the heritage item. There is an existing fence along the boundary of the rail corridor so the installation of rail barriers in the same location would be visually consistent with the existing setting
		Archaeological: **Neutral**
S2B PAD01	CI-085	Archaeological: **Nil**. Installation of the rail barrier would require ground penetrations. However, the new rail barrier will adhere to the existing rail fence alignment and will not extend into the footprint of S2B PAD01. Therefore, potential subsurface Aboriginal objects associated with S2B PAD01 would not be impacted

5.3 Statement of heritage impact

A statement of heritage impact has been prepared according to NSW Heritage Office guidelines in Table 12 below.

Table 12: Statement of heritage impact for the errant and hostile vehicles treatment work

Development	Discussion
What aspects of the Proposal respect or enhance the heritage significance of the study area?	None of the proposed impacts would exceed the material affect threshold. A summary of aspects of the Proposal that would respect or enhance the heritage significance of the study area is outlined below: Re-use of materials Where the existing brick parapet wall at Canterbury Station would be removed, the bricks would be salvaged and re-used as part of the fascia that would be applied to the new concrete barrier. This would enable the re-use of some significant fabric and presents a more visually sympathetic option and respect the significant fabric of the overbridge. Design The new safety installations are consistent with railway and safety infrastructure that is expected in association with railway stations, including new bollards, fences and anti-throw screens. The urban design of the vertical protection screens at the station precincts have been designed to be consistent with the architectural approval of minimal visual impact and 'voids not solids'. The installation of non-solid barriers and screens (with plexiglass and perforated metal) allows for visibility through these structures, minimising disruption of views in and around bridges and stations. New concrete barriers match the height of existing parapet wall heights, maintaining and respecting the existing visual impact of these structures. Ongoing use The safety upgrade works facilitate the continued operation of the SWM corridor as a rail carriage service.
What aspects of the Proposal could have a detrimental impact on the heritage significance of the study area?	The potential detrimental visual impacts to most of the station groups would generally be negligible to minor due to the positive interventions noted in the row above (transparency of screens, overall significance of items retained). The works would typically result in neutral visual impacts to any other nearby heritage item, as most of the rail barriers/fences would be installed in the location of existing fences along the rail corridor, and the overall views and settings of these items would be maintained. The removal of the Canterbury Road brick parapet wall and replacement with concrete barriers would have a moderate adverse impact on the heritage significance of the bridge element of Canterbury Station. This would be partially mitigated by the salvage and reuse of the bricks for the fascia of the new barriers, so that it is considered that the impacts to Canterbury Station are consistent with approved impacts for the Southwest Metro Project (see Section 5.4).
Have more sympathetic options been considered and discounted?	The proposed works are generally considered to be the most sympathetic and least impactful means of performing the necessary safety installations to retain the continued operation of the SWM corridor as a rail carriage service. Options for the configuration and location of the new safety installation were considered and more impactful solutions were discounted. As an example, for the Illawarra Road Bridge at Marrickville Station, concrete barriers were proposed to replace the masonry parapet wall which is within the heritage curtilage. With consideration of the adverse heritage impact on the heritage item from the demolition, barriers are now designed to be placed on the road kerb, retaining the brick parapet wall. Similarly, on Canterbury Road Bridge at

Development	Discussion
	Canterbury Station, alternative options for the installation of traffic barriers at the kerb of the bridge were considered but discarded due to the resulting increased visual impact. Where impacts to significant fabric is planned this is typically proposed in order to comply with relevant building and safety standards. For example, at locations with existing horizontal safety screens, it was considered whether there was an opportunity to maintain and void the requirement or reduce the height of a vertical safety screen where vertical protection screens are being installed. Through assessment it was deemed that the existing horizontal safety screens were not complying with ASA standards. The implementation of carefully considered installation that balances heritage impacts against safety will retain the significance of the SWM corridor heritage items, while they continue to serve as components of a crucial transport service for Sydney's public. Architects engaged by Martinus and Metron during the design process considered a number of factors, including the heritage aspects of each location, bus stop locations, DDA compliance, location of existing services, and maintaining views of existing overbridge features where relevant. Key heritage considerations for the Architects during the design process are outlined for some of the stations is outlined below. <u>Marrickville</u> '*Layout at Marrickville keeps the strong line of the parapet and ties in with the urban design of the station entry*'[54] <u>Dulwich Hill</u> *As the current fencing on the bridge comprises welded steel mesh panels contemporary with the post-1975 reconstruction, replacement with new compliant fencing will not have any adverse impact on the heritage values of the Station buildings or the Group. The new fencing will include a three-rail carriageway barrier less than 1 metre in heigh, with transparent screens along the outer edges of the footways, allowing views through the fences. Consequently, significant views from Wardell Road to the station will be maintained*[55] <u>Canterbury Station</u> *'In order to meet the heritage objects arising from the State Heritage Register and other listings, the design maintains and conserves the bridge structure below road level. Above road level, the brick parapets will be rebuilt as a facing to the new protection screens using, as far as possible, salvaged bricks from the existing parapets'*[56] <u>Belmore Station</u> *'The use of glass screens next to the station building provides a more sympathetic treatment to the new structure that is fixed hard up against the heritage building'*[57] <u>Wiley Park Station</u> *'As the current fencing on the bridge comprises steel RMS Pedestrian Fence panels, in front of anti-throw screens (city side) and chain-wire fencing (country*

[54] DesignInc, 2024. 'Urban and Landscape Design Report South West Metro Errant and Hostile Vehicle Mitigation: Marrickville Station at Illawarra Road Overbridge'. p. 5
[55] Metron T2M, 2022. 'CIRA Bridge Works Wardell Rd Overbridge Stage 1 Design Report Southwest Metro Design Services (SMDS) Sydney Metro. p. 44
[56] Metron T2M, 2022. 'CIRA Bridge Works Canterbury Rd Overbridge Stage 1 Design Report Southwest Metro Design Services (SMDS) Sydney Metro. p. 44
[57] DesignInc, 2024. 'Ubran and Landscape Design Report South West Metro Errant and Hostile Vehicle Mitigation: Belmore Station and Burwood Road Overbridge'. p. 6

Development	Discussion
	side), replacement with new compliant fencing will not have any adverse impact upont he heritage values of the Station buildings or Group. Adjacent to the Station (country side), the new fencing will consist of a concrete portal frame with vertical protection screens with glazing panels fixed to the top of the traffic barriers, allowing views through the fence. Consequently, significant views form King Georges Road to the station will be maintained[58]

5.4 Consistency assessment

The errant and hostile vehicle works would be undertaken within and in the vicinity of several heritage items, including items listed on the SHR, and areas of archaeological potential. These works are consistent with the approved project scope, which includes bridge works, the installation of vehicle collision barriers, and providing/upgrading fencing.

It has been assessed that the errant and hostile vehicle works would generally cause negligible to minor impacts to heritage items where bridge works would be undertaken within heritage curtilages, with only Canterbury Station being subject to moderate impacts. For the remaining heritage items in the vicinity, it has been assessed that there would be neutral physical impacts and neutral to negligible visual impacts. This is consistent with the overall approved impact level for the project, with the SPIR identifying that impacts to the heritage station groups would be moderate while impacts to heritage items in the vicinity would generally be neutral to negligible.[59] This assessment is also consistent with the findings of the project SoHIs (2024) that have been prepared by Purcell for Aurecon, which determined that the Proposal would generally result in negligible to minor impacts where works are undertaken on significant bridges (with moderate impacts at Canterbury Station).

This assessment has identified six heritage items in the vicinity of the planned works that were not included in the EIS and SPIR. However, it has been assessed that the impacts to most of these items would all be neutral. Only 'Turpentine - Ironbark Forest Understory' (Inner West LEP I1222) would be subject to negligible visual impacts from where new rail barriers are installed within its curtilage. However, the item would not be physically impacted, and its exclusion from the EIS and SPIR was because it was not listed on the LEP at the time of assessment. Given its proximity to Dulwich Hill Station, it would already be visually impacted by the project. Therefore, it is considered that the negligible visual impacts to the heritage item are consistent with the existing project.

It has been assessed that the works would generally cause little to no impacts to archaeological remains, and the overall impact to significant archaeological remains would be nil. This is within the approved archaeological impact level for the project, with the AARD identifying that the project would generally have a minor impact on potential archaeological remains.[60] There would be nil impacts to S2B PAD01. This is consistent with the findings of the project ACHAR.[61]

Overall, it is assessed that the errant and hostile vehicle works are consistent with the existing project approvals (see Table 13).

[58] Metron T2M, 2022. 'CIRA Bridge Works King Georges Road Overbridge Stage 1 Design Report: Southwest Metro Design Services (SMDS) Sydney Metro. p. 44
[59] Artefact Heritage, 2018a: Table 32, pp 86-87.
[60] Artefact 2018b.
[61] Artefact 2018c.

Table 13: Errant and Hostile Vehicles Project heritage impacts consistency with approved impacts as identified in SPIR[62]

Item	Significance	Direct Impact – SPIR	Visual Impact – SPIR	Potential Direct – SPIR	Significance Level Retained – SPIR	Errant and Hostile Vehicles Project Consistency (Y/N)
Marrickville Station	State	Moderate	Moderate	Negligible	Yes	Yes
South Dulwich Hill Conservation Area	Local	Negligible	Negligible	Negligible	Yes	Yes
Dulwich Hill Station	Local	Moderate	Moderate	Negligible	Yes	Yes
Hurlstone Park Station	Local	Moderate	Moderate	Negligible	Yes	Yes
Canterbury Station	State	Moderate	Moderate	Negligible	Yes	Yes
Belmore Station	State	Moderate	Moderate	Negligible	Yes	Yes
Lakemba Station	Local	Moderate	Moderate	Negligible	Yes	Yes
Punchbowl Station	Local	Moderate	Moderate	Negligible	Yes	Yes
Wiley Park Station	Local	Moderate	Moderate	Negligible	Yes	Yes

[62] Artefact Heritage Services, 2018. 'Sydney Metro City and Southwest – Sydenham to Bankstown Upgrade: Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment'. Report to Transport for NSW. Table 33

6.0 CONCLUSION

6.1 Conclusion

Planned errant and hostile vehicle treatment works would be undertaken at 15 bridge locations and 66 non-bridge locations along the SWM alignment. It has been identified that these works would be located within or near 27 heritage items or archaeological catchments that include a combination of local and State heritage items, including three items listed on the SHR. It has been identified that the planned works would cause physical and visual impacts to some of these heritage items.

The works at these locations would generally involve bridge safety treatments and the installation of off-bridge barriers. The bridge works would include the removal of existing safety barriers and screens, and the installation of new concrete and steel rail barriers, vertical safety screens, and associated modifications of bridge fabric. It has been identified that these works would cause impacts to significant fabric at some of the heritage items.

Overall, it has been assessed that the errant and hostile vehicle mitigation treatments would typically cause negligible to minor impacts to heritage items where bridge works are undertaken within heritage curtilages. Works to the Canterbury Road Bridge at Canterbury Station would have a moderate adverse impact to the bridge element as a result of the demolition of the existing brick parapet wall, but this would be partially mitigated by the salvage and reuse of the bricks for the fascia of the new barriers. For the remaining heritage items in the vicinity, it has been assessed that the proposed works would typically result in neutral physical impacts and neutral to negligible visual impacts. The material threshold would not be exceeded at any of the heritage items.

Of the relevant heritage items, six have been identified in the vicinity of the planned works that were not included in the EIS and SPIR. However, it has been assessed that the impacts to most of these items would be neutral. Only ‘Turpentine - Ironbark Forest Understory’ (Inner West LEP I1222) would be subject to negligible visual impacts, however, this is considered to be consistent with the existing level of impacts from the broader project.

It has been identified that works would be undertaken within the archaeological Marrickville, Canterbury, Belmore, and Lakemba Station Catchments. However, works would be limited to areas of AMZ 2 and AMZ 3 where little to no significant archaeological remains are expected to be present. The remaining work locations would be limited to the Bankstown Line Catchment (AMZ 3), which has been assessed as having nil to low potential. Overall, it is expected that there would be nil impacts to significant non-Aboriginal archaeological remains. There would be no harm to the area of Aboriginal archaeological potential, S2B PAD01.

Overall, it is assessed that the errant and hostile vehicle works are consistent with the existing project approvals and impact levels.

6.2 Recommendations and mitigation measures

The following recommendations are made to assist with the mitigation and management of heritage impacts associated with the works.

6.2.1 Built heritage

6.2.1.1 Prior to construction

- If changes to the scope of the works occur, further heritage assessment will be required to capture the additional impacts. In particular, this report will need to be updated when the Stage 3 design documentation is available

- The general requirements for the installation of new structures and required new services from the following documents should be considered:
    - *How to Carry out Work on Heritage Buildings & Sites* (NSW Heritage Office, 2002)
    - *Sydney Trains Heritage Technical Notes: Fixing Methods at Heritage Sites*
    - *Sydney Trains Heritage Technical Notes: Installation of New Electrical and Data Services at Heritage Sites* (Sydney Trains 2017)
- In the first instance, retain and conserve elements of high heritage significance where possible
- As part of the proposed works, condition inspections should be undertaken prior to, during and following completion of the work. Any repair works to heritage significant fabric should reinstate "like for like" and match the existing fabric. The repair works should be undertaken in consultation with the nominated Heritage Architect in accordance with REMM NAH 20, and Heritage NSW where appropriate, and should documented
- A Photographic Archival Recording (PAR) of the areas impacted by the works is not recommended as these works have been captured in the PARs previously prepared for the project in accordance with REMM NAH 13
- Opportunities for the implementation of heritage interpretation at the stations in accordance with the Heritage Interpretation Strategies that have been prepared for the project should be considered as part of the detailed design process. This may include the installation of artwork on new barriers or bollards
- New services and equipment are to be rationalised and should not cover decorative fabric. Design for installation of services would be verified and/or revised in consultation with a Heritage Architect once final designs are available for review

6.2.1.2 During construction

- All staff, including design professionals and tradespeople, involved in the works within or in the vicinity of heritage items that would be impacted, as assessed in this report, must receive a heritage induction and briefing prior to the commencement of works. The heritage induction should cover the heritage significance of the heritage items, identification of significant fabric and the recommendations and mitigation methods included in this report. This would apply to the following heritage items:
    - Marrickville Station
    - Dulwich Hill Station
    - South Dulwich Hill Conservation Area
    - Turpentine-Ironbark Forest Understorey
    - Canterbury Station
    - Hurlstone Park Station
    - Belmore Station
    - Lakemba Station
    - Wiley Park Station
    - Punchbowl Station

- All works to, and in the vicinity of significant heritage fabric must be coordinated with the heritage architect in accordance with REMM NAH20, to ensure they are conducted in accordance with relevant heritage controls in this SoHI and other heritage related documents
- Works on Albermarle Street Bridge must take care to avoid impacts to the Depression era brick paving. If temporary laydown areas or access paths are required near to, or over the brick paving, then impact protection measures must be implemented to protect the paving, such as coverings or ramps.
- If Depression era bricks need to be removed temporarily, the minimum number of bricks should be removed and then reinstated in the same herringbone pattern as existing, without grout or mortar. If mortar or grout is required for the relaying of the pavers, the materials should match existing and no cementitious materials are to be used
- When removing the original brick parapet walls at the Canterbury Road Bridge:
    - Masonry deconstruction and reconstruction should be conducted by tradespeople with demonstrated experience in managing and repairing heritage masonry, under the advice and supervision of the contractor's heritage architect
    - Salvage of brickwork should be conducted by hand as much as possible, with the least number of vertical saw cuts provided. Saw cuts should be conducted between brick courses and not through brick courses wherever possible
    - Salvaged brickwork should be managed with care following removal to ensure inadvertent damage does not occur to bricks during transport and storage
    - Salvaged bricks are to stored by the contractor in a secure dry location nominated by Sydney Metro
    - As not all bricks are expected to be salvaged intact, new replacement brick would be required. Replacement bricks must be appropriately matched in colour, dimensions, texture, type of aggregate and the range of colour and aggregate variation to existing brick
    - Brick matching should be conducted with on-site comparison of existing and replacement bricks, with a moderate sample size of replacement brick, to ensure that matching qualities are met
    - Bricks should be re-laid in the original pattern and bond as the existing parapet and retaining walls where possible, including existing angled sills and soffit courses
    - New brick and original brick should be installed in consolidated sections and not intermixed, so that new and original fabric can be discerned.
    - Additional time should be allotted during the construction program for the reconstruction works if hand deconstruction and reconstruction is not tenable during existing possession period estimates
- The bricks removed from demolished parapet walls at non-heritage listed bridges (Duntroon Street and Livingston Road bridges) are not required to be salvaged or reused. These bricks are not of heritage significance, and as they are painted, their compatibility with other bricks salvaged for reuse at heritage sites cannot be determined

- Where compressive filler material is planned be used between new concrete paths and existing brick masonry of parapet walls, the new material should be carefully installed so as to retain the integrity of the fabric it adjoins.
- When undertaking works in close proximity to significant fabric, impact or splash protection should be used where necessary to ensure that the surrounding fabric is not impacted. This may include the use of sound/construction blankets, geofabric, or other protective materials
- All works must be conducted in accordance with the relevant provisions of the CHMP and in the CEMP for the project
- Known items of heritage significance are to be labelled on Environmental Control Maps
- The following mitigation measures need to be undertaken during construction to protect heritage significant fabric in accordance with the *TfNSW Temporary works and protection at heritage sites during construction fact sheet*:[63]
    - Avoid accidental damage to significant fabric with thorough planning, site-specific inductions and physical protection measures
    - No construction materials are to be stockpiled or stored against heritage items or trees. Clear delineation must be provided
    - Vibration monitoring is to be undertaken in accordance with the required standards for works in the vicinity of heritage elements
- The following mitigation measures need to be undertaken during construction of the new fence (CI 109) within and adjoining the Turpentine-Ironbark Forest Understorey to prevent impacts to sensitive vegetation:
    - The Turpentine-Ironbark Forest Understorey is to be labelled on Environmental Control Maps
    - Ensure that the works do not impact any significant vegetation (including trees and grasses) thorough planning, site-specific inductions and physical protection measures
    - Implement any additional environmental controls necessary to protect the endangered ecological community and in accordance with best practice guidelines[64]
    - Maintain any existing Sydney Trains grass ‘no-mow’ zones in the vicinity of the works
- Existing penetrations into original fabric should be utilised where introduced fabric (new services and equipment) is to be located. Any existing penetrations that would not be utilised for new works should be repaired and made good
- Above ground service installation should endeavour to use existing penetrations and entry points to structures. Services should not cover significant fabric or areas of detailing wherever possible. Services should not introduce large noticeable structures or items in areas of significant detailing or within significant view lines. During detailed design, services should adhere to the principles and guidelines outlined in the Heritage Technical Note, Installation of New Electrical and Data Services at Heritage Sites (Sydney Trains, 2017) to prevent minor cumulative impacts to fabric

[63] Transport for NSW, 2023. *The Temporary works and protection at heritage sites during construction fact sheet EMF-HE-FS-0166*.
[64] Department of Environment & Climate Change NSW, 2008. *Best practice guidelines: Sydney Turpentine-Ironbark Forest*. Accessed online at: https://www.environment.nsw.gov.au/resources/threatenedspecies/08528tsdssydturpironforestbpg.pdf.

from occurring due to ad hoc service design solutions. Service design solutions should avoid ad hoc solutions which can cause further physical and visual impacts to heritage significant fabric

- Undertake all demolition work, removal of modern accretions and the like carefully and by hand to avoid damage to surrounding heritage fabric
- Existing penetrations are to be used where possible when introducing new services and equipment to limit change to heritage fabric
- Following removal of any modern elements, redundant penetrations, accretions and the like, repair and make good fabric as required and in accordance with best practice conservation techniques in consultation with specialist tradespeople and the heritage architect
- Where necessary clean all heritage fabric of dirt, organic growth, guano and other debris using low pressure warm water, biocide and a stiff bristle (non-ferrous) brush. Do not use aggressive or harsh chemicals, sand blasting or other abrasive means
- Allow for making good all existing surfaces exposed after removal of existing fixtures and fittings
- Unexpected or undocumented dilapidation of fixtures or materials discovered during the works should be brought to the attention of the nominated heritage consultant and heritage architect.

6.2.2 Archaeology

h) It is recommended that excavations for the works be managed under the *Sydney Metro Unexpected Heritage Finds Procedure* and *Exhumation Management Procedure* in accordance with the management strategies for AMZ 3 as outlined in the AARD and in the ACHAR

i) Works would be undertaken within AMZ 2 at Marrickville Station, Belmore Station, and Lakemba Station. However, as the excavations would be minor in nature and limited to areas not expected to contain significant archaeology, it is considered that archaeological monitoring would not be necessary. It is recommended that management of these excavations under AMZ 3 would be sufficient as outlined in the appended Archaeological Method Statement

j) The location of the historical station archaeological catchments and the area of Aboriginal archaeological potential, S2B PAD01, must be shown on Environmental Control Maps

k) The boundaries of S2B PAD01 must be marked out before undertaking works for CI-085 to ensure that excavations do not enter the mapped area of the PAD.

7.0 REFERENCES

AECOM, 2017. *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*. Accessed online at: https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf.

Artefact Heritage, 2017. *Sydney Metro City & Southwest – Sydenham to Bankstown: Technical Paper No 3: Non-Aboriginal Heritage Impact Assessment*. Report to Transport for NSW.

Artefact Heritage, 2017. *Sydney Metro City & Southwest – Sydenham to Bankstown: Technical Paper No 4: Aboriginal Heritage Impact Assessment*. Report to Transport for NSW.

Artefact Heritage, 2018a. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment*. Report to Transport for NSW.

Artefact Heritage, 2018b. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Historical Archaeological Assessment & Research Design*. Report to Transport for NSW.

Artefact Heritage, 2018c. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade: Aboriginal Cultural Heritage Assessment Report*. Report to Transport for NSW.

Artefact Heritage Services, 2018. 'Sydney Metro City and Southwest – Sydenham to Bankstown Upgrade: Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment'. Report to Transport for NSW

Artefact, 2020. *Sydney Metro City and Southwest – Marrickville Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Dulwich Hill Metro Station Detailed (Revised stage 3) Design Heritage Impact and Consistency Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Hurlstone Park Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Canterbury Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Belmore Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Lakemba Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Punchbowl Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2020. *Sydney Metro City and Southwest – Wiley Park Metro Station Detail (Revised stage 3) Design Heritage Impact Assessment*. Report to Metron T2M.

Artefact, 2024. *Sydney Metro City & Southwest – Southwest Metro: Package 5 & 6. Aboriginal Heritage Report*. Report to Downer Group on behalf of Sydney Metro.

Department of Environment & Climate Change NSW, 2008. *Best practice guidelines: Sydney Turpentine-Ironbark Forest*. Accessed online at:

https://www.environment.nsw.gov.au/resources/threatenedspecies/08528tsdssydturpironforestbpg.pdf

DesignInc, 2024. 'Urban and Landscape Design Report South West Metro Errant and Hostile Vehicle Mitigation: Marrickville Station at Illawarra Road Overbridge'

DesignInc, 2024. 'Ubran and Landscape Design Report South West Metro Errant and Hostile Vehicle Mitigation: Belmore Station and Burwood Road Overbridge'

Heritage NSW, 2024. "Marrickville Railway Station Group". *SHI database no. 5012096*, accessed online at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=5012096.

Heritage NSW, 2022. "South Dulwich Hill Conservation Area". *SHI database no. 2030484*, accessed online at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=2030484.

Heritage NSW, 2022. "Dulwich Hill Railway Station Group". *SHI database no. 4801909*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801909.

Heritage NSW, 2022. "Hurlstone Park Railway Station Group". *SHI database no. 4802051*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4802051.

Heritage NSW, 2024. "Canterbury Railway Station Group". *SHI database no. 5011966*, accessed online at: https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5011966.

Heritage NSW, 2024. "Belmore Railway Station Group". SHI database no. 5045375, accessed online at: https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5045375.

Heritage NSW, 2022. "Lakemba Railway Station Group". *SHI database no. 4801916*, accessed online at: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801916.

Heritage NSW, 2022. "Punchbowl Railway Station Group". *SHI database no. 4802009*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4802009.

Heritage NSW, 2022. "Wiley Park Railway Station Group". *SHI database no. 4801946*, accessed online at https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801946.

Metron T2M, 2022. 'CIRA Bridge Works Canterbury Rd Overbridge Stage 1 Design Report Southwest Metro Design Services (SMDS) Sydney Metro

Metron T2M, 2022. 'CIRA Bridge Works Wardell Rd Overbridge Stage 1 Design Report Southwest Metro Design Services (SMDS) Sydney Metro

Metron T2M, 2022. 'CIRA Bridge Works King Georges Road Overbridge Stage 1 Design Report: Southwest Metro Design Services (SMDS) Sydney Metro

Transport for NSW, 2023. *The Temporary works and protection at heritage sites during construction fact sheet EMF-HE-FS-0166*.

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Artefact Heritage and Environment
ABN 73 144 973 526
Suite 56, Jones Bay Wharf
26-32 Pirrama Road
Pyrmont NSW 2009 Australia
+61 2 9518 8411
office@artefact.net.au
www.artefact.net.au