artefact

5 January 2016
Philippa Owen
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Jacobs
100 Christie Street
St Leonards, NSW, 2065

Dear Ms Owen

Re: Hornsby Junction remodelling and commuter car park Aboriginal heritage Due Diligence assessment

This letter report has been prepared by Artefact Heritage at your request to form part of the Review of Environmental Factors (REF) for the proposed Hornsby Junction remodelling and commuter car park (Figure 1). It outlines the results of a preliminary due diligence Aboriginal heritage assessment which meets the requirements of the Office of Environment and Heritage (OEH) 2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, and includes recommendations as to whether further archaeological investigation may be required in relation to the current proposal.

Legislative Context

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* was introduced in October 2010 by the OEH (formerly the Department of Environment, Climate Change and Water). The aim of the guideline is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP).

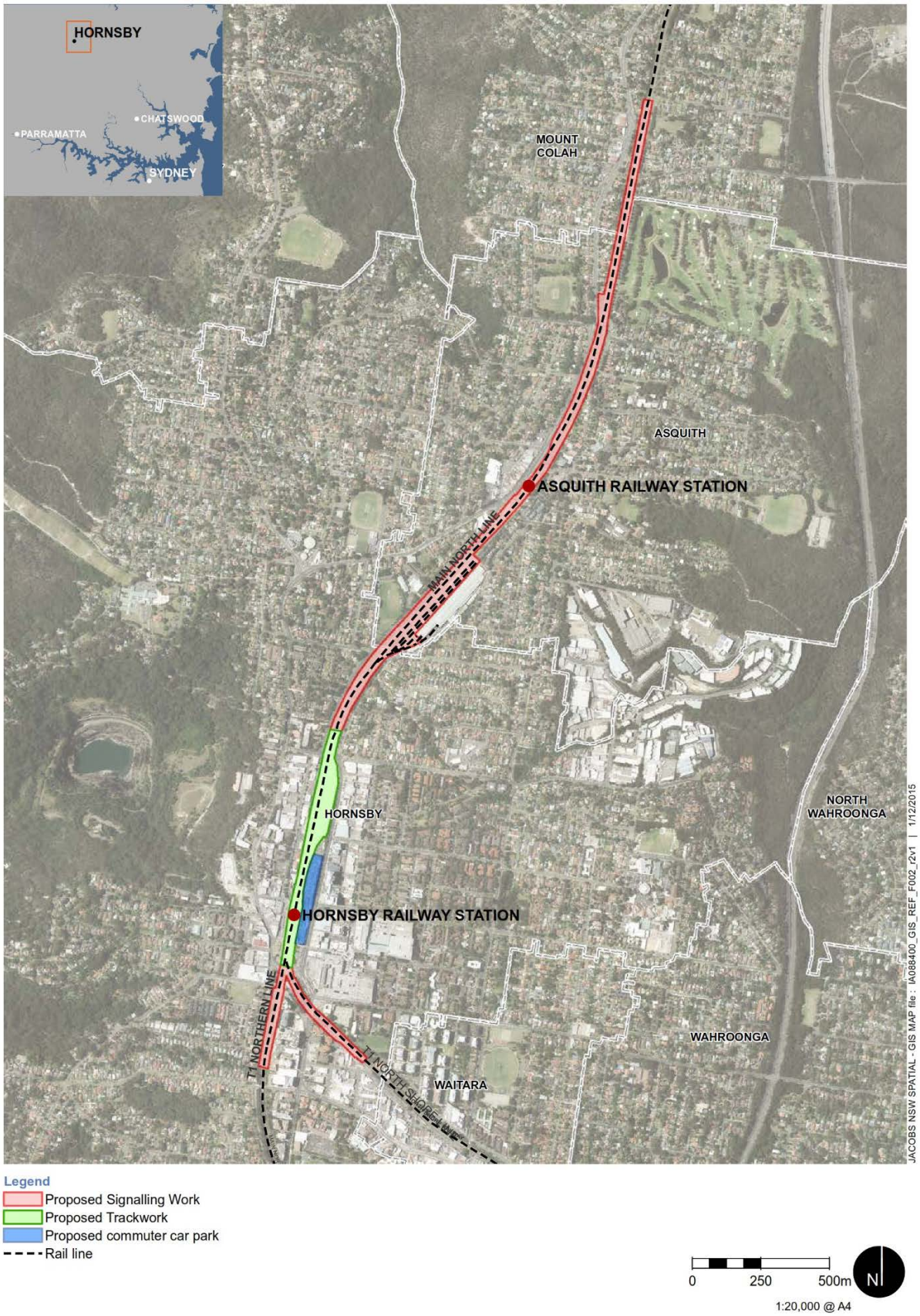
A due diligence assessment should take reasonable and practicable steps to ascertain whether there is a likelihood that Aboriginal sites will be disturbed or impacted during the proposed development. If it is assessed that sites exist or have a likelihood of existing within the development area and may be impacted by the proposed development, further archaeological investigations may be required along with an AHIP. If it is found to be unlikely that Aboriginal sites exist within the study area and the due diligence assessment has been conducted according to the *Code of Practice*, work may proceed without an AHIP.

Study Area

The study area is located within the Rail Corridor of the Main North Line on the country side of Hornsby Station and includes the existing commuter car park. The study area is located within the business centre of Hornsby, extending north into the medium and low density residential areas. The southern extent of the works is mainly surrounded by commercial uses. The Hornsby railway siding is located on the eastern side of the railway just north of the station.

The study area is located within the Local Government Area of Hornsby, the Parish of South Colah and the County of Cumberland. The local Aboriginal land council is the Metropolitan Local Aboriginal Land Council (MLALC).

Figure 1: Location of study area



The Proposal

The Proposal comprises two parts:

- Hornsby Junction Remodelling, comprising the reconfiguration of track work, signalling and overhead wiring within the existing rail corridor between Waitara and Asquith
- Hornsby Station commuter car park, comprising the construction and operation of a multi-storey car park at the site of the existing at-grade Hornsby Station commuter car park.

The track work is being delivered to increase the capacity and reliability of the T1 North Shore Line and the car park is being delivered as part of the Transport Access Program.

Further discussion on the key features of the Proposal is provided below.

Hornsby Junction Remodelling

The key features of the Hornsby Junction remodelling would include:

- Installation, removal and reconditioning of track work between Hornsby Station and about 400 metres north of Bridge Road, Hornsby,
- Relocation of overhead wires and support structures
- Installation, removal and modifications of signalling infrastructure to enable the operation of up to 16 city-bound trains per hour on the T1 North Shore line. This work would generally be limited to:
  - Installing new signals and/or modifying existing signals
  - Installing new field equipment including train stops, points and track circuits. Pending signal sighting outcomes, there is also potential for existing warning lights and guard indicators to be relocated or newly installed
  - Running new cables within existing galvanised steel trough (GST) to connect the additional signals
- Modification of track drainage, combined services routes and other rail infrastructure (such as local cable routes)
- Provision of a new train driver's walkway to a train turnback facility located about 30 metres south of Bridge Road, Hornsby.

Subject to planning approval, construction of the proposed track work is expected to commence in mid-2016 and is anticipated to take up to 20 months to complete in the first quarter of 2018.

Commuter car park

Key features of the car park include construction of a multi-storey commuter car park that would provide approximately 230 additional car spaces. The Proposal would also include a new vehicular entry and exit from the George Street/Burdett Street intersection (via reconfigured traffic signals) and the relocation of the high voltage overhead power lines (owned by Sydney Trains) from the site of the existing commuter car park.

The key features of the proposed Hornsby Station commuter car park are:

- Partial demolition of the existing at-grade commuter car park, including the decommissioning and replacement of an existing on site stormwater detention storage tank
- Construction of a commuter car park,
- Provision approximately 230 additional parking spaces

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- Provision of vehicular entry and exit from the George Street / Burdett Street intersection (via reconfigured traffic signals); the existing vehicle entry and exit off George Street (south of Burdett Street) would also be retained
- Provision of a new retaining wall along the eastern boundary of the commuter car park
- Provision of a new retaining wall and planter along the western side of George Street (to replace the existing retaining wall structure that would be demolished to facilitate construction)
- Ancillary works including stairs, a lift, perimeter fencing, power and lighting, communications, CCTV camera surveillance, drainage, utilities, line-marking and signage, urban design works and landscaping
- Maintaining access to the Sydney Trains maintenance facility via the car park.

A number of other associated works would also be required as part of the proposed car park, comprising:

- Relocation of high voltage overhead power lines from the site of the existing commuter car park.
- Provision of about six new accessible parking spaces adjacent to the eastern station entrance in accordance with the relevant requirements (to be created from existing unrestricted commuter parking at this location)
- Extension of the footpath on the western side of George Street (from the George Street/Burdett Street intersection, where it currently terminates, to the northern boundary of the proposed commuter car park to provide pedestrian access between Hornsby Station and the proposed lifts in the commuter car park
- Modification of the George Street/Burdett Street intersection to accommodate the proposed new commuter car park entry
- Utility protection works
- Vegetation removal from the existing car park site.

Subject to planning approval, construction of the Hornsby Station commuter car park is expected to commence in mid-2016 and is anticipated to take up to 18 months to complete, the car park is anticipated to reopen in the first quarter of 2018, however options to progressively open the car park earlier would be assessed during detailed design and construction. To minimise the duration of commuter car parking impacts at Hornsby Station, Transport for NSW will review the timing and duration of construction works for both elements of the Proposal with the contractor.

Aboriginal Heritage Information Management System (AHIMS) Search

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken on 13 October 2015 (Client ID: 194650).

An area of approximately two kilometres (east-west) by 2.5 kilometres (north-south) was included in the search. The AHIMS search provides archaeological context for the area and identifies whether any previously recorded Aboriginal sites are located within or near the study area.

There is one registered AHIMS site located within the search area. AHIMS site 45-6-2821 Arrionga GG1 is located 1.2 kilometres north west of the study area. The site is recorded as a grinding groove.

The location of Aboriginal sites is considered culturally sensitive information. Therefore, the AHIMS heritage map for the proposal has been removed from this public version.

Background

Environmental context

The study area is located within the Sydney Basin, a large depositional geological feature that spans from Batemans Bay to the south, Newcastle to the north and Lithgow to the west. The underlying geology of the area consists of Hawkesbury Sandstone and Ashfield Shale. Hawkesbury Sandstone consists of medium to coarse-grained sandstone, very minor shale, and laminate lenses (eSpade 2015). Hawkesbury Sandstone is one of the most ubiquitous geological layers of the Sydney Basin, and was used extensively by both Aboriginal and colonists for a variety of shelter and subsistence requirements.

Evidence of Aboriginal use of Hawkesbury Sandstone in the Sydney area includes occupation deposits in natural shelter formations created by weathering processes in exposed sandstone, grinding grooves where edge-ground stone axes were manufactured or maintained, and rock engravings or pigment motifs that were applied to exposed sandstone. British colonisers primarily utilised Hawkesbury Sandstone for building material, and many buildings and bridges were constructed with sandstone before clay bricks became the predominant construction material.

Generally shallow soils existed across the Hawkesbury Sandstone, with soil developed in situ from the underlying sandstone geology. These soil contexts include the Lucas Heights soil landscape on which the study area is located. The soil landscape generally consists of shallow sandy soils with high erosion hazard in cleared areas (eSpade 2015). The upper lens of Hawkesbury sandstone beneath both soil landscapes is likely to be weathered and fractured, resulting in ‘floating’ bedrock at the soil/bedrock transition (eSpade 2015).

The underlying geology of the main sandstone crest through the North Shore consists of Ashfield Shale, which is composed of black to dark-grey shale and laminate (eSpade 2015). Ashfield Shale is located along the southern boundary of the study area. Ashfield Shale caps the broad ridges of Hawkesbury Sandstone west of the study area and across northern Sydney (eSpade 2015). Soils associated with the typically gentler slopes of the Ashfield Shale formation tend to be residual soils developed in situ.

Historical Background

Six weeks after the arrival of the first fleet, Governor Phillip led an exploration through Broken Bay in search of a large river to provide fertile land capable of cultivating crops for the colony. The harvesting of Blue Gums and Grey Ironbarks which grew on the ridges was the first economic activity undertaken by European settlers in the Hornsby area. Timber was transported by river for sale to Sydney builders. The activities of timber cutters opened the district for permanent settlement by farmers who took up the most fertile land located on the ridge tops.

Throughout the 19th century the region remained fairly remote and rural with large land holdings primarily utilised for agriculture. The fruit growing industry commenced in the 1830’s and was the main industry within the region.

Large scale subdivision of the early grants occurred in the 1880s relating primarily to the development of the railway. The first railway junction was built in 1893 linking the main northern railway line to Newcastle with the North Shore line at Hornsby. Most of the early development within the town followed the railway lines. Hornsby developed as a railway town providing work for railway employees, shopkeepers and publicans. It became a popular residential area for families and was advertised as a healthy climate away from the smog of the city.

Aboriginal Material Culture

Traditional Aboriginal tribal boundaries within Australia have been reconstructed, primarily, based on surviving linguistic evidence and are therefore only approximations. Social interaction, tribal boundaries and linguistic evidence may not always correlate and it is likely boundaries and interaction levels varied and fluctuated over time. Aboriginal people traditionally lived in small family or clan groups that were associated with particular territories or places. The language group spoken in the Hornsby area is thought to have been Darug, Kuringai and Darkingung (Tindale 1974).

The archaeological understanding of the early Aboriginal settlement of the Sydney Basin and surrounds is constantly expanding and developing. At present, the earliest occupation known is associated with deposits on the Parramatta and Nepean Rivers, which have been dated to c.25-30ka and 36ka (JMCHM 2005; AHMS 2013).Two coastal sites south of Wollongong at Bass Point and Burrill Lake in the Shoalhaven have both been dated to around 20,000 yBP (Lampert 1971 and Nanson et al 1987). Evidence of Aboriginal occupation at Lake Mungo has been dated to 50-60,000 yBP suggesting a likelihood that Aboriginal people have lived in the Sydney region for even longer than indicated by the oldest recorded dates known at present (Bowler et al 2003).

The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay. As a result the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4000 yBP in the Sydney region (Attenbrow 2010: 102). It is argued that these changes in material culture were an indication of changes in social organisation and behaviour.

The Eastern Regional Sequence was first developed by McCarthy in 1948 to explain the typological differences he was seeing in stone tool technology in different stratigraphic levels during excavations such as Lapstone Creek near the foot of the Blue Mountains (McCarthy 1948). The sequence had three phases that corresponded to different technologies and tool types (the Capertian, Bondaian and Eloueran). The categories have been refined through the interpretation of further excavation data and radiocarbon dates (Hiscock & Attenbrow 2005; JMCHM 2005). It is now thought that prior to 8500 yBP tool technology remained fairly static with a preference for silicified tuff, quartz and some unheated silcrete. Bipolar flaking was rare with unifacial flaking predominant. No backed artefacts have been found of this antiquity. After 8500 yBP silcrete was more dominant as a raw material, and bifacial flaking became the most common technique for tool manufacture. From about 4000 yBP to 1000 yBP backed artefacts appear more frequently. Tool manufacture techniques become more complex and bipolar flaking increases (JMCHM 2006). It has been argued that from 1400 to 1000 years before contact there is evidence of a decline in tool manufacture. This reduction may be the result of decreased tool making, an increase in the use of organic materials, changes in the way tools were made, or changes in what types of tools were preferred (Attenbrow 2010: 102). The reduction in evidence coincides with the reduction in frequency of backed blades as a percentage of the assemblage.

After European colonisation Aboriginal people of the Cumberland Plain often continued to manufacture tools, sometimes with new materials such as bottle glass or ceramics. There are a number of sites in the Sydney basin where flaked glass has been recorded, for example at Prospect (Ngara Consulting 2003) and Oran Park (JMcDCHM 2007).

Previous Archaeological Studies

Artefact Heritage 2012 Northern Sydney Freight Corridor Epping to Thornleigh Third Track (ETTT) Project

Artefact Heritage (2012) prepared an Aboriginal Cultural Heritage Assessment for the ETTT project from Epping to Thornleigh, approximately 3.5 kilometres south of the study area. The rail corridor was assessed as highly disturbed due to construction and maintenance of the railway. The construction of the railway has involved major landform modifications. Three registered AHIMS sites and one previously unidentified site were located within and adjacent to the rail corridor. These sites consist of isolated quartz and silcrete artefacts and one artefact scatter. The study area within the rail corridor was assessed to be of low archaeological potential due to the high level of disturbance and landform modification associated with construction and maintenance of the rail corridor. The study area was also over 200 metres away from any substantial watercourses and therefore not considered to be located within a sensitive landform.

Artefact Heritage 2013 Due Diligence Aboriginal heritage assessment for the Westleigh Ancillary Facility

Artefact Heritage (2013) conducted a Due Diligence Aboriginal heritage assessment for the Westleigh Ancillary Facility as part of the ETTT project. The proposed ancillary facility was located within a large cleared area formerly used as a stone quarry approximately 2.5 kilometres south west of the current study area. The assessment area was assessed to have been highly disturbed and modified due to quarrying activities. The assessment area was not located within a sensitive landform and located approximately one kilometre south from the major watercourse in the area, Berwora Creek. The area was therefore assessed as having a low archaeological potential and no Aboriginal objects were identified.

Artefact Heritage 2014 Epping to Chatswood Railway – Conversion to Rapid Transit Aboriginal heritage Due Diligence assessment

Artefact Heritage (2014) conducted an Aboriginal heritage due diligence assessment for five stations on the Epping to Chatswood railway including, Epping, Macquarie University, North Ryde and Chatswood. The closest station Epping, is located approximately seven kilometres south of the current study area. There were no Aboriginal objects or areas of potential identified within the localities of any of the assessed stations. This assessment was based on the identification of the assessment areas as heavily impacted by the construction and maintenance of the railway, the absence of any major watercourses within 200 metres of the assessment areas and the lack of Aboriginal sites located within the vicinity of the assessment areas.

Results of the Site Visit

An inspection of the study area was conducted by archaeologists Claire Rayner and Jenny Winnett (Artefact Heritage) on 15 October 2015. The main aims of the inspection were to gain an overall impression of the intactness of the study area and identify any intact areas where Aboriginal objects may be located.

The study area encompasses the rail corridor, Hornsby Station and adjacent carpark (Plate 1 and Plate 2). The area has been high modified by the construction of the railway, station and carpark. Visibility was generally low across the study area, impeded by structures, sealed bitumen surfaces and the rail itself. Where ground exposures were observed they appeared to be within artificial disturbed contexts such as gardens within the carpark areas (Plate 3).

The station and rail corridor has severely impacted the natural landform. The original landform appears to have been a slope, sloping down to the east. The Station and rail corridor has been cut into the slope below Jersey Street and built up above the slope above George Street (see Plate 4 and Plate 5).There were no Aboriginal objects or areas of archaeological potential located within the study area during the site visit.

Plate 1: Hornsby Station

Plate 2: Hornsby Station carpark

Plate 3: Garden beds

Plate 4: Station cut into landform below Jersey Street

Plate 5: Station and rail line built up above George Street

Assessment of Archaeological Potential

Archaeological potential is closely related to the levels of ground disturbance. However, other factors are also taken into account when assessing archaeological potential, such as whether artefacts were located on the surface, and whether the area is within a sensitive landform unit according to the predictive statements.

The OEH due diligence guidelines defines landscape features that indicate the likely existence of Aboriginal objects. These features include areas:

- *Within 200 metres of waters, or*
- *Located within a sand dune system, or*
- *Located on a ridgetop, ridgeline or headland, or*
- *Located within 200 metres below or above a cliff face, or*
- *Within 20 metres of or in a cave, rock shelter, or a cave mouth.*

The current study area is located approximately one kilometre from the closest watercourse. Prior to impacts associated with the railway the study area is likely to have been located on a sloped landform. The impacts from the railway and subsequent construction and maintenance activities within the rail corridor have modified the landfrom so that it no longer represents the natural topography of the area. Therefore the study area is not considered to be located within a landform context likely to contain Aboriginal objects.

This due diligence assessment has identified that the entirety of the study area has been subject to past ground disturbance. The Code of Practice defines disturbed land:

> *Sec 7.5 (4) For the purposes of this clause, land is disturbed if it is has been the subject of human activity that has changed the lands surface, being changes that remain clear and observable.*

This includes disturbed land via:

> *(a) soil ploughing,*
>
> *(b) construction of rural infrastructure,*
>
> *(d) clearing of vegetation,*
>
> *(e) construction of buildings and the erection of other structures,*
>
> *(f) construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure),*

The study area has been disturbed by impacts that are clear and observable since at least 1886 when Hornsby Station was first opened. These impacts include the construction of the railway, the construction of Hornsby Station including stations, ancillary buildings, elevators, car parks and stabling yard. The railway infrastructure would also include below ground services which are likely to have impacted any intact archaeological deposits.

From the discussion of landform and disturbance associated with the rail corridor, Hornsby Station and carpark i.e. the study area is assessed to have low archaeological potential to contain intact archaeological deposits and Aboriginal objects.

Conclusions and Recommendations

The study area has been significantly disturbed by the construction and maintenance of the railway over an extended period. The potential for intact archaeological deposits across the study area is considered low. Following the OEH due diligence guidelines the landscape features within the study area do not indicate that Aboriginal objects are likely to occur in subsurface deposits. Significant levels within the study area indicate that the natural landform has been completely modified. As a result the proposed works, including any signalling works, would impact areas of previously disturbed land where Aboriginal objects are unlikely to occur beneath the ground surface.

It is therefore recommended that there are no Aboriginal heritage constraints on the proposed development and works can proceed with caution.

If unforseen Aboriginal objects are uncovered during construction, work should cease, and an archaeologist, OEH, and Metropolitan Local Aboriginal Land Council (MLALC) should be informed. If human remains are found, work should cease, the site should be secured and the NSW Police and OEH should be notified. It is an offence under the *NPW Act 1974* (as amended 2011) to disturb or destroy an Aboriginal object without an Aboriginal Heritage Impact Permit (AHIP).

If changes are made to the project that may result in impacts to areas not covered by this assessment, further archaeological assessment may be required.

Yours sincerely,

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