Campbell's Stores, Campbell's Cove
SSD 7056 DA, S96 - Bay 12
Archaeological Statement of Heritage Impact

Prepared by

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For

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On behalf of Tallowoladah Pty Ltd

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18 APPENDIX 1: ARCHAEOLOGICAL STATEMENT OF HERITAGE IMPACT FOR PROPOSED REDESIGN OF BAY 12

18.1 Introduction

This archaeological statement of heritage impact has been prepared to specifically address the potential impacts of a major re-design of the 'Bay 12' area at Campbell's Stores so as to permanently conserve and interpret archaeological features of State significance uncovered in test and open area excavations undertaken in October 2017. It has been prepared as an appendix to the existing report created by Austral Archaeology Pty Ltd (Austral) and entitled "Campbell's Stores, Campbell's Cove, Sydney NSW, Aboriginal Due Diligence and Historical Archaeological Assessment, Bore-Hole Monitoring Results, Statement Of Heritage Impact And Research Design Final Report V1" dated 27 September 2016.

During approved archaeological investigations of areas of moderate to high archaeological potential in the Bay 12 area in October 2017, Austral identified an area of sandstone paving and wall footings which correspond to the expected location of structural features shown on an 1834 plan of the area. These are associated with a bond store and sea wall located to the north of Campbell's Store which were constructed prior to 1834 and demolished prior to the construction of Hickson Road in 1910-1920. Remains of other structures and drainage uncovered to the south of the 1834 remains are likely to be part of the palimpsest intermediary structures built in the 1880s-1895 (and possibly up to 1920) period between the northern end of Bay 11 and the pre-1834 bond store (see overlay mapping in Figures 1 to 5). The extent of archaeological excavations was constrained on the west and north sides due to the proximity of existing brick retaining walls which precluded excavation closer than 2 metres.

The archaeological remains identified in Bay 12 lie at a depth of approximately 1.2 m below the current ground surface. Prior to identification of these remains, Tallawoladah (the client) had approval (SSD 7056) to bulk excavate to a depth of approximately 2 metres from the current ground surface across the entire Bay 12 area in order to install footings and piles as well as toilets, an outdoor eating area and other services in this area. The ground level would then be built back up to a Finished Floor Level at an RL of 1.7 metres, which is at approximately the same level as the pre-1834 sandstone paving which has been uncovered.

After consultation with the Heritage Division which indicated that the remains should be conserved and interpreted *in situ*, Tallawoladah agreed to amend the approved design for the Bay 12 area. Johnson Pilton Walker (JPW) (architects) in conjunction with Taylor Thomson Whitting (TTW) (engineers) have prepared an alternative design for the area, which protects almost all of the archaeological remains and displays part of them through an open archaeological viewing "window", whilst also providing the required toilets, services, and outdoor dining area. This addendum reviews the alternative design and assesses the potential impact of the required structural and drainage elements on the archaeological remains.

The full package of plans for the Section 96 Planning Application is included in the Design Statement prepared by JPW and submitted to NSW Government Department of Planning. This document contains excerpts from those plans showing details relevant to the archaeology.

Figure 1 Approximate location of structures built by 1834, with Bay 12 area circled.

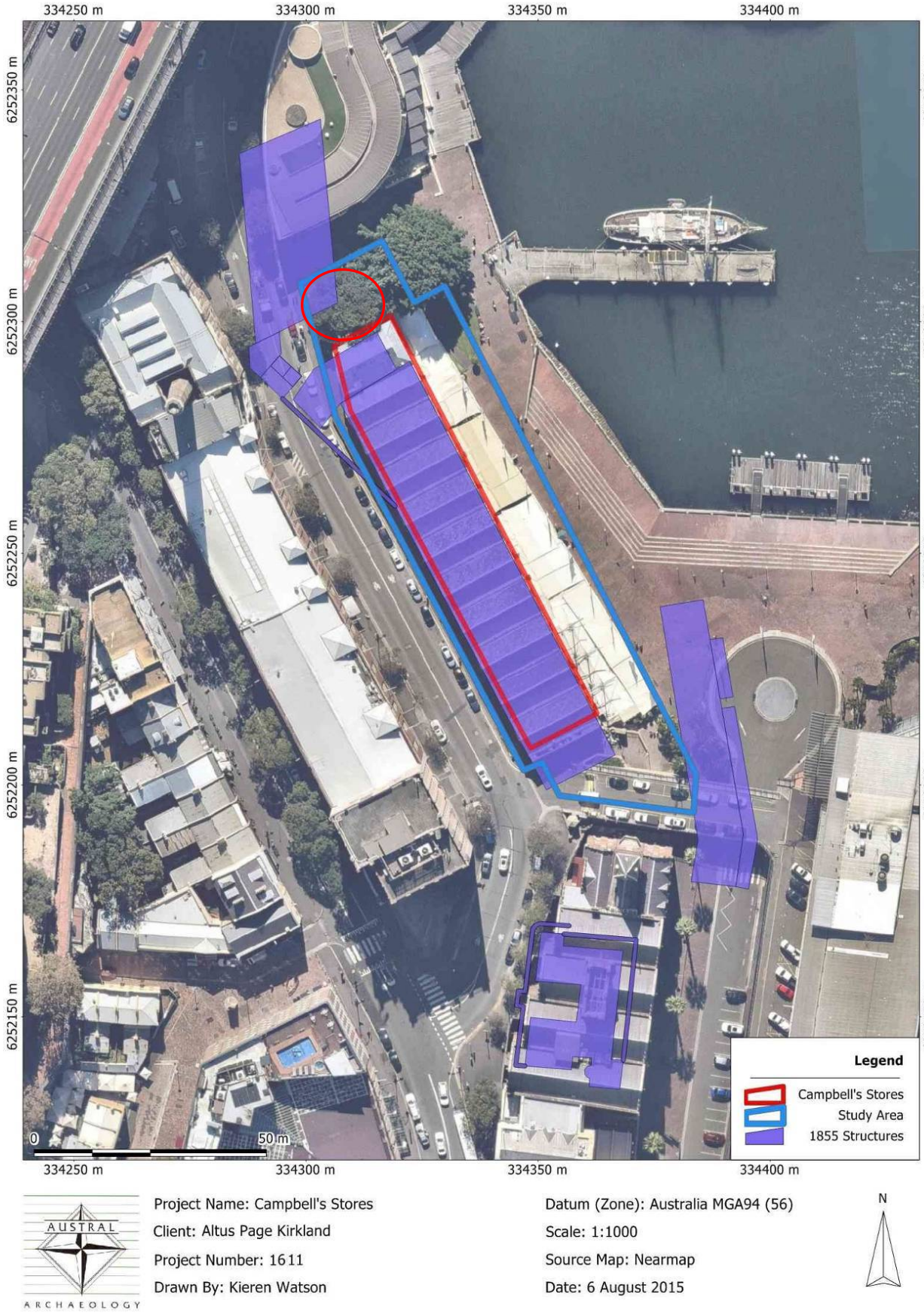

Figure 2 Approximate location of structures built by 1855-65 with Bay 12 area circled.

Figure 3 Approximate location of structures built by 1880s with Bay 12 area circled.

Figure 4 Approximate location of structures built by 1895 with Bay 12 area circled.

Figure 5 Approximate location of structures built by 1920 with Bay 12 area circled.

18.2 Proposed Work

The current development proposal is to modify and update the existing Campbell's Stores building complex. The originally proposed alterations to the current building and outdoor area included the construction of new toilets to the north and south of the stores, modifications to the existing openings on the western and southern elevations of the building, expansion of the existing covered outdoor area and landscaping works at the southern end of the stores.

The discovery of the State significant archaeological features in the Bay 12 area has necessitated a redesign of the outdoor area, toilets, grease pits and drainage at the northern end of the building so that the archaeological remains can be conserved *in situ* (see Figures 6a to 9). This addendum only addresses the proposed changes in the Bay 12 area which include:

- creation of an archaeological display via a viewing "window" into part of the *in situ* archaeology of an area of approximately 4.2 x 4.2 m to ensure that elements of the pre-1834 sea wall, sandstone paving and part of the pre-1834 bond store walls are visible and interpreted to the public
- permanent *in situ* conservation of all the archaeological features below the proposed developments in the Bay 12 area. The parts of the excavated archaeological site that will not be visible in the viewing window are to be carefully backfilled
- changes to the design and location of the toilets which are to be relocated to the west side of the site adjacent to, and built off, the extant Hickson Road retaining wall and its footings
- changes to the design and location of the outdoor dining area so that it lies entirely to the south of the viewing window
- the creation of two public viewing areas on the east and west sides of the window to view the archaeology
- removal of two grease pump-out pits and associated plumbing from the Bay 12 area
- construction of additional subsoil drainage so as to drain the archaeological remains visible in the window.

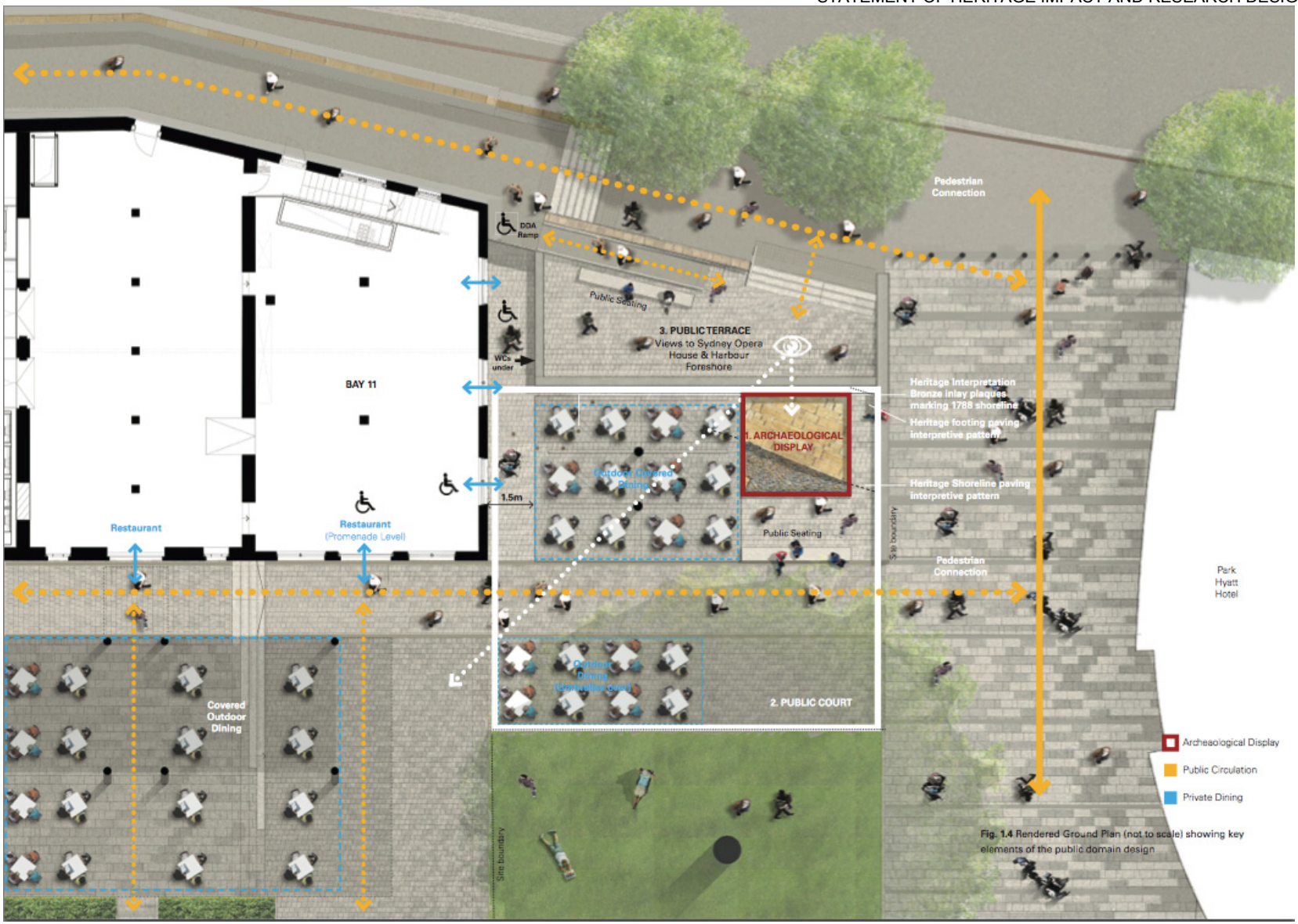

Fig. 1.4 Rendered Ground Plan (not to scale) showing key elements of the public domain design

Figure 6a Bay 12 Concept Plan. Note north is to right hand side (rhs) of page. (Detail from p5 JPW Design Statement)

Figure 6b Bay 12 Rendered view of archaeological window. (Detail from p7 JPW Design Statement)

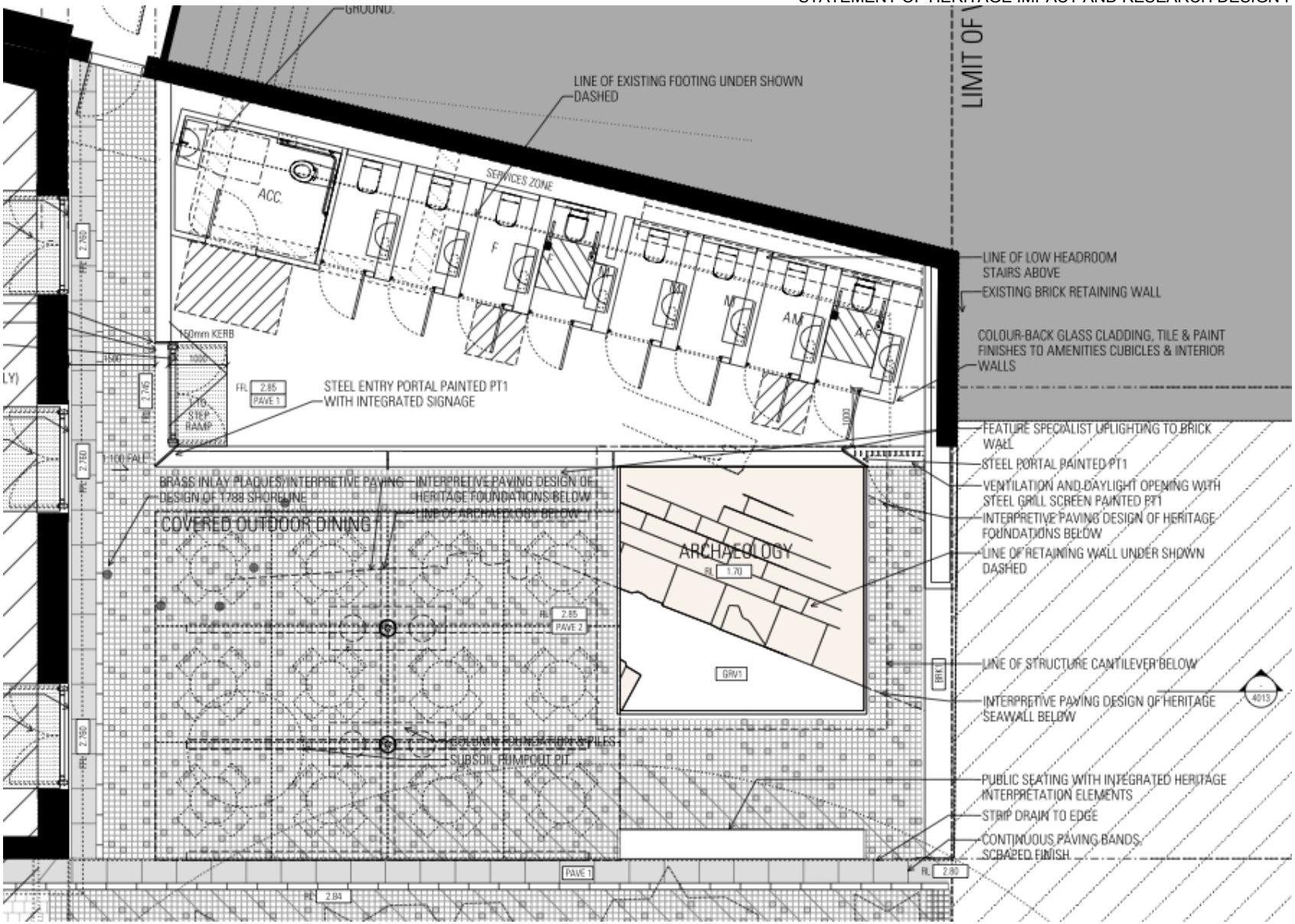

Figure 7 Bay 12 Redesign - Plan of Level 1. Note north is to rhs of page. (Detail from p32 JPW Design Statement)

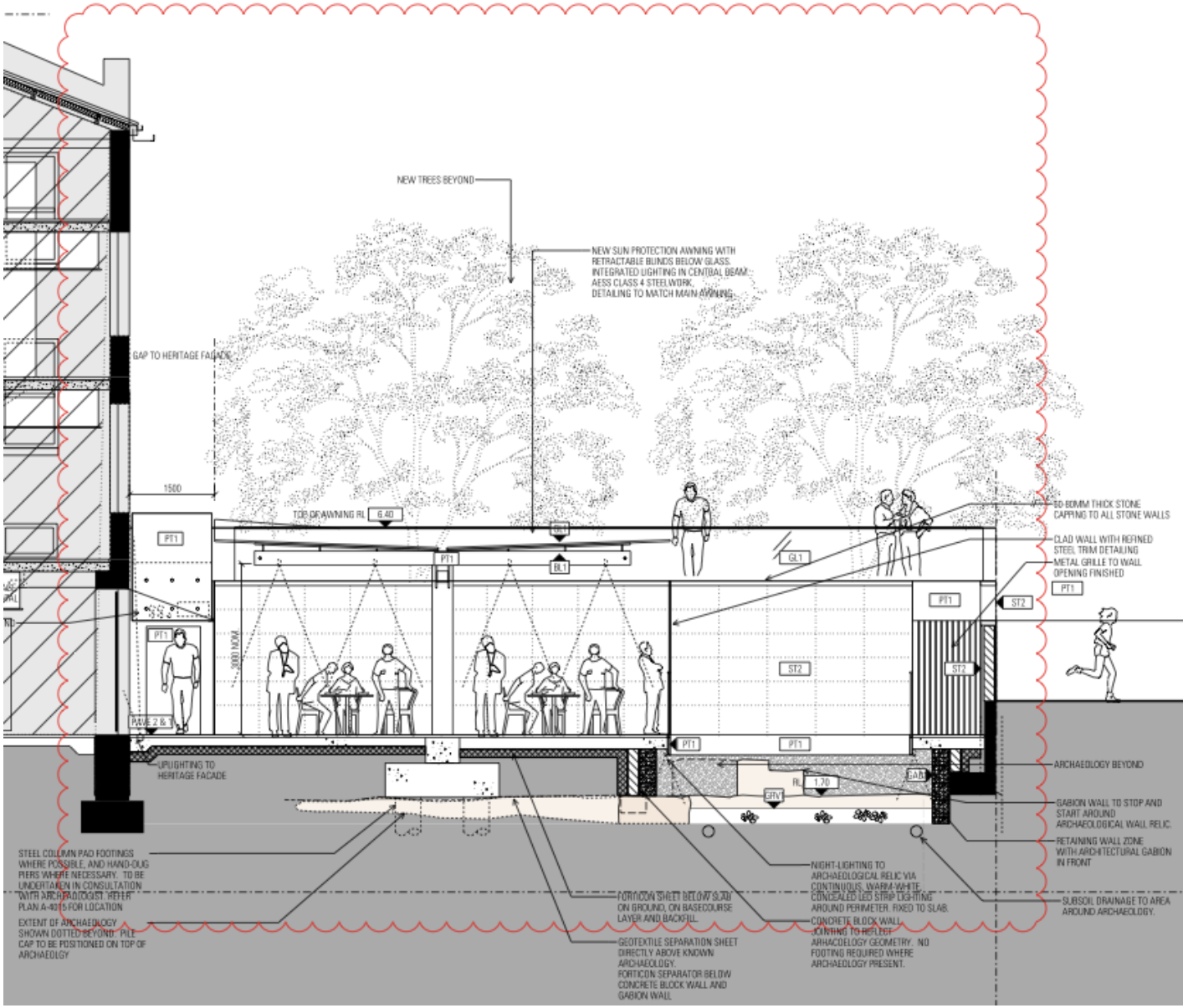

Figure 8 Bay 12 Redesign - West section through Level 1. (Detail from p31 JPW Design Statement)

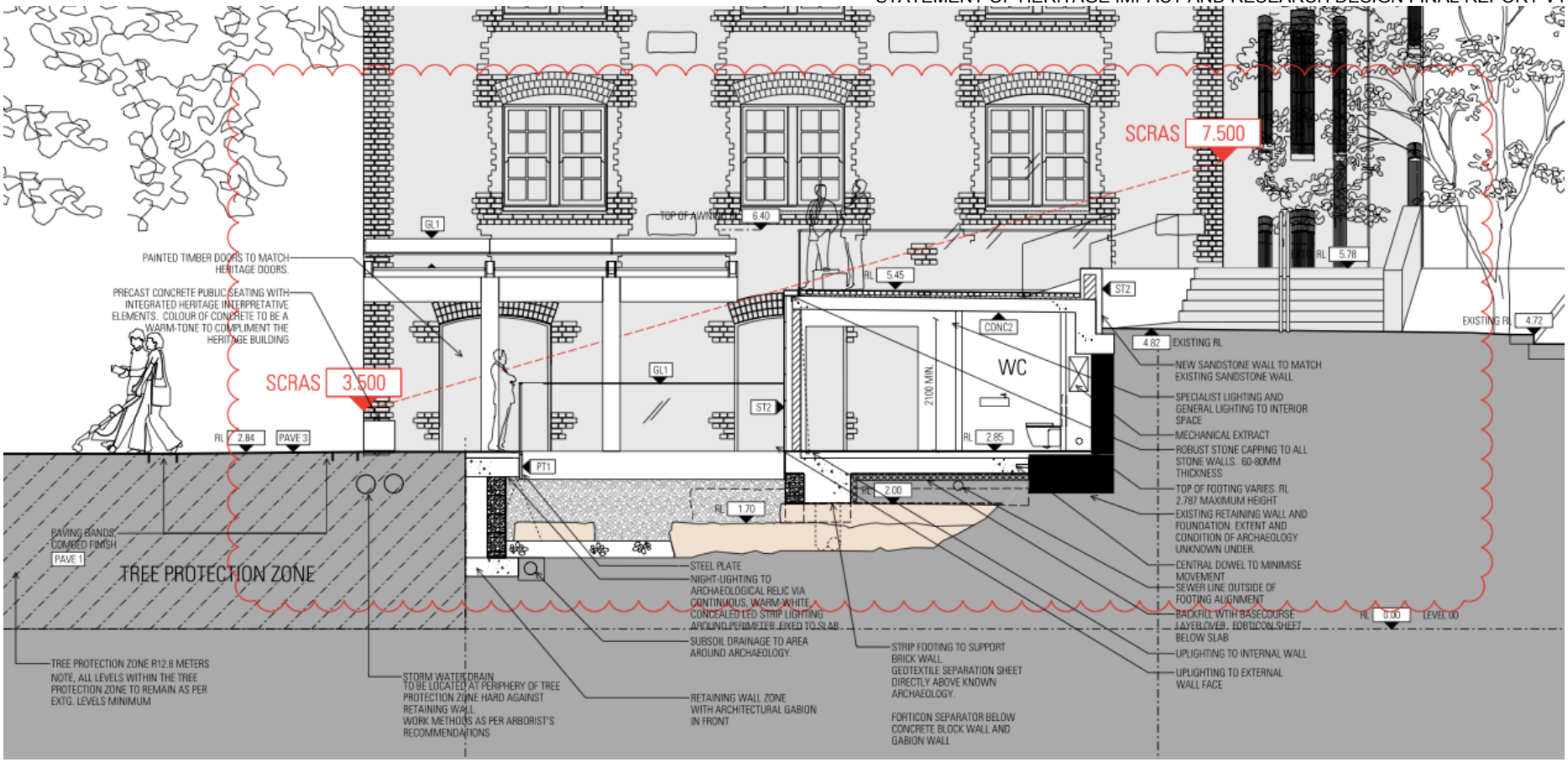

Figure 9 Bay 12 Redesign - South section through Level 1. (Detail from p30 JPW Design Statement)

18.3 Assessed Impacts on the Archaeological Resource

The primary objectives of the redesign of the Bay 12 area are to redesign the required facilities so that they can be constructed and yet permanently conserve and interpret the *in situ* archaeological remains. Nevertheless there will of necessity be some impact to the archaeology and this is assessed below.

18.3.1 Proposed Toilets

The relocation of the toilet area to the west side of the site adjacent to, and built off, the extant Hickson Road retaining wall and its footings largely negates the need for extensive new footings within the archaeological area. However, the toilet block will require the insertion of five piles into the subsoil to support the floor and wall of the toilet block on its eastern side. The piles will have a diameter of 500 – 750 mm and will be hand dug to a sufficient depth so as to be founded in solid ground.

These five piles will support two slightly offset concrete beams running roughly north-south which will support the external (eastern) brick wall of the toilet block. The southern beam will measure 750 mm wide x 500 mm thick and will be situated above the 1880-1895 / 1920s archaeological features. The northern beam will be offset to the west from the southern beam where it will be situated above the 1834 archaeological features (see Figure 12). It will measure 750 mm wide x 300 – 500 mm thick. Where the brick wall to the new toilet block is to be built along the edge of the archaeology viewing window, the floor slab will be cantilevered and the wall supported on a 350 mm wide x 300 mm deep edge beam built as part of the floor slab (see Figures 10 to 12). The sewerage and drainage required for the proposed toilets will be incorporated into, or attached to, the floor slab and will not impact the archaeology.

None of the piles for the toilet block will intersect the pre-1834 sandstone paving and/or bond store remains so will have **no impact** on them. Three piles will penetrate the later 1880-1895 / 1920s remains (see Figure 13) and this will constitute **a low level of impact**.

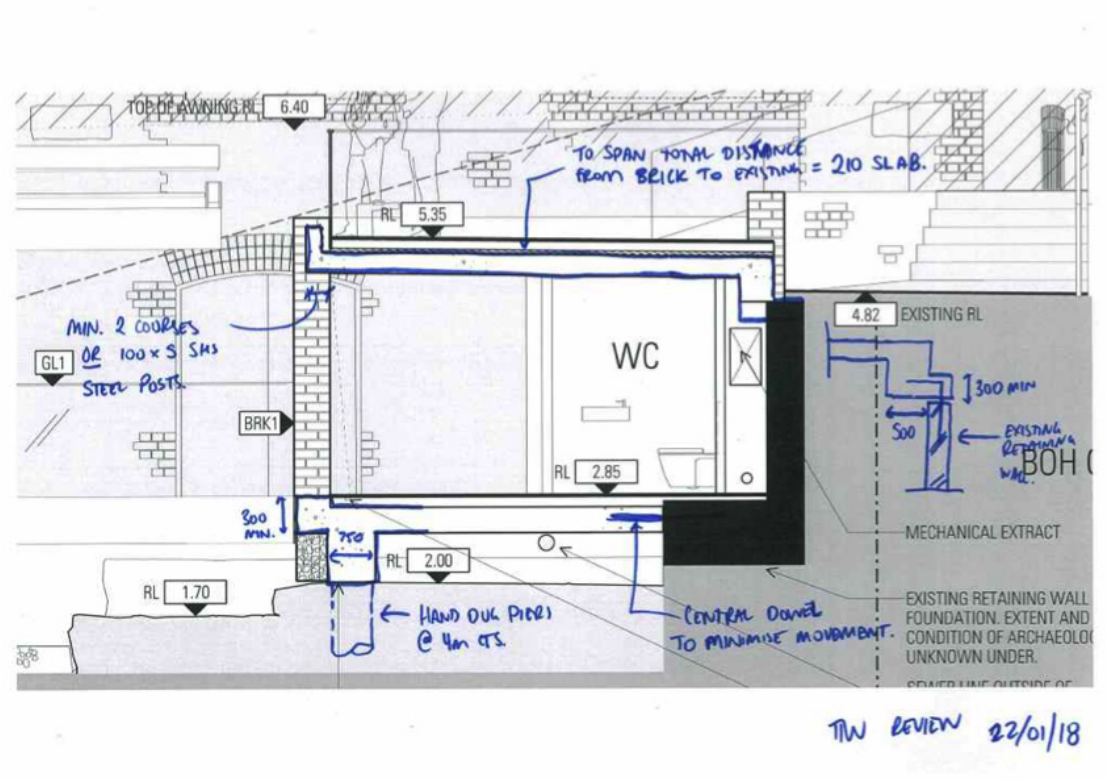

Figure 10 South section showing construction details for piers below toilets and concrete floor and edge beam above archaeological remains. (Source: TTW 180122_bay12sections)

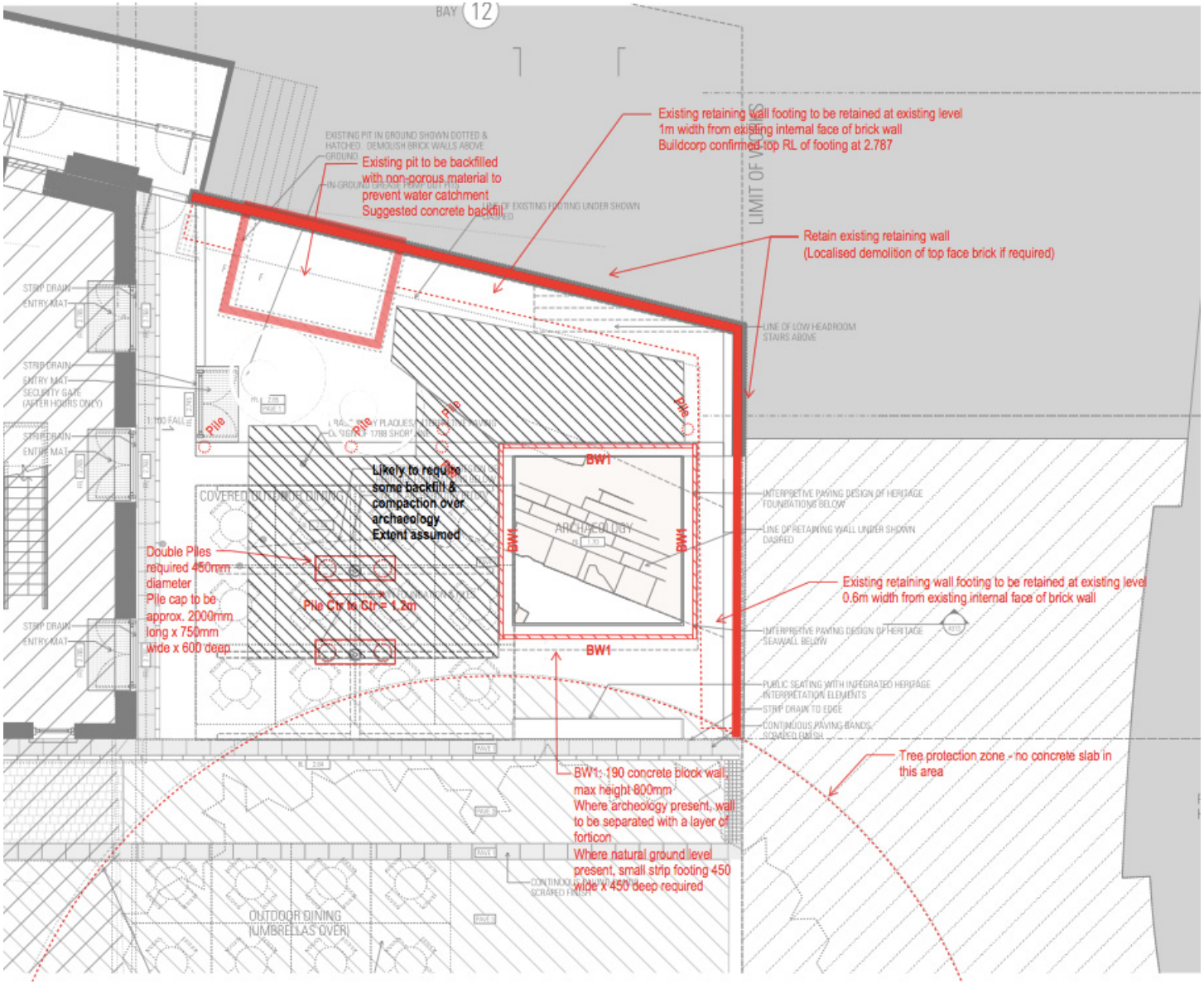

Figure 11 Level 1 plan showing details of block wall around the archaeological viewing window, locations of piles to support toilets, and piles and pile caps to support the outdoor awning columns. Note north is to rhs of page. (Source: TTW 180228_Bay 12_Archaeology S96_TTW Structure Preliminary)

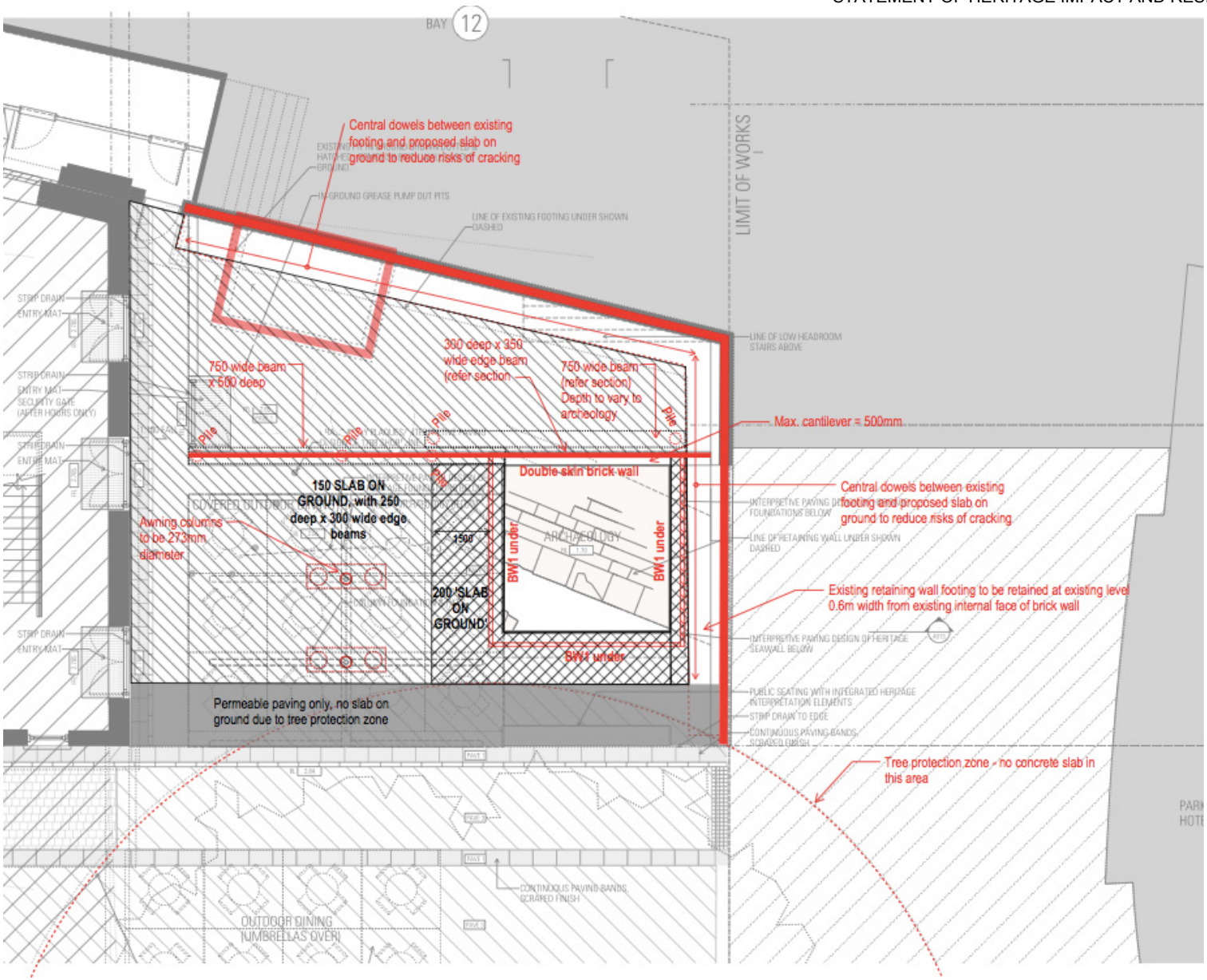

Figure 12 Level 1 plan showing details of concrete floor and edge beams to toilets and slabs on ground over backfilled archaeology. Note north is to rhs of page. (Source: TTW 180228_Bay 12_Archaeology S96_TTW Structure)

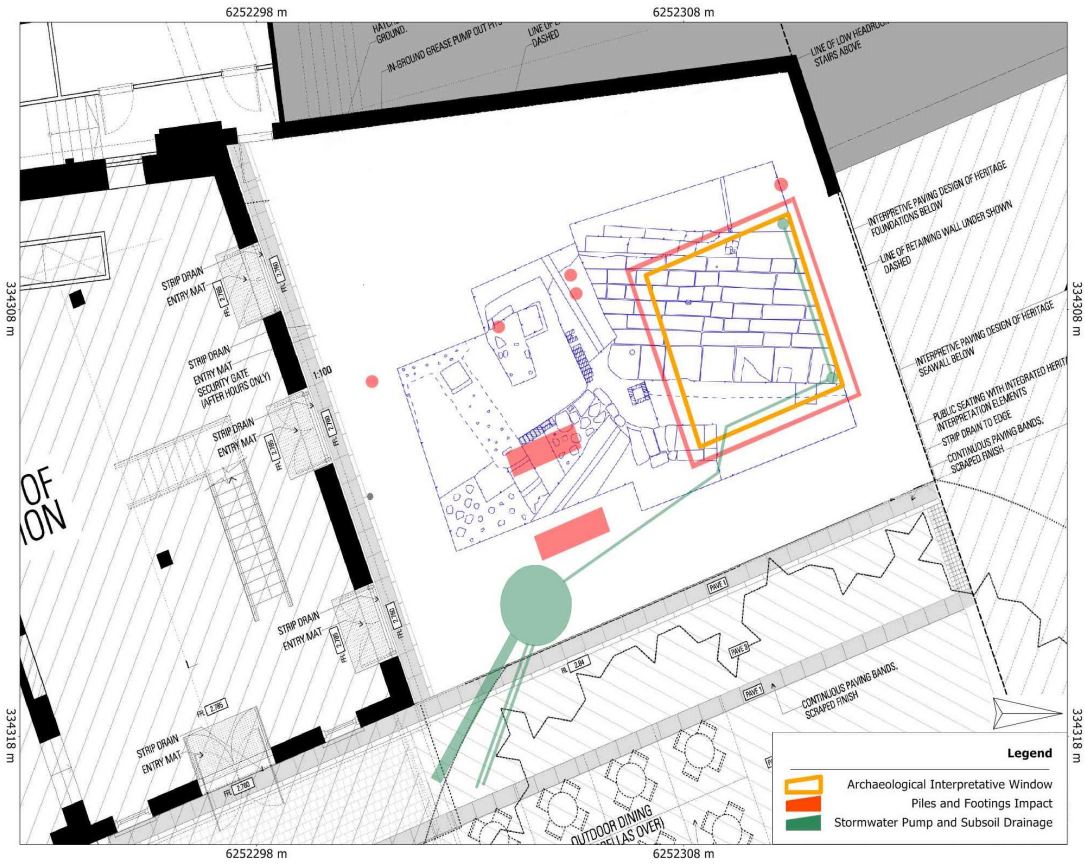

Figure 13 Plan showing the viewing window in relation to the archaeology and potential impacts of the below ground works required for the Bay 12 redesign. Note north is to rhs of page. The five red dots are the piles to support the toilets; the red rectangles are the pile caps (with piles below them) for the outdoor awning supports; and the green shows the subsoil drainage lines and pump-out tank.

18.3.2 Awning Supports for Outdoor Seating Area

The awning roof will be supported above ground by two steel columns measuring 273 mm in diameter. The footings for each of these columns will comprise of a pile cap measuring 2 m long x 750 mm wide x 600 mm deep over two piles of 450 mm diameter each. The piles will be set 1.2 m apart and will typically be founded on natural bedrock at an anticipated depth of approximately 2 – 3 m below the existing ground level. The pile caps will sit directly below the proposed structural slab and the distance between the pile caps will be 1.5 m. The area bordering the archaeological viewing window will have a slab 200 mm thick and up to 1.5 m wide on the south side. The rest of the slab for the outdoor seating area will be 150 mm thick with edge beams of 250 mm deep x 300 mm wide (see Figure 11 above).

The eastern pile cap and its two supporting piles will be located beyond the limit of the archaeological excavation in an area that has been heavily disturbed by later services and thus will not have an adverse impact on the archaeological remains (see Figure 13).

The western pile cap and its two supporting piles will be located toward the eastern edge of the archaeological investigation in an area that has been previously disturbed by services - mainly excavations for a partly extant 400 mm earthenware stormwater pipe most likely dating to the Hickson Road phase of development in 1910 – 1920 (see Figure 13). The work will require removal of part of the pipe, some displaced sandstone pieces and fill material to allow insertion of the piles and construction of the pile cap.

18.3.3 Proposed Viewing Window

The proposed viewing "window" over part of the *in situ* archaeology will comprise an opening of approximately 4.2 m x 4.2 m set into the paved floor of the outdoor seating area. A concrete block retaining wall measuring 190 mm wide and 800 mm high (and set back approximately 400 mm from the underside of the viewing window opening) will be built around the four sides of the archaeological viewing window (see Figure 11). The footings for the wall will be constructed only in natural ground or ground clear of archaeological remains and will comprise a concrete strip footing measuring 450 mm wide x 450 mm deep. Where archaeological remains are present on the line of the proposed retaining wall, the wall will be built directly over them but separated from them by a layer of builders plastic (Forticon or similar) and some dry pack grout to create a flat level surface to build on. Gabion walls will be placed in front of the block walls for a better aesthetic effect; these will not directly impact on the archaeological remains as they will be self supporting and the same separation and leveling method will be used.

The archaeological remains that lie on the alignment of the block work wall for the viewing window (see Figure 13) which will have the wall built over them include:

- on the south side – part of the pre-1834 sandstone paved surface
- on the west side – part of the pre-1834 bond store wall
- on the north side – part of the pre-1834 sandstone paved surface and bond store wall
- on the east side – part of the pre-1834 sea wall.

Overall it is considered that the works required to create the viewing window will constitute a **low level impact** as they will be reversible in the future if required and they serve to enhance the archaeological significance and appreciation of the site.

18.3.4 Drainage around Viewing Window

The archaeological remains to be exposed in the viewing window will require sub-soil drainage to stop the area retaining water after rain events. It is proposed to install Nylex strip drains along the north and east sides of the viewing window, with the eastern drain connecting to an underground pump tank in the south-eastern corner of the Bay 12 area (see Figures 15). The pump-out tank will have two 80 mm pressure lines leading to the existing stormwater system to the south-east outside the Bay 12 area.

The Nylex strip drains consist of a high-density polyethylene (HDPE) inner drain core completely wrapped with a non-woven geotextile filter and need only sand as the backfilling material. The trench cut required will be 100 mm wide x 600 mm deep and the Nylex drains will be of 200 mm height and 40mm wide (see product detail sheet in Figure 14a and a section detail in Figure 14b). The benefit of the Nylex product over a conventional aggregate drain is that it requires a much lesser trench cut (100 mm wide as opposed to 300 mm). The pump-out tank will be of 1.8 m diameter and 3 m in depth.

The proposed drainage trench along the northern side of the viewing window is likely to impact part of the pre-1834 sandstone paved surface and part of the pre-1834 bond store wall. The proposed drain will be placed as close as possible to the base of the block work wall.

The proposed drainage trench along the eastern side of the viewing window will run along the outer eastern edge of the pre-1834 sandstone paving in consolidated fill material. It will then turn to the south-east (avoiding the pre-1834 sea wall remains) and will terminate at a 5,000 litre pump-out tank. The tank will be situated in ground clear of archaeological material, beyond the limit of *in situ* archaeology.

The proposed drainage trench along the northern side of the viewing window will constitute a **high level impact** as it will require a 100 mm wide cut through the pre-1834 sandstone paved surface and part of the pre-1834 bond store wall. This impact is however considered justifiable as (a) there is no feasible and prudent alternative, and (b) it otherwise aids in the conservation of the exposed archaeological features.

The proposed drainage trench along the eastern side of the viewing window will constitute a **low level impact**. Other than 19th century fills, no archaeological features will be impacted.

The 5,000 litre pump-out tank will have **no impact** on archaeological features or deposits.

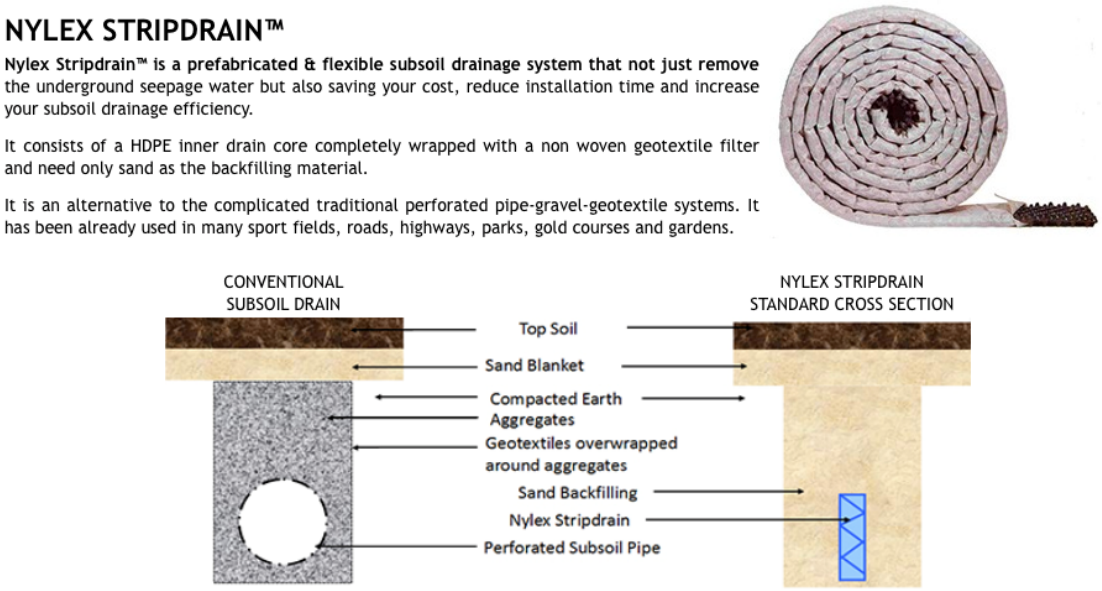

Figure 14a Illustration of a Nylex subsoil strip drain showing the differences to a conventional aggregate drain. (Source: http://www.nylexpolymer.com/stripdrain.html)

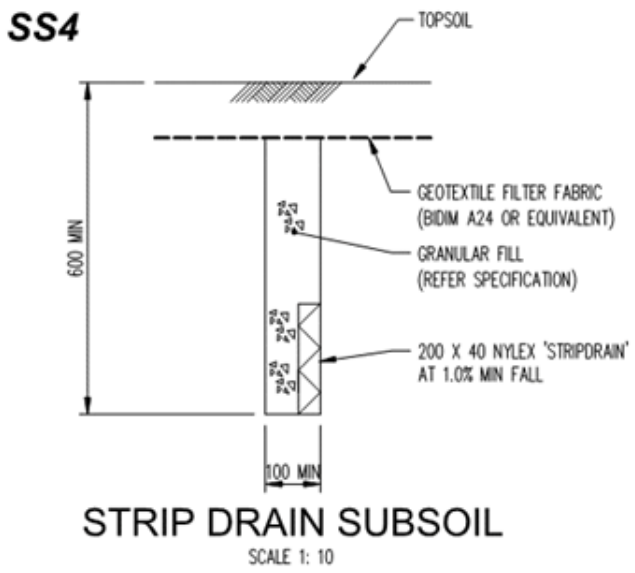

Figure 14b Section showing details of required trench cut for a subsoil Nylex strip drain. (Source: TTW 180309)

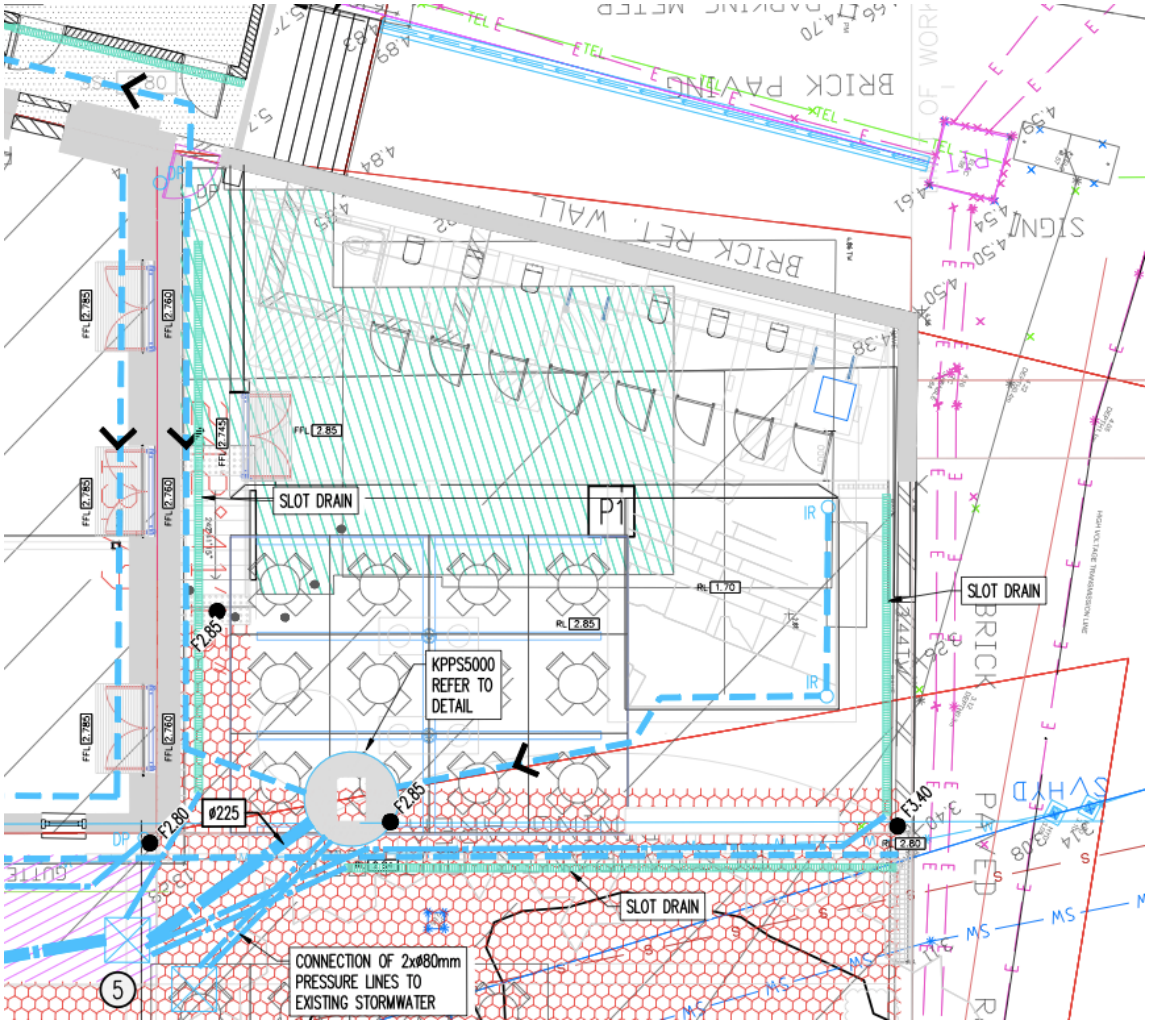

Figure 15 Plan showing location of proposed drainage in viewing window and location of pump-out tank. Note north is to rhs of page. (Source: TTW plan C105-I_180309)

18.3.5 Backfilling Over Archaeology

Other than the specific impacts identified above, all the archaeological features below the proposed developments in Bay 12 will be permanently conserved *in situ*. This means that other than the area to be left exposed in the viewing window, the remainder of the archaeological excavation area will be backfilled and concrete slabs constructed over it (see Figure 12 and Section 18.3.2 above).

A specification for earthworks has been prepared by the engineer. It is proposed to cover the remains with a suitable separation material such as a geotextile and then compact the fill material to the required level. Proof rolling will not be used due to the site sensitivity, however a geotechnical engineer will be required to confirm the compaction of the backfill is as specified. Where the slab on ground for the outdoor eating area is to be constructed, separation material such as Forticon plastic will be placed over the backfill material and beneath the slab.

A **possible impact** of this work could be vibration damage from compaction.

18.3.6 Assessment Using Heritage Division Guidelines

The following questions are taken from the Heritage Division's guidelines to preparing statements of heritage impact.

What aspects of the proposal respect or enhance the heritage significance of the study area?

The new alternative design both respects and enhances the heritage significance of the Bay 12 area as it protects almost all of the archaeological remains that have been revealed there and displays part of them through an open archaeological viewing window, whilst also providing the required toilets, services, and outdoor dining area.

The creation of a viewing window into a highly significant fragment of the Rock's colourful history will enhance the significance of the archaeology of the earliest phase of site development (which hitherto has been invisible) through interpretation and public visual access. This in turn will create a greater public awareness and appreciation of the history and archaeology of the Rocks.

What aspects of the proposal could have a detrimental effect on the heritage significance of the study area?

Some aspects of the below ground engineering required for the new design of the Bay 12 area will, of necessity, adversely impact on some elements of the archaeological remains. The impacts however, will be limited due to firstly, clever design to minimise the below ground engineering and drainage requirements and secondly, careful siting of such elements within the site in consultation with the archaeologist in order to avoid the most significant archaeology.

Specifically the insertion of the three of the five piles required to support the toilets will have a **low degree of impact** on the later period archaeology as will the construction of the foundations (piles and pile caps) for the eastern column of the outdoor seating area.

The proposed construction of the northern subsoil drain requires a trench cut measuring 100 mm wide x 600 mm deep along the base of the northern side of the viewing window. This will impact the pre-1834 sandstone paving and bond store foundation wall revealed in the archaeological excavations. This will constitute a **high degree of impact to a limited area**.

The proposed construction of the eastern subsoil drain requires a trench cut measuring 100 mm wide x 600 mm deep along the eastern side of the viewing window that will have a **low degree of impact** on pre-1834 fill material beside the pre-1834 sandstone paved area. Where this drain traverses to the south-east to the pump-out tank, it will avoid areas of known archaeological significance especially the remains of the pre-1834 seawall and should have **no impact** on these remains.

It is considered that the recommendations made in this report provide adequate mitigative strategies for management of the archaeological values of the site.

Have more sympathetic options been considered and discounted?

The archaeological consultant provided direct input and feedback into the development of this design option. It is considered that this design is highly sympathetic to the conservation and interpretation of the archaeological heritage.

18.4 Conclusions and Recommendations

18.4.1 Conclusions

The redesign of the Bay 12 area has been undertaken by the architect JPW and engineer TTW with close and ongoing involvement of the archaeological consultant Austral so that possible adverse impacts to the *in situ* archaeology have either been totally avoided or minimised as far as possible. Possible design conflicts were resolved before designs were finalised as part of an ongoing iterative process. The draft final design for Bay 12 is considered to be a successful resolution of the double objectives of conserving, displaying and interpreting the archaeology yet allowing construction of the toilets and outdoor seating area to proceed.

It is concluded that, provided that the following mitigative measures are adopted, the proposed redesign of Bay 12 will have a low and/or acceptable level of impact on the archaeological resources. Note that these recommendations only apply to the proposed Bay 12 redesign.

18.4.2 Recommendations

It is recommended that:

- All proposed below ground works in the Bay 12 area must be monitored by an archaeologist. This work includes the five hand dug piles to be installed to support the toilet block; the two piles and pile cap to support the western awning column in the outdoor seating area; any excavations for drainage; any cutting or penetration of archaeological surfaces or historical fabric and any removal of historical fabric. Adequate notice of at least 48 hours should be provided to the archaeological consultant prior to the works occurring.
- Further archaeological excavation should be undertaken at the northern limit of the current excavation toward the extant brick retaining wall in order to determine the extent of the pre-1834 sandstone paving and bond store wall prior to excavations for the block wall being undertaken or drainage installed. If archaeological excavation is not permissible due to fears of undermining the retaining wall, the mechanical excavation of this area for construction purposes should be monitored and controlled by an archaeologist.
- Where backfilling is to be undertaken over archaeological deposits or features, geotextile such as Bidim or similar should be laid directly over the deposits or features (being careful to push the fabric into pockets, holes and depressions as it is being laid), then a layer of clean washed sand of no less than 100 mm thickness should be carefully placed over the fabric before any other approved backfilling material is laid on top up to the required height. The placement of the geotextile and sand should be monitored and controlled by an archaeologist.
- Where compaction of backfilling material over archaeological remains is required, the engineer must provide a prior assurance that it will not crush the archaeological features. Proof rolling should not be used and care must be taken with any vibratory compaction methods.
- Where archaeological remains are present on the line of the proposed block work retaining wall to the viewing window, a layer of builders plastic (Forticon or similar) should first be placed directly over the archaeological remains as a separation layer. The same method should be used where the gabion walls are to be placed.
- The services of an appropriately qualified conservator should be sought to advise on the long term conservation needs and maintenance requirements of the pre-1834 sandstone paving, wall foundations and sea wall to be left permanently exposed in the archaeological viewing window.