FINAL REPORT

Long-term Environmental Management Plan

Platypus Site, High Street, North Sydney NSW

Date:
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Prepared for:
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1 Introduction

This Long-term Environmental Management Plan (EMP) has been prepared to set out the requirements for the management of the presence and potential presence of contaminated soils and groundwater in the sub-surface environment at the property known as the Platypus Site, located at 118 High Street, North Sydney NSW (the Site). The location of the Site is shown on Figure 1 in Appendix A and the layout and boundaries of the Site to which this EMP applies are provided on Figure 1. The layout and nomenclature for the current buildings and areas referred to in this EMP is provided on Figure 2.

The Site has had a diverse history as manufactured gas works plant, a Naval torpedo maintenance facility and the HMAS Platypus submarine base. Various stages of redevelopment, refurbishment and remediation works have been undertaken on the Site since 2012 to convert the Site for public open space and recreational uses as well as for light commercial and retail businesses. Remediation works that have been completed on the Site since 2012 have resulted in the retention of contaminated soils and groundwater in the sub-surface of the Site and given the continued presence of these materials in the sub-surface, the EMP has been prepared and is required to be implemented to ensure that the Site remains suitable for these uses

This EMP has been developed with reference to the relevant requirements of the NSW Environment Protection Authority (2020) *Contaminated Land Guidelines Consultants Reporting on Contaminated Land*, the National Environment Protection Council (NEPC) (2013) *National Environment Protection Measures (NEPM)*, the NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme – 3rd Edition*, the relevant requirements of the *Work Health and Safety Regulation 2017* (WHS Regulation) and on the information presented in the following reports:

- Coffey Environments Australia Pty Ltd '*Site Validation Report, Platypus Remediation Project – Stage 2 Remediation Works*' dated 19 January 2017 (the Validation Report);
- CONSARA Pty Ltd. '*Closure Report for Remediation and Validation Works, Platypus Site, High Street North Sydney*' dated 7 July 2017 (the Closure Report);
- CONSARA Pty Ltd. '*Addendum to Closure Report for Remediation and Validation Works, Platypus Site, High Street North Sydney*' dated 30 April 2018 (the Addendum to Closure Report);
- CONSARA Pty Ltd. '*Validation Report for Guardhouse Site, Platypus Site High Street North Sydney NSW*' dated 4 December 2019 (the Guardhouse Validation Report); and
- CONSARA Pty Ltd. '*Validation Report for Torpedo Factory Renewal Project, Sub Base Platypus Site High Street North Sydney NSW*' dated 4 June 2024 (the Torpedo Factory Renewal Validation Report);

This version of the EMP has been prepared to supersede the previous EMP dated 22 April 2020. This update to the EMP was required due to works completed in early 2024 to effect a change in the use and surface coverings of the southern area of the Site that had been occupied by the former Torpedo Factory Building.

The implementation of this EMP will be undertaken by the Sydney Harbour Federation Trust (the Harbour Trust) which is a self-funded Federal Government Agency instituted under the Sydney Harbour Federation Trust Act 2001 (SHFT Act) that has statutory responsibility for the management of the Site. This EMP and its implementation is a requirement of the Harbour Trust's Comprehensive Plan (as amended in May 2009) which was made and is being implemented in accordance with Part 5 of the SHFT Act, and the detailed precinct Site Management Plan which was approved on 8 December 2016, with Amendment 1 to this plan approved on 12 May 2021, in accordance with Section 11 of the Comprehensive Plan. Together, these two Harbour Trust plans constitute the 'Site Management Plan' for the Site under which the implementation of this EMP by the Harbour Trust is required (Part 5 of SHFT Act). This EMP is made publicly available on the Harbour Trust website as part of compliance with Part 5 of the SHFT Act and at the time of issue of this EMP can be found under the publications tab at harbourtrust.gov.au.

In addition the *Permanent Works Operation and Maintenance Manual*, (O&M Manual) for the Site, prepared by Thiess Services Pty Ltd and dated 2015 provides information regarding the operation and maintenance of the sub-

surface drainage and seepage systems and equipment installed on the Site and is required to be implemented in conjunction with this EMP.

It is noted that within this EMP direct reference is made to specific guidelines, regulations and legislation that were in force at the time of preparation of this EMP. Over time it is likely that these references will be superseded by updated and revised versions. In applying this EMP those responsible must ensure that the relevant guidelines, regulations and legislation that are applied are those that are in force at that time.

1.1 Purpose of the EMP

This EMP was prepared to document procedures that are required to be implemented to manage identified risks to users of the Site to ensure that:

- The hardstand and other surface coverings present on the Site are maintained to ensure that users of the Site are not exposed to potentially contaminated soils and/or groundwater located beneath these surface coverings; and
- Works that require disturbance of ground surface coverings on the Site, particularly in the northern area of the Site, are undertaken in a manner that protects the health of the users of the Site, being the local community and general public and any Harbour Trust Staff, contractors or workers on the Site.

It is noted that the implementation of this EMP requires the avoidance, to the extent practicable, of the undertaking of works that will penetrate the surface coverings on the Site.

The principal elements of this EMP are to:

- Detail the sub-surface conditions of the Site at the time of preparation of this EMP;
- Detail the surface conditions of the Site at the time of preparation of this EMP and detail the measures to be undertaken to ensure the integrity of these surfaces;
- Assign responsibilities for implementation of this EMP;
- Protect the health of users of the Site by ensuring maintenance of the surface coverings on the Site to prevent exposure to contaminants that may be present in the sub-surface environment; and
- Protect the health of maintenance workers on the Site if the surface coverings are disturbed by works.

This EMP sets out that the regular ongoing use of the Site for open space and recreational purposes and commercial uses requires only minimal measures, defined as 'passive' measures, be implemented, such as routine inspections and, where required rectification works, to ensure the ongoing integrity of the surface coverings on the Site. Where works are required to be undertaken that disturb those surface coverings, then this EMP sets out the measures that need to be implemented to be protective of workers undertaking those works and other users of the Site. The responsibilities for implementation of the EMP are further set out in Section 3.3 and at Table 1.

1.2 Terms used in this EMP

The Terms used in this EMP to refer to specific areas or installed features on the Site are defined below:

- **Cap** – means surface treatments or finishes that are present on the Site that provide a suitable physical barrier between users of the Site and the underlying contaminated/potentially contaminated soil and groundwaters;
- **Surface Coverings** - means surface treatments or finishes that form the Cap or part of the Cap as follows:
  - Permeable – Turf, planted beds, trees, mulch or wood chips, sandstone mulch;

    OR
  - Impermeable
    - Hardstand surfaces, such as concrete, asphalt, pavers, stones, decogravel, seating structures, walls and their associated sub-grade materials that cannot be removed by users in the course of expected use of these areas; and
    - Building footprints.
- **Marker Layer–** High visibility geotextile fabric, rigid mesh or HDPE Plastic liner installed directly onto retained fill materials forming part of the Cap in specific areas of the Site (refer to Section 2.3.3 of this EMP)
- **Geosynthetic Clay Liner (GCL)** – Single liner installed directly onto retained compacted contaminated materials – 10-20 mm thickness – forming part of the Cap in the Northern Remediation Containment Area (refer to Section 2.3.1 of this EMP). The GCL is a high strength low permeability material made from polypropylene geotextiles and sodium bentonite powder and forms the primary barrier between the retained stabilised materials and the overlying surface treatments.
- **Minor works** - works that require minimal disturbance of the surface coverings and comprise activities described in Section 3.2 of this EMP
- **Major works** - works that require larger scale disturbance to the surface coverings and the underlying retained contaminated materials and comprise activities described in Section 3.2 of this EMP.
- **Control measures** - measures required to be implemented during the completion of Minor Works or Major Works to protect health of workers undertaking those works, users of the Site, the surrounding community and the environment. Control measures are set out in Table 3 of this EMP.
- **Northern Remediation Area** – the northern section of the Site in which the former gasworks infrastructure was primarily located and that was the focus of the remediation works completed as shown on Figure 3 provided in Appendix A. The final layout and survey plan of this area is provided in Appendix B and its location is also shown on Figure 2 of this EMP.
- **Northern Remediation Containment Area** – Area within the Northern Remediation Area in which stabilised contaminated fill and soils were backfilled, compacted and covered with a series of materials that comprise the cap the extent of which is shown on the survey plan provided in Appendix C.
- **Guardhouse Site** - the former Guardhouse Building and the immediate surrounding area located at entrance to the Site from High Street that is occupied for residential purposes and for use as the Harbour Trust Rangers Office. The Guardhouse Site is not subject to this EMP. The location of the Guardhouse Site is shown on Figure 2.

1.3 Structure of this EMP

The structure of this EMP is as follows:

- **Section 2 –Site Conditions** - Description of the Site, including a description of the areas and contaminants of concern that have been retained in the sub-surface of the Site.
- **Section 3 – Implementation of EMP** - Description of how the EMP is to be implemented, the works required and the persons responsible and records that need to be maintained. The primary work required is to maintain the existing surface coverings. When works are to be undertaken that disturb the surface coverings, they are defined as either Minor Works or Major Works depending on the nature of the disturbance. Examples of minor works and major works are provided;
- **Section 4 – Risk Control Measures** - Description of the different contaminants present and the risks to human health and the environment from those contaminants. Control measures are then provided that need to be implemented to ensure maintenance of existing coverings and during either Minor Works or Major Works on the Site to ensure the protection of human health and the environment during those works and to ensure that the surface coverings remain or are appropriately reinstated.

2 Site Conditions

2.1 Site Identification

The Site is located at 118 High Street, North Sydney, within the North Sydney local government area. The main access to the Site is from High Street, with a secondary access to an upper car-park area via Kiara Close.

The Site is located on land owned by the Harbour Trust identified as DP109583 (Lot A). The land adjoining the Site to the east is referred to as Harbour Land and is comprises a wharf over Neutral Bay which is owned by the NSW Government.

The area of the Site to which this EMP applies is provided on Figure 1 and the layout and nomenclature for the buildings and areas referred to in this EMP is provided on Figure 2. It is noted that the area of the wharf and the area occupied by the Guardhouse Building that has a residential unit and the Rangers office is not subject to this EMP.

The Site is bound by:

- Adderstone Avenue and residential properties to the north;
- A wharf and Neutral Bay to the east;
- Residential properties, including the Iora development then High Street to the west; and
- High Street, residential properties and Kesterton Park to the south.

2.2 Site History

The Site has been utilised for various purposes since European settlement in the late 1700s, with it's earliest recorded use being associated with whaling allotments from about 1828 and as a manufactured gaswork plant between 1876 and 1932. The Australian Federal Government resumed the Site in 1942 when it was used for torpedo maintenance workshops and thein in 1967 as submarine base known as HMAS Platypus.

In 1999 HMAS Platypus including the torpedo workshops were closed and the Site was mothballed whilst the Department of Defence considered remediation and development plans. Investigations commissioned initially by Defence in the 1990s identified the presence of significant soil and groundwater contamination primarily as a results of the former gasworks operations on the Site.

2.2.1 Site-wide Remediation– 2011 to 2016

In 2005 the Site was transferred to the Harbour Trust for remediation and rehabilitation to allow for a mix of public open space and light commercial uses. Over the next few years the Harbour Trust undertook numerous stages of detailed investigations to inform the development of a plan of remediation for the whole Site. Remediation works were subsequently commissioned by the Harbour Trust in 2011 and were conducted over three stages:

- Stage 1 – Preparatory works including hazardous materials removal or stabilisation in all buildings, demolition of the administration building (Building No. 8 – see Figure 2 in Appendix A) and Store (Building No. 7- see Figure 2 in Appendix A) and wharf repairs;
- Stage 2 – Major remediation works comprised of the following:
    - On-site ex-situ stabilisation treatment of the most significantly contaminated materials such as pure coal tars and coal tar contaminated soils from the Northern Remediation Area for off-site disposal to landfill;
    - On-site ex-situ stabilisation of other less contaminated soils and bedrock from the Northern Remediation Area and placement of these stabilised materials into on-site containment area within the Northern Remediation Containment Area that was covered with a Cap;

- Other ancillary remediation works included installation of a jet-grout cut off wall along the lower eastern boundary of the Site (alignment shown in Appendix D), in-situ stabilisation of soil materials beneath the former retort house (Building No. 11 see Figure 2 in Appendix A and plans in Appendix D), containment of existing contaminated and potentially contaminated soils beneath existing buildings and paved surfaces and construction of a seepage collection system at the base of the cut sandstone walls on Site;

- Stage 3– Landscaping works comprised the following:
  - Placement of layers of clean materials, including sands, topsoils, mulch, gravels and concrete to form the finished surfaces of the Cap across the Northern Remediation Containment Area and the Northern Remediation Area that was subject to the major remediation works;
  - Installation of shallow drainage and irrigation systems; and
  - Planting of mass planting beds, trees and grasses.

These works commenced in 2011 and were completed in mid 2016. Comprehensive details of these works are provided in the Validation Report and Closure Report. In addition, the O&M Manual provides information regarding the operation and maintenance of the sub-surface drainage and seepage systems and equipment installed during the remediation works and is required to be implemented in conjunction with this EMP. In December 2017, NSW EPA Accredited Site Auditor, Mr Graeme Nyland, issued a non-statutory Site Audit Statement and Site Audit Report that certified that the remediation works had been completed and that the Site was suitable for open space/recreational and commercial/industrial uses subject to the implementation of this EMP.

2.2.2 Remediation of Guardhouse Site for Residential Land Use -2019

In 2019 the Harbour Trust undertook the repurposing of the former Guardhouse Building and the immediate surrounding area from its former commercial/industrial land use and into a residential leasing and as a Harbour Trust Ranger's office (the Guardhouse Site). The re-purposing or redevelopment works comprised the completion of internal improvements in the building via the conversion of the internal areas into two separate residential apartments as well as a dedicated office area for Harbour Trust Ranger's that manage access into the Site. The rear external areas have been landscaped to comprise primarily concrete and paved outdoor areas and raised garden beds with the frontage of the building at High Street to have general garden beds. The concrete slab across the carport area has also been improved via resurfacing with new concrete.

The works to the Guardhouse Site enabled a change in use from a commercial/industrial land use to a more sensitive residential land use with minimal opportunities for soil access, without the requirement for the implementation of the EMP. These works were documented in the Guardhouse Validation Report. In December 2019, NSW EPA Accredited Site Auditor, Ms Rowena Salmon, certified that the Guardhouse Site was suitable for residential land use with minimal opportunities for soil access, without the requirement for the implementation of the EMP.

2.2.3 Remediation of the RANTME Building (Building No.1), known as the former Torpedo Factory Building, for Open Space and Recreation and Commercial Land Use – 2022-2024

At the completion of the site-wide remediation works in 2016 the RANTME Building, known as Building No.1 and as the former Torpedo Factory Building, located across the southern area of the Site, was suitable for commercial/industrial use, subject to the EMP. There remained the potential for contaminated materials to be present beneath the ground floor slabs, on-ground slabs and footings of the building. Since 2016, Level 3 of the RANTME Building had been converted into a carpark and for a period of time was utilised by the Harbour Trust for their offices, with the remaining Level 1 and 2 areas vacant and unoccupied.

In 2022 the Harbour Trust commenced a project, referred to as the Former Torpedo Factory Renewal Project, to convert the building and surrounds from the existing commercial/industrial land use to a mix of open space and recreational land uses and retained existing commercial/industrial land uses (being carparking on Level 3). The works comprised the removal of the large parts of the building, including the eastern areas and the western walls, the creation of an updated carpark area on the retained areas of Level 3, new outdoor areas on the eastern part of the retained Level 3 area (and the creation of a new small indoor area being the service room and an amenities building), a new landscaped park area to the east in the footprint of the former eastern part of the building (referred to as the L1 Foreshore Park) and a new landscaped forecourt to the west at High Street (referred to as the High Street Forecourt).

Given that these works would result in a significant change to the surface coverings across the eastern and to a lesser extent across the western areas of this southern area of the Site, a remediation strategy consistent with that already adopted for the Site, being capping, containment and long-term management, was implemented as part of the works. The results of these works provide new hardstand and soft landscape surface coverings along with the retention of the Level 3 concrete slab, to ensure that they provide an effective isolation and capping layer across the Renewal Site. The capping, containment and management of the retained contaminated and potentially contaminated fill materials was undertaken after the demolition and as part of the construction phase of the works and has resulted in the southern area of the Site being made suitable for its open space and recreational and commercial/industrial land uses, subject to the implementation of an updated and revised EMP. These works were completed in March 2024 and documented in the Torpedo Factory Renewal Validation Report. This version of the EMP is the updated and revised version required at the completion of these works.

2.3 Areas and Contaminants of Concern

The remediation works completed on the Site resulted in the retention of contaminated and potentially contaminated soils and groundwaters in the sub-surface beneath various areas of the Site. The contaminants of concern primarily comprise Total Petroleum Hydrocarbons (TPHs), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAHs), Metals (Arsenic, Cadmium, Copper, Chromium, Nickel, Lead, Mercury and Zinc) and Asbestos.

These areas and the associated contaminants of concern are detailed below.

2.3.1 Cut-off Wall

The remediation works on the Site required the installation of an impermeable cut-off wall behind the existing seawall along the eastern boundary of the Site to contain the northern section and central section of the Site. The primary objective of the wall was to prevent the ingress of sea water from Neutral Bay and the discharge of groundwaters from the Site to Neutral Bay, whilst also protecting and stabilising the existing sea wall.

The cut-off wall was installed as a jet grout wall with a 'U-shaped' alignment around the north-eastern, eastern and south-eastern boundary of the Northern Remediation Area and then in a north-south alignment along the eastern boundary of the Site to the south of the Northern Remediation Containment Area. The as-builts of the installed jet-grout wall is provided as Appendix D of this report. The Validation Report and the Closure Report stated that the constructed jet-grout wall met the specified design criteria and acts as an impermeable hydrological barrier to the Site.

The jet-grout wall is comprised of a mixture of cement self hardening grout and the soils that were present in the areas that the wall was constructed. As such the jet grout wall itself has been formed utilising contaminated soils and as such contains some potential contaminants of concern such as PAHs, TPHs and heavy metals. It is noted that the jet-grout process serves to bind these contaminants in a stable matrix such that contaminants may only be able to be released if the jet grout is significantly disturbed or compromised.

2.3.2 Contained Stabilised Contaminated Materials – Northern Remediation Containment Area

The remediation works on the Northern Remediation Area, shown outlined in red on Figure 2 and 3 of Appendix A, resulted in the removal of all soil materials to bedrock. Whilst the most significantly contaminated materials were disposed off-site, the less contaminated materials were treated on the Site. This treatment served to stabilise the primary contaminants, PAHs and TPHs, in the soils. These stabilised soils were then reinstated into the deepest areas of the resultant excavation in compacted layers and were finished above the pre-existing surface levels to form the basis of the final landscaping works. A Cap comprised of various layers of materials was then placed over the stabilised soils. The extent of the retained stabilised materials is referred to as the Northern Remediation Containment Area as shown in plans provided in Appendix C and Appendix E. Details of the Cap are provided in detail below.

Details of Cap over Northern Remediation Containment Area

The extent of the contained stabilised contaminated materials and the cap that covers the Northern Remediation Containment Area is shown on the figures provided in plans provided in Appendix C and Appendix E. The Cap is comprised of the following (in order of placement over the retained materials):

- **Geosynthetic Clay Liner (GCL)** – Single liner installed directly onto retained compacted materials – 10-20 mm thickness. The GCL is a high strength low permeability material made from polypropylene geotextiles and sodium bentonite powder and forms the primary barrier between the retained stabilised materials and the overlying surface treatments. The specifications for the GCL installed on the Site are provided in Appendix F;
- **Drainage blanket including a flow net** – Panel liners and a single layer of high-density polyethylene (HDPE) geonet installed directly over GCL – 10 mm thickness. The specifications for the panel liners and geonet installed on the Site are provided in Appendix F;
- **Drainage layer** – Layer comprising fine-grained, well graded, non-erodible cohesive material with stones of up to 25mm – Variable thickness – between 0.4 and 1.1 metres dependant on final surface covering;
- **Final surface treatments** - concrete, structural sands, sub-grade materials, soils, gravels, paving, topsoils, mulch, vegetation (plants, shrubs, grass etc) – Variable thickness between 0.2 and 0.5 metres dependant on final surface covering.

The registered survey of the top of the GCL and top of the drainage layer and as-builts for these features is provided in Appendix E and then the thickness of the capping layer over the top of the GCL to the finished surface levels of the Site is provided on the plan in Appendix C. The final surface levels and features across the Northern Remediation Area are generally provided in Appendix B. However, it is noted that as set out the Addendum to Closure Report, some changes have occurred to the surface features shown in Appendix B comprising the installation of staircases, additional paving, concrete and playground equipment, all of which were constructed above the finished surface RLs shown in Appendix B and that on these areas the resultant finished surfaces have higher RLs than those provided on Appendix B.

It is noted that a constructed drainage system was installed through the drainage layer and upper clean materials to divert waters and stormwaters laterally to a system of pits and pipes. Part of the as-builts for these systems is provided in Appendix G and it is noted that the full detail on this system is provided in the O&M Manual for the Site.

Cliff Line Seepage water Collection and Discharge System - Northern Remediation Containment Area

The Site has a number of expansive vertical sandstone rock cliff faces. Groundwaters present in sandstone beneath the higher areas of the Site and off-site continue to migrate to the east and discharge as seeps along the jointing, bedding planes or fractures in the sandstone rock at these faces. Concentrations of cyanide and some other metals in these seepage waters have been found to be elevated and as such a cliff line seepage water collection

system was installed to collect seepage water for diversion for collection and ultimate disposal via tradewaste to sewer.

The system comprises a continuous series of grated drains installed along the base of the cliffs with the finished ground surfaces and a drainage layer present along the north-western corner of the Northern Remediation Containment Area. The grated drainage system extends along the driveway into the Site from High Street and continues to the north along the base of the cliff that runs behind Building No.2 and continues along the base of this cliff into the Northern Remediation Containment Area. Within the Northern Remediation Area the grated drain extends to where the Cap commences in the north-west.

Along the base of the cliff line where the Contained Stablised Materials are present, a drainage layer was installed along the cliff face prior to the placement of these materials. This drainage layer consists of a plastic layer (Podrain CD18) fastened to the cliff with a water proof membrane (Emerproof HDPE) preventing water migration between the fill materials and the drainage layer. The drainage layer drains to the geofabric covered pipe which discharges to the south into the drainage system.

This system ultimately discharges seepage waters into a collection tank in the sub-surface of the Northern Remediation Containment Area for disposal to sewer under a Tradewaste Permit. The as-builts for this systems is provided in Appendix G and it is noted that the full detail on this system is provided in the O&M Manual for the Site.

2.3.3 Retained Contaminated Materials Southern Area

The works completed to convert the RANTME Building (known as the former Torpedo Factory Building) located on the southern area of the Site (as shown on Figure 2) to a new public domain and publicly accessible open space and recreational areas in the east and west of the retained and opened up Level 3 of the building has resulted in the retention of contaminated soils/fill materials in the sub-surface above bedrock and beneath pre-existing or newly installed surface coverings to form a capping layer across this area. The Cap is comprised of the following (in order of placement over the retained materials):

- **Impermeable surface coverings** - comprised of concrete, paving and decogravel pavements;
- **Permeable surface coverings** – on the soft landscaped planted beds which are comprised of the following:
    - **Marker Layer–** High visibility geotextile fabric, rigid mesh or HDPE Plastic liner installed directly onto retained fill materials. The specifications for the marker layer installed in this southern area of the Site are provided in Appendix I. The extent of the marker layer placed in this area of the Site and the RLs of the top of the marker layer is provided on Figures 3 to 7 of the Torpedo Factory Renewal Validation Report which are included in Appendix I.
    - **Landscaping Materials** – Growing medium soils and mulch to thickness of 300 mm over the marker layer in areas of shallow planting and to thickness of 700 mm over the marker layer in areas of deep planting such as trees. Further, the sub-soil drainage channels installed in the L1 Foreshore Park on the eastern area have been lined with HDPE plastic and then the slotted drainage pipes installed and covered with drainage aggregates and the covered with sandstone mulches. The thickness of the materials placed in these areas of the Site above the marker layer and the RLs of the finished surfaces in these areas is provided on Figure 5 to 7 of the Torpedo Factory Renewal Validation Report which are included in Appendix I.

It is noted that on the eastern lower area where the L1 Foreshore Park is present, the existing sandstone seawall that runs along the eastern edge of the cliff line remains present and that the area between this seawall and the permanent fenceline of the park, referred to and shown in Figure 2 as the Seawall Protection Zone (see also Figure 4 of the Torpedo Factory Renewal Validation Report in Appendix I), has a minimal Cap comprising of a Marker Layer of high visibility rigid mesh that is covered with minimal thickness landscaping comprised of approximately 70 mm thick sandstone mulch and shallow planting. Access to this area is not permitted for any other purpose except for landscape maintenance by landscape workers.

It is noted that for many of the large planter beds and boxes on the eastern and western areas of the retained areas of Level 3 which contain planting, are present on the concrete slab, which provided the Cap in these areas.

The registered survey and as-builts for these features for this southern area of the Site is provided in Appendix I and the location of the L1 Foreshore Park is shown on Figure 2.

2.3.4 Retained Contaminated Materials Remaining Areas of Site

In various areas across the Site, outside of the Northern Remediation Area, there remains the actual or potential for contaminated soils and/or groundwaters to have been retained in the sub-surface above bedrock and beneath pre-existing or newly installed surface coverings. A summary of these areas is provided below:

- **Driveway Area between the Workshops (Building No.10) and the Submarine School (Building No.2)** (as seen in Figure 1 and 2 and in Figure 10 of Appendix A) – The driveway that extends from High Street in an L-shape to the southern boundary of the Northern Remediation Containment Area was subject to excavation to depths of 1.2 metres below the ground surface (m bgs) or to/into sandstone bedrock, whichever was first encountered.

  Whilst the excavation for the driveway from High Street down to between the RANTME Factory (Building No.1 and also referred to as the former Torpedo Factory Building) and the Administration Building (Building No.3) was completed into bedrock in the base and walls, between the Workshops (Building No.10) and the Submarine School (Building No.2) there were areas of the driveway excavation where soils materials were retained at depths greater than 1.2 m bgs. In this area a marker liner comprised of orange HDPE plastic was installed along the base of the excavation prior to backfilling. This liner was installed to alert future users who may access depths greater than 1.2 m bgs that potentially contaminated materials are retained beneath the liner.

  In order to prevent undermining of the buildings on either side, the excavation along the roadway was only able to extend laterally to the edges of the buildings. During these works it was observed (reported in Validation Report) that the soil materials retained in the walls and beneath the buildings contained fragments of asbestos containing materials. No marker liner was installed along the face of the walls.

- **Workshops (Building No.10), Submarine School (Building No.2), Coal Bunker House (Building No.13) and Compressor House (Building No. 12)** (as shown on Figure 2 and in Figure 2 of Appendix A) – These buildings were subject to various remedial works, including excavation and removal of contaminated materials present in the floors or sub-floors and, where practicable, re-surfacing with concrete. The final surfaces of these areas is shown on Figure 13 of Appendix A. However, there remains the potential for contaminated materials to have been retained beneath the ground floor slabs, retained on-ground slabs and footings and/or for hazardous building materials to be present.

3 IMPLEMENTATION OF THIS EMP

This EMP is required to be implemented to ensure:

- Maintenance of the surface coverings of the Site in the condition described in this EMP; and
- Works that require the disturbance of the surface coverings, described below as 'minor works' and 'major works', are conducted in accordance with the requirements set out in this EMP.

It is noted that the implementation of this EMP requires the avoidance, to the extent practicable, of the undertaking of works that will penetrate the surface coverings.

3.1 Maintenance of Surface Coverings

For the purpose of this EMP, the surface covering of the Site is defined as the pavements, roadways or slabs constructed of concrete, bitumen, asphaltic cement or other materials such as bricks, paving stones, growing mediums (topsoils, mulch or similar),vegetation etc, that cannot be removed readily without the use of tools.

The program of the maintenance of surface coverings is required for all areas of the Site, however, frequency of inspections and timeframes for repair works differs depending on the nature of the surface covering.

3.1.1 Impermeable Surface Cover Maintenace

The integrity hardstand surfaces on the Site (comprised primarily of concrete and/or bitumen, paving, decogravels, walls or covered by building footprints) must be maintained to prevent contact with the underlying potentially contaminated soils and groundwater.

Inspections must be undertaken to ensure that the impermeable surface coverings are not showing signs of deterioration. Inspections must be undertaken at least once per every 12 months. These inspections are to be undertaken as a walkover and can be completed by Harbour Trust staff or contractors as part of routine, specific or general works.

Impermeable surface coverings are present across the Site in both indoor (in an enclosed space that comprises walls and roofing, such as a building or similar) and outdoor (open outdoor areas or where good ventilation is present at all times) areas. In both indoor and outdoor areas, where practicable, cracks or gaps within the hardstand pavement are to be no wider than 250 mm at the widest point.

Should a pothole or cracking wider than 250 mm be observed in the hardstand pavement, such that workers or users of this area could be practicably exposed to the underlying sub-surface materials present beneath the pavement and its associated sub-grade, nominally at depths greater than 0.2 metres (m) from the surface, (such as through dermal (skin) contact due to requirements to handle sediments or silts generated from such areas during weather events or similar) then repairs are required to be undertaken following the protocol set out below for minor or major works as appropriate..

Should a pothole or cracking area wider than 250 mm be observed in the hardstand, such that workers or users of this area could be practicably exposed to the underlying sub-surface materials present beneath the impermeable surface coverings or marker layer (such as through dermal (skin) contact) then repairs are required to be undertaken following the protocol set out below for minor or major works as appropriate. At the time that such compromises of the integrity of the impermeable surface coverings are identified an exclusion zone must be established, by cordoning off using physical barriers such as bollards, high visibility mesh, fencing or similar, to restrict access to the impacted area until repairs can be undertaken.

Guidance on determining the period of time in which repairs must be made is as follows:

- Indoor Areas which are in regularly used and occupied by workers or users of the Site (For example - utilised at least twice per week for a work period of at least 4 hrs continuous each time or greater) – Repairs to hardstands must be made within a 4 week period;

- Indoor Areas which are not regularly used or occupied by workers or users of the Site (For example - utilised once to twice per week for a work period of up to 4 hrs continuous each time or less) – Repairs to hardstands must be made within a 10 week period);
- Outdoor Areas which are regularly used and occupied by workers of users of the Site (such as driveways, access walkways, entrances to buildings) – Repairs to hardstands must be made within an 8 week period;
- Outdoor Areas which are not regularly used or occupied by workers or users of the Site – Repairs to hardstands to be made within a timeframe considered to be reasonable by the Harbour Trust but no longer than a 4 month period.

3.1.2 Permeable Surface Cover Maintenance

The areas that are covered with permeable surface covers such as turf, plantings, trees or mulch or wood chips or similar must be maintained to ensure the integrity of these surface coverings and to prevent contact with the underlying retained contaminated fill materials and groundwater. Inspections must be undertaken to ensure that no large-scale erosion or removal of the surface coverings occurs that exposes the materials present beneath the surface coverings such that the marker layer (where present) can be visually observed and/or retained contaminated fill materials are exposed.

Inspections must also be undertaken to ensure that no large scale erosion occurs such that deeper potentially contaminated soils are exposed. Inspections must be undertaken at least once per every 6 months. These inspections are to be undertaken as a walkover and can be completed by Harbour Trust staff or contractors as part of routine, specific or general works. It is noted that for the Seawall Protection Zone on the southern area of the Site as shown on Figure 2, walkovers are not required as visual inspections to assess integrity of surface coverings can be completed from the fenceline that forms it boundary with the L1 Foreshore Park.

Should such erosion or similar be observed or should the marker layer (where present) or the retained fill materials be observed or exposed then repair works are to be undertaken. At the time that such compromises of the integrity of the permeable surface coverings are identified an exclusion zone must be established, by cordoning off using physical barriers such as bollards, high visibility mesh, fencing or similar, to restrict access to the impacted area until repairs can be undertaken. If required, the exclusion zone is to be formed by cordoning off using physical barriers such as bollards, high visibility mesh, fencing or similar, to restrict access to the general public. Repairs to re-establish the surface covering are required to be undertaken within 4 weeks. Inspections must be undertaken to ensure that the repair works has been appropriately completed prior to users being able to re-gain access to these areas.

3.2 Disturbance of the Surface Coverings – Minor Works and Major Works

For the purpose of this EMP:

- **Minor works** comprise works that require minimal disturbance of the surface coverings and comprise activities such as:
    - Hardstand or pavement maintenance works at surface level only such as filling in of cracks, patching of holes or small scale replacement of sections of pavement where sub-surface retained soils are not required to be disturbed;
    - Landscaping works on permeable surface coverings installed as part of Cap on sub-surface retained soils - such as mowing, shallow planting, mulching, raking leaves, maintenance of gravel pathways or similar, where direct contact with the materials used in the Cap is possible, but no contact with the sub-surface retained soils (soils greater than 0.2 m depth) or contact with the GCL (described in Section 2.3.2) or Marker Layer (described in Section 2.3.3) is possible.
    - Landscaping works on planter beds installed on impermeable surface coverings (planter beds with concrete base – no contact with underlying retained soils). This includes any landscaping works on these planter

beds. These planter beds are aboveground and are located in areas in the atrium of the Workshop Building (Building No. 10); to the south of the Workshop Building (Building No. 10); the eastern area of Level 3 of the RANTME Building and in some locations in High St Forecourt (see Figure 5 of Appendix I).

- **Major works** comprise larger scale disturbance to the surface coverings and the underlying materials and comprise activities such as:
  - Any works during which the impermeable surface coverings are disturbed such that direct contact with the underlying retained contaminated fill material or groundwater is possible or will occur;
  - Any works during which the surface covering is disturbed such that the Marker Layer/GCL (where present) is required/potentially required to be exposed and/or penetrated and where direct contact with the underlying retained contaminated fill material or groundwater is possible or will occur;
  - Any works across the Northern Remediation Containment Area during which direct contact with the sub-surface soils and/or groundwater at depths greater than 0.2 m is possible;
  - Any works that directly affect or disturb the Cut-off Wall;
  - Construction and maintenance of sub-surface services, such as gas, electricity, stormwater, surface drainage, telephone, cabling and water supply;
  - Installation of equipment or undertaking of construction that requires excavation of the surface and sub-surface where direct contact with the retained materials is possible;
  - Installation and maintenance of features or equipment that require disturbance and/or disposal of the surface and/or sub-surface soils where direct contact with the sub-surface soils or groundwater is possible.

The control measures required to be implemented during the completion of Minor Works or Major Works are provided in further detail in Section 4.3.

3.3 Responsibilities

The Harbour Trust, as the Site Owner, is responsible for the overall implementation and maintenance of this EMP and for ensuring that owners, occupiers, tenants and contractors working on the Site have been informed of the requirements of the EMP prior to commencement of works.

It is the responsibility of the Harbour Trust to avoid, to the extent practicable, the undertaking of works on the Site that will penetrate the surface coverings and underlying marker layer (where present) and potentially expose the underlying retained contaminated materials (Major works).

The supervisor or person-in-charge of works on the Site is responsible for implementing the requirements of the EMP during the planning process for any works to be conducted, during the course of any works that fall into the "Minor" or "Major" categories as defined below, and at the completion of any "Minor" or "Major" works. The specific responsibilities of the Harbour Trust and the supervisor or person in-charge of the works are outlined in Table 1.

Table 1: Roles and Responsibilities

Position and Company/Entity	Responsibilities
The Site Owner (Harbour Trust OR nominated representative)	• Advise persons occupying and working at the Site of the requirements of the EMP; • Ensure implementation of the EMP requirements on the Site; • Ensure appropriate consents and licences (as required) are obtained for the works; • Procure the training and induction of employees and contractors before and during the works, as appropriate and relevant; • Provide a copy of the EMP to the occupiers, supervisor or person-in-charge of occupier/tenant employees and/or contractor/s who are undertaking the works; • Ensure relevant and appropriate project/occupier/tenant staff and contractors comply with the requirements of the EMP; • Ensure relevant and appropriate project/occupier/tenant staff and contractors clearly understand the requirements of the EMP and ensure that compliance with the EMP is a condition of any agreement with these parties; • Ensure the conditions of the EMP are implemented and supplemented, if necessary, by conditions of any relevant planning consent; • Obtain advice if the conditions on the Site are changed, and, if necessary, arrange for an appropriately qualified person to update the EMP, informing other relevant and appropriate parties, including tenants, of the changes; • Ensure the Site is maintained in accordance with the EMP; • Ensure corrective action is undertaken where verified complaints are made; • Provide the EMP for inclusion on the relevant records maintained by project/occupier/tenant.

Position and Company/Entity	Responsibilities
Supervisor or person in charge of works (Owner/Occupier/Tenant/ Site Manager/Contractor/ Sub-Contractor/Environmental Consultant)	• Implement the EMP to ensure compliance; • Complete the registers, databases and records required by the EMP; • Conduct works in an environmentally responsible manner; • Meet relevant Work and Occupational Health and Safety regulatory requirements; • Implement the works in a safe and responsible manner; • Notify the Site Owner if suspected contaminated fill materials is encountered during works on the Site; • Complete non-conformance and corrective action reports as required and undertake follow-up corrective actions, as required; • Conduct groundwater monitoring as required in the EMP; • Undertake audits of activities in accordance with the requirements of the EMP; • Ensure non-conformance and/or complaints are reported to the Site Owner • Undertake corrective actions in response to requests made by the Site Owner regarding specific environmental or safety issues; • Ensure all works comply with relevant regulatory requirements; • Inform the Site Owner if conditions change significantly from those documented in the EMP.

3.4 Record of Implementation of the EMP

Records of the implementation of this EMP must completed and maintained by the Site Owner and include, but may not be limited to, the following:

- EMP Induction Register – Register of persons inducted under the EMP. This register must include the name of the person, their employer, the date of induction, the nature of works being completed, whom the inductee is working on behalf of, the person that provided the induction and signatures of both the instructor and the inductee;
- Inspection Records – Records of inspections of the integrity of the Cap across the Site as set out in Section 4.3;
- Asbestos Materials Handling or Removal Records – Records of any works requiring the handling and removal of asbestos or other hazardous building materials as set out in Section 4.4;
- Waste Disposal Records – Records of any works requiring the off-site disposal of excavated soils or similar as set out in Section 4.5;
- Unexpected Finds Register – Records of any unexpected finds as set out in Section 4.6; and
- Complaints Register – Records of complaints and response works as set out in Section 4.7.

These records must be maintained by the Site Owner such that they are available to any external auditor for review on request.

3.5 Document Revision

This EMP is required to be reviewed if a change of use or redevelopment of the Site occurs that results in a material change to the surface coverings on the Site or on the Cap across the Northern Remediation Containment Area or to the Cut-off Wall as described in this EMP. Any amendments or revisions or similar of the EMP must be controlled by the Harbour Trust and be completed by a suitability qualified environmental consultant. In making any amendments or revisions the Harbour Trust must provide the appointed suitably qualified person with the reports referred to in Section 1 of this EMP.

Should the EMP be varied due to a change in use or redevelopment of the Site occurs that results in a material change to the surface coverings and/or use of the Site as described in this EMP, the revised EMP must be subject to review by a NSW EPA Accredited Site Auditor (Accreditation under the *Contaminated Land Management Act* 1997) for acceptance as appropriate and to ensure that the revised EMP continues to be able to be legally enforceable.

It is the responsibility of the Site Owner to ensure the EMP supplied to any person is the current updated or amended version.

It is the responsibility of the supervisor or person-in-charge of works proposed to be undertaken to ensure they have the current version of the EMP.

The up-to-date version of the EMP will be available from the Site Owner.

The EMP is required to be continually implemented (in perpetuity) to ensure that the Site remains suitable for use for open space recreational and commercial/industrial land uses.

4 Risk Control Measures

This section provides summary information on mechanisms whereby exposure to the contamination present in the sub-surface soils or groundwater could occur (known as exposure pathways) and guidance on precautionary control measures for activities on the Site that have the potential to result in exposure to these materials.

It should be noted, however, that this EMP provides general guidance only and does not constitute a health and safety plan, job safety analysis, risk assessment or any other considerations under the Work Health & Safety Act 2011 (WHS Act) (or relevant legislation and regulations current at the time of the proposed works).

Potential human health risks associated with the presence or potential presence of petroleum hydrocarbon, polycyclic aromatic hydrocarbon and heavy metal contaminated soils and groundwater and asbestos in soils beneath the Site are:

- Exposure to vapours, dust, soils or groundwaters generated during the completion of works that disturb the sub-surface; and
- Inappropriate handling and waste management of excavated or excess soil materials or groundwaters.

4.1 Exposure Pathways

The presence and potential presence of petroleum hydrocarbons, polycyclic aromatic hydrocarbons and some metals within the sub-surface soils and groundwater beneath the Site does not affect the present safe use of the Site under the current land use scenarios and whilst the existing surface coverings are undisturbed.

However, if these surface coverings are disturbed through Minor or Major works as defined in Section 3.2, it is possible that a risk of exposure may result. In order to develop appropriate measures to control this increased exposure, it is necessary to understand the potential exposure pathways.

A summary of the potential health affects and the exposure pathway for these potential contaminants is summarised in Table 2 below.

Table 2: Exposure Pathways

Contaminant of Concern	Source	Chemicals	Physiological Effect	Exposure Pathway
Petroleum Hydrocarbons (TPH), including Benzene, Toluene, Ethyl-benzene and Xylenes (BTEX)	Soils, soil vapour and groundwater present in sub-surface beneath the Cap in the Northern Remediation Containment Area and beneath buildings and pavement across remainder of Site.	TPH and BTEX	Inhalation of volatile hydrocarbons, if present, may cause central nervous system effects such as headaches, blurred vision and narcosis, when present in high concentrations. Repeated skin contact may result in allergic dermatitis and skin cancer. Skin contact may cause dermatitis. Long term or chronic exposure may result in liver damage, effects on the blood forming-systems.	Inhalation of vapours or contaminated dust and ingestion of contaminated soil/dust are the primary pathways for exposure. Dermal absorption is low to negligible

Contaminant of Concern	Source	Chemicals	Physiological Effect	Exposure Pathway
Polycyclic Aromatic Hydrocarbons (PAHs) – Carcinogenic PAHs	Soils, soil vapour and groundwater present in sub-surface beneath the Cap in the Northern Remediation Containment Area and beneath buildings and pavement across remainder of Site.	PAHs, including benzo(a)pyrene	Inhalation/ingestion of PAHs (as dusts with PAHs are not very volatile) may cause bronchitis and possibly cancer of the respiratory system and different types of tumours. B(a)P is a genotoxic carcinogen. Repeated skin contact may result in allergic dermatitis and skin cancer	Inhalation of vapours or contaminated dust and ingestion of contaminated soil/dust are the primary pathways for exposure. Dermal absorption is low to negligible
Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Mercury and/or Zinc)	Soils and groundwater present beneath the Cap in the Northern Remediation Containment Area and beneath buildings and pavement across remainder of Site.	Arsenic, Cadmium, Copper, Chromium, Nickel, Lead, Mercury and Zinc	Toxic to a wide range of organs and tissues, and variety of toxicological end points – reproductive toxicity, neurotoxicity, carcinogenicity	Ingestions of soil and dust is considered to be the most significant pathway of exposure for inorganics in soil. Dermal absorption is also considered but is generally considered to be negligible
Asbestos	Soils containing bonded and/or friable asbestos. It is noted that no respirable asbestos fibres have been previously identified in surface or shallow sub-surface soils on the Site.	Asbestos Containing Materials (ACM)	Inhalation of asbestos fibres can cause asbestosis, lung cancer and mesothelioma. The risk of contracting these diseases increases with the number of fibres inhaled and the risk of lung cancer from inhaling asbestos fibres is also greater if you smoke. People who get health problems from inhaling asbestos have usually been exposed to high levels of asbestos for a long time. The symptoms of these diseases do not usually appear until about 20 to 30 years after the first exposure to asbestos	Inhalation of loose/friable asbestos from disturbed soils.

4.2 Control Measures for Current Activities

Under the current land use and based on the existing surface coverings on the Site there is low to negligible risk of harm to the human health of users of the Site and to the ecological aquatic environment of Neutral Bay by the presence of materials that contain or may contain the above listed potential contaminants within the sub-surface of the Site. The surface coverings and cut-off wall are required to be maintained for the lifetime of this EMP to ensure that this low to negligible risk of exposure is maintained.

The surface coverings across the Site are required to be regularly inspected, at least once per every 12 months. It is the responsibility of the Owner to ensure that these inspections are undertaken. As a conservative measure the inspections are to be undertaken as a walkover across the surface of the Site. The inspection must make a written and photographic record of the following:

- General condition of hardstand pavement surfaces and unsealed surfaces;
- Presence of any subsidence, cracks, openings, degradation, erosion or similar in the surface coverings – the nature, extent and location needs to be recorded and rectification works are required to be implemented;
- Presence of any obvious repair/maintenance works to the surface coverings– the nature, extent and location needs to be recorded;
- Presence of any excavation works into the sub-surface and the control measures being undertaken; and
- Any other observations on the condition and/or integrity of the surface coverings.

Where rectification works are required to be implemented or where repair/maintenance works are being undertaken, the Owner must ensure that these works are undertaken in accordance with the measures set out in this EMP. On completion of such works, the Site Owner must conduct an inspection to ensure that the surface coverings have been adequately re-instated/restored.

The record of the required inspections is required to be kept and maintained by the Site Owner.

4.3 Control Measures for Minor Works and Major Works

Minor Works on any part of the Site do not require specific controls and as long as the underlying retained contaminated and potentially contaminated materials beneath the surface coverings of the Cap (including the Marker Layer/GCL where present) are not disturbed then no specific controls are required.

Where Major Works are required to be undertaken (where the Cap is disturbed such that underlying retained fill materials or Marker Layer/GLC (where present) are disturbed/exposed) additional control measures may be required.

Whilst it is not possible to assess the impacts from all future activities, it is possible to consider exposure scenarios likely to be associated with a range of general maintenance and intrusive works.

The control measures required to be implemented for “Minor Works” and “Major Works” are set out below.

Table 3: Control Measures for Minor Works and Major Works

Works	Examples of Types of Works	Possible Risks to Users	Possible Risks to the Environment	Control Measures Required
MINOR WORKS				
Minor works comprise activities that only require minimal disturbance of the surface coverings/Cap (as defined in Section 3.2)	**Impermeable (hardstand, pavement, concrete or similar) surface cover maintenance:** -Filling in of cracks, patching of holes -Small scale replacement of sections of sections of hardstand/sealed surface coverings where underlying sub-surface fill materials are not required to be disturbed **Minor landscaping works on permeable surface coverings installed as part of Cap on sub-surface retained soils:** -Mowing of grassed areas -Raking or placing of additional growing medium on top of existing growing mediums -removal of surface weeds or similar -shallow planting that does not require contact with the sub-surface retained soils (soils greater than 0.2 m depth) or GCL in the Northern Remediation Area OR exposure, contact with or other disturbance to the Marker Layer (described in Section 2.3.3); **Landscaping works in planter beds installed on impermeable surface coverings (planter beds with concrete base – no contact with underlying retained soils) (locations described in Section 3.2)** **Internal or External Building façade works:** -Painting, pointing, plastering -Internal fitouts aboveground only **Does not include:** - planting or any similar landscaping activity that requires excavation into the growing medium or sub-surface at depths beyond the base of the Cap, as set out above -maintenance of the groundwater/seepage collection system -maintenance of underground utilities	Inhalation of vapours or dusts potentially containing TPHs, BTEX, PAHs, metals, asbestos (though considered unlikely to be generated during Minor Works)	Low risk of runoff. May impact stormwater system if not appropriately contained.	**WHS and General Requirements** -No eating, drinking, smoking; avoid contact with soil (wear gloves) -Minimise dust generation where possible by dampening any soils prior to disturbance -Wash hands and clothes after work -A half–face respirator (fitted with organic cartridges) or dust-masks must be available for use at the Site in the event that significant odours or dust is generated during the works -Where materials are required to be imported to the Site for use in reinstatement, repair, refurbishment, maintenance or similar they must meet the requirements set out in Section 4.7 of this EMP. -Where off-site disposal is required ensure all excavated materials (soils and/or waters) are handled, managed and disposed off-site in accordance with NSW EPA (2014) *Waste Classification Guidelines* or equivalent and disposal to a facility licensed by NSW EPA to receive the class of waste material. Waste classification works must be completed by an appropriately qualified contaminated site consultant or equivalent. Records of waste classification and disposal must be maintained and recorded in a materials tracking register.

Works	Examples of Types of Works	Possible Risks to Users	Possible Risks to the Environment	Control Measures Required
				Repairs/Maintenance to Surface Coverings/Cap - Where repairs/maintenance to the surface coverings/Cap are required that are considered to be Minor Works, the Harbour Trust must determine whether an exclusion zone is required to be established around the area subject to the repair or maintenance to preclude further compromise of the surface coverings and/or exposure to the sub-surface of the area by users until such time that repairs/maintenance can be completed. Where an exclusion zone is required then: -The diameter of the exclusion zone is to be determined by those undertaking the works and establishing the exclusions zone as part of those works (Site manager, contractors) and must be sufficient to prevent access by normal users of the Site -The exclusion zone is to be established by using physical barriers such as bollards, cones, tape or mesh. Timeframes in which the repairs are required to be completed are provided in Section 3.1 of this EMP.
MAJOR WORKS				
Major works comprise activities that require disturbance to the surface coverings/Cap such that underlying materials are disturbed or could be disturbed and include any works associated with the groundwater/	**Landscaping, Maintenance or Other Works within Northern Remediation Containment Area:** -where direct contact with the sub-surface soils and/or groundwater at depths greater than 0.2 m is possible; -where direct contact with the GCL is possible; -any works that directly affect or disturb the Cut-off Wall; **Any works during which the impermeable surface coverings are disturbed such that** -direct contact with the underlying retained contaminated fill material or groundwater is possible or will occur **Construction and maintenance of sub-surface services:** - gas, electricity, stormwater, surface drainage, telephone, cabling and water supply;	Inhalation of vapours or dusts potentially containing TPHs, BTEX, PAHs, asbestos. Dermal exposure to soils and/or water potentially contain TPHs,	Medium risk of runoff. May impact stormwater system if not appropriately contained.	**Harbour Trust Approval** -Any works to be conducted that are considered to be Major Works and that may compromise the integrity of the Cap or Cut-off Wall must be approved by the Harbour Trust. -Harbour Trust must not approve such works until they have considered (based on the location and scale of the Major Works and acting reasonably) whether consultation with an appropriately qualified contaminated site consultant is required to obtain formal advice on whether the works will affect on the Cap or Cut-off Wall and whether: 1) a Construction Environmental Management Plan (CEMP) is required for the works; and

Works	Examples of Types of Works	Possible Risks to Users	Possible Risks to the Environment	Control Measures Required
seepage collection system (described in Section 3.2)	-Maintenance of the groundwater and seepage water collection system **Other:** -Installation of equipment or undertaking of construction that requires excavation of the surface coverings of the Cap and sub-surface where direct contact with the GCL/Marker Layer and/or underlying retained materials is possible; -Installation and maintenance of features or equipment that require disturbance and/or disposal of the surface and/or sub-surface soils where direct contact with the sub-surface soils or groundwater is possible.	BTEX, PAHs, metals Ingestion of dusts, waters, soils potentially containing TPHs, BTEX, PAHs, metals Unexpected finds		2) the surface coverings to be established/reestablished after the completion of the Major Works meet the definition of surface coverings set out in Section 3.1 of this EMP. If Harbour Trust determines that advice for 1) and/or 2) above is to be obtained, then the contaminated site consultant must be provided with this EMP and any other relevant reports listed in this EMP prior to providing their advice. If a CEMP is determined to be required to be prepared and implemented for the works it must detail the works to be undertaken and set out the specific control measures to be implemented during those works to be protective of the health of the workers undertaking the works and the surrounding community/users and the environment **WHS Requirements** -Workers/contractors undertaking the works are appropriately licenced in accordance with the requirements of the relevant WH&S regulations and Safework NSW. -Develop and implement safety documentation for works that include the establishment of works exclusions zones, donning of appropriate PPE and appropriate work methodologies to mitigate exposure pathways to be formed, as required; -No eating, drinking, smoking; avoid contact with soils or waters (wear gloves); -At minimum Level D PPE must be worn during works including long sleeved shirts and long pants, steel-toed boots, gloves, high-visibility vest and safety glasses and

Works	Examples of Types of Works	Possible Risks to Users	Possible Risks to the Environment	Control Measures Required
				a P3 dust mask/respirator be available during manual handling of soils and/or waters -Wash hands and clothes after work **Odours, Staining, Sheens or Unexpected Finds** -Should odours, sheens or similar or unexpected materials be uncovered works must cease and the Harbour Trust must be immediately notified. The Harbour Trust will determine whether consultation with an appropriately qualified contaminated site consultant is required to determine control measures, which are likely to require the following: - that a Photoionization Detector (PID) with a lamp voltage of at least 10.6 electron volt (eV) be used to monitor operator/ field staff breathing zone for volatile organic contaminants (VOCs) during excavation works conducted where disturbance of the soils will occur; - that Half–face respirators fitted with organic filters and coveralls/Tyvek (chemical resistant) be made available for use and/or are used for future works and/or where further significant contamination /odours are encountered. If deemed required Harbour Trust and/or contaminated site consultant will apply the action levels and personal protective equipment (PPE) requirements for VOCs as presented in Table 4 below for the breathing zone of workers during the works **General Measures** -Prevent dust by applying dust suppression prior to and during excavation; -Any materials excavated must be handled with care; -If soil materials are required to be excavated, excavate and stockpile any hardstand materials, sub-grade

Works	Examples of Types of Works	Possible Risks to Users	Possible Risks to the Environment	Control Measures Required
				materials, topsoils or similar materials separately to the contaminated/potentially contaminated fill materials, cover excavated/stockpiled materials with heavy density polyurethane (HDPE) plastic or similar (appropriate to prevent runoff from materials, water infiltration and prevent dust generation) then use for reinstatement in same location or placement elsewhere on the Site, as determined by the Harbour Trust; - Excavated soils or waters containing or suspected of containing contamination must not be left unattended. If it is necessary to leave materials unattended, the soils are required to be either placed back in the excavation and the surface cover reinstated so that exposure to these materials cannot be gained by users or must be formed into stockpiles that are covered with heavy density polyurethane (HDPE) plastic or similar; waters are required to be stored in appropriate containers that can be sealed and secured; -Where off-site disposal is required ensure all excavated materials (soils and/or waters) are handled, managed and disposed off -site in accordance with NSW EPA (2014) *Waste Classification Guidelines* or equivalent and disposal to a facility licensed by NSW EPA to receive the class of waste material. Waste classification works must be completed by an appropriately qualified contaminated site consultant or equivalent. Records of waste classification and disposal must be maintained and recorded in a materials tracking register. -Where materials are required to be imported to the Site for use in reinstatement, repair, refurbishment, maintenance or similar they must meet the requirements set out in Section 4.7 of this EMP.

Works	Examples of Types of Works	Possible Risks to Users	Possible Risks to the Environment	Control Measures Required
				Repair/Maintenance of Surface Coverings/Cap - Where the integrity of the surface coverings/Cap has been compromised such that the required repair/maintenance works are considered to be Major Work or any works are undertaken that are Major Works, an exclusion zone must be established around the impacted area to preclude exposure to the sub-surface by users until such time that repairs or the works can be completed. -The diameter of the exclusion zone is to be determined by those undertaking the works and establishing the exclusions zone as part of those works (Site manager, contractors) and must be sufficient to prevent access by normal users of the Site; -The exclusion zone is to be established by using physical barriers such as secure lockable fencing or similar. Timeframes in which the repairs/maintenance works are required to be completed are provided in Section 3.1of this EMP

Table 4: Breathing Zone Action Levels

Chemical Hazards:	Risk: H - High M - Med L - Low	TWA (mg/m^3)	STEL (mg/m^3)	IE (eV)	MUL Action levels (75% safety margin worked into MUL)				LEL (%)
					No APR	½ face APR	full face APR	IDLH reached	
☒ Benzene	H	16	-	-	5	37.5	187.5	3000	1.3-
** Remember - Max Use Limit (MUL) = (Protection Factor x Exposure Limit) x 75% ** PF= 10 for ½ face, 50 for full face, 10000 for SCBA									

4.4 Control Measures - Asbestos

Should fragments of asbestos containing materials (ACM) and/or bonded fibrous cement materials (potential ACM) and/or any quantity of friable material be encountered the following procedure is required to be implemented:

- Works must cease and the exposed area should be covered with substantial plastic sheeting that is securely anchored to the ground surface and be enclosed within a barrier to prevent access.
- The Site Manager must be immediately notified;
- The Site Manager must determine if appropriate signage should be displayed to warn of the presence of these materials;
- A suitably qualified Occupational Hygienist or equivalent must be contacted by the Site Manager to provide an assessment of risks and the required management response and control measures;
- No further works are to be undertaken on the Site until the Site Manager has provided approval for works to re-commence.
- Asbestos removal works must only be undertaken in accordance with the requirements of the relevant OH&S regulations and NSW Workcover;
- A bonded asbestos licence is required to be issued by NSW Workcover (or as superseded at the time of works) to remove, repair or disturb more than 10 square metres of bonded asbestos material such as fibro, corrugated cement sheeting and asbestos cement pipes. A friable asbestos licence is required to be issued by NSW Workcover to remove, repair or disturb any amount of friable asbestos, such as sprayed limpet, asbestos cloth, millboard and pipe lagging. This licence also allows the removal of bonded asbestos;
- NSW WorkCover must be notified seven days before removing bonded asbestos and a work site permit from NSW WorkCover is required to be obtained before removing any friable asbestos. Applications must be lodged at least seven days before the proposed work is due to start.

Should the procedures above be required to be implemented, records of such works will need to be completed and retained by the Supervisor or person in charge of works. Such records would include the location on the Site where materials were found, reason for the works, the type of asbestos, documentation of any monitoring or clearance works completed by the Occupational Hygienist, report on waste classification works completed by the environmental consultant on any removed materials and the receiving waste facility dockets.

4.5 Handling of Contaminated and Potentially Contaminated Materials

Any solid or liquid materials excavated from the surface and sub-surface of the Site must be handled with care and in accordance with the requirements set out above. Any materials that require disposal off-site will require the engagement of a suitably qualified environmental consultant to conduct appropriate sampling and analysis to

determine the requirements for off-site disposal in accordance with NSW EPA (2014) guidelines or equivalent. Records of any materials excavated and then subsequently disposed off-site are required to be completed and retained by the Site Owner. Such records would include the location on the Site where materials were excavated, reason for excavation works, the type of materials excavated, report on waste classification works completed by the environmental consultant on the excavated materials and the receiving waste facility dockets.

4.6 Unexpected Finds

In the event of unexpected finds e.g. presence of an underground storage tank, drums, pipework or similar, works must cease and the Site Manager and/or Site Owner must inspect the unexpected find and isolate the area until such time that an appropriately qualified environmental consultant conducts an inspection and provides a recommendation of what works are required to control/manage the unexpected find in accordance with the relevant guidelines made or approved by the NSW EPA, NSW regulations and legislation.

Records of any unexpected finds are required to be completed and retained by the Site Owner. Such records would include the location on the Site where the unexpected find was uncovered, how it was found, the follow up works undertaken, any reports, advice or similar provided by the environmental consultant, documentation, reports or similar on any rectification/remediation works undertaken and photographic record.

4.7 Imported Materials

Materials to be imported on the Site to be used as part of any refurbishment, rectification, repair or maintenance work either as part of the Cap or in areas beneath the Cap must satisfy the following criteria:

- Virgin excavated natural materials (VENM) must satisfy the criteria stated in NSW EPA (2014) and NSW EPA (2017) guidelines and be demonstrated to be:
  - Natural material (such as clay, gravel, sand, soil or rock fines);
  - Materials that has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities; and
  - Materials that do not contain any sulfidic ores or soils or any other waste;
- Topsoils, growing media, mulch etc. for landscaping purposes must not contain foreign substances, suspicious staining and/or odours;
- Materials that are permitted to be brought onto the Site via an exemption issued under the POEO Act must meet and comply with the requirements of any such exemption, prior to, during and/or after importation of materials;
- Any materials proposed to be imported to the Site must not contain any of the following:
  - Marine mud, peat, soluble or perishable materials,
  - Dangerous or toxic material or material susceptible to combustion;
  - Metal, rubber, plastic or synthetic material or other forms of general rubbish;
  - Construction/demolition debris; and/or
  - Asbestos.

4.8 Reporting of Complaints and Incidents

If a complaint is made by a member of the public or by any other person with respect to any environmental management or control issue either during "Minor Works" or during "Major Works" or at any other time, appropriate corrective action is required to be undertaken as soon as practicable. The Site Owner is responsible for ensuring the corrective action is undertaken (as set out in Table 1).

Similarly, if an environmental incident occurs that has given or may give rise to pollution of soil, air or waters, appropriate corrective action is required to be undertaken as soon as practicable.

In addition to the above, complaints and environmental incidents are required to be notified to the Site Owner as soon as practicable after a complaint has been made or an environmental incident has occurred. If appropriate, and following the Site Owner's instructions, notification may need to be made to the applicable regulatory authority.

Records of complaints and incidents are required to be entered into a register to be developed for the Site, but only after corrective action has been taken and the Site Owner has been notified.

5 Limitations

This Long-term Environmental Management Plan has been prepared for the sole purpose of documenting the procedures that are required to be implemented on the Site in accordance with generally accepted consulting practice. No other warranty or guarantee, expressed or implied is made as to the advice indicated in this report.

This report should not be used for any other purpose without our prior written consent. Accordingly, neither CONSARA nor any member or employee of CONSARA accepts responsibility or liability in any way whatsoever for the use of this report for any purpose other than that for which it has been prepared.

This report should not be released to any other party, in whole or in part, without the express written consent of CONSARA. CONSARA accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report by any third party.

CONSARA has relied upon and presumed accurate information provided by Sydney Harbour Federation Trust and/or any third party (or absence thereof) in making the assumptions made in this report. Nothing in this report should be taken to imply that CONSARA has verified or audited any of the information supplied to us other than as expressly stated in this report. We have assumed this information to be both adequate and accurate for the purposes of this report.

Where findings, observations and conclusions are based solely upon information provided by Sydney Harbour Federation Trust and/or a third party and CONSARA do not accept, to the maximum extent permitted by law, any liability for any losses, claims, costs, expenses, damages (whether in statute, in contract or tort for negligence or otherwise) suffered or incurred by Sydney Harbour Federation Trust or any third party as a result of or in connection with CONSARA's reliance on any such the information to the extent that such information is false, misleading or incomplete and CONSARA give no warranty or guarantee, express or implied as to such findings, observations and conclusions.

If further information becomes available, or additional assumptions need to be made, CONSARA reserves its right to amend any statements or opinions made in this report.

6 References

Australian and New Zealand Environment Conservation Council and Agriculture Resource Management Council of Australia and New Zealand (ANZECC/ARMCANZ) (2000). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality,* October 2000.

Coffey Environments Australia Pty Ltd (2017) *Site Validation Report, Platypus Remediation Project – Stage 2 Remediation Works.* 19 January 2017

CONSARA Pty Ltd. (2017). *Closure Report for Remediation and Validation Works, Platypus Site, High Street North Sydney NSW* 13 September 2017

CONSARA Pty Ltd. (2018). *Addendum to Closure Report for Remediation and Validation Works, Platypus Site, High Street North Sydney NSW* 30 April 2018

CONSARA Pty Ltd (2018). *Environmental Site Assessment, Guardhouse Site located within the Platypus Site, High Street, North Sydney NSW*. 27 April 2018

CONSARA Pty Ltd (2019a). *Remediation Action Plan for Guardhouse Site, Platypus Site, High Street, North Sydney NSW*. 25 July 2019.

CONSARA Pty Ltd (2019b). *Validation Report for Guardhouse Site, Platypus Site, High Street, North Sydney NSW*. 4 December 2019

CONSARA Pty Ltd (2024). *Validation Report Torpedo Factory Renewal Project Sub Base Platypus, High Street, North Sydney NSW*. 4 June 2024

International Agency for Research on Cancer (IARC) (2008). *Monographs on the Evaluation of Carcinogenic Risks to Humans: 1,3-Butadiene, Ethylene Oxide and Vinyl Halides (Vinyl Fluoride, Vinyl Chloride and Vinyl Bromide*. World Health Organisation, International Agency for Research on Cancer 97, Lyons.

National Health and Medical Research Council & Natural Resource Management Ministerial Council(NHMRC & NRMMC) (2011 and as updated 2013). *Australian Drinking Water Guidelines*

National Health and Medical Research Council. (NHMRC) (2008).*Guidelines for managing risk in recreational water*.

National Environment Protection Council (NEPC) (2013). *National Environment Protection (Assessment of Site Contamination) Measure (NEPM) – Schedule B 1999 as Amended 2013 (ASC NEPM*)

NSW DEC (2007). *Guidelines for the Assessment and Management of Groundwater Contamination*. NSW Department of Environment and Conservation.

NSW EPA (1995). *Contaminated Sites: Sampling Design Guidelines*. NSW Environment Protection Authority.

NSW EPA (2014) *Waste Classification Guidelines* NSW Environment Protection Authority.

NSW EPA (2015). *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act*. NSW Environment Protection Authority

NSW EPA (2017). *Guidelines for the NSW Site Auditor Scheme (3rd edition)*. NSW Environment Protection Authority

NSW EPA (2020). *Contaminated Land Guidelines Consultants Reporting on Contaminated Land*. NSW Environment Protection Authority

NSW EPA, 2022. *Contaminated Land Guidelines – Sampling Design Part 1 and Part 2* NSW Environment Protection Authority

Soil Conservation Service of NSW (SCS), 2009. *Sydney Soil Landscape Series Sheet 9130 1:100 00*.

US EPA (2000). *Guidance for the Data Quality Objectives Process, EPAC QA/G-4 DEC/600/r-96/055,* United States Environmental Protection Agency Office of Environmental Information, Washington DC

US EPA, (RSLs). Regional Screening Levels for Chemical Contaminants at Superfund Sites. Available at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm

Figures

A3

SOURCE: NEARMAP - IMAGE DATED 7th APRIL 2024

PROJECT No.	**C121007**
FILE NAME	**F009**
DATE	**05.06.24**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

SITE BOUNDARY

E 325501.665
N 6248326.116
COORDINATES IN MGA

0 10 20 30 40
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
LONG TERM ENVIRONMENTAL MANAGEMENT PLAN, PLATYPUS SITE, HGH STREET, NORTH SYDNEY, NSW

TITLE
SITE LOCATION PLAN

FIGURE No.
1

CONSARA

A3

SOURCE: NEARMAP - IMAGE DATED 7th APRIL 2024

PROJECT No.	C121007
FILE NAME	F010
DATE	05.06.24
DRAWN	RR
APPROVED	RO

LEGEND

SITE BOUNDARY

E 325501.665
N 6248326.116
COORDINATES IN MGA

0 10 20 30 40
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
LONG TERM ENVIRONMENTAL MANAGEMENT PLAN, PLATYPUS SITE, HGH STREET, NORTH SYDNEY, NSW

TITLE
SITE LAYOUT

FIGURE No.
2

CONSARA

Appendix A: Figures from Validation Report

SOURCE: UBD STREET DIRECTORY GREGORYS
SYDNEY, NEW SOUTH WALES
47TH EDITION, 2012, MAP: 7 & 8

100 0 100 300 500

Scale (metres) 1:10,000

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A4

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: SITE LOCATION PLAN

project no: ENAURHOD04128AB-R00A | figure no: FIGURE 1 | rev. -

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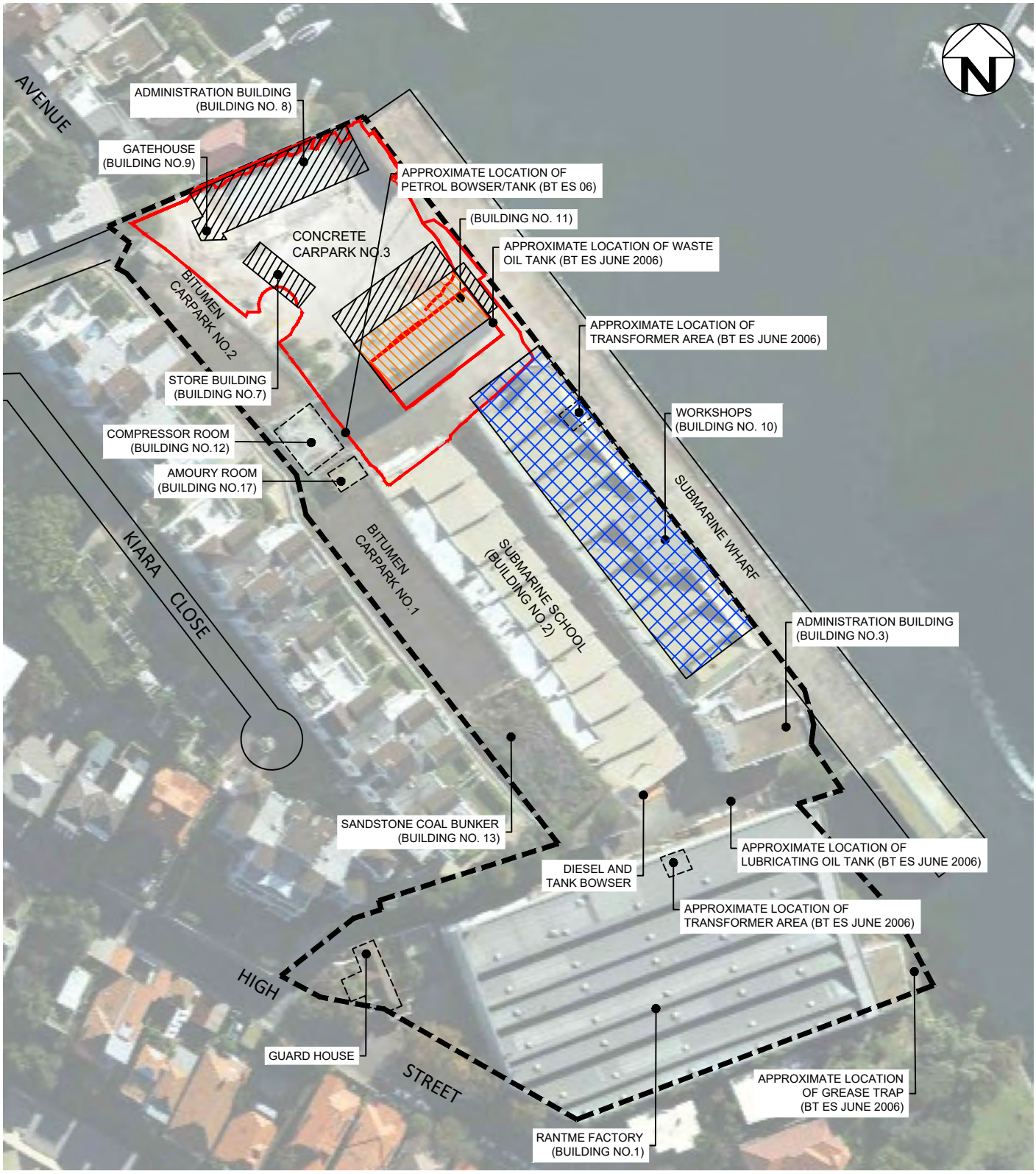


LEGEND

- APPROXIMATE SITE BOUNDARY
- BUILDING TO BE USED TO STORE BUILDING 11 (WHEN BUILDING 11 IS DISMANTLED)
- BUILDING 7 & 8 WERE DEMOLISHED IN 2010
- BUILDING OF FORMER RETORT HOUSE

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 5.2.1.1588
AERIAL IMAGE ©: 2012 SINCLAIR KNIGHT MERZ
2012 WHEREIS SENSIS PTY LTD

10 0 20 40 60

Scale (metres) 1:1250

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A4

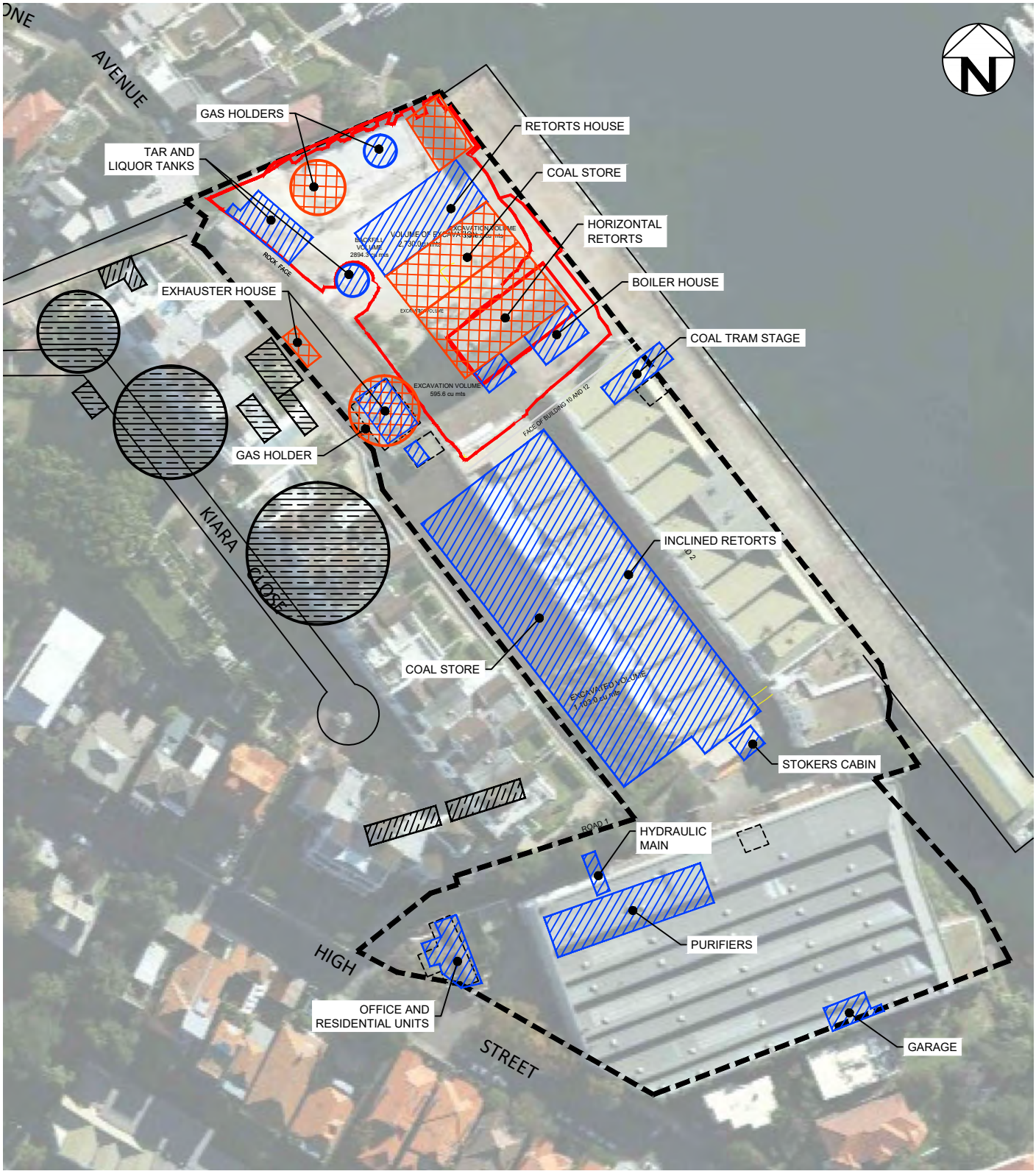
coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: SITE LAYOUT PLAN AND FEATURES

project no: ENAURHOD04128AB-R00A | figure no: FIGURE 2 | rev. -



LEGEND

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE LOCATION OF FOR FORMER GASWORK STRUCTURES (1890)
- APPROXIMATE LOCATION OF FORMER GASWORK STRUCTURES (1913)
- APPROXIMATE LOCATION OF FORMER GAS STRUCTURES ON THE IORA SITE

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 5.2.1.1588
AERIAL IMAGE ©: 2012 SINCLAIR KNIGHT MERZ
2012 WHEREIS SENSIS PTY LTD

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Scale (metres) 1:1250

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A4

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: SITE LAYOUT PLAN AND FORMER GASWORKS FEATURES

project no: ENAURHOD04128AB-R00A | figure no: FIGURE 3 | rev. -

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LEGEND

- SITE BOUNDARY
- CONTAINMENT
- DRIVEWAY
- JET GROUT WALL / IN-SITU CONTAINMENT

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 5.2.1.1588
AERIAL IMAGE ©: 2012 SINCLAIR KNIGHT MERZ
2012 WHEREIS SENSIS PTY LTD

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Scale (metres) 1:1250

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A4

coffey

client:	THIESS SERVICES
project:	SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES
title:	REMEDIATION LAYOUT - MAIN ELEMENTS
project no:	ENAURHOD04128AB-R00A
figure no:	FIGURE 4
rev.	-

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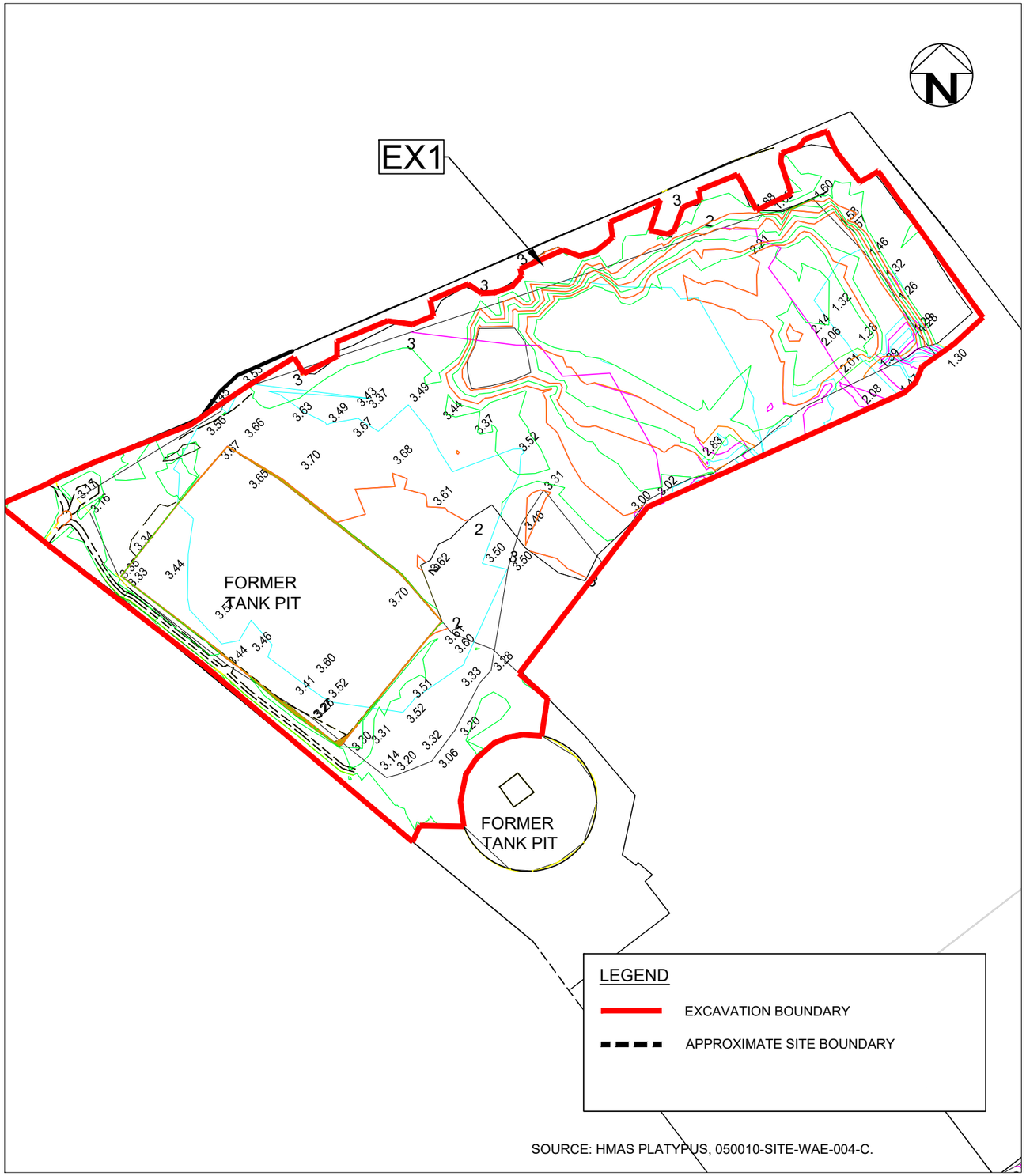

revision	description	drawn	approved	date

IMAGE SOURCE: maps.six.nsw.gov.au/
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SCALE (metres) 1:300

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 1

project no: ENAURHOD04128AB-R00A

figure no: FIGURE 6

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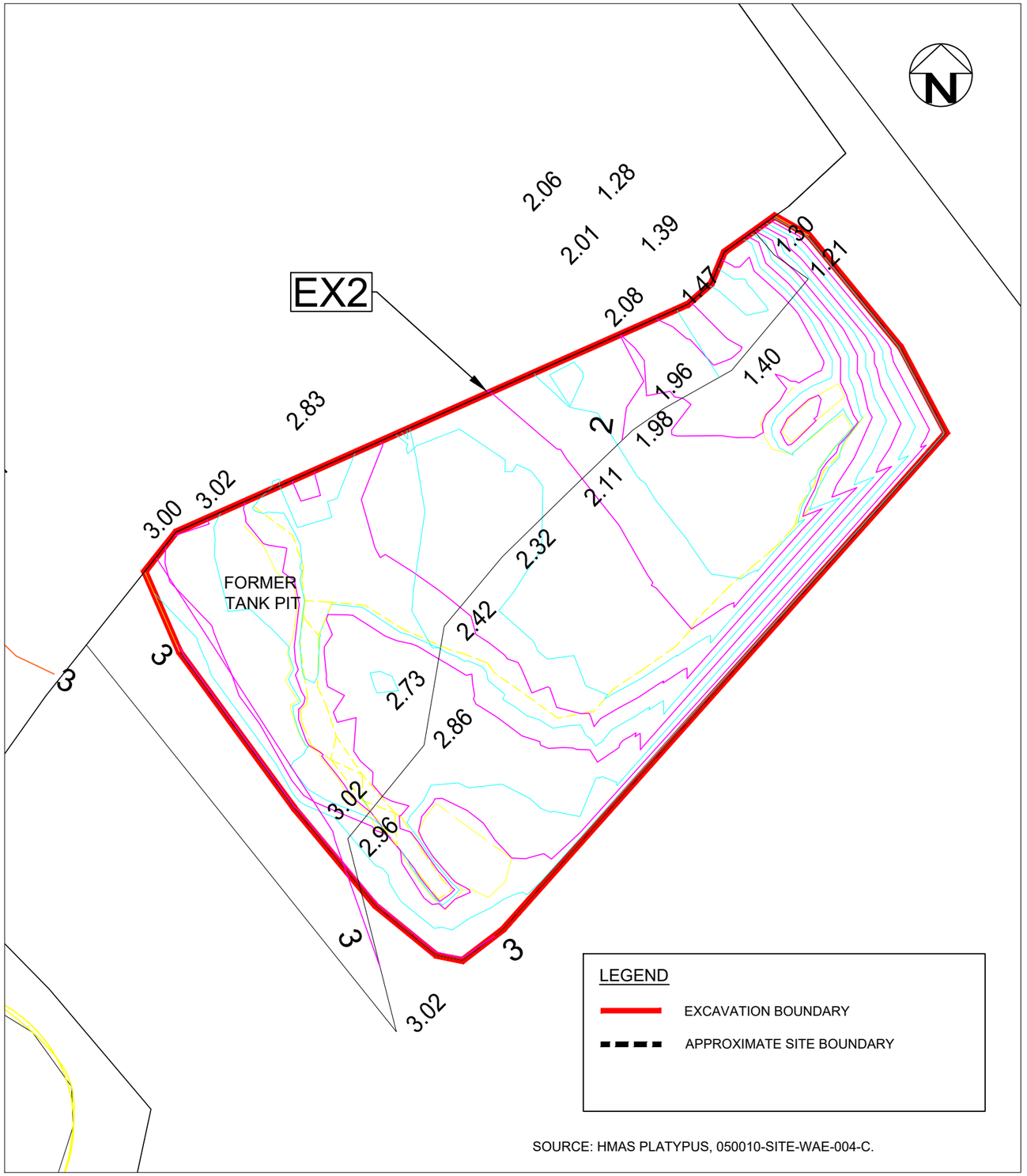

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drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

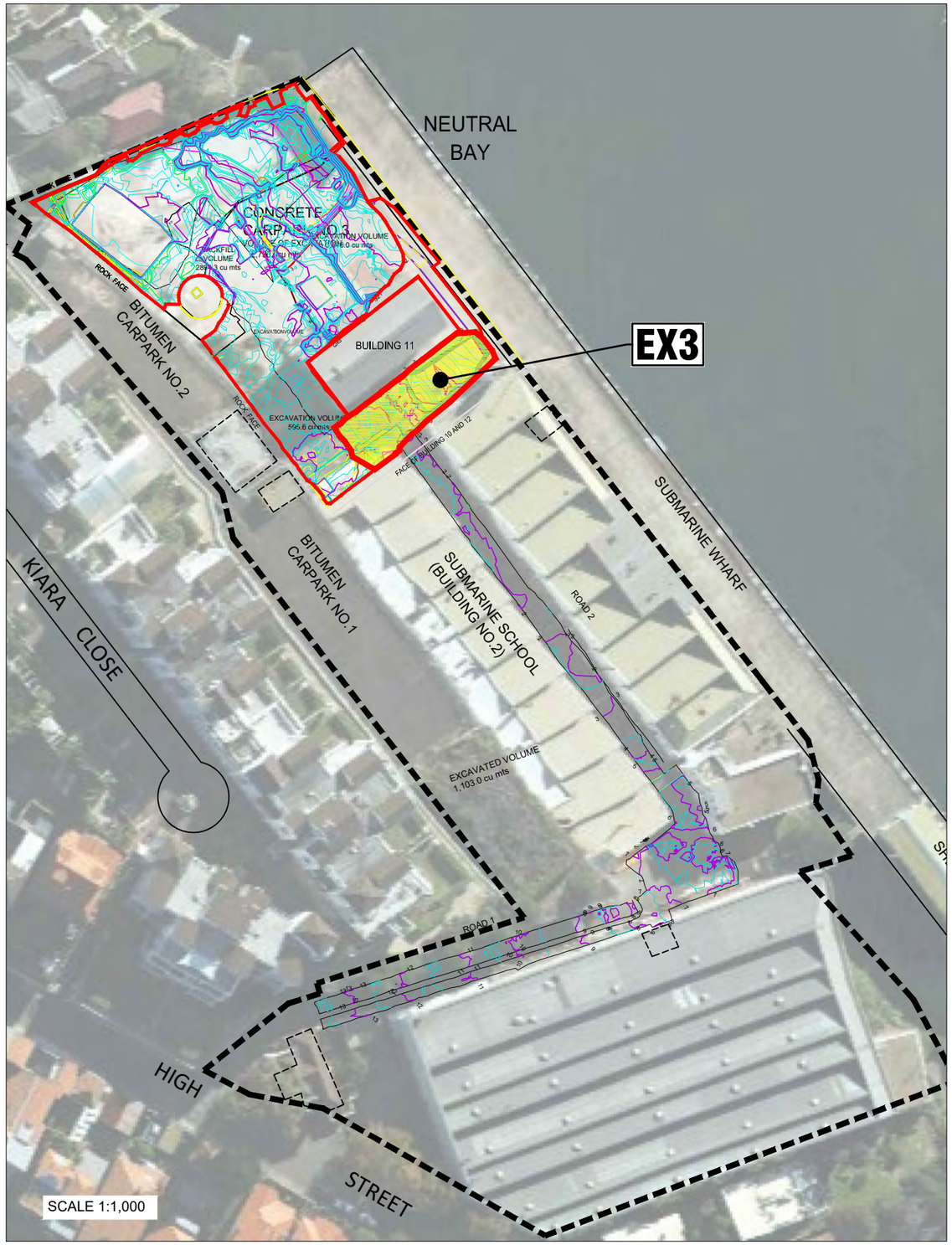
client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 2

project no: ENAURHOD04128AB-R00A

figure no: FIGURE 7



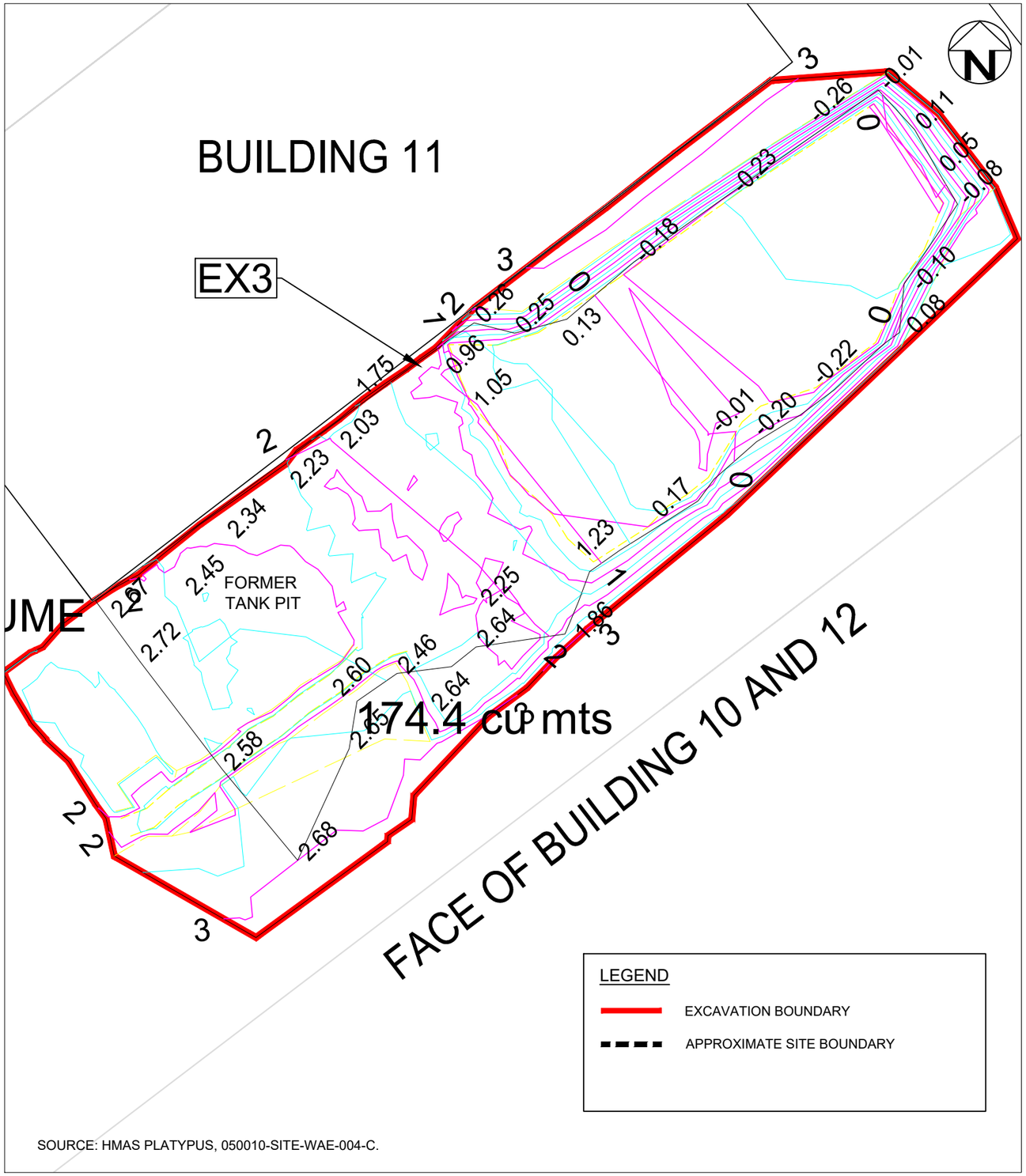


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IMAGE SOURCE: maps.six.nsw.gov.au/
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approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 3

project no: ENAURHOD04128AB-R00A | figure no: FIGURE 8

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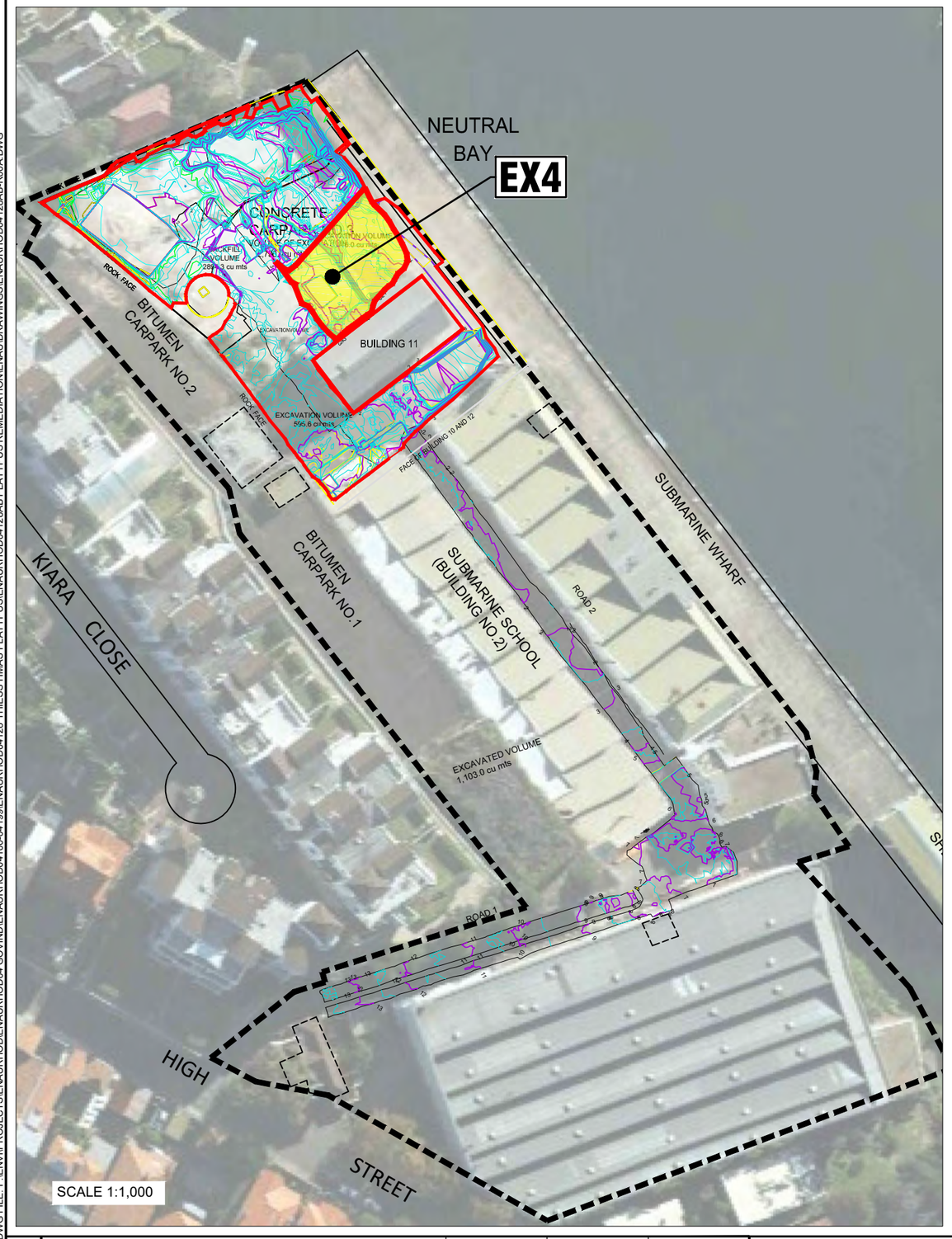

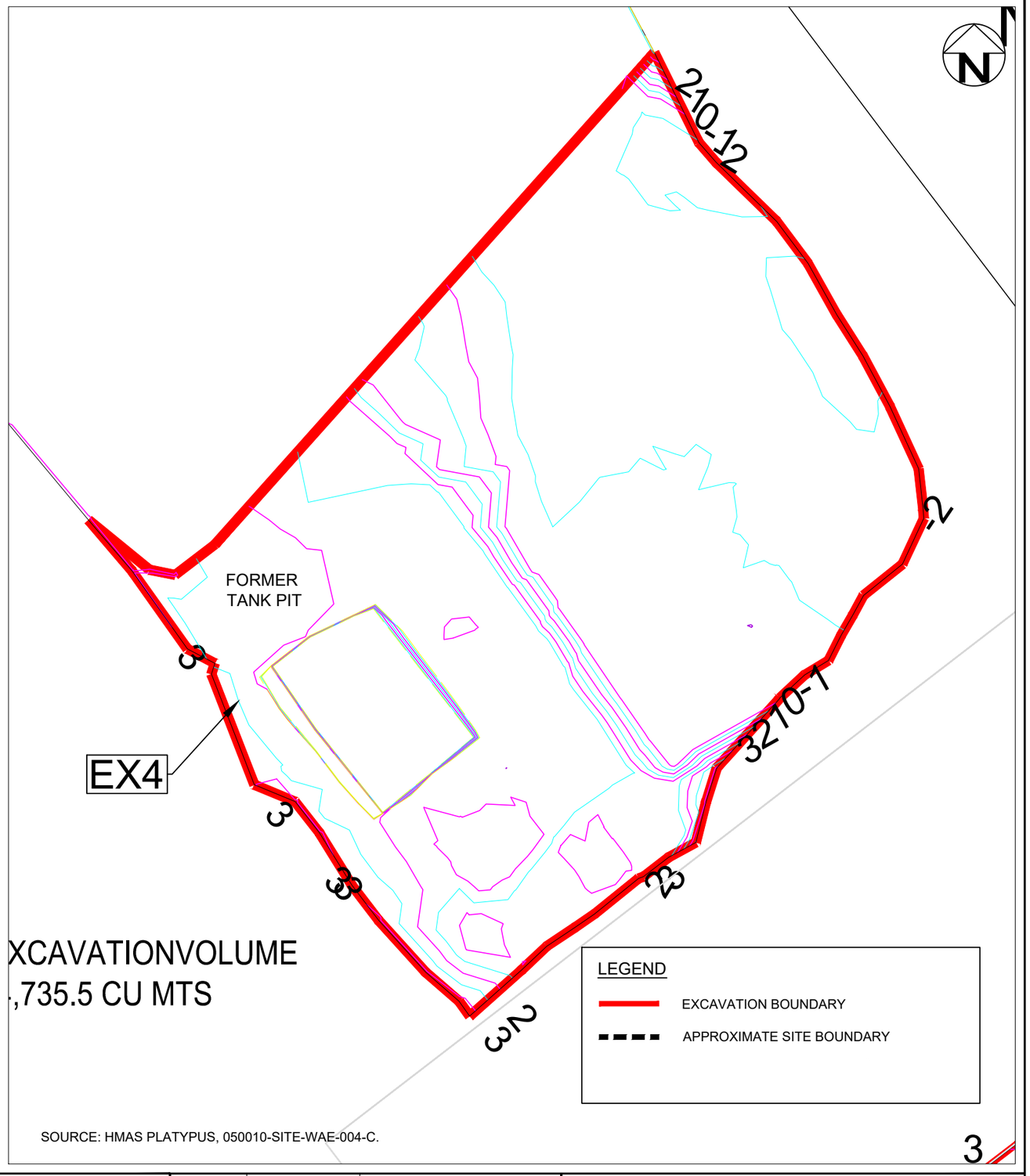

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revision	description	drawn	approved	date

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drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 4

project no: ENAURHOD04128AB-R00A

figure no: FIGURE 9

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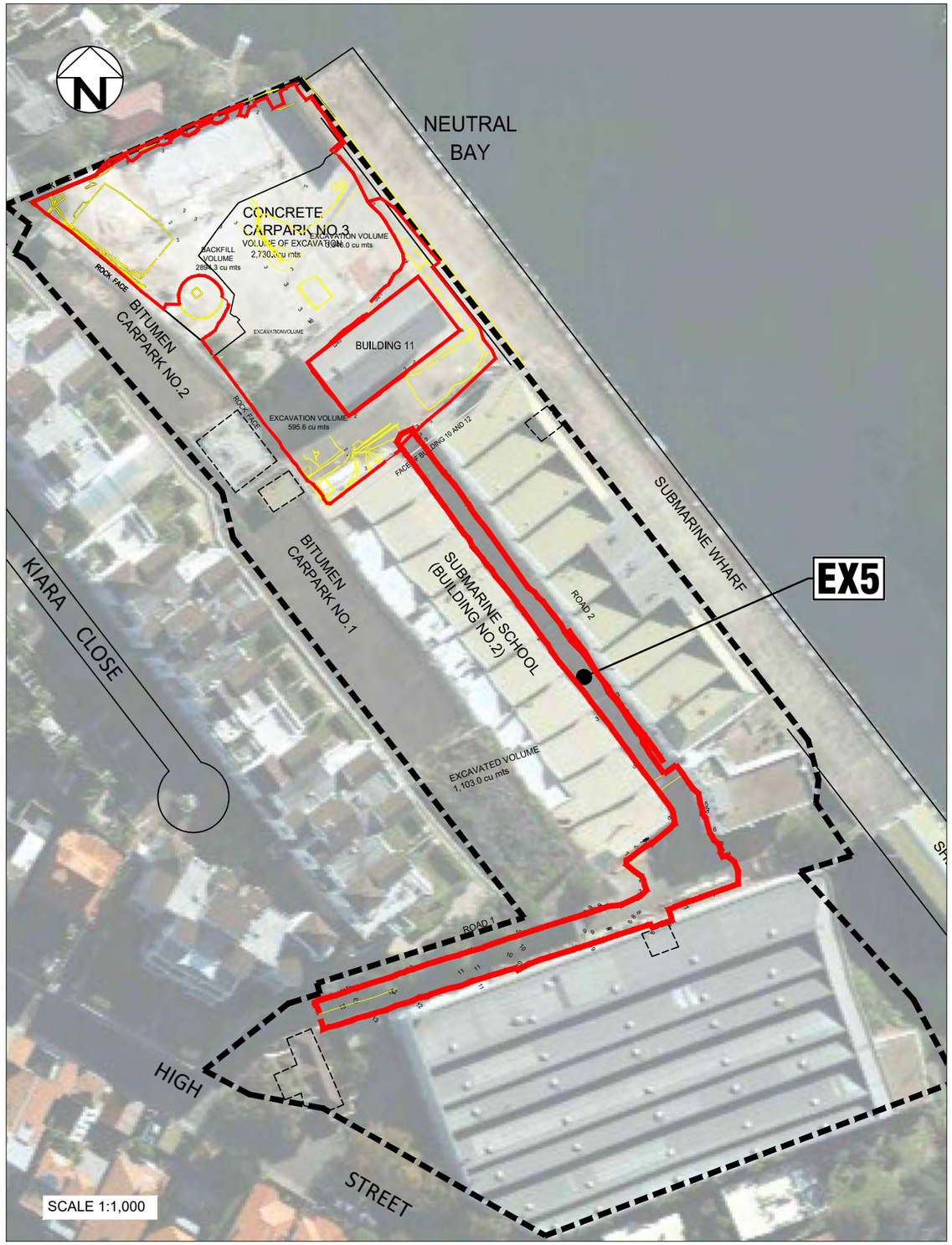
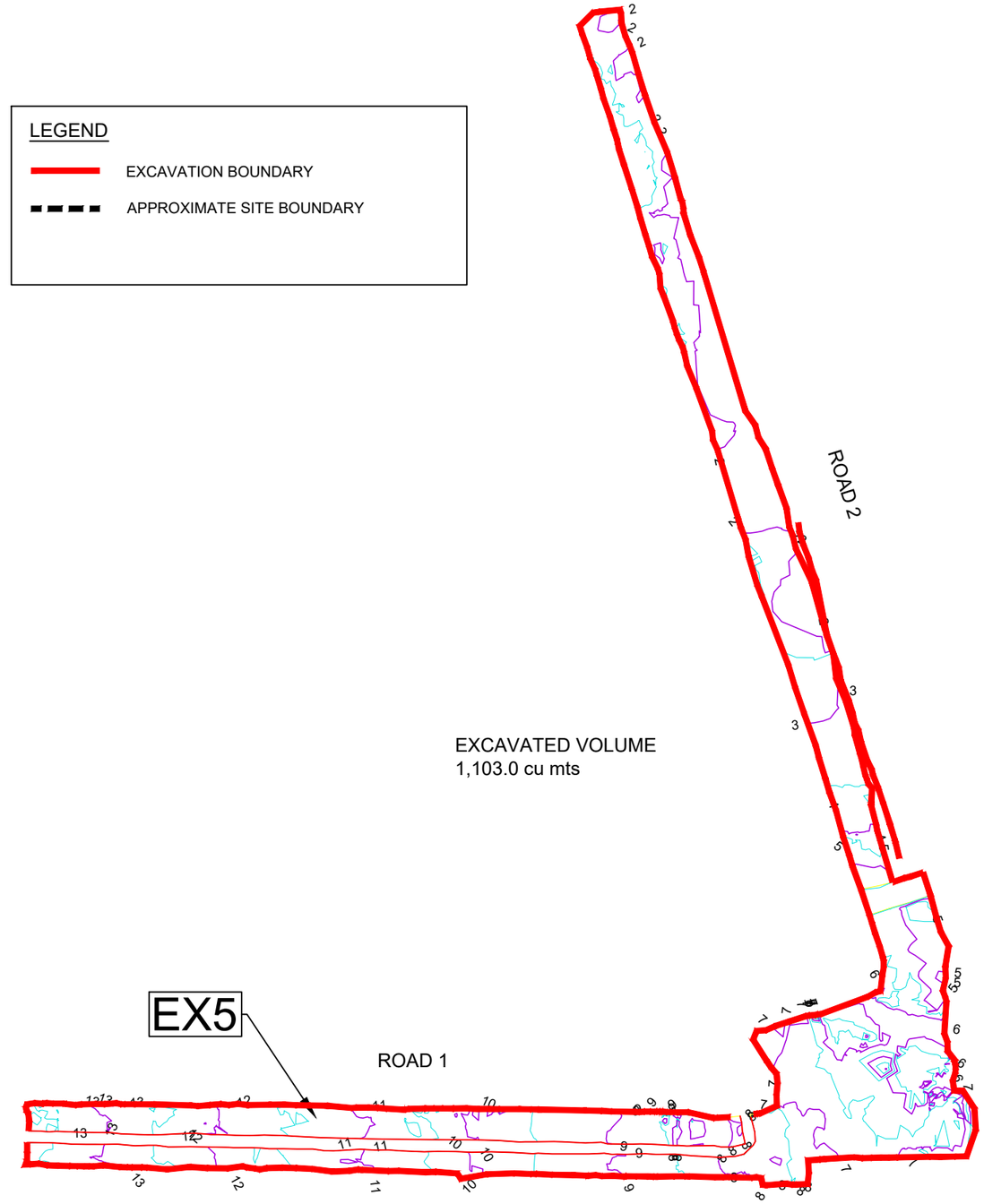


LEGEND

- EXCAVATION BOUNDARY
- APPROXIMATE SITE BOUNDARY



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EXCAVATED ROAD

revision	description	drawn	approved	date

IMAGE SOURCE: maps.six.nsw.gov.au/
DRAWING SOURCE: HMAS PLATYPUS, 050010-SITE-WAE-002, SEPTEMBER 2013.

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SCALE (metres) 1:500

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 5

project no: ENAURHOD04128AB-R00A

figure no: FIGURE 10

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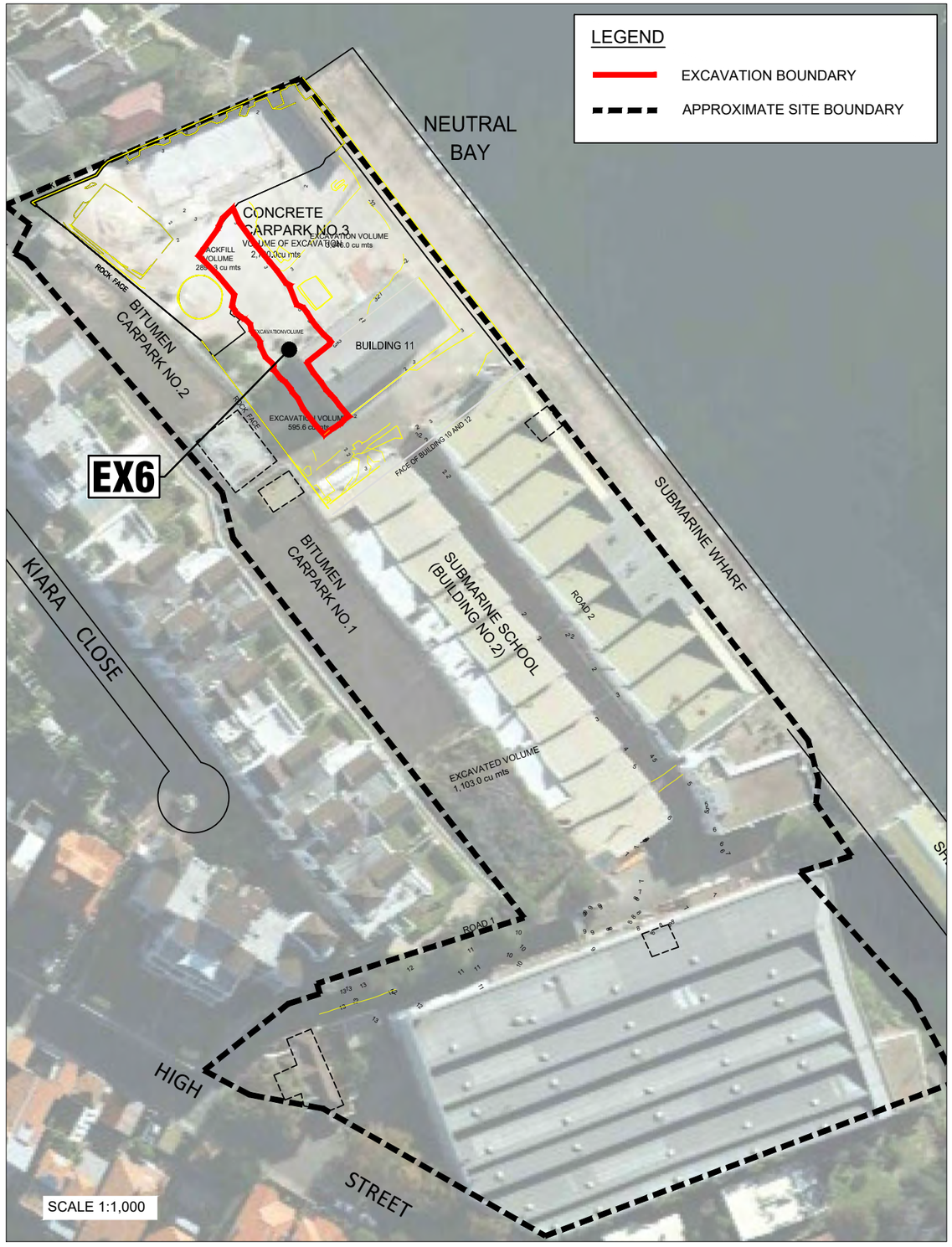

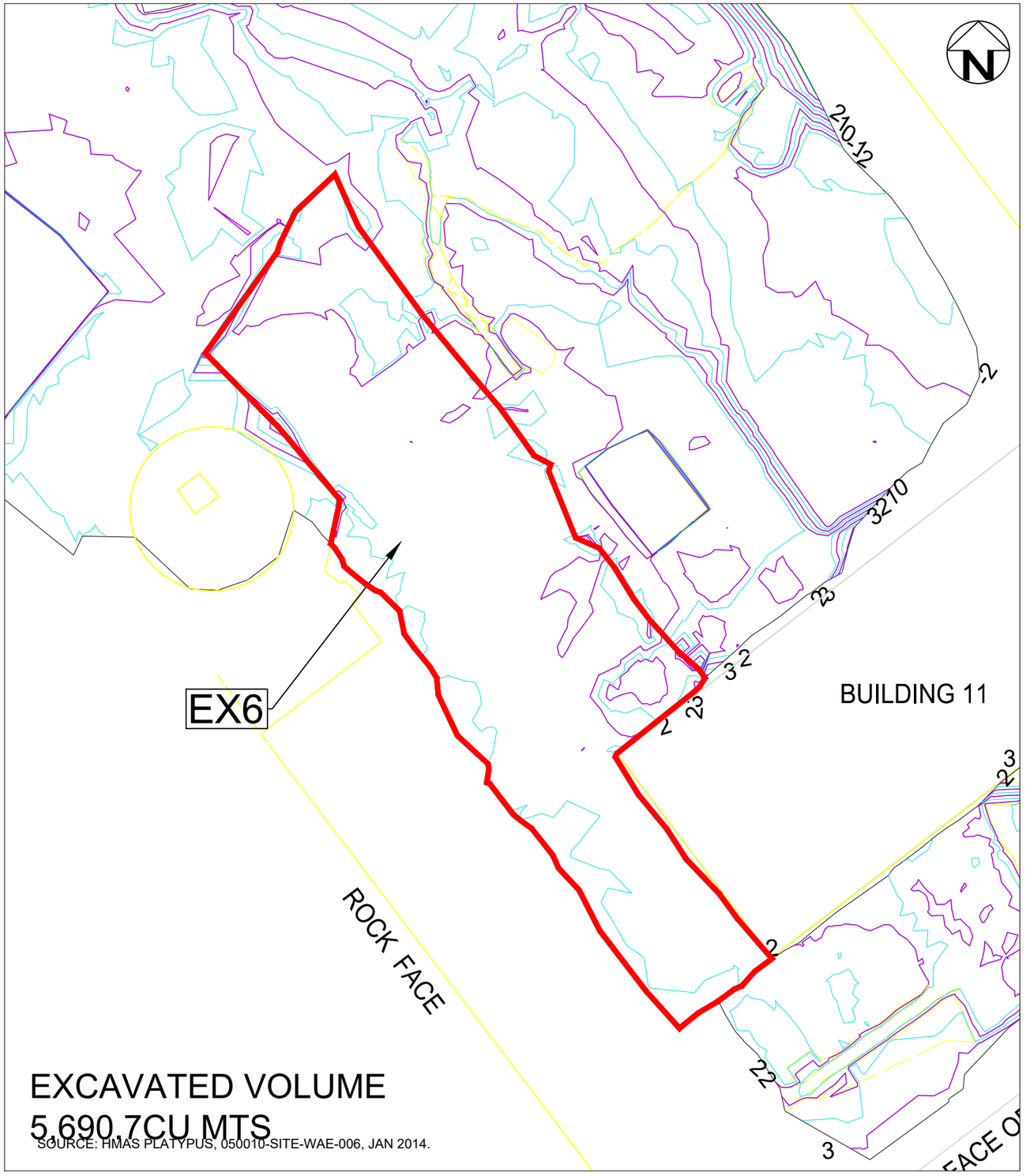

revision	description	drawn	approved	date

IMAGE SOURCE: maps.six.nsw.gov.au/
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2.5 0 5 10

SCALE (metres) 1:250

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

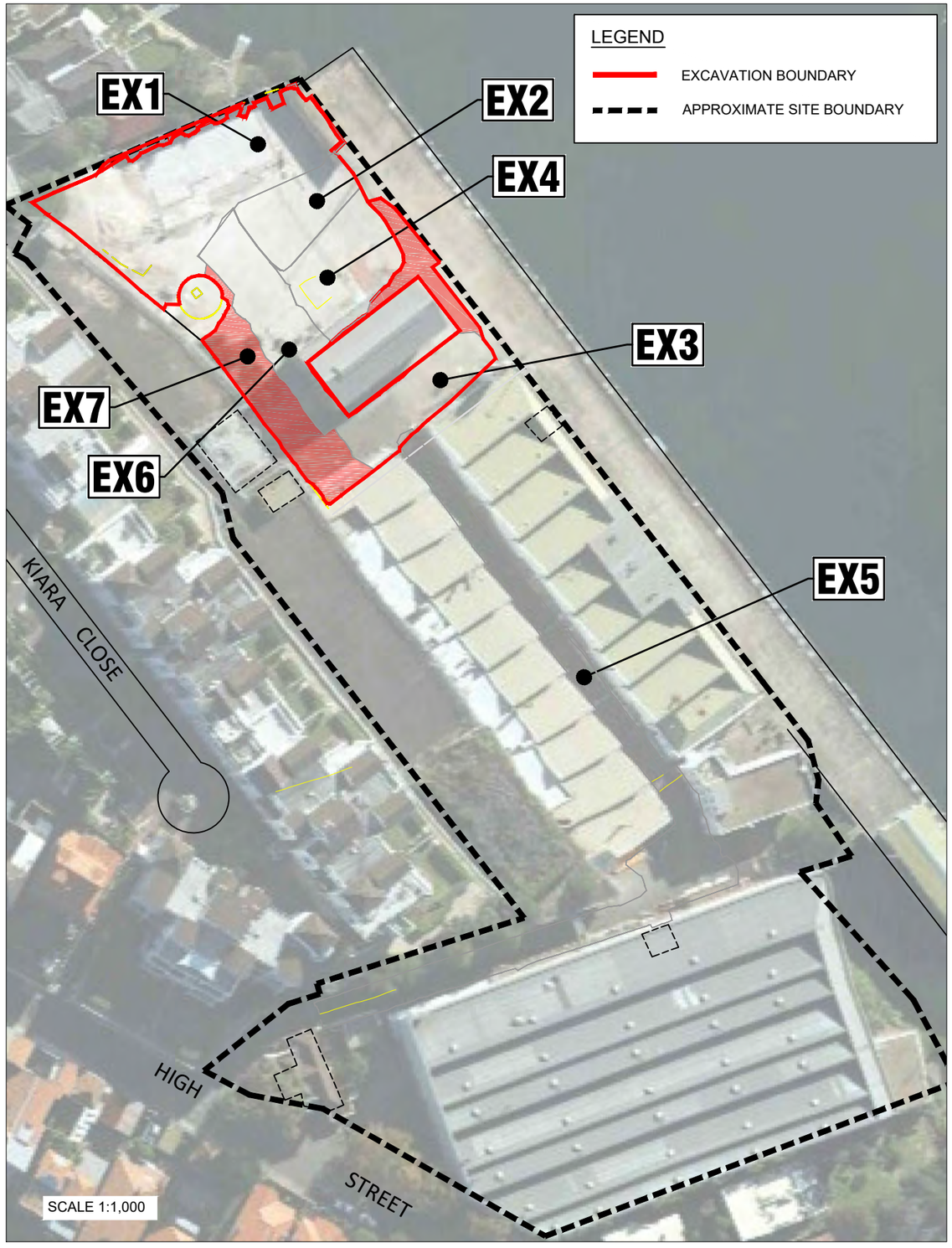
client: THIESS SERVICES

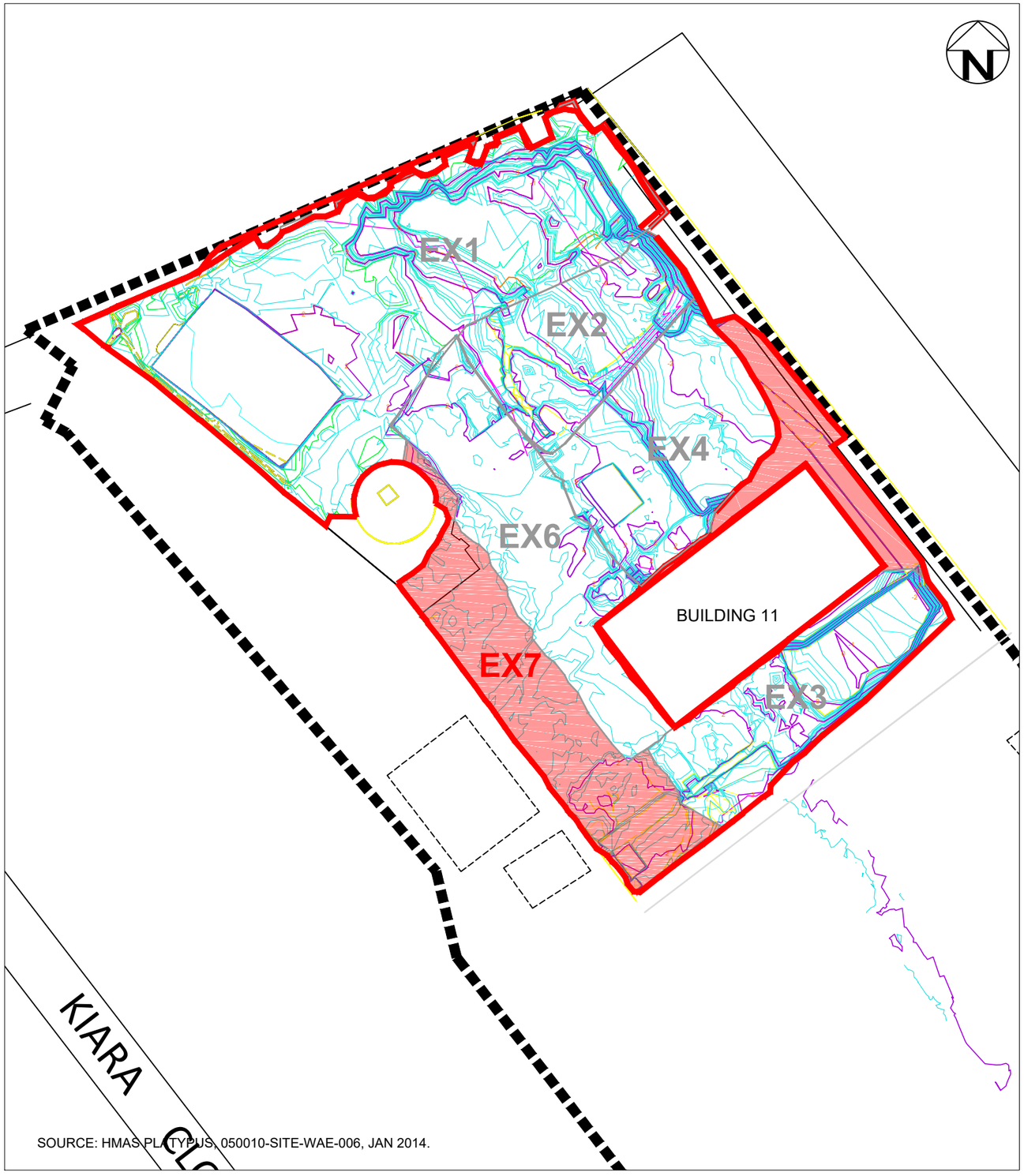
project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 6

project no: ENAURHOD04128AB-R00A

figure no: FIGURE 11





revision	description	drawn	approved	date

IMAGE SOURCE: maps.six.nsw.gov.au/
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2.5 0 5 10

SCALE (metres) 1:250

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A3

coffey

client: THIESS SERVICES

project: SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES

title: REMEDIATION EXCAVATION 7

project no: ENAURHOD04128AB-R00A

figure no: FIGURE 12

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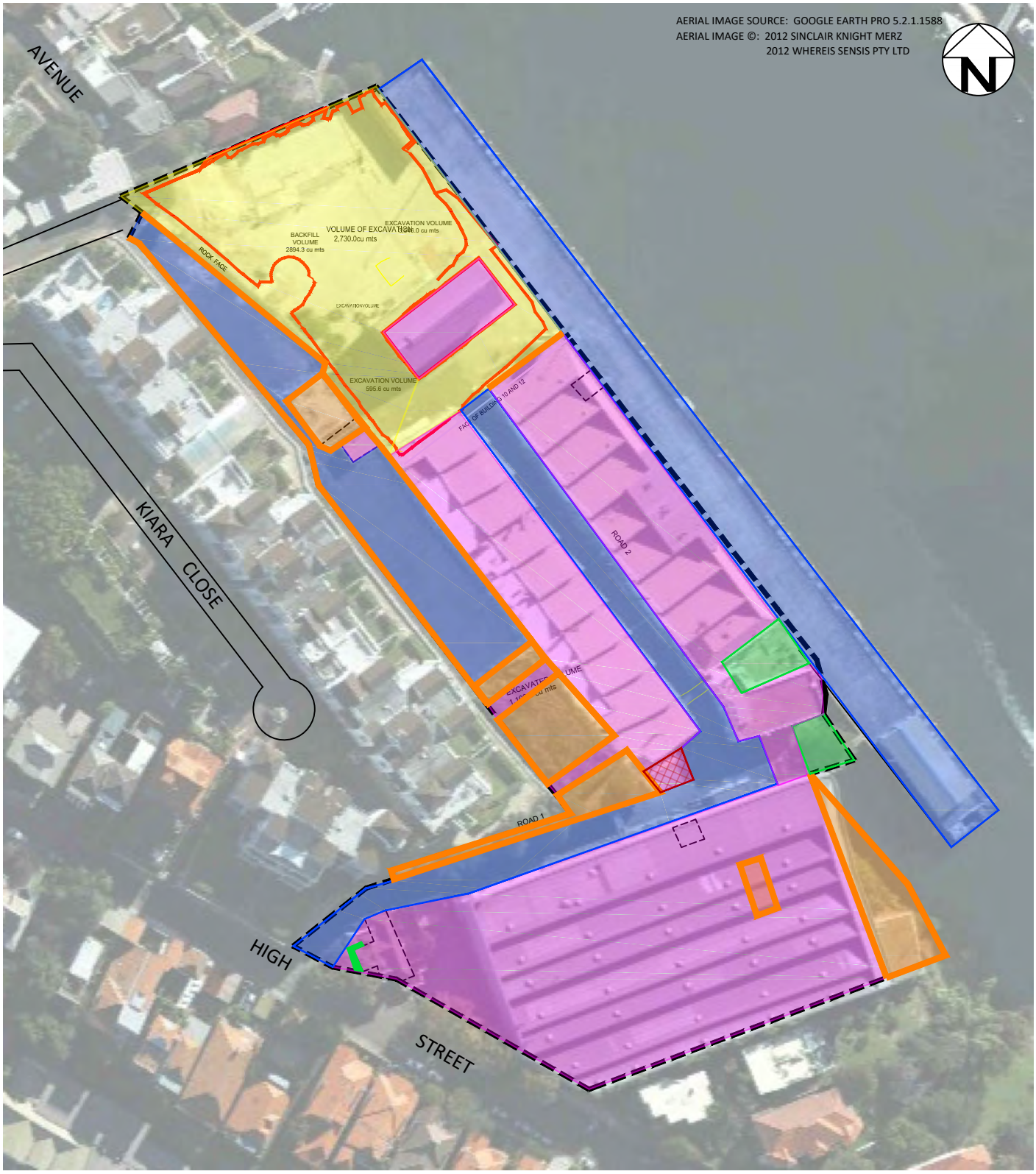


LEGEND

- APPROXIMATE SITE BOUNDARY
- ASPHALT SEALED
- CONCRETE FLOOR SLABS
- EXPOSED SANDSTONE SURFACES
- GRASS
- EXPOSED CAP
- SUBSTATION

10 0 20 40 60

Scale (metres) 1:1250

drawn	MV
approved	GB
date	05/09/14
scale	AS SHOWN
original size	A4

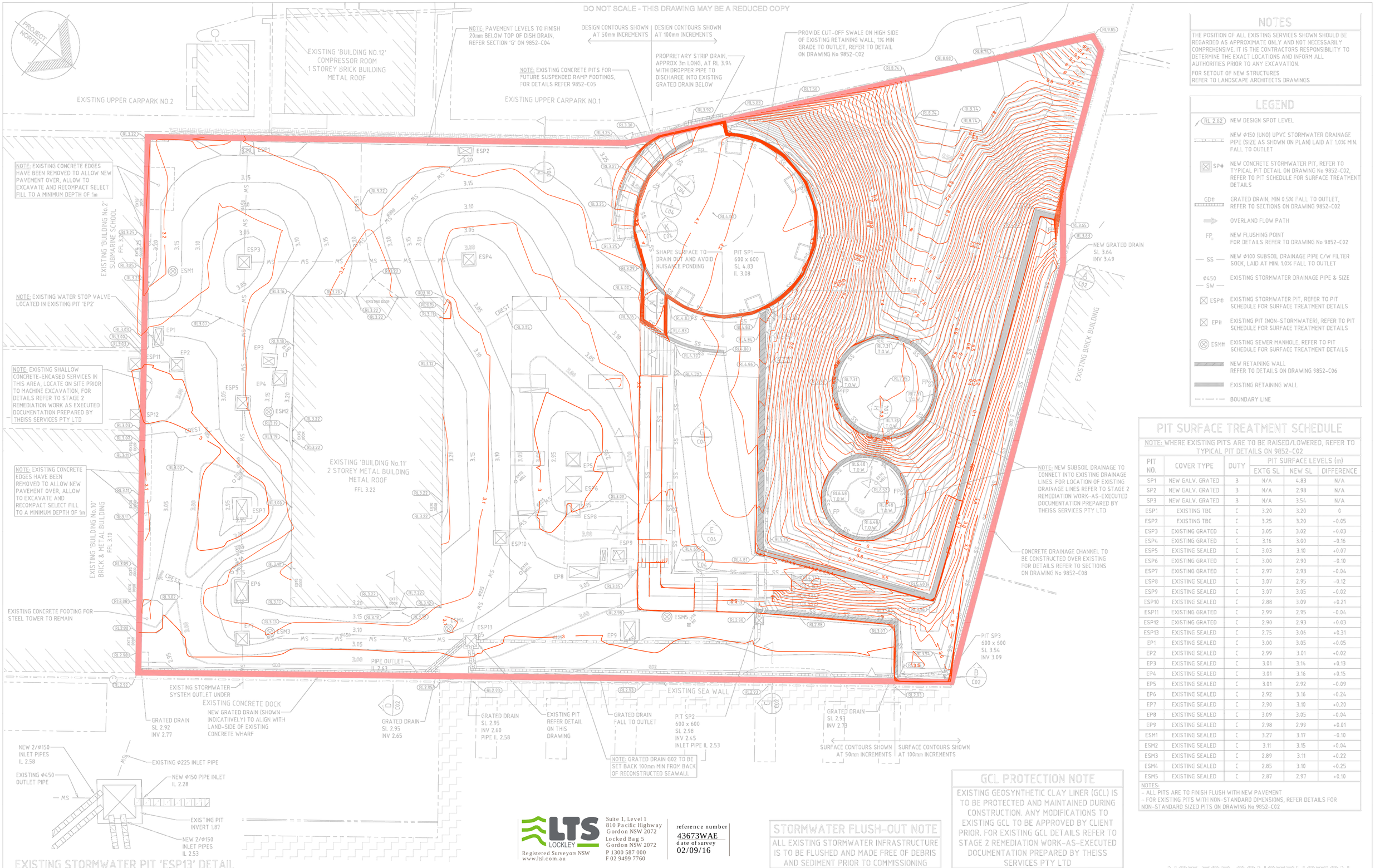
coffey

client:	THIESS SERVICES
project:	SITE VALIDATION, PLATYPUS REMEDIATION PROJECT, 118 HIGH STREET, NORTH SYDNEY, NEW SOUTH WALES
title:	IN-SITU CONTAINMENT
project no:	ENAURHOD04128AB-R00A
figure no:	FIGURE 13
rev.	-

PLOT DATE: 22/01/2015 3:29:38 PM DWG FILE: F:\ENVIPROJECTS\ENAURHOD\ENAURHOD04\GOVIND\ENAURHOD04100-04199\ENAURHOD04128AB PLATYPUS REMEDIATION\ENAU\DRAWINGS\ENAURHOD04128AB-R00A.DWG

Appendix B: Registered Survey Plan of Final Surfaces of Northern Remediation Area

DO NOT SCALE - THIS DRAWING MAY BE A REDUCED COPY



EXISTING STORMWATER PIT 'ESP13' DETAIL

NOT TO SCALE

NOTES

THE POSITION OF ALL EXISTING SERVICES SHOWN SHOULD BE REGARDED AS APPROXIMATE ONLY AND NOT NECESSARILY COMPREHENSIVE. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATIONS AND INFORM ALL AUTHORITIES PRIOR TO ANY EXCAVATION.

FOR SETOUT OF NEW STRUCTURES REFER TO LANDSCAPE ARCHITECTS DRAWINGS

LEGEND

- RL 2.62 — NEW DESIGN SPOT LEVEL
- NEW Φ150 (UNO) UPVC STORMWATER DRAINAGE PIPE (SIZE AS SHOWN ON PLAN) LAID AT 1.0% MIN. FALL TO OUTLET
- SP# — NEW CONCRETE STORMWATER PIT, REFER TO TYPICAL PIT DETAIL ON DRAWING No 9852-C02, REFER TO PIT SCHEDULE FOR SURFACE TREATMENT DETAILS
- GD# — GRATED DRAIN, MIN 0.5% FALL TO OUTLET, REFER TO SECTIONS ON DRAWING 9852-C02
- OVERLAND FLOW PATH
- FP# — NEW FLUSHING POINT FOR DETAILS REFER TO DRAWING No 9852-C02
- SS — NEW Φ100 SUBSOIL DRAINAGE PIPE C/W FILTER SOCK, LAID AT MIN. 1.0% FALL TO OUTLET
- Φ450 SW — EXISTING STORMWATER DRAINAGE PIPE & SIZE
- ESP# — EXISTING STORMWATER PIT, REFER TO PIT SCHEDULE FOR SURFACE TREATMENT DETAILS
- EP# — EXISTING PIT (NON-STORMWATER), REFER TO PIT SCHEDULE FOR SURFACE TREATMENT DETAILS
- ESM# — EXISTING SEWER MANHOLE, REFER TO PIT SCHEDULE FOR SURFACE TREATMENT DETAILS
- NEW RETAINING WALL REFER TO DETAILS ON DRAWING 9852-C06
- EXISTING RETAINING WALL
- BOUNDARY LINE

PIT SURFACE TREATMENT SCHEDULE

NOTE: WHERE EXISTING PITS ARE TO BE RAISED/LOWERED, REFER TO TYPICAL PIT DETAILS ON 9852-C02

PIT NO.	COVER TYPE	DUTY	PIT SURFACE LEVELS (m) EXTG SL	NEW SL	DIFFERENCE
SP1	NEW GALV. GRATED	B	N/A	4.83	N/A
SP2	NEW GALV. GRATED	B	N/A	2.98	N/A
SP3	NEW GALV. GRATED	B	N/A	3.54	N/A
ESP1	EXISTING TBC	C	3.20	3.20	0
ESP2	EXISTING TBC	C	3.25	3.20	-0.05
ESP3	EXISTING GRATED	C	3.05	3.02	-0.03
ESP4	EXISTING GRATED	C	3.16	3.00	-0.16
ESP5	EXISTING SEALED	C	3.03	3.10	+0.07
ESP6	EXISTING GRATED	C	3.00	2.90	-0.10
ESP7	EXISTING GRATED	C	2.97	2.93	-0.04
ESP8	EXISTING SEALED	C	3.07	2.95	-0.12
ESP9	EXISTING SEALED	C	3.07	3.05	-0.02
ESP10	EXISTING SEALED	C	2.88	3.09	+0.21
ESP11	EXISTING GRATED	C	2.99	2.95	-0.04
ESP12	EXISTING GRATED	C	2.90	2.93	+0.03
ESP13	EXISTING SEALED	C	2.75	3.05	+0.31
EP1	EXISTING SEALED	C	3.00	3.05	+0.05
EP2	EXISTING SEALED	C	2.99	3.01	+0.02
EP3	EXISTING SEALED	C	3.01	3.14	+0.13
EP4	EXISTING SEALED	C	3.01	3.16	+0.15
EP5	EXISTING SEALED	C	3.01	2.92	-0.09
EP6	EXISTING SEALED	C	2.92	3.16	+0.24
EP7	EXISTING SEALED	C	2.90	3.10	+0.20
EP8	EXISTING SEALED	C	3.09	3.05	-0.04
EP9	EXISTING SEALED	C	2.98	2.99	+0.01
ESM1	EXISTING SEALED	C	3.27	3.17	-0.10
ESM2	EXISTING SEALED	C	3.11	3.15	+0.04
ESM3	EXISTING SEALED	C	2.89	3.11	+0.22
ESM4	EXISTING SEALED	C	2.85	3.10	+0.25
ESM5	EXISTING SEALED	C	2.87	2.97	+0.10

NOTES:
- ALL PITS ARE TO FINISH FLUSH WITH NEW PAVEMENT
- FOR EXISTING PITS WITH NON-STANDARD DIMENSIONS, REFER DETAILS FOR NON-STANDARD SIZED PITS ON DRAWING No 9852-C02

GCL PROTECTION NOTE

EXISTING GEOSYNTHETIC CLAY LINER (GCL) IS TO BE PROTECTED AND MAINTAINED DURING CONSTRUCTION. ANY MODIFICATIONS TO EXISTING GCL TO BE APPROVED BY CLIENT PRIOR. FOR EXISTING GCL DETAILS REFER TO STAGE 2 REMEDIATION WORK-AS-EXECUTED DOCUMENTATION PREPARED BY THEISS SERVICES PTY LTD

STORMWATER FLUSH-OUT NOTE

ALL EXISTING STORMWATER INFRASTRUCTURE IS TO BE FLUSHED AND MADE FREE OF DEBRIS AND SEDIMENT PRIOR TO COMMISSIONING

LTS LOCKLEY
Registered Surveyors NSW
www.ltsl.com.au
Suite 1, Level 1
810 Pacific Highway
Gordon NSW 2072
Locked Bag 5
Gordon NSW 2072
P 1300 587 000
F 02 9499 7760

reference number 43673WAE
date of survey 02/09/16

NOT FOR CONSTRUCTION

REVISIONS	No.	DATE	DRN	CHK	APP	DRAWING STATUS
	G	07.08.15	AC	MM	"	RE-ISSUED FOR TENDER
	F	28.07.15	AC	MM	"	RE-ISSUED FOR TENDER
	E	03.07.15	AC	MM	"	ISSUED FOR TENDER
	D	01.06.15	AC	MM	"	ISSUED FOR COORDINATION
	C	22.05.15	AC	MM	"	ISSUED FOR COORDINATION
	B	14.05.15	AC	MM	"	ISSUED FOR COORDINATION
	A	08.05.15	AC	MM	"	ISSUED FOR COORDINATION

Lindsay Dynan Pty Limited
Consulting Engineers - A.C.N. 050 541 127
SYDNEY
Suite 2, Level 10, 71 Macquarie Street Sydney NSW 2000
Phone - 02 92485500 Facsimile - 02 92516689
Email - syd@lindsaydynan.com.au
Web - www.lindsaydynan.com.au
Sydney | Perth | Newcastle | Central Coast

CLIENT: ASPECT STUDIOS

TITLE: FINISHED SURFACE LEVELS AND STORMWATER DRAINAGE PLAN

PROJECT: PLATYPUS URBAN PARK
CIVIL WORKS
NEUTRAL BAY, NSW

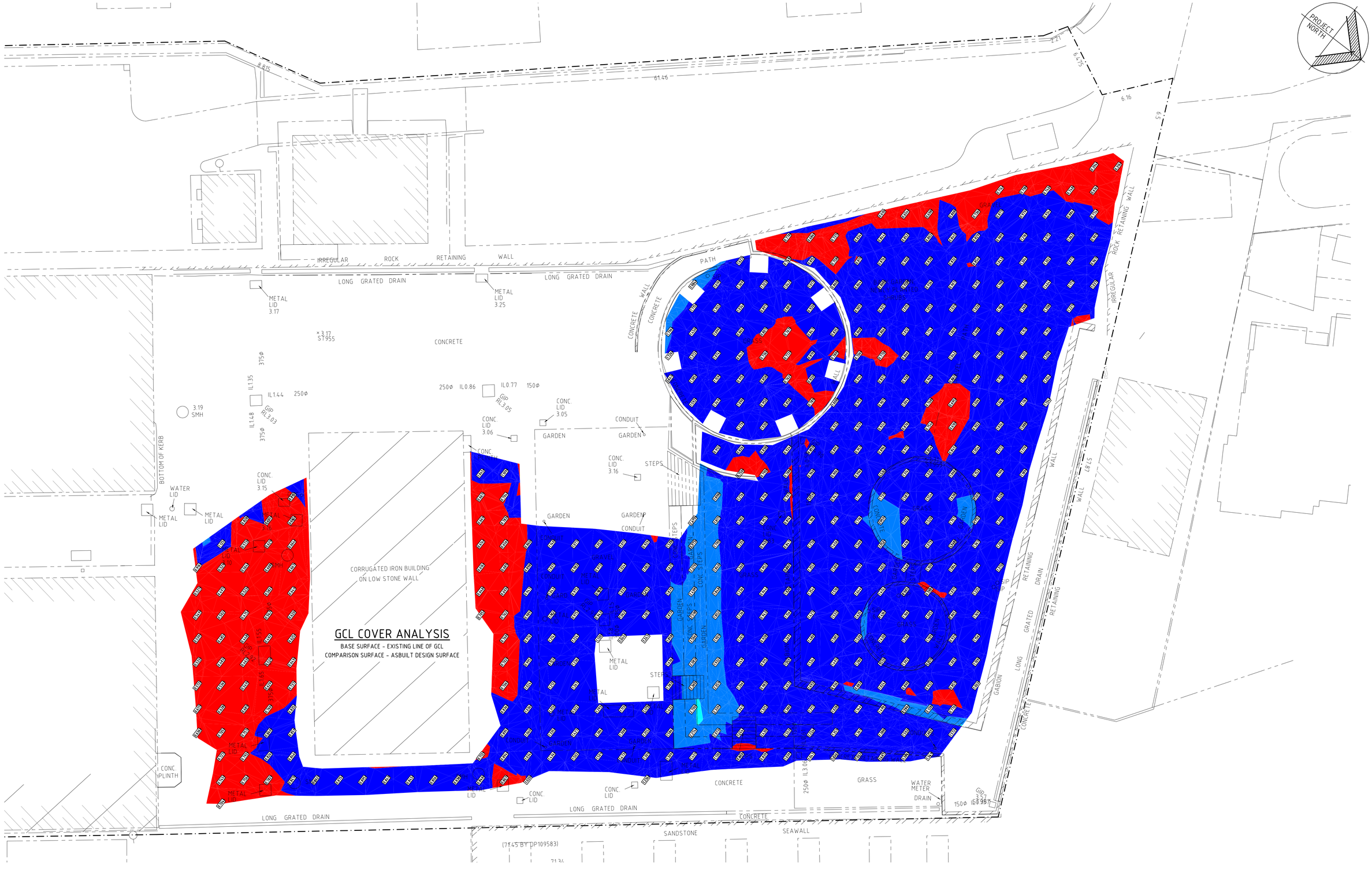
DWG STATUS: FOR TENDER
SHEET SIZE: A1

DRAFTSMAN	PROJECT MANAGER	SCALE
AC	MM	A1 - 1:150

PROJECT REF No.	DRAWING No.	REVISION
9852	C01	G

Appendix C: Registered Survey Plan of Cap Thickness across Northern Remediation Containment Area

DO NOT SCALE - THIS DRAWING MAY BE A REDUCED COPY



AS BUILT GCL COVER ANALYSIS

SCALE 1:150

NOT FOR CONSTRUCTION

REVISIONS

No.	DATE	DRN	CHK	APP	DRAWING STATUS
A	5/10/2016	CT	MM	-	ISSUED FOR INFORMATION

Lindsay Dynan Pty Limited
Consulting Engineers - A.C.N. 050 541 127

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Phone - 02 82485500 Facsimile - 02 92516689
Email - syd@lindsaydynan.com.au
Web - www.lindsaydynan.com.au

Sydney I Perth I Newcastle I Central Coast

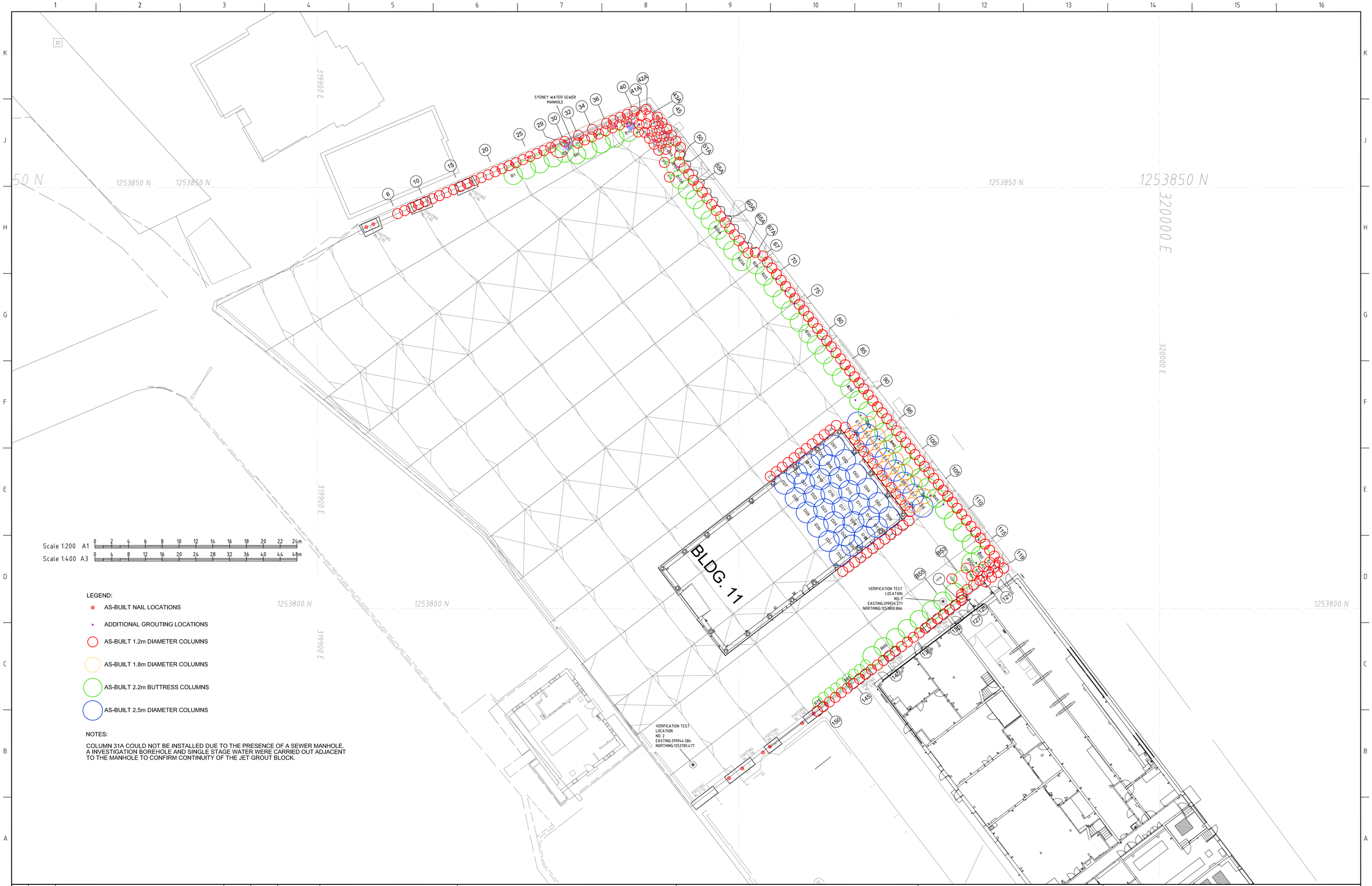
CLIENT: ASPECT STUDIOS

TITLE: AS BUILT DESIGN COMPARISON WITH GCL LAYER

PROJECT: PLATYPUS URBAN PARK
CIVIL WORKS
NEUTRAL BAY, NSW

DWG STATUS			SHEET SIZE
DRAFT COPY			A1
DRAFTSMAN	PROJECT MANAGER	SCALE	
AC	MM	A1 - 1:150	
PROJECT REF No.	DRAWING No.	REVISION	
9852	CSK10	A	

Appendix D: Cut-Off Wall Location and As-Builts



LEGEND:

- AS-BUILT NAIL LOCATIONS
- ADDITIONAL GROUTING LOCATIONS
- AS-BUILT 1.2m DIAMETER COLUMNS
- AS-BUILT 1.8m DIAMETER COLUMNS
- AS-BUILT 2.2m BUTTRESS COLUMNS
- AS-BUILT 2.5m DIAMETER COLUMNS

NOTES:

COLUMN 31A COULD NOT BE INSTALLED DUE TO THE PRESENCE OF A SEWER MANHOLE. A INVESTIGATION BOREHOLE AND SINGLE STAGE WATER WERE CARRIED OUT ADJACENT TO THE MANHOLE TO CONFIRM CONTINUITY OF THE JET GROUT BLOCK.

REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
G	29.7.13	UPDATED FOR BLDG 11 WORKS	BG	DAC	SHB/MC
F	30.4.2013	FIX ERROR IN LEGEND	BG	DAC	SHB/NS
E	5.4.2013	UPDATED FOR SEAWALL INSTALLATION INFORMATION	BG	DAC	SHB/NS
D	7.2.2013	AS-BUILT NORTH & SOUTH WING WALLS	RK	DC	SHB/NS
C	5.2.2013	FOR REVIEW	RK	DC	SHB/NS
B	8.1.2013	AS-BUILT SHEET PILE WALL, COL LOCATIONS	RK	DC	SHB/NS
A	28.11.2012	ISSUED FOR REVIEW	RK	DC	SHB/NS

KELLER GROUND ENGINEERING

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	RK	DC	D Chadwick
DRAWN	BG	DC	DATE 29.07.13

REF:
050010-JGW-WAE-007, 050010-JGW-WAE-008 & 050010-JGW-WAE-012

Australian Government
Sydney Harbour Federation Trust

Thiess services
Thiess Services Pty Ltd
A.C.N. 010 725 247 A.B.N. 69 010 725 247 43 88 PHILLIP STREET, PARRAMATTA, NSW 2150
PHONE (02) 8892 5900 FAX (02) 8892 5901

HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

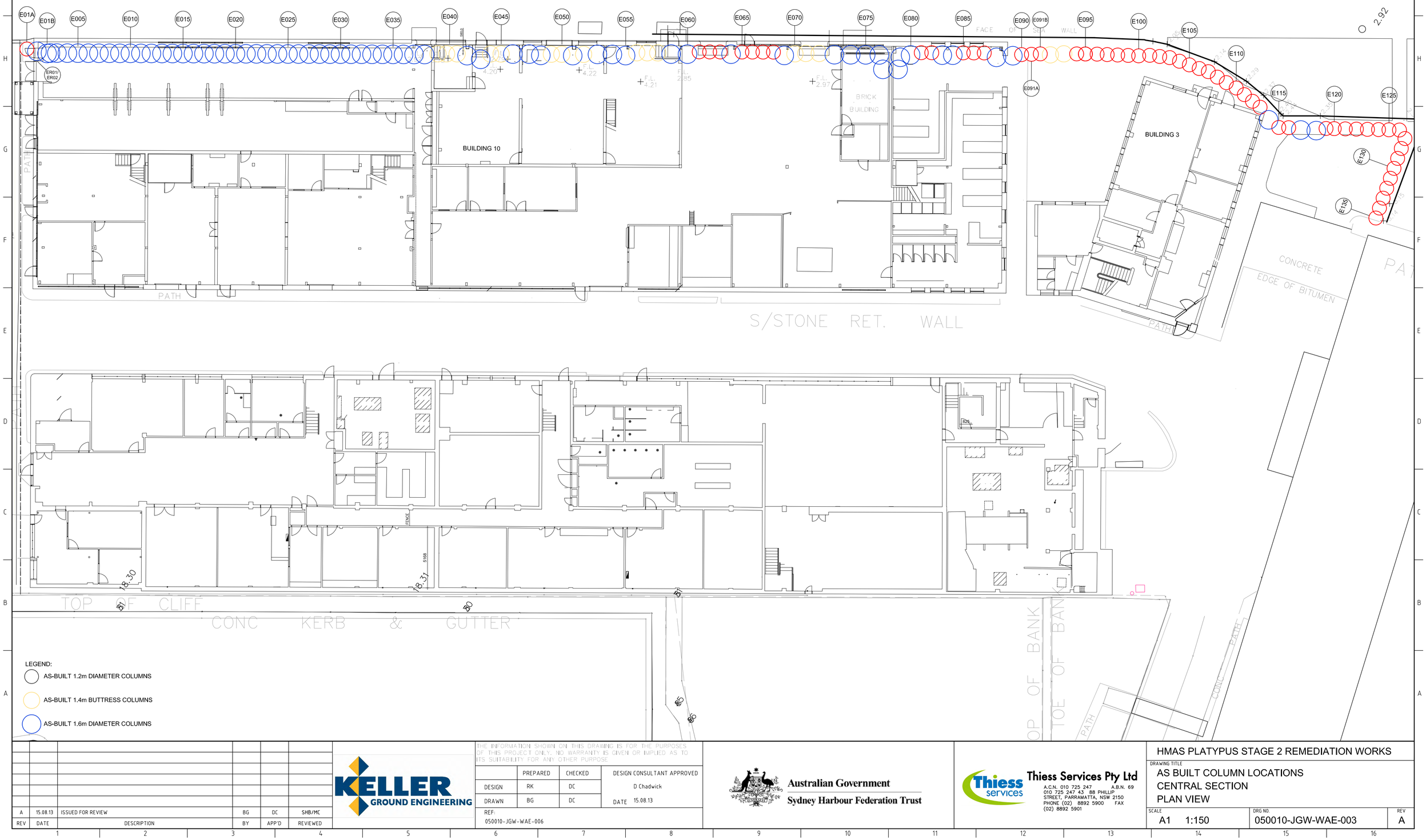
DRAWING TITLE
AS BUILT COLUMN AND NAIL LOCATIONS
NORTHERN SECTION
PLAN VIEW

SCALE	DRG NO.	REV
A1 1:200	050010-JGW-WAE-002	G

Scale 1:150 A1

Scale 1:300 A3

Notes:
1. Column diameters and positions shown are at slab level



LEGEND:

- AS-BUILT 1.2m DIAMETER COLUMNS
- AS-BUILT 1.4m BUTTRESS COLUMNS
- AS-BUILT 1.6m DIAMETER COLUMNS

REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
A	15.08.13	ISSUED FOR REVIEW	BG	DC	SHB/MC

KELLER GROUND ENGINEERING

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	RK	DC	D Chadwick
DRAWN	BG	DC	DATE 15.08.13

REF: 050010-JGW-WAE-006

Australian Government
Sydney Harbour Federation Trust

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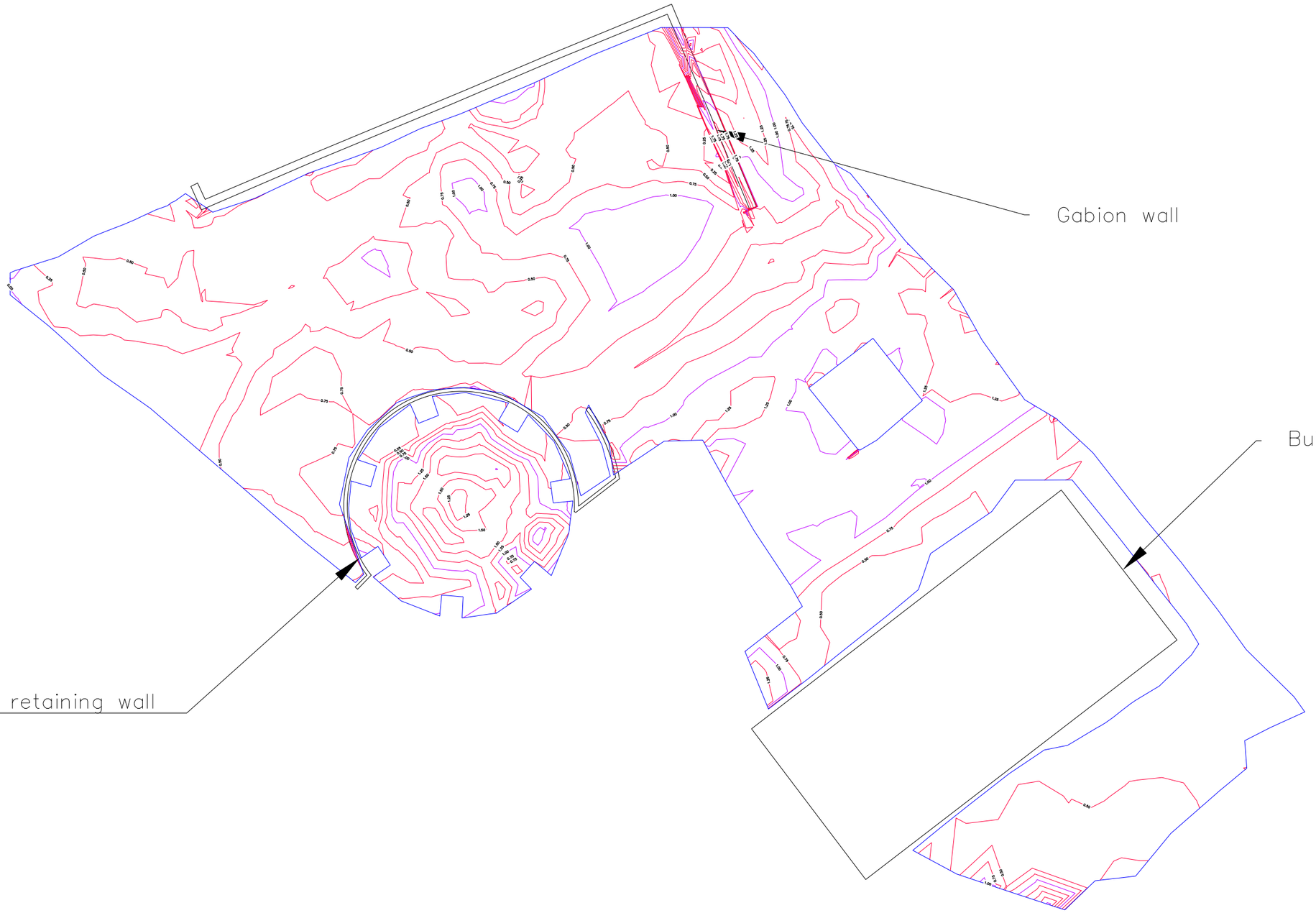
HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
AS BUILT COLUMN LOCATIONS
CENTRAL SECTION
PLAN VIEW

SCALE	DRG NO.	REV
A1 1:150	050010-JGW-WAE-003	A

Appendix E: Registered Survey of Extent of GCL and As-Builts



REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
A	20.10.2014	ISSUED FOR REVIEW	SHB	SHB	BW

THE INFORMATION SHOWN ON THIS DRAWING IS FOR THE PURPOSES OF THIS PROJECT ONLY. NO WARRANTY IS GIVEN OR IMPLIED AS TO ITS SUITABILITY FOR ANY OTHER PURPOSE

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	SHB	BW	S Barthelme
DRAWN	SHB	BW	DATE 20.10.2014
REF:			

Australian Government
Sydney Harbour Federation Trust

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HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
BULK EARTHWORKS CAPPING DEPTH ABOVE GCL AS BUILT

SCALE	DRG NO.	REV
A1 1:150	050010-CAP-WAE-012	A

Canceled!

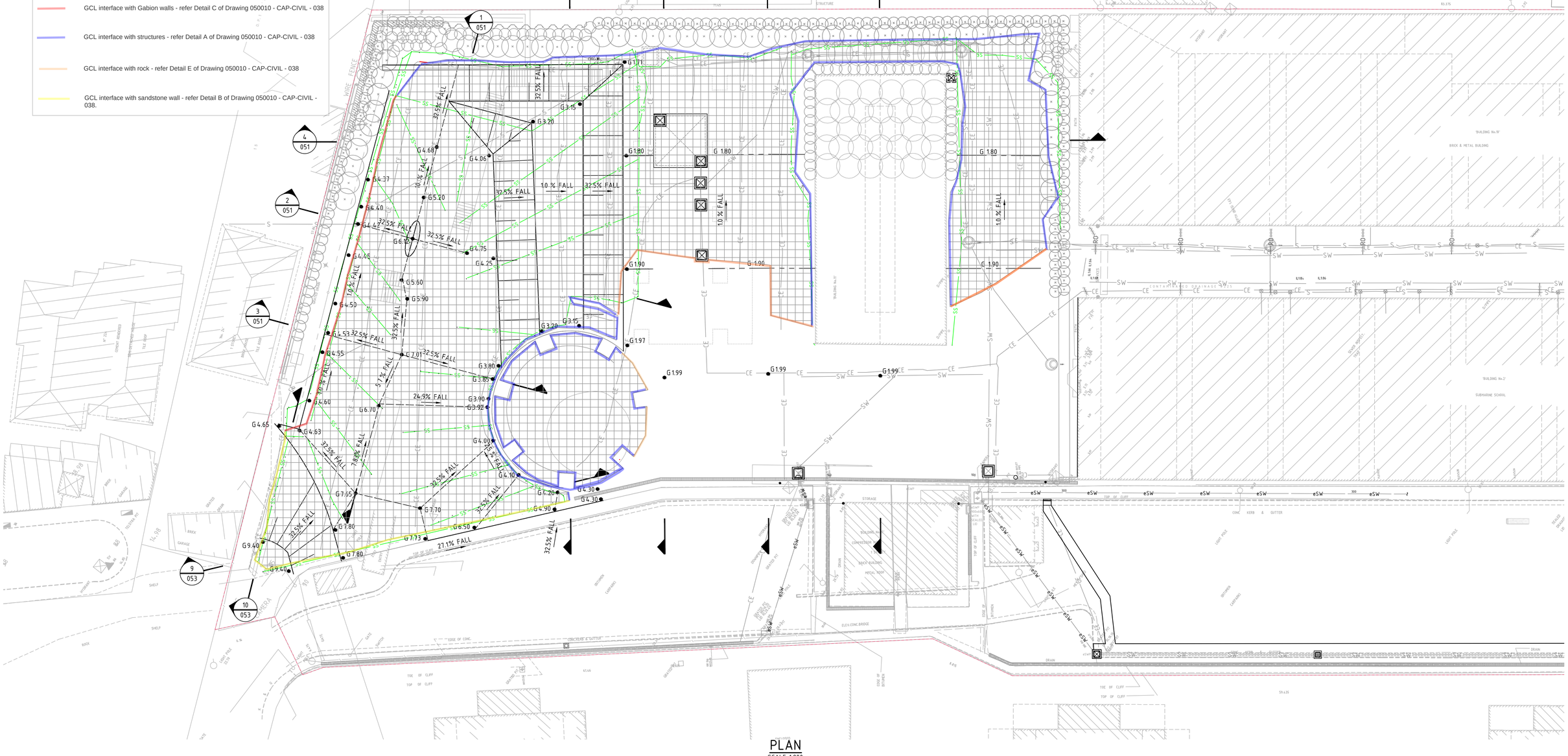
NORTH

LEGEND

● G 10.00	GEOSYNTHETIC CLAY LINER LEVEL
	EXTENT OF GEOSYNTHETIC CLAY LINER AND TREATED FILL

GCL interfaces - Legend

- GCL interface with Gabion walls - refer Detail C of Drawing 050010 - CAP-CIVIL - 038
- GCL interface with structures - refer Detail A of Drawing 050010 - CAP-CIVIL - 038
- GCL interface with rock - refer Detail E of Drawing 050010 - CAP-CIVIL - 038
- GCL interface with sandstone wall - refer Detail B of Drawing 050010 - CAP-CIVIL - 038.



PLAN
SCALE 1:200

5 4 3 2 1 0 5 10
DETAILS SCALE 1:200 @ A1

REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
WAE	05.07.16	WORK AS EXECUTED	DRC	RPH	RBD

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	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	DC	RPH	
DRAWN	DC	RBD	DATE 12.09.2013

REF: MMD-298850-C-DR-CC01-GEOSYNTHETIC DRAINAGE PLAN.dwg

Australian Government
Sydney Harbour Federation Trust

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HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
GEOSYNTHETIC DRAINAGE LAYER PLAN

SCALE	DRG NO.	REV
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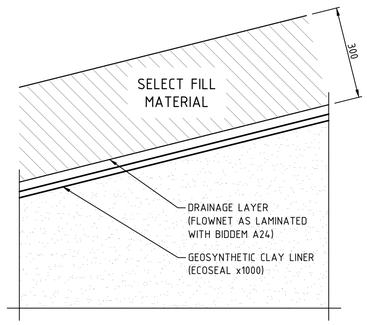
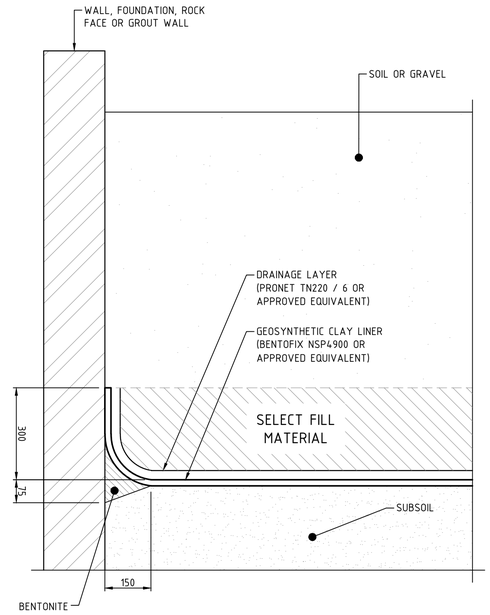
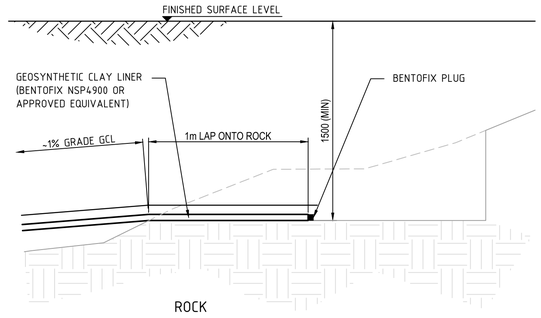


GEOSYNTHETIC CLAY LINER



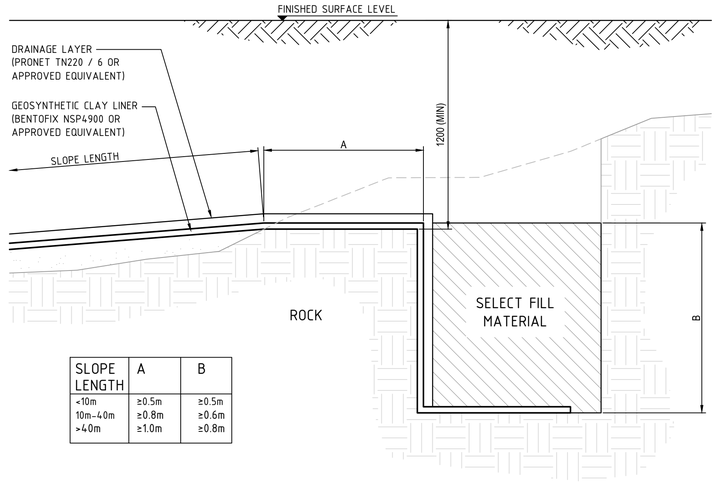
DETAIL SCALE 1:10 — A / 051, 052, 053

SEALING GEOSYNTHETIC CLAY LINER TO STRUCTURES



DETAIL SCALE 1:10 — E / 053

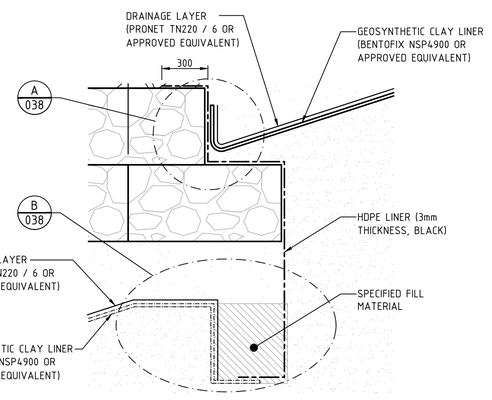
ANCHORING TRENCH FOR GEOSYNTHETIC CLAY LINER



SLOPE LENGTH	A	B
<10m	≥0.5m	≥0.5m
10m-40m	≥0.8m	≥0.6m
>40m	≥1.0m	≥0.8m

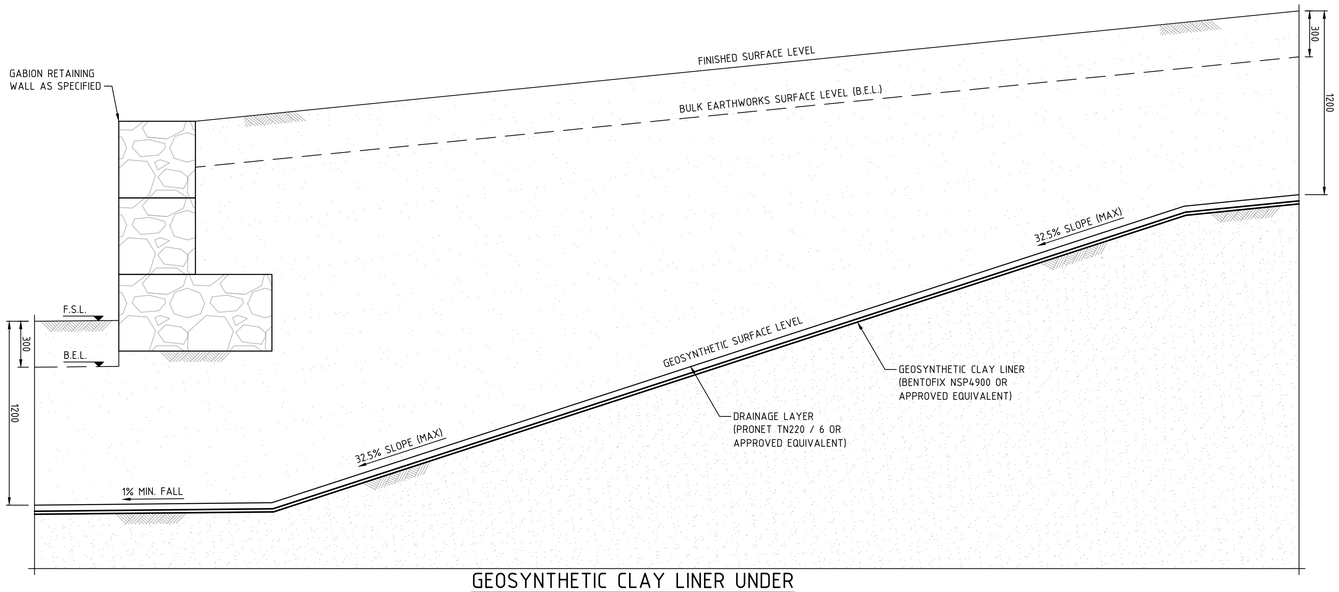
DETAIL SCALE 1:10 — B / 053

ANCHORING TRENCH FOR GEOSYNTHETIC CLAY LINER



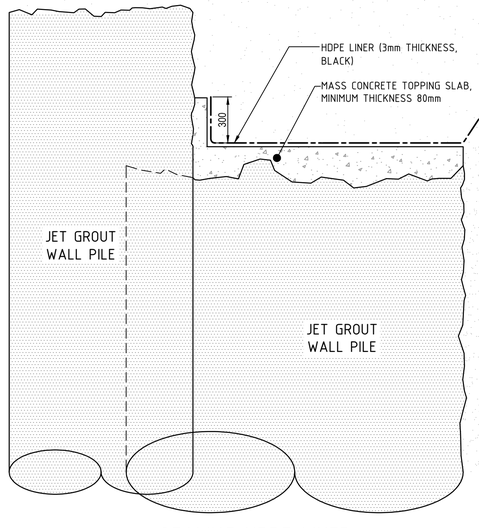
DETAIL SCALE 1:20 — C / 051

GEOSYNTHETIC CLAY LINER AT GW4 GABION WALLS



GEOSYNTHETIC CLAY LINER UNDER RETAINING WALL - TYPICAL DETAIL

SCALE 1:20



DETAIL SCALE 1:20 — D / 051

SEALING HDPE LINER TO GROUT WALL

0.1 0 0.2 0.4 0.6
DETAILS SCALE 1:10 @ A1

0.5 0.25 0 0.5 1.0
DETAILS SCALE 1:20 @ A1

REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
WAE	20.02.15	WORK AS EXECUTED	DRC	RPH	RBD

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stleonards@hughestrueman.com.au

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	DC	RPH	
DRAWN	DC	RBD	DATE 05.07.2013

REF: MMD-298850-C-DR-CC01-GEOSYNTHETIC DRAINAGE DETAILS.dwg

Australian Government
Sydney Harbour Federation Trust

THIESS

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HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
GEOSYNTHETIC DRAINAGE LAYER DETAILS

SCALE	DRG NO.	REV
A1 1:20	050010-CAP-CIVIL-038	WAE

Appendix F: Specifications for Liners used in Cap

bidim®

Nonwoven Geotextiles

Technical Data Sheet

QUALITY - SUPPORT - EXPERTISE

GEOFABRICS®

Specifications

bidim® Geotextiles – Typical and MARV Values

bidim® geotextiles are manufactured in accordance to ISO 9001:2008, Cert No: QEC1773.

All **bidim®** "A" range nonwoven, needle punched geotextiles are made in Australia.

	Test	Standard	Units		A12	A14	A19	A24	A29	A34	A39	A44	A49	A64
Mechanical Properties	Wide Strip Tensile Strength (MD/XMD)	AS3706.2-12	kN/m	Typical	9.4/8.0	11.0/9.5	14.0/12.8	16.0/14.2	19.0/17.0	21.5/21.0	26.5/25.5	29.5/28.0	37.0/34.0	41.5/38.0
				MARV	7.5/6.6	9.0/7.7	12.0/10.0	14.0/12.0	15.5/14.5	18.5/17.5	22.0/21.0	24.5/24.0	31.5/30.5	35.8/33.0
	Grab Tensile Strength (MD/XMD)	AS3706.2-12	N	Typical	620/570	720/650	950/860	1,130/1,060	1,280/1,200	1,430/1,350	1,900/1,670	2,100/1,910	2,850/2,570	3,010/2,850
				MARV	510/430	600/530	795/730	850/800	1,100/1,000	1,270/1,210	1,590/1,490	1,800/1,680	2,490/2,200	2,620/2,460
	Trapezoidal Tear Strength (MD/XMD)	AS3706.3-12	N	Typical	240/230	300/270	350/330	430/400	490/450	540/510	630/610	753/700	915/910	1,060/1,010
				MARV	205/180	240/220	295/280	320/310	380/360	440/410	530/510	575/550	750/740	800/770
	CBR Burst Strength	AS3706.4-12	N	Typical	1,550	1,720	2,250	2,700	3,200	3,600	4,400	4,800	6,400	6,850
				MARV	1,275	1,500	1,925	2,450	2,800	3,300	3,950	4,450	5,850	6,300
	G Rating	Austroads	G	Typical	1,150	1,500	1,950	2,230	2,480	2,800	3,450	3,900	5,150	5,400
				MARV	900	1,250	1,550	1,800	2,160	2,510	3,100	3,450	4,600	5,000
(MD) = Machine Direction Strength (XMD) = Cross Machine Direction Strength														
Hydraulic Properties	Pore Size	AS3706.7-03	μm	Typical	120	110	110	100	90	90	80	80	80	80
	Permittivity	AS3706.9-12	s^{-1}	Typical	2.50	2.35	2.20	2.00	1.85	1.65	1.25	1.10	0.90	0.80
	Coefficient of Permeability	AS3706.9-12	m/s x 10^{-4}	Typical	33	33	33	33	33	33	33	33	33	33
	Flow Rate @ 100mm Head	AS3706.9-12	l/m²/s	Typical	250	235	220	200	185	165	125	110	90	80

The data and specifications contained in this table are obtained from the manufacturer's laboratory testing. To ensure this information is current please contact your local branch of Geofabrics Australasia.

The product properties listed on this sheet include both **Typical** and **Minimum Average Roll Values** (MARV) for machine and cross machine directions (MD/XMD).
Definitions of these terms are included on the reverse side of this data sheet. All testing has been carried out by a NATA accredited laboratory and copies of test certificates are available on request.

Definition of Terms

ISO Accreditation

ISO9001 is a manufacturing quality assurance system under which **bidim®** is manufactured. Please refer to the **bidim®** Quality Assurance & Control Manual for testing frequencies.
Note; not all manufacturers test to the same frequency.

Machine Direction (MD)

The direction in a machine-made fabric, parallel to the direction of motion of the material through the processing machine (i.e. along the length of the roll).

Cross Machine Direction (XMD)

The direction in a machine made fabric, perpendicular to the direction of motion of the material through the processing machine (i.e. across the width of the roll).

Typical Value

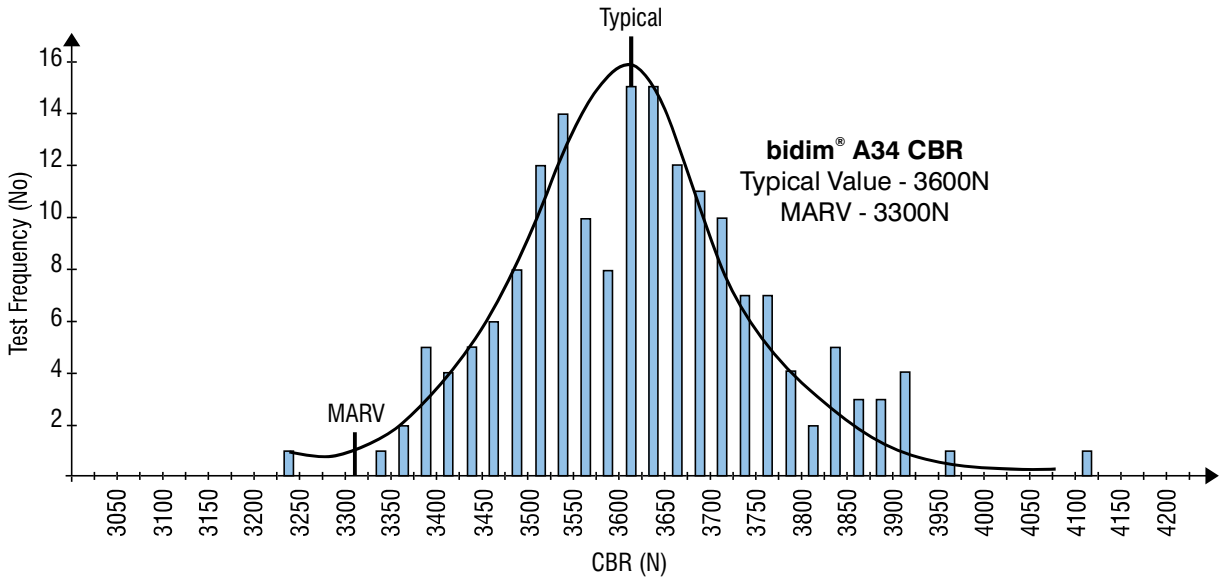
A typical value is the arithmetic mean of a set of results (refer to diagram below). This implies that 50% of the tested specimens will typically exceed this value and 50% will typically not meet this value.

Minimum Average Roll Value (MARV)

MARV is a statistical derivation for any distribution of data. It is defined as the mean or typical value less 2 standard deviations (refer to diagram below). Mathematically it is implied that 97.5% of the tested specimens will exceed the MARV.

Indicative Results Spread

(for a given test method for a given period of time)



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Fax: (03) 8586 9186	Fax: (02) 9821 3670	Fax: (02) 4950 5895	Fax: (02) 6653 5706	Fax: (08) 9249 5447	Fax: (08) 8162 5755

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Fax: (03) 6273 0686	Fax: (07) 3279 1589	Fax: (07) 4774 8655	Fax: (07) 4155 9968	Fax: (07) 5563 3727	Fax: (08) 8984 1614

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M018-05/12

ELCOSEAL®

Geosynthetic Clay Liners

Technical Data Sheet

QUALITY - SUPPORT - EXPERTISE

GEOFABRICS®

ELCOSEAL® Bentonite Specification

ELCOSEAL® Geosynthetic Clay Liners contain a sodium bentonite processed to exceed the relevent requirements of API Spec 13A, for which the bentonite supplier is a licensed manufacturer. The unique swelling properties and low permeability performance of ELCOSEAL® 's sodium bentonite can be attributed to the following properties.

PROPERTY	TEST METHOD	UNITS	VALUE
Bentonite Particle Size	Dry Screen AS 1289-3.6.2[1]	% passing 75μm % ≤ 0.5μm	≥ 75 ≥ 55
Swell Index	ASTM D 5890[2]	mL/2g	≥ 24
Fluid Loss	ASTM D 5891[3]	mL	≤ 15
Montmorillonite Content	XRD Quantitative Mineralogy Analysis[4]	% of Bulk Sample	≥ 70
Montmorillonite Content of Bentonite Particles ≤ 0.5μm	XRD Quantitative Mineralogy Analysis[4]	% ≤ 0.5μm	≥ 90
Calcium Carbonate Content ($CaCO_3$)	XRD Quantitative Mineralogy Analysis[5]	% of Bulk Sample	≤ 2
Layer Charge and Layer Charge Distribution	Chemical analysis and structural formula calculation[6]	e^- per unit cell ($O_{20}(OH)_4$) % in tetrahedral sheet	0.75 - 0.90 < 35
Cation Exchange Capacity (CEC)	NH_4 displacement[7] Barium Saturation Method - (e.g. Battaglia et al., 2006)[7] Methylene Blue[7]	cmol/kg of Bulk Sample	70 - 110

EXPLANATION OF TEST METHODS

1. **BENTONITE PARTICLE SIZE – AS 1289-3.6.2 – 'Methods of testing soils for engineering purposes - Soil classification tests - Determination of the particle size distribution of a soil - Analysis by sieving in combination with hydrometer analysis (subsidiary method)'** – Particle size provides an indication of the reactive surfaces. Smaller particle sizes generally react more efficiently and effectively with water to result in better swelling, lower fluid loss, higher swelling pressure, greater gel strength and lower permeability.

2. **SWELL INDEX - ASTM D5890 – 'Standard Test Method for Swell Index of Clay Mineral Component of Geosynthetic Clay Liners'** – This is an index test that evaluates the swelling potential of the bentonite component of a GCL. The index relates to bulk swelling under minimal confinement. The swell index is generally inversely related to GCL permeability, ie. the higher the swell index, the lower the GCL permeability.

3. **FLUID LOSS - ASTM D5891 – 'Standard Test Method for Fluid Loss of Clay Component of Geosynthetic Clay Liners'** – This is an index test that evaluates the fluid loss properties of the bentonite component of a GCL, under 100psi (690 MPa) pressure, over a specified period of time. A low Fluid Loss value is indicative of the ability of the bentonite to restrict movement of liquid under load. Fluid Loss is directly related to GCL permeability, ie. the lower the fluid loss, the lower the GCL permeability.

4. **MONTMORILLONITE CONTENT – XRD Quantitative Mineralogy Analysis** – The method enables quantification of the mineralogy of a bentonite by powder X-ray diffraction and Reitveldt refinement. The XRD method can be performed on bulk bentonite, showing montmorillonite content as a % of bulk; or on size-fractionated materials, showing montmorillonite content as a % of size fraction (ie. ≤0.5μm).

   REFERENCE

   Taylor, J.C., Hinczak, (2004). Reitveldt Made Easy. Sietronics, Pty Ltd, Belconnen Australia, 201p.

5. **CALCIUM CARBONATE CONTENT – 'XRD Quantitative Mineralogy Analysis'** – As for Montmorillonite content, quantitative mineralogy analysis enables quantification of carbonate minerals present in bentonite.

6. **LAYER CHARGE AND LAYER CHARGE DISTRIBUTION – 'Chemical analysis and structural formula calculation'** – This method enables calculation, from chemical analysis, of layer charge characteristics of the <0.2 micron smectite clay component of a GCL. Chemical analysis is quantified by XRF on calcium saturated purified smectite samples. Smectite layer charge is responsible for the cation exchange capacity of bentonite, but also influences swelling, sealing and gel formation. Layer charge values <0.90e- per unit cell in combination with a tetrahedral layer charge <35%, indicates a good swelling bentonite.

   REFERENCES

   1.Norrish, K., Hutton,J.T. (1969). "An accurate X-ray spectroscopic method for the analysis of a wide range of geologic samples", Geochemical Cosmochimical Acta, 33, 431-453.

   2.Bodine, M.W.Jr. (1987). "CLAYFORM: A FORTRAN 77 computer program apportioning the constituents in the chemical analysis of a clay or other silicate mineral in a structural formula", Computers and Geosciences, 13:77-88.

7. **CATION EXCHANGE CAPACITY – 'NH_4 Displacement Method'** – 'This method has traditionally been used to determine CEC in SOILS. The NH_4 displacement method can be modified to enable direct determination of the cation exchange capacity of the bentonite component of a GCL. The amount of NH_4 retained by the clay is quantified by Inductively Coupled Plasma Atomic Absorption Spectrometry (ICP-AAS). This method can be performed on the bulk bentonite, in which case "Bentonite CEC" is recorded; or on the monomineralic smectite (<2.0 micron) isolated from the bentonite, in which case the "Smectite CEC" is recorded. The ranges in CEC values specified provide the best combination of good swelling and cation retention capabilities – see Note 6 - **LAYER CHARGE AND LAYER CHARGE DISTRIBUTION.**

   or 'Barium Saturation Method' – 'The barium (Ba) displacement method enables direct determination of the cation exchange capacity of the carbonate free fractions of the bentonite component of a GCL. The amount of Ba retained by the clay is quantified by X-ray Fluorescence (XRF). This method can be performed on the carbonate free bulk bentonite, in which case "Bentonite CEC" is recorded; or on the carbonate free monomineralic smectite isolated from the bentonite, in which case the "Smectite CEC" is recorded. The ranges in CEC values specified provide the best combination of good swelling and cation retention capabilities – see Note 6 – **LAYER CHARGE AND LAYER CHARGE DISTRIBUTION.**

   REFERENCES

   Wang, M.K., Wang, S.L., Wang W.M. 1996. Rapid Estimation of Cation-exchange Capacities of Soils and Clays with Methylene Blue Exchange. Soil Science Society of America J. 60:138-141.

ELCOSEAL® GCL Specification

ELCOSEAL® is a New Generation Geosynthetic Clay Liner (GCL) made from quality polypropylene geotextiles and premium grade sodium bentonite powder mined in Australia. ELCOSEAL® GCL's are fibre-reinforced by needle-punching the composite across the entire surface area of the product. Unique to this product, the high tenacity fibres are then thermally-locked to ensure high long-term shear strength.

PROPERTY		TEST METHOD	MQC[1] FREQUENCY	UNITS	ELCOSEAL® GRADE			
					X800	X1000	X2000	X3000
GCL Hydraulic Properties								
Hydraulic Conductivity, k	MaxArv[2]	ASTM D 5887	40,000m²	m/s	3.5×10^{-11}	2.8×10^{-11}	3×10^{-11}	2×10^{-11}
	Typical[3]				2×10^{-11}	1.6×10^{-11}	1.6×10^{-11}	1.5×10^{-11}
GCL Components - Mass								
Cover Nonwoven Geotextile Mass per Unit Area	MARV[4]	AS 3706.1	10,000m²	g/m²	220	270	270	290
	Typical				280	300	300	330
Bentonite Mass per Unit Area @ 0% moisture content	MARV	ASTM D 5993	2,500m²	g/m²	3,600	4,000	3,700	4,250
	Typical				4,100	4,500	4,250	4,700
Carrier / Composite Geotextile Mass per Unit Area	MARV	AS 3706.1	70,000m²	g/m²	110	110	380	380
	Typical				110	110	410	410
Geotextile Configuration (Carrier / Cover)					W / NW[5]	W / NW	W+NW / NW	W+NW / NW
GCL - Mass								
GCL Total Mass per Unit Area @ 0% moisture content	MARV	ASTM D 5993	2,500m²	g/m²	3,930	4,380	4,350	4,920
	Typical				4,490	4,910	4,960	5,440
GCL - Strength Properties								
Strip Tensile Strength (MD)[6]	MARV	ASTM D 6768	10,000m²	kN/m	7	8	12	12
	Typical				10	11	15	16
CBR Strength	MARV	AS 3706.4	25,000m²	N	1,400	1,600	3,900	4,100
	Typical				2,000	2,100	4,900	5,300
CBR Elongation	MARV	AS 3706.4	25,000m²	%	10	15	30	30
	Typical				30	40	80	80
GCL - Shear Strength Properties								
Hydrated Peak Internal Shear Strength @ 10kPa Normal Stress	Typical[7]	ASTM D 6243	Periodic	kPa	30	30	35	40
Hydrated Peak Internal Shear Strength @ 30kPa Normal Stress	Typical	ASTM D 6243	Periodic	kPa	50	50	60	70
GCL Longitudinal Edge Treatment								
Bentonite Impregnation - Width ≥ 300mm - Typical				-	√	√	√	√
Edge Sealing				-	√	√	√	√
GCL Roll Dimensions								
Roll Dimensions (Width x Length)				m	4.7 x 45	4.7 x 35	4.7 x 30	4.7 x 30
Maximum Roll Mass			(Weighed every roll)	kg	1,200	1,000	875	950
GCL Spreader Bar Requirement				-	Heavy-Duty[8]	Heavy-Duty[8]	Standard[9]	Standard[9]

NOTES

1. **MQC** = Manufacturing Quality Control – an ongoing system that monitors and tests materials during manufacture to ensure compliance with certification documents and contract specifications.
2. **MaxARV** = Maximum Average Roll Value – a MaxARV is defined as the Mean or Typical values plus 2 standard deviations. Mathematically, it is implied that 97.5% of the results of the tested specimens will be less than the MaxARV. A MaxARV provides a confidence level of 97.5%. **NOTE** – in reference to GCL Permeability, **LOWER IS BETTER**.
3. **Typical** = A typical value is the arithmetic mean of a set of results. This implies that 50% of the tested specimens will typically exceed this value and 50% will typically not meet this value.
4. **MARV** = Minimum Average Roll Value – a MARV is defined as the Mean or Typical values less 2 standard deviations. Mathematically, it is implied that 97.5% of the results of the tested specimens will exceed the MARV. A MARV provides a confidence level of 97.5%.
5. **W**= Woven, **NW**= Nonwoven.
6. **MD** = Roll Machine Direction.
7. **Peak value** reported at 10kPa or 30kPa normal stress. [The reported values are not intended to replace site specific internal shear or interface friction testing required for design].
8. **Heavy-Duty WLL** (Working Load Limit) = 1400kg.
9. **Standard WLL** = 1000kg.

ELCOSEAL® Technical Data Sheet

Contact your nearest Geofabrics Australasia office for any further information on:

General Information

ELCOSEAL®
Installation Guidelines

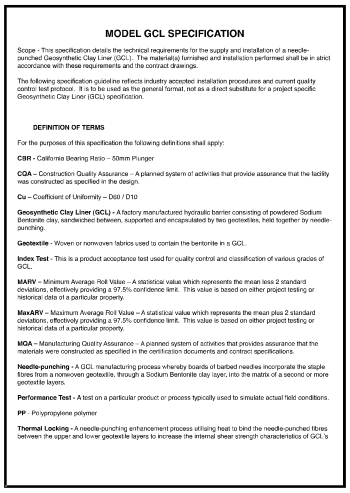
Manufacturers Quality Assurance & Control Manual


ELCOSEAL GCL TECHNOTE 6

GCL Technical Notes


ELCOSEAL BENTONITE TECHNOTE 1

Bentonite Technical Notes


MODEL GCL SPECIFICATION

GCL Model Specification

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M123 - 04/12

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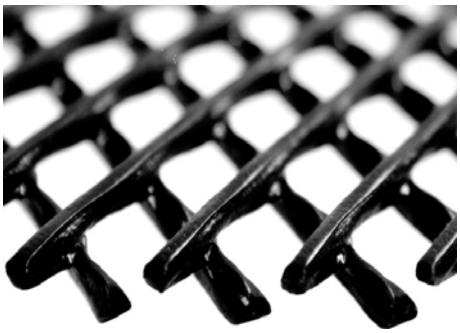
FAX 34-93-842 57 01
web: www.intermas.com
e-mail: geo@intermas.com

INTERDRAIN

M 5

Drainage geonet



PRODUCT DESCRIPTION:

INTERDRAIN M5 is a high-density polyethylene (HDPE) geonet. The geonet is made with 2 overcrossed strands at 60º, whose geometry create channels with a high flow capacity, also under pressure and at very low gradients.

FUNCTION:
DRAINAGE.

MAIN USES:
Landfill capping, new landfills, water reservoirs, horizontal drainage in embankments and platforms of roads, railways, trams and other trafficked areas, retaining structures, bridges, foundations, basements, canals, cut and cover tunnels, tunnels and other underground structures, gardens and sport fields.

Characteristics		Value	Unit	Standard
Drainage geonet				
Polymer		High-density polyethylene (HDPE)		
Carbon black		1,2 - 2,5	%	ASTM D 1603
Density		> 0,94	g / cm^3	ASTM D1505
Thickness at 2 kPa / 200 kPa		5,2 / 4,8	mm	ISO 9863-1
Mass per unit area		650	g / m^2	ISO 9864
Peak tensile strength MD / CD		7,0 / 2,5	kN / m	ISO 10319
Elongation at peak, MD / CD		20 / 90	%	ISO 10319
CBR		0,6	kN	ISO 12236
Flow capacity in their plane, MD			l / m·s	ISO 12958 (1)
i = 1,0	σ = 20 kPa	2,00		
	σ = 50 kPa	1,82		
	σ = 200 kPa	1,44		
	σ = 400 kPa	1,00		

INTERDRAIN standard roll format is **2 or 4 meters-wide**.

(1) ISO 12958-1999 with 380*300 mm specimens and rigid plates (hard-hard).The tolerance is ±30%.
i : Hydraulic gradient
MD : Machine direction (longitudinal)
CD : Cross machine direction (transversal)
σ: Normal stress

This information are typical values based on our present state of knowledge and is intended to provide general notes on our products and their uses.

CE Certificate of conformity
0099/CPD/A42/0013
0099/CPD/A42/0014

AENOR ER Empresa Registrada ER-0061/2/94

AENOR Gestión Ambiental CGM-98/007

April 2010

Megaflo®
Panel Drain System

General Brochure

QUALITY - SUPPORT - EXPERTISE

GEOFABRICS®

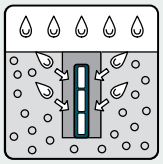
Please read the important notice at the end of this brochure

Megaflo® panel drain provides the dimensional stability and field-proven structural strength for quick, effective subsurface drainage. **Megaflo®** consists of a perforated HDPE core wrapped with **bidim®** nonwoven geotextile to prevent soil ingress into the drainage system.

Performance is the distinguishing feature of the panel drain due to its ability to rapidly collect and remove water. Compared to 100mm diameter round pipe, **Megaflo®** has twice the inflow capacity for an equivalent length and will drain water in less than 60% of the response time. Its slim 40mm wide profile permits faster and more cost effective installation in a narrower trench.

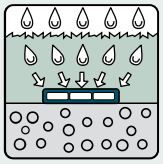
The design of the **Megaflo®** panel drain permits significantly higher flow velocity at lower head.

FUNCTIONS



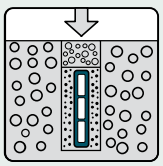
Drainage

Removal of excess water from a structure whether it be a road, retaining wall or sports field is key to long term performance of the structure. **Megaflo®** is a unique composite drainage system with an unsurpassed infiltration rate and rigid flow path which ensures effective drainage under the most challenging conditions.



Rapid Response Time

Rapid removal of excess water is a key consideration in roads and sports fields where excess water can result in significant damage to the pavement or limit the playability of the sports surface. The long flat shape of **Megaflo®** incorporates a high open area for inflow of water - allowing rapid response time well in excess of conventional drainage systems.



Strength

Vertically installing the **Megaflo®** drainage panel utilises the ribbed structure to provide higher strength under traffic loads. The properties of high compressive modulus, longitudinal stiffness and structural rigidity aids the mechanical performance of **Megaflo®**, ensuring the long term hydraulic flow capacity of the drain. High structural strength allows for a minimum cover depth of 100mm, recommended for **Megaflo®** in most applications. **Megaflo®** typically requires less backfill in comparison to a traditional trench which results in cost savings and faster installation.

GEOFABRICS®

APPLICATIONS

ROADSIDE EDGE DRAINS

Megaflo® provides faster and higher inflow capacity due to its high trench installation profile and earlier interception of pavement infiltration. **Megaflo®** has a high compressive modulus and structural rigidity (preventing deflection under normal service loads), due to its elongated ribbed profile incorporating internal support.

Simple installation techniques provide installation savings compared to a traditional round pipe drainage system.

SPORTS FIELDS

Sports field surfaces endure high traffic, which if not drained adequately, results in costly and time consuming maintenance. Adequate drainage requires the fast and effective removal of water after a storm.

The use of narrow width **Megaflo®** flat panel drain ensures minimal disruption of the existing sports surface with a simple, cost effective installation process.

RETAINING WALLS

Megaflo® provides reliable drainage in specialist construction applications such as retaining walls, shotcrete walls and tunnels.

The **Megaflo®** drainage system can be utilised vertically or horizontally to remove excess water, preventing the build up of water pressures induced on the structure.

LANDFILL

Landfill leachate and gas collection systems are an integral part of landfill design for lining and capping systems.

The high compressive strength of **Megaflo®** under normal and inclined loads makes it the ideal product for a range of landfill drainage applications.

MINING

Megaflo® is ideally suited for use as collector drains in mining applications. Its high compressive modulus and structural rigidity prevents deflection and the loss of flow capacity under high load or localised settlement.

Megaflo® Ultra is available for the rapid drainage of tailing dams.

GOLF COURSES

The trenchless option of **Megaflo®** laid directly onto the subgrade results in significant savings in man-hours and material compared to traditional round pipe.

Regardless of the subgrade soil type, all golf courses can benefit from improved drainage using **Megaflo®**.

ADVANTAGES OF MEGAFLO® DRAINAGE SYSTEMS

High Crush Strength	The high vertical crush strength means **Megaflo®** can be installed closer to the surface reducing the cost of excavation.
Enhanced Performance	The increased height and rapid response times associated with **Megaflo®** ensures the system outperforms traditional drainage options. The flat pipe construction prevents intrusion of the cover geotextile allowing flow rates to be maintained despite soil confinement pressure.
Cost Effective	The narrow trench width requirement combines rapid installation of the geotextile encapsulated **Megaflo®** to provide significant cost savings when compared to traditional French drain systems.
Environmentally Friendly	**Megaflo®** is manufactured from recycled HDPE, minimising the carbon footprint of the project.

MEGAFLO® DIMENSIONS

Megaflo® Products:		
Product Description	**Height**	**Roll Length**
Megaflo® 170	170mm	50m or 100m
Megaflo® 300	315mm	50m or 100m
Megaflo® 450	450mm	50m or 100m
Megaflo® 900	900mm	50m

FITTINGS

A range of standard **Megaflo®** fittings are available:

- **Megaflo®** couplers are a high strength, secure means to join continuous sections of **Megaflo®**, inserted beneath the geotextile.
- Connecting to 100mm diameter round pipe is easily achieved using either the **Megaflo®** side outlet or **Megaflo®** end outlet where required.
- **Megaflo®** end caps can be fitted to terminations to prevent backfill ingress into the system. Other fittings are available for connecting **Megaflo®** in various arrangements depending on the application.

Fittings are available to suit all Megaflo® sizes:

A	Joiner Coupling	C	Side Outlet
B	End Outlet	D	End Cap

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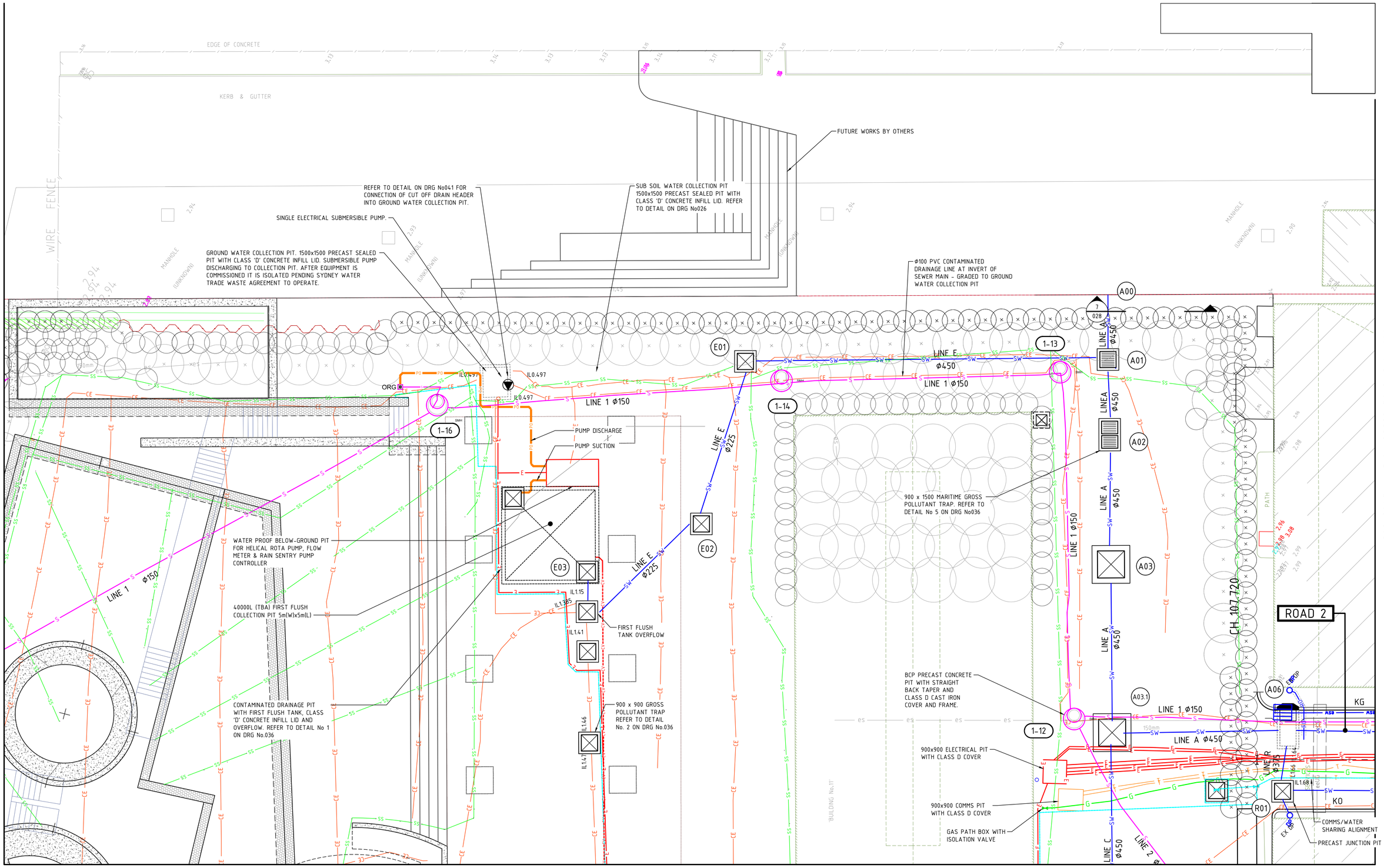
Appendix G: Drainage System As-Builts in Northern Remediation Containment Area



REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
WAE	03.03.15	WORK AS EXECUTED	DRC	RPH	RBD

Mott MacDonald
Hughes Trueman
ABN 53 831 529 091
Level 2, 60 Pacific Hwy, PO Box 151, ST LEONARDS NSW 2065
T+61 2 9439 2633 F+61 2 9438 4505
stleonards@hughestrueman.com.au

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	DC	RPH	
DRAWN	DC	RBD	DATE 13.08.14

REF: MMD-298850-C-DR-CC01-SITEWORKS PLANS.dwg

Australian Government
Sydney Harbour Federation Trust

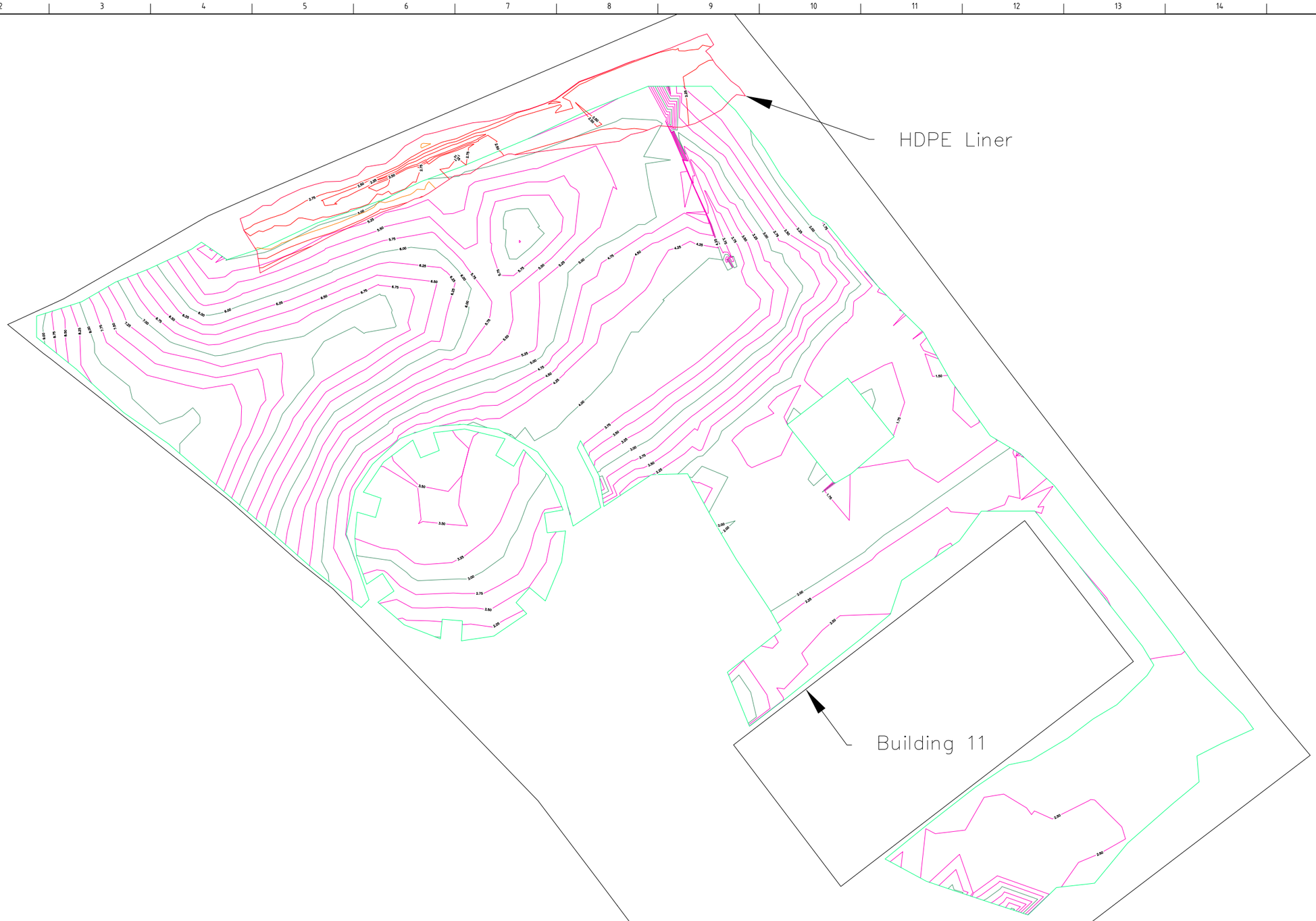
THIESS

THIESS SERVICES PTY LTD
A.C.N. 010 725 247
A.B.N. 69 010 725 247 43
88 PHILLIP STREET,
PARRAMATTA, NSW 2150
PHONE (02) 8892 5900
FAX (02) 8892 5901

HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
SITEWORKS PLAN
SHEET 4 OF 7

SCALE	DRG NO.	REV
A1 1:100	050010-CAP-CIVIL-011	WAE



REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
B	4.11.2014	HDPE LINER SURFACE ADDED	SHB	SHB	BW
A	20.10.2014	ISSUED FOR REVIEW	SHB	SHB	BW

THE INFORMATION SHOWN ON THIS DRAWING IS FOR THE PURPOSES OF THIS PROJECT ONLY. NO WARRANTY IS GIVEN OR IMPLIED AS TO ITS SUITABILITY FOR ANY OTHER PURPOSE

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	SHB	BW	S Barthelme
DRAWN	SHB	BW	DATE 20.10.2014
REF:			

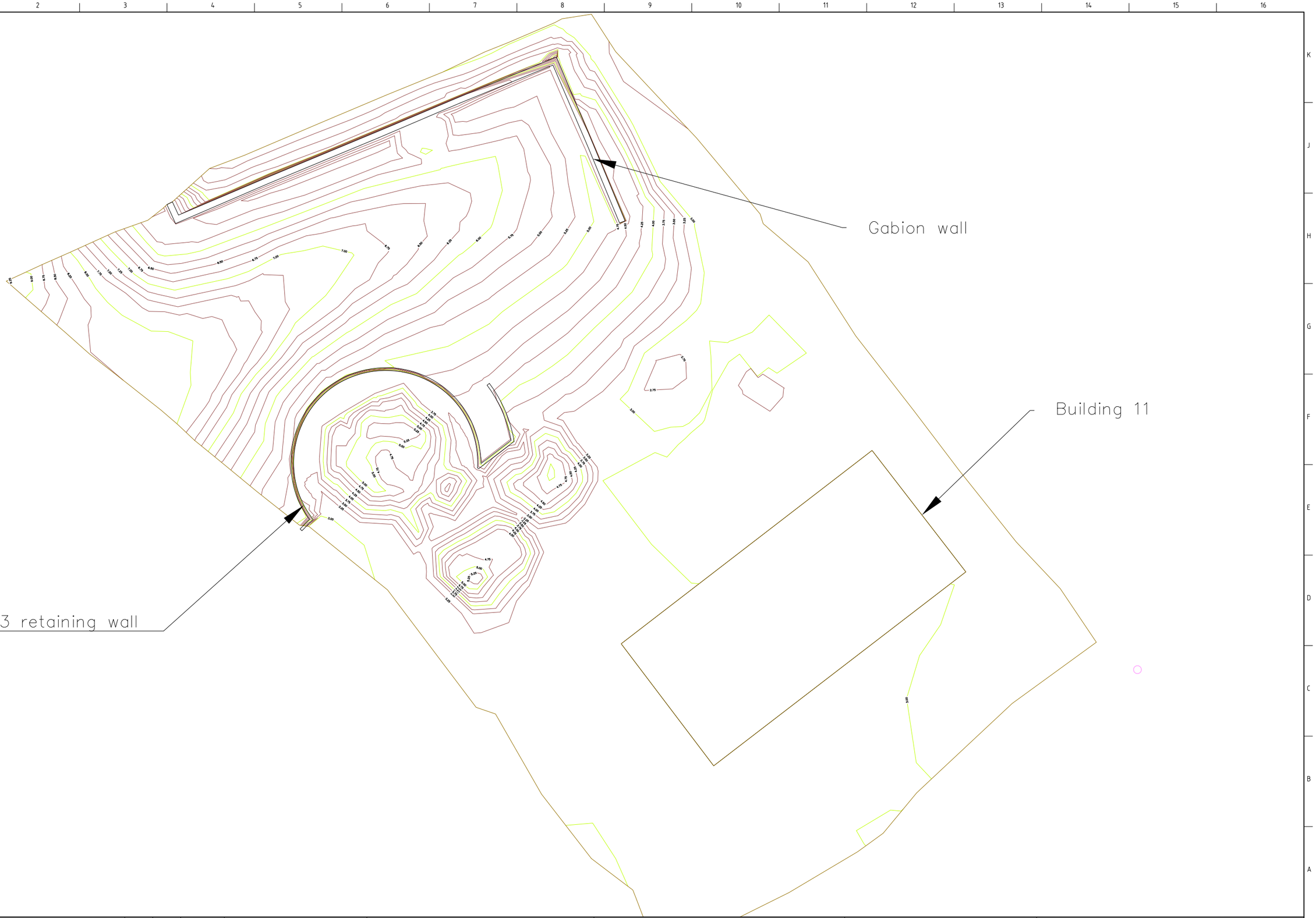
Australian Government
Sydney Harbour Federation Trust

THIESS
THIESS SERVICES PTY LTD
A.C.N. 010 725 247
A.B.N. 69 010 725 247 43
88 PHILLIP STREET,
PARRAMATTA, NSW 2150
PHONE (02) 8892 5900
FAX (02) 8892 5901

HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
GEOSYNTHETIC CLAY LINER
AS BUILT

SCALE	DRG NO.	REV
A1 1:150	050010-CAP-WAE-010	B



REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
A	20.10.2014	ISSUED FOR REVIEW	SHB	SHB	BW

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	SHB	BW	S Barthelme
DRAWN	SHB	BW	DATE 20.10.2014

REF:

Australian Government
Sydney Harbour Federation Trust

THIESS

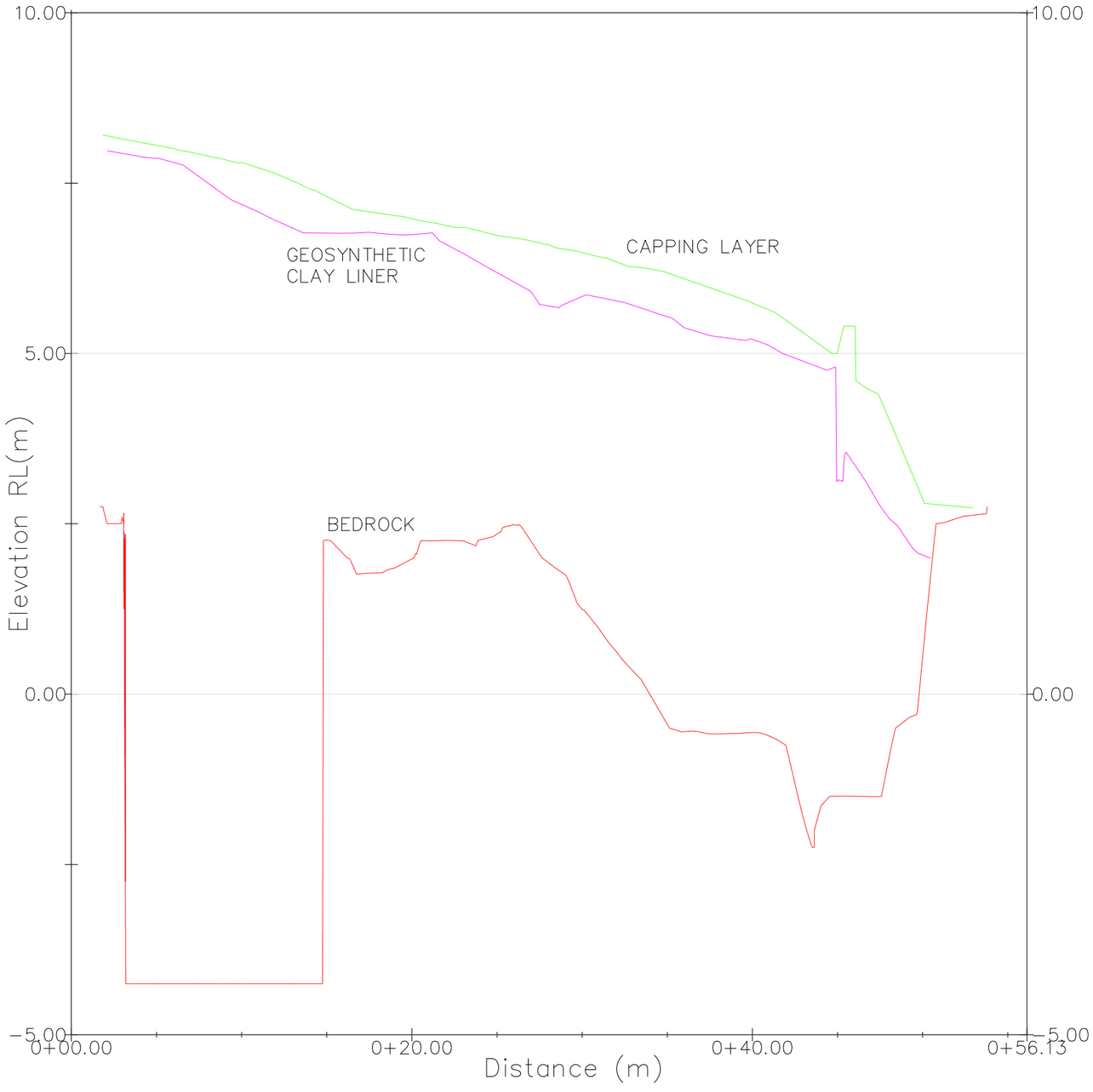
THIESS SERVICES PTY LTD
A.C.N. 010 725 247
A.B.N. 69 010 725 247 43
88 PHILLIP STREET,
PARRAMATTA, NSW 2150
PHONE (02) 8892 5900
FAX (02) 8892 5901

HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
FINAL CAPPING SURFACE
AS BUILT

SCALE	DRG NO.	REV
A1 1:150	050010-CAP-WAE-011	A

Typical Cross Section



REV	DATE	DESCRIPTION	BY	APP'D	REVIEWED
A	20.10.2014	ISSUED FOR REVIEW	SHB	SHB	BW

	PREPARED	CHECKED	DESIGN CONSULTANT APPROVED
DESIGN	SHB	BW	S Barthelme
DRAWN	SHB	BW	DATE 20.10.2014
REF:			

Australian Government
Sydney Harbour Federation Trust

THIESS

THIESS SERVICES PTY LTD
A.C.N. 010 725 247
A.B.N. 69 010 725 247 43
88 PHILLIP STREET,
PARRAMATTA, NSW 2150
PHONE (02) 8892 5900
FAX (02) 8892 5901

HMAS PLATYPUS STAGE 2 REMEDIATION WORKS

DRAWING TITLE
CONTAINMENT CELL TYPICAL CROSS SECTION
AS BUILT

SCALE	DRG NO.	REV
A1 1:150	050010-CAP-WAE-013	A

Appendix H: Figures from Guardhouse Validation Report

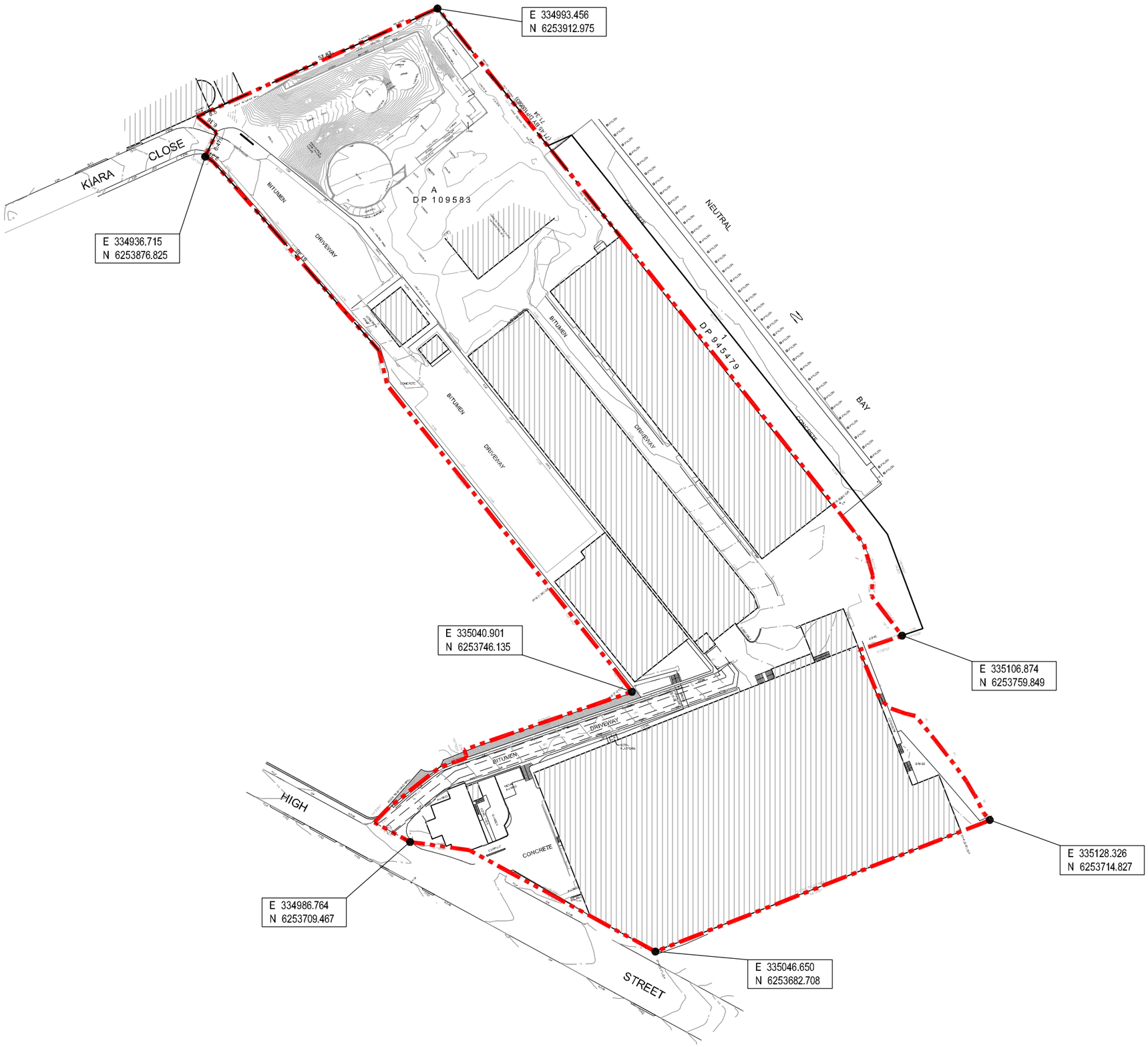
A3

PROJECT No.	**C121007**
FILE NAME	**F004**
DATE	**25.04.18**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

SITE BOUNDARY

E 325501.665
N 6248326.116
COORDINATES IN M.G.A.



0 10 20 30 40
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

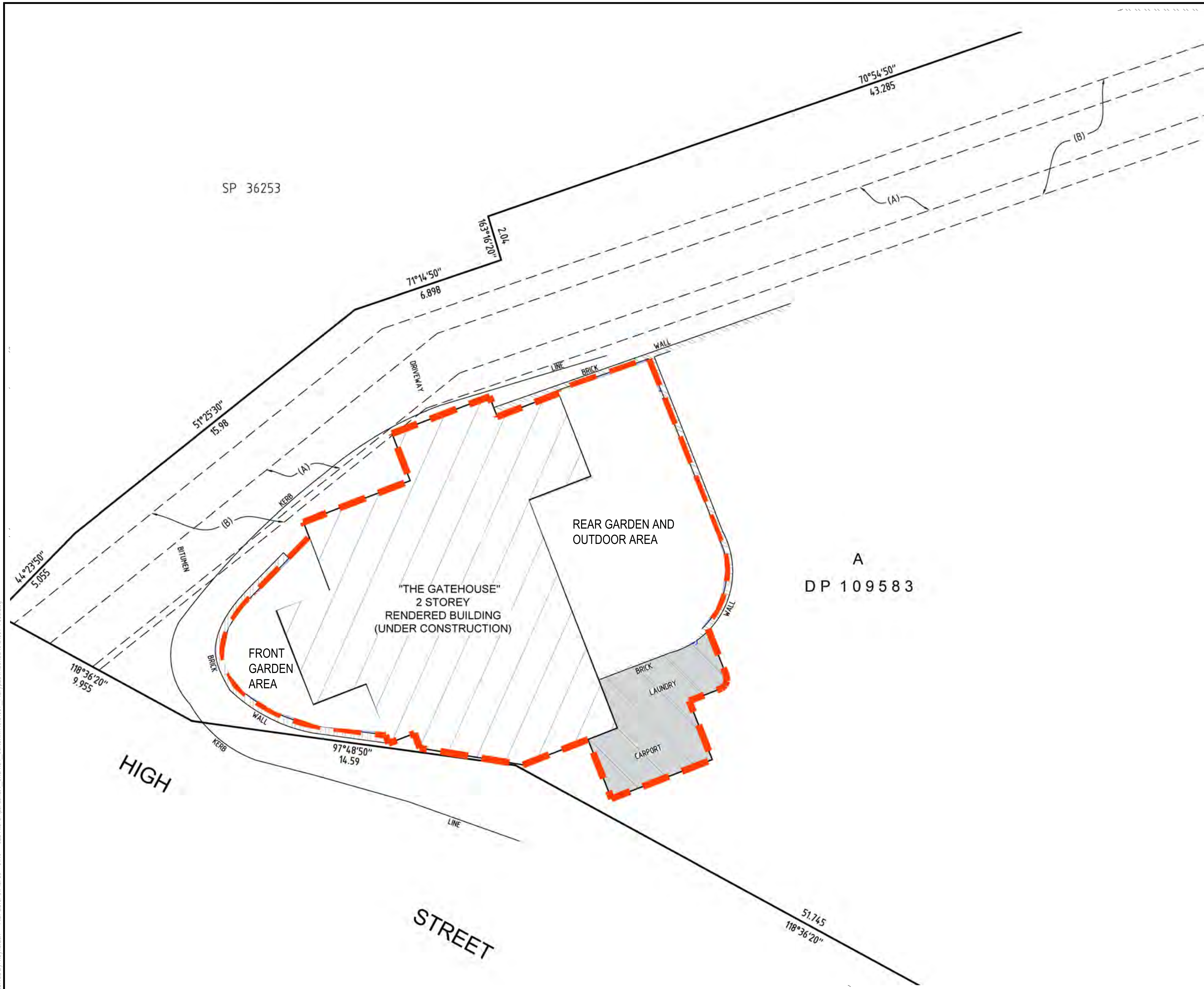
PROJECT
VALIDATION REPORT
GUARDHOUSE SITE
PLATYPUS SITE, HIGH STREET
NORTH SYDNEY

TITLE
SITE LAYOUT

FIGURE No.
1

CONSARA

Plotted By: ReynoldsR Plot Date: 30/12/05 - 04:52 Cad File: E:\personal_CAD R2_CONSARA\C121007_Platypus\FIGURES\C121007-F004.dwg



PROJECT No.	C121007
FILE NAME	F005
DATE	25.04.18
DRAWN	RR
APPROVED	RO

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT
GUARDHOUSE SITE, PLATYPUS SITE,
HIGH STREET
NORTH SYDNEY

TITLE
SITE LAYOUT

FIGURE No.
2

CONSARA

A3

PROJECT No.	C121007
FILE NAME	F005
DATE	25.04.18
DRAWN	RR
APPROVED	RO

CS_02 CHARACTERISATION/ VALIDATION BOREHOLE LOCATION

BH02 ESA BOREHOLE LOCATION

GUARDHOUSE SITE BOUNDARY

SP 36253

70°54'50" 43.285

71°14'50" 6.898

163°16'20" 2.04

51°25'30" 15.98

44°23'50" 5.055

118°36'20" 9.955

97°48'50" 14.59

51.745 118°36'20"

(A)

(B)

DRIVEWAY

BRICK WALL

KERB

BITUMEN

BRICK WALL

KERB

LINE

"THE GATEHOUSE"
2 STOREY
RENDERED BUILDING
(UNDER CONSTRUCTION)

BRICK LAUNDRY

CARPORT

WALL

CS_01

CS_02

CS_03

CS_04

CS_05

CS_06

BH02

BH07

A
DP 109583

HIGH STREET

0 2.5 5 7.5 10
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT
GUARDHOUSE SITE, PLATYPUS SITE,
HIGH STREET
NORTH SYDNEY

TITLE
CHARACTERISATION/VALIDATION SAMPLING LOCATIONS

FIGURE No.
3

CONSARA

Plotted By: ReynoldsR Plot Date: 31/12/05 - 01:14 Cad File: E:\personal_CAD R2_CONSARA\C121007_Platypus\FIGURES\C121007-F005.dwg

A3

PROJECT No.	C121007
FILE NAME	F005
DATE	25.04.18
DRAWN	RR
APPROVED	RO

LEGEND

(0.35)	DENOTES THICKNESS OF SOILS OVER MARKER LAYER
+15.62	~ DENOTES MARKER LAYER LEVELS AND SURFACE PRIOR SURFACE TREATMENTS AT 27-09-2019
+15.62	~ DENOTES NEW FINISHED PAVING AND SOIL LEVELS AT 29-10-2019
	~ DENOTES GATEHOUSE BOUNDARY
	~ DENOTES AREAS WITH A MARKER LAYER
	~ DENOTES CONCRETE SLAB AREA
	~ DENOTES BRICK PAVED AREA

0 2.5 5 7.5 10
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT
GUARDHOUSE SITE, PLATYPUS SITE,
HIGH STREET
NORTH SYDNEY

TITLE
FINAL LAYOUT OF GUARDHOUSE SITE

FIGURE No.
4

CONSARA

Appendix I: Documentation from Torpedo Factory Renewal Validation Report

I1 Figures

A3

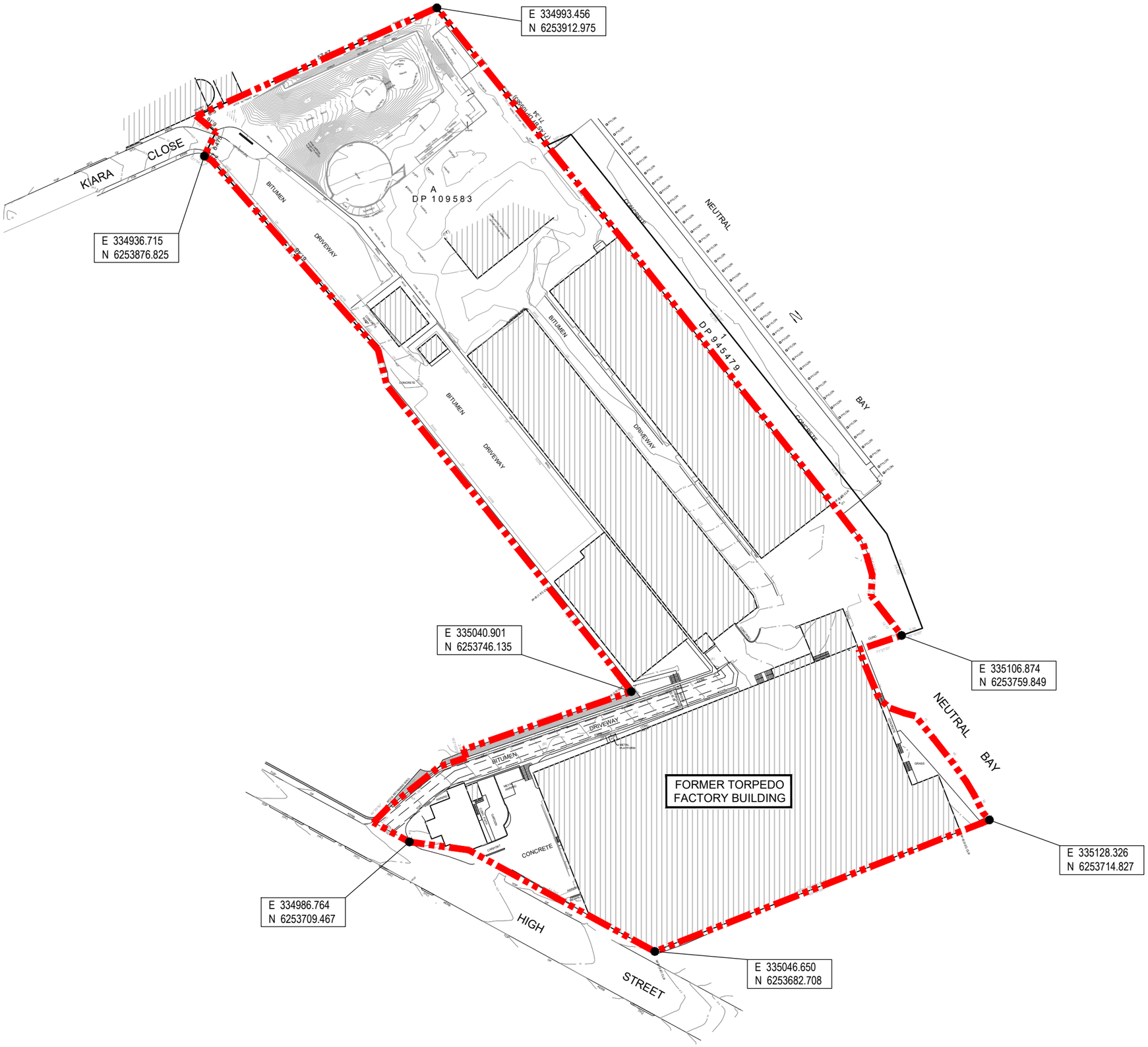
PROJECT No.	**C201015**
FILE NAME	**F001**
DATE	**19.04.24**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

PLATYPUS SITE BOUNDARY

E 325501.665
N 6248326.116

COORDINATES IN M.G.A.



0 10 20 30 40
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT,
TORPEDO FACTORY RENEWAL
PROJECT, SUB-BASE PLATYPUS,
118 HIGH STREET,
NORTH SYDNEY, NSW

TITLE
PLATYPUS SITE LOCATION

FIGURE No.
1

CONSARA

A3

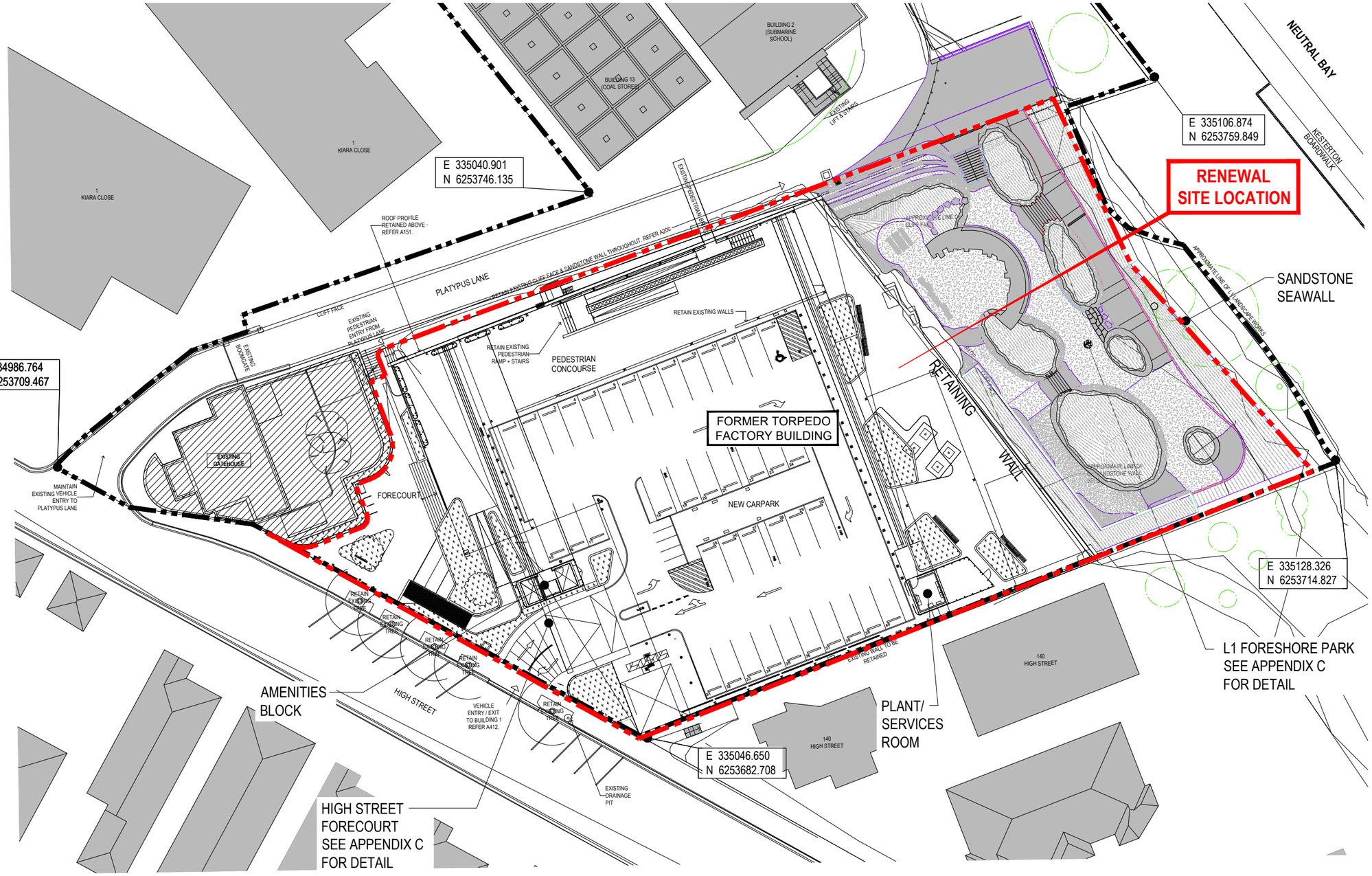
PROJECT No.	**C201015**
FILE NAME	**F002**
DATE	**19.04.24**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

PLATYPUS SITE BOUNDARY

RENEWAL SITE BOUNDARY

E 325501.665
N 6248326.116
COORDINATES IN M.G.A.



CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT,
TORPEDO FACTORY RENEWAL PROJECT, SUB-BASE PLATYPUS,
118 HIGH STREET,
NORTH SYDNEY, NSW

TITLE
RENEWAL SITE LOCATION AND LAYOUT

FIGURE No.
2

CONSARA

A3

1
KIARA CLOSE

ROOF PROFILE
RETAINED ABOVE -
REFER A151.

EXISTING
LIFT & STAIRS

EXISTING PEDESTRIAN BRIDGE

PLATYPUS LANE

RETAIN EXISTING CLIFF FACE & SANDSTONE WALL THROUGHOUT. REFER A200

CLIFF FACE

EXISTING
PEDESTRIAN
ENTRY FROM
PLATYPUS LANE

RETAIN EXISTING WALLS

RETAIN EXISTING
PEDESTRIAN
RAMP + STAIRS

PEDESTRIAN
CONCOURSE

FORMER TORPEDO
FACTORY BUILDING

APPROXIMATE LINE OF
CLIFF FACE

RETAINING WALL

APPROXIMATE LINE OF
CLIFF FACE

APPROXIMATE LEVELS
BELOW

HIGH ST
FORECOURT

NEW CARPARK

RETAIN
EXISTING
TREE

RETAIN
EXISTING
TREE

RETAIN
EXISTING
TREE

RETAIN
EXISTING
TREE

RETAIN
EXISTING
TREE

AMENITIES
BLOCK

HIGH STREET

VEHICLE
ENTRY / EXIT
TO BUILDING 1
REFER A412.

HIGH STREET FORECOURT
SEE APPENDIX C
FOR DETAIL

EXISTING WALL TO BE
RETAINED

PLANT/
SERVICES
ROOM

140
HIGH STREET

140
HIGH STREET

PROJECT No.	C201015
FILE NAME	F003
DATE	19.04.24
DRAWN	RR
APPROVED	RO

LEGEND

- RENEWAL SITE BOUNDARY
- PLANTER BEDS ON SLAB
- PLANTER BEDS ON RETAINED FILL MATERIAL

0 2 4 6 8 10
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT,
TORPEDO FACTORY RENEWAL
PROJECT, SUB-BASE PLATYPUS,
118 HIGH STREET,
NORTH SYDNEY, NSW

TITLE
HIGH STREET FORECOURT AND LEVEL 3 LAYOUT

FIGURE No.
3

CONSARA

Plotted By: robro Plot Date: 20/04/24 - 17:23 Cad File: C:_CONSARA\C201015_Platypus\FIGURES\C201015-F003.dwg

A3

PROJECT No.	**C201015**
FILE NAME	**F004**
DATE	**19.04.24**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

RENEWAL SITE BOUNDARY

SEAWALL PROTECTION ZONE

PAVING

DECOGRAVEL PAVING - P1

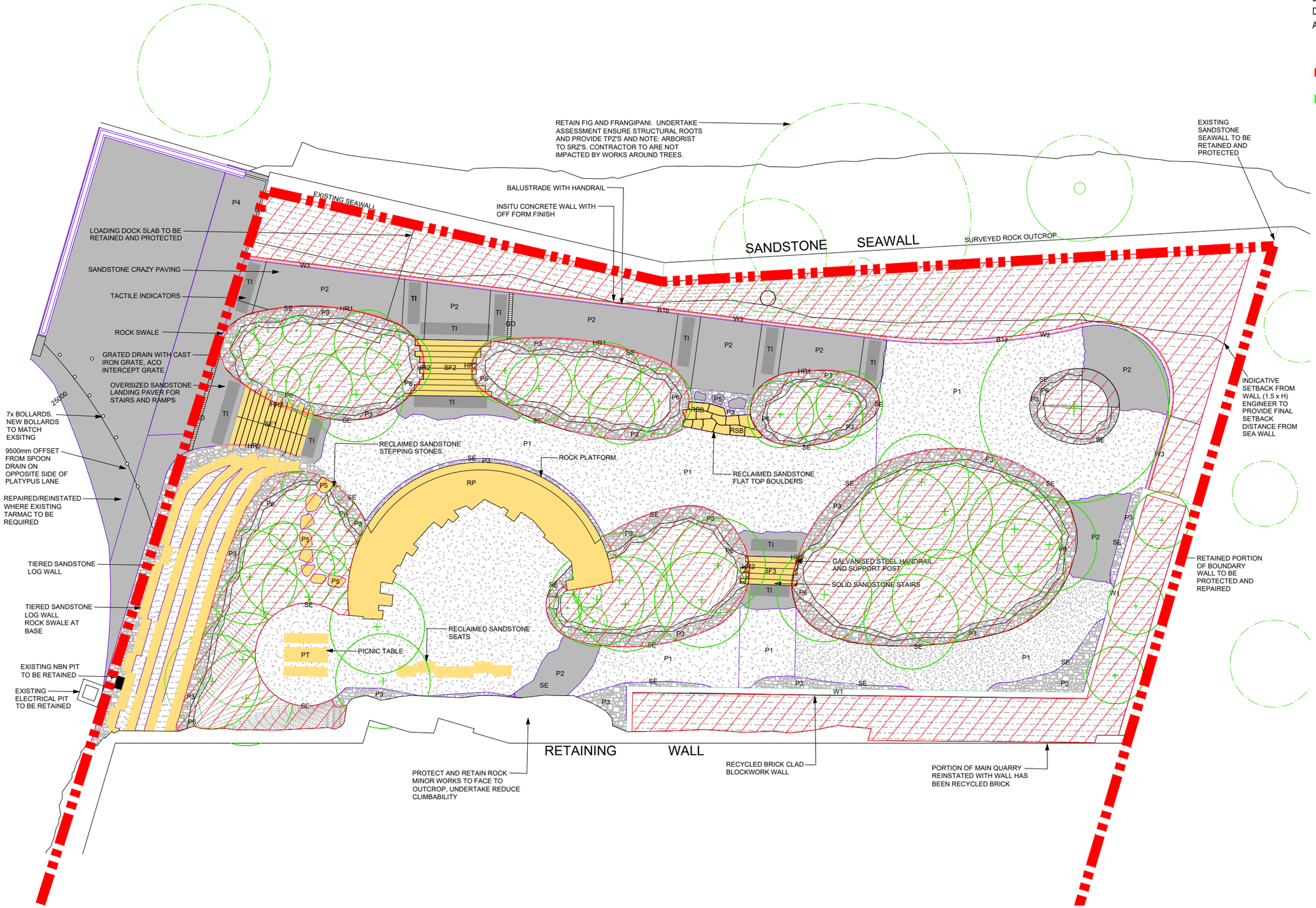
SANDSTONE PAVING - P2

SANDSTONE STEPPERS - P5

LANDSCAPING

PLANTING

EXTENT OF MARKER LAYER



0 2 4 6 8 10
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT, TORPEDO FACTORY RENEWAL PROJECT, SUB-BASE PLATYPUS, 118 HIGH STREET, NORTH SYDNEY, NSW

TITLE
L1 FORESHORE PARK LAYOUT

FIGURE No.
4

CONSARA

A3

PROJECT No.	**C201015**
FILE NAME	**F005**
DATE	**26.03.24**
DRAWN	**RR**
APPROVED	**RO**

LEGEND

XXXXXXXXX BOUNDARY

+16.726 FINAL SURFACE LEVEL (mAHD)

×15.427 TOP OF MARKER LAYER (mAHD)

0 1 2 3 4 5
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
REMEDIATION ACTION PLAN,
TORPEDO FACTORY RENEWAL PROJECT, SUB-BASE PLATYPUS,
118 HIGH STREET,
NORTH SYDNEY, NSW

TITLE
MARKER LAYER LEVELS

FIGURE No.
5

CONSARA

Plotted By: robro Plot Date: 27/03/24 - 13:21 Cad File C:\ CONSARA\C201015 Platypus\FIGURES\C201015-F005.dwg

A3

SANDSTONE SEAWALL

EXISTING SEAWALL

25000

PROJECT No.	C201015
FILE NAME	F006
DATE	05.06.24
DRAWN	RR
APPROVED	RO

LEGEND

- RENEWAL SITE BOUNDARY
- SEAWALL PROTECTION ZONE

PAVING

- DECORATIVE PAVING - P1
- SANDSTONE PAVING - P2
- SANDSTONE STEPPERS - P5

LANDSCAPING

- PLANTING
- EXTENT OF MARKER LAYER
- +16.726 FINAL SURFACE LEVEL (mAHD)
- 9.84 TOP OF PLASTIC LAYER SUBSOIL DRAINAGE (mAHD)
- 9.84 TOP OF GEOFABRIC LAYER SUBSOIL DRAINAGE(mAHD)
- 9.84 TOP OF GEOFABRIC LAYER (mAHD)

PLAN 1 | PLAN 2

KEY PLAN

0 2 4 6 8 10 (metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT,
TORPEDO FACTORY RENEWAL PROJECT, SUB-BASE PLATYPUS,
118 HIGH STREET,
NORTH SYDNEY, NSW

TITLE
L1 FORESHORE PARK MARKER LAYER AND FINAL SURFACE RL's - PLAN 1

FIGURE No.
6

CONSARA

Plotted By: robro Plot Date: 05/06/24 - 10:35 Cad File: C:\...CONSARA\C201015_Platypus\FIGURES\C201015-F006.dwg

A3

SANDSTONE SEAWALL

SURVEYED ROCK OUTCROP

8.80
9.03 TOP
8.91 BOTTOM
9.20 TOP
9.01 BOTTOM
9.10
9.05
9.08
9.65 TOP
9.19 BOTTOM
9.69 TOP
9.23 BOTTOM
9.99
9.26
8.50
8.62
9.42
9.54
9.43
9.63
9.73
9.84
9.71
9.83
9.69 TOP
9.31 BOTTOM
9.81
9.96
9.95
9.62
9.74
9.48
9.60
9.99
10.12 TOP
9.86 BOTTOM
10.675
9.81
9.91
9.63
9.75
10.57
10.11
10.14
10.41
10.33
10.36
10.32
10.01
10.11
10.40
10.52
10.55
10.64
10.64
11.02
10.675
10.88
10.675
10.675
10.675
12.40

PROJECT No. C201015
FILE NAME F007
DATE 05.06.24
DRAWN RR
APPROVED RO

LEGEND

RENEWAL SITE BOUNDARY

SEAWALL PROTECTION ZONE

PAVING

DECORATIVE PAVING - P1

SANDSTONE PAVING - P2

SANDSTONE STEPPERS - P5

LANDSCAPING

PLANTING

EXTENT OF MARKER LAYER

+16.726 FINAL SURFACE LEVEL (mAHD)

9.84 TOP OF PLASTIC LAYER SUBSOIL DRAINAGE (mAHD)

9.84 TOP OF GEOFABRIC LAYER SUBSOIL DRAINAGE(mAHD)

9.84 TOP OF GEOFABRIC LAYER (mAHD)

PLAN 1 PLAN 2

KEY PLAN

0 2 4 6 8 10
(metres)

CLIENT
SYDNEY HARBOUR FEDERATION TRUST

PROJECT
VALIDATION REPORT,
TORPEDO FACTORY RENEWAL PROJECT, SUB-BASE PLATYPUS,
118 HIGH STREET,
NORTH SYDNEY, NSW

TITLE
L1 FORESHORE PARK MARKER LAYER AND FINAL SURFACE RL's - PLAN 2

FIGURE No.
7

CONSARA

Plotted By: robro Plot Date: 05/06/24 - 10:36 Cad File: C:_CONSARA\C201015_Platypus\FIGURES\C201015-F007.dwg

I2 Marker Layer Specifications

Bastion

Bastion 1 x 50m Orange Barrier Mesh

3.3 (4)

I/N: 0332625

Compare

$43

Add to Cart

Select your preferred purchase method

In-Store | Click & Collect | Delivery

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Chat with us

mastaTEX Orange Hi Vis Geotextile Warning Layer

Product Images

Short Description

FW grade high vis orange geotextile, designed for separating contaminated and non-contaminated soils ie in asbestos remediation applications. Available in a 150m roll, 3m or 6m wide. ADDITIONAL FREIGHT CHARGES MAY APPLY - You may be contacted about freight cost for heavy, bulky or awkward items. Call us for details on 1300 885 364.

Description

mastaTEX Orange is a high quality staple fibre geotextile, designed for separating contaminated and non-contaminated soils. Due to its bright hi vis orange colouring, mastaTEX Orange is most commonly used as a warning layer in areas which are liable to future excavations. mastaTEX orange high vis geotextile provides the same performance as other geotextiles in the mastaTEX™ range

Applications:

- Segregation of contaminated soil
- Filtration
- Warning Layer

I3 As build Documentation

Sub Base Platypus

120 High St, North Sydney NSW 2060

Project Status
AS BUILT

LANDSCAPE PACKAGE

Drawing Number	Drawing Title
L-000	Cover sheet
L-001	Legend and Landscape Schedule
L-051	Specification
L-530	Planting Plan - East
L-531	Planting Plan - West
L-532	Planting Schedule
L-534	Planting Details - 1 of 1
L-540	Planting & Wire Trellis Details

Drawing Number	Drawing Title

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Rev	Date	Description	Drawn	Checked
	17/08/2023	AS BUILT	OM	SK

Author

turf

Turf Design Studio: P.O Box 2282 Sydney NSW 2001, 35 Wellington St Chippendale, NSW 2008
Phone (+61 2) 8394 9990
Email: sydney@turfdesign.com

Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Cover sheet

Drawing Status
AS BUILT

N

Scale. @A1
Plot Date 17/08/2023 6:29:22 PM
Project No. 2040
Drawing No. L-000
Revision N/A

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus.20_.rvt

Sub Base Platypus

120 High St, North Sydney NSW 2060

Project Status
AS BUILT

LANDSCAPE PACKAGE

DRAWING LIST

Drawing Number	Drawing Title	Current Revision	Current Revision Date	Current Revision Description
L-P-000	Cover Sheet	K	26/03/2024	AS BUILT
L-P-011	Legend & Landscape Schedule - Sheet 1	M	26/03/2024	AS BUILT
L-P-012	Legend & Landscape Schedule - Sheet 2	J	26/03/2024	AS BUILT
L-P-200	General Arrangement Plan	V	26/03/2024	AS BUILT
L-P-300	Levels & Drainage Plan	O	26/03/2024	AS BUILT
L-P-520	Planting Plan - Trees	J	26/03/2024	AS BUILT
L-P-521	Planting Plan - Understorey and Shrubs	G	26/03/2024	AS BUILT
L-P-530	Planting Schedule	H	26/03/2024	AS BUILT
L-P-607	Overall Section - Sheet 1	E	26/03/2024	AS BUILT
L-P-608	Overall Section - Sheet 2	C	26/03/2024	AS BUILT
L-P-614	Site Sections - Sheet 5	D	26/03/2024	AS BUILT
L-P-621	Detail Sections - Sheet 2	C	26/03/2024	AS BUILT
L-P-625	Detail Sections - Sheet 6	D	26/03/2024	AS BUILT
L-P-626	Detail Sections - Sheet 7	C	26/03/2024	AS BUILT
L-P-627	Detail Sections - Sheet 8	E	26/03/2024	AS BUILT
L-P-900	Details - Paving & Walls - Sheet 1	I	26/03/2024	AS BUILT
L-P-901	Details - Paving & Walls - Sheet 2	G	26/03/2024	AS BUILT
L-P-902	Details - Paving & Walls - Sheet 3	D	26/03/2024	AS BUILT
L-P-904	Details - Paving & Walls - Sheet 5	F	26/03/2024	AS BUILT
L-P-906	Details - Paving & Walls - Sheet 7	F	26/03/2024	AS BUILT
L-P-910	Details - Interfaces	D	26/03/2024	AS BUILT
L-P-920	Details - Stairs & Handrails - Sheet 1	K	26/03/2024	AS BUILT
L-P-921	Details - Stairs & Handrails - Sheet 2	H	26/03/2024	AS BUILT
L-P-922	Details - Stairs & Handrails - Sheet 3	F	26/03/2024	AS BUILT
L-P-923	Details - Stairs & Handrails - Sheet 4	D	26/03/2024	AS BUILT
L-P-924	Details - Stairs & Handrails - Sheet 5	C	26/03/2024	AS BUILT
L-P-925	Details - Stairs & Handrails - Sheet 6	A	26/03/2024	AS BUILT
L-P-930	Details - Furniture & Fixtures - Sheet 1	E	26/03/2024	AS BUILT
L-P-931	Details - Furniture & Fixtures - Sheet 2	G	26/03/2024	AS BUILT
L-P-933	Details - Balustrades & Handrails - Sheet 1	E	26/03/2024	AS BUILT

Drawing Number	Drawing Title	Current Revision	Current Revision Date	Current Revision Description
L-P-934	Details - Balustrades & Handrails - Sheet 2	D	26/03/2024	AS BUILT
L-P-935	Details - Balustrades & Handrails - Sheet 3	G	26/03/2024	AS BUILT
L-P-950	Details - Softscape - Sheet 1	I	26/03/2024	AS BUILT
L-P-951	Details - Softscape - Sheet 2	F	26/03/2024	AS BUILT
L-P-952	Details - Softscape - Sheet 3	E	26/03/2024	AS BUILT
L-P-953	Details - Softscape - Sheet 4	C	26/03/2024	AS BUILT
L-P-960	Details - Rock Platform - Sheet 1	J	26/03/2024	AS BUILT
L-P-970	Details - Bollard Setout	B	26/03/2024	AS BUILT
L-P-1000	Details - Balustrade with Steel Kickrail	B	26/03/2024	AS BUILT

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SURVEY INFORMATION

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Rev	Date	Description	Drawn	Checked
K	26/03/2024	AS BUILT	DR	MH
J	15/12/2023	FOR CONSTRUCTION	DR	MH
I	23/11/2023	FOR CONSTRUCTION	DR	MH
H	09/11/2023	FOR CONSTRUCTION	DR	MH
G	03/11/2023	FOR CONSTRUCTION	DR	MH
F	02/11/2023	FOR INFORMATION	DR	MH
E	03/03/2023	IFT Addenda 2	DR	MH
D	03/02/2023	IFT Addenda	DR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Cover Sheet

Drawing Status
AS BUILT

Scale. @A1
Plot Date 26/03/2024 7:37:07 PM
Project No. 2040
Drawing No. L-P-000
Revision K

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

CODE	SYMBOL	ITEM/PRODUCT	DIMENSION	COLOUR + FINISH	DRAWING NUMBER	SUPPLIER (or equal)	SHOP DRAWINGS	SAMPLES	HOLD/INSPECTION POINTS	NOTES
PAVING										
P1		Decomposed Granite Paving	Refer to Detail	Cowra Gold	1/L-P-900	Benedict Industries	-	Required	Inspection point: Preparation of subgrade is complete. Hold point: Approval of sample required prior to installation. Minimum size 3m x 3m.	P5 Slip Rating. Decomposed granite bound with soil bond A01 at 2% application rate in accordance with manufactures specification. Do not apply within 1m radius of tree.
P2		Sandstone Crazy Paving	Thickness: 40mm Paver size: minimium 300mm and maximum 1200mm	Colour: Brown quarry run. minimal banding. Finish: Gang sawn	3&4/L-P-900	Gosford Quarries	Required	Required	Inspection point: Preparation of subgrade is complete. Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation. Minimum size 3m x 3m.	P5 Slip Rating. If expansion joints are required, they are to be filled in with a silicone product to match Sandstone colour. Contractor to inform Turf if expansion joints are required.
P2#		Oversized Sandstone Landing Pavers	Thickness: 40mm Paver size: Refer to details	Colour: Brown quarry run. minimal banding. Finish: Gang sawn	L-P-902, L-P-920, L-P-921 & L-P-922	Gosford Quarries	Required	Required	Inspection point: Preparation of subgrade is complete. Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation. Minimum size 3m x 3m.	P5 Slip Rating. If expansion joints are required, they are to be filled in with a silicone product to match Sandstone colour. Contractor to inform Turf if expansion joints are required.
P4		Asphalt Paving	Repair and Reinstate Asphalt Paving to SHFT Specification	To match surrounding asphalt	-	TBD	-	-	Asphalt to be reinstated/made good over machine shed roof. SHFT to confirm asphalt colour and specification.	P5 Slip Rating. Asphalt to be reinstated/made good over machine shed roof. SHFT to confirm asphalt colour and specification.
P5		Random Sandstone Stepping Stones	Thickness: 400mm Paver size: minimium 600mm and maximum 1200mm	Reclaimed flat top boulders from site.	2/L-P-900	-	-	-	Hold point: Boulder selection and final arrangement to be confirmed on site by Turf Design Studio representative.	P5 Slip Rating.
WALLS										
RP		Rock Platform	Refer to details	Reclaimed sandstone OR Colour: Brown quarry run. minimal banding. Finish: Gang sawn	L-P-960	Reclaimed sandstone OR Gosford Quarries	Required	Required	Hold Point: Appoval of construction methodology provided by Stonemason Hold Point: Approval of shop drawings Hold Point: Selection and approval of stone Hold Point: 3m x full depth insitu portion of wall	-
SE		Galvanised Steel Edging	2.5mm x 100mm	Galvabond	L-P-910	Ideal Edging	-	-		Edging to have smooth transition between sections to ensure that ovoid shapes are expressed.
SL#		Sandstone Log Wall	Refer to details	Reclaimed sandstone OR Colour: Brown quarry run. minimal banding. Finish: Gang sawn	L-P-904 & L-P-905	Reclaimed sandstone OR Gosford Quarries	-	Required	Hold Point: Selection and approval of stone Hold Point: 3m x full length insitu portion of wall	Contractor to advise if reclaimed stone or sandstone logs (C Grade) will be utilised.
W1		Brick clad blockwork wall	Refer to detail	Recycled Brick to match southern notch	L-P-906	The Brick Pit	-	Required (Approved)	Hold Point: Appoval of 3m full height wall	-
W3		Insitu Concrete Wall	200mm wide 15mm chamfer to front and back face of top of wall	Colour: Natural Concrete colour Finish: Off Form Class 2	L-P-901	-	-	-	Contractor to ensure smooth transitions between raked level changes in top of wall. Expansion joints are to be filled with a silicone product (colour to match wall).	
STAIRS										
KR1		Sandstone Kerb Rail	100mm x 150mm x 300mm	Colour: Brown quarry run. minimal banding. Finish: Gang sawn	L-P-935	Gosford Quarries	-	Required	Hold point: Approval of sample required prior to installation. Hold Point: Appoval of 3m insitu run in between handrail.	Ensure compliance with AS1428.1. Sandstone block to be mortared to same slab as P2 paving.
KR2		Galvanised Steel Kerb Rail	150mm x 6mm	Finish: Hot dipped galvanised steel	L-P-901	-	-	Required	Hold point: Approval of sample required prior to installation. Hold Point: Appoval of 3m insitu run in between handrail.	Ensure compliance with AS1428.1. Sandstone block to be mortared to same slab as P2 paving.
SF1/2/3		Sandstone Stairs	Refer to details	Colour: Brown quarry run. minimal banding. Finish: Gang sawn	L-P-920 to L-P-922	Gosford Quarries	Required	Required	Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation.	Ensure compliance with AS1428.1.
SN		Stair Nosing	75mm wide	Product: Rufazel Slip Resistant strips. Colour: Black	L-P-920 to L-P-923	Latham	Required	Required	Hold point: Approval of sample required prior to installation. Hold Point: Appoval of installation of stair nosing insitu on tread.	Ensure compliance with AS1428.1. Heat treatment application - to match concrete stairs on site. Ensure stair surface is clean prior to intsalling.
TI		Tactile indicators	Outer Diameter: 35mm Top Diameter: 25mm Thickness: 5mm Shaft: M6 x 18mm	Product: Urethane classic warning tactile Colour: Black	L-P-902, L-P-920, L-P-921 & L-P-922	DTAC	Required	Required	Hold point: Approval of sample required prior to installation. Hold Point: Appoval of tactile setout prior to installation.	Ensure compliance with AS1428.1. No tactiles to be fixed into mortar joints. Centre of tactile to be a minimium of 20mm from edge of paver to prevent cracking.
BALUSTRADES AND HANDRAILS										
B1a		Balustrade	Refer to details	Material: Hot dipped galvanised steel - 300 grade	L-P-933, L-P-934 & L-P-936	Major Engineering Australia	Required	Required	Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation.	Ensure compliance with AS1428.1. No site welding - due to highly corrosive environment.
B1b		Balustrade - with integrated handrail	Refer to details	Material: Hot dipped galvanised steel - 300 grade	L-P-933, L-P-934 & L-P-936	Major Engineering Australia	Required	Required	Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation.	Ensure compliance with AS1428.1. No site welding due to highly corrosive environment. Contractor to pre-weld galvanised fixing cups to balustrade support plate. Balustrade and handrail to be fixed together with appropriate screws. Contractor to apply a silicone (or equivalent) between cup and handrail to prevent elements rusting together.
HR1		Handrail - Ramp	Refer to details	Material: Hot dipped galvanised steel - 300 grade	L-P-935	Major Engineering Australia	Required	Required	Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation.	Ensure compliance with AS1428.1. No site welding - due to highly corrosive environment. Contractor to pre-weld galvanised fixing cups to handrail support post. Support post and handrail to be fixed together with appropriate screws. Contractor to apply a silicone (or equivalent) between cup and handrail to prevent elements rusting together.
HR2		Handrail - Stairs	Refer to details	Material: Hot dipped galvanised steel - 300 grade	L-P-920 to L-P-922	Major Engineering Australia	Required	Required	Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation.	Ensure compliance with AS1428.1. No site welding - due to highly corrosive environment. Contractor to pre-weld galvanised fixing cups to handrail support post. Support post and handrail to be fixed together with appropriate screws. Contractor to apply a silicone (or equivalent) between cup and handrail to prevent elements rusting together.

NOTES

- **ALL STEEL IN ACCORDANCE WITH AS:4312 CORROSIVITY ZONES IN AUSTRALIA**
- **ALL SANDSTONE QUARRY LOCATIONS TO BE CONFIRMED WITH SUPPLIER PRIOR TO ORDERING TO ENSURE CONSISTENCY BETWEEN SANDSTONE ELEMENTS ACROSS THE PROJECT**

Rev	Date	Description	Drawn	Checked
M	26/03/2024	AS BUILT	DR	MH
L	23/11/2023	FOR CONSTRUCTION	DR	MH
K	09/11/2023	FOR CONSTRUCTION	DR	MH
J	02/11/2023	FOR INFORMATION	DR	MH
I	12/05/2023	FOR INFORMATION	DR	MH
H	20/04/2023	IFT Addenda 4	DR	MH
G	13/04/2023	IFT Addenda 3	DR	MH
F	03/03/2023	IFT Addenda 2	DR	MH

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Legend & Landscape Schedule - Sheet 1

Drawing Status

AS BUILT

Scale. @A1

Plot Date 26/03/2024 7:37:10 PM

Project No. 2040

Drawing No. L-P-011

Revision M

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

CODE	SYMBOL	ITEM/PRODUCT	DIMENSION	COLOUR + FINISH	DRAWING NUMBER	SUPPLIER (or equal)	SHOP DRAWINGS	SAMPLES	HOLD/INSPECTION POINTS	NOTES
FURNITURE AND FIXINGS										
PT		Picnic Table	Refer to detail	Stone: Reclaimed Sandstone from site OR Brown quarry run with minimal banding. Finish: Gang sawn Timber: Australian FSC certified hardwood Finish: Cabot's Garden Furniture Oil Steel: Hot dipped galvanised steel	L-P-930	Stone Reclaimed stone from site OR Gosford Quarries Timber: MosUrban	Required	Required	Hold point: Approval of shop drawings Hold point: Approval of sample required prior to installation.	-
RSB		Reclaimed Sandstone Boulder	Min 1500mm wide.	-	L-P-621	-	-	-	Hold Point: Boulder selection and final arrangement to be confirmed on site.	Ensure boulder does not pose a fall height. Ensure fall from top of boulder to surrounding areas is no more then 920mm.\
RSS		Reclaimed Sandstone Seat/Sandstone Log	Approx 570mm x 570mm x 1200mm	-	L-P-931	-	-	-	Hold Point: Turf to select blocks from stockpiled material. Final arrangement to be confirmed on site by Turf Design Studio representative.	Min height 400mm Max height 550mm

CODE	SYMBOL	ITEM/PRODUCT	DIMENSION	COLOUR + FINISH	DRAWING NUMBER	SUPPLIER (or equal)	SHOP DRAWINGS	SAMPLES	HOLD/INSPECTION POINTS	NOTES
SOFTWORKS										
0		Existing Site Fill	-	-	-	-	-	-	-	To be compacted to engineers specification
1		Existing Tree to be Retained	-	-	-					
1		Proposed Tree	-	-	L-P-520, L-P-525 & L-P-530	-	-	-	Hold Point: placement of trees in bags/pots in specifed locations prior to planting	All trees to meet relevant standards (NATSPEC and AS)
2		Marker Layer: Geogrid open weave	-	Grid spacing to be min 100mm x 100mm	L-P-950 to L-P-953	Geofabrics	-	-	Hold Point: To be approved by Consara prior to installation	Refer to RAP for more information
2		Marker Layer: Geofabric 'bidim' non woven	-	-	L-P-950 to L-P-953	Geofabrics	-	-	Hold Point: To be approved by Consara prior to installation	Refer to RAP for more information
3		Soil: Horizon B - Benedict Smartmix® 7 Native Garden Sub-Soil Mix	-	Below 300mm	L-P-950 to L-P-953	Benedicts	Required	-	Hold Point: Inspection of marker layer over existing site fill prior to installation of Horizon B. Inspection undertaken by Consara.	-
3		Soil: Horizon A - Benedict Smartmix® 6 Native Garden Mix	-	Top 300mm	L-P-950 to L-P-953	Benedicts	Required	-	Hold Point: Inspection of marker layer over existing site fill prior to installation of Horizon A. Inspection undertaken by Consara.	-
3		Mulch: Forest Blend	-	75mm deep	L-P-950 to L-P-953	ANL	Required	-	-	-
P3		Sandstone Rock Swale	-	Swale Spalls to consist of an even mix of 200mm - 300mm spalls & 8mm - 20mm spalls.	2/L-P-951	Benedicts	Required	-	Hold Point: Installation of subsoil drainage	-
P6		Sandstone Spall	-	200mm - 300mm sandstone spalls	2/L-P-951	Benedicts	Required	-	-	-

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H	02/11/2023	FOR INFORMATION	DR	MH
G	12/05/2023	FOR INFORMATION	DR	MH
F	13/04/2023	IFT Addenda 3	DR	MH
E	03/03/2023	IFT Addenda 2	DR	MH
D	03/02/2023	IFT Addenda	DR	MH
C	17/01/2023	IFT	AR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

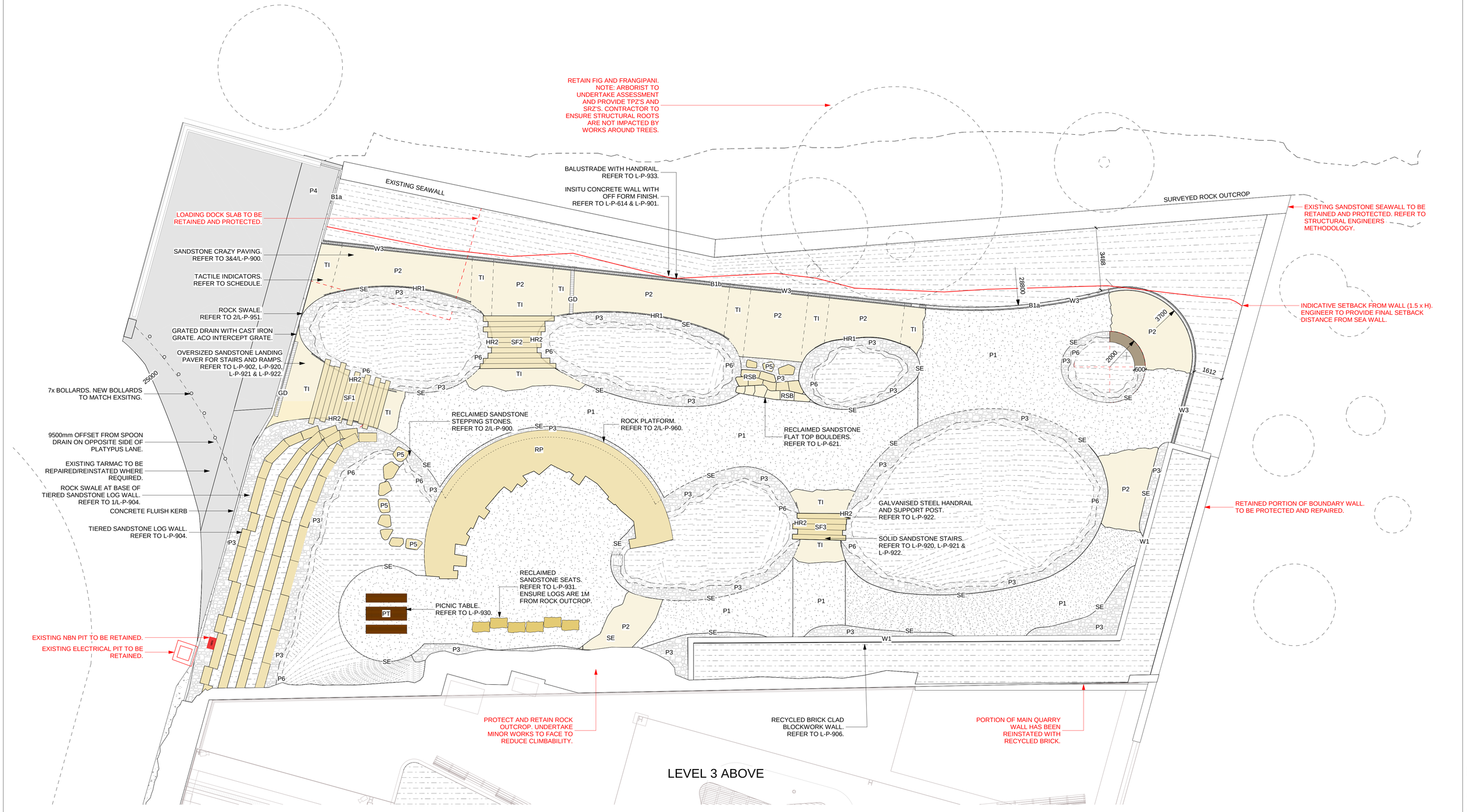
Project
Sub Base Platypus

Drawing Title
Legend & Landscape Schedule - Sheet 2

Drawing Status
AS BUILT

Scale. 1 : 1 @A1
Plot Date 26/03/2024 7:37:12 PM
Project No. 2040
Drawing No. L-P-012
Revision J

BM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



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Rev	Date	Description	Drawn	Checked
V	26/03/2024	AS BUILT	DR	MH
U	04/03/2024	FOR CONSTRUCTION	DR	MH
T	03/01/2024	FOR CONSTRUCTION	DR	MH
S	29/02/2024	FOR CONSTRUCTION	DR	MH
R	09/11/2023	FOR CONSTRUCTION	DR	MH
Q	03/11/2023	FOR CONSTRUCTION	DR	MH
P	19/09/2023	FOR INFORMATION	DR	MH
O	12/09/2023	FOR INFORMATION	DR	SK

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

General Arrangement Plan

Drawing Status

AS BUILT

0 1 2 3 4 5
SCALE - 1:100 @ A1 , 1:200 @ A3

Scale. 1 : 100 @A1

Plot Date 26/03/2024 7:37:37 PM

Project No. 2040

Drawing No. L-P-200

Revision V

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

REFER TO L-P-300 FOR ALL LEVELS.
LEVELS HAVE BEEN PROVIDED BY USHER & COMPANY SURVEYORS AND ARE AS PER SITE CONDITIONS.

USHER & COMPANY
Surveying & Land Development Consultants
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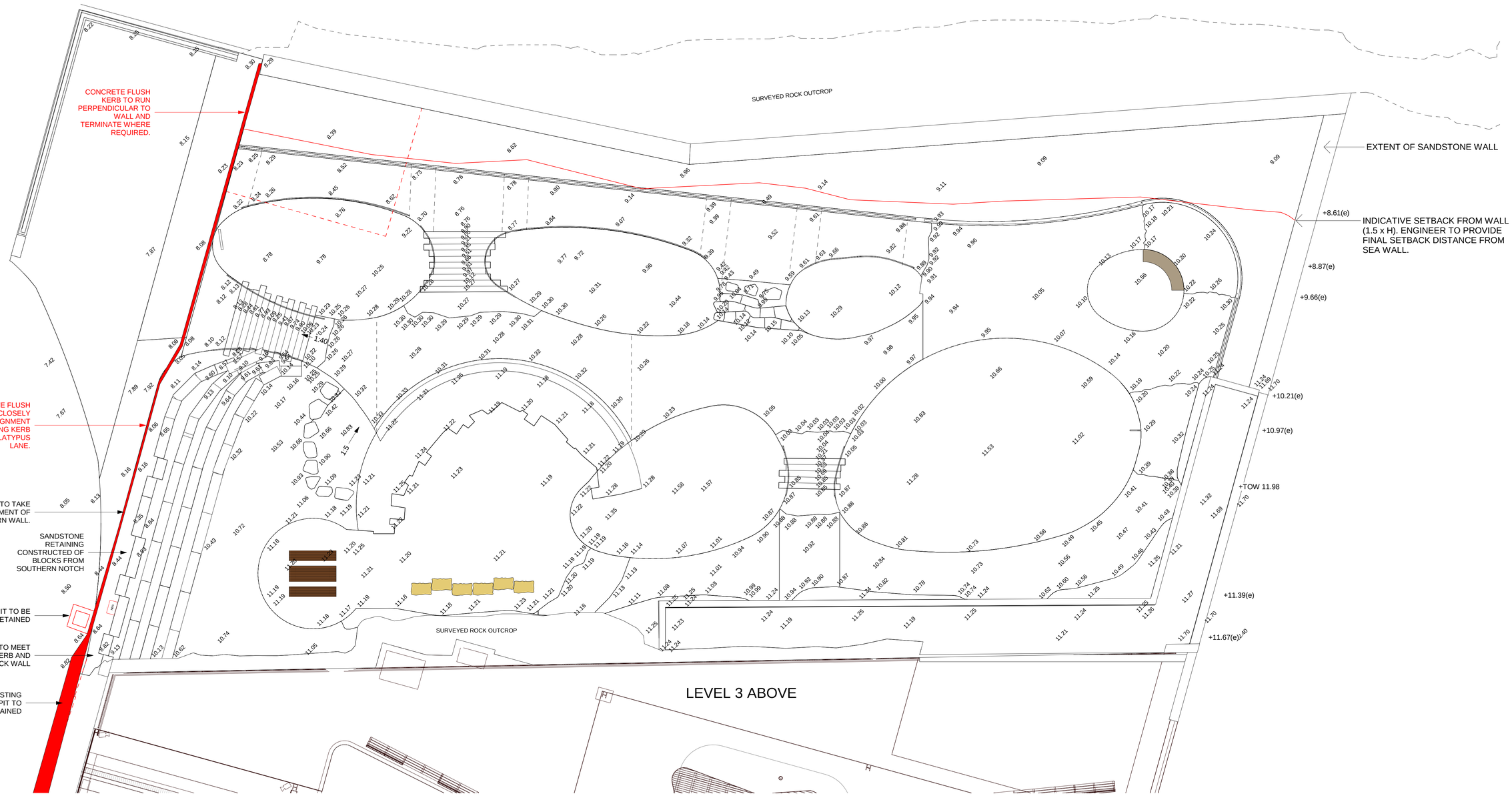
Suite 23, 1-3 Havilah Street, Chatswood NSW 2057
PO Box 1199, CHATSWOOD NSW 2057
Phone: (02) 9411 8166
Email: admin@ushersurvey.com.au

THE WORK AS EXECUTED INFORMATION SHOWN IN RED ON THIS PLAN RELATES TO THE AS BUILT LOCATION AND LEVELS OF LEVEL 1 AS SURVEYED ON 11 MARCH 2024

Ref: 6488-L1-WAE

USHER & CO PROVIDE NO WARRANTY AS REGARDS THE SUITABILITY OR OTHERWISE OF THE NEW CONSTRUCTION.
RATHER THIS SURVEY HAS BEEN PRODUCED TO ENABLE ASSESSMENT OF THE AS BUILT LEVEL 1 SUITABILITY BY OTHERS.

ORIGIN OF LEVELS: CONTROL STATIONS REFERENCE PLAN
REPARED BY LTS, FILE RED 25041 007DT, REV E, DATED 14/12/2020



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N	15/02/2024	FOR CONSTRUCTION	DR	MH
M	23/11/2023	FOR CONSTRUCTION	DR	MH
L	09/11/2023	FOR CONSTRUCTION	DR	MH
K	02/11/2023	FOR INFORMATION	DR	MH
J	19/09/2023	FOR INFORMATION	DR	MH
I	12/09/2023	FOR INFORMATION	DR	SK
H	28/08/2023	FOR INFORMATION	DR	SK

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Client: Harbour Trust — Australian Government, Sydney Harbour Federation Trust

Project: Sub Base Platypus

Drawing Title: **Levels & Drainage Plan**

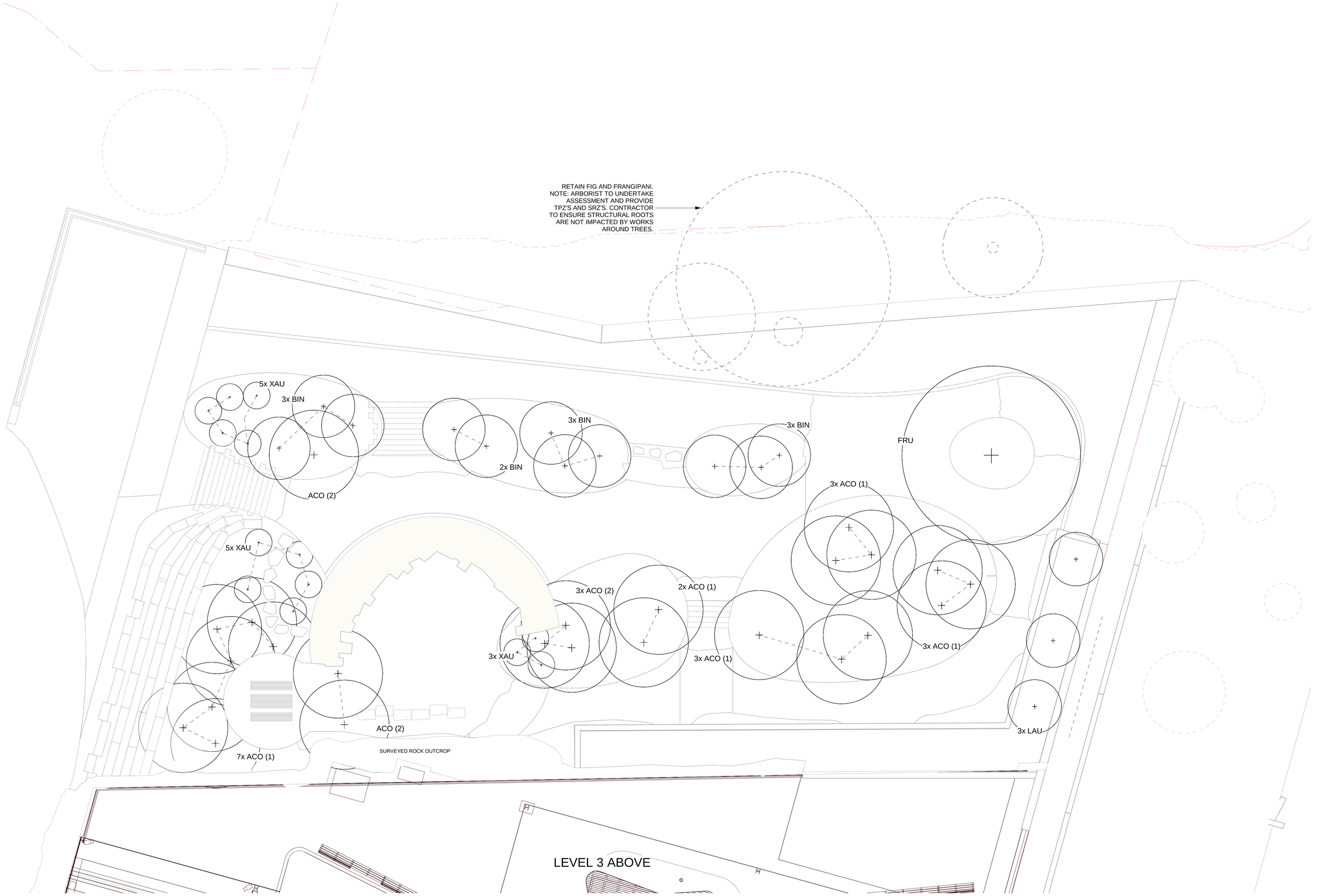
Drawing Status: AS BUILT

SCALE - 1:100 @ A1 , 1:200 @ A3

Scale. 1 : 100 @A1 | Plot Date 26/03/2024 7:37:39 PM

Project No. 2040 | Drawing No. L-P-300 | Revision O

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



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H	31/10/2023	FOR CONSTRUCTION	DR	MH
G	11/10/2023	FOR PLANT PROCUREMENT	DR	MH
F	11/05/2023	FOR PLANT PROCUREMENT	DR	MH
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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Planting Plan - Trees

Drawing Status

AS BUILT

0 1 2 3 4 5
SCALE - 1:100 @ A1 , 1:200 @ A3

Scale. 1 : 100 @A1

Plot Date 26/03/2024 7:37:42 PM

Project No. 2040

Drawing No. L-P-520

Revision J

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

Mix 1
Mix 2
Mix 3
Mix 4
Mix 5
Mix 6
Mix 7
Mix 8
Mix 9
Mix 10
Mix 11
Mix 12
Mix 13

RETAIN FIG AND FRANGIPANI.
NOTE: ARBORIST TO UNDERTAKE ASSESSMENT AND PROVIDE TPZ'S AND SRZ'S. CONTRACTOR TO ENSURE STRUCTURAL ROOTS ARE NOT IMPACTED BY WORKS AROUND TREES.

ROCK GARDEN WITH SOIL POCKETS OVER RETAINED SLAB

110 Mix 13
563 Mix 12
3x Amy
3x Alf
62 Mix 1
147 Mix 10
2x Ber
3x Alf
62 Mix 1
Amy
Ber
126 Mix 10
Alf
Amy
Ber
Alf
2x Ber
57 Mix 10
39 Mix 1
Alf
Amy
38 Mix 9
22 Mix 1
Bli
28 Mix 11
Kam
93 Mix 11
12 Mix 2
44 Mix 7
3x Alf
94 Mix 1
409 Mix 8
7 x Alf
3x Alf
3x Alf
64 Mix 1
3x Alf
167 Mix 8
4x Amy
54 Mix 1
37 Mix 1
Amy
47 Mix 5
21 Mix 4
49 Mix 3
51 Mix 3
51 Mix 1
48 Mix 3
5x Alf
186 Mix 4
3x Amy
SURVEYED ROCK OUTCROP
51 Mix 2
16 Mix 2
271 Mix 6
29 Mix 2
5x Alf
x
MAKE GOOD OF ZONE BETWEEN BRICK WALL AND TIMBER LOG WALL ON ADJACENT PROPERTY. PROVIDE PLANTING TO SCREEN TIMBER LOG WALL AND REDUCE LINE OF SIGHT INTO APARTMENTS.

LEVEL 3 ABOVE

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G	26/03/2024	AS BUILT	DR	MH
F	27/11/2023	FOR CONSTRUCTION	DR	MH
E	31/10/2023	FOR CONSTRUCTION	DR	MH
D	11/10/2023	FOR PLANT PROCUREMENT	DR	MH
C	11/05/2023	FOR PLANT PROCUREMENT	DR	MH
B	03/03/2023	IFT Addenda 2	DR	MH
A	17/01/2023	IFT	AR	MH

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Planting Plan - Understorey and Shrubs

Drawing Status

AS BUILT

SCALE - 1:100 @ A1 , 1:200 @ A3

Scale. 1 : 100 @A1

Plot Date 26/03/2024 7:37:57 PM

Project No. 2040

Drawing No. L-P-521

Revision G

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detachedLrvt

PRECISION LANDSCAPES PTY LTD

Sub Base Platypus Stage 2

Plant	Size	Quantity	Notes/Substitutions
GROUNDCOVERS AND CLIMBERS			
Mix 1 - Even Mix of below, Qty 485:			
Carex appressa	Tube	122	
Ficinia nodosa	Tube	121	
Juncus usitatus	Tube	121	
Lomandra hystrix	140mm	121	
Mix 2 - Even Mix of below, Qty 109:			
Gahnia sieberiana	140mm	54	
Lomandra hystrix	140mm	55	
Mix 3 - Even Mix of below, Qty 148:			
Baeckea linifolia	140mm	37	
Banksia integrifolia 'Roller Coaster'	140mm	37	
Hardenbergia violacea	140mm	37	
Hibbertia scandens	140mm	37	
Mix 4 - Even Mix of below, Qty 207:			
Correa alba	140mm	41	
Lomandra longifolia 'Verday'	140mm	41	
Melaleuca thymifolia	140mm	41	
Rhagodia spinescens	140mm	42	
Westringia fruiticosa	140mm	42	
Mix 5 - Even Mix of below, Qty 47:			
Chrysocephalum apiculatum 'desert flame'	140mm	47	
Mix 6 - Even Mix of below, Qty 271:			
Dianella revoluta	Tube	91	
Hibbertia scandens	140mm	90	
Lomandra hystrix	140mm	90	
Mix 7 - Even Mix of below, Qty 44:			
Cissus antartica	140mm	11	
Grevillea 'Poorinda Royal Mantle'	140mm	11	
Melaleuca thymifolia	140mm	11	
Poa labillardierei	140mm	11	
Mix 8 - Even Mix of below, Qty 576:			
Correa alba	140mm	115	
Isopogona anethifolius	Tube	115	
Lomandra longifolia	140mm	115	
Poa labillardierei	140mm	115	
Ozothamnus diosmifolius	Tube	116	
Mix 9 - Even Mix of below, Qty 38:			
Dianella revoluta 'Blue Stream'	140mm	19	
Lomandra longifolia	140mm	19	
Mix 10 - Even Mix of below, Qty 330:			
Leptospermum polygalifolium	Tube	66	
Correa alba	140mm	66	
Melaleuca thymifolia	140mm	66	
Rhagodia spinescens	140mm	66	
Westringia fruticosa 'Mundi'	140mm	66	
Mix 11 - Even Mix of below, Qty 121:			
Dianella caerulea	Tube	41	
Lomandra longifolia	140mm	40	
Lomandra longifolia 'Verday'	140mm	40	
Mix 12 - Even Mix of below, Qty 563:			
Leptospermum polygalifolium	Tube	71	
Banksia spinulosa	140mm	70	
Carpobrotus glaucescens	140mm	70	
Carex appressa	Tube	71	
Hibbertia scandens	140mm	70	
Juncus usitatus	Tube	71	
Lomandra longifolia 'Verday'	140mm	70	
Rhagodia spinescens	140mm	70	
Mix 13 - Even Mix of below, Qty 110:			
Carpobrotus glaucescens	140mm	18	
Carex appressa	Tube	19	
Hibbertia scandens	140mm	18	
Juncus usitatus	Tube	19	
Lomandra hystrix	140mm	18	
Rhagodia spinescens	140mm	18	
	Total	3049	

TREES			
Angophora costata	100L	17	
Angophora costata	200L	6	
Acacia longifolia subsp. sophorae Coast Wattle	300mm	24	
Acacia myrtifolia	300mm	21	Pregrow only. If not ready, downsize or sub Acacia longifolia.
Banksia ericifolia Heath-leaved banksia	45Ltr	6	
Banksia integrifolia	100L	11	
Baeckea linifolia 'Swamp Baeckea'	5L	1	Largest size available.
Cyathea australis Tree Fern	45Ltr	8	
Ficus rubiginosa Port Jackson Fig	4m tall	1	
Kunzea ambigua Tick Bush	300mm	1	
Livistonia australis Cabbage Tree palm	4m tall	3	2m Clear Trunk
Xanthorrhoea australis Grass Tree	ex-ground	14	
	Total	113	

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G	27/11/2023	FOR CONSTRUCTION	DR	MH
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E	11/10/2023	FOR PLANT PROCUREMENT	DR	MH
D	11/05/2023	FOR PLANT PROCUREMENT	DR	MH
C	03/03/2023	IFT Addenda 2	DR	MH
B	03/02/2023	IFT Addenda	DR	MH
A	17/01/2023	IFT	AR	MH

DRAFT

NOT FOR CONSTRUCTION

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Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Planting Schedule

Drawing Status

AS BUILT

Scale. @A1

Plot Date 26/03/2024 7:37:58 PM

Project No.

2040

Drawing No.

L-P-530

Revision

H

BM 360//2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

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Rev	Date	Description	Drawn	Checked
E	26/03/2024	AS BUILT	DR	MH
D	09/11/2023	FOR CONSTRUCTION	DR	MH
C	02/11/2023	FOR INFORMATION	DR	MH
B	12/05/2023	FOR INFORMATION	DR	MH
A	27/04/2023	FOR INFORMATION	DR	MH

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Project

Sub Base Platypus

Drawing Title

Overall Section - Sheet 1

Drawing Status

AS BUILT

0 2 4 6 8 10

SCALE - 1:50 @ A1 , 1:100 @ A3

Scale. 1 : 50 @A1

Plot Date 26/03/2024 7:38:04 PM

Project No. 2040

Drawing No. L-P-607

Revision E

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

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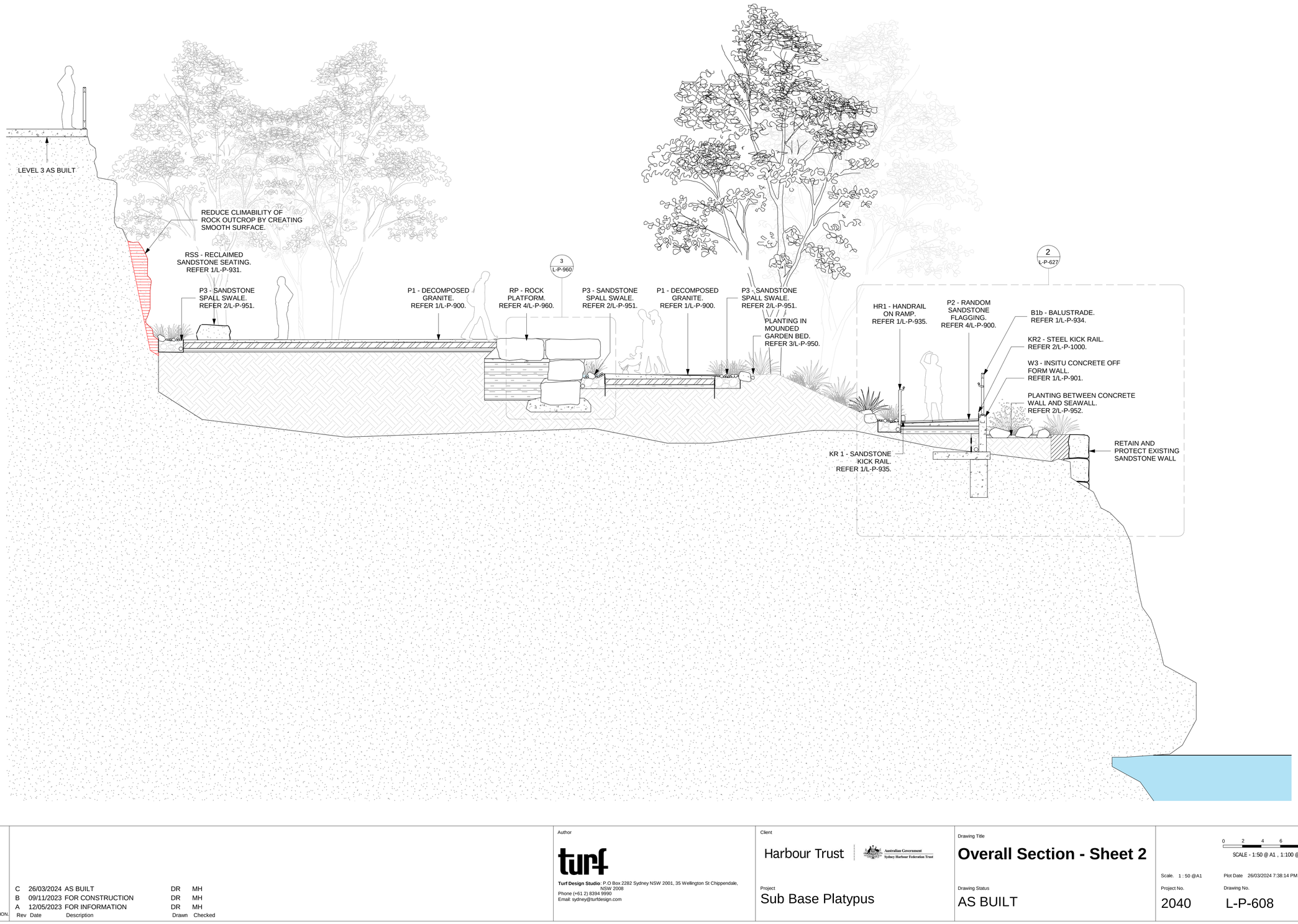

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Rev	Date	Description	Drawn	Checked
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B	09/11/2023	FOR CONSTRUCTION	DR	MH
A	12/05/2023	FOR INFORMATION	DR	MH

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Project

Sub Base Platypus

Drawing Title

Overall Section - Sheet 2

Drawing Status

AS BUILT

0 2 4 6 8 10

SCALE - 1:50 @ A1 , 1:100 @ A3

Scale. 1 : 50 @A1

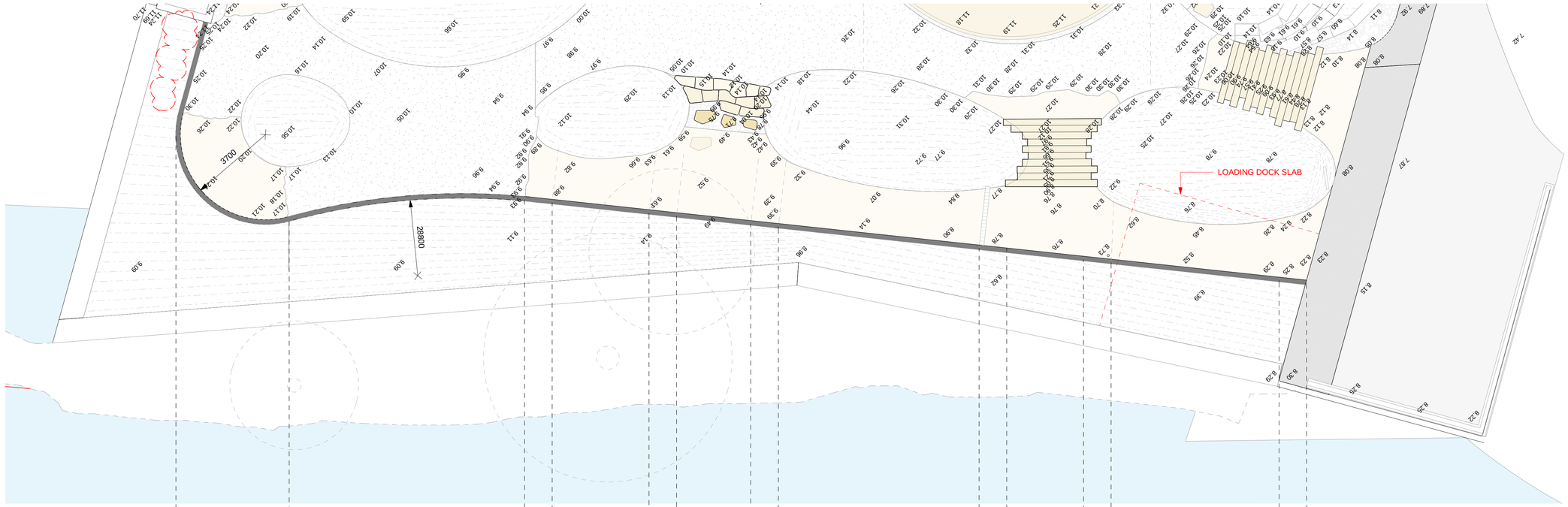
Plot Date 26/03/2024 7:38:14 PM

Project No. 2040

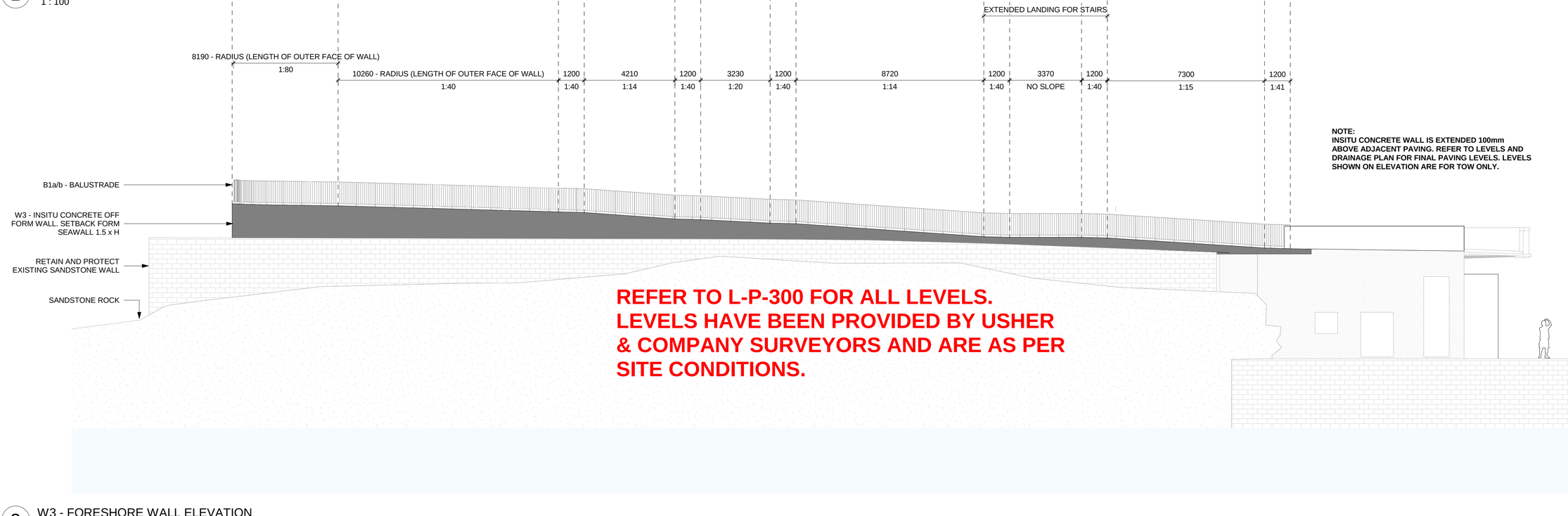
Drawing No. L-P-608

Revision C

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



1 W3 - FORESHORE WALL PLAN
1 : 100



2 W3 - FORESHORE WALL ELEVATION
1 : 100

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C	03/11/2023	FOR CONSTRUCTION	DR	MH
B	31/10/2023	FOR CONSTRUCTION	DR	MH
A	24/10/2023	FOR CONSTRUCTION	DR	MH

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Project
Sub Base Platypus

Drawing Title
Site Sections - Sheet 5

Drawing Status
AS BUILT

Scale. 1 : 100 @A1
Plot Date 26/03/2024 7:38:18 PM
Project No. 2040
Drawing No. L-P-614
Revision D

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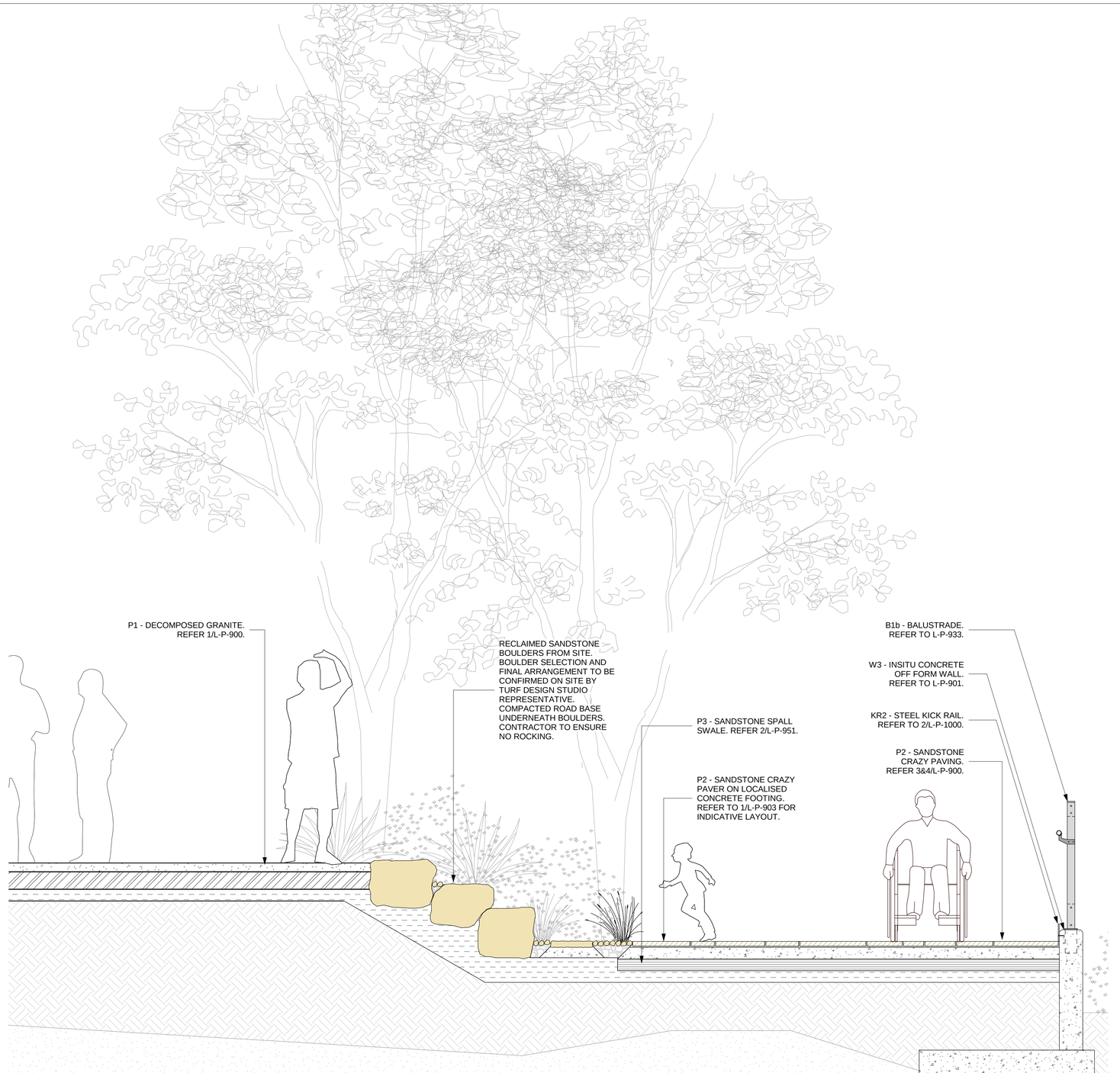

1 TYPICAL SECTION - SANDSTONE BOULDER
1 : 20

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C	26/03/2024	AS BUILT	DR	MH
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A	02/11/2023	FOR INFORMATION	DR	MH

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Project

Sub Base Platypus

Drawing Title

Detail Sections - Sheet 2

Drawing Status

AS BUILT

Scale. 1 : 20 @A1

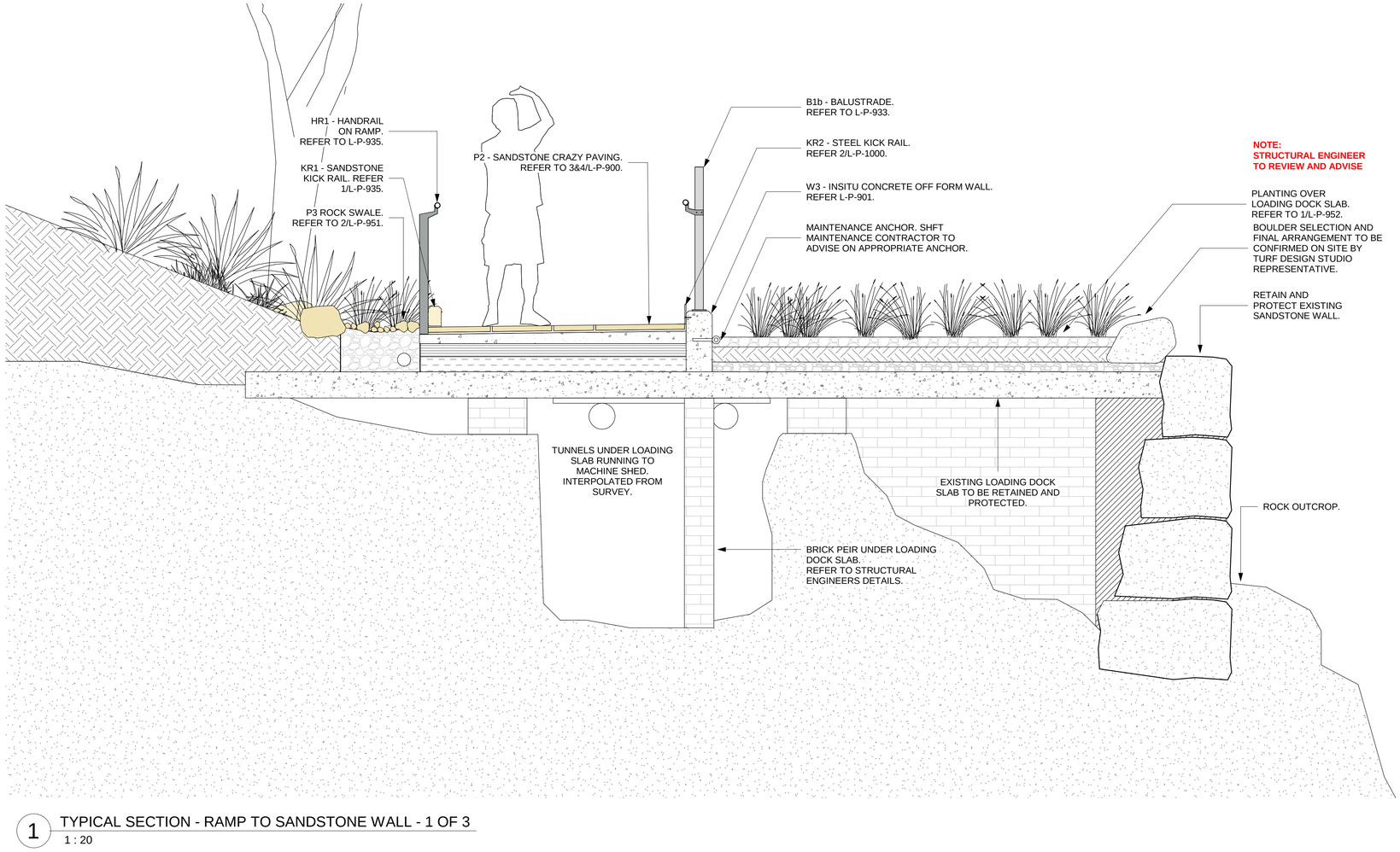
Plot Date 26/03/2024 7:38:21 PM

Project No. 2040

Drawing No. L-P-621

Revision C

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



1 TYPICAL SECTION - RAMP TO SANDSTONE WALL - 1 OF 3
1 : 20

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Rev	Date	Description	Drawn	Checked
D	26/03/2024	AS BUILT	DR	MH
C	03/11/2023	FOR CONSTRUCTION	DR	MH
B	02/11/2023	FOR INFORMATION	DR	MH
A	12/05/2023	FOR INFORMATION	DR	MH

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Project

Sub Base Platypus

Drawing Title

Detail Sections - Sheet 6

Drawing Status

AS BUILT

0 200 400 600 800 1000mm
SCALE - 1:20 @ A1 , 1:40 @ A3

Scale. 1 : 20 @A1

Plot Date 26/03/2024 7:38:22 PM

Project No.	Drawing No.	Revision
2040	L-P-625	D

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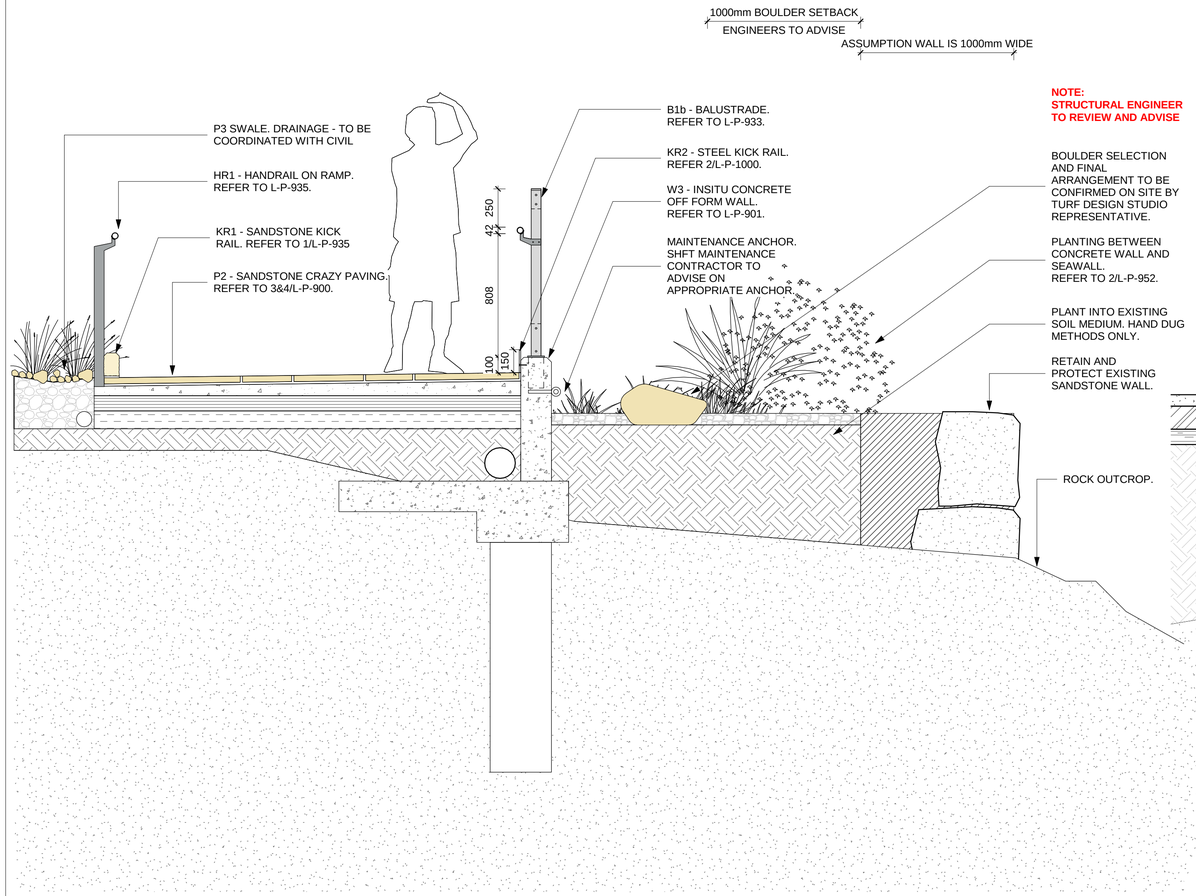
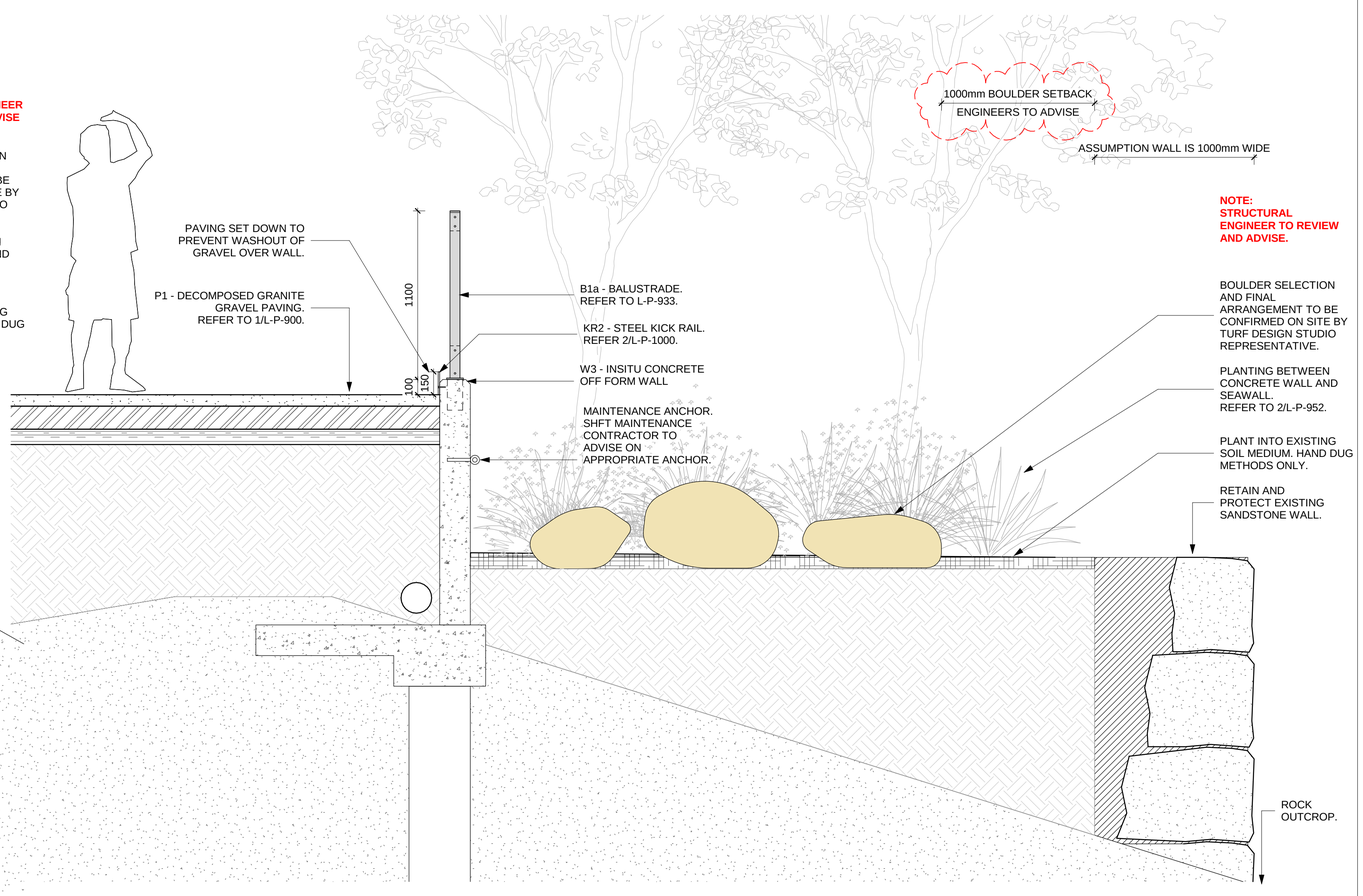


1 TYPICAL SECTION - RAMP TO SANDSTONE WALL - 2 OF 3
1 : 20



2 TYPICAL SECTION - RAMP TO SANDSTONE WALL - 3 OF 3
1 : 20

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Rev	Date	Description	Drawn	Checked
C	26/03/2024	AS BUILT	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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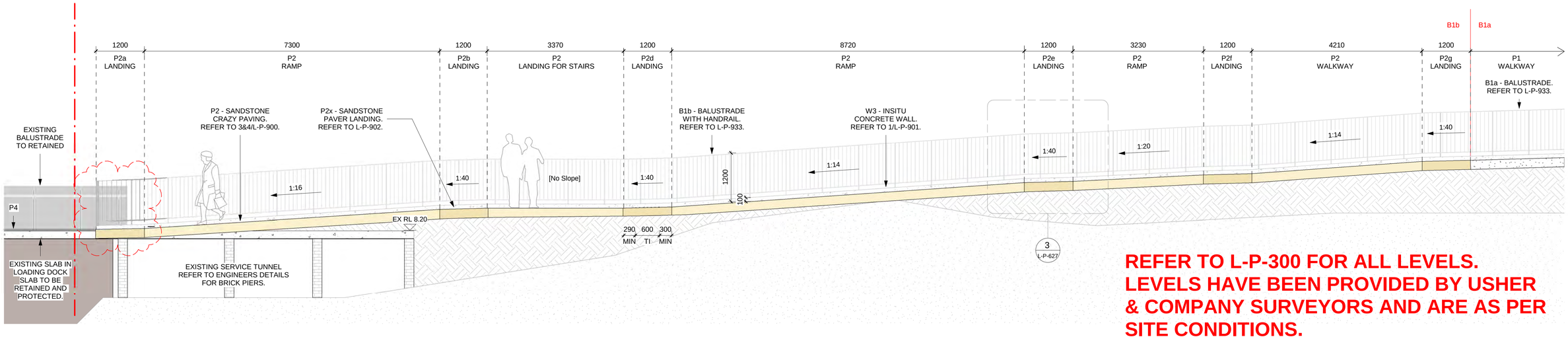
Project
Sub Base Platypus

Drawing Title
Detail Sections - Sheet 7

Drawing Status
AS BUILT

Scale. 1 : 20 @A1
Plot Date 26/03/2024 7:38:24 PM
Project No. 2040
Drawing No. L-P-626
Revision C

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



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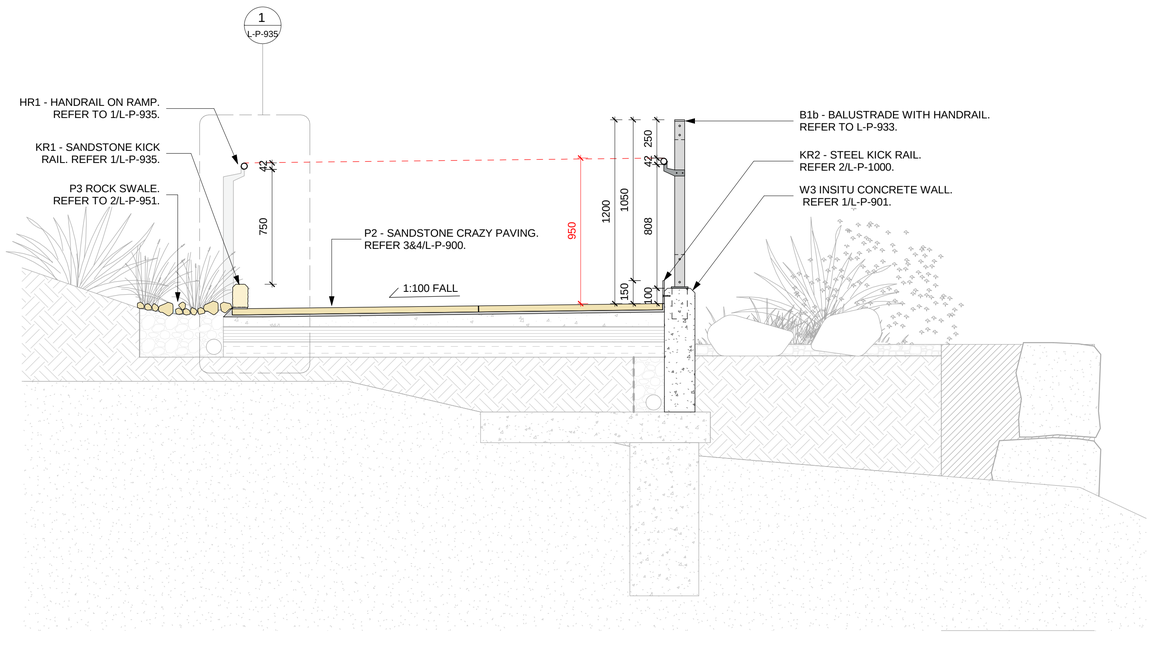
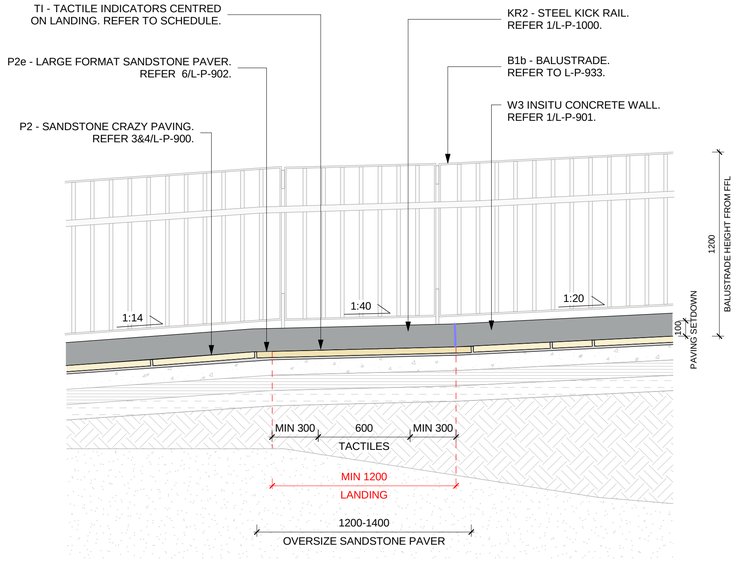
1 RAMP - LONG SECTION
1 : 50



2 P2 - RAMP - TRANSVERSE TYPICAL SECTION
1 : 20



3 P2&P2a/b/d/e/f/g - RAMP LANDING - LONGITUDINAL TYPICAL SECTION
1 : 20

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Rev	Date	Description	Drawn	Checked
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C	09/11/2023	FOR CONSTRUCTION	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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Australian Government
Sydney Harbour Federation Trust

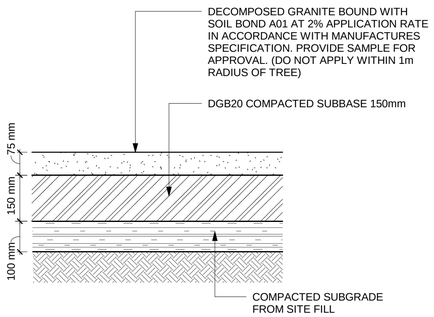
Project
Sub Base Platypus

Drawing Title
Detail Sections - Sheet 8

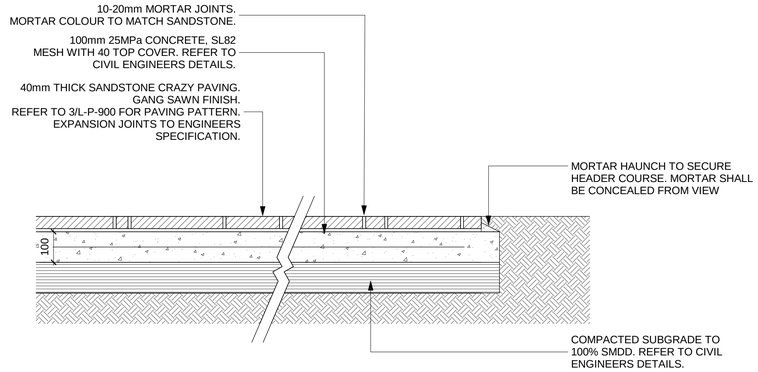
Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:38:29 PM
Project No. 2040
Drawing No. L-P-627
Revision E

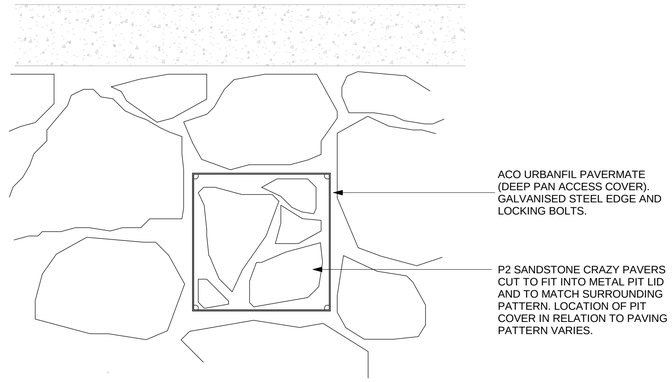
BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



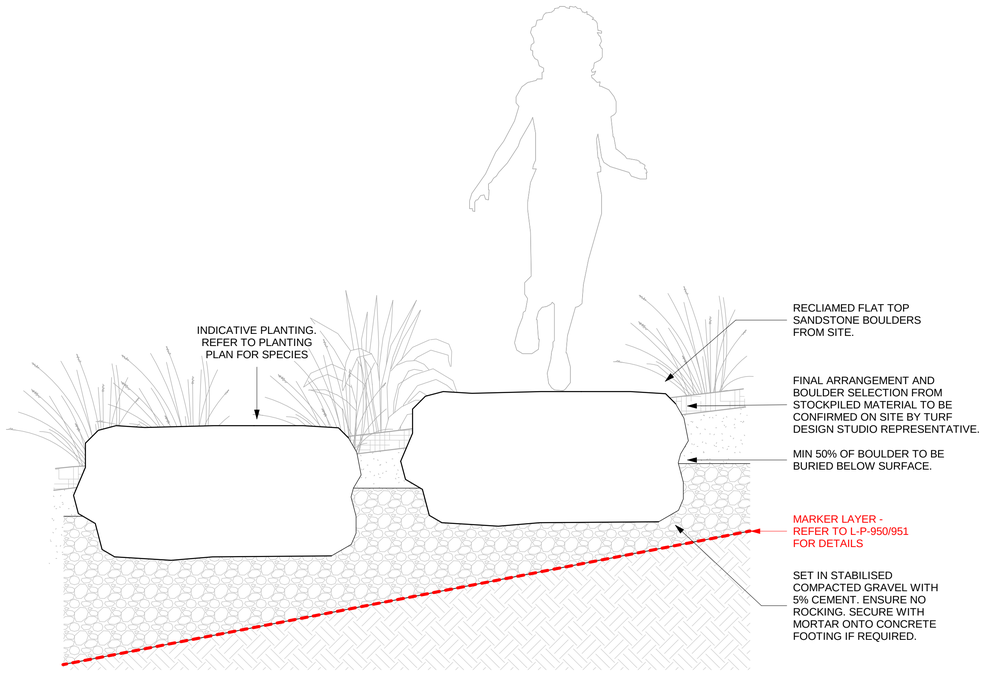
1 P1 - DECOMPOSED GRANITE GRAVEL PAVING - SOIL BONDED
1 : 10



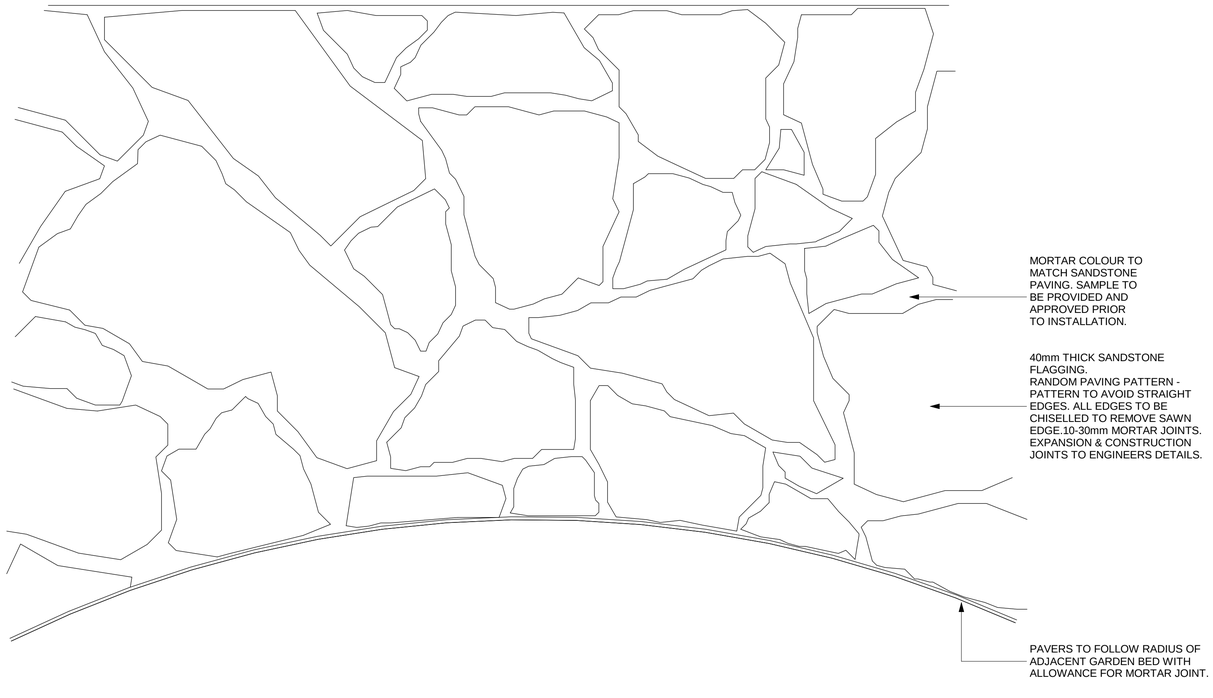
4 P2 - SANDSTONE CRAZY PAVING
1 : 10



5 TYPICAL DETAIL - INFILL PIT LID
1 : 10



2 SS - SANDSTONE STEPPING STONES - IN PLANTING
1 : 10



3 P2 - RANDOM SANDSTONE FLAGGING - INDICATIVE PATTERN
1 : 10

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H	23/11/2023	FOR CONSTRUCTION	DR	MH
G	09/11/2023	FOR CONSTRUCTION	DR	MH
F	03/11/2023	FOR CONSTRUCTION	DR	MH
E	12/05/2023	FOR INFORMATION	DR	MH
D	03/03/2023	IFT Addenda 2	DR	MH
C	03/02/2023	IFT Addenda	DR	MH
B	17/01/2023	IFT	AR	MH

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Email: sydney@turfdesign.com

Client: Harbour Trust — Australian Government, Sydney Harbour Federation Trust

Project: Sub Base Platypus

Drawing Title: **Details - Paving & Walls - Sheet 1**

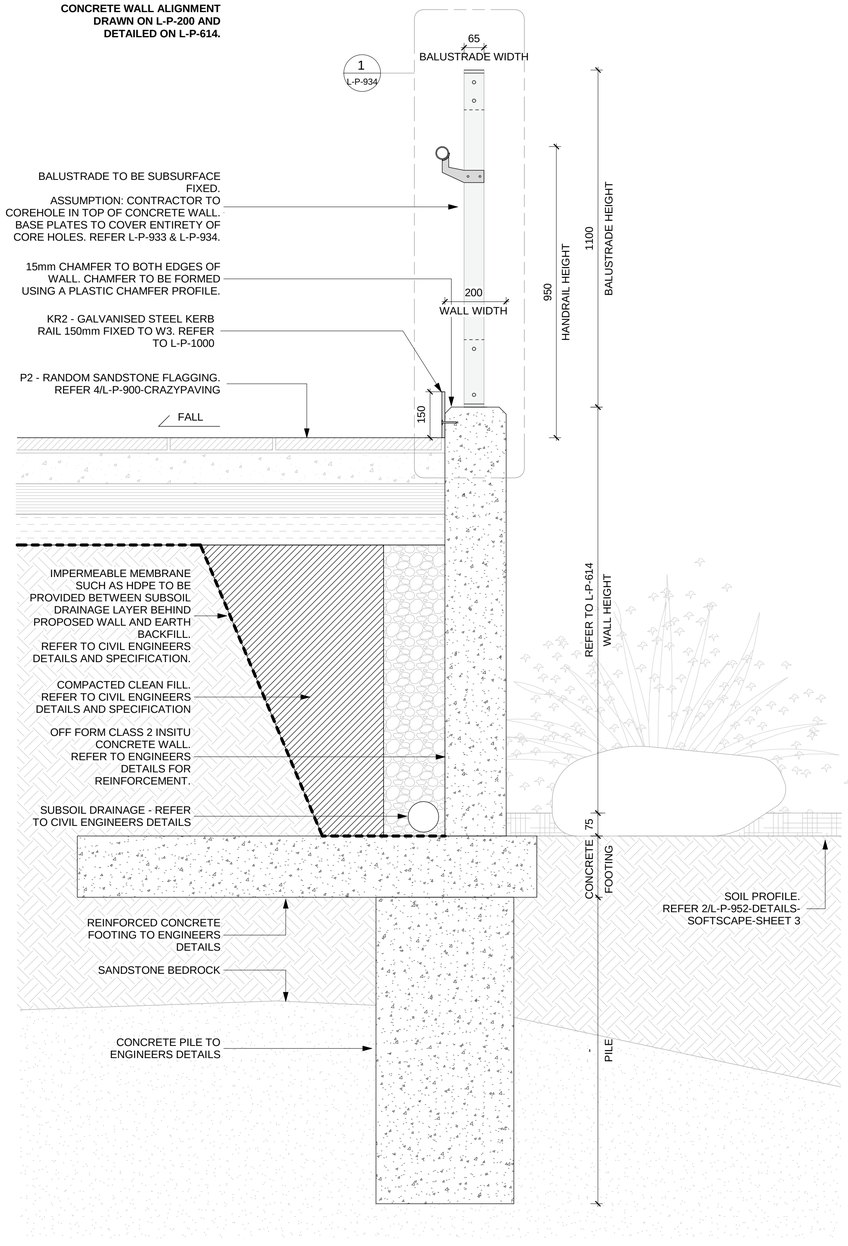
Drawing Status: AS BUILT

Scale. 1 : 10 @A1 | Plot Date 26/03/2024 7:38:30 PM

Project No. 2040 | Drawing No. L-P-900 | Revision I

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detachedrvt

NOTE:
CONCRETE WALL ALIGNMENT DRAWN ON L-P-200 AND DETAILED ON L-P-614.



1 W3 - INSITU CONCRETE WALL
1 : 10

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E	02/11/2023	FOR INFORMATION	DR	MH
D	31/10/2023	FOR CONSTRUCTION	DR	MH
C	12/05/2023	FOR INFORMATION	DR	MH
B	03/03/2023	IFT Addenda 2	DR	MH
A	17/01/2023	IFT	AR	MH

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Harbour Trust | Australian Government Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Paving & Walls - Sheet 2

Drawing Status

AS BUILT

Scale. 1 : 10 @A1

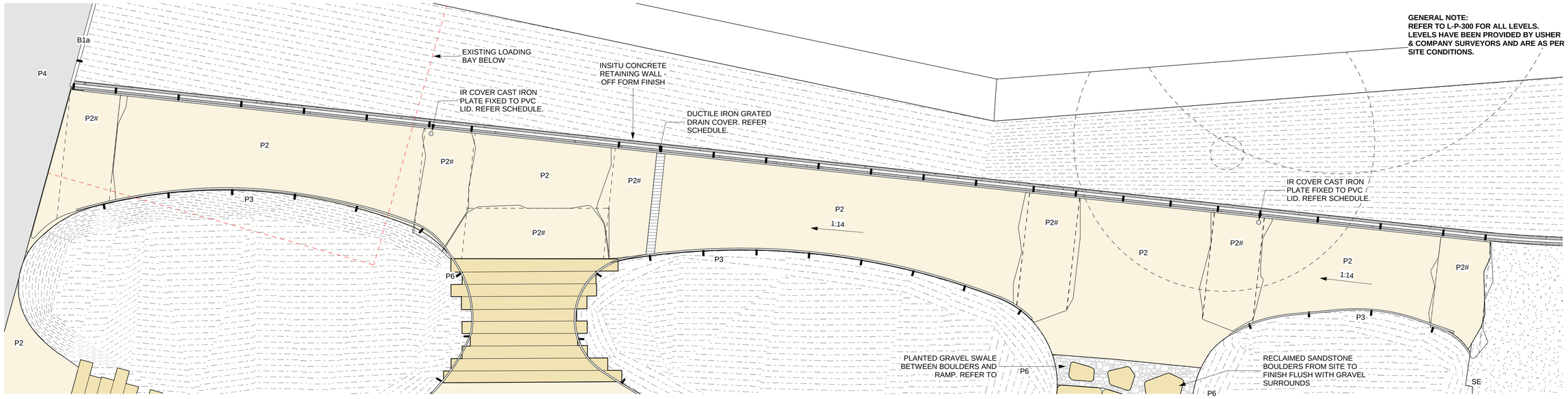
Plot Date 26/03/2024 7:38:31 PM

Project No. 2040

Drawing No. L-P-901

Revision G

BM 360:/2040_Sub Base Platypus/s2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.vt



1 RAMP DETAIL PLAN
1 : 50

DETAIL OMITTED

DETAIL OMITTED

DETAIL OMITTED

DETAIL OMITTED

DETAIL OMITTED

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B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Paving & Walls - Sheet 3

Drawing Status

AS BUILT

N

Scale. 1 : 50 @A1

Plot Date 26/03/2024 7:38:33 PM

Project No. 2040

Drawing No. L-P-902

Revision D

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

GENERAL NOTE:

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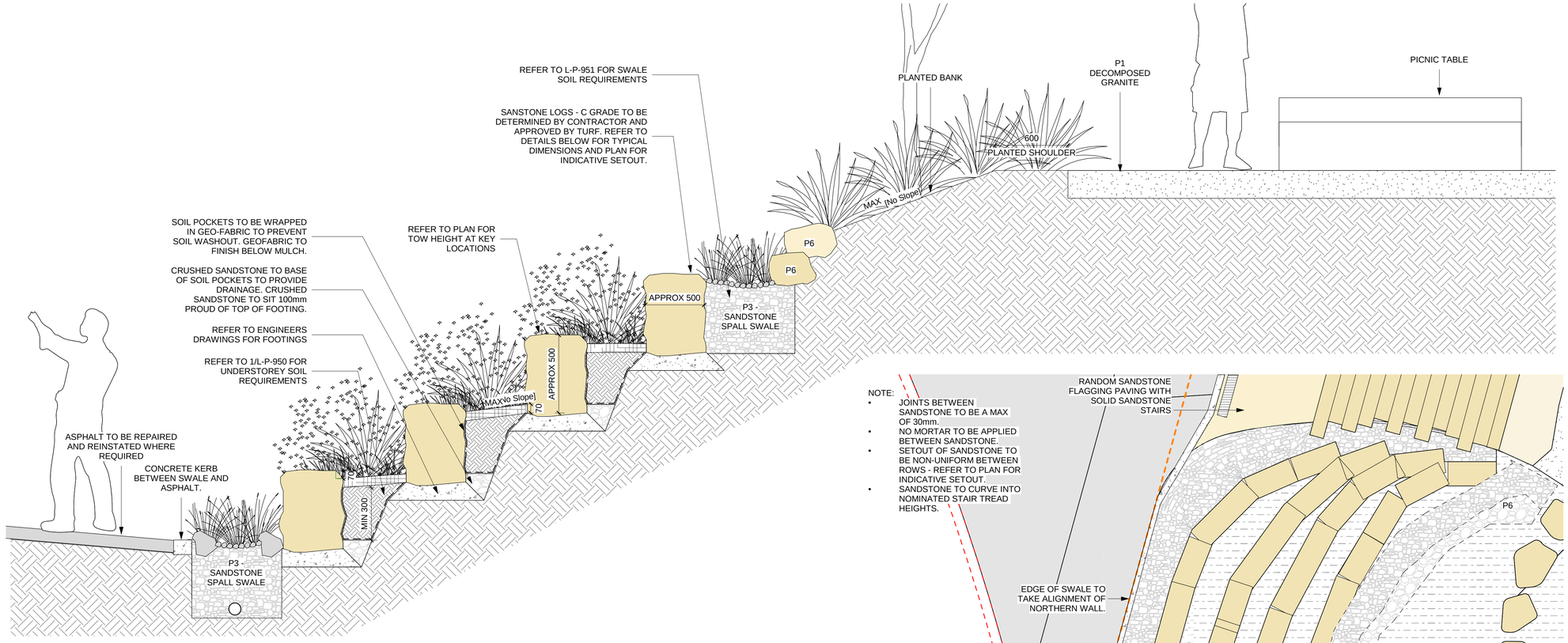
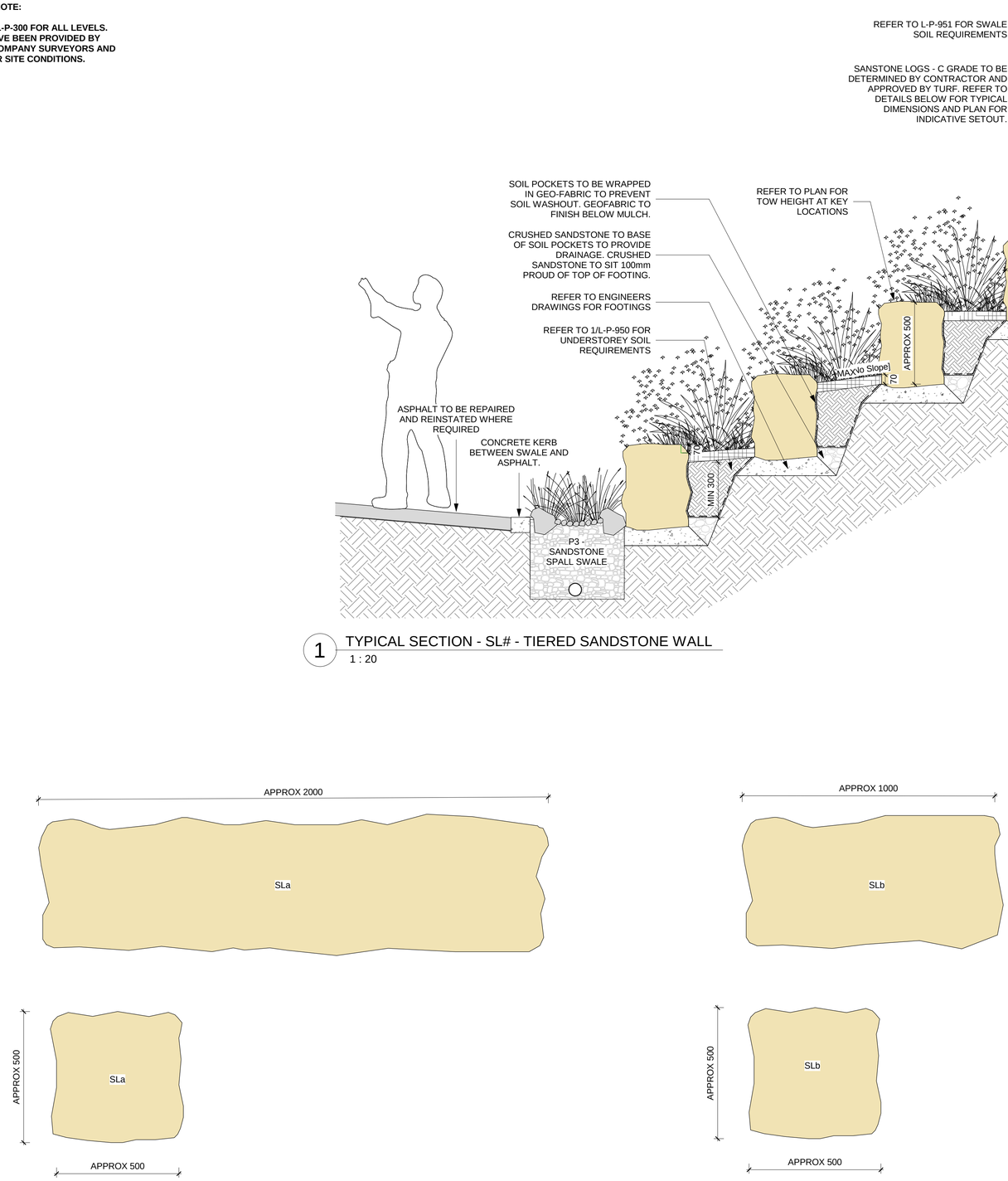
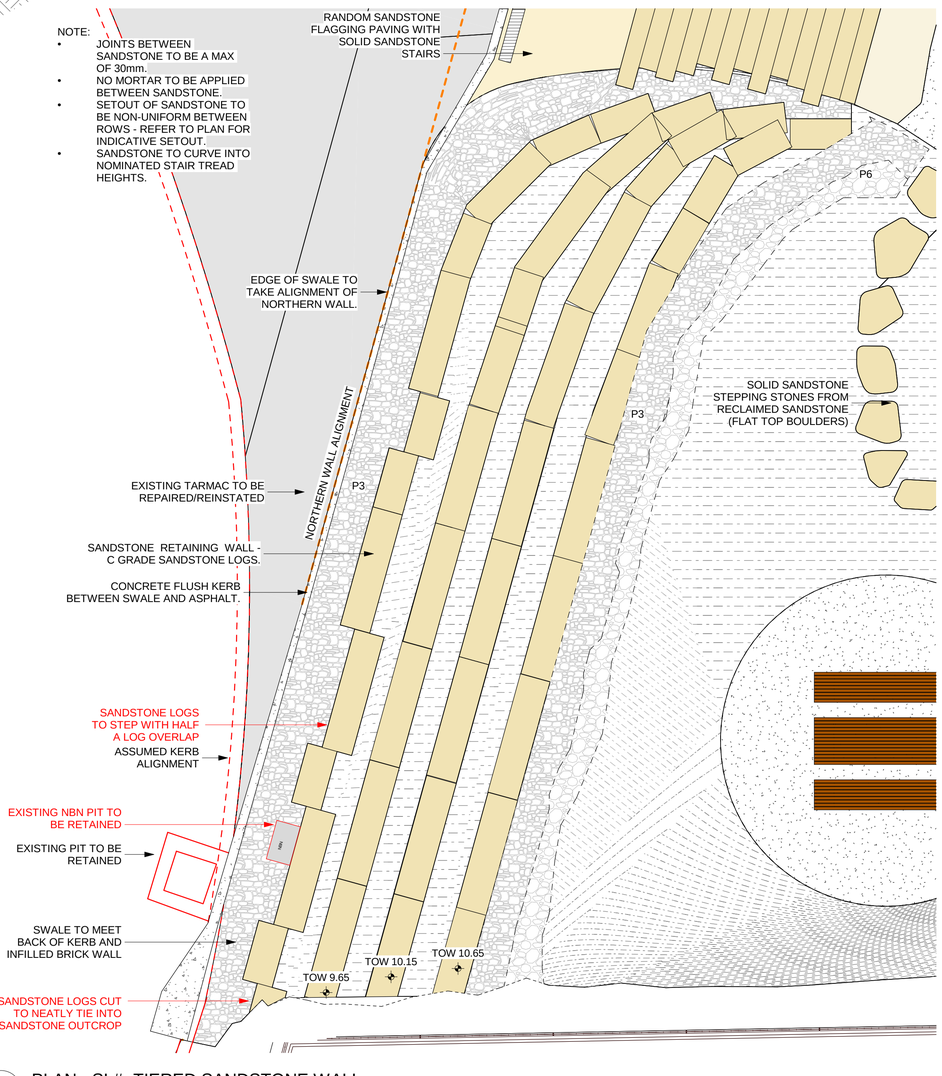


1 TYPICAL SECTION - SL# - TIERED SANDSTONE WALL
1 : 20



NOTE:
EVEN MIX OF SLa & SLb

3 SANDSTONE LOGS - C GRADE OR RECLAIMED SANDSTONE
1 : 10



2 PLAN - SL# -TIERED SANDSTONE WALL
1 : 50

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F	26/03/2024	AS BUILT	DR	MH
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D	16/10/2023	FOR INFORMATION	DR	MH
C	11/10/2023	FOR INFORMATION	DR	MH
B	12/05/2023	FOR INFORMATION	DR	MH
A	27/04/2023	FOR INFORMATION	DR	MH

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Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Paving & Walls - Sheet 5

Drawing Status

AS BUILT

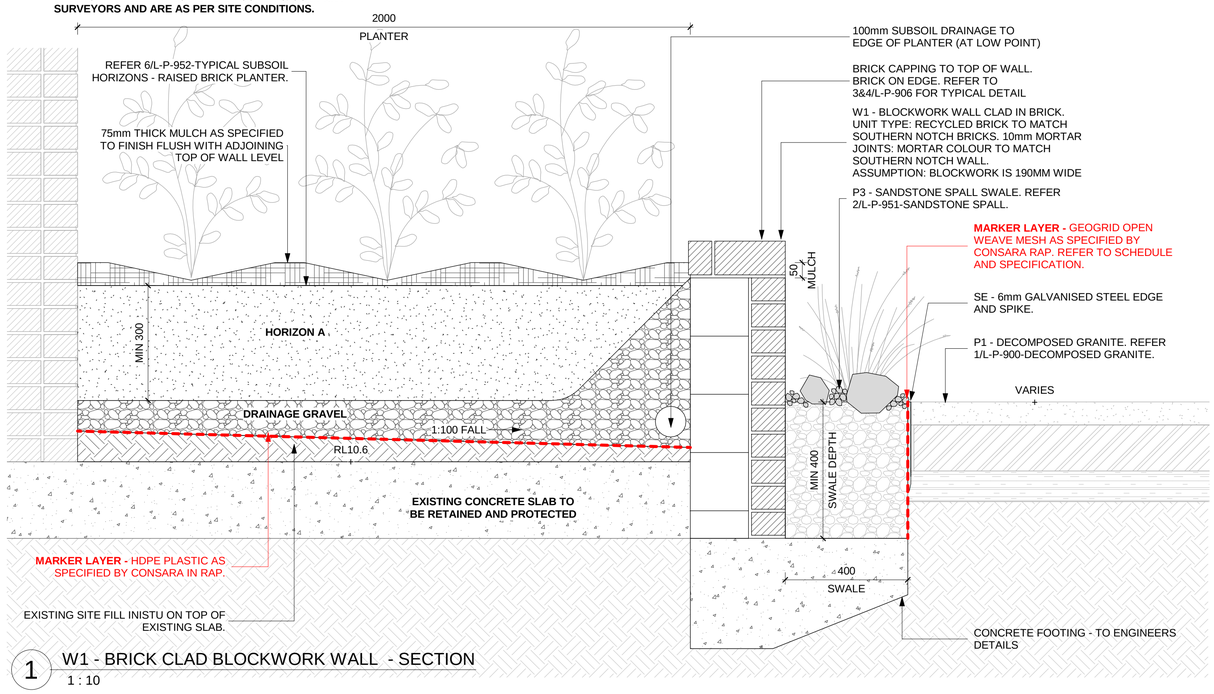
0 200 400 600 800 1000mm
SCALE - 1:20 @ A1 , 1:40 @ A3

Scale. As indicated @A1
Plot Date 26/03/2024 7:38:45 PM
Project No. 2040
Drawing No. L-P-904
Revision F

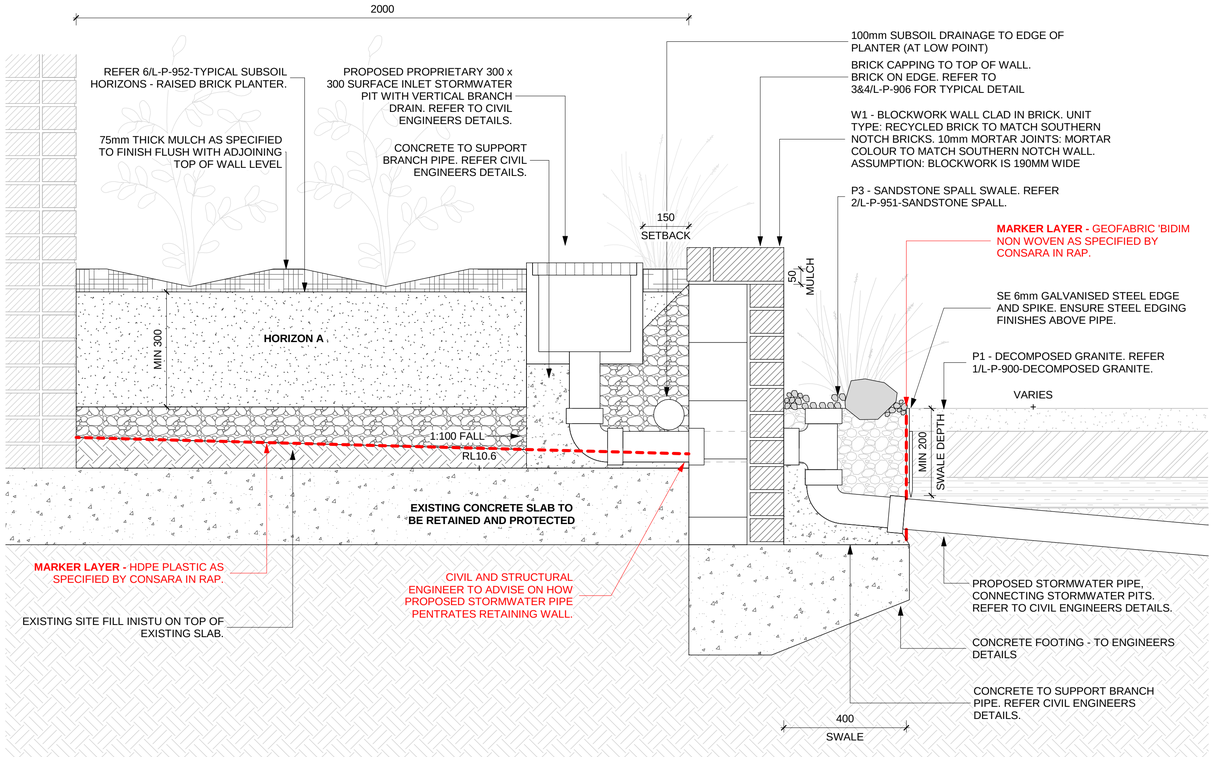
BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

GENERAL NOTE:

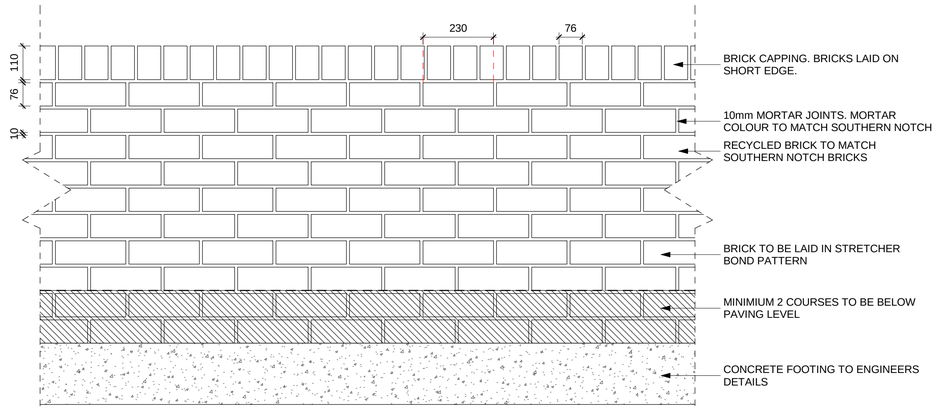
REFER TO L-P-300 FOR ALL LEVELS.
LEVELS HAVE BEEN PROVIDED BY USHER & COMPANY SURVEYORS AND ARE AS PER SITE CONDITIONS.



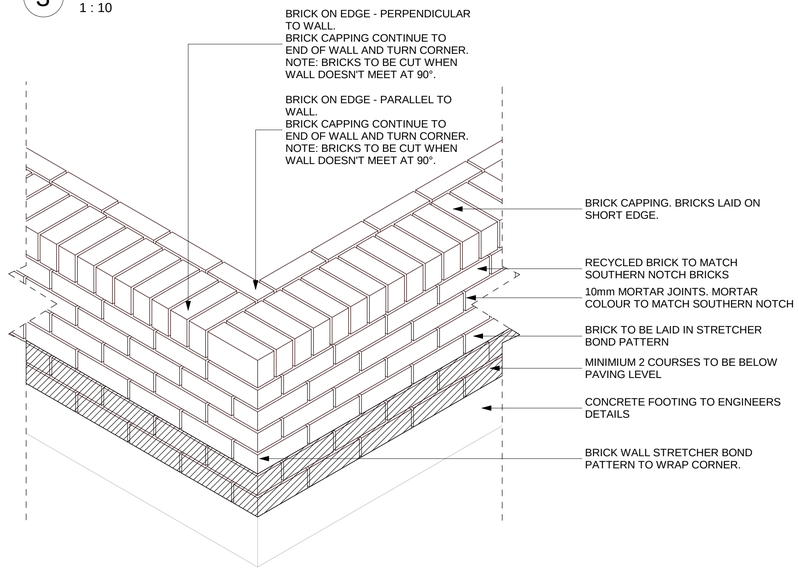
1 W1 - BRICK CLAD BLOCKWORK WALL - SECTION
1 : 10



2 W1 - BRICK CLAD BLOCKWORK WALL WITH STORMWATER PIT - SECTION
1 : 10

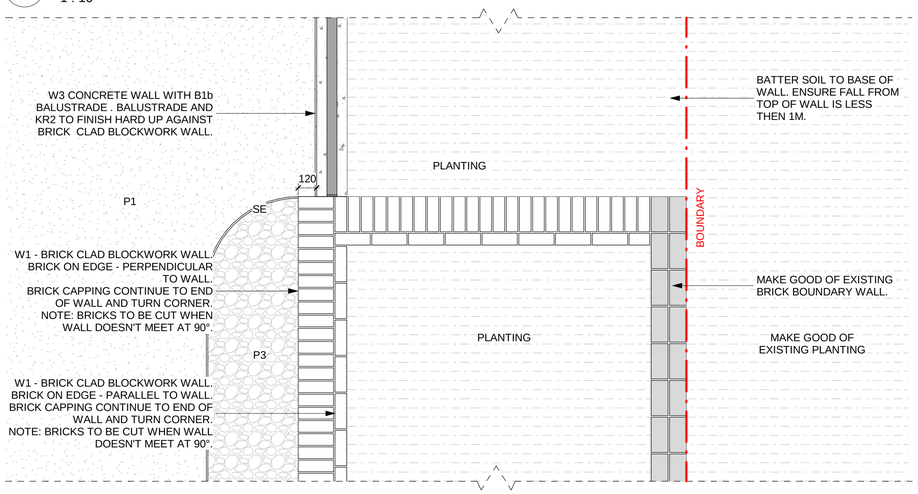


3 W1 - BRICK CLAD BLOCKWORK WALL - ELEVATION
1 : 10



RECYCLED BRICK FOR W1 BRICK CLAD WALL.
PHOTO SUPPLIED BY TAYLOR.

4 W1 - BRICK CLAD BLOCKWORK WALL - AXONOMETRIC
1 : 10



5 W1/W3 INTERFACE AND KEY LEVELS
1 : 20

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D	23/11/2023	FOR CONSTRUCTION	DR	MH
C	07/11/2023	FOR CONSTRUCTION	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
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Australian Government Sydney Harbour Federation Trust

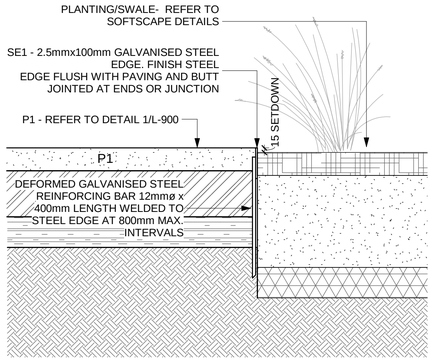
Project
Sub Base Platypus

Drawing Title
Details - Paving & Walls - Sheet 7

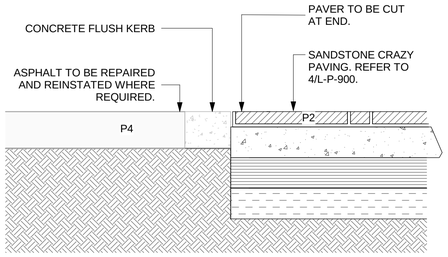
Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:38:52 PM
Project No. 2040
Drawing No. L-P-906
Revision F

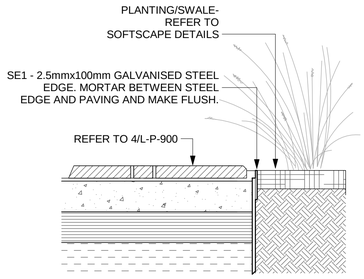
BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION/X_20_detached.rvt



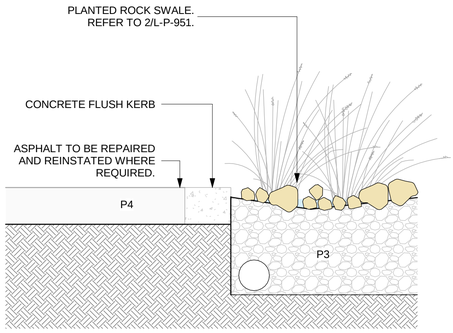
1 P1/PLANTING TYPICAL DETAIL
1 : 10



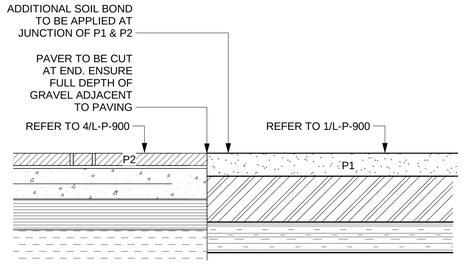
4 ASPHALT/P2 TYPICAL DETAIL
1 : 10



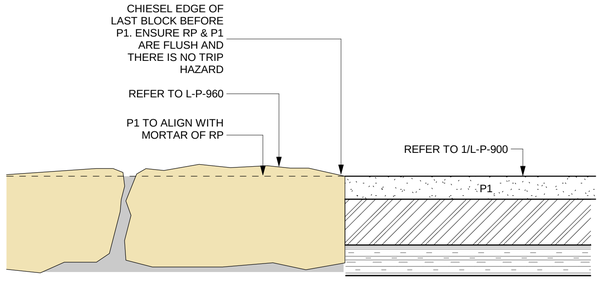
2 P2/PLANTING TYPICAL DETAIL
1 : 10



5 ASPHALT/P3 TYPICAL DETAIL
1 : 10



3 P1/P2 TYPICAL DETAIL
1 : 10



6 P1/RP TYPICAL DETAIL
1 : 10

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A	02/11/2023	FOR INFORMATION	DR	MH

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Interfaces

Drawing Status

AS BUILT

Scale. 1 : 10 @A1

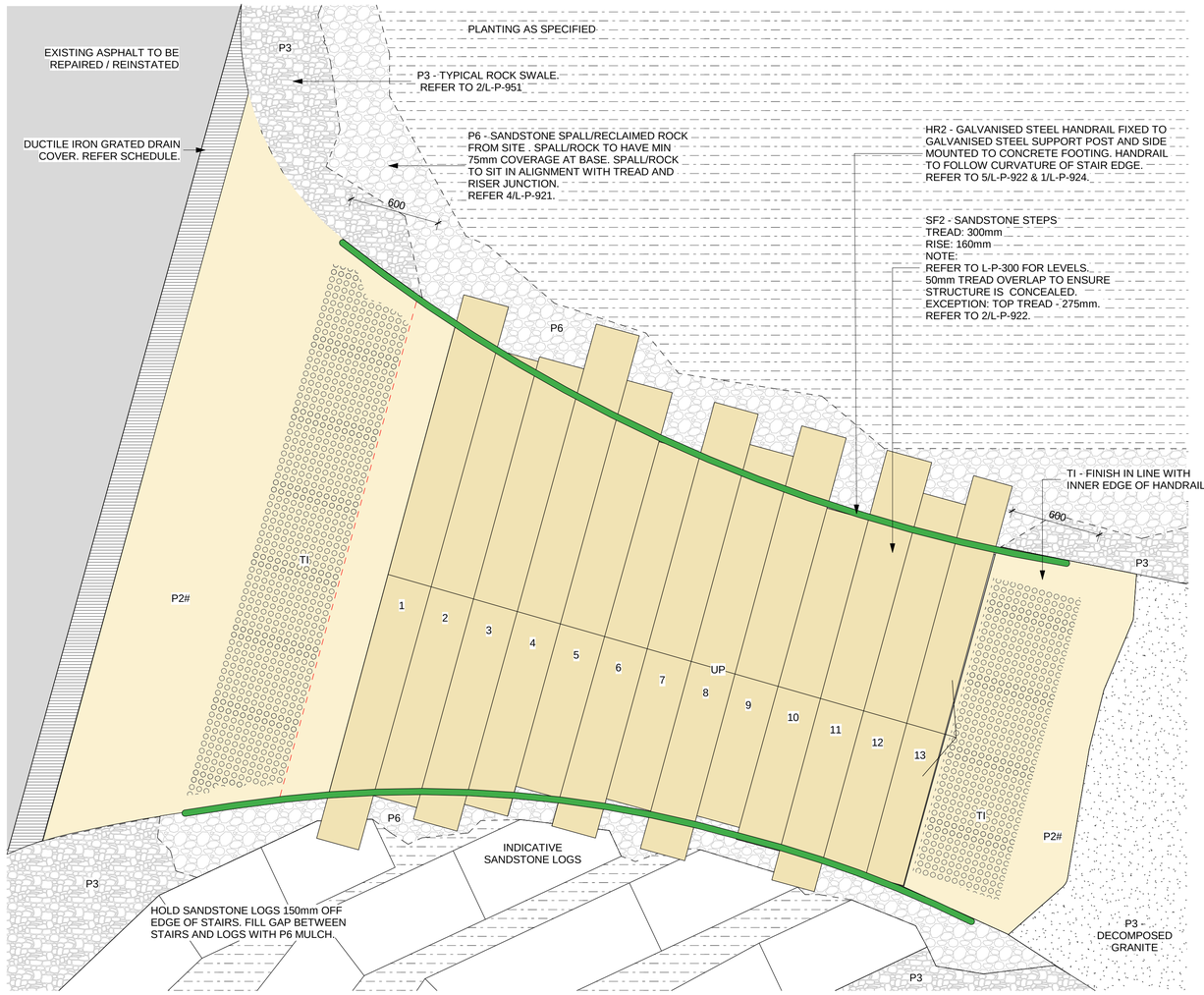
Plot Date 26/03/2024 7:38:53 PM

Project No. 2040

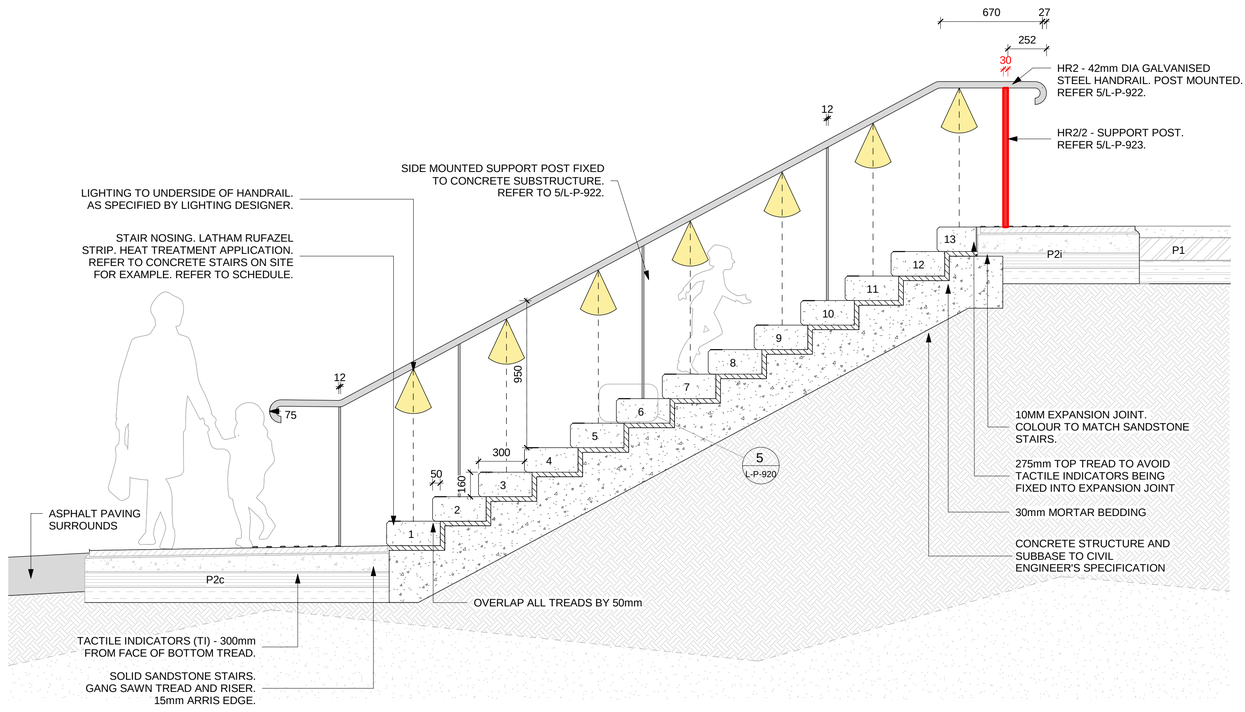
Drawing No. L-P-910

Revision D

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



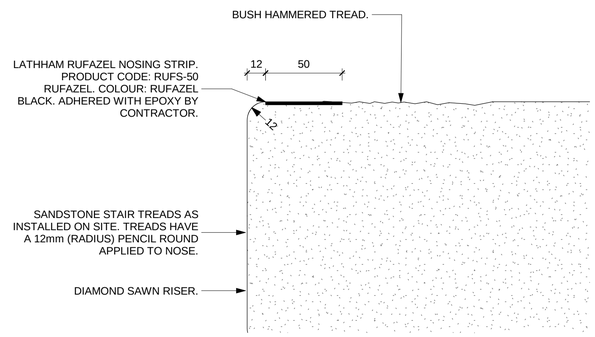
1 SF1 - SANDSTONE STAIRS - DETAIL PLAN
1 : 20



2 SF1 - SANDSTONE STAIRS - PLATYPUS LANE
1 : 20

DETAIL OMITTED

DETAIL OMITTED



5 REVISED STAIR NOSING DETAIL
1 : 2

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F	03/11/2023	FOR CONSTRUCTION	DR	MH
E	02/11/2023	FOR INFORMATION	DR	MH
D	03/03/2023	IFT Addenda 2	DR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

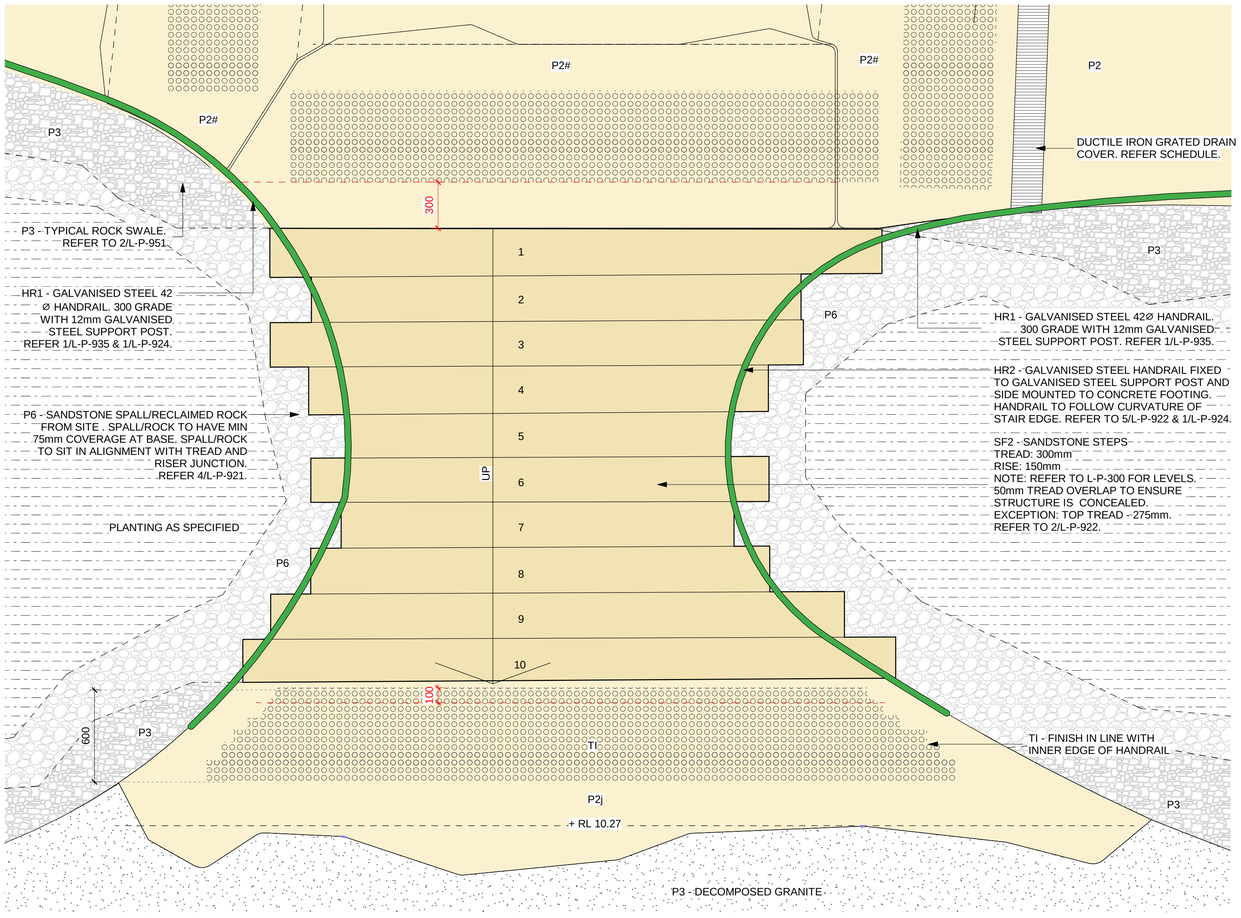
Project
Sub Base Platypus

Drawing Title
Details - Stairs & Handrails - Sheet 1

Drawing Status
AS BUILT

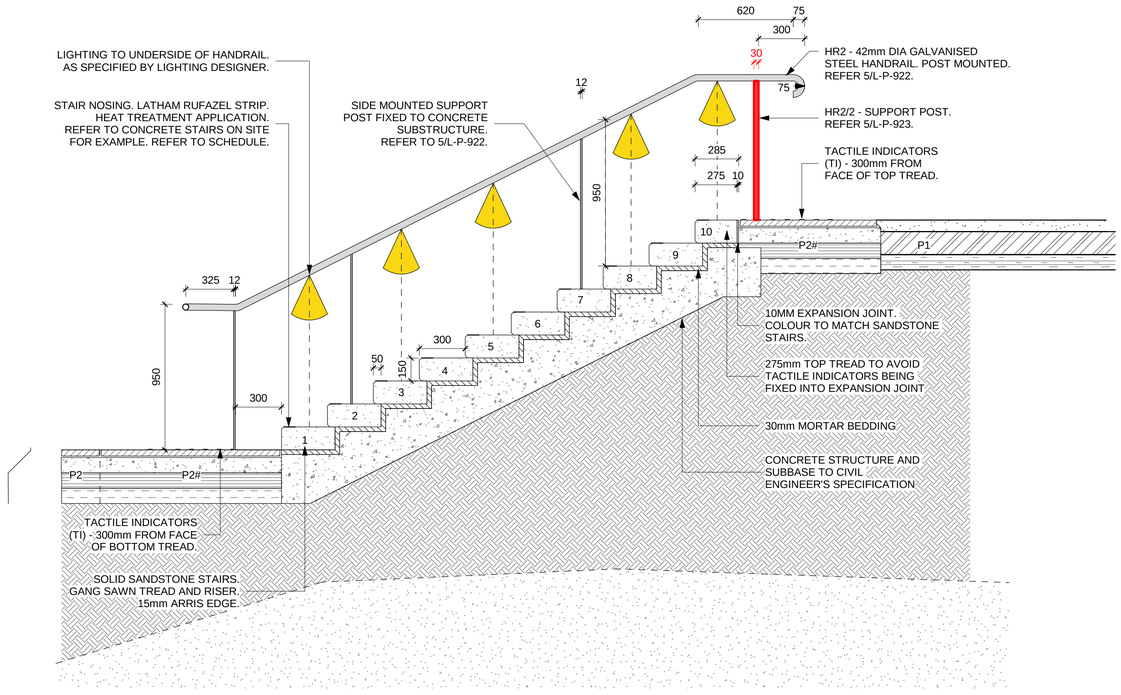
Scale. As indicated @A1
Plot Date 26/03/2024 7:38:58 PM
Project No. 2040
Drawing No. L-P-920
Revision K

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

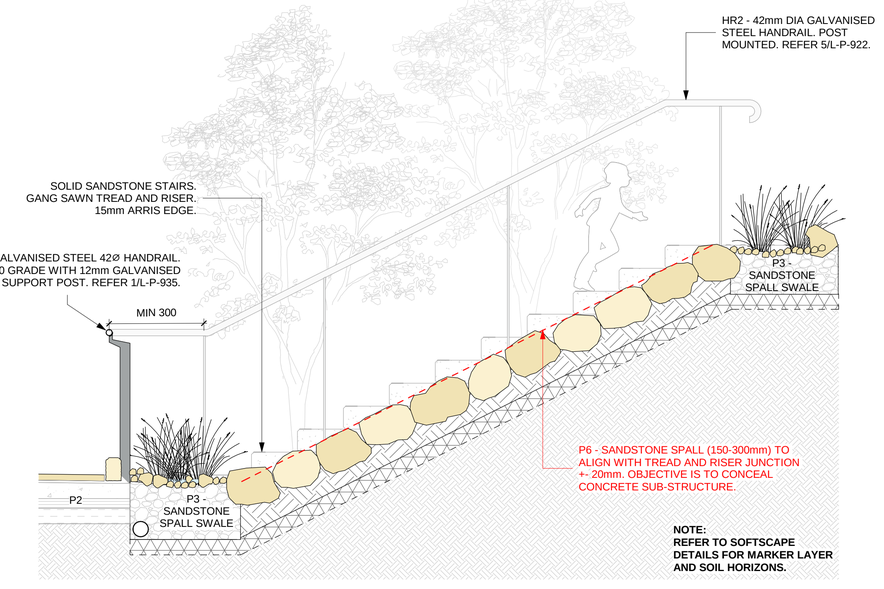


1 SF2 - SANDSTONE STAIRS - DETAIL PLAN
1 : 20

DETAIL OMITTED



3 SF2 - SANDSTONE STAIRS - FORESHORE RAMP
1 : 20



4 SF/P6 - TYPICAL DETAIL
1 : 20

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SURVEY INFORMATION

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Rev	Date	Description	Drawn	Checked
H	26/03/2024	AS BUILT	DR	MH
G	23/01/2024	FOR CONSTRUCTION	DR	MH
F	17/01/2024	FOR CONSTRUCTION	DR	MH
E	20/12/2023	FOR CONSTRUCTION	DR	MH
D	15/12/2023	FOR CONSTRUCTION	DR	MH
C	23/11/2023	FOR CONSTRUCTION	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

Author

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Client: Harbour Trust — Australian Government, Sydney Harbour Federation Trust

Project: Sub Base Platypus

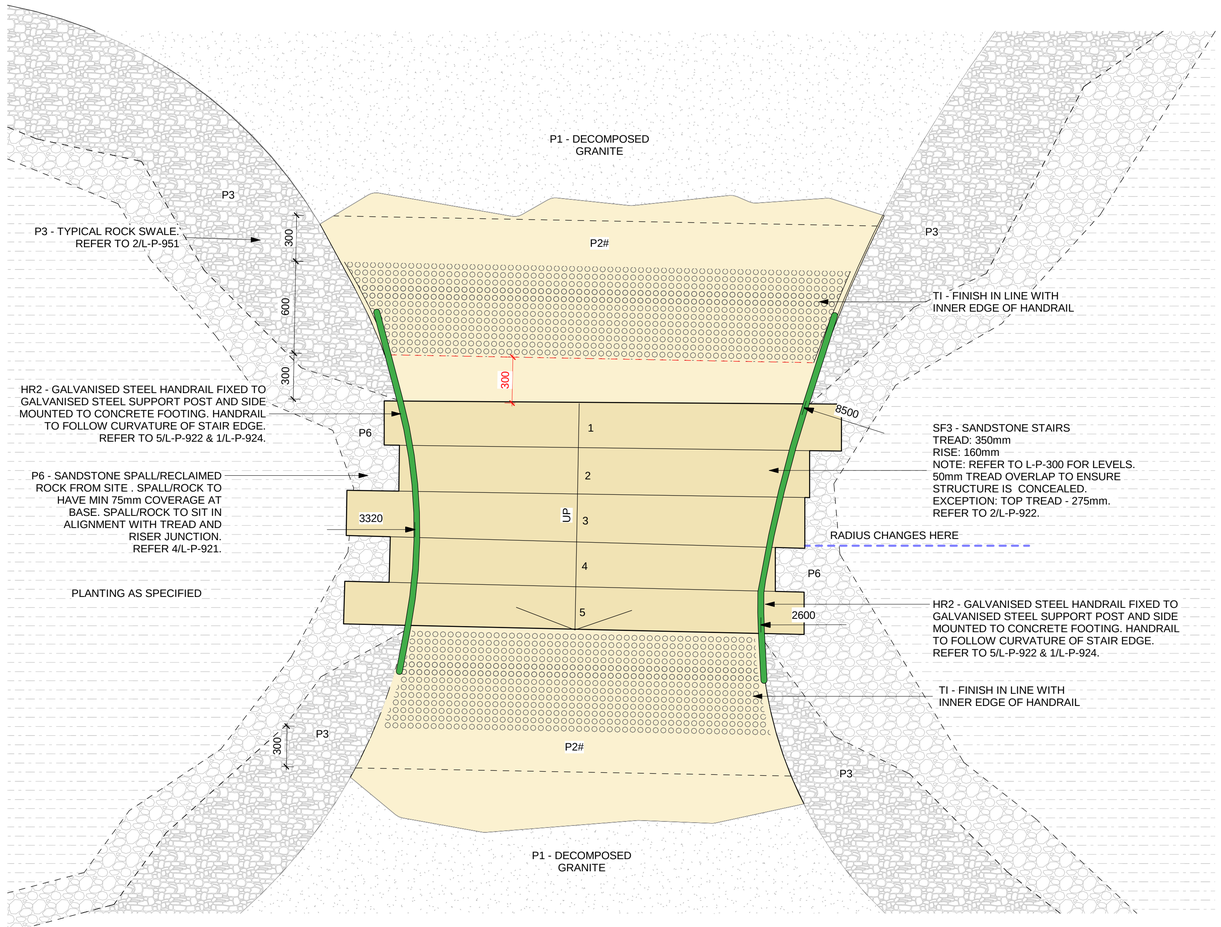
Drawing Title: **Details - Stairs & Handrails - Sheet 2**

Drawing Status: AS BUILT

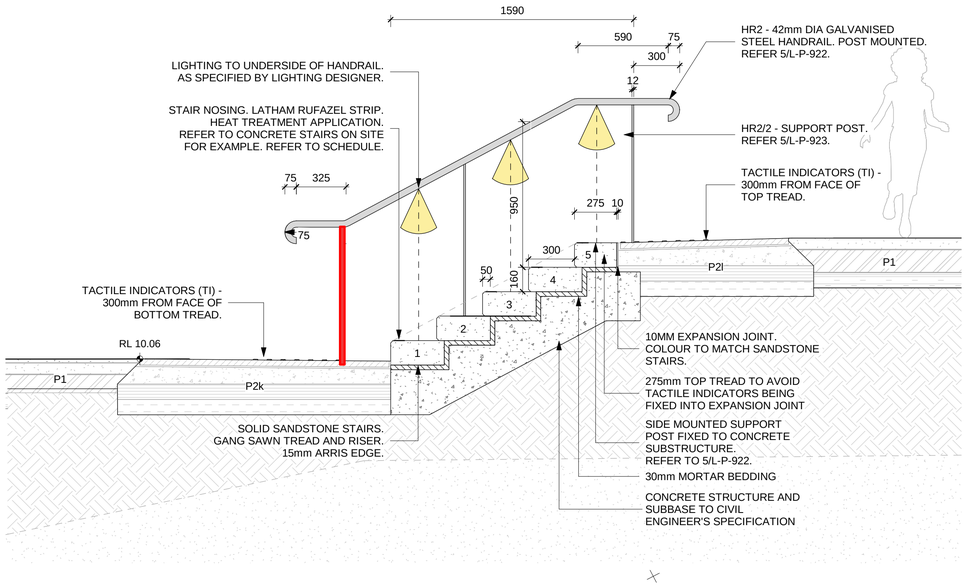
Scale. 1 : 20 @A1 | Plot Date 26/03/2024 7:39:05 PM

Project No. 2040 | Drawing No. L-P-921 | Revision H

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



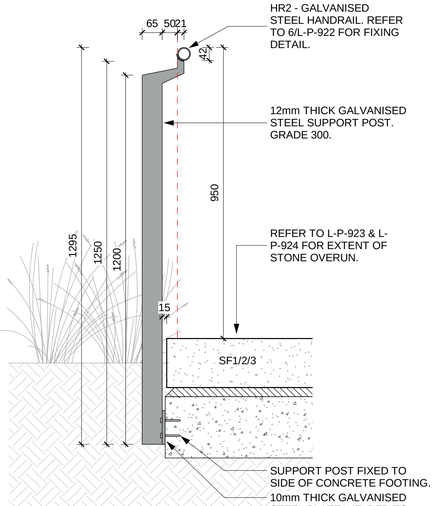
1 SF3 - SANDSTONE BLOCK STAIRS - DETAIL PLAN
1 : 20



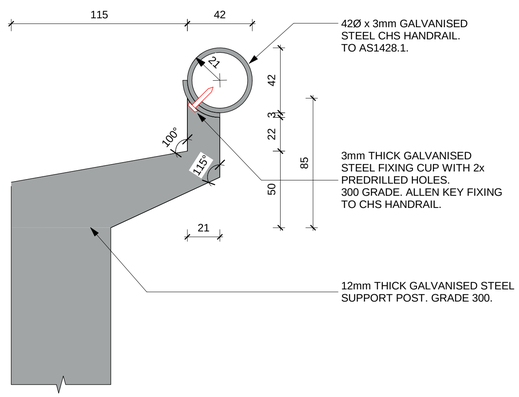
2 SF3 - SANDSTONE BLOCK STAIRS -DETAIL SECTION
1 : 20

DETAIL OMITTED

DETAIL OMITTED



5 HR2 - SECTION - SIDE MOUNTED SUPPORT POST
1 : 10



6 HR2 - HANDRAIL FIXING DETAIL
1 : 2

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Rev	Date	Description	Drawn	Checked
F	26/03/2024	AS BUILT	DR	MH
E	23/01/2024	FOR CONSTRUCTION	DR	MH
D	17/01/2024	FOR CONSTRUCTION	DR	MH
C	15/12/2023	FOR CONSTRUCTION	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Stairs & Handrails - Sheet 3

Drawing Status

AS BUILT

Scale. As indicated @A1

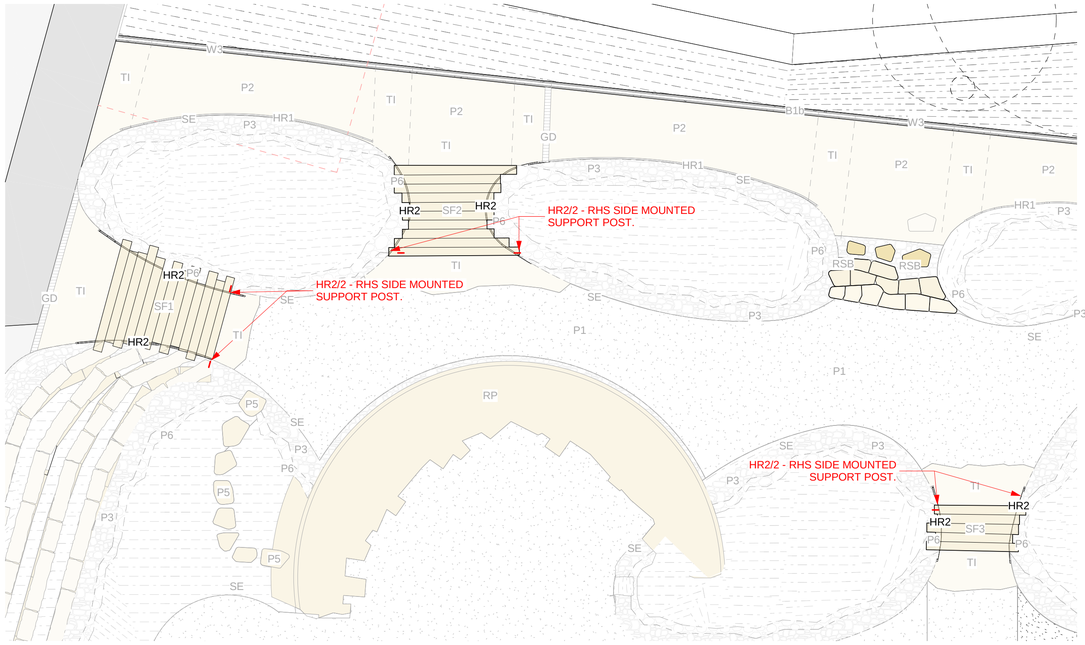
Plot Date 26/03/2024 7:39:15 PM

Project No. 2040

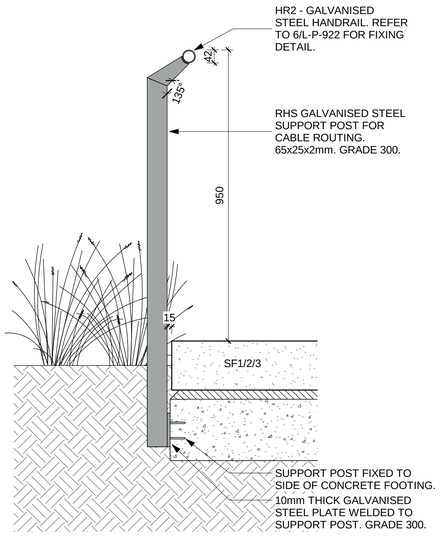
Drawing No. L-P-922

Revision F

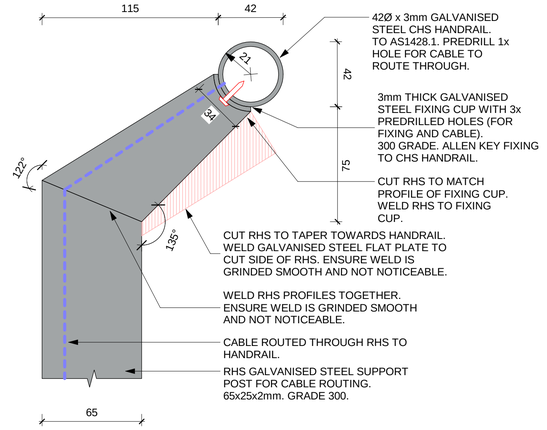
BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



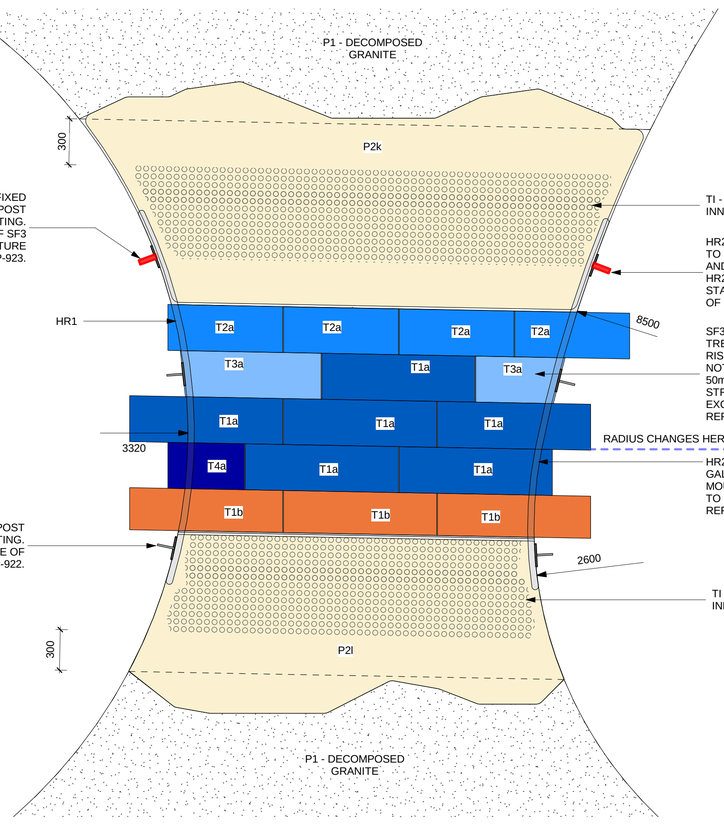
3 HR2/2 LOCATION PLAN
1 : 100



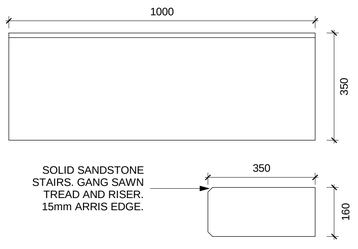
1 HR2/2 - SECTION - RHS SIDE MOUNTED SUPPORT POST
1 : 10



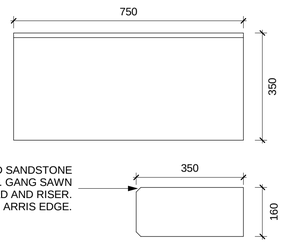
2 HR2/2 - HANDRAIL RHS SIDE MOUNTED SUPPORT POST
1 : 2



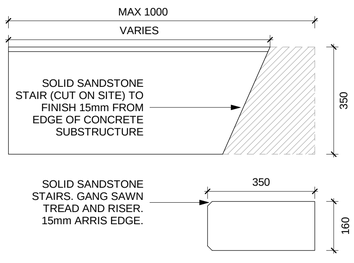
4 SF3 - SANDSTONE BLOCK STAIRS - DETAIL PLAN - SETOUT
1 : 20



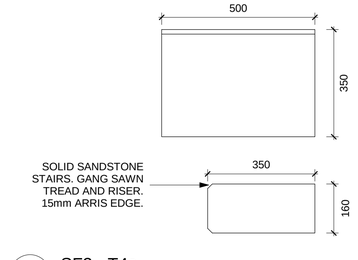
5 SF3 - T1a
1 : 10



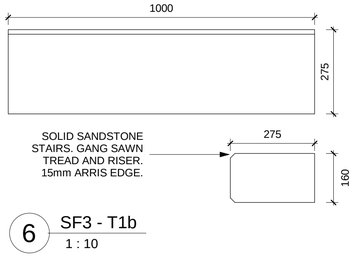
9 SF3 - T2a
1 : 10



7 SF3 - T3a
1 : 10



10 SF3 - T4a
1 : 10



6 SF3 - T1b
1 : 10

NOTE:

- DETAILS ARE TO BE READ IN CONJUNCTION WITH STAIRS & HANDRAILS DETAILS (L-P-920 TO L-P-924)
- REFER TO SCHEDULE (L-P-011) FOR COLOUR AND FINISH.
- HANDRAIL SUPPORT POSTS TO BE FIXED TO EDGE OF CONCRETE SUBSTRUCTUE ONLY.
- TREADS TO BE SECURELY MORTARED TO CONCRETE SUBSTRUCTURE
- TREADS TO BE BUTTED AGAINST EACHOTHER. NO MORTAR IS TO BE APPLIED TO JOINTS
- PROVIDE MORTAR HAUNCH OR PINNING WHERE REQUIRED. ENSURE ALL PINNING AND HAUNCHING IS CONCEALED.
- **HOLD POINTS:**
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  2. CONTRACTOR TO PROVIDE SHOP DRAWINGS AND CONSTRUCTION METHODOLOGY FOR THE CONSTRUCTION AND INSTALLATION OF ALL STONE STAIRS.
  3. DRY RUN PRIOR TO MORTARING IN FINAL POSITION.

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SURVEY INFORMATION

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Rev	Date	Description	Drawn	Checked
D	26/03/2024	AS BUILT	DR	MH
C	17/01/2024	FOR CONSTRUCTION	DR	MH
B	20/12/2023	FOR CONSTRUCTION	DR	MH
A	15/12/2023	FOR CONSTRUCTION	DR	MH

DRAFT

NOT FOR CONSTRUCTION

Author

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Stairs & Handrails - Sheet 4

Drawing Status

AS BUILT

Scale. As indicated @A1

Plot Date 26/03/2024 7:39:19 PM

Project No. 2040

Drawing No. L-P-923

Revision D

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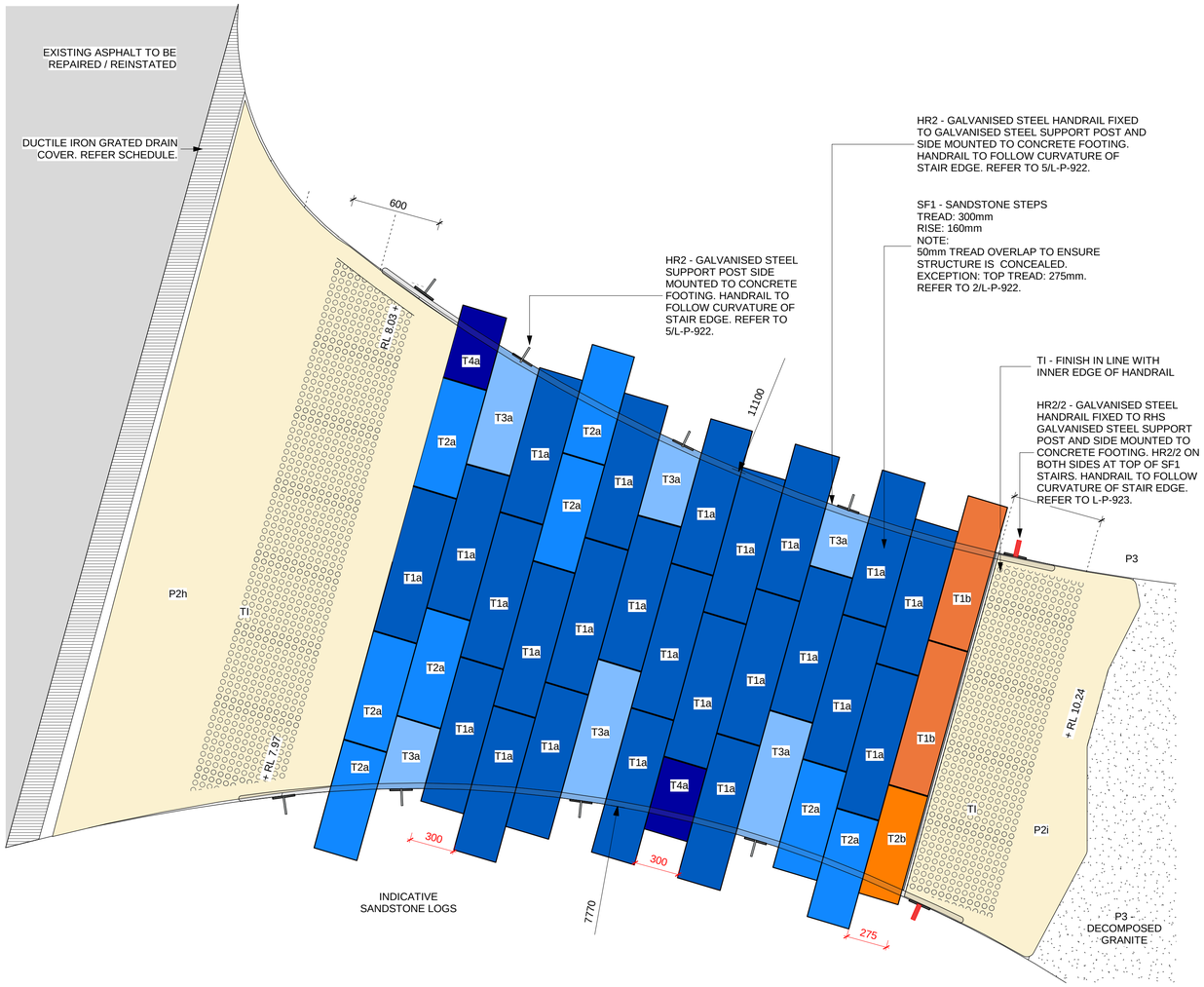
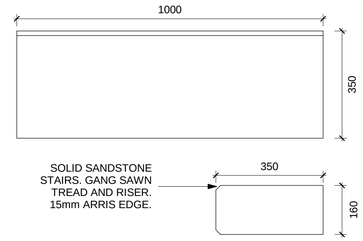
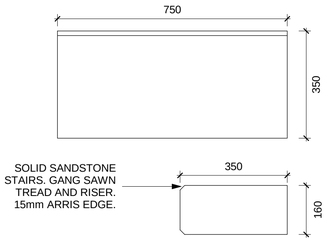


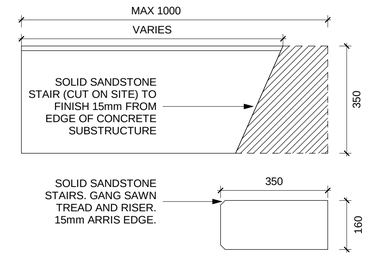
1 SF1 - SANDSTONE STAIRS - DETAIL PLAN - SETOUT
1 : 20



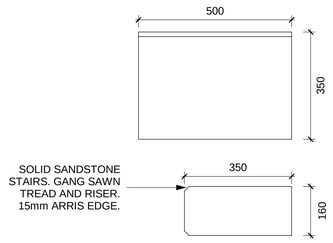
2 SF1 - T1a
1 : 10



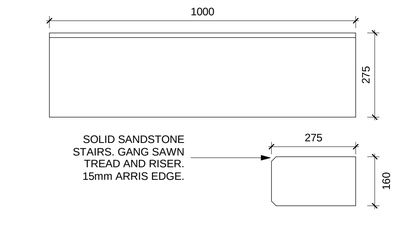
3 SF1 - T2a
1 : 10



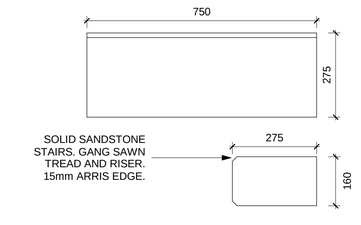
4 SF1 - T3a
1 : 10



5 SF1 - T4a
1 : 10



6 SF1 - T1b
1 : 10



7 SF1 - T2b
1 : 10

NOTE:

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  3. DRY RUN PRIOR TO MORTARING IN FINAL POSITION.

Rev	Date	Description	Drawn	Checked
C	26/03/2024	AS BUILT	DR	MH
B	17/01/2024	FOR CONSTRUCTION	DR	MH
A	20/12/2023	FOR CONSTRUCTION	DR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Stairs & Handrails - Sheet 5

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:21 PM
Project No. 2040
Drawing No. L-P-924
Revision C

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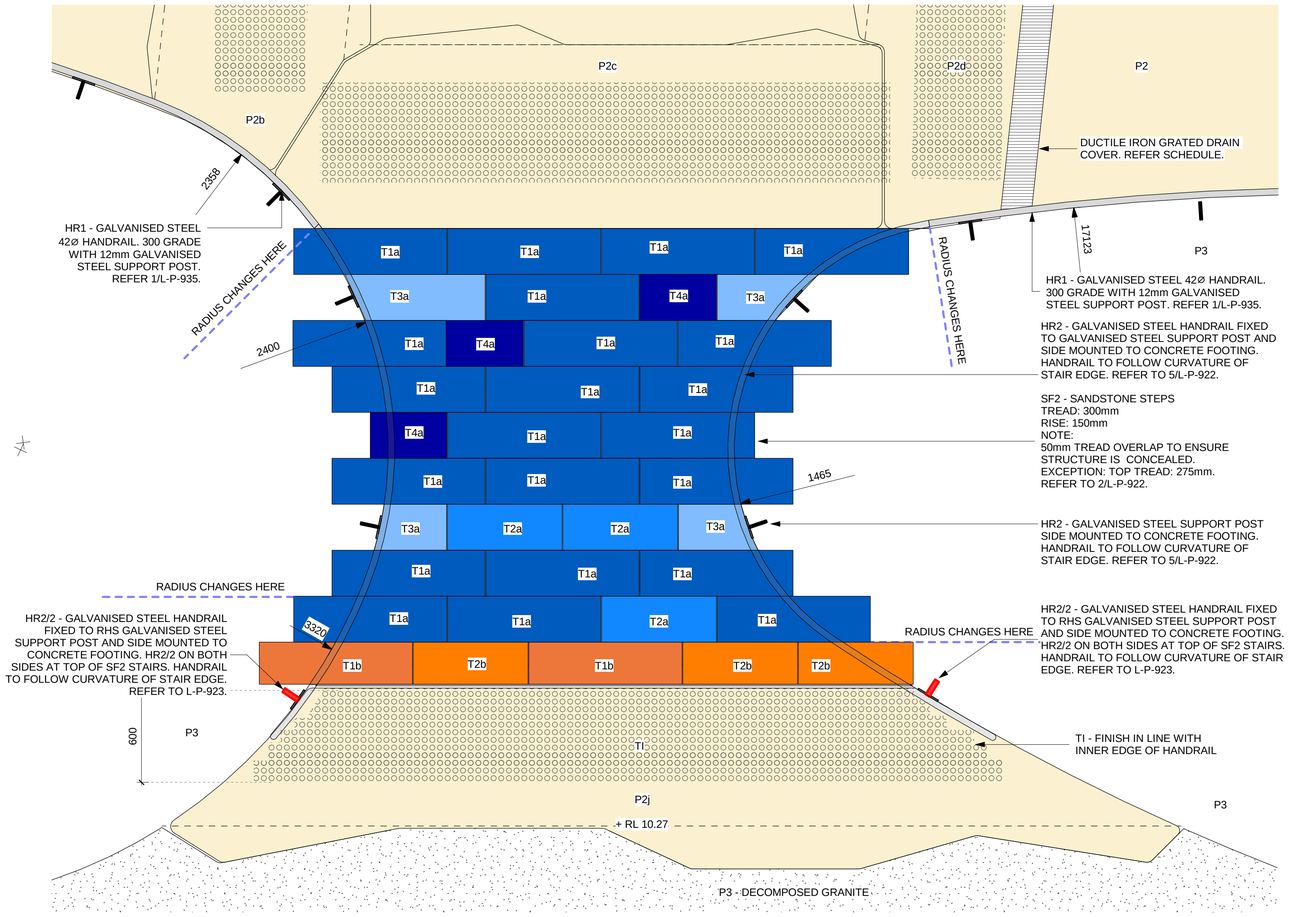
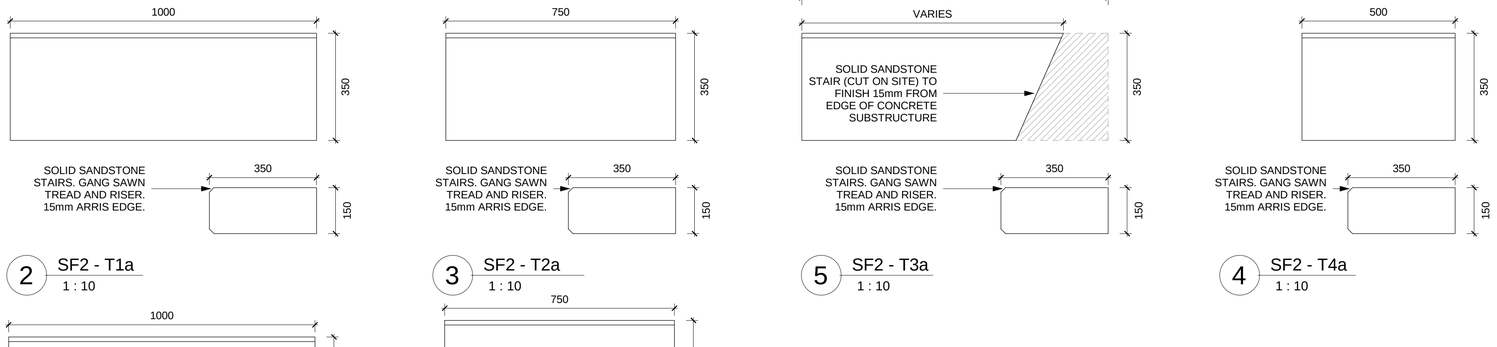


1 SF2 - SANDSTONE STAIRS - DETAIL PLAN - SETOUT
1 : 20

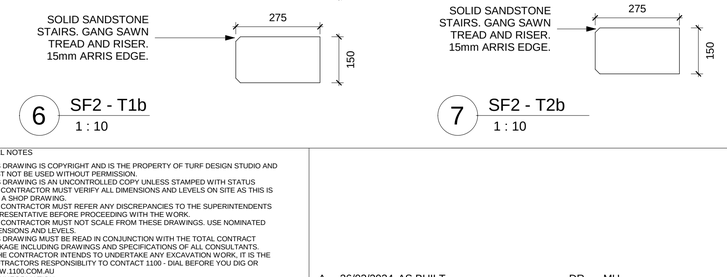


2 SF2 - T1a
1 : 10

3 SF2 - T2a
1 : 10

5 SF2 - T3a
1 : 10

4 SF2 - T4a
1 : 10



6 SF2 - T1b
1 : 10

7 SF2 - T2b
1 : 10

NOTE:
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Rev	Date	Description		
A	26/03/2024	AS BUILT	DR	MH
			Drawn	Checked

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Stairs & Handrails - Sheet 6

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:23 PM
Project No. 2040
Drawing No. L-P-925
Revision A

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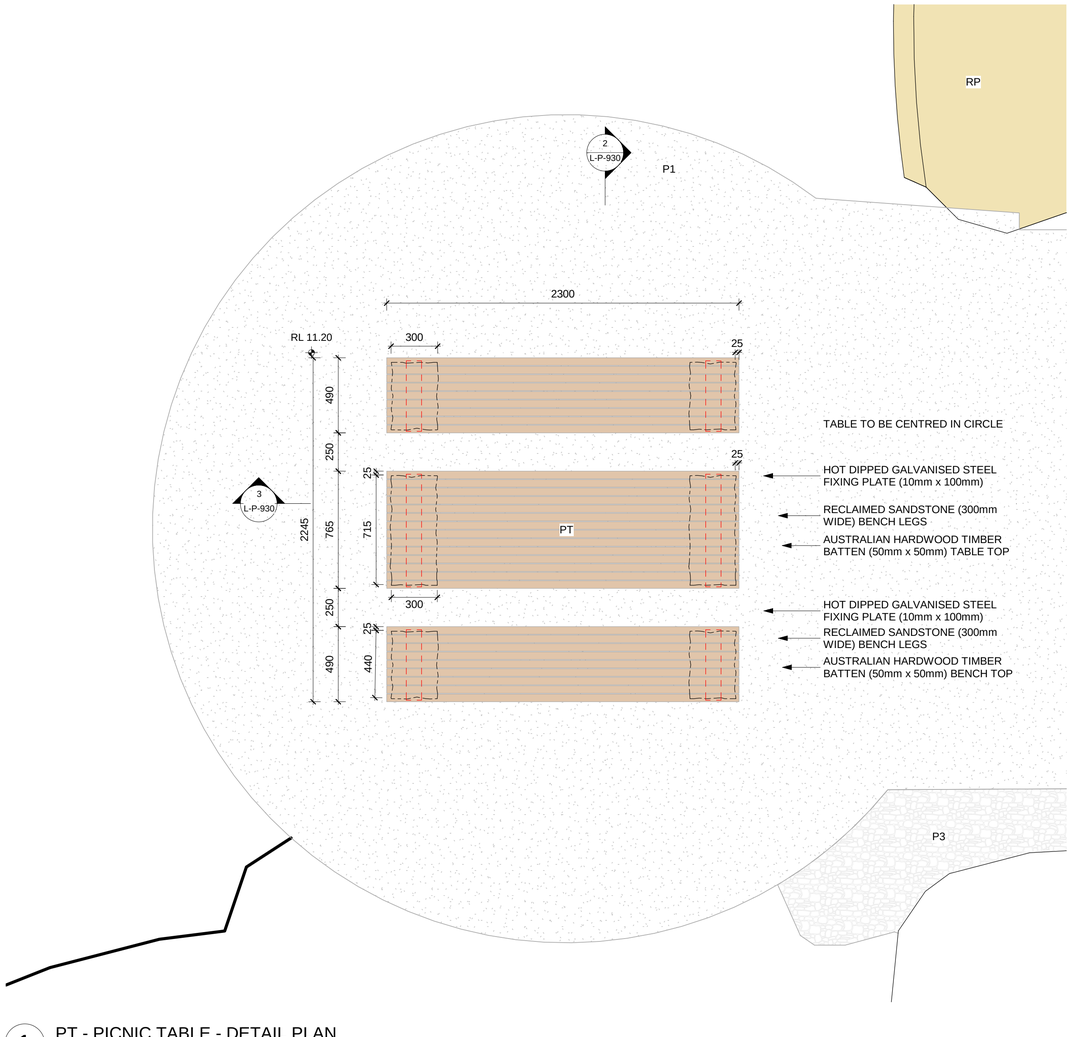
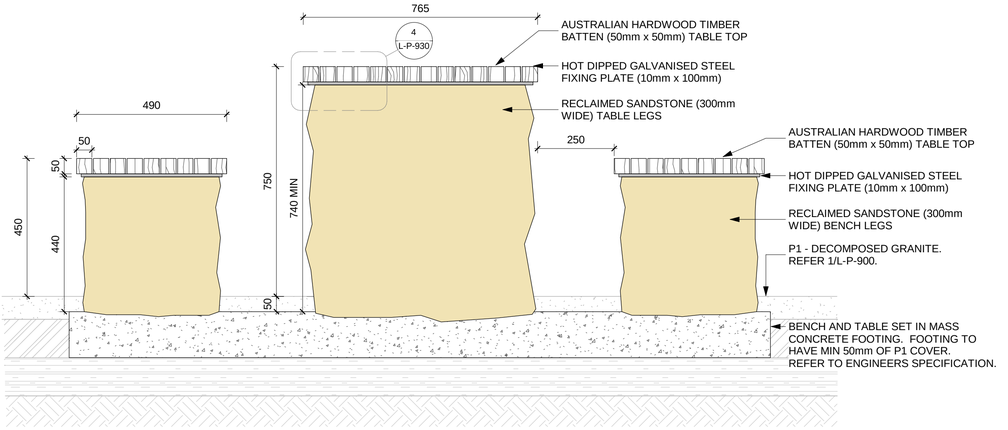


1 PT - PICNIC TABLE - DETAIL PLAN
1 : 20



2 PT - PICNIC TABLE - TRANSVERSE SECTION
1 : 10

3 PT - PICNIC TABLE - LONGITUDINAL SECTION
1 : 10

PICNIC TABLE

RECLAIMED SANDSTONE BENCH LEGS WITH HARDWOOD TIMBER BATTEN TOP

RECLAIMED SANDSTONE TABLE END WITH HARDWOOD TIMBER BATTEN TOP.

SANDSTONE WORKS TO BE UNDERTAKE INSITU:

1. BENCH LEGS: MADE UP OF SPILT RECLAIMED SANDSTONE BLOCK. UTILISE FLATEST FACE FOR TOP (MOUNTING SURFACE FOR BENCH)
2. TABLE LEGS: MADE UP OF SPLIT RECLAIMED SANDSTONE BLOCK/S. UTILISE FLATEST FACE FOR TOP (MOUNTING SURFACE FOR BENCH)

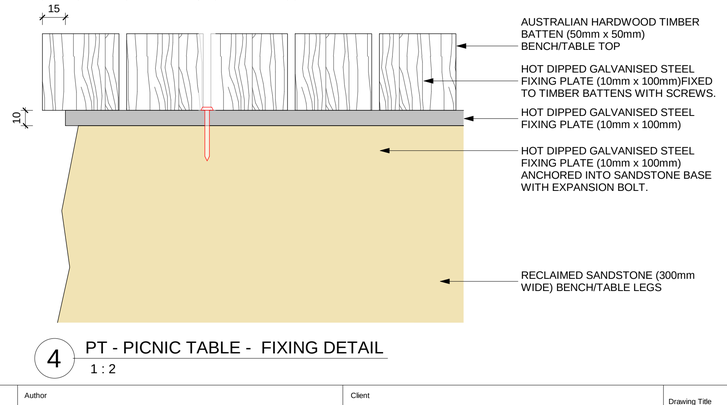
TIMBER:

- AUSTRALIAN HARDWOOD TIMBER BATTEN TABLE AND BENCH TOP.
- 50x50mm BATTENS
- FINISHED WITH PENETRATING OIL (NEUTRAL COLOUR).

FRAMING:

- GALVANISED STEEL FRAME TO CONNECT TIMBER AND STONE ELEMENTS
- ONLY FIXING FRAME REQUIRED.
- NO SUBSTRUCTURE FRAME BELOW TIMBER BATTENS REQUIRED.

NOTE:
SHOP DRAWINGS REQUIRED



4 PT - PICNIC TABLE - FIXING DETAIL
1 : 2

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C	03/11/2023	FOR INFORMATION	DR	MH
B	17/01/2023	IFT	AR	MH
A	02/11/2022	SUBMISSION 2	AR	MH

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Furniture & Fixtures - Sheet 1

Drawing Status

AS BUILT

Scale. As indicated @A1

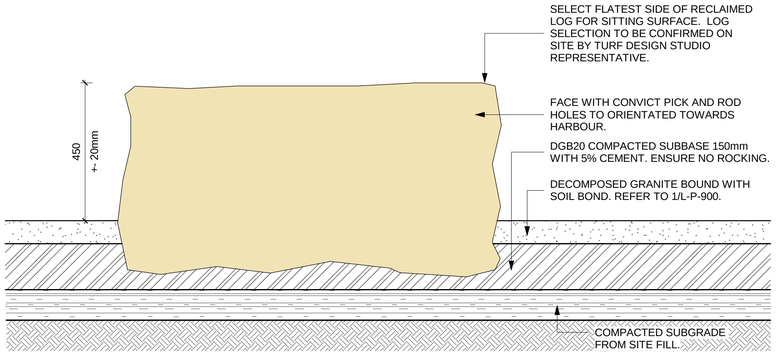
Plot Date 26/03/2024 7:39:25 PM

Project No. 2040

Drawing No. L-P-930

Revision E

BM 360//2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



1 RSS - RECLAIMED SANDSTONE SEAT
1 : 10

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E	03/11/2023	FOR INFORMATION	DR	MH
D	03/03/2023	IFT Addenda 2	DR	MH
C	03/02/2023	IFT Addenda	DR	MH
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A	02/11/2022	SUBMISSION 2	AR	MH

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Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Furniture & Fixtures - Sheet 2

Drawing Status

AS BUILT

Scale. 1 : 10 @A1

Plot Date 26/03/2024 7:39:25 PM

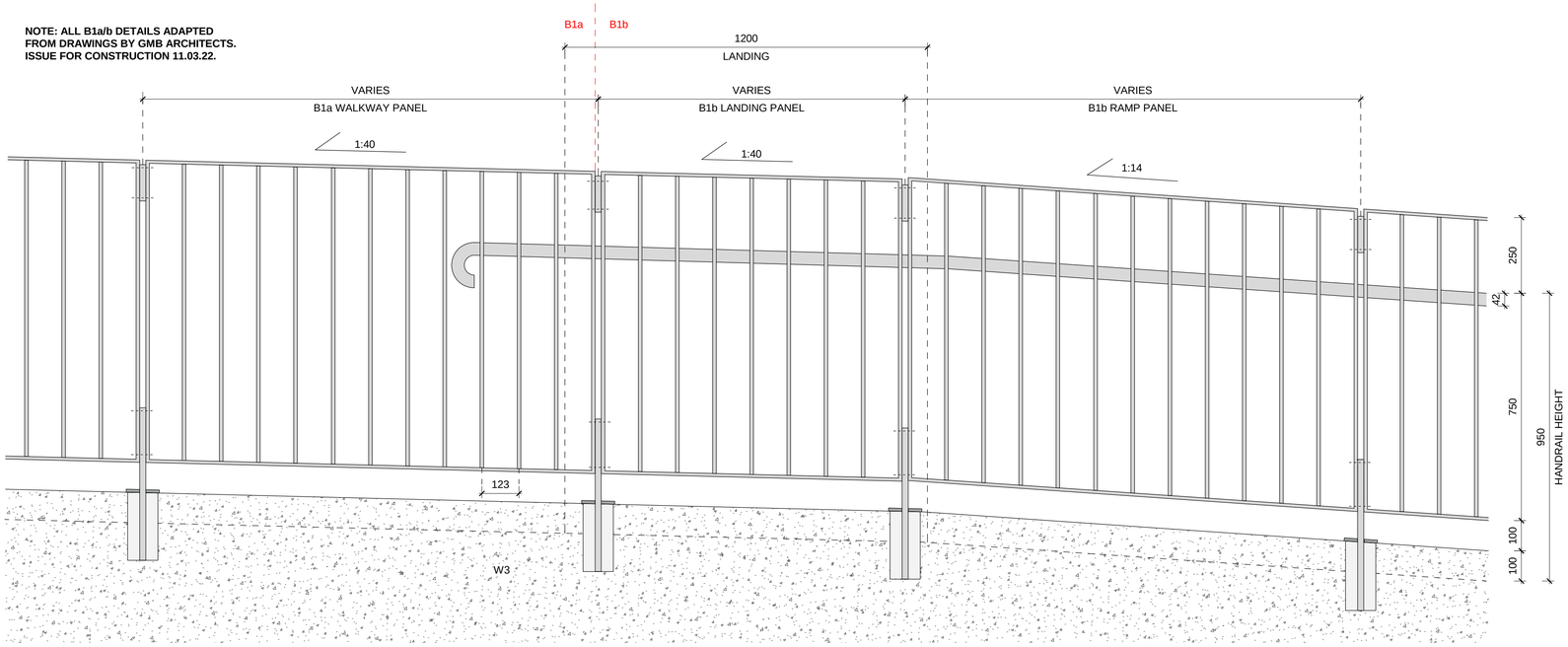
Project No. 2040

Drawing No. L-P-931

Revision G

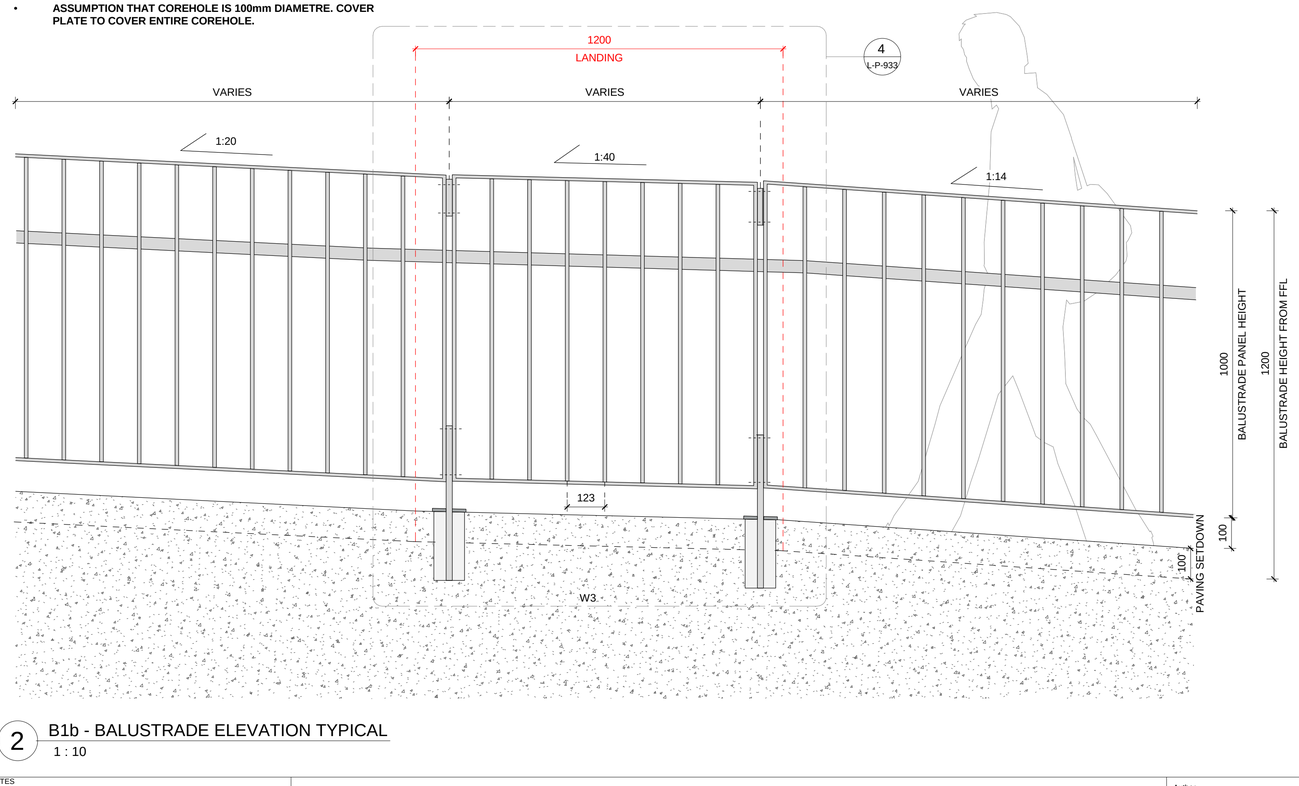
BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

NOTE: ALL B1a/b DETAILS ADAPTED FROM DRAWINGS BY GMB ARCHITECTS. ISSUE FOR CONSTRUCTION 11.03.22.



1 B1a/b - BALUSTRADE ELEVATION TYPICAL
1 : 10

NOTE:
- **PANELS RANGE BETWEEN 1016 - 1508mm. PANELS TO BE EQUALLY DIVIDED FOR EACH GRADED SECTION OF WALL. REFER TO L-P-936 FOR PANEL SETOUT.**
- **MAINTAIN CONSISTENT 123mm SPACING BETWEEN 12Ø GALV. STEEL RODS.**
- **ASSUMPTION THAT COREHOLE IS 100mm DIAMETRE. COVER PLATE TO COVER ENTIRE COREHOLE.**



2 B1b - BALUSTRADE ELEVATION TYPICAL
1 : 10

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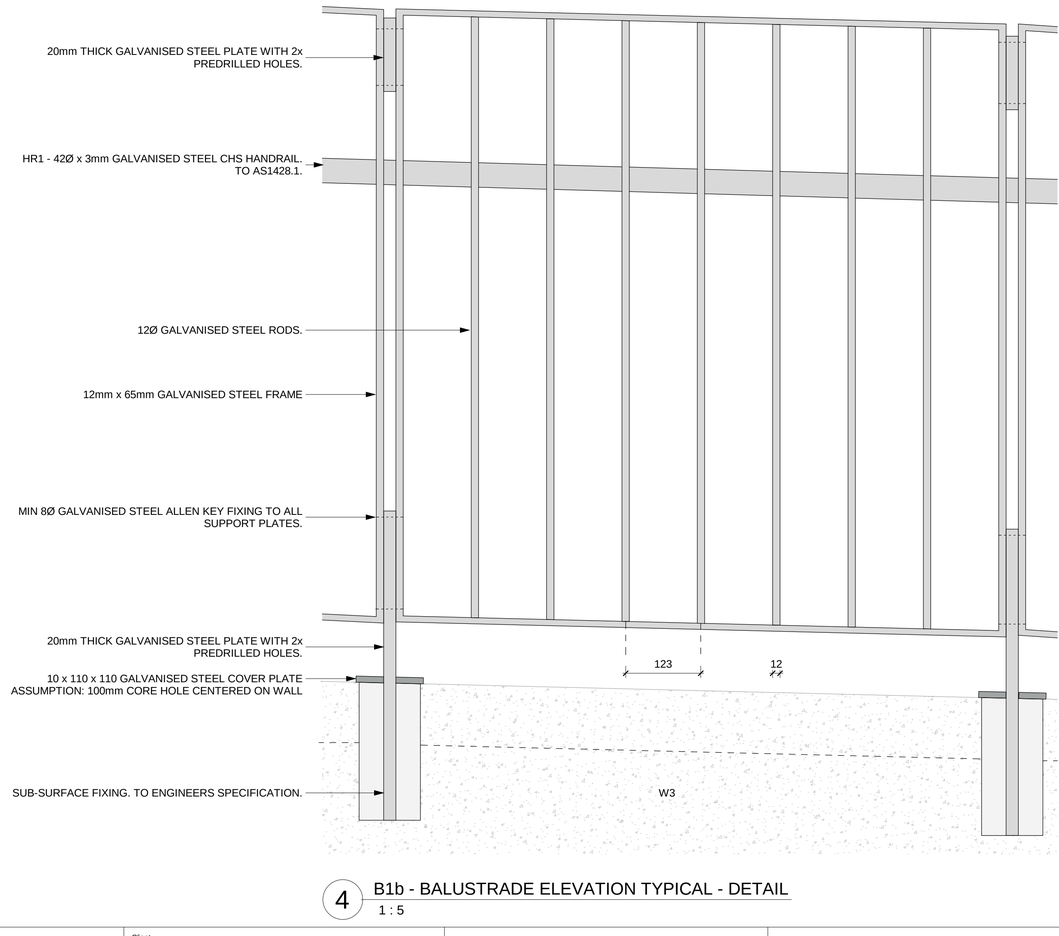

4 B1b - BALUSTRADE ELEVATION TYPICAL - DETAIL
1 : 5

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C	02/11/2023	FOR INFORMATION	DR	MH
B	03/03/2023	IFT Addenda 2	DR	MH
A	17/01/2023	IFT	AR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Balustrades & Handrails - Sheet 1

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:26 PM
Project No. 2040
Drawing No. L-P-933
Revision E

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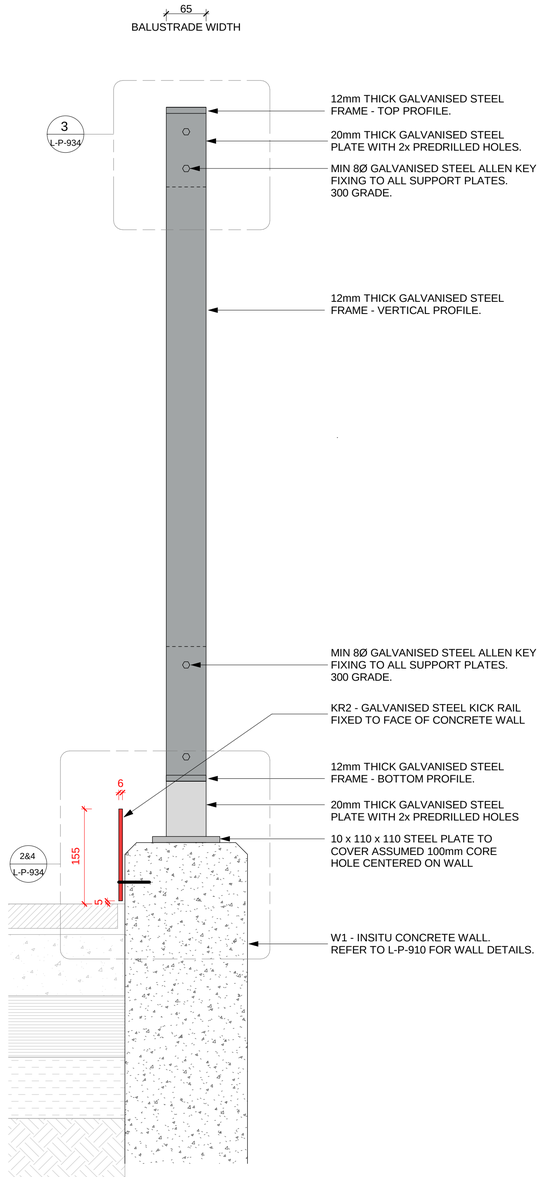
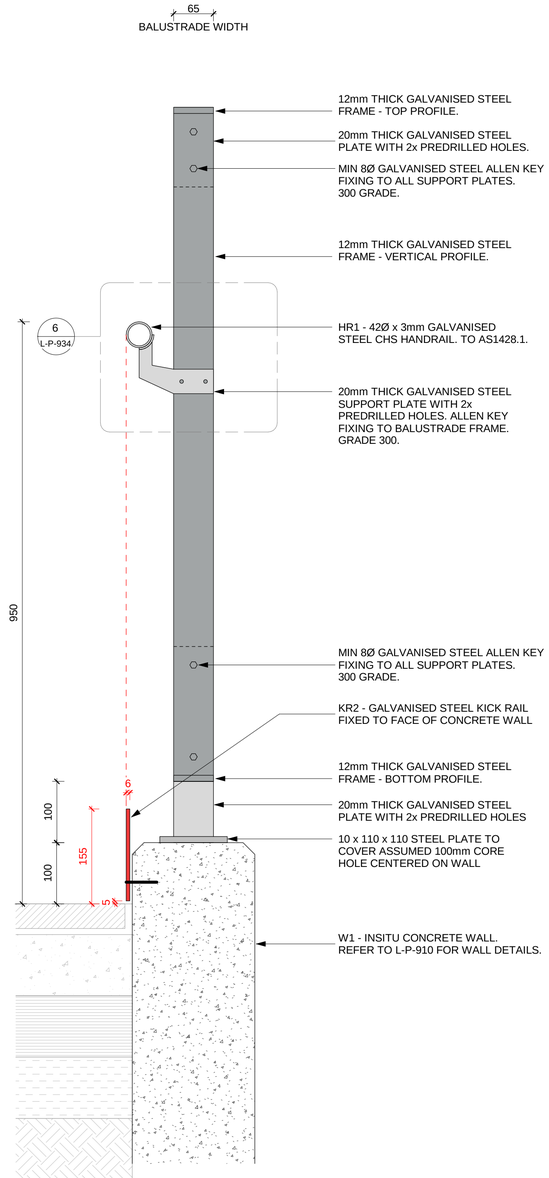
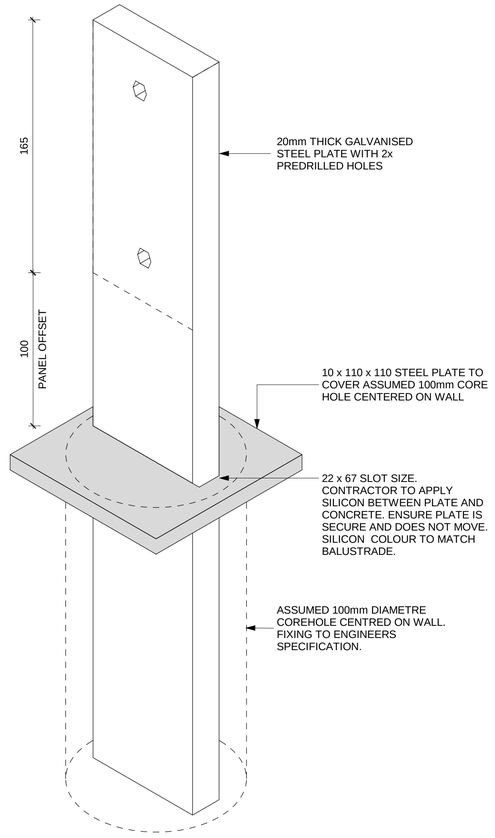


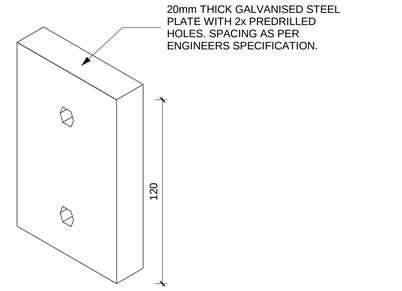
1 B1a - BALUSTRADE - TYPICAL SECTION
1 : 5



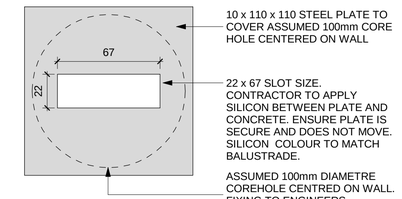
5 B1b - BALUSTRADE - TYPICAL SECTION
1 : 5



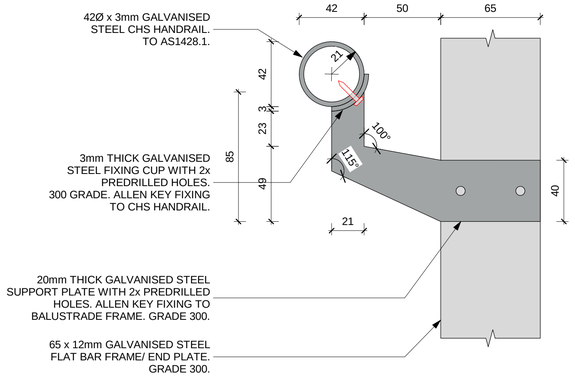
2 B1a/b - BALUSTRADE FIXING PLATE
1 : 2



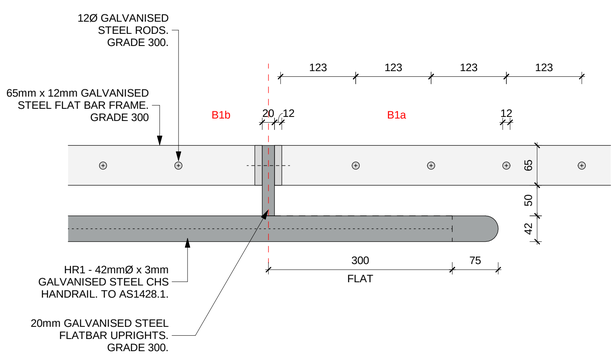
3 B1a/b - BALUSTRADE SUPPORT PLATE
1 : 2



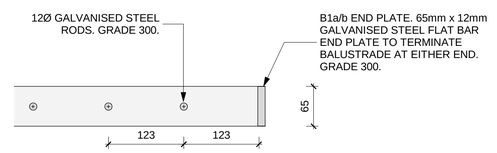
4 B1a/b - BALUSTRADE BASE PLATE
1 : 2



6 B1b - HANDRAIL FIXING DETAIL
1 : 2



7 B1a/b - BALUSTRADE TYPICAL PLAN
1 : 5



9 B1a/b - BALUSTRADE TYPICAL TERMINATION PLAN
1 : 5

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C	09/11/2023	FOR CONSTRUCTION	DR	MH
B	03/11/2023	FOR INFORMATION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Balustrades & Handrails - Sheet 2

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:28 PM
Project No. 2040
Drawing No. L-P-934
Revision D

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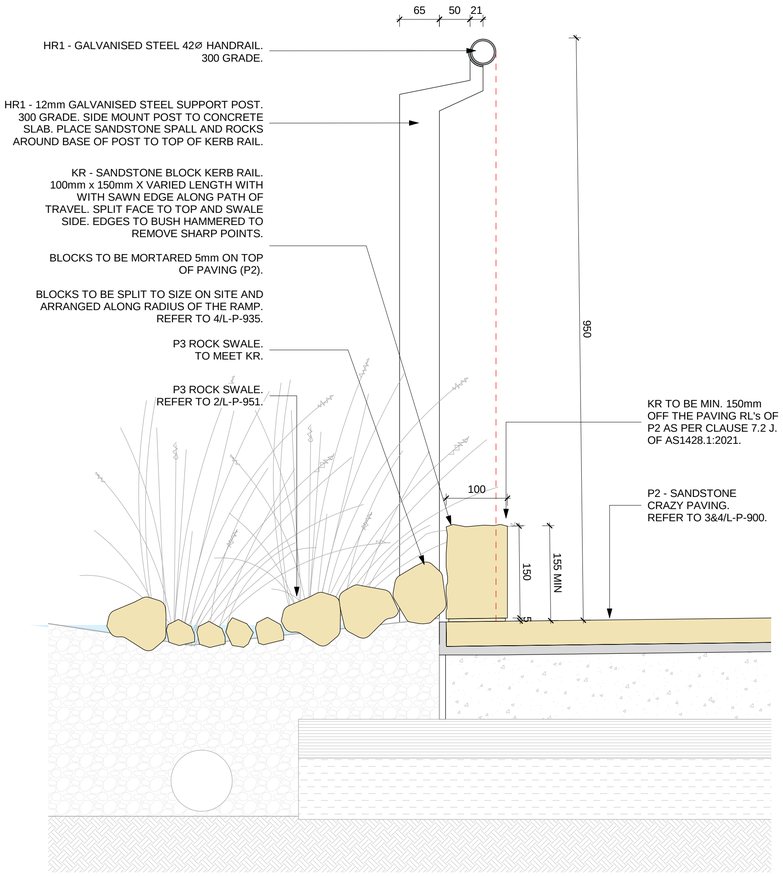
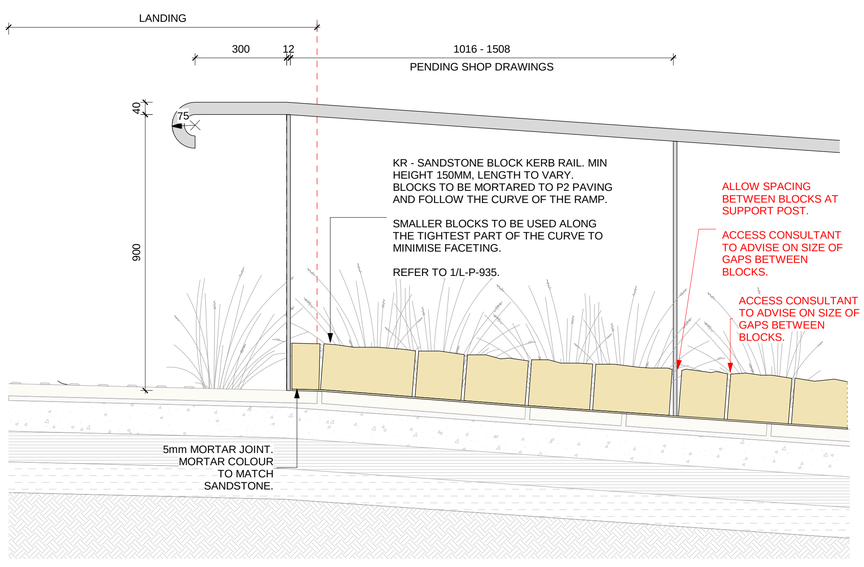


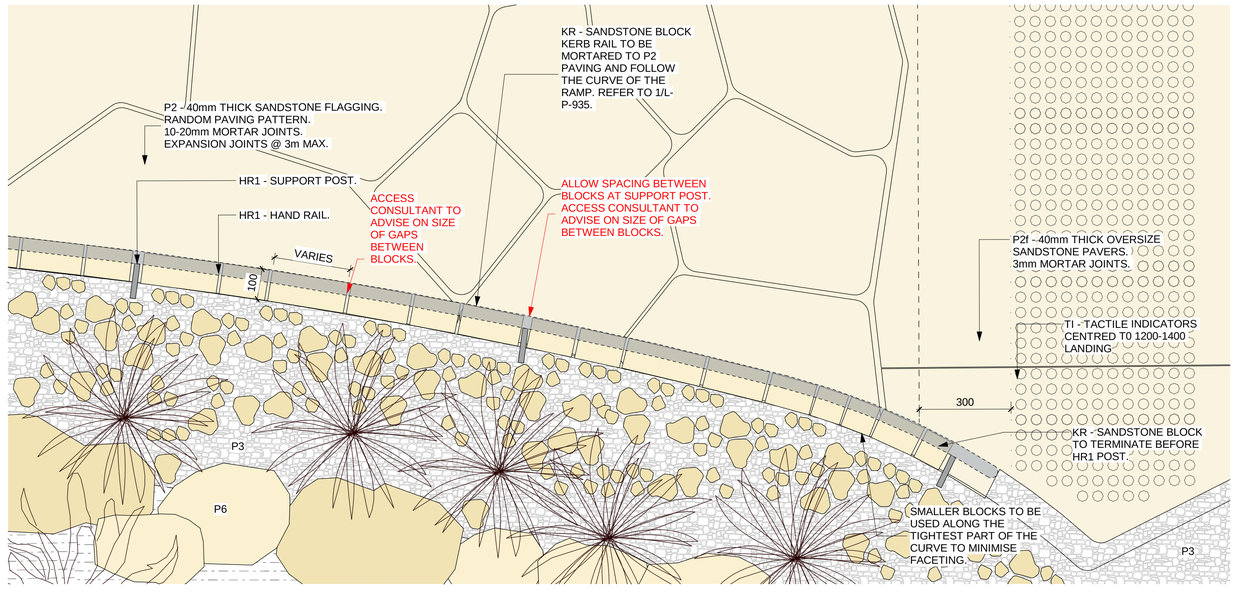
1 HR1 - TYPICAL SECTION - 1 of 2

1 : 5



3 HR1 - TYPICAL ELEVATION/ TERMINATION

1 : 10



4 HR1 - TYPICAL PLAN

1 : 10

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E	19/02/2024	FOR CONSTRUCTION	DR	MH
D	23/01/2024	FOR CONSTRUCTION	DR	MH
C	09/11/2023	FOR CONSTRUCTION	DR	MH
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Project

Sub Base Platypus

Drawing Title

Details - Balustrades & Handrails - Sheet 3

Drawing Status

AS BUILT

Scale. As indicated @A1

Plot Date 26/03/2024 7:39:31 PM

Project No. 2040

Drawing No. L-P-935

Revision G

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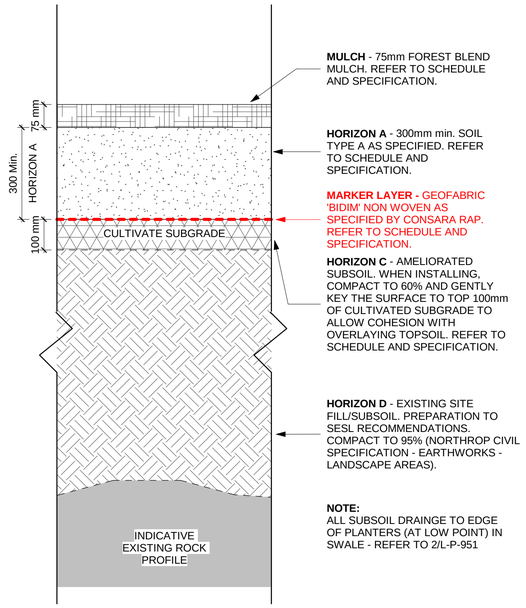
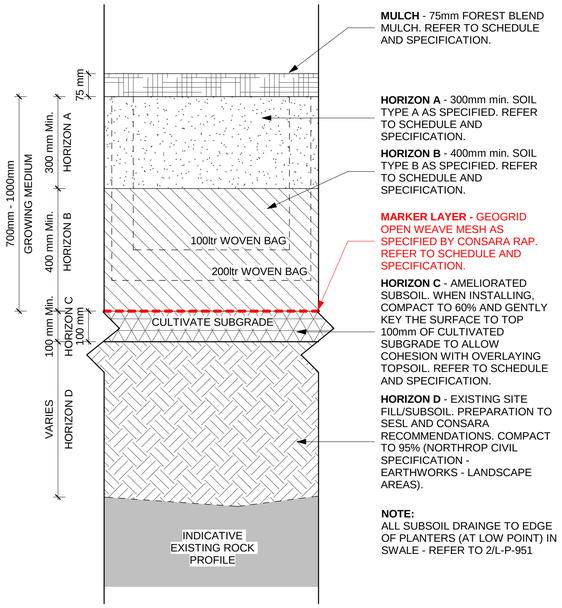
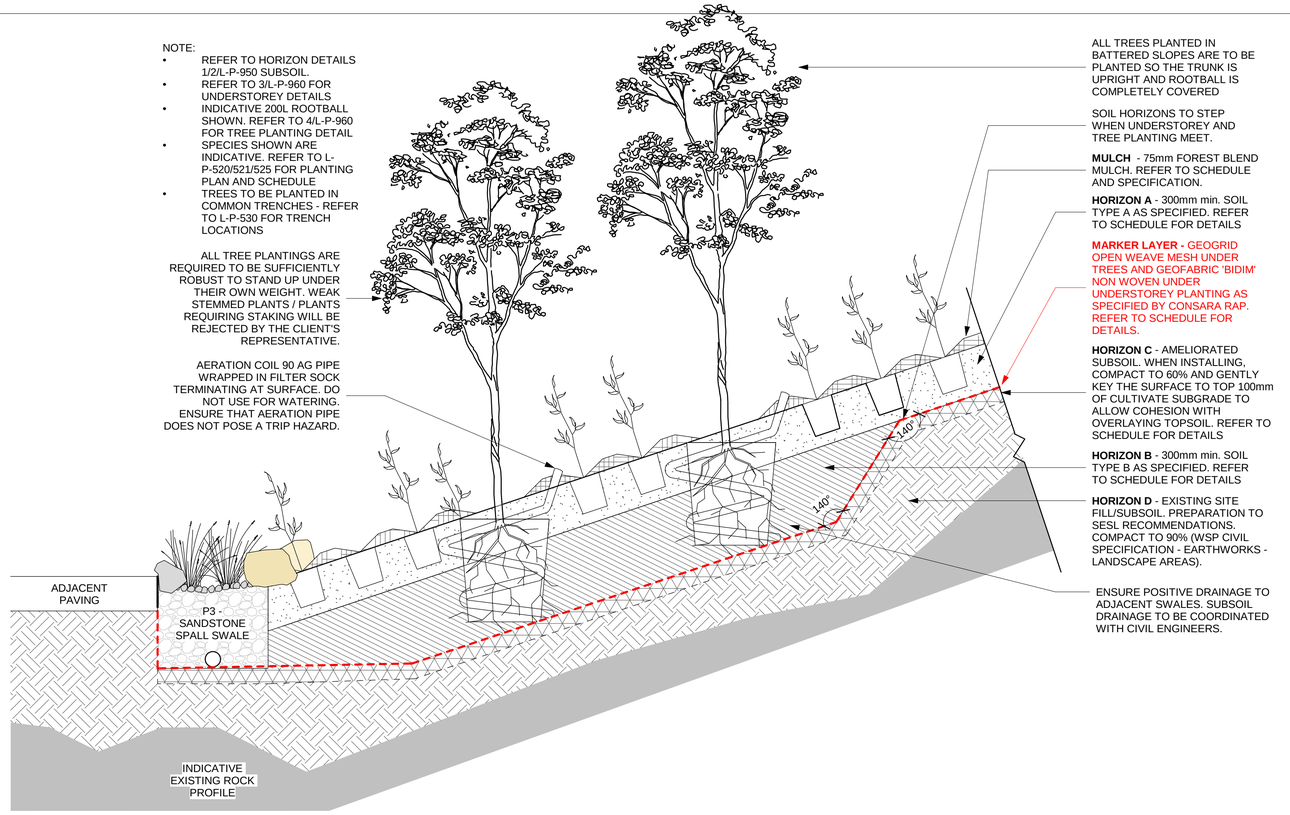


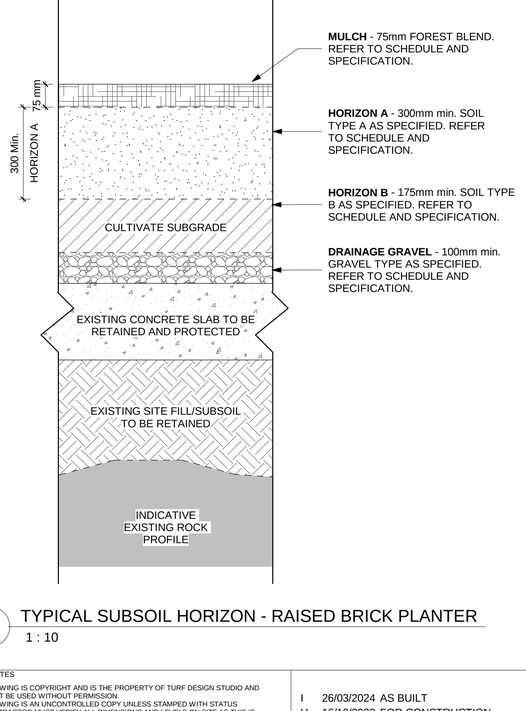
1 TYPICAL SUBSOIL HORIZONS - UNDERSTOREY
1 : 10



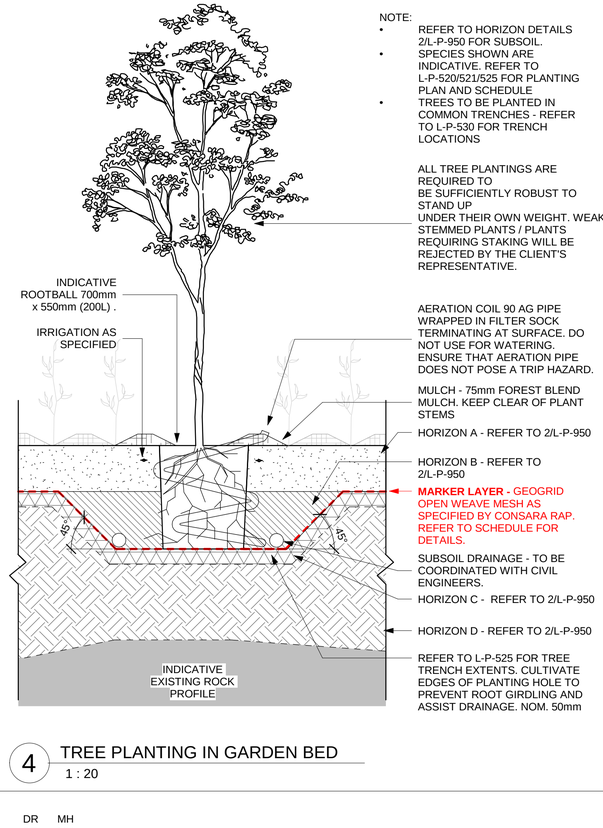
2 TYPICAL SUBSOIL HORIZONS - WITH TREES
1 : 10



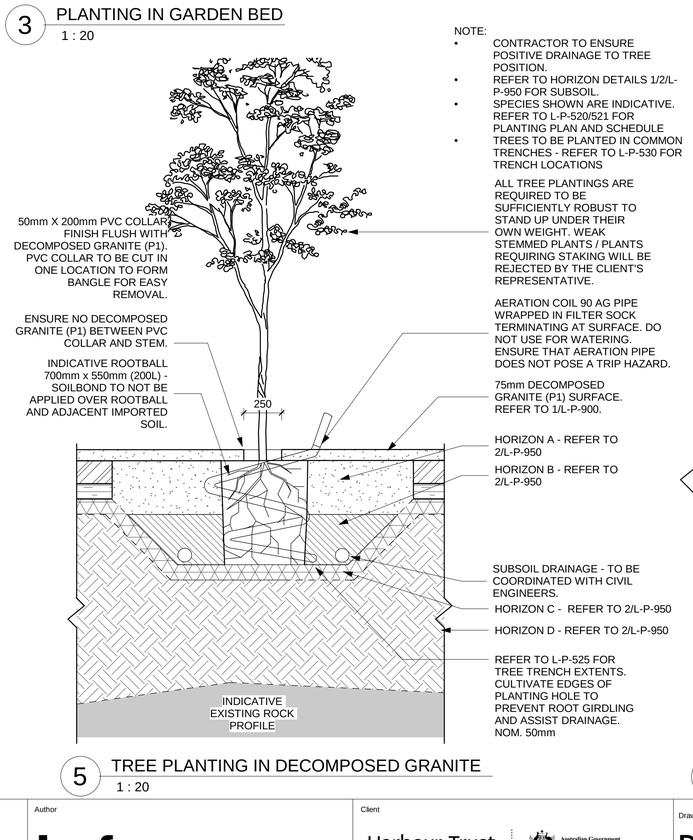
3 PLANTING IN GARDEN BED
1 : 20



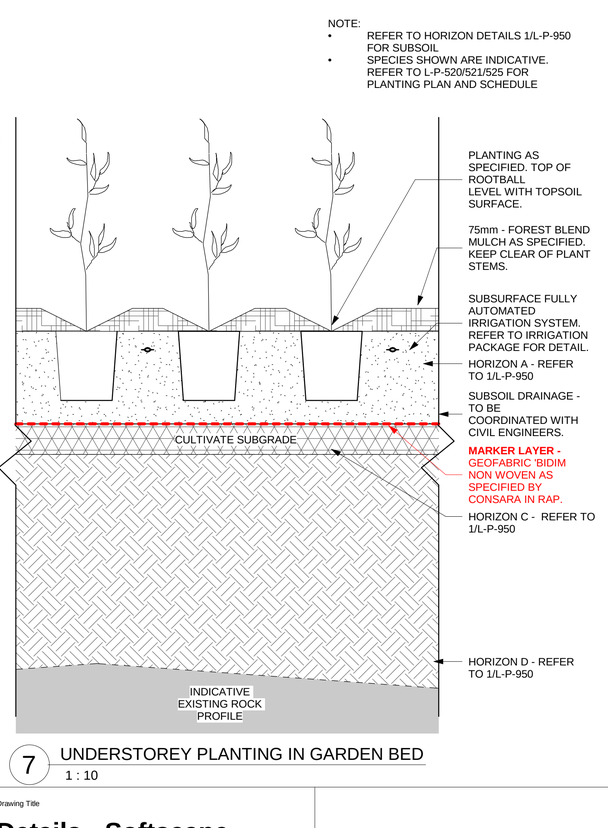
6 TYPICAL SUBSOIL HORIZON - RAISED BRICK PLANTER
1 : 10



4 TREE PLANTING IN GARDEN BED
1 : 20



5 TREE PLANTING IN DECOMPOSED GRANITE
1 : 20



7 UNDERSTOREY PLANTING IN GARDEN BED
1 : 10

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H	16/10/2023	FOR CONSTRUCTION	DR	MH
G	11/10/2023	FOR INFORMATION	DR	MH
F	30/08/2023	FOR INFORMATION	DR	SK
E	12/05/2023	FOR INFORMATION	DR	MH
D	03/03/2023	IFT Addenda 2	DR	MH
C	03/02/2023	IFT Addenda	DR	MH
B	17/01/2023	IFT	AR	MH

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Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Softscape - Sheet 1

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:33 PM
Project No. 2040
Drawing No. L-P-950
Revision I

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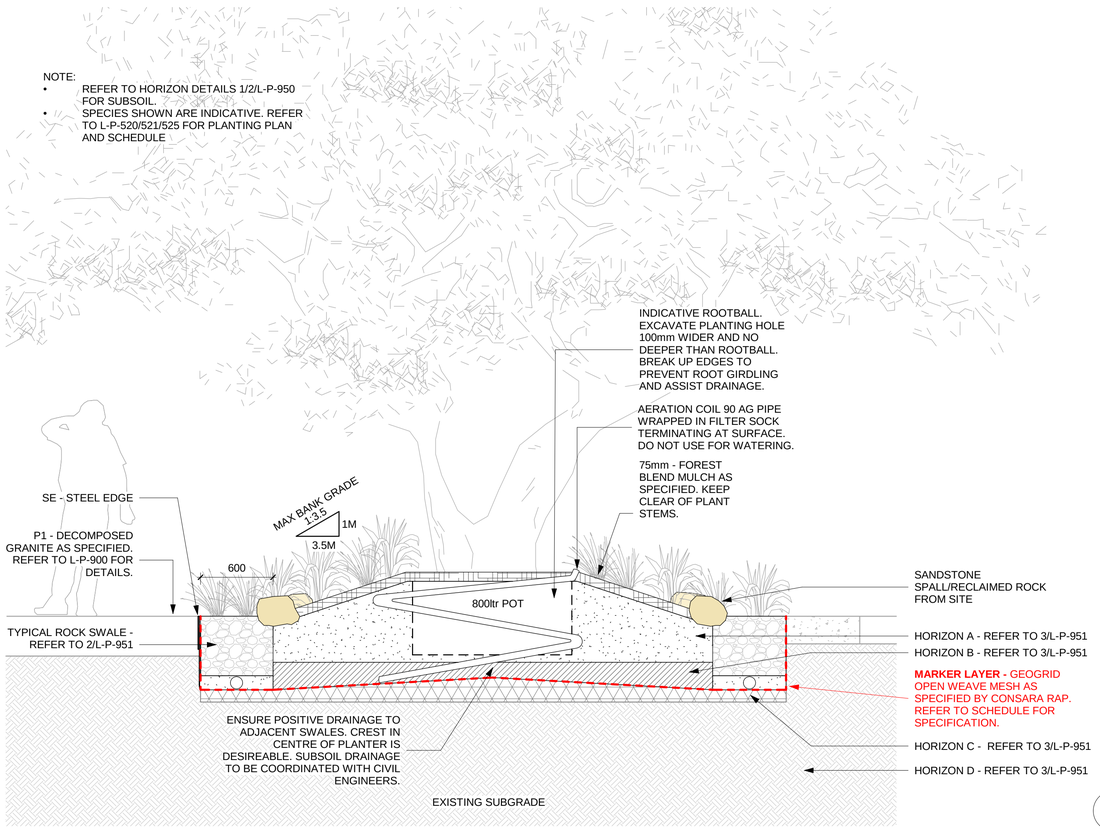

1 FEATURE FIG
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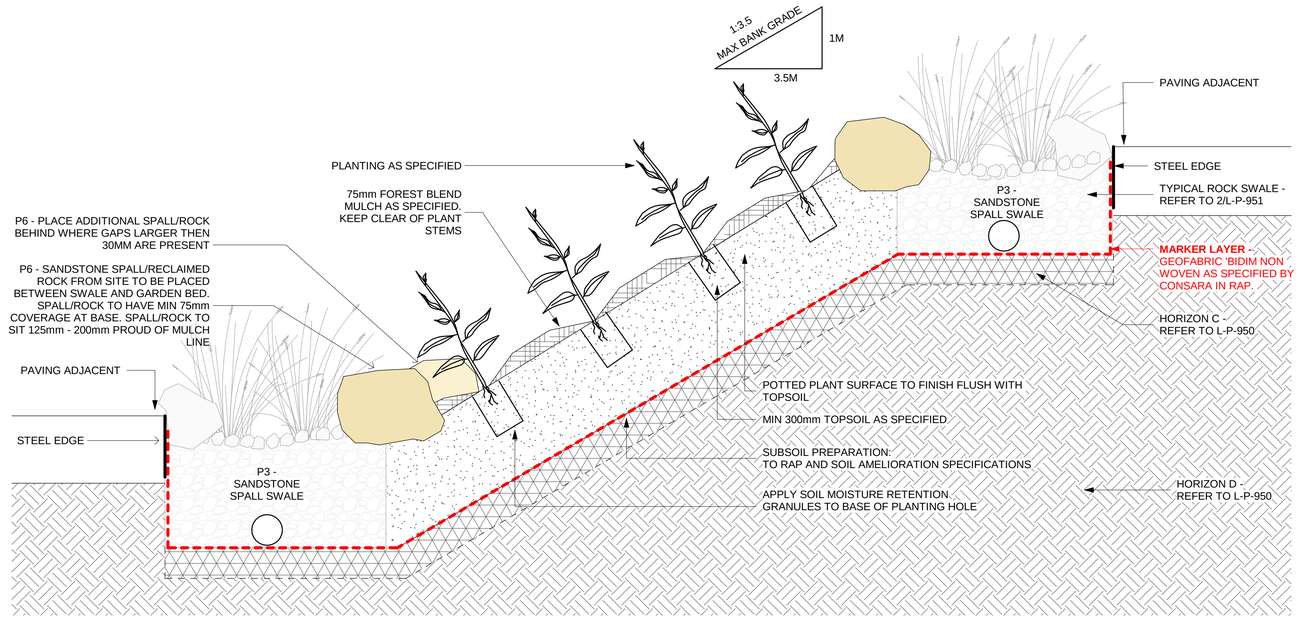
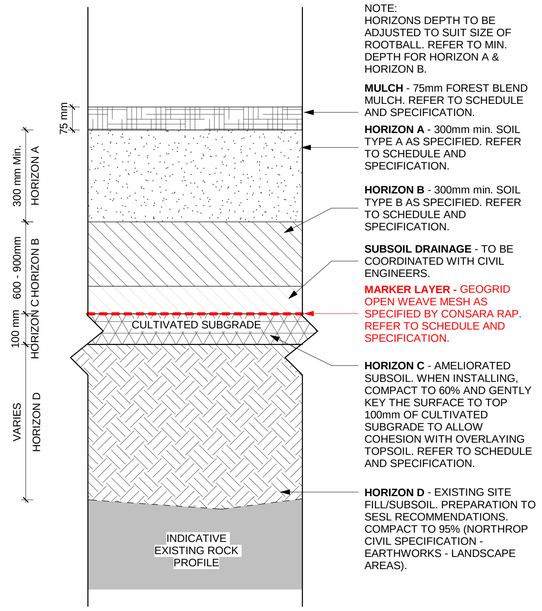
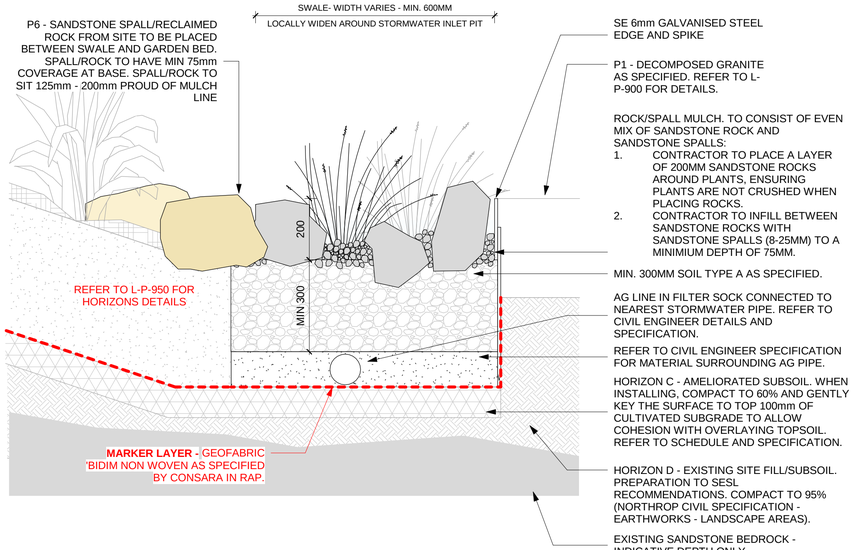


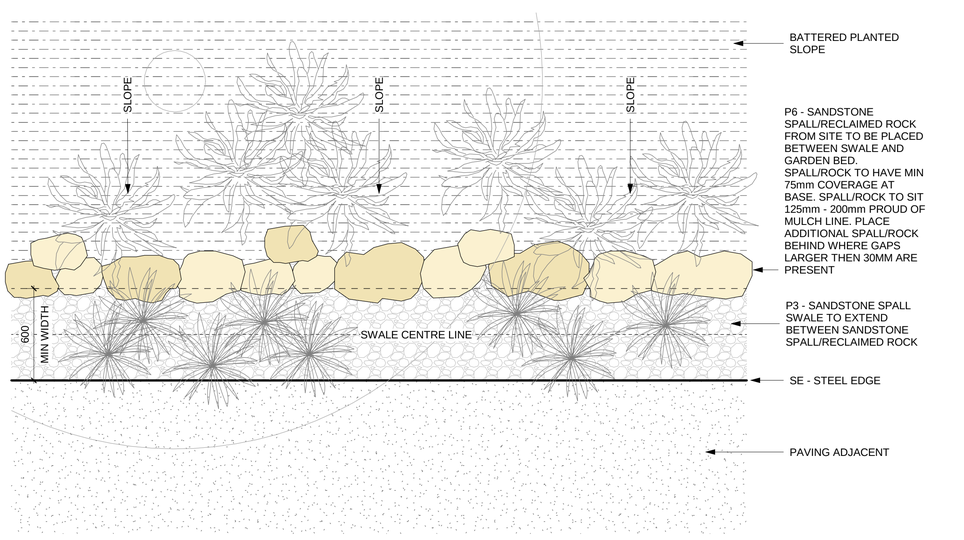
4 BATTERED PLANTING WITH SANDSTONE - TYPICAL DETAIL
1 : 10



3 TYPICAL SUBSOIL HORIZONS - WITH FIG
1 : 10



2 P3/SE/PLANTING - TYPICAL DETAIL ROCK SWALE
1 : 10



5 P3/SE/PLANTING - TYPICAL PLAN ROCK SWALE
1 : 20

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SURVEY INFORMATION

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Rev	Date	Description	Drawn	Checked
F	26/03/2024	AS BUILT	DR	MH
E	16/10/2023	FOR CONSTRUCTION	DR	MH
D	11/10/2023	FOR INFORMATION	DR	MH
C	30/08/2023	FOR INFORMATION	DR	SK
B	12/05/2023	FOR INFORMATION	DR	MH
A	03/03/2023	IFT Addenda 2	DR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

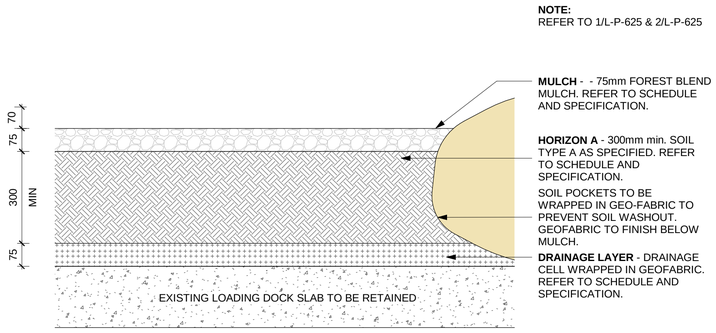
Project
Sub Base Platypus

Drawing Title
Details - Softscape - Sheet 2

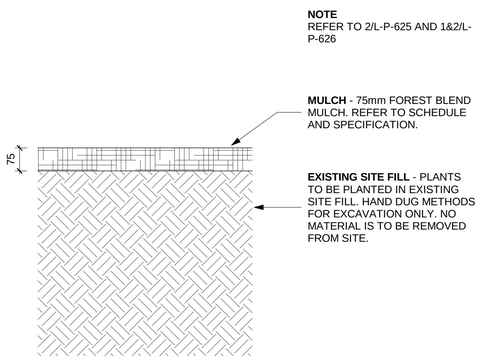
Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:36 PM
Project No. 2040
Drawing No. L-P-951
Revision F

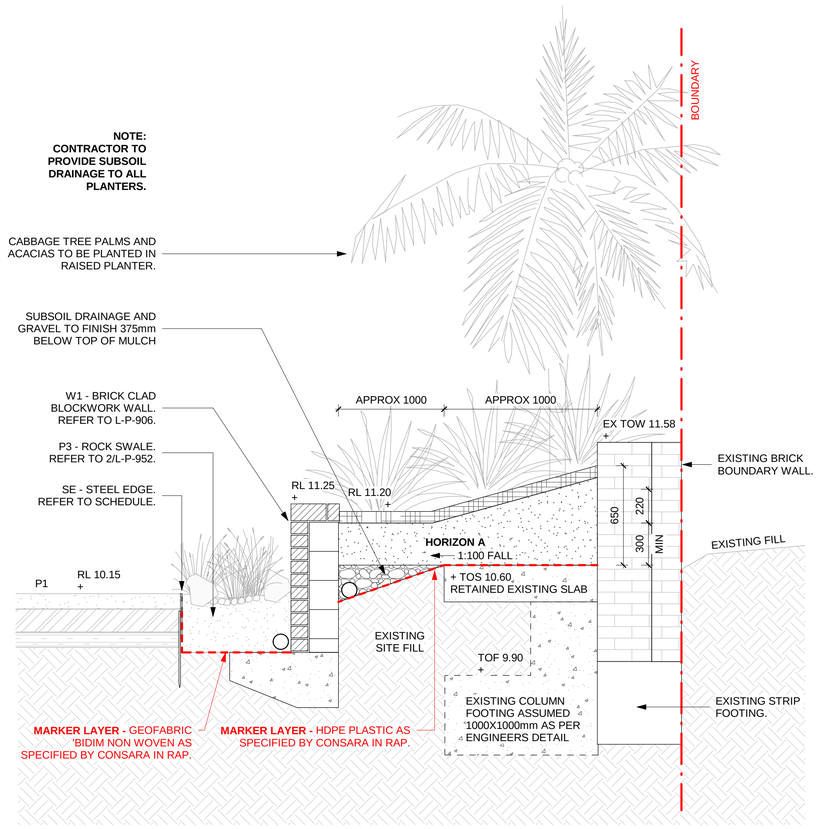
BM 360//2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



1 TYPICAL SUBSOIL HORIZONS - PLANTING OVER LOADING DOCK SLAB
1 : 10



2 TYPICAL SUBSOIL HORIZONS - BETWEEN CONCRETE WALL AND SEAWALL
1 : 10



3 TYPICAL SECTION - SOUTHERN WALL
1 : 20

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Rev	Date	Description	Drawn	Checked
E	26/03/2024	AS BUILT	DR	MH
D	15/12/2023	FOR CONSTRUCTION	DR	MH
C	27/11/2023	FOR CONSTRUCTION	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

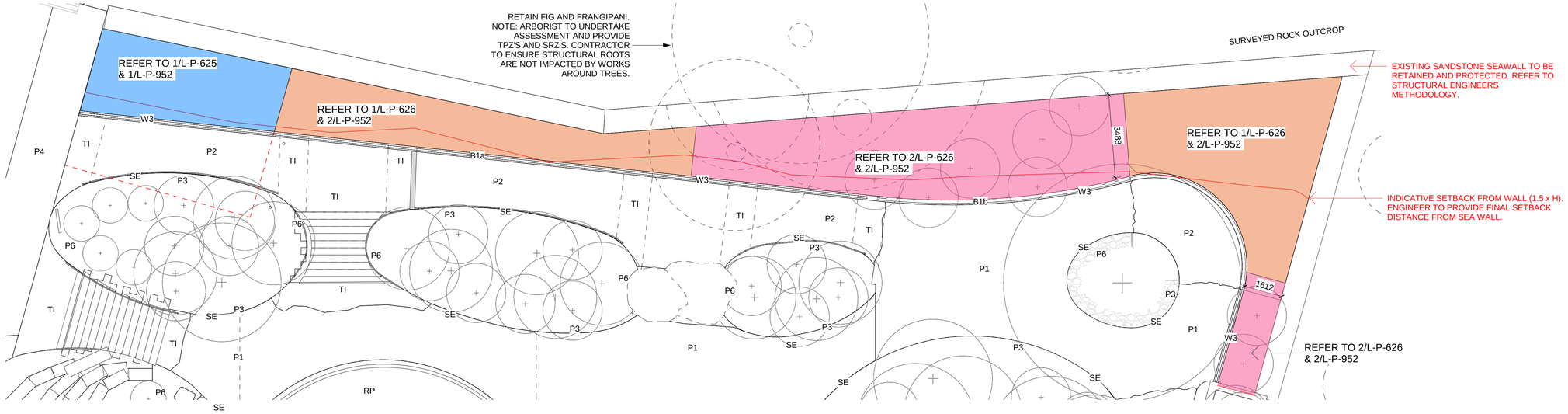
Project
Sub Base Platypus

Drawing Title
Details - Softscape - Sheet 3

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:37 PM
Project No. 2040
Drawing No. L-P-952
Revision E

BIM 360:/2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



1 KEY PLAN - PLANTING BETWEEN CONCRETE WALL AND SEAWALL
1 : 100

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Rev	Date	Description	Drawn	Checked
C	26/03/2024	AS BUILT	DR	MH
B	03/11/2023	FOR CONSTRUCTION	DR	MH
A	02/11/2023	FOR INFORMATION	DR	MH

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Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Softscape - Sheet 4

Drawing Status
AS BUILT

N

Scale. 1 : 100 @A1
Plot Date 26/03/2024 7:39:39 PM

Project No.	Drawing No.	Revision
2040	L-P-953	C

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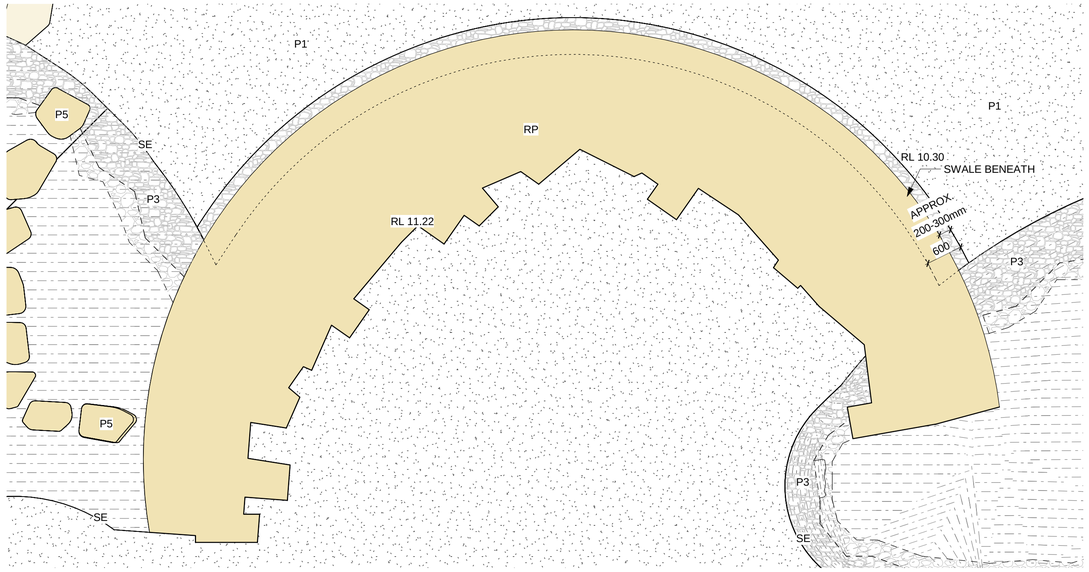
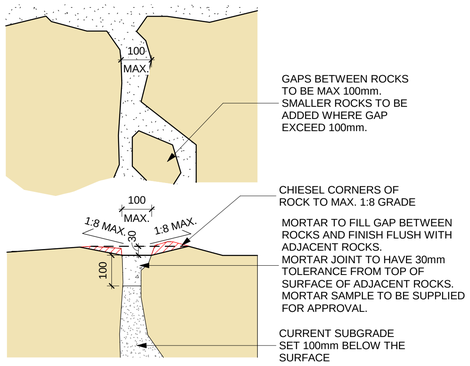
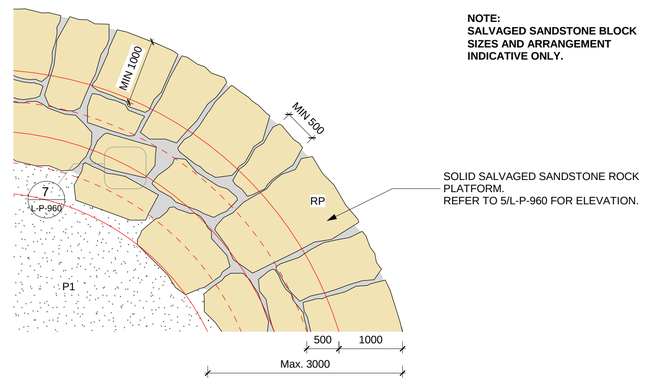


REFER TO L-P-300 FOR ALL LEVELS. LEVELS HAVE BEEN PROVIDED BY USHER & COMPANY SURVEYORS AND ARE AS PER SITE CONDITIONS.

1 RP - ROCK PLATFORM DETAIL PLAN
1 : 50

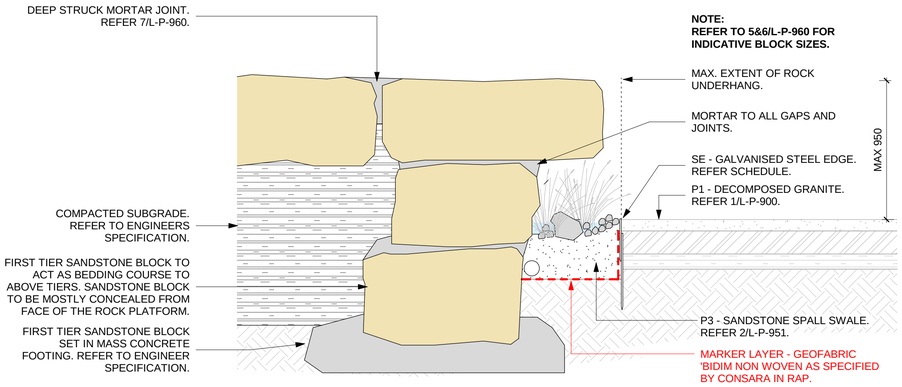




NOTE:
SALVAGED SANDSTONE BLOCK SIZES AND ARRANGEMENT INDICATIVE ONLY.

SOLID SALVAGED SANDSTONE ROCK PLATFORM.
REFER TO 5/L-P-960 FOR ELEVATION.

6 RP - INDICATIVE SANDSTONE ARRANGEMENT DETAIL PLAN
1 : 50

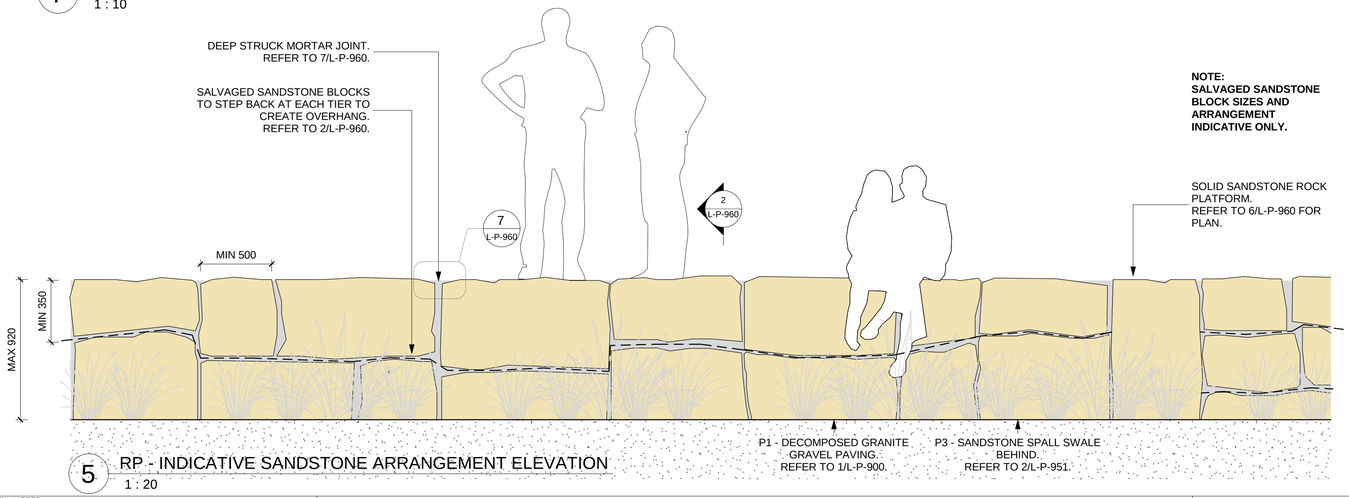


NOTE:
REFER TO 5&6/L-P-960 FOR INDICATIVE BLOCK SIZES.

2 RP - PLATFORM DETAIL SECTION 1
1 : 20

DETAIL OMITTED

7 RP - TYPICAL JOINT DETAIL.
1 : 10



NOTE:
SALVAGED SANDSTONE BLOCK SIZES AND ARRANGEMENT INDICATIVE ONLY.

5 RP - INDICATIVE SANDSTONE ARRANGEMENT ELEVATION
1 : 20

DETAIL OMITTED

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SURVEY INFORMATION

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Rev	Date	Description	Drawn	Checked
J	26/03/2024	AS BUILT	DR	MH
I	23/02/2024	FOR CONSTRUCTION	DR	MH
H	07/11/2023	FOR CONSTRUCTION	DR	MH
G	03/11/2023	FOR CONSTRUCTION	DR	MH
F	02/11/2023	FOR INFORMATION	DR	MH
E	12/05/2023	FOR INFORMATION	DR	MH
D	03/03/2023	IFT Addenda 2	DR	MH
C	03/02/2023	IFT Addenda	DR	MH

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Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

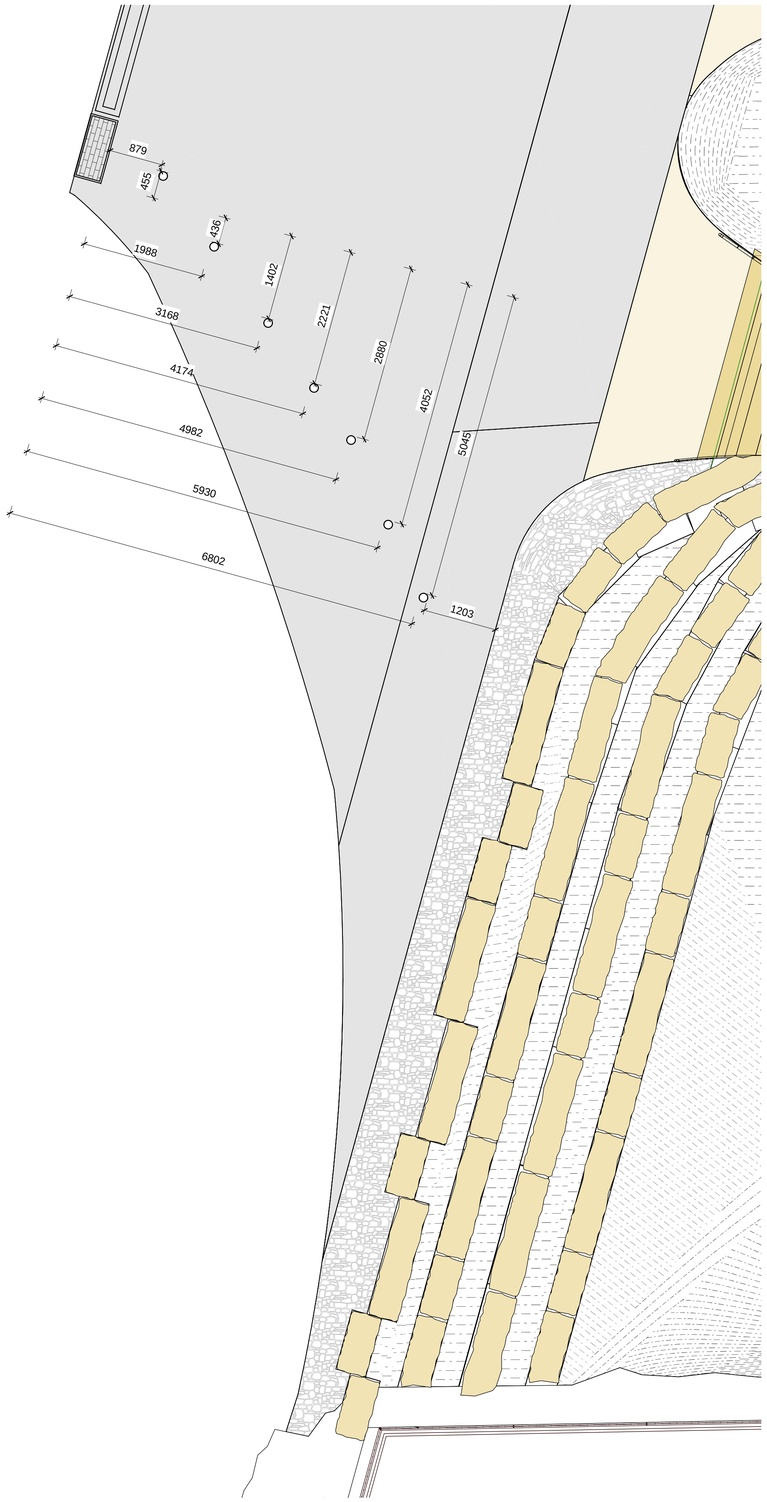
Drawing Title
Details - Rock Platform - Sheet 1

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:42 PM
Project No. 2040
Drawing No. L-P-960
Revision J

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

NOTE: DIMENSIONS ARE FROM FACE OF WALL TO FACE OF BOLLARD. EFFECTIVE SPACE BETWEEN BOLLARDS FACE TO FACE SHOULD NEVER EXCEED 1200mm.



1 BOLLARD SETOUT PLAN
1 : 50

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B	26/03/2024	AS BUILT	DR	MH
A	04/03/2024	FOR CONSTRUCTION	DR	MH

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Details - Bollard Setout

Drawing Status

AS BUILT

Scale. 1 : 50 @A1

Plot Date 26/03/2024 7:39:43 PM

Project No.

2040

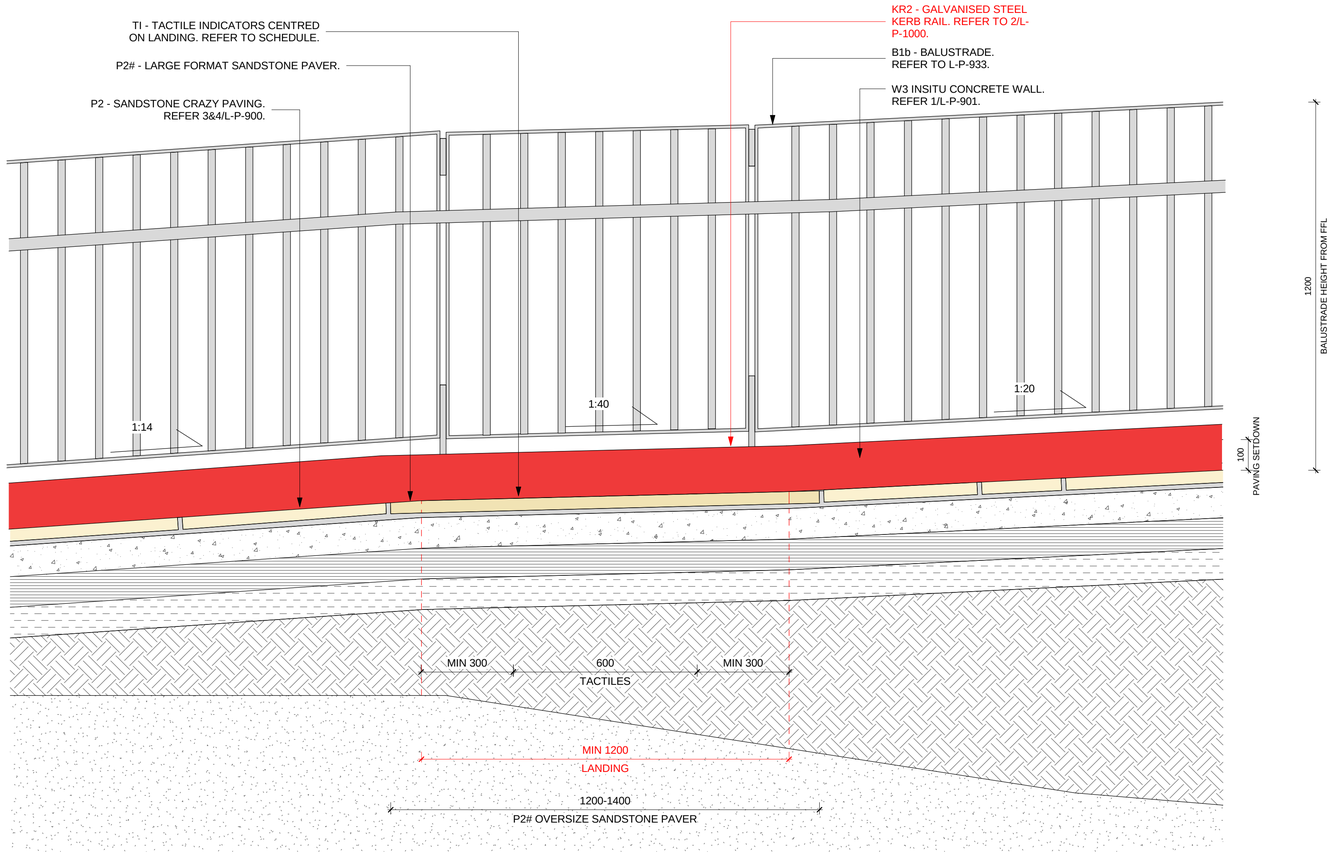
Drawing No.

L-P-970

Revision

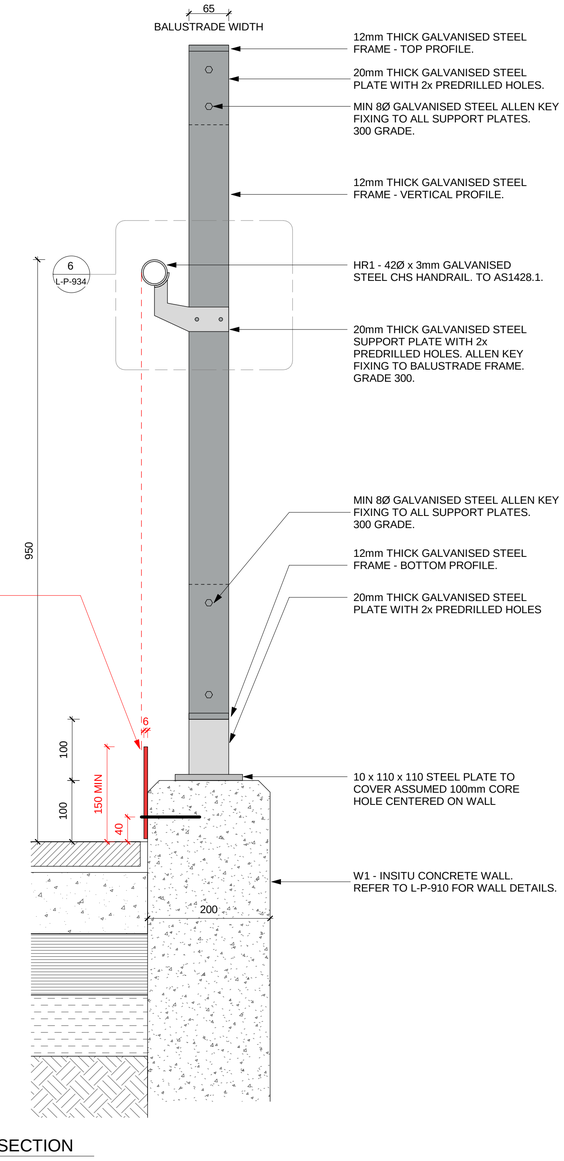
B

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt



1 KR2 - STEEL KICKRAIL - LONGITUDINAL TYPICAL SECTION
1 : 10

KR2 - GALVANISED STEEL KERB RAIL TO EDGE OF RAMP. RAIL TO FOLLOW ALIGNMENT OF FACE OF WALL AND STEP WITH WALL/PAVING GRADIENT CHANGES. CONTRACTOR TO NEATLY FIX OR AHERE KR TO WALL. THICKNESS OF STEEL TO BE DETERMINED AFTER SITE MEASURE, INDICATIVELY SHOWN AS 10mm.



2 KR2 - STEEL KICK RAIL - TYPICAL SECTION
1 : 5

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B	26/03/2024	AS BUILT	DR	MH
A	23/02/2024	FOR CONSTRUCTION	DR	MH

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Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Details - Balustrade with Steel Kickrail

Drawing Status
AS BUILT

Scale. As indicated @A1
Plot Date 26/03/2024 7:39:44 PM
Project No. 2040
Drawing No. L-P-1000
Revision B

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus_FOR CONSTRUCTION_20_detached.rvt

Sub Base Platypus

120 High St, North Sydney NSW 2060

Project Status
AS BUILT

LANDSCAPE PACKAGE

Drawing Number	Drawing Title
L-000	Cover sheet
L-001	Legend and Landscape Schedule
L-051	Specification
L-530	Planting Plan - East
L-531	Planting Plan - West
L-532	Planting Schedule
L-534	Planting Details - 1 of 1
L-540	Planting & Wire Trellis Details

Drawing Number	Drawing Title

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	17/08/2023	AS BUILT	OM	SK

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Cover sheet

Drawing Status
AS BUILT

N

Scale. @A1
Plot Date 17/08/2023 6:29:22 PM
Project No. 2040
Drawing No. L-000
Revision N/A

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus.20_.rvt

CODE	SYMBOL	ITEM/PRODUCT	DIMENSION	COLOUR + FINISH	DRAWING NUMBER	SUPPLIER (or equal)	SHOP DRAWINGS	SAMPLES	HOLD/INSPECTION POINTS	NOTES
SOFTWORKS										
-		Drainage Cell	30mm thick	Black	-	Atlantis - Flo Cell	-	-	-	Ensure filter fabric is securely placed over drainage cell.
-		Existing Tree - to be retained	-	-	-	-	-	-	-	Refer to specification for tree protection requirements.
-		Mulch	75mm thick	Forest Blend' Course 20-40mm gold coloured chip, made from 100% recycled grade A wood waste.	-	ANL	-	Photographic samples	Supplier Certificates Required prior to installation	Keep clear of plant stem and tree trunk.
-		Proposed Tree	-		-		-	Photographic samples	Inspection of setout & specimen quality on site prior to installation	All speciments to Natspec specifications. Refer to details. Refer to planting schedules for quantity.
-		Soil Type A	Benedict Smartmix® 6 Native Garden Mix		-	Benedicts	-	Photographic samples	Supplier Certificates Required prior to installation	-
-		Soil Type B	Benedict Smartmix® 7 Native Garden Sub-Soil Mix		-	Benedicts	-	Photographic samples	Supplier Certificates Required prior to installation	-
-		Soil Type C	Coarse Washed Drainage Sand		-	Benedicts	-	Photographic samples	Supplier Certificates Required prior to installation	-
TRELLIS SYSTEM										
-		Wire Rope Trellis System	Varies	Grade 316 stainless steel. Jakob Rope Systems Part no. 10820-0600	L-540	Tensile Design & Conctruct - 02 999 3668	Required	Samples to be provided for approval prior to installation.	Supplier Certificates Required prior to installation	Supplier to provide Engineering advice. Fittings to provide adequate tension as required. The fixing to steel structure to be designed.

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Rev	Date	Description	Drawn	Checked
N/A	17/08/2023	AS BUILT	OM	SK

Author

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Client

Harbour Trust

Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Legend and Landscape Schedule

Drawing Status

AS BUILT

N

Scale. @A1

Plot Date 17/08/2023 6:29:25 PM

Project No. 2040

Drawing No. L-001

Revision N/A

BIM 360://2040_Sub Base Platypus/2040_Sub Base Platypus 20_.rvt

1. PRELIMINARIES

1.01. General

The following general conditions should be considered prior to the commencement of landscape works. Commencement of work by The Contractor shall be deemed as proof of The Contractor's acceptance of the following conditions and existing condition of site.
The landscape plans should be read in conjunction with the survey, architectural plans, engineering plans, service plans, hydraulic plans, and all other relevant documentation prepared by others for the development.
All specification information provided below is supplementary to all relevant codes and Australian Standards.

1.02. Workmanship & expertise

The Contractor must be conversant with all current best practice methods relevant to their profession and work being undertaken.
The Contractor (and subconsultants) must be appropriately experienced with all aspects of the work being undertaken.
All planting, establishment and maintenance work must be carried out by qualified arborist / horticulturist with minimum three years' experience in similar work. It is a requirement that the site foreman / leading hand will have the minimum certificate qualification equivalent to a NSW TAFE Course, with a minimum five years demonstrable experience in similar landscape projects.

1.03. Check / Hold Points

The Contractor must provide minimum 5 working days' notice for the Client's representative to inspect the works for compliance with the design documents. At a minimum, inspections are to occur at the following check / hold points:

- Ground preparation
- Set out (softworks)
- Nursery inspection of plant specimens
- Installation of advanced trees (or larger)
- Prior to practical completion
- During defects period
- At handover

1.04. Initial preparation

The Contractor must arrange site meeting with the Client's representative (Landscape Architect) prior to commencement, confirm design intent, review documentation and confirm construction methodology.
No work shall be carried out until all underground services have been identified and accurately located and pegged by Contractor.
The Contractor is to ensure all appropriate safety provisions are made, including but not limited to traffic control and appropriate PPE for all staff.
Location of material stockpiles must be agreed with Client's Representative prior to commencement of work on site.

1.05. Protection of existing adjacent elements

The Contractor must ensure all adjacent pavements, urban elements, planting, etc. are adequately protected prior to commencement of works.

1.06. Protection of existing trees

All existing trees to be retained must be protected in accordance with AS4970 - Protection of Trees on Development Sites.
Do not store or otherwise place bulk materials and harmful materials under of near trees within the tree protection zone. Storage of materials, mixing of materials, vehicle parking, disposal of liquids, machinery repairs and refuelling, site office and sheds must not occur within the drip line of any existing trees, or within 5m of any existing trees where the drip line radius is less than 5m.
Do not place spoil from excavations against tree trunks, even for short periods. Prevent wind-blown materials such as cement from harming trees and plants.
Particular care must be given to root protection; excavation around existing trees must be undertaken by hand methods, unless otherwise approved by the Client's representative.
Machine excavation is to be undertaken no closer than 2m from the trunk of existing trees, or until a root with diameter greater than 30mm is encountered. Hand methods should be used around tree roots greater than 30mm.
Soil within 2m of existing trunks should be lightly cultivated (using hand methods). Soil levels should not exceed 100mm greater than existing.

1.07. Erosion & pollution control

The Contractor must take all proper precautions to prevent the erosion of soil from the subject site. The Contractor must install erosion and sediment control barriers as required, and ensure they are maintained throughout construction.
An Erosion control plan that reflects the soil type and erosion characteristics of the site must be prepared for approval by the Client prior to commencement of works.

2. SOIL WORKS

2.01. Materials

Soil Types
Refer to the Landscape Legend for specified soil types for all planting.

2.02. Installation

Testing
All testing is to be conducted in accordance with AS1289 Method of testing soils for engineering purposes. Site soil shall be given a pH test prior to modifying to ensure conditions are appropriate for planting. Tests shall be taken in several areas where planting is proposed, and the pH shall be adjusted accordingly with sulphur or lime to suit.
A soil test must be undertaken by SESL Australia (or approved equal) for industrial sites. The successful contractor shall implement the recommendations of this test.
Subgrade requirements
Refer to the landscape details for required subgrade levels and cultivation depths. Ensure a thorough breakup of the subgrade into a coarse tilth. Grade subgrades to provide falls to surface and subsurface drains, prior to the installation of specified topsoil. The Contractor must arrange for Client's Representative (Landscape Architect) to inspect the preparation of sub grade prior to top soil / wearing courses.
Drainage
To civil engineers drawings, details and specification.
Achieving finished levels
Growing media placed as fill in mass planting beds, and tree pits shall be lightly compacted in maximum 75mm layers so as to minimise degree of future settlement. No work shall be carried out on mass planting beds whilst soil is still wet, to avoid compaction of these areas. If future settlement occurs Contractor is to allow for additional fill material to achieve design finished levels. Thickening of mulch layer to achieve design finished levels is not acceptable.

3. PLANTING

3.01. Materials

Specimen Quality & Size
All plants must be grown well, healthy, not soft or forced, nor rootbound and weed free. The Contractor must undertake a thorough inspection of all plants at the time of delivery and after they have been unloaded off the delivery vehicle to identify damaged or defective plants. When damaged stock is found the Installation Contractor must immediately notify the Client's representative and the Supplier of the damage, and record the time, date and nature of the damage including photographic evidence. At this stage the Supplier will be liable for replacement of defective stock. The Supplier may choose to have the specimens returned immediately or await a determination by the Client's representative.
All tree stock must be in accordance with AS 2303 "Tree Stock for Landscape Use".
Species
Plants must be true to species or cultivar as named. Plant substitution is not acceptable unless approved by Client's representative (Landscape Architect).
Stakes & Ties
Staking of plants is generally not acceptable. All plant stems must be robust enough to support their own weight. In the event that staking is deemed acceptable, min 3 stakes and ties must be provided. Stakes shall be unpainted hardwood, straight, free of knots, and pointed at one end. They shall be 2200x50mmx50mm hardwood, or similar approved. Ties shall be 50mm wide hessian webbing material.
Fertilisers
Fertilisers must be slow release fertilisers suitable for the proposed planting types. For native plants, specifically Proteaceae family plants (including Grevillea, Banksia, Hakea spp.), low phosphorus fertilisers shall be used. Fertiliser rate to manufacturers recommendation.
Mulch
Refer to the landscape legend for specified mulch material.

3.02. Installation

Setting Out
All planting set out shall be in accordance with the drawings by a suitably qualified horticulturalist. Any conflicts with services must be identified by the Contractor, and adjustment to the location must be approved by the Client's representative (Landscape Architect).
Planting
Planting holes shall be dug to the depth as illustrated in details provided. Base of planting hole shall be loosened to a depth of 150mm and a surface dressing of an approved slow release fertiliser added to hole to manufacturer's recommendations and worked into loosened soil.
Contractor shall ensure that a 'pond' is not dug into clay sub grade material and that planting holes are free draining. Should Contractor not be satisfied with quality of existing soil into which plants are to be installed then contractor must immediately the advise Client's representative and await further instructions.
All plant material shall be planted as soon after delivery as possible. Plant containers shall be removed and discarded, and the outer roots gently teased from the soil mass. For all tree species, trim potted root balls by 10% off perimeter prior to planting to remove circling roots and encourage lateral root development.
All plants shall be thoroughly watered immediately prior to planting. Set plant in the centre of hole and backfill with growing media as specified. Compact the backfilled soil and saturate by hand watering to expel any remaining air pockets immediately after planting. On completion of planting works the base of each stem shall finish flush with the soil surface level.
Planting on Structure
All raised planters to architects specification.
Planter boxes constructed over a concrete slab shall be built in accordance with the following details provided prior to the issue of a relevant Construction Certificate:
a) Ensure soil depths are in accordance with the plans and details provided with the application, including the amended plans required by condition B49. The base of the planter must be screeded to promote water movement towards subsoil drainage. Refer to civil engineer's details and specification for subsoil drainage. There are to be no external weep holes.
b) A concrete hob or haunch shall be constructed at the internal join between the sides and base of the planter to contain drainage to within the planter.
c) Planters are to be fully waterproofed and sealed internally with a proprietary sealing agent and applied by a qualified and experienced tradesman to eliminate water seepage and staining of the external face of the planter. All internal sealed finishes are to be sound and installed to manufacturer's directions prior to backfilling with soil. An inspection of the waterproofing and sealing of edges is required by the Certifier prior to backfilling with soil.
d) Drainage cell must be supplied to the base and sides of the planter to minimize damage to the waterproof seal during backfilling and facilitate drainage. Apply a proprietary brand filter fabric and backfill with an imported soil as specified.
e) Install automated drip irrigation - refer to hydraulic engineer for specification.
f) Wire Trellis System refer to landscape schedule.
Mulching
Mulch shall be spread evenly across all planting beds to the depth specified in the drawings. Mulch must be installed clear of all plant stems / trunks as detailed. There shall be no mixing of soil and mulch material.

4. Maintenance

4.01. General

- Maintenance shall mean the care and maintenance of contracted works by accepted landscaping or horticultural practices, ensuring that all plants are in optimum growing conditions and appearance at all times, as well as rectifying any defects that become apparent.
- The maintenance period shall be 52 weeks beginning from the approved completion of the specified construction work (Practical Completion).
- Prior to requesting practical completion, The Contractor shall make good / repair any damaged areas, including but not limited to existing turf, planting, pavements, kerb and gutter, signage, buildings, services. All must be returned to a condition equivalent to that prior to commencement of works. Contractor shall leave areas over which Contractor has worked in a tidy condition and to satisfaction of Client's representative. Contractor shall be responsible for removal from site of all unwanted material and debris resulting from this work.
- A qualified landscape maintenance contractor shall undertake the required landscape maintenance works. Timing of maintenance works shall be spread regularly over maintenance period. Duties shall include, but not be limited to:
  - watering of planting and irrigation maintenance;
  - removal of any weed growth or litter/debris;
  - replacing failed plants (at no additional cost to the Client unless due to vandalism or some other reason beyond the Contractors control, at discretion of Client's representative);
  - make good areas of soil subsistence or erosion;
  - topping up of mulch;
  - spraying of plants as necessary to combat insects or disease;
  - fertilising with approved fertilisers at correct rates;
  - adjusting ties to stakes;
  - pruning in accordance with Australian Standard 4373 "Pruning of Amenity Trees".
- The Landscape Contractor must keep a logbook of all maintenance activity, and submit with each progress claim as evidence of works undertaken.
- On completion of the maintenance period, the landscape works shall be inspected and at the satisfaction of the Superintendent or Client's representative (Landscape Architect), the responsibility will be signed over to the Client.

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N/A	17/08/2023	AS BUILT	OM	SK

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Specification

Drawing Status
AS BUILT

N

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Plot Date 17/08/2023 6:29:40 PM
Project No. 2040
Drawing No. L-051
Revision N/A

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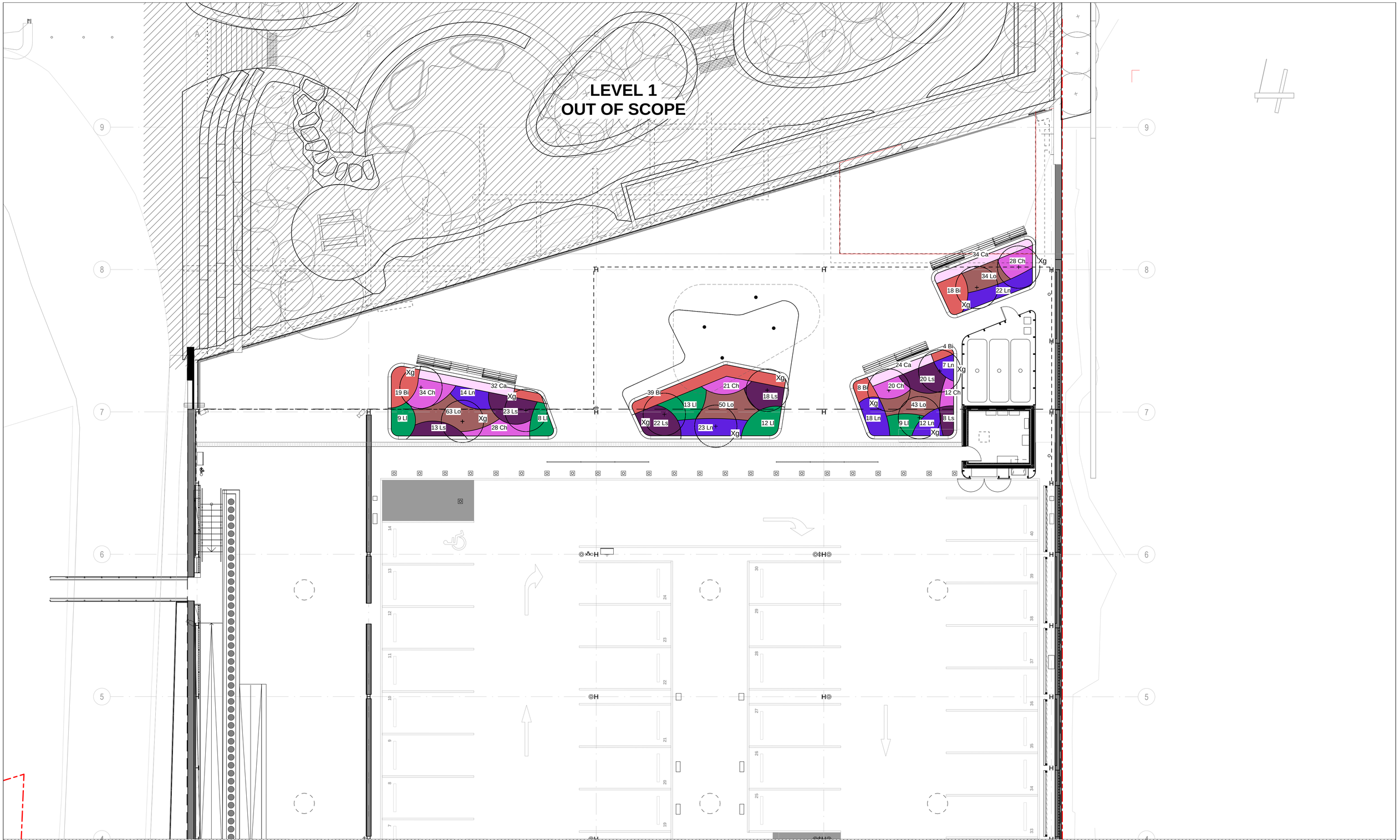

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Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Planting Plan - East

Drawing Status

AS BUILT

N

Scale. 1 : 100 @A1

Plot Date 17/08/2023 6:29:45 PM

Project No.	Drawing No.	Revision
2040	L-530	N/A

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REFER TO L-530

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Client

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Australian Government
Sydney Harbour Federation Trust

Project

Sub Base Platypus

Drawing Title

Planting Plan - West

Drawing Status

AS BUILT

N

Scale. 1 : 100 @A1

Plot Date 17/08/2023 6:29:50 PM

Project No.	Drawing No.	Revision
2040	L-531	N/A

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GROUNDCOVERS AND CLIMBERS - LEVEL 3							
CODE	SPECIES	COMMON NAME	HEIGHT AT INSTALL	CENTRES(mm)	POT SIZE	QUANTITY	NOTES
Bli	Baeckea linifolia	Swamp Baeckea	0.2m	500	140mm	21	-
Bi	Banksia integrifolia 'Roller Coaster'	Banksia roller coaster	0.2m	400	150mm	94	-
Bs	Banksia spinulosa 'Birthday Candles'	Banksia Birthday Candles	0.3m	400	140mm	70	-
Bh	Banksia spinulosa 'Honey Pots'	Banksia Honey Pots	0.3m	400	140mm	36	-
Ch	Chrysocephalum apiculatum 'Desert Flame'	Yellow Buttons	0.2m	300	150mm	144	-
Ca	Correa alba	White Correa	0.2m	300	150mm	211	-
Cr	Correa reflexa	Native Fuchsia	0.2m	400	140mm	19	-
Dc	Dianella caerulea	Blue Flax-Lily	0.3m	400	150mm	301	-
Go	Goodenia ovata	Hop Goodenia	0.2m	400	140mm	33	-
Gr	Grevillea	Grevillea	0.4m	400	200mm	44	Contractor to confirm exact substitute.
Gg	Grevillea 'Gaudi chaudii'	Gaudi's Ghost	0.2m	400	200mm	30	-
Hs	Hibbertia scandens	Snake Vine	0.3m	N/A	150mm	12	-
Lf	Lambertia Formosa	Mountain Devil	0.3m	500	200mm	54	Contractor to confirm exact substitute.
Lp	Leptospermum polygalifolium	Yellow Tea Tree	0.8m	500	200mm	20	-
Lo	Lomandra confertifolia rubiginosa Crackerjack	Mat Rush	0.2m	300	150mm	190	-
Ls	Lomandra fluviatilis 'Shara'	Lomandra 'Shara'	0.3m	400	140mm	104	-
Ll	Lomandra longifolia	Mat Rush	0.4m	500	150mm	79	-
Ln	Lomandra longifolia 'Nyalla'	Mat Rush	0.2m	400	140mm	95	-
Lt	Lomandra longifolia 'Tanika'	Mat Rush	0.2m	300	150mm	47	-
Mt	Melaleuca thymifolia	Honey Myrtle	0.2m	500	150mm	19	-
Pp	Pandorea pandorana	Wonga Wonga Vine	0.3m	N/A	200mm	12	-
Pg	Poa labillardieri	Tussock Grass	0.3m	400	140mm	58	-
Wf	Westringia fruticosa 'Mundi'	Coastal Rosemary	0.3m	400	140mm	38	-

TREES AND SHRUBS - LEVEL 3							
	SPECIES	COMMON NAME	HEIGHT AT INSTALL	CENTRES	POT SIZE	QUANTITY	NOTES
ACO (2)	Angophora costata	Smooth-barked apple	3m	As shown	200L	1	Client rep to determine placement.
Al	Acacia longifolia	Long- leaved Wattle	1m	As shown	300mm	5	-
BIN	Banksia integrifolia	Coast Banksia	3m	As shown	100L	5	Client rep to determine placement.
Gm	Grevillea moonlight 'gold fever'	Moonlight	1m	As shown	20L	7	-
Xg	Xanthorrhoea glauca	Grass Tree	2m	As shown	Ex-Ground	11	Client rep to select specimens and determine placement

Please note: In addition to the specification (where provided) the following controls will apply to plant material brought to site. Where any perceived conflict arises the listed items below are to prevail:
1. The head contractor must place the plant order for the whole site within 2 weeks of signing the head contract to ensure the plant nursery has enough time to source and grow on plant stock.
2. The Genus and Species nominated must be delivered to site in the total quantity specified. Varieties and hybrids of the same genus are not a suitable substitute.
3. Unapproved substitutes will be defected and require replacement.
4. Unapproved reductions to the specified pot sizes will be defected and require replacement, or where approved by client, a cost credit will be applied.
5. Acceptance of plant stock is wholly at the discretion of the client. Plants deemed to be unsuitable for any reason (damage, root girdling, poor health, no vigorous, yellowing leaves, insect predation, water stress… etc.) can be rejected by the client and will require replacement at the contractors expense.
6. Plants that are deemed too small for the pot size nominated (as determined by the client and/or the clients representative) will be defected and require replacement.
7. It is incumbent upon the contractor to maintain appropriate quality controls to minimise costly and timely defects rectification.
8. Liaison with the plant nursery, inspecting and receiving plant stock must be undertaken by a qualified horticulturist with a minimum of 5 years practical experience on construction projects. The name and qualifications of the horticulturist must be submitted for approval within 2 weeks of the head contract being award. The client may accept or reject the submission and the contractor must seek an alternative horticulturist to the satisfaction of the client. Where not under the employ of the contractor, the contractor must hire a horticulturist for the project. The horticulturist must liaise with the client and clients' representative on all plant related issues and be present at any site inspection during soil, irrigation, and plant installation.

Rev	Date	Description	Drawn	Checked
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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Planting Schedule

Drawing Status
AS BUILT

N

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Plot Date 17/08/2023 6:29:55 PM
Project No. 2040
Drawing No. L-532
Revision N/A

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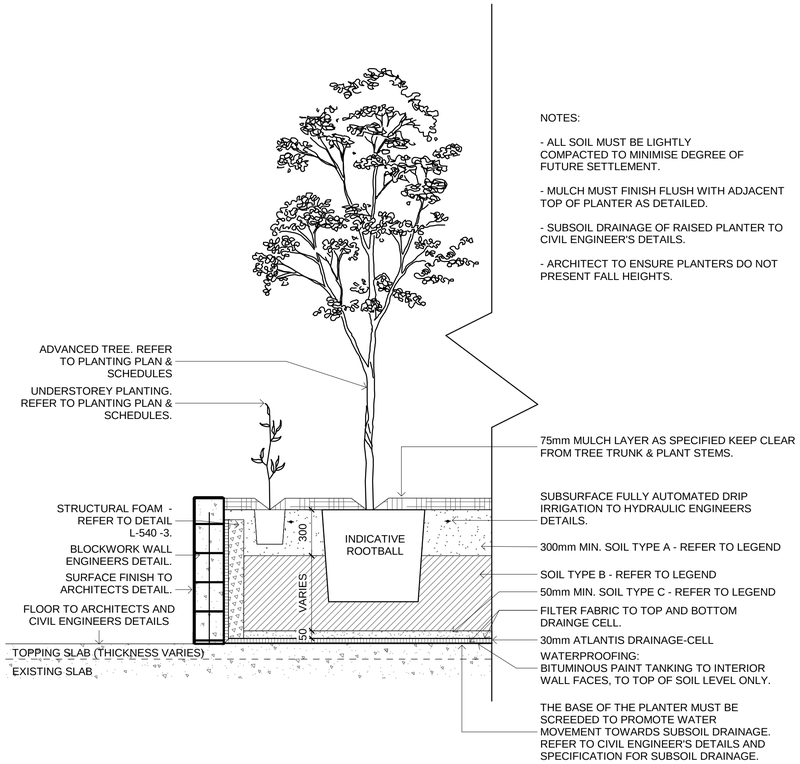


NOTES:

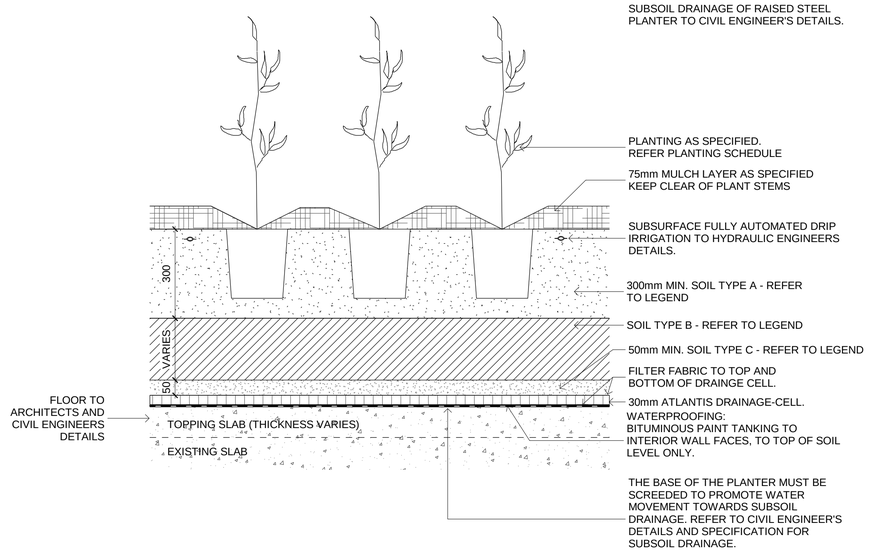
- ALL SOIL MUST BE LIGHTLY COMPACTED TO MINIMISE DEGREE OF FUTURE SETTLEMENT.

- MULCH MUST FINISH FLUSH WITH ADJACENT TOP OF PLANTER AS DETAILED.

- SUBSOIL DRAINAGE OF RAISED PLANTER TO CIVIL ENGINEER'S DETAILS.

- ARCHITECT TO ENSURE PLANTERS DO NOT PRESENT FALL HEIGHTS.

1 PLANTING ON STRUCTURE - BLOCKWORK PLANTER
1 : 20



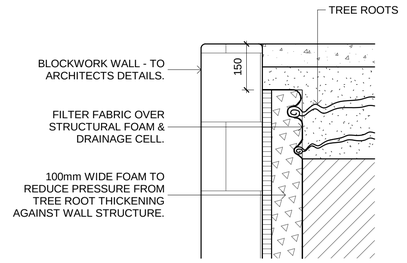
NOTES:

ALL SOIL MUST BE LIGHTLY COMPACTED TO MINIMISE DEGREE OF FUTURE SETTLEMENT.

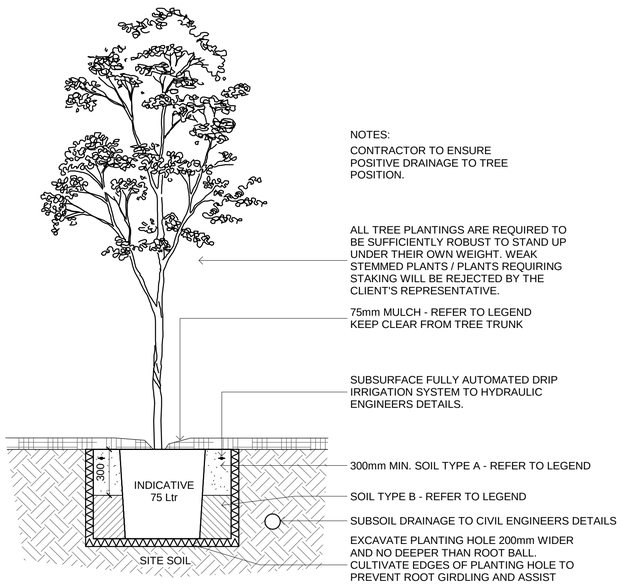
MULCH MUST FINISH FLUSH WITH ADJACENT TOP OF PLANTER.

SUBSOIL DRAINAGE OF RAISED STEEL PLANTER TO CIVIL ENGINEER'S DETAILS.

2 MASS PLANTING ON STRUCTURE - STEEL PLANTER
1 : 10



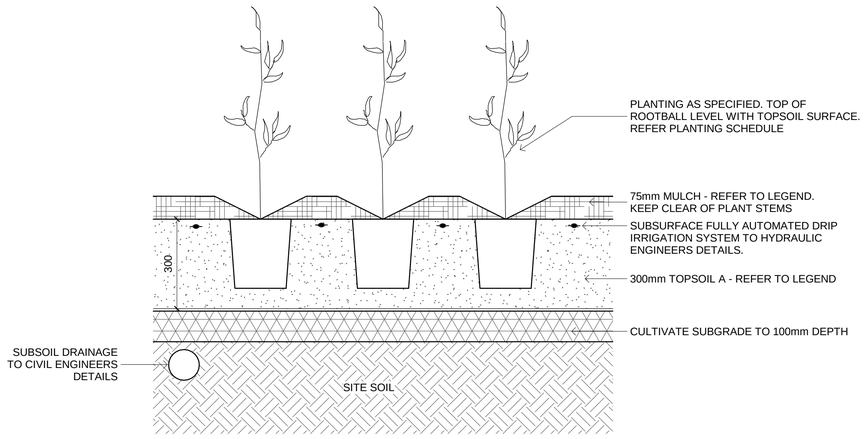
3 BLOCKWORK PLANTER INTERNAL WALL DETAIL
1 : 10



NOTES:

CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO TREE POSITION.

4 TYPICAL TREE IN DEEP SOIL
1 : 20



5 TYPICAL MASS PLANTING IN DEEP SOIL
1 : 10

GENERAL NOTE:

- **REFER TO ARCHITECTS SPECIFICATION AND DETAILS FOR RAISED PLANTERS.**

Rev	Date	Description	Drawn	Checked
N/A	17/08/2023	AS BUILT	OM	SK

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Client: Harbour Trust — Australian Government, Sydney Harbour Federation Trust

Project: Sub Base Platypus

Drawing Title: **Planting Details - 1 of 1**

Drawing Status: AS BUILT

N

Scale: As indicated @A1
Plot Date: 17/08/2023 6:29:59 PM
Project No.: 2040
Drawing No.: L-534
Revision: N/A

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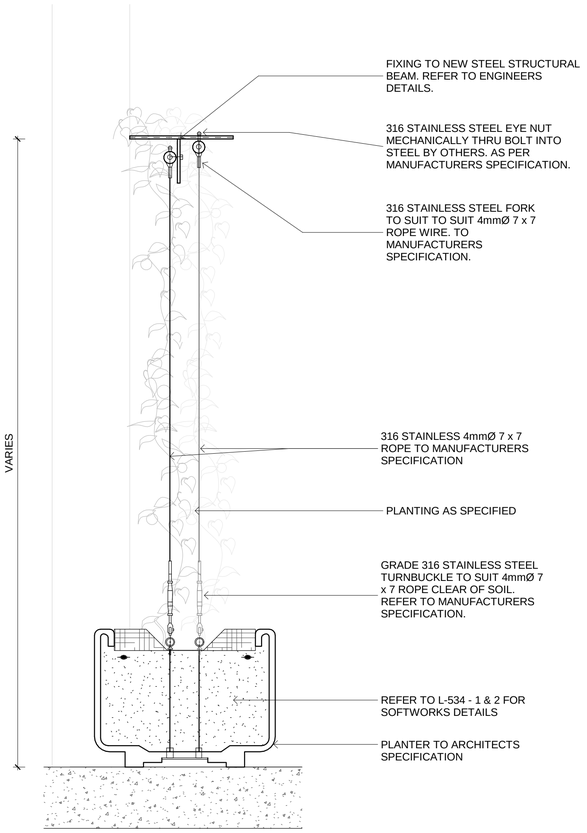
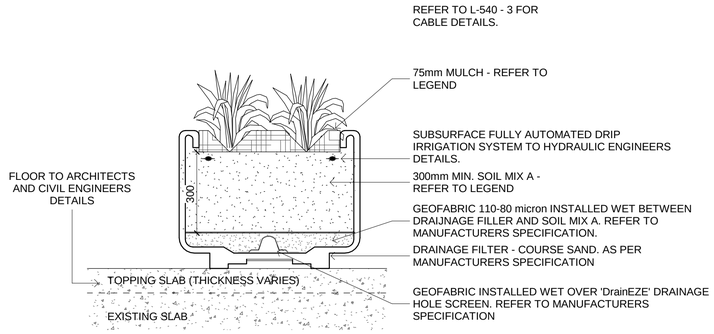
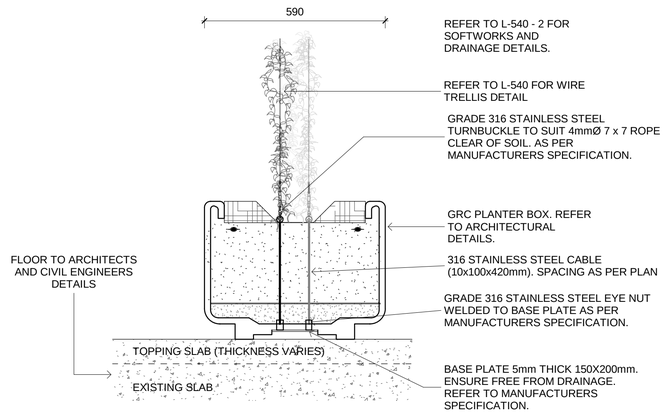


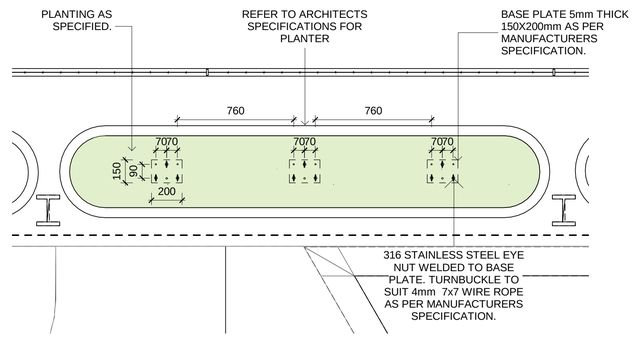
1 WIRE TRELLIS DETAIL
1 : 10



2 PLANTING ON STRUCTURE - QUATRO PLANTER & DRAINAGE
1 : 10



3 PLANTING ON STRUCTURE - QUATRO PLANTER WITH WIRE CABLES
1 : 10



4 PLANTING ON STRUCTURE - QUATRO PLANTER CABLE SETOUT PLAN
1 : 20

GENERAL NOTE:

- **REFER TO ARCHITECTS SPECIFICATION AND DETAILS FOR RAISED PLANTERS.**
- **DETAILS DRAWN TO MANUFACTURERS SPECIFICATION (TENSILE DESIGN & CONSTRUCT).**

Rev	Date	Description	Drawn	Checked
N/A	17/08/2023	AS BUILT	OM	SK

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Client
Harbour Trust
Australian Government Sydney Harbour Federation Trust

Project
Sub Base Platypus

Drawing Title
Planting & Wire Trellis Details

Drawing Status
AS BUILT

N

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Project No. 2040
Drawing No. L-540
Revision N/A

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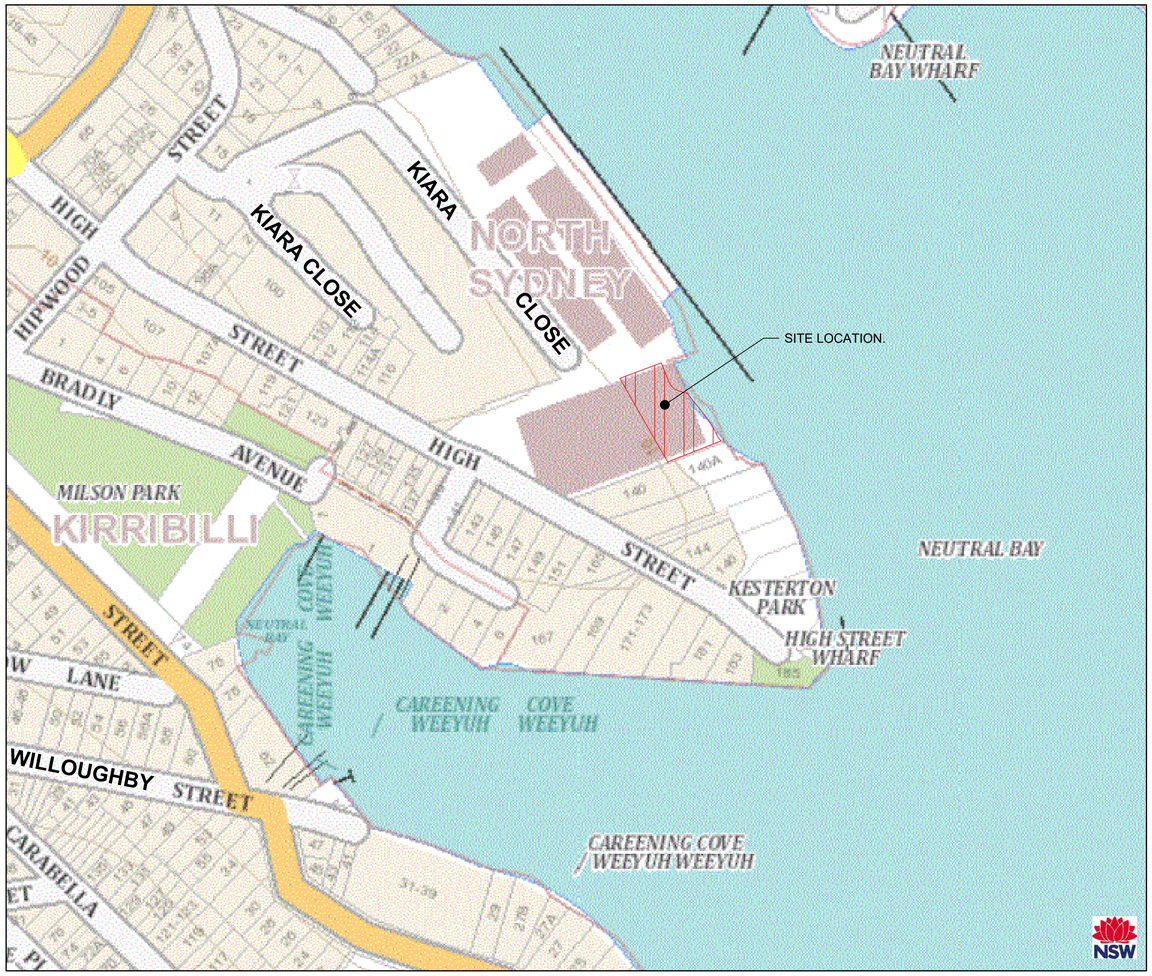
SUB BASE PLATYPUS

120 HIGH STREET, NORTH SYDNEY - FORESHORE PARK
CIVIL ENGINEERING PLANS



SITE LOCALITY PLAN

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DRAWING SCHEDULE	
DRG No.	DRAWING TITLE
C1.01	COVER SHEET, DRAWING SCHEDULE AND SITE LOCALITY PLAN
C1.11	CONSTRUCTION SPECIFICATION NOTES
C2.01	STORMWATER AND GENERAL ARRANGEMENT PLAN
C2.11	STORMWATER PIPE LONGITUDINAL SECTION SHEET 1
C2.21	MC01 LONGITUDINAL SECTION SHEET 1 OF 1
C2.31	MC01 CROSS SECTIONS SHEET 1
C2.32	MC01 CROSS SECTIONS SHEET 2
~~C2.41~~	~~RW01 LONGITUDINAL SECTION SHEET 1 OF 1~~
C2.42	RW02 LONGITUDINAL SECTION SHEET 1 OF 1
C3.01	DETAILS SHEET 1
C3.02	DETAILS SHEET 2
C4.01	BULK EARTHWORKS PLAN

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AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	W.D.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	W.D.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	19/10/23
B	REVISIONS AS CLOUDED	E.B.	M.B.	D.H.	C.N.	15/11/23
C	AS BUILT	E.B.	W.D.	D.H.		28/03/24

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PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
COVER SHEET, DRAWING SCHEDULE AND SITE LOCALITY PLAN

JOB NUMBER 230309
DRAWING NUMBER C1.01
REVISION C
DRAWING SHEET SIZE = A1

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Plotted By : wbobic
Date : 28-3-24 8:56am

ENGINEERING CERTIFICATION NOTES

1. TO CERTIFY THE CONSTRUCTED CIVIL WORKS, A QUALIFIED EXPERIENCED ENGINEER IS TO VISIT THE SITE TO OBSERVE CONSTRUCTION TECHNIQUES AND VARIOUS ELEMENTS THAT MAY BE CONCEALED WHEN THE WORKS ARE COMPLETE.

2. THIS SPECIFICATION ALLOWS FOR CERTIFICATION OF WORKS CONTROLLED BY A PRIVATE CERTIFIER FOR LAND DEVELOPMENT WORKS. THIS SPECIFICATION DOES NOT COVER CERTIFICATION REQUIREMENTS FOR AUTHORITIES SUCH AS COUNCIL, RMS OR OFFICE OF WATER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND PROVIDE ALL PROJECT SPECIFIC CONSTRUCTION COMPLIANCE (WORKS AS EXECUTED) INFORMATION TO THE SATISFACTION OF THE STAKEHOLDER / AUTHORITY. DISCREPANCIES BETWEEN THIS SPECIFICATION AND SPECIFICATIONS OF OTHER EXTERNAL STAKEHOLDERS / AUTHORITIES IS TO BE REPORTED TO THE SUPERINTENDENT FOR CLARIFICATION.

3. THE CONTRACTOR IS TO AGREE WITH THE ENGINEER AN APPROPRIATE SITE VISIT SCHEDULE AND FEE ARRANGEMENT PRIOR TO COMMENCEMENT OF THE WORKS. THE CONTRACTOR SHALL ENSURE THAT THE ENGINEER CAN SAFELY ACCESS ALL CIVIL ELEMENTS TO BE REVIEWED. SITE VISITS ARE CONDUCTED DURING NORMAL BUSINESS HOURS. WE REQUIRE TWO (2) WORKING DAY NOTICE FOR ANY SITE VISIT.

4. THE CONTRACTOR SHALL PROVIDE SURVEYED LEVELS, PREPARED BY A QUALIFIED SURVEYOR FOR SUBGRADE, SUB-BASE COURSE, BASE COURSE AND WEARING COURSE.

5. THE CONTRACTOR SHALL PROVIDE WORKS AS EXECUTED (WAE) DOCUMENTATION PREPARED BY A QUALIFIED PRACTICING SURVEYOR. THE WAE DRAWINGS SHALL CLEARLY SHOW, STORMWATER GRATE/ COVER LEVELS, STORMWATER PIT INVERT LEVELS AND CORRESPONDING INVERT LEVELS OF ANY INCOMING OR OUTGOING PIPES, DIAMETER OF ALL PIPES, DIMENSIONS AND VOLUME OF ON-SITE DETENTION FACILITIES, INVERT LEVELS OF ORIFICE PLATES, OVERFLOW WEIRS, BASE OF TANK FINISHED LEVELS OF PAVEMENTS. THE WAE SHALL SHOW WHERE THE SIZE OR ALIGNMENT OF CIVIL ENGINEERING ELEMENTS WHEN THEY DEVIATE FROM THE DESIGN DOCUMENTATION.

6. THE WAE DRAWINGS SHALL BE STAMPED WITH THE FOLLOWING STATEMENT "THESE WAE DRAWINGS HAVE BEEN PREPARED BY [COMPANY NAME] AND ARE A TRUE AND ACCURATE REPRESENTATION OF THE CONSTRUCTED WORKS". EACH DRAWING SHALL BE SIGNED AND DATED BY THE SURVEYOR WHO PREPARED THE DRAWINGS.

THESE WAE DRAWINGS HAVE BEEN PREPARED BY [COMPANY NAME} AND ARE A TRUE AND ACCURATE REPRESENTATION OF THE CONSTRUCTED WORKS.

SIGNED... DATE..

NAME...

POSITION.......................................

7. WAE SHALL BE PROVIDED IN BOTH AUTOCAD AND PDF FORMAT. NORTHROP CONSULTING ENGINEERS WILL PROVIDE ENGINEERING PLANS TO THE CONTRACTOR IN AUTOCAD FORMAT TO AID PREPARATION OF WAE DOCUMENTATION.

8. CONTRACTOR IS TO UNDERTAKE A CCTV INSPECTION OF ALL STORMWATER DRAINAGE PIPELINES AND PROVIDE TO THE ENGINEER FOR APPROVAL.

9. THE CONTRACTOR SHALL PROVIDE ALL RELEVANT TEST CERTIFICATES PROGRESSIVELY THROUGHOUT THE DURATION OF THE WORKS. ALL TEST CERTIFICATES SHALL BE PREPARED BY A NATA REGISTERED LABORATORY. TEST CERTIFICATES ARE REQUIRED FOR PROOF ROLLING, SUBGRADE COMPACTION, COMPACTION OF PAVEMENT LAYERS, COMPACTION OF FILLING OPERATIONS, CONCRETE SLUMP TEST, AND CONCRETE STRENGTH TESTS. THE CONTRACT SHALL PROVIDE ALL RELEVANT VALIDATIONS BY A GEOTECHNICAL ENGINEER FOR ALL IMPORTED FILL

10. EACH TEST CERTIFICATE WILL NOMINATE THE DATE AND TIME OF THE TEST AND PROVIDE A LOCATION OF WHERE THE TEST SAMPLE WAS TAKEN FROM.

11. THE CONTRACTOR SHALL ARRANGE FOR THE ENGINEER TO CONDUCT A FINAL VISIT TO REVIEW OF THE CONSTRUCTED WORKS. THIS WILL REVIEW WILL NOT TAKE PLACE UNTIL THE WAE DOCUMENTATION AND RELEVANT TEST CERTIFICATES HAVE BEEN RECEIVED.

12. IF DEFECTIVE OR INCOMPLETE WORK IS FOUND DURING THE FINAL INSPECTION ANOTHER INSPECTION MAY BE REQUIRED AT THE CONTRACTORS EXPENSE TO VERIFY THE RECTIFICATION WORKS HAVE BEEN COMPLETED.

SAFETY IN DESIGN

EXISTING SERVICES

1. CONTRACTOR TO BE AWARE EXISTING SERVICES ARE LOCATED WITHIN THE SITE. LOCATION OF ALL SERVICES TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORKS. CONTRACTOR TO CONFIRM WITH RELEVANT AUTHORITY REGARDING MEASURES TO BE TAKEN TO ENSURE SERVICES ARE PROTECTED OR PROCEDURES ARE IN PLACE TO DEMOLISH AND/OR RELOCATE.

EXISTING STRUCTURES

CONTRACTOR TO BE AWARE EXISTING STRUCTURES MAY EXIST WITHIN THE SITE. TO PREVENT DAMAGE TO EXISTING STRUCTURE(S) AND/OR PERSONNEL, SITE WORKS TO BE CARRIED OUT AS FAR AS PRACTICALLY POSSIBLE FROM EXISTING STRUCTURE(S).

EXISTING TREES

2. CONTRACTOR TO BE AWARE EXISTING TREES EXIST WITHIN THE SITE WHICH NEED TO BE PROTECTED. TO PREVENT DAMAGE TO TREES AND/OR PERSONNEL, SITE WORKS TO BE CARRIED OUT AS FAR AS PRACTICALLY POSSIBLE FROM EXISTING TREES. ADVICE NEEDS TO BE SOUGHT FROM ARBORIST AND/OR LANDSCAPE ARCHITECT ON MEASURES TO PROTECT TREES.

GROUNDWATER

3. CONTRACTOR TO BE AWARE GROUND WATER LEVELS ARE CLOSE TO EXISTING SURFACE LEVEL. TEMPORARY DE-WATERING MAY BE REQUIRED DURING CONSTRUCTION WORKS.

EXCAVATIONS

4. DEEP EXCAVATIONS DUE TO STORMWATER DRAINAGE WORKS IS REQUIRED. CONTRACTOR TO ENSURE SAFE WORKING PROCEDURES ARE IN PLACE FOR WORKS. ALL EXCAVATIONS TO BE FENCED OFF AND BATTERS ADEQUATELY SUPPORTED TO APPROVAL OF GEOTECHNICAL ENGINEER.

GROUND CONDITIONS

5. CONTRACTOR TO BE AWARE OF THE SITE GEOTECHNICAL CONDITIONS. REFER TO GEOTECHNICAL REPORT FOR DETAILS.

HAZARDOUS MATERIALS

6. EXISTING ASBESTOS PRODUCTS AND CONTAMINATED MATERIAL MAY BE PRESENT ON SITE. CONTRACTOR TO ENSURE ALL HAZARDOUS MATERIALS ARE IDENTIFIED PRIOR TO COMMENCING WORKS. SAFE WORKING PRACTICES AS PER RELEVANT AUTHORITY TO BE ADAPTED AND APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) TO BE USED WHEN HANDLING ALL HAZARDOUS MATERIALS.

CONFINED SPACES

7. CONTRACTOR TO BE AWARE OF POTENTIAL HAZARDS DUE TO WORKING IN CONFINED SPACES SUCH AS STORMWATER PITS, TRENCHES AND/OR TANKS. CONTRACTOR TO PROVIDE SAFE WORKING METHODS, USE APPROPRIATE PPE WHEN ENTERING CONFINED SPACES AND BE LICENCED.

MANUAL HANDLING

8. CONTRACTOR TO BE AWARE MANUAL HANDLING MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ENSURE MANUAL HANDLING PROCEDURES AND ASSESSMENTS ARE IN PLACE PRIOR TO COMMENCING WORKS.

WATER POLLUTION

9. CONTRACTOR TO ENSURE APPROPRIATE MEASURE ARE TAKEN TO PREVENT POLLUTANTS FROM CONSTRUCTION WORKS CONTAMINATING THE SURROUNDING ENVIRONMENT.

SITE ACCESS/EGRESS

10. CONTRACTOR SHALL COMPLY WITH ALL STATUTORY AND INDUSTRIAL REQUIREMENTS FOR PROVISION OF A SAFE WORKING ENVIRONMENT INCLUDING TRAFFIC CONTROL.
11. CONTRACTOR IS TO BE AWARE SITE WORKS OCCUR IN CLOSE PROXIMITY TO FOOTPATHS AND ROADWAYS. CONTRACTOR TO ERECT APPROPRIATE BARRIERS AND SIGNAGE TO PROTECT SITE PERSONNEL AND PUBLIC.
12. CONTRACTOR SHALL ENSURE THAT AT ALL TIMES ACCESS TO ALL BUILDINGS ADJACENT TO THE WORKS IS NOT DISRUPTED.
13. WHERE NECESSARY, CONTRACTOR SHALL PROVIDE SAFE PASSAGE OF VEHICLES AND/OR PEDESTRIANS THROUGH OR BY THE SITE.

VEHICLE MOVEMENT

14. CONTRACTOR TO SUPPLY AND COMPLY WITH TRAFFIC MANAGEMENT PLAN AND PROVIDE ADEQUATE SITE TRAFFIC CONTROL INCLUDING A CERTIFIED TRAFFIC MARSHALL TO SUPERVISE VEHICLE MOVEMENTS WHERE NECESSARY.

SITE WORKS

1. ALL WORKS TO BE IN ACCORDANCE WITH LOCAL RELEVANT COUNCIL REQUIREMENTS, SPECIFICATIONS, AUSTRALIA STANDARDS, CONFLICT SHALL BE REFERRED TO THE SUPERINTENDENT FOR DIRECTION.
2. THE CONTRACTOR IS TO DESIGN, OBTAIN APPROVALS AND CARRY OUT REQUIRED TEMPORARY TRAFFIC CONTROL PROCEDURES DURING CONSTRUCTION IN ACCORDANCE WITH RMS AND LOCAL COUNCIL REGULATIONS AND REQUIREMENTS.
3. THE CONTRACTOR IS TO OBTAIN ALL AUTHORITY APPROVALS AS REQUIRED.
4. RESTORE ALL PAVED, COVERED, GRASSED AND LANDSCAPED AREAS TO THEIR ORIGINAL CONDITION ON COMPLETION OF WORKS.
5. ON COMPLETION OF ANY TRENCHING WORKS, ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, INCLUDING KERBS, FOOTPATHS, CONCRETE AREAS, GRAVEL, GRASSED AREAS AND ROAD PAVEMENTS.
6. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO LODGMENT OF TENDER AND ON SITE WORKS.
8. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT OF THE SUBJECT SITE.
9. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
   A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE.
   B) ENSURING THAT NOTHING IS NAILED TO THEM.
   C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS:
   D) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICHEVER IS GREATER.
   E) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH.
   F) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.
10. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWINGS.
11. IN CASE OF DOUBT OR DISCREPANCY REFER TO SUPERINTENDENT FOR CLARIFICATION OR CONFIRMATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
12. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
13. MAKE SMOOTH TRANSITION TO EXISTING FEATURES AND MAKE GOOD WHERE JOINED.
14. THESE PLANS SHALL BE READ IN CONJUNCTION WITH ALL APPROVED DRAWINGS AND SPECIFICATIONS PREPARED BY OTHER PROJECT CONSULTANTS.
15. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MIN 50mm IN BITUMINOUS PAVING.

EXISTING SERVICES

1. All UTILITY SERVICES INDICATED ON THE DRAWINGS ORIGINATE FROM SUPPLIED DATA, THEREFORE THEIR ACCURACY AND COMPLETENESS IS NOT GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE AND CONFIRM THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK, ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
2. CARE TO BE TAKEN WHEN EXCAVATION NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER COMMUNICATION, GAS OR ELECTRICAL SERVICES. HAND EXCAVATION ONLY IN THESE AREAS.
3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING SERVICES THAT ARE TO BE RETAINED IN THE VICINITY OF THE PROPOSED WORKS. ANY AND ALL DAMAGE TO THESE SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.
4. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR ADJUSTMENT (IF REQUIRED) OF EXISTING SERVICES IN AREAS AFFECTED BY WORKS.
5. THE CONTRACTOR SHALL ALLOW IN THE PROGRAM FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF EXISTING SERVICES IN THE AREA AFFECTED BY WORKS UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE SUPERINTENDENT.
6. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
7. PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF THE PROGRAM FOR THE RELOCATION AND/OR CONSTRUCTION OF TEMPORARY SERVICES AND FOR ANY ASSOCIATED INTERRUPTION OF SUPPLY.
8. THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.

EARTHWORKS

1. AT THE COMMENCEMENT OF THE FILLING OPERATION FOR BULK EARTHWORKS, A GEOTECHNICAL ENGINEER IS TO VISIT THE SITE AND CONFIRM THE SUITABILITY OF THE METHODOLOGY OF ACHIEVING THE REQUIRED BUILDING PLATFORMS AND COMPACTION REQUIREMENTS. SUBSEQUENTLY, THE HEAD CONTRACTOR IS TO CONFIRM, IN WRITING TO THE DESIGNING CIVIL AND STRUCTURAL ENGINEERS, THAT THE METHODOLOGY APPROVED AT THE TIME OF THE GEOTECHNICAL ENGINEERS VISIT WAS MAINTAINED DURING ALL BULK EARTHWORKS PROCESS.
2. STRIP TOPSOIL, VEGETABLE MATTER AND RUBBLE TO EXPOSE NATURALLY OCCURRING MATERIAL AND STOCKPILE ON SITE AS DIRECTED BY THE SUPERINTENDENT.
3. WHERE FILLING IS REQUIRED TO ACHIEVE DESIGN SUBGRADE, PROOF ROLL EXPOSED NATURAL SURFACE WITH A MINIMUM OF TEN PASSES OF VIBRATING ROLLER (MINIMUM STATIC WEIGHT OF 10 TONES) IN THE PRESENCE OF THE SUPERINTENDENT.
4. ALL SOFT, WET OR UNSUITABLE MATERIAL IS TO BE REMOVED AS DIRECTED BY THE SUPERINTENDENT AND REPLACED WITH APPROVED MATERIAL SATISFYING THE REQUIREMENTS LISTED BELOW.
5. PROVIDE CERTIFICATES VERIFYING THE QUALITY OF IMPORTED MATERIAL FOR THE SUPERINTENDENTS APPROVAL.
6. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289 E3.1 OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY IN ACCORDANCE WITH AS1289 E1.1:

LOCATION	COMPACTION REQUIREMENTS
UNDER BUILDING SLABS	98% STANDARD MAXIMUM DRY DENSITY (SMDD)
LANDSCAPING AREAS	95% SMDD
ROADS & PAVED AREAS	98% SMDD

7. TESTING OF THE SUBGRADE FOR BUILDINGS SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY AND IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 - FOR BUILDING TYPE 1 OPERATIONS.
8. ALLOW FOR THE COMPACTION TESTING BY NATA REGISTERED LABORATORY FOR PLATFORMS AND FILL LAYERS. IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 - FOR TYPE 1 OPERATIONS (MINIMUM 3 TESTS PER LAYER).
9. WHERE TEST RESULTS ARE BELOW THE SPECIFIED COMPACTION, RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION STANDARD IS ACHIEVED.
10. ALLOW FOR EXCAVATION IN ALL MATERIALS AS FOUND U.N.O. NO ADDITIONAL PAYMENTS WILL BE MADE FOR EXCAVATIONS IN WET OR HARD GROUND.
11. WHERE THERE IS INSUFFICIENT EXCAVATED MATERIAL SUITABLE FOR FILLING OR SUBGRADE REPLACEMENT, THE CONTRACTOR IS TO ALLOW TO IMPORT FILL. IMPORTED FILL SHALL COMPLY WITH THE FOLLOWING:
   A) MAXIMUM SIZE 50mm. PASSING 75 MICRON SIEVE (<25%).
   B) PLASTICITY INDEX BETWEEN 2-15% AND CBR >8.
   C) FREE FROM ORGANIC AND PERISHABLE MATTER.
12. REFER TO THE GEOTECHNICAL REPORT FOR GENERAL REQUIREMENTS ON SITE PREPARATION AND RE-USE OF EXISTING SITE MATERIAL AS ENGINEERED FILL.
13. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED AT THEIR COST.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE AND MAINTAIN THE INTEGRITY OF ALL SERVICES, CONDUITS AND PIPES DURING CONSTRUCTION, SPECIFICALLY DURING THE BACKFILLING AND COMPACTION PROCEDURE. ANY AND ALL DAMAGE TO NEW OR EXISTING SERVICES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST.
15. PROTECT FINAL SURFACE WITH EITHER A TEMPORARY LOOSE SOIL LAYER OR A GRANULAR SUB-BASE LAYER TO PREVENT DRYING OUT PRIOR TO ON-GROUND SLAB CONSTRUCTION.
16. TESTING OF THE SUBGRADE SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY AT THE CONTRACTORS EXPENSE.

SERVICE TRENCHES

17. BACK FILL ALL TRENCHES UNDER NEW ROADS, PAVEMENTS, PATH AND BUILDINGS WITH DGS40 SUB-BASE MATERIAL COMPACTED TO 98% SMDD TO SUBGRADE LEVEL (UNO).
18. SAWCUT EXISTING SURFACES PRIOR TO EXCAVATION. BACK FILL ALL TRENCHES UNDER EXISTING ROADS, PAVEMENTS AND PATHS WITH STABILISED SAND 5% CEMENT OR DGS40 MATERIAL (5% CEMENT) COMPACTED IN 200mm THICK LAYERS TO 95% MMDD, (TOP 150mm COMPACTED TO 98% MMDD TO UNDERSIDE OF PAVEMENT).
19. BACKFILL ALL TRENCHES NOT UNDER ROADS, PAVEMENTS, PATHS AND BUILDINGS WITH APPROVED EXCAVATED OR IMPORTED MATERIAL COMPACTED TO 95% SMDD.

ASPHALTIC CONCRETE

GENERAL

1. ALL ASPHALTIC CONCRETE (AC) WORK TO BE PREPARED AND CARRIED OUT IN ACCORDANCE WITH GOOD ASPHALTIC PAVING PRACTICE AS DESCRIBED IN AS2734-1994 "ASPHALT (HOT-MIXED) PAVING - GUIDE TO GOOD PRACTICE" AND CURRENT RMS SPECIFICATIONS.

PAVEMENT PREPARATION

2. THE EXISTING SURFACE TO BE SEALED SHALL BE WITHIN +/- 2% OF THE OPTIMUM AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL SUPERFICIAL FOREIGN MATTER.
3. PRIME ALL SURFACES TO BE SEALED. ALLOW PRIME TO SETTLE FOR A MINIMUM OF 3 DAYS BEFORE APPLYING TACK COAT AND ASPHALT.
4. SWEEP PRIMED SURFACES BEFORE APPLYING TACK COAT AND ASPHALT.
5. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.
6. ALL DEFECTS IN THE BASE COURSE INCLUDING CRACKS, SURFACE DEFORMATION AND THE LIKE SHALL BE REPAIRED AS DIRECTED BY THE SUPERINTENDENT PRIOR TO PLACEMENT OF TACK COAT AND/OR AC COURSES.

PLACEMENT

7. ALL ASPHALT SHALL BE PLACED UTILISING APPROVED MECHANICAL PAVING MACHINES. DO NOT HAND PLACE ASPHALT WITHOUT PRIOR APPROVAL FROM ENGINEER.

JOINTS

8. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.
9. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.

COMPACTION

10. ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.
11. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 105°C USING A STEEL DRUM ROLLER HAVING A MINIMUM WEIGHT OF 8 TONNES AND A MAXIMUM UNIT LOAD ON THE REAR DRUM EQUIVALENT TO 55kN/m WIDTH OF DRUM.
12. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 80°C USING A PNEUMATIC TYRED ROLLER OF A MINIMUM TOTAL LOAD OF 1 TONNE ON EACH TYRE.
13. ROLLED SURFACES SHALL BE SMOOTH AND FREE OF UNDULATIONS. BONY AND UNEVEN SURFACES WILL BE REJECTED.
14. PROVIDE 2 No. MINIMUM COMPACTION TESTS.

FINISHED SURFACE PROPERTIES

15. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE TO SHAPE AND SHALL NOT VARY MORE THAN:
   15.1. 3mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT.
   15.2. 3mm FROM THE BOTTOM OF A 3m STRAIGHT EDGE LAID TRANSVERSELY.\
   15.3. 5mm FROM THE BOTTOM OF A 3m STRAIGHT EDGE LAID LONGITUDINALLY.
   15.4. MINUS 0 TO PLUS 2mm ADJACENT TO OTHER ELEMENTS SUCH AS KERBS AND THE LIKE TO AVOID POOLING OF SURFACE WATER.
   15.5. MINUS 0 FROM THE SPECIFIED THICKNESS.
16. DO NOT STORE PLANT EQUIPMENT OR TRAFFIC NEWLY LAID ASPHALTIC CONCRETE PAVEMENTS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
17. DO NO APPLY MARKING PAINTS UNTIL ASPHALT HAS CURED IN ACCORDANCE WITH PAINT MANUFACTURER'S SPECIFICATIONS.

PAVEMENTS

1. ALL PAVEMENT MATERIALS SHALL COMPLY WITH CURRENT RMS SPECIFICATIONS. PROVIDE MECHANICAL ANALYSIS FOR EACH BATCH OF PAVEMENT MATERIAL TO ENSURE CONFORMITY.
2. COMPACTION STANDARDS:
   A) BASE 98% MODIFIED MAXIMUM DRY DENSITY (MMDD)
   B) SUB-BASE 95% MMDD
   C) SUBGRADE 100% STANDARD MAXIMUM DRY DENSITY (SMDD)
3. THE CONTRACTOR SHALL CONFIRM THE DESIGN CBR WITH A MINIMUM OF 3 TESTS TAKEN AT SUBGRADE LEVEL. WHERE DISCREPANCY IS FOUND, CONTACT THE DESIGNING ENGINEER.
4. ALLOW FOR COMPACTION TESTING BY NATA REGISTERED LABORATORY FOR: BASE LAYER, SUB-BASE LAYER, SUBGRADE IN ACCORDANCE WITH THE LATEST VERSION OF AS3798 FOR PAVEMENTS, (MINIMUM 2 TESTS PER LAYER). ALLOW FOR AT LEAST TWO SUCCESSFUL COMPACTION TESTS IN EACH LAYER.

STORMWATER DRAINAGE

1. PIPES GREATER THAN OR EQUAL TO Ø300mm ARE TO BE MINIMUM CLASS 2 RUBBER-RING JOINTED RCP (UNO).
2. FRC PIPES EQUIVALENT TO THE STEEL REINFORCED CONCRETE PIPE CLASS SPECIFIED ON THE DRAWINGS MAY BE USED - OBTAIN SUPERINTENDENTS APPROVAL.
3. ALL PIPES ARE TO BE LAID AT (min) 1.0% GRADE (UNO).
4. U.N.O. THE USE OF PRE-CAST STORMWATER DRAINAGE PITS IS NOT ACCEPTED WITHOUT CONFIRMATION WITH NORTHROP CONSULTING ENGINEERS. THIS IS DUE TO THE GENERAL POOR QUALITY FINISH AND DAMAGE WHEN USED. THE CONTRACTOR AND NE ARE TO DISCUSS QUALITY CONTROL, AND CERTIFICATION OF FINISHES IF PRE-CAST PITS ARE PROPOSED.
5. COVERS
   A) USE HOT DIPPED GALVANISED COVERS AND GRATES COMPLYING WITH RELEVANT AUSTRALIAN AND COUNCIL STANDARDS.
   B) ALL COVERS AND GRATES TO BE POSITIONED IN A FRAME AND MANUFACTURE AS A UNIT.
   C) ALL COVERS AND GRATES TO BE FITTED WITH POSITIVE COVER LIFTING KEYS.
   D) OBTAIN SUPERINTENDENT'S APPROVAL FOR THE USE OF CAST IRON SOLID COVERS AND GRATES. CAST IRON SOLID COVERS (IF APPROVED) TO CONSIST OF CROSS-WEBBED, CELLULAR CONSTRUCTION WITH THE RIBS UPPERMOST TO ALLOW INFILLING WITH CONCRETE. INSTALL POSITIVE COVER LIFTING KEYS AND PLASTIC PLUGS.
   E) UNLESS DETAILED OR SPECIFIED OTHERWISE COVERS AND GRATES TO BE CLASS "C" IN VEHICULAR PAVEMENTS AND CLASS "B" ELSEWHERE.
6. ALL PIPE BENDS, JUNCTIONS, ETC. ARE TO BE PROVIDED USING PURPOSE MADE FITTINGS OR STORMWATER PITS.
7. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT PIPE PENETRATIONS SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH.
8. THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTERS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
9. U.N.O. MATERIAL USED FOR BEDDING OF PIPES SHALL BE APPROVED NON-COHESIVE GRANULAR MATERIAL HAVING HIGH PERMEABILITY AND HIGH STABILITY WHEN SATURATED AND FREE OF ORGANIC AND CLAY MATERIAL.
10. WHERE TRENCHES ARE IN ROCK, THE PIPE SHALL BE BEDDED ON A MIN. 50mm CONCRETE BED (OR 75mm THICK BED OF 12mm BLUE METAL) UNDER THE BARREL OF THE PIPE. THE PIPE COLLAR AT NO POINT SHALL BEAR ON THE ROCK.
11. BEDDING SHALL BE (UNO) TYPE HS2 UNDER ROADS; H2 GENERAL AREAS, IN ACCORDANCE WITH CURRENT RELEVANT INDUSTRY STANDARDS AND GUIDELINES.
12. THE CONTRACTOR SHALL ENSURE AND PROTECT THE INTEGRITY OF ALL STORMWATER PIPES DURING CONSTRUCTION. ANY AND ALL DAMAGE TO THESE PIPES AS A RESULT OF THESE WORKS SHALL BE REPAIRED BY THE CONTRACTOR UNDER THE DIRECTION OF THE SUPERINTENDENT, AND AT NO EXTRA COST.
13. NOTE THAT THE PIT COVER LEVEL NOMINATED IN GUTTERS ARE TO THE INVERT OF THE GUTTER WHICH ARE 40mm LOWER THAN THE PAVEMENT LEVEL AT LIP OF GUTTER.
14. PROVIDE 3.0m LENGTH OF Ø100 SUBSOIL DRAINAGE PIPE WRAPPED IN A NON-WOVEN GEOTEXTILE FABRIC, TO THE UPSTREAM SIDE OF STORMWATER PITS, LAID IN STORMWATER PIPE TRENCHES AND CONNECTED TO THE DRAINAGE PIT.
15. Ø100mm SUB-SOIL DRAINAGE LINES WITH NON-WOVEN GEOTEXTILE SOCK SURROUND SHALL BE CONNECTED TO A STORMWATER DRAINAGE PIT (AT min. 1% LONGITUDINAL GRADE) AND PROVIDED IN THE FOLLOWING LOCATION:
   A) THE HIGH SIDE OF PROPOSED TRAFFICKED AND CARPARK PAVEMENT AREAS.
   B) ALL PLANTER AND TREE BEDS PROPOSED ADJACENT TO PAVEMENT AREAS.
   C) BEHIND RETAINING WALLS (IN ACCORDANCE WITH DRAWINGS)
   D) ALL OTHER AREAS SHOWN ON THE DRAWINGS.
16. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS SEALED uPVC SEWER GRADE PIPE SHALL BE USED.

CONSTRUCTION HOLD POINTS

THE FOLLOWING ACTIONS CONSTITUTE A HOLD POINT. APPROVAL FROM THE DESIGN CIVIL ENGINEER/COUNCIL'S DEVELOPMENT ENGINEER IS REQUIRED PRIOR TO RELEASING THE HOLD POINT:

HP1 PRIOR TO COMMENCEMENT OF THE WORKS IN ORDER TO VERIFY THE EXTENT OF WORKS.

HP2 STORMWATER DRAINAGE WORKS PRIOR TO BACKFILLING/CONCRETE ENCASING.

HP3 COMPACTION AND CBR TEST RESULTS FOR THE SUBGRADE.

HP4 FORMWORK, REINFORCEMENT MESH AND JOINTS PRIOR TO ANY CONCRETE POUR.

NOTE THAT THE DESIGN CIVIL ENGINEER/COUNCIL'S DEVELOPMENT ENGINEER REQUIRES AT LEAST 48 HOURS PRIOR NOTICE THAT AN INSPECTION IS REQUIRED.

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	L.M.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	19/10/23
B	REVISIONS AS CLOUDED	E.B.	M.B.	D.H.	C.N.	15/11/23
C	AS BUILT	E.B.	W.D.	D.H.		28/03/24

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Email bowral@northrop.com.au ABN 81 094 433 100

PROJECT
SUB BASE PLATYPUS

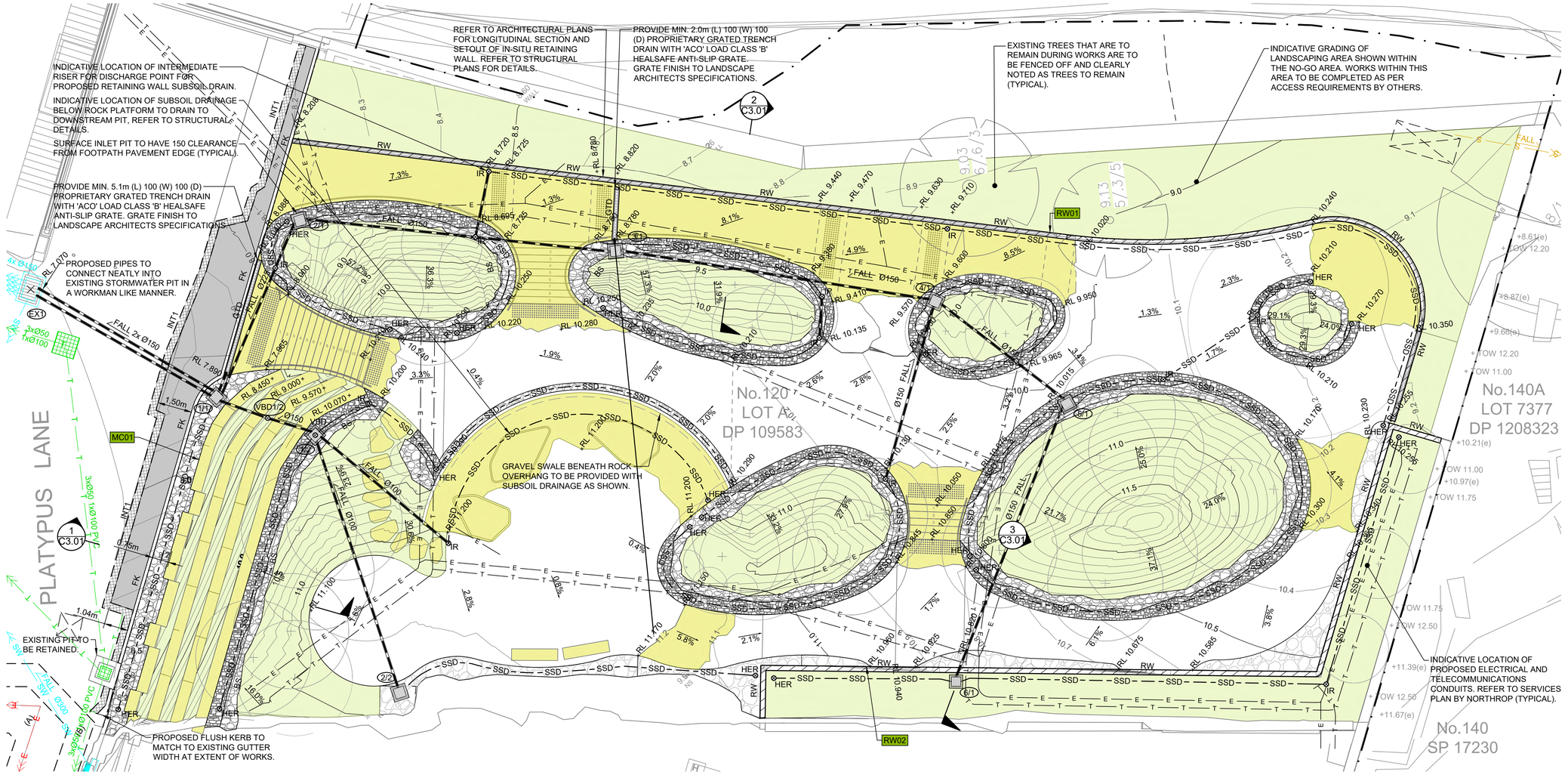
DRAWING TITLE
CONSTRUCTION SPECIFICATION NOTES

JOB NUMBER
230309

DRAWING NUMBER **C1.11**
REVISION **C**

DRAWING SHEET SIZE = A1

Date : 28-3-24 8:56am Plotted By : wdodic Found : W:\#jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C1.11_CONSTRUCTION SPECIFICATION NOTES.dwg



LEGEND

- EXISTING ELECTRICAL CONDUIT
- PROPOSED ELECTRICAL CONDUIT- REFER TO SERVICES PLANS FOR DETAILS
- EXISTING SEWER MAIN/SERVICE
- EXISTING TELECOMMUNICATION CONDUIT- REFER TO SERVICES PLANS FOR DETAILS
- PROPOSED TELECOMMUNICATION CONDUIT
- MC01 — MASTER CONTROL LINE I.D.
- RW01 — RETAINING WALL CONTROL LINE I.D.
- UNKNOWN UTILITY CONDUIT/PIPE
- RL 100.000 — PROPOSED REDUCED LEVEL
- FALL Ø100 — DIRECTION OF FLOW AND PIPE SIZE
- 2.0% — GENERAL SURFACE FALL
- 1/1 — STORMWATER PIT I.D. - REFER TO TABLE '1'
- HER — PROPOSED HIGH END RISER - REFER TO DETAIL 'A'
- IR — PROPOSED INTERMEDIATE RISER - REFER TO DETAIL 'B'
- VBD — VERTICAL BRANCH DRAIN - REFER TO DETAIL 'J'
- GTD — PROPOSED GRATED TRENCH DRAIN
- PROPOSED STORMWATER SURFACE INLET PIT
- EXISTING STORMWATER PIT
- EXISTING KERB INLET PIT
- PROPOSED STORMWATER PIPE
- SW — EXISTING STORMWATER PIPE
- SSD — PROPOSED SUB-SOIL DRAINAGE
- RW — PROPOSED RETAINING WALL - REFER TO STRUCTURAL ENGINEERS PLANS
- FK — PROPOSED FLUSH KERB, REFER TO DETAIL 'L'
- FLEXIBLE PAVEMENT TYPE '1' - REFER TO DETAIL 'E'
- PAVEMENT INTERFACE - REFER TO DETAIL 'F'
- ROCK PLATFORM - REFER TO LANDSCAPE ARCHITECTS PLANS
- SANDSTONE AREA - REFER TO DETAIL 'K'
- GRANITE PAVING AREA - REFER TO LANDSCAPE ARCHITECTS PLANS
- LANDSCAPED AREA - REFER TO LANDSCAPE ARCHITECTS PLANS
- ROCK LINED SWALE - REFER TO DETAIL 'G'
- BS — BANK STABILISATION - REFER TO LANDSCAPE ARCHITECTS PLANS
- PROPERTY BOUNDARY
- ADJOINING PROPERTY BOUNDARY

NOTE:
1. REFER TO PLANS 230309_C3.01-02 FOR DETAILS.
2. REFER TO PLAN 230309_C3.21-31 FOR MC01 LONGITUDINAL AND CROSS SECTION SHEETS
3. REFER TO PLAN 230309_C3.42 FOR RETAINING WALL LONGITUDINAL SECTION ALONG RW02.

TABLE '1' - PIT SCHEDULE STORMWATER NETWORK 1

PIT I.D.	PIT LID LEVEL	OUTLET DIAMETER	OUTLET INVERT RL	INLET DIAMETER	INLET INVERT RL	DEPTH	PIT SIZE	LID LOAD CLASS	STEP IRONS	EASTING	NORTHING	COMMENT
	(m)	(mm)	(m)	(mm)	(m)	(m)	(mm)			(m)	(m)	
EX1	7.073			150	6.470	0.603	-	-	-	335079.545	6253761.091	EXISTING PIT TO REMAIN
1\1	7.852	150	7.252	225	7.272	0.600	450x450	B	N	335080.795	6253751.894	PROPRIETARY SURFACE INLET PIT
				150	7.272							
				100	7.400							
2\1	8.174	225	7.574	150	7.594	0.600	450x450	B	N	335089.041	6253753.727	PROPRIETARY SURFACE INLET PIT
3\1	8.743	150	8.293	150	8.313	0.450	450x450	B	N	335096.370	6253742.141	PROPRIETARY SURFACE INLET PIT
				90	8.344							
4\1	9.568	150	9.118	150	9.138	0.450	450x450	B	N	335103.144	6253729.876	PROPRIETARY SURFACE INLET PIT
5\1	10.013	150	9.563	150	9.583	0.450	450x450	B	N	335103.132	6253722.656	PROPRIETARY SURFACE INLET PIT
6\1	11.200	150	10.450	-	-	0.750	600x600	B	N	335090.715	6253719.096	PROPRIETARY SURFACE INLET PIT
VBD1/2	8.872	150	7.570	150	8.310	1.302	150	B	-	335081.212	6253749.536	PROPOSED VERTICAL BRANCH DRAIN, REFER TO DETAIL 'J'.
1\2	9.699	150	8.735	100	9.249	0.964	450x450	B	N	335082.135	6253747.623	PROPRIETARY SURFACE INLET PIT WITH VERTICAL BRANCH DRAIN, REFER TO DETAIL 'J'
2\2	10.996	100	10.586	-	-	0.410	450x450	B	N	335075.576	6253737.802	PROPRIETARY SURFACE INLET PIT

WARNING: UTILITY INFORMATION SHOWN ON THIS PLAN DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE, BASED ON AVAILABLE DOCUMENTARY EVIDENCE. THE PRESENCE OF A UTILITY SERVICE, ITS SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION, PRIOR TO THE COMMENCEMENT OF WORKS. CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER IF A CLASH WITH ANY EXISTING UTILITIES OCCURS ON SITE.

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AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
04	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
05	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	16/10/23
B	AMMENDED GTD LENGTHS AND LEADER LOCATIONS	E.B.	M.B.	D.H.	C.N.	19/10/23
C	REVISIONS AS CLOUDED	E.B.	M.B.	D.H.	C.N.	15/11/23
D	AS BUILT	E.B.	W.D.	D.H.		15/03/24

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SCALE 1:100@ A1 (0 1 2 3 4 5m)

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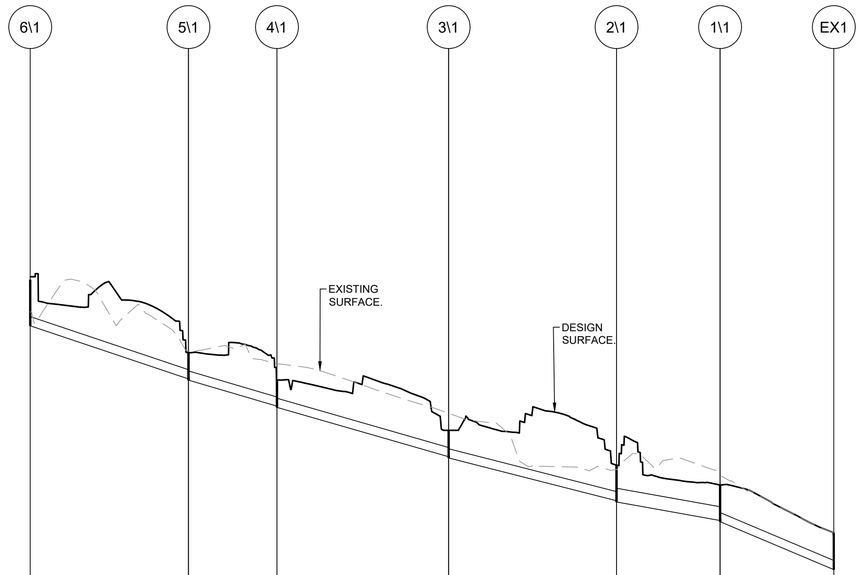
PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
STORMWATER AND GENERAL ARRANGEMENT PLAN

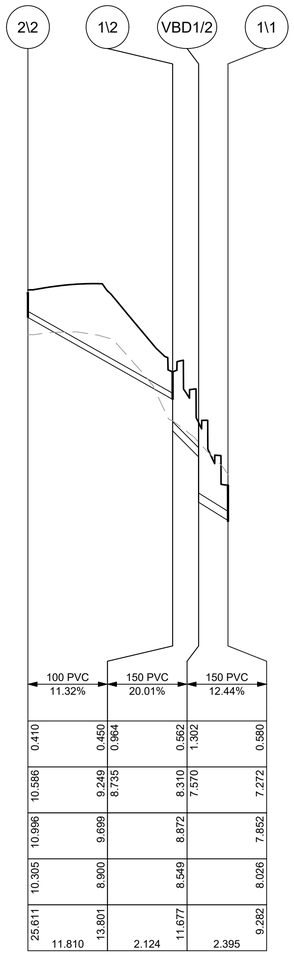
JOB NUMBER **230309**
DRAWING NUMBER **C2.01** REVISION **D**
DRAWING SHEET SIZE = A1

Date : 28-3-24 8:56am Plotted By : wdodic Found : W:\Jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C2.01_STORMWATER AND GENERAL ARRANGEMENT PLAN.dwg



PIPE DETAILS	150 PVC		150 PVC		150 PVC		150 PVC		225 PVC		2x150 PVC		
SLOPE/GRADE	6.71%		5.89%		5.75%		5.10%		3.58%		8.42%		
DATUM RL 4.000													
DEPTH TO INVERT	0.750	0.430	0.450	0.430	0.450	0.430	0.450	0.580	0.600	0.580	0.600	0.603	
INVERT LEVELS	10.450	9.583	9.563	9.138	9.118	8.313	8.293	7.594	7.574	7.272	7.252	6.470	
DESIGN LEVELS	11.200	10.013		9.568		8.743		8.174		7.852		7.073	
EXISTING LEVELS	10.676	10.030		9.832		9.021		8.106		8.026		7.073	
CHAINAGE	65.587	52.670	45.450		31.439		17.729		9.282		0.000		
	12.917		7.220		14.012		13.709		8.448		9.282		

LONGITUNDINAL SECTION FOR DRAINAGE LINE 1



PIPE DETAILS	100 PVC	150 PVC	150 PVC
SLOPE/GRADE	11.32%	20.01%	12.44%
DEPTH TO INVERT	0.410 0.450	0.964 0.562	1.302 0.580
INVERT LEVELS	10.586 9.249	8.735 8.310	7.570 7.272
DESIGN LEVELS	10.996 9.699	8.872	7.852
EXISTING LEVELS	10.305 8.900	8.549	8.026
CHAINAGE	25.611 13.801	11.677	9.282
	11.810	2.124	2.395

LONGITUNDINAL SECTION FOR DRAINAGE LINE 2

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	19/10/23
B	REVISIONS AS CLOUDED	E.B.	M.B.	D.H.	C.N.	15/11/23
C	AS BUILT	E.B.	W.D.	D.H.		15/03/24

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SCALE 1:250@A1 0 2 4 6 8 10 12m
SCALE 1:50@A1 0.0 0.5 1.0 1.5 2.0 2.5m

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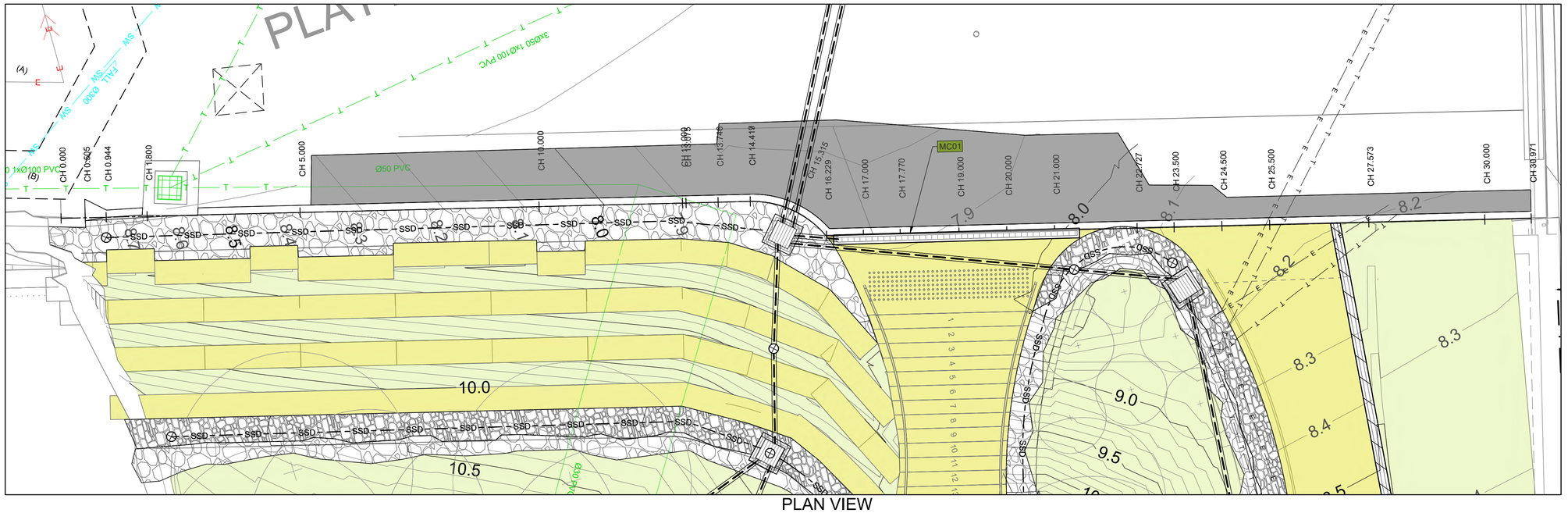
PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
STORMWATER PIPE LONGITUDINAL SECTION SHEET 1

JOB NUMBER **230309**
DRAWING NUMBER **C2.11**
REVISION **C**
DRAWING SHEET SIZE = A1

Date : 28-3-24 8:56am Plotted By : wbodic Found : W:\ifjobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C2.11_STORMWATER PIPE LONGITUDINAL SECTION SHEET 1.dwg



PLAN VIEW

SCALE 1:50

UTILITY LEGEND

ELECTRICAL SERVICES
GAS SERVICES
SEWER SERVICES
STORMWATER SERVICES
TELECOMMUNICATION SERVICES
WATER SERVICES

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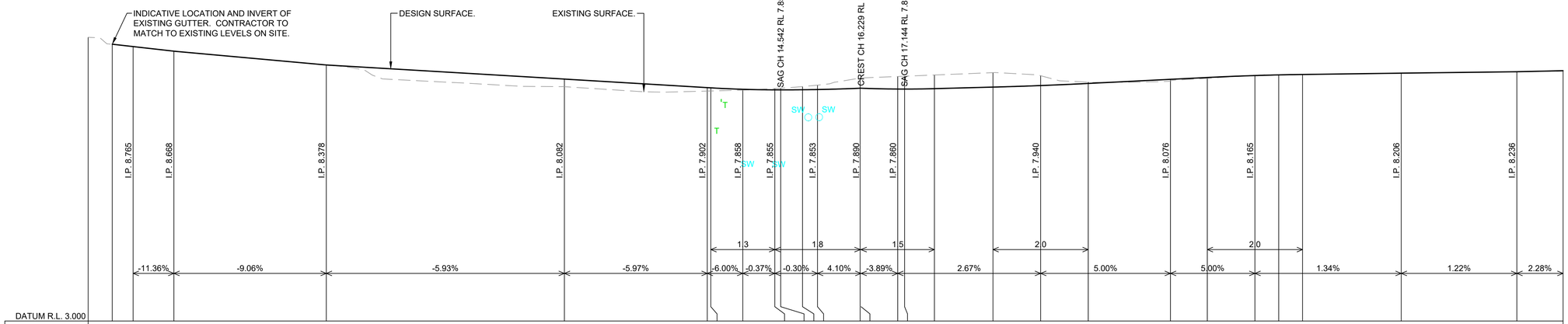

HORIZONTAL GEOMETRY
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B=68°27'23"
L=1.792
R=2.0
L=0.018
R=0.0
L=6.498
B=68°27'23"
L=4.846
B=68°26'02"
L=3.399
B=68°27'22"

CUT/ FILL		+0.000	+0.000	+0.000	+0.000	+0.160	+0.072	+0.066	+0.018	-0.029
DESIGN LEVELS		8.815	8.765	8.668	8.378	8.082	7.902	7.898	7.867	7.855
EXISTING LEVELS	8.959	8.815	8.765	8.668	8.378	7.922	7.830	7.832	7.849	7.884
CHAINAGE	0.000	0.505	0.944	1.800	5.000	10.000	13.000	13.075	13.746	14.419

CUT/ FILL	-0.036	-0.066	-0.092	-0.215	-0.216	-0.263	-0.270	-0.286	-0.304	-0.207
DESIGN LEVELS	7.855	7.858	7.862	7.889	7.890	7.873	7.872	7.881	7.913	7.946
EXISTING LEVELS	7.891	7.924	7.954	8.104	8.106	8.136	8.142	8.167	8.217	8.153
CHAINAGE	14.542	15.000	15.315	16.210	16.229	17.000	17.144	17.770	19.000	20.000

CUT/ FILL	-0.028	+0.032	+0.018	-0.003	-0.006	-0.003	+0.000	+0.000	+0.007
DESIGN LEVELS	7.990	8.076	8.115	8.156	8.169	8.178	8.206	8.236	8.258
EXISTING LEVELS	8.018	8.044	8.097	8.159	8.175	8.181	8.206	8.236	8.251
CHAINAGE	21.000	22.727	23.500	24.500	25.000	25.500	27.573	30.000	30.971

LONGITUDINAL SECTION ALONG CONTROL LINE MC01

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	15/11/23
B	AS BUILT	E.B.	W.D.	D.H.		15/03/24

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SCALE 1:50@A1 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:50@A1 0.0 0.5 1.0 1.5 2.0 2.5m

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PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
MC01 LONGITUDINAL SECTION SHEET 1 OF 1

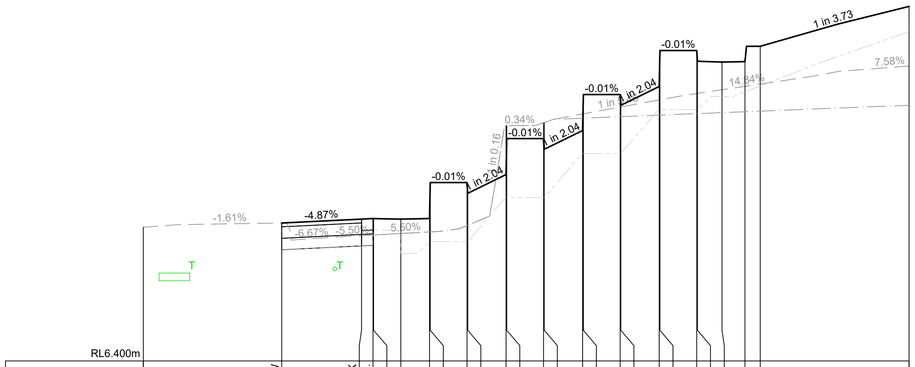
JOB NUMBER
230309

DRAWING NUMBER
C2.21

REVISION
B

DRAWING SHEET SIZE = A1

Found : W:\Jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C2.21_MC01 LONGITUDINAL SECTION SHEET 1 OF 1.dwg
Plotted By : wdodic
Date : 28-3-24 8:56am



ELECTRICAL SERVICES
GAS SERVICES
SEWER SERVICES
STORMWATER SERVICES
TELECOMMUNICATION SERVICES
WATER SERVICES

DISCLAIMER

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DESIGN CODE		LSAW	LFK	C.L.																						
CUT/FILL		0.000	0.216	0.216	0.215	0.188	0.175	0.644	0.560	0.416	-0.638	-0.168	-0.207	-0.351	-0.216	0.252	0.164	0.022	0.175	0.644	0.561	0.420	0.361	0.322	0.493	0.778
DESIGN LEVELS		8.201	8.252	8.259	8.259	8.252	8.259	8.729	8.729	8.589	8.834	9.304	9.303	9.163	9.408	9.878	9.878	9.738	9.983	10.453	10.453	10.313	10.302	10.308	10.508	11.029
EXISTING LEVELS	8.145	8.201	8.035	8.044	8.044	8.064	8.084	8.085	8.169	8.173	9.472	9.472	9.511	9.514	9.624	9.626	9.714	9.716	9.808	9.810	9.892	9.893	9.941	9.985	10.015	10.251
DESIGN OFFSET	-3.000	-1.192	-0.150	0.000	0.008	0.363	0.738	0.748	1.228	1.238	1.737	1.747	2.227	2.237	2.737	2.747	3.227	3.237	3.737	3.747	4.227	4.237	4.557	4.857	5.057	7.000

CH 7.000 m
GR-PAVT-21

DESIGN CODE		LSAW	LFK	C.L.																					
CUT/FILL		0.000	-0.017	-0.028	-0.115	-0.158	0.147	0.004	0.092	0.560	0.444	0.301	0.390	0.858	0.748	0.606	0.694	1.162	1.057	0.915	0.835	0.775	0.935	0.939	0.865
DESIGN LEVELS		7.773	7.848	7.855	7.848	7.855	8.325	8.185	8.444	8.913	8.910	8.770	8.962	9.432	9.422	9.282	9.451	9.921	9.902	9.762	9.739	9.734	9.926	9.940	10.076
EXISTING LEVELS	7.624	7.773	7.865	7.884	7.963	8.013	8.178	8.181	8.352	8.354	8.466	8.469	8.572	8.574	8.675	8.676	8.757	8.759	8.845	8.847	8.904	8.958	8.991	8.997	9.210
DESIGN OFFSET	-3.000	-1.646	-0.150	0.000	0.632	1.029	1.555	1.566	2.180	2.191	2.712	2.723	3.185	3.196	3.707	3.717	4.196	4.207	4.713	4.723	5.060	5.376	5.587	5.621	7.000

CH 14.419 m
GR-PAVT-21

DESIGN CODE		LFK	C.L.																					
CUT/FILL		0.000	0.001	0.001	-0.021	-0.030	0.440	0.437	0.299	0.602	1.070	0.076	-0.095	-0.065	0.405	0.358	0.216	0.393	0.862	0.797	0.655	0.542	0.429	0.550	0.064
DESIGN LEVELS		8.552	8.559	8.559	8.552	8.559	9.029	9.029	8.889	9.133	9.603	9.603	9.463	9.711	10.181	10.181	10.041	10.286	10.756	10.755	10.615	10.604	10.610	10.810	10.948
EXISTING LEVELS	8.467	8.552	8.558	8.558	8.573	8.589	8.589	8.591	8.590	8.531	8.533	9.527	9.559	9.776	9.776	9.823	9.824	9.892	9.894	9.959	9.960	10.062	10.181	10.260	10.884
DESIGN OFFSET	-3.000	-0.150	0.000	0.004	0.359	0.734	0.744	1.224	1.234	1.733	1.743	2.223	2.233	2.733	2.743	3.223	3.233	3.733	3.743	4.223	4.233	4.553	4.853	5.053	7.000

CH 3.000 m
GR-PAVT-21

DESIGN CODE		LSAW	LFK	C.L.																						
CUT/FILL		0.000	0.169	0.159	0.157	0.121	0.099	0.568	0.388	0.243	0.314	0.780	0.484	0.312	-0.100	0.368	0.258	0.116	0.247	0.715	0.605	0.463	0.379	0.316	0.469	0.648
DESIGN LEVELS		8.021	8.074	8.082	8.081	8.074	8.081	8.551	8.551	8.411	8.655	9.125	9.125	8.985	9.229	9.699	9.699	9.559	9.804	10.274	10.274	10.134	10.123	10.129	10.329	10.845
EXISTING LEVELS	7.930	8.021	7.905	7.922	7.923	7.952	7.982	7.983	8.163	8.169	8.342	8.345	8.641	8.673	9.328	9.331	9.440	9.443	9.557	9.559	9.669	9.671	9.744	9.813	9.860	10.196
DESIGN OFFSET	-3.000	-1.204	-0.150	0.000	0.010	0.365	0.740	0.750	1.230	1.240	1.740	1.750	2.230	2.240	2.740	2.750	3.230	3.240	3.740	3.750	4.230	4.240	4.560	4.860	5.060	7.000

CH 10.000 m
GR-PAVT-21

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	15/11/23
B	AS BUILT	E.B.	W.D.	D.H.		15/03/24

CLIENT
TAYLOR
Level 16, 100 Pacific Highway North Sydney NSW 2060
P +61 8736 9000 W taylorau.com.au

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

LANDSCAPE ARCHITECT
turf
Turf Design Studio : P.O Box 2282 Sydney NSW 2001, 35 Wellington St Chippendale, NSW 2008
Phone (+61 2)8394 9990
Email: sydney@turfdesign.com

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SCALE 1:40 @A1 0 0.4 0.8 1.2 1.6 2.0m
SCALE 1:40 @A1 0.0 0.4 0.8 1.2 1.6 2.0m

NORTHROP
Bowral
Shop 9A 'High Street Arcade' 310-312 Bong Bong Street, Bowral NSW 2576
Ph (02) 4861 2042
P.O. Box 500, Bowral NSW 2576
Email bowral@northrop.com.au ABN 81 094 433 100

PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
MC01 CROSS SECTIONS SHEET 1

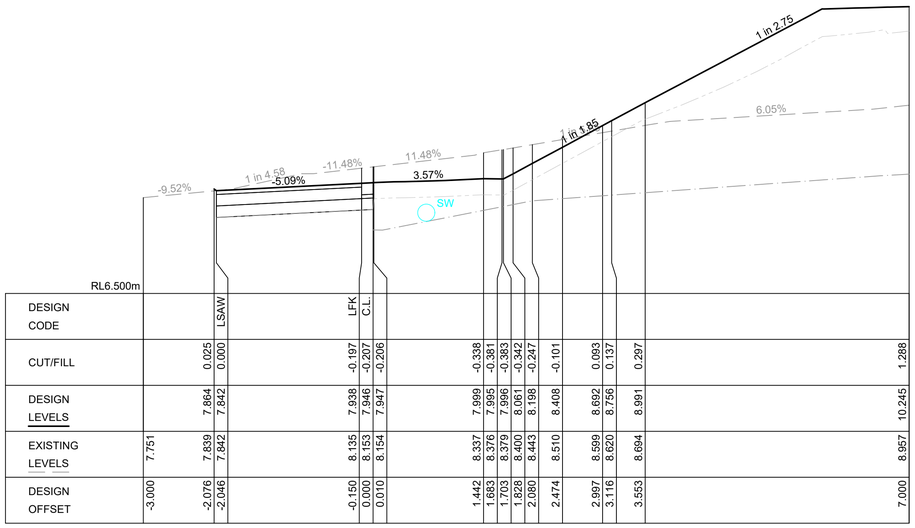
JOB NUMBER
230309

DRAWING NUMBER
C2.31

REVISION
B

DRAWING SHEET SIZE = A1

Found : W:\#jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C2.31_MC01 CROSS SECTIONS SHEET 1.dwg
Plotted By : wdodic
Date : 28-3-24 8:56am



ELECTRICAL SERVICES
GAS SERVICES
SEWER SERVICES
STORMWATER SERVICES
TELECOMMUNICATION SERVICES
WATER SERVICES

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DESIGN CODE			LSAW	LFK	C.L.											
CUT/FILL		0.025	0.000	-0.197	-0.207	-0.206	-0.338	-0.381	-0.383	-0.342	-0.247	-0.101	0.093	0.137	0.297	1.288
DESIGN LEVELS		7.864	7.842	7.938	7.946	7.947	7.999	7.995	7.996	8.061	8.198	8.408	8.692	8.756	8.991	10.245
EXISTING LEVELS	7.751	7.839	7.842	8.135	8.153	8.154	8.337	8.376	8.379	8.400	8.443	8.510	8.599	8.620	8.694	8.957
DESIGN OFFSET	-3.000	-2.076	-2.046	-0.150	0.000	0.010	1.442	1.683	1.703	1.828	2.080	2.474	2.997	3.116	3.553	7.000

CH 20.000 m
GR-PAVT-21

DESIGN CODE		LSAW	LFK	C.L.		
CUT/FILL		0.000	0.000	0.000	0.012	0.157
DESIGN LEVELS		8.207	8.228	8.236	8.250	8.438
EXISTING LEVELS	8.183	8.207	8.229	8.236	8.238	8.183
DESIGN OFFSET	-3.000	-0.598	-0.150	0.000	0.047	7.000

CH 30.000 m
GR-PAVT-21

DESIGN CODE			LSAW			C.L.																						
CUT/FILL		0.003	0.000	-0.180	-0.185	-0.216	-0.353	-0.433	0.034	-0.081	-0.082	-0.152	0.315	0.226	0.085	0.086	0.189	0.658	0.607	0.466	0.510	0.978	0.944	0.804	0.790	0.791	0.986	0.979
DESIGN LEVELS		7.763	7.789	7.876	7.876	7.890	7.898	7.917	8.388	8.407	8.407	8.401	8.870	8.880	8.741	8.742	8.900	9.371	9.418	9.279	9.392	9.862	9.911	9.772	9.807	9.854	10.081	10.158
EXISTING LEVELS	7.696	7.759	7.789	8.056	8.061	8.106	8.250	8.351	8.354	8.489	8.490	8.553	8.556	8.654	8.656	8.656	8.711	8.713	8.811	8.813	8.882	8.884	8.967	8.969	9.017	9.063	9.095	9.179
DESIGN OFFSET	-3.000	-2.336	-1.983	-0.242	-0.215	0.000	0.695	1.178	1.191	1.841	1.845	2.129	2.141	2.738	2.751	2.752	3.119	3.132	3.780	3.794	4.250	4.264	4.975	4.990	5.469	5.918	6.217	7.000

Horizonal:-40.00
Vertical :- 40.00

CH 16.229 m
GR-PAVT-21

DESIGN CODE		LSAW	LFK	C.L.							
CUT/FILL		0.000	-0.006	-0.005	-0.006	0.009	0.012	0.019	0.019	0.022	0.026
DESIGN LEVELS		8.146	8.162	8.169	8.168	8.220	8.268	8.358	8.438	8.694	8.914
EXISTING LEVELS	8.032	8.146	8.168	8.175	8.175	8.181	8.178	8.175	8.171	8.168	8.164
DESIGN OFFSET	-3.000	-0.599	-0.150	0.000	0.011	2.188	2.942	3.877	5.071	5.942	7.000

CH 25.000 m
GR-PAVT-21

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	15/11/23
B	AS BUILT	E.B.	W.D.	D.H.		15/03/24

CLIENT
TAYLOR
Level 16, 100 Pacific Highway North Sydney NSW 2060
P +61 8736 9000 W taylorau.com.au

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

LANDSCAPE ARCHITECT
turf
Turf Design Studio : P.O Box 2282 Sydney NSW 2001, 35 Wellington St Chippendale, NSW 2008
Phone (+61 2)8394 9990
Email: sydney@turfdesign.com

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SCALE 1:40 @A1 0 0.4 0.8 1.2 1.6 2.0m
SCALE 1:40 @A1 0.0 0.4 0.8 1.2 1.6 2.0m

NORTHROP
Bowral
Shop 9A 'High Street Arcade' 310-312 Bong Bong Street, Bowral NSW 2576
Ph (02) 4861 2042
P.O. Box 500, Bowral NSW 2576
Email bowral@northrop.com.au ABN 81 094 433 100

PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
MC01 CROSS SECTIONS SHEET 2

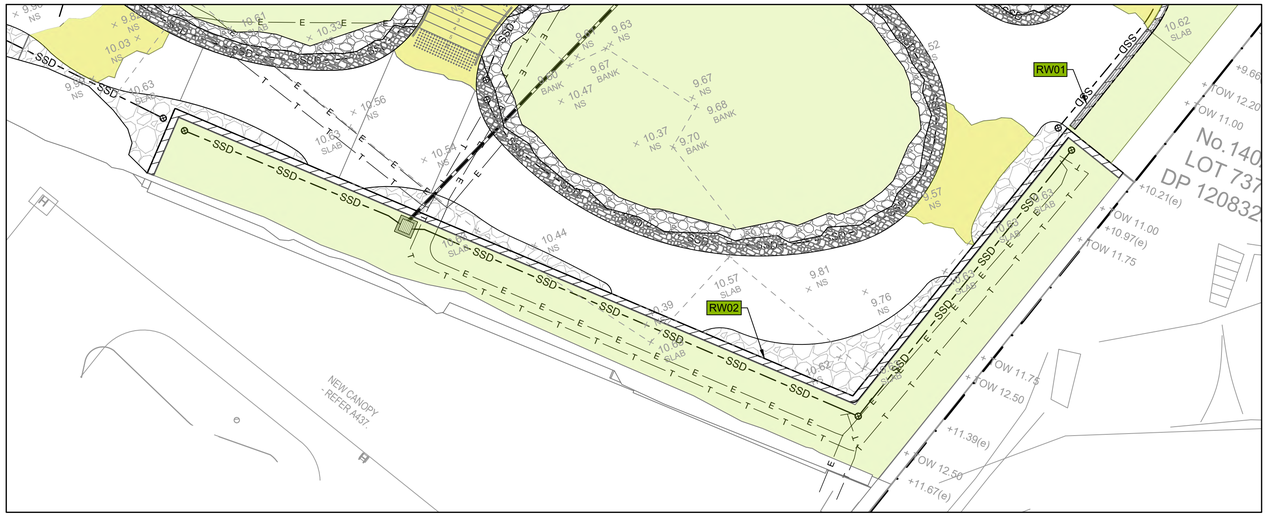
JOB NUMBER
230309

DRAWING NUMBER
C2.32

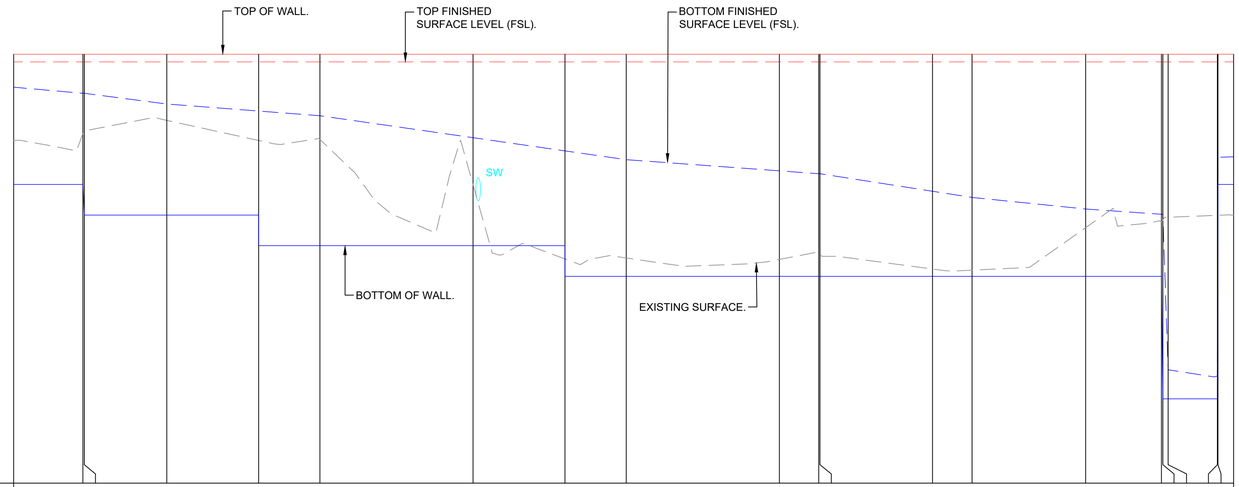
REVISION
B

DRAWING SHEET SIZE = A1

Date : 28-3-24 8:56am Plotted By : wdodic Found : W:\#jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C2.32_MC01 CROSS SECTIONS SHEET 2.dwg



PLAN VIEW
SCALE 1:100



HORIZONTAL GEOMETRY	L=2.261 B=53°06'51"		L=23.978 B=142°48'25"								
EXISTING LEVELS	10.737	10.782	10.799	10.868	10.737	10.744	10.448	9.964	9.970	9.960	10.010
HEIGHT (FSL-FSL)	+0.165	+0.205	+0.205	+0.275	+0.192	+0.352	+0.495	+0.705	+0.638	+0.711	+0.730
TOP OF WALL	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300
RETAINING WALL TOP FSL	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250
RETAINING WALL BOTTOM FSL	11.085	11.045	11.045	10.975	10.929	10.898	10.755	10.669	10.612	10.539	10.520
BOTTOM OF WALL	10.450	10.450	10.250	10.250	10.250 10.050	10.050	10.050	10.050 9.850	9.850	9.850	9.850
CHAINAGE	0.000	2.261	2.308	5.000	8.000	10.000	15.000	18.000	20.000	25.000	26.286

HORIZONTAL GEOMETRY		L=11.149 B=68°32'00"					L=2.308 B=158°32'02"			
EXISTING LEVELS	10.002	9.897	9.890	10.168	10.205	10.216	10.236	10.248	10.248	10.246
HEIGHT (FSL-FSL)	+0.730	+0.845	+0.885	+0.960	+0.995	+0.996	+2.009	+2.051	+0.631	+0.620
TOP OF WALL	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300	11.300
RETAINING WALL TOP FSL	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250	11.250
RETAINING WALL BOTTOM FSL	10.520	10.405	10.365	10.290	10.255	10.254	9.241	9.199	10.619	10.630
BOTTOM OF WALL	9.850	9.850	9.850	9.850	9.850	9.050	9.050	9.050	10.450	10.450
CHAINAGE	26.325	30.000	31.291	35.000	37.474	37.521	37.691	39.300	39.320	39.829

LONGITUDINAL SECTION ALONG CONTROL LINE RW02

UTILITY LEGEND

ELECTRICAL SERVICES
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SEWER SERVICES
STORMWATER SERVICES
TELECOMMUNICATION SERVICES
WATER SERVICES

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BEFORE YOU DIG
www.byda.com.au

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	15/11/23
B	AS BUILT	E.B.	W.D.	D.H.		15/03/24

CLIENT
TAYLOR
Level 16, 100 Pacific Highway North Sydney NSW 2060
P +61 8736 9000 W taylorau.com.au
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

LANDSCAPE ARCHITECT
turf
Turf Design Studio · P.O Box 2282 Sydney NSW 2001, 35 Wellington St Chippendale, NSW 2008
Phone (+61 2)8394 9990
Email: sydney@turfdesign.com
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SCALE 1:100 @A1 0 1 2 3 4 5m
SCALE 1:20 @A1 0.0 0.2 0.4 0.6 0.8 1.0m

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Bowral
Shop 9A 'High Street Arcade' 310-312 Bong Bong Street, Bowral NSW 2576
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Email bowral@northrop.com.au ABN 81 094 433 100

PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
RW02 LONGITUDINAL SECTION SHEET 1 OF 1

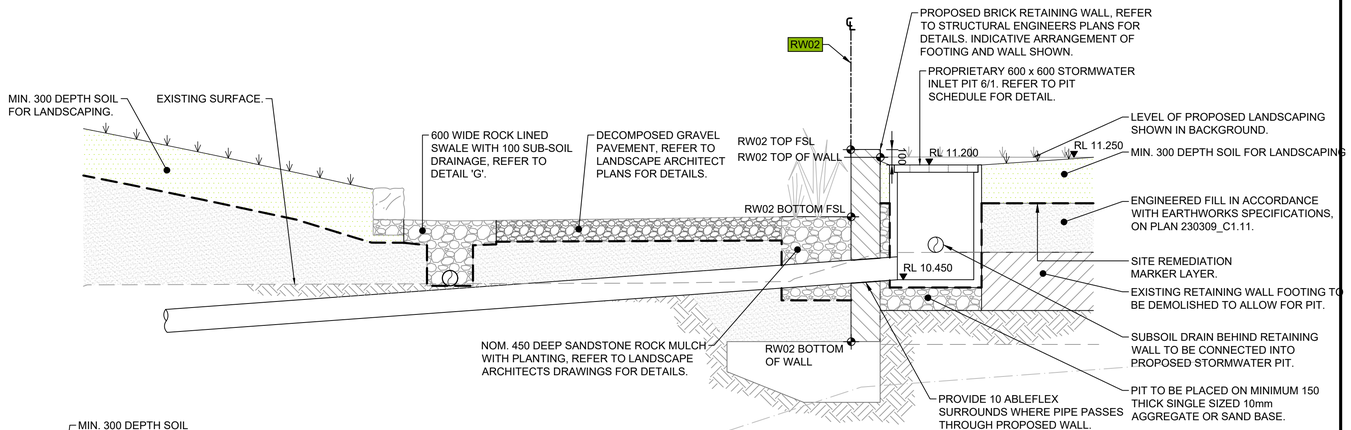
JOB NUMBER
230309

DRAWING NUMBER
C2.42

REVISION
B

DRAWING SHEET SIZE = A1

Date : 28-3-24 8:56am Plotted By : wdodic Found : W:\#jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C2.42_RW02 LONGITUDINAL SECTION SHEET 1 OF 1.dwg



SECTION 3
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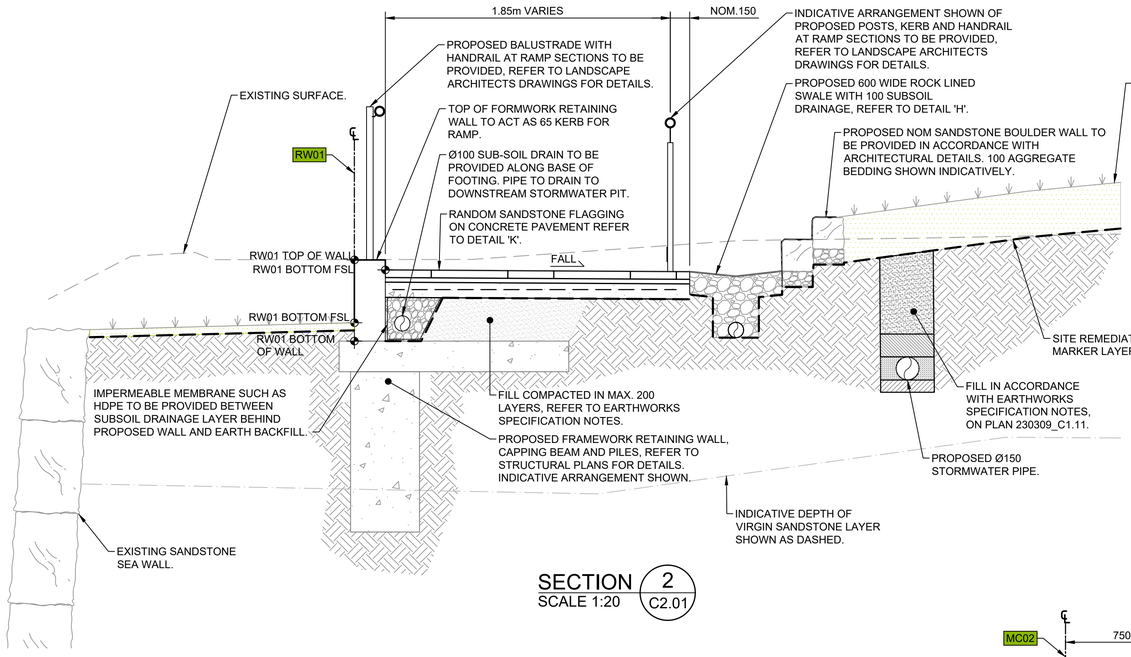
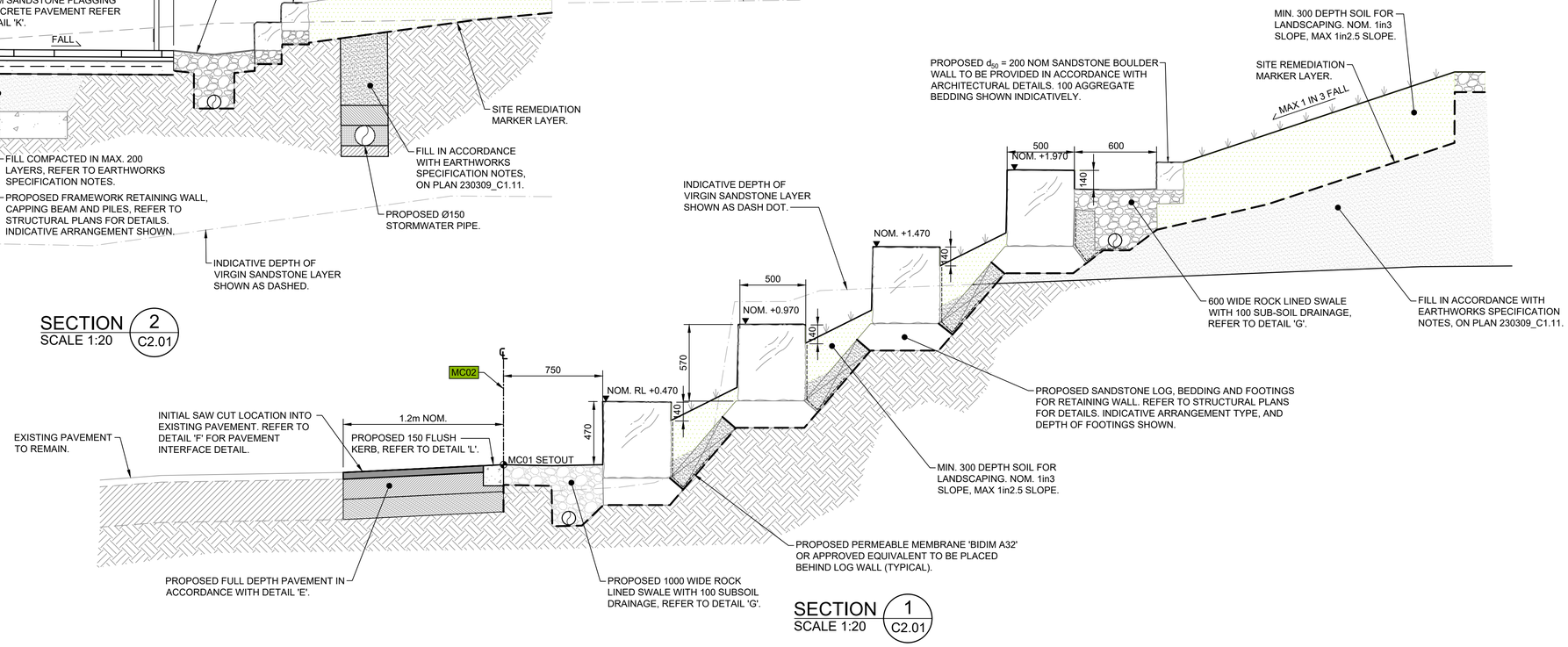


SECTION 2
SCALE 1:20 C2.01



SECTION 1
SCALE 1:20 C2.01

BEFORE YOU DIG www.byda.com.au

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	19/10/23
B	REVISIONS AS CLOUDED	E.B.	M.B.	C.N.	C.N.	15/11/23
C	AS BUILT	E.B.	W.D.	D.H.		28/03/24

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P +61 8736 9000 W **taylorau.com.au**

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LANDSCAPE ARCHITECT
turf
Turf Design Studio : P.O Box 2282 Sydney NSW 2001, 35 Wellington St Chippendale, NSW 2008
Phone (+61 2)8394 9990
Email: sydney@turfdesign.com

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AS SHOWN

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Email bowral@northrop.com.au ABN 81 094 433 100

PROJECT
SUB BASE PLATYPUS

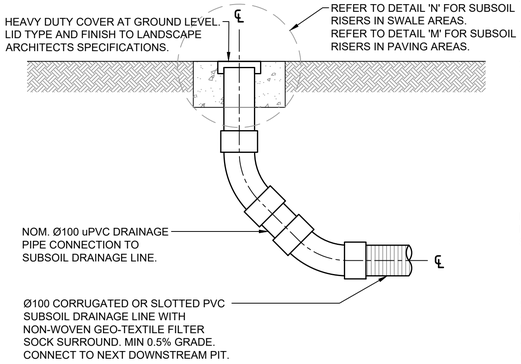
DRAWING TITLE
DETAILS SHEET 1

JOB NUMBER
230309

DRAWING NUMBER **C3.01** | REVISION **C**

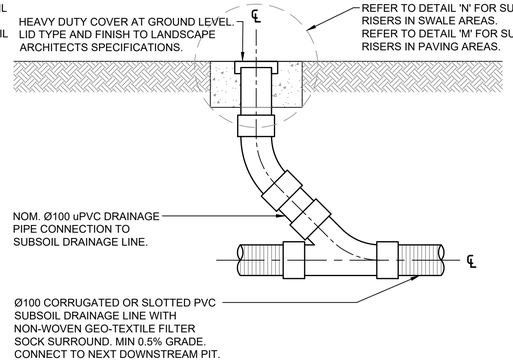
DRAWING SHEET SIZE = A1

Date: 28-3-24 8:55am Plotted By: wbodic Found: W:\Jobs\2023\230309 - Lvl 1 Foreshore Park - Subbase Platypus\D-Drawings\C-Civil\230309-CAD\02-DD\230309_C3.01_DETAILS SHEET 1.dwg



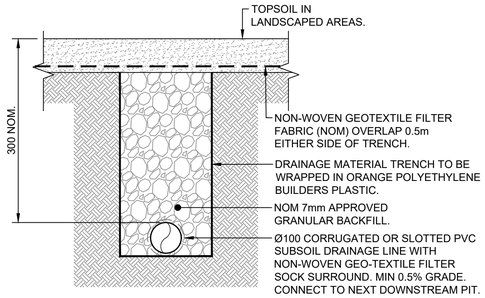
DETAIL 'A' - HIGH END RISER (HER)

SCALE 1:10



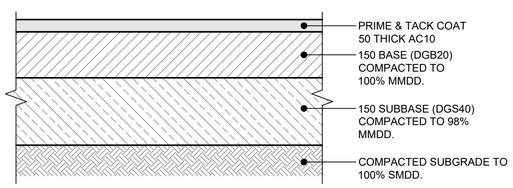
DETAIL 'B' - INTERMEDIATE RISER (IR)

SCALE 1:10



DETAIL 'C' - SUBSOIL IN LANDSCAPING

SCALE 1:10

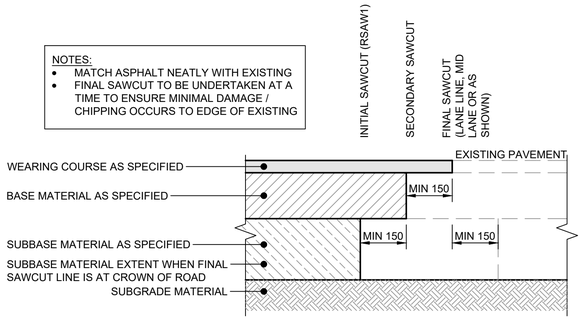


DETAIL 'E' - SEALED FLEXIBLE PAVEMENT

SCALE 1:10

ASSUMED SUBGRADE CBR 5%
DESIGN LIFE - 30 YEARS
$8.5X10^5$ ESA

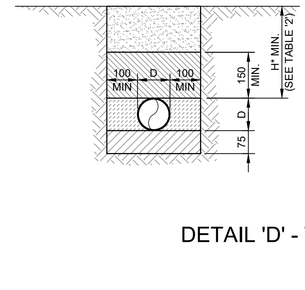
NOTE:
1. PAVEMENT BASE AND SUBBASE DEPTHS CAN BE REDUCED IF VIRGIN SANDSTONE OR CONCRETE STRUCTURE SUBGRADE EXISTS.



DETAIL 'F' - PAVEMENT INTERFACE 'INT1'

SCALE 1:10

ASSUMED SUBGRADE CBR 5%



INSTALLATION NOTES

1. TRENCH WIDTH MAY NEED TO INCREASE SUBJECT TO ACHIEVING ADEQUATE COMPACTION.
2. THE CONTRACTOR SHALL ENSURE THAT THE SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS AND PIPE INSTALLATION IS IN ACCORDANCE WITH AS 2032.

BACKFILL - COMPACTED DGB20 TO 98% SMDD IF IN TRAFFICABLE AREAS/ORDINARY FILL IF IN NON-TRAFFICABLE AREAS.

PIPE OVERLAY - COMPACTED SELECT FILL (NOMINAL 10mm AGGREGATE) TO SUBGRADE LEVEL IF UNDER ROAD OR UP TO BACKFILL LEVEL IN NON TRAFFICABLE AREAS.

PIPE SIDE SUPPORT - COMPACTED SELECT FILL (NOMINAL 10mm AGGREGATE)

BEDDING - SELECT FILL (NOMINAL 10mm AGGREGATE)

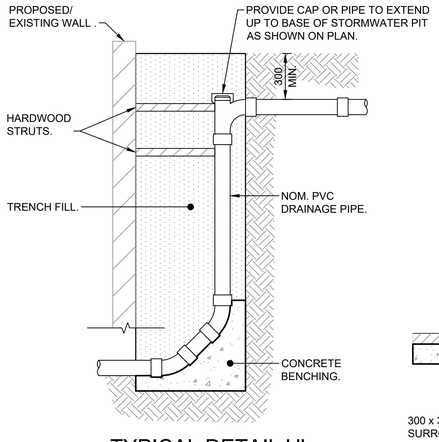
DETAIL 'D' - TYPICAL PVC PIPE EMBEDMENT

SCALE 1:10

TABLE '2' - MINIMUM COVER OVER PIPE

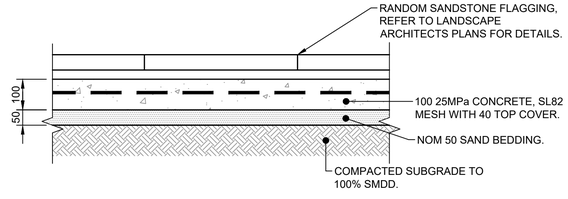
LOCATION	MINIMUM H* m
NOT SUBJECT TO VEHICLE LOADING	0.30
SUBJECT TO VEHICULAR LOADING -	
NOT IN ROADWAYS	0.45
IN SEALED ROADWAYS	0.60
UNDER UNSEALED ROADWAYS	0.75
PIPES IN EMBANKMENTS OR SUBJECT TO CONSTRUCTION EQUIPMENT LOADS	0.75

* SUBJECT TO VARIATION BY THE REGULATORY AUTHORITY.



TYPICAL DETAIL 'J' - VERTICAL BRANCH DRAIN

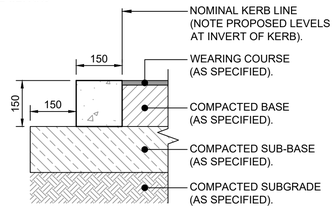
SCALE 1:20



DETAIL 'K' - CONCRETE PAVEMENT WITH SANDSTONE FLAGGING

SCALE 1:10

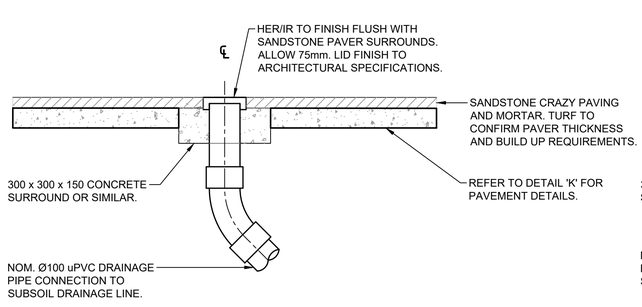
ASSUMED SUBGRADE CBR 5%



DETAIL 'L' - 150mm FLUSH KERB

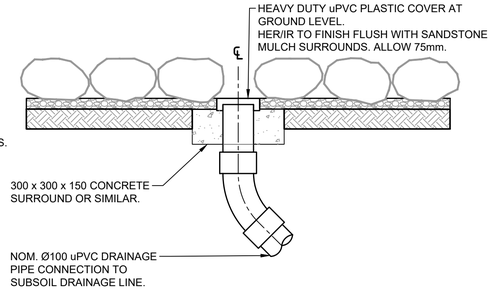
SCALE 1:10

ALL RADII TO BE 5mm UNLESS NOTED OTHERWISE.
EXPANSION JOINT (EJ) TO BE PROVIDED EVERY 6m AND A TOOL JOINT (TJ) EVERY 2m.



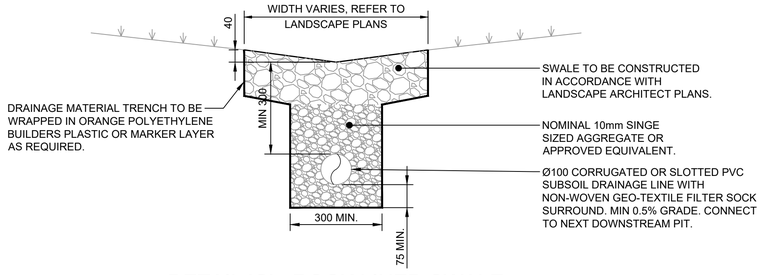
DETAIL 'M' - SUBSOIL RISER IN PAVING AREAS

SCALE 1:10



DETAIL 'N' - SUBSOIL RISER IN SWALE PLANTING AREAS

SCALE 1:10



DETAIL 'G' - ROCK LINED SWALE

NOT TO SCALE

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AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
01	ISSUED FOR 80% CO-ORDINATION	E.B.	M.B.	B.W.S.	C.N.	28/07/23
02	ISSUED FOR 100% CO-ORDINATION	E.B.	M.B.	D.H.	C.N.	09/08/23
03	ISSUED FOR 100% CO-ORDINATION	E.B.	J.W.S.	D.H.	C.N.	28/09/23
A	ISSUED FOR CONSTRUCTION	E.B.	M.B.	D.H.	C.N.	19/10/23
B	REVISIONS AS CLOUDED	E.B.	M.B.	D.H.	C.N.	15/11/23
C	AS BUILT	E.B.	W.D.	D.H.		28/03/24

CLIENT
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P. +61 8736 9000 W. taylorau.com.au
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

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turf
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PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
DETAILS SHEET 2

JOB NUMBER
230309

DRAWING NUMBER **C3.02** REVISION **C**

DRAWING SHEET SIZE = A1

Found: W:#jobs#2023#230309 - Lvl 1 Foreshore Park - Subbase Platypus#D-Drawings#C-Civil#230309-CAD#02-DD#230309_C3.02_DETAILS SHEET 2.dwg
Plotted By: wdodic
Date: 28-3-24 8:57am

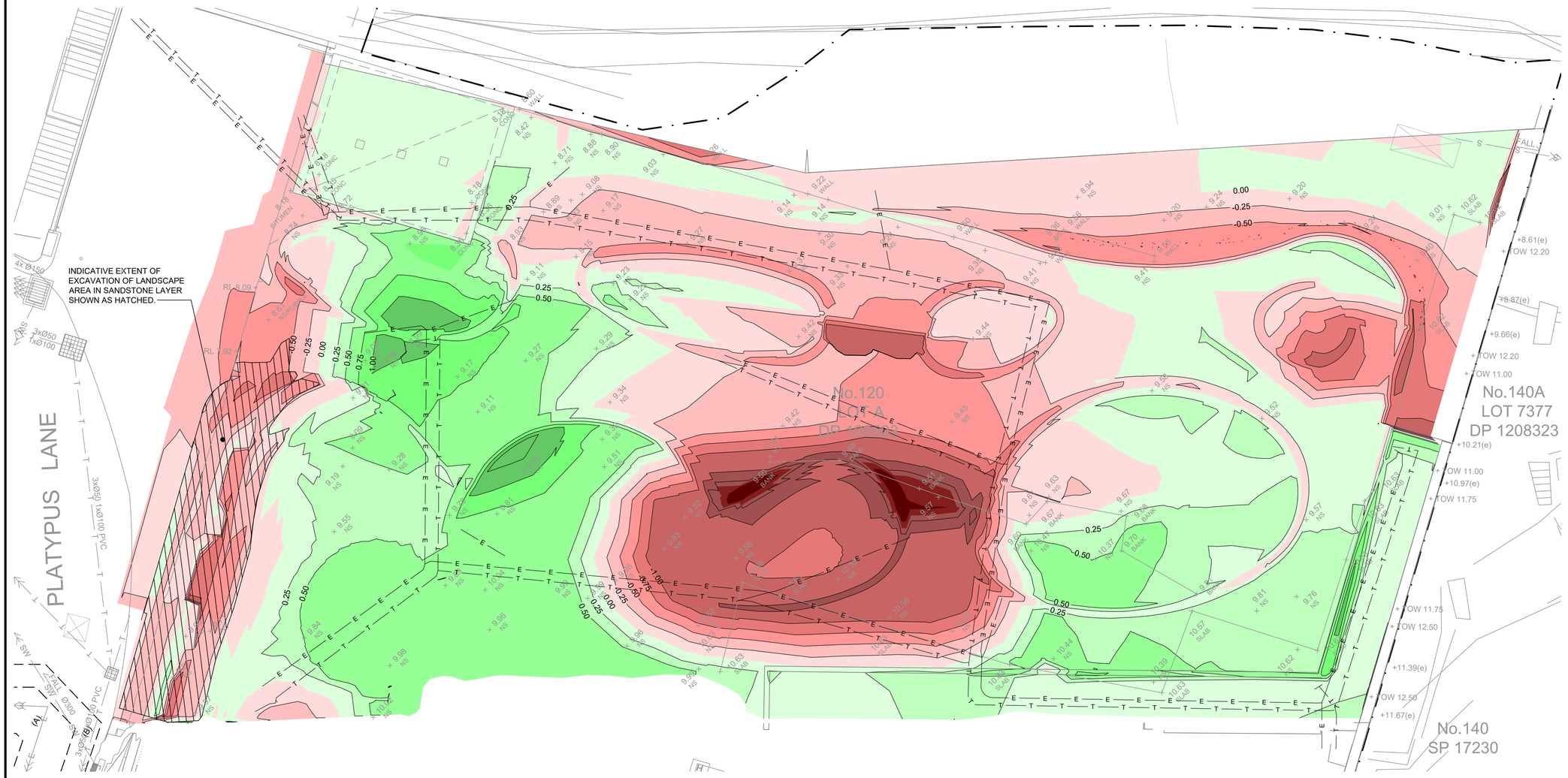

TABLE '3' - CUT AND FILL VOLUMES								
STAGE	CUT (SANDSTONE)	CUT (TOTAL)	FILL (TOTAL)	ESTIMATED CUT FOR HORIZON 'B TREE ROOT BALL'	ESTIMATED CUT FOR PROPOSED STRUCTURAL ELEMENTS	ESTIMATED CUT FOR ELECTRICAL AND TELECOMMUNICATIONS TRENCH EXCL. BACKFIL[5]	ESTIMATED CUT FOR STORMWATER TRENCH EXCL. BACKFIL[5]	NET
TOTAL	18 cu.m	339 cu.m	233 cu.m	92cu.m	71cu.m	58 cu.m	26 cu.m	353 cu.m (CUT)

NOTE:
1. THIS PLAN IS TO BE READ IN COLOUR.
2. NORTHROP HAVE UNDERTAKEN A BEST ENDEAVORED APPROACH, THESE VALUES ARE APPROXIMATE IN NATURE AND ARE BASED ON INFORMATION MADE AVAILABLE TO US.
3. THE BULK EARTHWORKS SURFACE HAS BEEN COMPARED AGAINST A COMBINATION OF ALL RECEIVED SURVEYS TO DATE WHERE THE MOST RECENT SURFACE IS OVERLAID ON TOP, WHICH WAS CONDUCTED ON 11/09/2023 BY 'USHER&COMPANY'.
4. NORTHROP PROVIDED WITH VOLUME ESTIMATES FROM OTHERS CONSULTANTS WHERE SHOW.
5. VALUES HAVE BEEN ESTIMATED FROM LINE LENGTHS AND AGGREGATE MATERIAL FOR BEDDING, SIDE SUPPORT, PIPE AND OVERLAY. REFER TO DETAIL 'D'. ESTIMATED VALUES HAVE BEEN MULTIPLIED BY 1.5 TO ACCOUNT FOR OVER EXCAVATION. THESE VALUES INCLUDE CUT WITHIN THE SANDSTONE LAYER WHICH IS NOT SHOWN IN THE CALCULATION CUT IS SANDSTONE VALUE..
6. NO BULKING FACTOR HAS BEEN APPLIED.
7. STOCKPILED MATERIALS TO BE TESTED AND CERTIFIED BY CONTRACTOR'S GEOTECHNICAL ENGINEERING PRIOR TO REMOVAL IF REQUIRED.

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WARNING: UTILITY INFORMATION SHOWN ON THIS PLAN DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE, BASED ON AVAILABLE DOCUMENTARY EVIDENCE. THE PRESENCE OF A UTILITY SERVICE, ITS SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION, PRIOR TO THE COMMENCEMENT OF WORKS. CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER IF A CLASH WITH ANY EXISTING UTILITIES OCCURS ON SITE.

AS BUILT

REV.	DESCRIPTION	DESIGN	DRAWN	CHECKED	VERIFIED	DATE
A	ISSUED FOR CONSTRUCTION	E.B.	J.W.S.	D.H.	C.N.	07/09/23
B	AMMENDEMNT TO TABLE '1' AND NOTES	E.B.	W.D.	D.H.		15/11/23
C	AS BUILT	E.B.	W.D.	D.H.		15/03/24

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SCALE 1:100@ A1 (0 1 2 3 4 5m)

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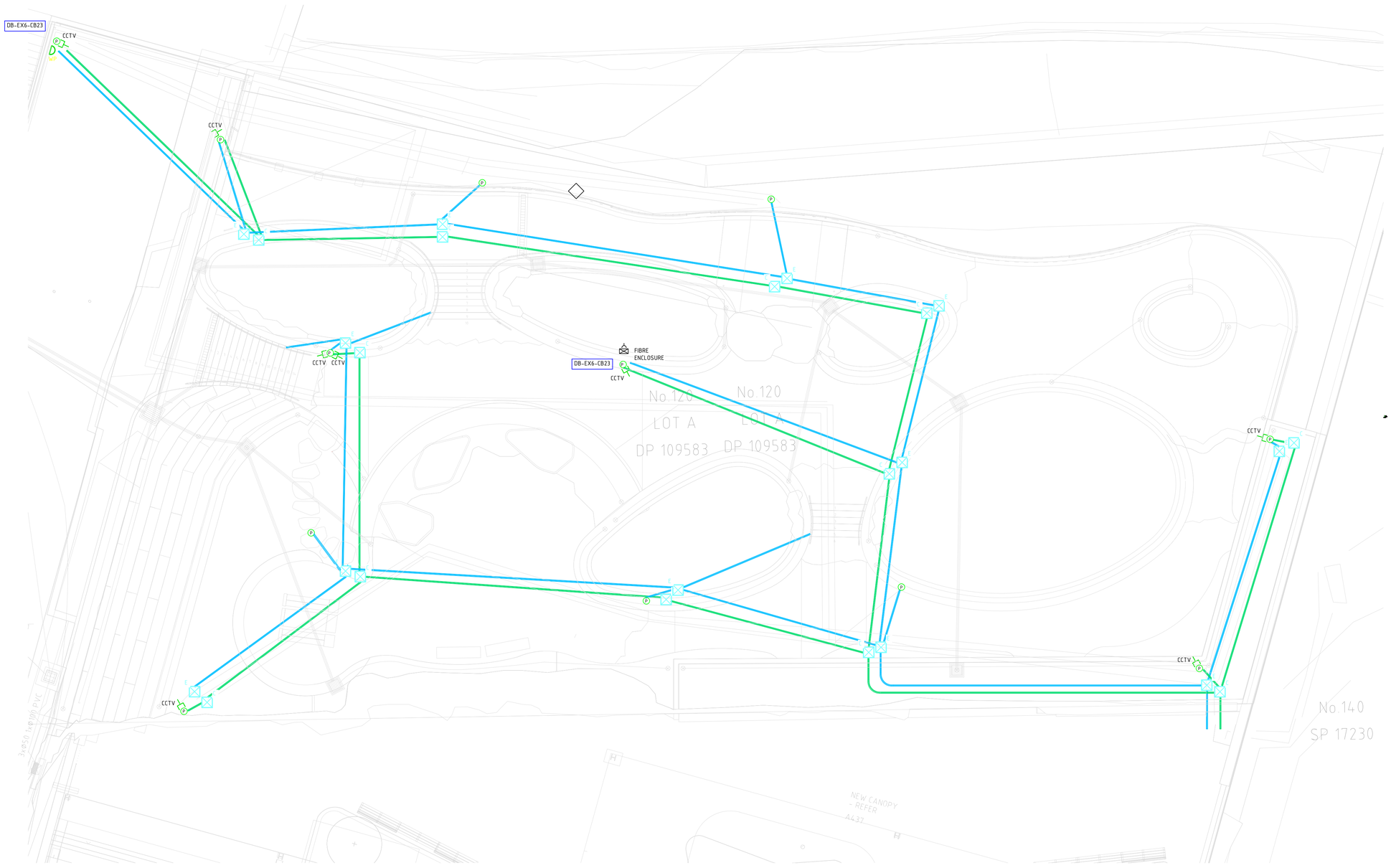
Email bowral@northrop.com.au ABN 81 094 433 100

PROJECT
SUB BASE PLATYPUS

DRAWING TITLE
BULK EARTHWORKS PLAN

JOB NUMBER **230309**
DRAWING NUMBER **C4.01** REVISION **C**
DRAWING SHEET SIZE = A1

Date : 28-3-24 8:57am Plotted By : wdodic Found : W:#jobs#2023#230309 - Lvl 1 Foreshore Park - Subbase Platypus#D-Drawings#C-Civil#230309-CAD#02-DD#230309_C4.01_BULK EARTHWORKS PLAN.dwg



ISSUE	DESCRIPTION	DRN	CKD	APPD	DATE
AB	AS BUILT	LA	WK		15.03.2024

PROJECT:

HMAS PLATYPUS - LEVEL 1
FORESHORE PARK

120 HIGH STREET, NORTH SYDNEY NSW 2060

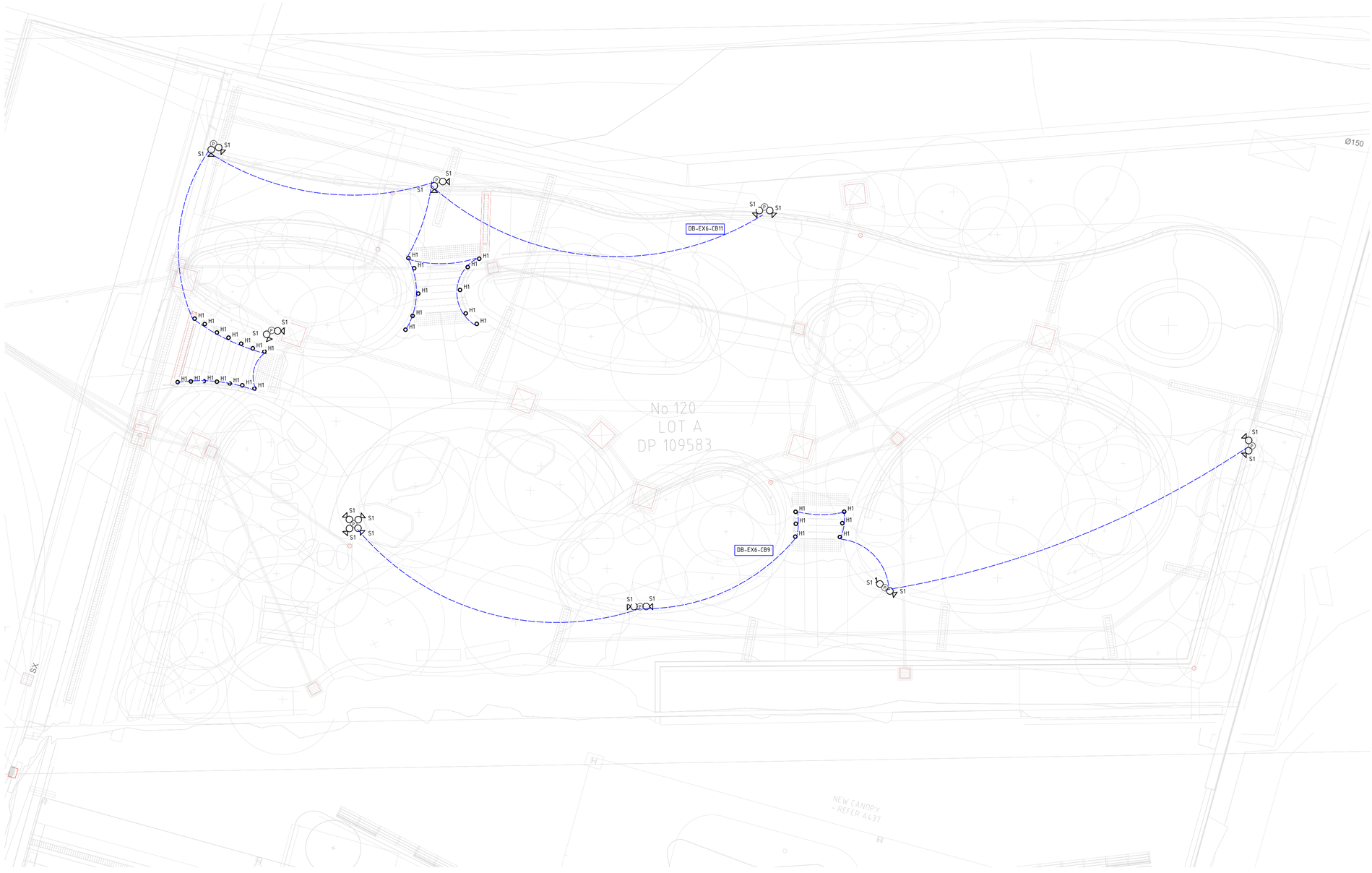
DRAWING TITLE:

ELECTRICAL SERVICES - POWER AND
COMMUNICATIONS LAYOUT

BK Synergy PTY LTD
ELECTRICAL CONTRACTORS

BK Synergy Integrated Systems
P.O. Box 486
NSW 2106
mail@synergyservices.com.au
ph: 1300 856 4 65
fax: 02 9443 2433

1:100@A1	DIMENSIONS IN MILLIMETRES		DO NOT SCALE	
	NAME	DATE		© COPYRIGHT
DRAWN	LLEWELYN ARNOLD	15.03.2024		
DRG. CKD	WALTER KEOGH	15.03.2024		
DESIGNED.	WALTER KEOGH	15.03.2024		Sheet No.
DESIGN CKD.				1/1
APPROVED				
SHT. SIZE A1	DRG No. E030-AS-SIS-GS			REV AB



ISSUE	DESCRIPTION	DRN	CKD	APPD	DATE
AB	AS BUILT	LA	WK		15.03.2024

PROJECT:

HMAS PLATYPUS - LEVEL 1
FORESHORE PARK

120 HIGH STREET, NORTH SYDNEY NSW 2060

DRAWING TITLE:

ELECTRICAL SERVICES - LIGHTING LAYOUT

BK Synergy PTY LTD
ELECTRICAL CONTRACTORS

BK Synergy Integrated Systems
P.O. Box 486
NSW 2106
mail@synergyservices.com.au
ph: 1300 856 4 65
fax: 02 9443 2433

1:100@A1	DIMENSIONS IN MILLIMETRES		DO NOT SCALE	
	NAME	DATE		© COPYRIGHT
DRAWN	LLEWELYN ARNOLD	15.03.2024		
DRG. CKD	WALTER KEOGH	15.03.2024		
DESIGNED.	WALTER KEOGH	15.03.2024		Sheet No. 1/1
DESIGN CKD.				
APPROVED				
SHT. SIZE A1	DRG No. E020-AS-SIS-GS			REV. AB

SUBBASE PLATYPUS

120 High St, North Sydney NSW 2060
STRUCTURAL DOCUMENTATION

DRAWING LIST	
S00.00	COVER SHEET AND DRAWING LIST
S00.01	SPECIFICATION NOTES - SHEET 1
S00.02	SPECIFICATION NOTES - SHEET 2
S01.10	GENERAL ARRANGEMENT PLAN
S02.00	TYPICAL SECTIONS & DETAIL - SHEET 1
S02.10	SECTIONS & DETAILS - SHEET 1
S02.11	SECTIONS & DETAILS - SHEET 2

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DRAWN: H. ABELLA DESIGNED: R. PRATT JOB MANAGER: R. PRATT VERIFIER:

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY ISSUE	HA		RP	11.05.23
2	ISSUED FOR TENDER	HA		RP	24.05.23
3	REVISED TENDER ISSUE	HA		RP	10.08.23
4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT: TAYLOR

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ARCHITECT: turf

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Ph (02) 4226 3333 Email: southcoast@northrop.com.au
ABN 81 094 433 100

PROJECT: **SUBBASE PLATYPUS 120 High St, North Sydney NSW 2060**

DRAWING TITLE: **STRUCTURAL DRAWING COVER SHEET AND DRAWING LIST**

JOB NUMBER: **230309**

DRAWING NUMBER: **S00.00** REVISION: **5**

DRAWING SHEET SIZE = A1

GENERAL

G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH SPECIFICATIONS AND OTHER CONSULTANT'S DRAWINGS.

G2. THE WEATHER PROOFING OF THE BUILDING IS THE BUILDER'S RESPONSIBILITY. THIS INCLUDES (BUT IS NOT LIMITED TO) THE SPECIFICATION AND FIXING DETAILS OF CLADDINGS, SHEETING, FLASHING, MEMBRANES, STEPS, SETDOWNS & RECESSES.

G3. ALL DISCREPANCIES SHALL BE REFERRED TO THE PROJECT MANAGER AND RESOLVED BEFORE PROCEEDING WITH THE WORK.

G4. ALL DIMENSIONS SHOWN SHALL BE VERIFIED BY THE BUILDER ON SITE. THESE STRUCTURAL DRAWINGS SHALL NOT BE SCALED FOR DIMENSIONS. THE RL's SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND ARE FOR THE SOLE PURPOSE OF ASSISTING THE STRUCTURAL DOCUMENTATION. THEY ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES. REFER TO ARCHITECTURAL DRAWINGS FOR CONFIRMATION OF ALL RL's, ALL LEVELS ARE IN METRES (m) AND DIMENSIONS ARE IN MILLIMETRES (mm)

G5. ALL WORKMANSHIP, TESTING, MATERIALS AND SUPERVISION ARE TO BE IN ACCORDANCE WITH THESE SPECIFICATIONS, THE WORK HEALTH AND SAFETY ACT 2011. ENFORCED BY THE WORKCOVER AUTHORITY AND CURRENT RELEVANT AUSTRALIAN STANDARDS.

G6. PROPRIETARY ITEMS SPECIFIED SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS. DO NOT VARY SPECIFIED PROPRIETARY PRODUCTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

G7. THESE DRAWINGS AND ISSUED WRITTEN INSTRUCTIONS DURING THE COURSE OF THE CONTRACT DEPICT THE COMPLETE STRUCTURE. THEY DO NOT DESCRIBE A WORK METHOD. THE ARRANGEMENT, DESIGN AND INSTALLATION OF TEMPORARY WORKS REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

G8. THE DETERMINATION OF A SAFE WORK METHOD REMAINS THE RESPONSIBILITY OF THE CONTRACTOR. ANY ELEMENT WHICH POSES AN UNACCEPTABLE LEVEL OF SAFETY RISK TO CONSTRUCT SHALL BE REFERRED TO THE STRUCTURAL ENGINEER. TEMPORARY BRACING AND SUPPORT OF STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MAINTAINED DURING ALL STAGES OF CONSTRUCTION.

G9. NOTES ON ANY DRAWING APPLY TO ALL DRAWINGS IN THE SET UNLESS NOTED OTHERWISE

G10. ALL ARCHITECTURAL FITMENTS SUCH AS GLAZING, PARTITIONS, CEILINGS ETC. SHOULD ALLOW FOR THE SHORT AND LONG TERM MOVEMENT OF STRUCTURAL ELEMENTS. FOR BEAMS AND SLABS SPANNING LESS THAN 8m AN ALLOWANCE OF AT LEAST 20mm SHOULD BE MADE (CONSULT ENGINEER WHERE SPANS EXCEED 8m).

G11. THE BUILDER SHALL PROVIDE CERTIFICATION ON ANY DESIGN AND CONSTRUCT COMPONENT BY A CHARTERED PROFESSIONAL ENGINEER (NER).

G12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL SERVICES IN THE VICINITY OF THE WORKS. ANY SERVICES SHOWN ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL SERVICES PRIOR TO COMMENCING AND SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO SERVICES, AS WELL AS ANY LOSS INCURRED AS A RESULT OF THE DAMAGE TO ANY SERVICE.

G13. THE STRUCTURAL COMPONENTS DETAILED ON THESE STRUCTURAL DRAWINGS ARE JOB SPECIFIC AND HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RELEVANT AUSTRALIAN STANDARDS AND BUILDING CODE OF AUSTRALIA FOR THE FOLLOWING LOADS.

WIND LOADS:

- IMPORTANCE LEVEL	= 2
- REGION	= A2
- ANNUAL PROBABILITY OF EXCEDENCE	= 1 : 500
- REGIONAL WIND SPEED V	= 45 m/s
- TERRAIN CATEGORY	= TC2
- TERRAIN MULTIPLIER Mz,cat	= 1.0
- WIND DIRECTION MULTIPLIER Md	= 1.0
- SHIELDING MULTIPLIER Ms	= 1.0
- TOPOGRAPHIC MULTIPLIER Mt	= 1.0
- SITE WIND SPEED	= 45 m/s

LIVE LOADS:

- PAVEMENTS	= 5 kPa
- STAIRS	= 5 kPa

EARTHQUAKE LOADS:

- IMPORTANCE LEVEL	= 2
- ANNUAL PROBABILITY OF EXCEDENCE (P)	= 1:500
- PROBABILITY FACTOR (kp)	= 1.0
- HAZARD FACTOR (Z)	= 0.08
- DOMESTIC STRUCTURE?	= N
- SITE SUB-SOIL CLASS	= Be - SHALLOW SOIL
- EARTHQUAKE DESIGN CATEGORY (EDC)	= I
- DESIGN REQUIRED	= SIMPLE STATIC CHECK

G14. ANY PRODUCTS SPECIFIED OR USED ARE TO BE VERIFIED BY THE CONTRACTOR AS BEING SAFE AND APPROPRIATE FOR USE. NORTHROP CONSULTING ENGINEERS DO NOT TAKE ANY RESPONSIBILTY FOR THE USE OF UNSAFE PRODUCTS.

G15. DRAWING TO BE READ IN CONJUNCTION WITH THE REQUIREMENTS OF THE REMEDIATION ACTION PLAN PREPARED BY CONSARA NUMBERED C201/015_DFTRAP_110CT2022 AND DATED 15 NOVEMBER 2022.

CONSTRUCTION PHASE SERVICES (WITNESS POINTS)

WP1. OBTAIN NORTHROP CONSULTING ENGINEERS WRITTEN INSTRUCTION AT THE FOLLOWING HOLD POINTS:
- PREPARATION OF FOUNDING MATERIAL, INCLUDING PIER BORE HOLES.
- REINFORCEMENT PRIOR TO PLACEMENT OF CONCRETE or COREFILLING OF BLOCKWORK.

WP2. PROVIDE MINIMUM 48 HOURS NOTICE FOR ANY REQUIRED INSPECTIONS.

TEMPORARY WORKS

TW1. THESE DRAWINGS DEPICT THE "PERMANENT" STRUCTURE, TEMPORARY WORKS REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.

TW2. BUILDER MUST ENGAGE (NER) QUALIFIED STRUCTURAL ENGINEER FOR THE DESIGN OF ALL TEMPORARY WORKS NECESSARY TO SAFELY ERECT THIS STRUCTURE. AS A MINIMUM THE FOLLOWING WORKS REQUIRE ATTENTION;
- FORMWORK / TEMPORARY PROPPING / NEEDLE BEAMS / SCAFFOLDING / UNDERPINNING / TEMPORARY SHORING

TW3. BUILDER SHALL CONTACT NORTHROP CONSULTING ENGINEERS IF THEY CONSIDER ANY PART OF THIS STRUCTURE IS UNSAFE TO ERECT

EARTHWORKS UNDER GROUND SLABS

E1. REMOVE ALL TOPSOIL, ORGANIC MATERIAL AND FILL BENEATH BUILDING PLATFORM. ALSO EXCAVATE TO THIS DEPTH FOR A DISTANCE OF D + 0.5m AROUND THE PERIMETER OF THE BUILDING, WHERE D IS THE DEPTH OF EXCAVATION.

E2. SOIL AND BUILDING MATERIAL REMOVED OFF SITE MUST BE DONE SO IN ACCORDANCE WITH THE NSW EPA GUIDELINES.

E3. IMPORTED FILL PROPERTIES :
- PASSING 50mm SIEVE - 100%
- PASSING 75micron SIEVE - LESS THAN 25%
- PLASTICITY INDEX - LESS THAN 15% BUT MORE THAN 2%

EARTHWORKS UNDER GROUND SLAB (CONTINUED)

E4. ONLY IMPORTED MATERIAL CLASSIFIED AS "INERT" UNDER NSW EPA GUIDELINES TO BE USED.

E5. FILL WITHIN BUILDING PLATFORMS SHOULD BE PLACED AND COMPACTED AS FOLLOWS:
- IN LAYERS OF 200 MAXIMUM LOOSE THICKNESS.
- TO A DRY DENSITY RATIO OF: 98% STANDARD DRY DENSITY FOR COMMERCIAL BUILDINGS
- WITH A MOISTURE CONTENT BETWEEN 1% DRY & 2% WET OF OMC.
- THE FINAL SURFACE COVERED WITH EITHER A TEMPORARY LOOSE SOIL LAYER OR A GRANULAR SUB-BASE LAYER TO PREVENT DRYING OUT PRIOR TO SLABCONSTRUCTION.
- EARTHWORKS TO BE CARRIED OUT WITH GEOTECHNICAL INSPECTION AT LEVEL 1 RESPONSIBILITY (AS DEFINED IN SECTION 8 OF AS3798-2007) DUE TO THE TIGHT LIMITS RECOMMENDED ABOVE.

E6. IF SUBGRADE OR FILL IS TOO WET TO ACHIEVE COMPACTION, SCARIFY AND WORK MATERIAL UNTIL IT HAS DRIED.

E7. NORTHROP CONSULTING ENGINEERS SUPPORT THE USE OF CONTAMINANT FREE, RECYCLED CONCRETE OR BRICK IN LIEU OF CRUSHED ROCK IN APPROPRIATE CIRCUMSTANCES.

TRENCH BACKFILL AND UNDERGROUND SERVICES

TB1. ALLOW FOR EXCAVATION IN ALL MATERIALS AS FOUND ON SITE AND AS DETAILED IN GEOTECHNICAL REPORT U.N.O.

TB2. PRIOR TO COMMENCING EXCAVATION VERIFY LEVELS OF ALL EXISTING SERVICES. IF ANY DISCREPANCIES CHECK WITH THE RELEVANT ENGINEER.

TB3. BACKFILL ALL TRENCHES UNDER SLABS, PATHS AND ROADS BELOW SUB-BASE LEVEL WITH ORIGINAL GROUND OR COMPACTED IMPORTED FILL.

TB4. IMPORTED FILL PROPERTIES :
- PASSING 50mm SIEVE - 100%
- PASSING 75micron SIEVE - LESS THAN 25%
- PLASTICITY INDEX - LESS THAN 15% BUT MORE THAN 2%

TB5. COMPACT FILL TO 95% MAXIMUM MODIFIED DRY DENSITY EXCEPT LANDSCAPED AREAS WHICH SHALL BE 85% MAXIMUM MODIFIED DRY DENSITY. COMPACT IN LAYERS OF 200 mm MAXIMUM LOOSE THICKNESS.

TB6. ALLOW FOR 1 SUCCESSFUL COMPACTION TEST PER 20 METRES LENGTH OF TRENCH IN THE MIDDLE LAYER.

FOUNDATIONS

F1. ASSUMED ALLOWABLE BEARING CAPACITY:

- PAD FOOTINGS	= 80 kPa
- STRIP FOOTINGS / EDGE THICKENING	= 80 kPa
- SLABS ON GROUND	= 80 kPa
- BORED PIERS (UNO)	= 1000 kPa END BEARING

F2. A GEOTECHNICAL REPORT HAS BEEN CARRIED OUT, REFER TO REPORT No. 7P2839_01 PREPARED BY MORROW GEOTECHNICS. THIS REPORT IS FOR INFORMATION ONLY, IT IS NOT A COMPLETE DESCRIPTION OF CONDITIONS AT OR BELOW GROUND LEVEL.

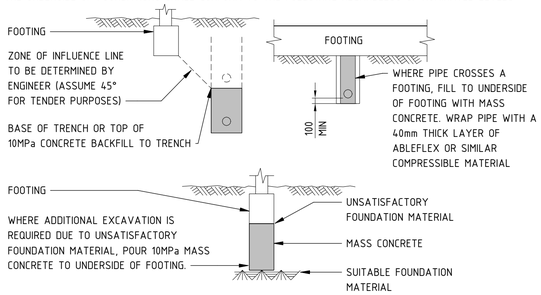
F3. THE SLAB AND FOOTINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH AS2870-2011 FOR CLASS H1 SITE. A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER TO BE CONTACTED DURING EXCAVATION TO CONFIRM THE SITE CLASSIFICATION.

F4. THE CONTRACTOR SHALL ALLOW TO ENGAGE A QUALIFIED (NER) GEOTECHNICAL ENGINEER TO APPROVE THE FOUNDATION MATERIAL. OBTAIN GEOTECHNICAL ENGINEERS APPROVAL AND SUBMIT CERTIFICATE IN WRITING TO NORTHROP CONSULTING ENGINEERS PRIOR TO CONCRETING FOUNDATIONS.

F5. ENSURE STABILITY OF ADJACENT BUILDINGS AND PATHS IS MAINTAINED DURING ALL STAGES OF CONSTRUCTION.

F6. DO NOT ALLOW EXCAVATED MATERIAL TO BE STOCKPILED WITHIN 1500mm OF FOOTING TRENCHES OR PITS. NO EARTH OR DETRITUS IS TO FALL INTO THE FOOTING TRENCHES BEFORE OR DURING CONCRETE PLACEMENT.

F7. THE UNDERSIDE OF FOUNDATIONS SHALL CONFORM TO THE FOLLOWING REGARDLESS OF NOMINATED LEVELS:



F8. FOOTINGS SHALL BE CENTRALLY LOCATED UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

F9. FOOTINGS SHALL BE EXCAVATED TO THE DETAILED DEPTH AND WIDTH. FOOTINGS SHALL BE INSPECTED AND FILLED WITH CONCRETE AS SOON AS POSSIBLE TO AVOID EITHER SOFTENING OF THE FOUNDATION MATERIAL OR DRYING OUT BY EXPOSURE.

F10. THE BASE OF ALL PIER HOLES SHALL BE FREE OF WATER AND CLEANED OF LOOSE MATERIAL OR DEBRIS PRIOR TO PLACEMENT OF CONCRETE. ALLOW TO PROVIDE TEMPORARY LINERS AS DEEMED NECESSARY.

SLAB ON GROUND

SG1. UNLESS NOTED OTHERWISE SLABS TO BE 100mm THICK WITH SL82 FABRIC THROUGHOUT TOP. CAST SLABS ON 0.2mm POLYTHENE MEMBRANE LAID OVER A NOMINAL SAND LEVELING LAYER ON FIRM CUT ORIGINAL GROUND OR COMPACTED FILL AS SPECIFIED.

SG2. MESH LAPS:
THE TWO OUTERMOST TRANSVERSE WIRES OF ONE SHEET OF MESH MUST OVERLAP THE TWO OUTERMOST TRANSVERSE WIRES OF SHEET BEING LAPPED, AS SHOWN BELOW.

SG3. PROVIDE 3-N12 TRIMMER BARS 2000mm LONG TIED TO UNDERSIDE OF FABRIC AT ALL RE-ENTRANT CORNERS.

SG4. ALL CONCRETE IS TO BE PLACED USING A VIBRATOR. CURING METHODOLOGY TO BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER PRIOR TO CONCRETE BEING PLACED.

CONCRETE

C1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600-2018 AND NATSPEC CONCRETE STANDARDS.

C2. CONCRETE PROPERTIES AND COVER TO REINFORCING :

COVER TO REINFORCEMENT

ELEMENT		CONCRETE STRENGTH f'c (MPa)	MAXIMUM 56 DAY DRY SHRINKAGE	COVER (mm)	
BORED PIERS		40		60	
SLABS ON GROUND	EXTERNAL (NO MEMBRANE)	40	650 um	TOP 45	BTM 40
	INTERNAL (WITH MEMBRANE)	40		TOP 45	BTM 35
STRIP FOOTINGS		32		60	
PAD FOOTINGS		32		60	
SUSPENDED SLABS	EXTERNAL	50	650 um	TOP 45	BTM 45
WALLS	EXTERNAL FACE	50	650 um	45	
	IN CONTACT WITH GROUND	50		45	

MAXIMUM AGGREGATE SIZE = 20mm U.N.O.
SLUMP DURING PLACING = 80mm ±10mm
EXPOSURE CLASSIFICATION = B2 (EXTERNAL CONCRETE ELEMENTS)

NO ADMIXTURES SHALL BE USED IN THE CONCRETE MIX UNLESS APPROVED BY NORTHROP CONSULTING ENGINEERS IN WRITING.

C3. CONCRETE PROPERTIES FOR SLABS AND BEAMS SHALL BE VARIED FROM NORMAL CLASS AS FOLLOWS:
- MINIMUM CEMENT CONTENT 250kg/m^3
- MAXIMUM 56 DAY SHRINKAGE STRAIN = AS NOMINATED ABOVE
- PRIOR TO COMMENCEMENT CONCRETE SUPPLIER TO PROVIDE DRYING SHRINKAGE TEST RESULTS FROM PRODUCTION ASSESSMENT AS EVIDENCE THAT SPECIFIED DRYING SHRINKAGE LIMITS CAN BE ACHIEVED USING NORMAL MIX DESIGN.
- PERCENTAGE OF ENTRAPPED AIR TO BE AS FOLLOWS:
  FOR AGGREGATE 10mm-20mm NORMAL SIZE 8-4% IN ACCORDANCE WITH AS3600-2018 AND AS1012.4-2014 (SUBMIT TEST RESULTS) FOR ALPINE OR SUB-ALPINE AREAS.

C4. SUBMIT FOR APPROVAL THE FOLLOWING TO THE ENGINEER :
- CURING PROCEDURE (PVA MEMBRANES NOT PERMITTED)
- STRIPPING AND BACK PROPPING PROCEDURE
- DETAILS AND LOCATION OF CONDUITS AND PENETRATIONS
- CONSTRUCTION JOINT LOCATIONS
- MINIMUM STRIPPING TIMES ARE IN AS3600 NOW.

C5. FOR TENDER PURPOSES ASSUME MINIMUM STRIPPING TIMES AND EXTENT OF BACK PROPPING AS PER AS3600-2018 ANDAS3610.1-2018 AND AS PER GENERAL NOTES FOR FORMWORK AND PROPPING.

C6. FORMWORK FINISH CLASSIFICATION TO AS3610.1-2018:

ELEMENT	CLASS
- INGROUND FOOTINGS	5
- RETAINING WALLS	5 EARTH FACE
- RETAINING WALLS	2 EXPOSED FACE
- STAIRS	2

C7. SURFACE FINISHES :

- COLUMNS & WALLS	OFF FORM
- FLOOR SLABS (U.N.O.)	MACHINE FLOAT
- SLABS TO BE TILED	WOOD FLOAT
- STAIRS	STEEL TROWEL

C8. COMPACT ALL CONCRETE, INCLUDING FOOTINGS AND SLABS USING MECHANICAL VIBRATORS.

C9. PLACE CONCRETE CONTINUOUSLY BETWEEN CONSTRUCTION JOINTS SHOWN ON PLAN. DO NOT BREAK OR INTERRUPT SUCCESSIVE POURS SUCH THAT COLD JOINTS OCCUR. ANY REVISIONS OR ADDITIONS TO CONSTRUCTION JOINTS SHOWN ON PLAN REQUIRE APPROVAL FROM THE NORTHROP CONSULTING ENGINEERS.

C10. CONCRETE PROFILES :
- BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE THE SLAB THICKNESS.
- SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
- NO HOLES, CHASES OR EMBEDMENT OF PIPES OTHER THAN SHOWN IN THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR WRITTEN APPROVAL OF NORTHROP CONSULTING ENGINEERS.
- PROVIDE DRIP GROOVES AT ALL EXPOSED EDGES. CHAMFERS, DRIP GROOVES, REGLETS ETC TO ARCHITECT'S DETAILS.

C11. ALL PENETRATIONS TO HAVE 2/N16 TRIMMER BARS TOP AND BOTTOM TO EACH FACE. U.N.O. EXTEND TRIMMERS 600 BEYOND PENETRATION.

C12. SETDOWNS OR FALLS IN FLOOR SURFACES ARE NOT PERMITTED UNLESS SHOWN ON DRAWINGS. MAINTAIN MINIMUM SLAB THICKNESS SHOWN ON PLAN WHERE FALLS OCCUR.

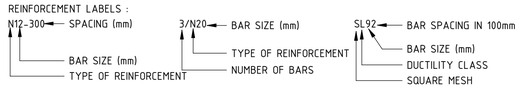
C13. REINFORCEMENT QUALITY AND NOTATION :

REINFORCEMENT NOTATION

SYMBOL	BAR TYPE	STRENGTH GRADE (MPa)	DUCTILITY CLASS	TO COMPLY WITH AUSTRALIAN STANDARD
S	STRUCTURAL GRADE DEFORMED RIB BAR	250	NORMAL	AS/NZS 4671-2001
N	HOT ROLLED DEFORMED RIB BAR	500	NORMAL	AS/NZS 4671-2001
R	PLAIN ROUND BAR	250	NORMAL	AS/NZS 4671-2001
RL	RECTANGULAR MESH OF DEFORMED RIB BAR	500	LOW	AS/NZS 4671-2001
SL	SQUARE MESH OF DEFORMED RIB BAR	500	LOW	AS/NZS 4671-2001
L-TM	TRENCH MESH	500	LOW	AS/NZS 4671-2001

ALL REINFORCING BARS SHALL BE GRADE D500N TO AS/NZS 4671-2001 AND ALL MESH SHALL BE GRADE 500L TO AS/NZS 4671-2001. UNLESS NOTED OTHERWISE CLASS L REINFORCEMENT SHALL NOT BE USED.

REINFORCEMENT LABELS :



CONCRETE (CONTINUED)

C14. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, AND NOT NECESSARILY IN TRUE PROJECTION. BARS SHOWN ARE INDICATIVE ONLY AND LENGTHS MAY VARY. BEAM ELEVATIONS TAKE PRECEDENCE OVER SECTIONS. SLAB PLANS TAKE PRECEDENCE OVER SECTIONS. REFER TO SECTIONS FOR EXTRA BARS THAT MAY BE REQUIRED.

C15. USE ONLY PLASTIC OR CONCRETE CHAIRS AT EXTERNAL SURFACES.

C16. SITE BENDING OF REINFORCEMENT BARS SHALL BE DONE WITHOUT HEATING USING A RE-BENDING TOOL. THE BARS SHALL BE RE-BENT AGAINST A FLAT SURFACE OR A PIN WITH A DIAMETER NOT LESS THAN THE MINIMUM PIN SIZE PRESCRIBED IN AS3600-2018.

C17. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN ON THE STRUCTURAL DRAWINGS OR IN POSITIONS OTHERWISE APPROVED IN WRITING BY NORTHROP CONSULTING ENGINEERS. LAPS SHALL NOT BE LESS THAN THE DEVELOPMENT LENGTH FOR EACH BAR AND IN ACCORDANCE WITH AS3600-2018 SECTION 13.

C18. LAPS IN MESH SHALL BE IN ACCORDANCE WITH AS3600-2018 SECTION 13.

C19. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY NORTHROP CONSULTING ENGINEERS.

C20. AT EXTERNALLY EXPOSED SURFACES NO METALLIC ITEMS INCLUDING FORM BOLTS, FORM SPACERS, METALLIC BAR CHAIRS AND TIE-WIRE ARE TO BE PLACED IN THE COVER ZONE.

C21. ALL REINFORCEMENT, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION AND INSPECTED BY NORTHROP CONSULTING ENGINEERS PRIOR TO PLACING CONCRETE.

C22. HOLD DOWN BOLTS SHALL BE HOT DIPPED GALVANISED.

C23. U.N.O., ALL MASONRY ANCHORS INTO CONCRETE SHALL BE RAMSET TRUBOLTS (LONGEST VERSION) OR APPROVED EQUIVALENT. BOLTS SHALL BE GALVANISED WHERE THEY ARE ADJOINING NON FERROUS OR PREPAINTED MEMBERS. PROVIDE STAINLESS STEEL BOLTS FOR ALL EXTERNAL CONDITIONS, OR WHERE EXPOSED TO THE WEATHER.

C24. ALL CONCRETE MIXES SHALL BE DESIGNED BY A RECOGNISED TESTING LAB AND SUBMITTED FOR REVIEW BY NORTHROP CONSULTING ENGINEERS.

C25. ALL COMPRESSIVE STRENGTH TEST REPORTS SHALL BE SUBMITTED TO NORTHROP CONSULTING ENGINEERS FOR REVIEW.

C26. PROJECT CONTROL TESTING SHALL BE CARRIED OUT ON ALL CONCRETE IN ACCORDANCE WITH AS1379-2007. TEST CYLINDERS ARE TO BE KEPT ON SITE.

C27. CURING OF ALL CONCRETE IS TO BE ACHIEVED BY KEEPING SURFACES CONTINUOUSLY WET FOR A PERIOD OF 7 DAYS, UNLESS SPECIFIED OTHERWISE. APPROVED SPRAY ON CURING COMPOUNDS THAT COMPLY WITH AS3799-1998 MAY BE USED WHERE FLOOR FINISHES WILL NOT BE AFFECTED. POLYTHENE SHEETING OR WET HESSIAN MAY BE USED TO RETAIN CONCRETE MOISTURE WHERE PROTECTED FROM WIND AND TRAFFIC. CURING IS TO COMMENCE IMMEDIATELY AFTER CONCRETE PLACEMENT.

C28. FOR ELAPSED TIME BETWEEN THE WETTING OF THE MIX AND THE DISCHARGE OF THE MIX, REFER TO CONCRETE - ELAPSED DELIVERY TIMES NOTE.

C29. BUILDER TO ALLOW TO COMPLETE FURTHER GEOTECHNICAL TESTING TO ASSESS THE PRESENCE OF ACID SULFATE SOILS ACROSS THE SITE. (REFER COUNCIL REQUIREMENTS).
IF ACID SULFATE SOILS ARE FOUND, ALLOW TO INCREASE CONCRETE STRENGTH OF CONCRETE IN CONTACT WITH GROUND TO 50MPa AND PROVIDE 2 LAYERS OF 0.2mm POLYTHENE MEMBRANE OF HIGH IMPACT RATING UNDER BUILDING SLABS.

LEGEND

TERM	ABBREVIATION	TERM	ABBREVIATION
BOTH SIDES	B/S	MAXIMUM	MAX
BOTTOM	B	MINIMUM	MIN
BLOCK WALL	BW	MISCELLANEOUS	MISC
BRICK WALL	BRW	NEAR FACE	NF
CENTRALLY PLACED	CENT	NEAR SIDE	N/S
CENTRE LINE	CL	NOMINAL	NOM
CENTRES	CTS	NOT SHOWN ON PLAN	NSOP
CIRCULAR HOLLOW SECTION	CHS	NOT SHOWN ON ELEVATION	NSOE
CONCRETE	CONC	NOT TO SCALE	NTS
CONCRETE WALL	CW	OPPOSITE	OPP
CONSTRUCTION JOINT	CJ	OVERALL	O/A
DEEP/DEPTH	D	PARALLEL	PFC
DIAMETER	DIA	FLANGE CHANNEL	
DIAMETER INSIDE	ID	PLATE	PL
DIAMETER NOMINAL	DN	PERMANENT ACTION (DEAD LOAD)	G
DIAMETER OUTSIDE	OD	POST TENSION	PT
DRAWING	DWG	QUANTITY	QTY
EACH FACE	EF	RADIUS	RAD
EACH WAY	EW	RECTANGULAR HOLLOW SECTION	RHS
EQUAL	EQ	REINFORCED CONCRETE	RC
EQUAL ANGLE	EA	REINFORCEMENT	REINF
EXISTING	EXST	REQUIRED	REQ'D
EXPANSION JOINT	EJ	SQUARE	SQ
FAR SIDE	F/S	SQUARED HOLLOW SECTION	SHS
FAR FACE	FF	TOP	T
FINISHED FLOOR LEVEL	FFL	TOP & BOTTOM	T&B
FLAT	FL	TYPICAL	TYP
GALVANISED	GALV	UNDER SIDE	U/S
GENERAL PURPOSE BRACKET	GPB	UNEQUAL ANGLE	UA
HIGH/HEIGHT	H	UNIVERSAL BEAM	UB
HORIZONTAL	HORIZ	UNIVERSAL COLUMN	UC
IMPOSED ACTION (LIVE LOAD)	Q	UNLESS NOTED OTHERWISE	UNO
INTERSECTION POINT	IP	VERTICAL	VERT
LONG/LENGTH	L	WIDE/WIDTH	W
LENGTH VARIES	LV		

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY ISSUE	HA		RP	11.05.23
2	ISSUED FOR TENDER	HA		RP	24.05.23
3	REVISED TENDER ISSUE	HA		RP	10.08.23
4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT: TAYLOR
DRAWINGS NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT: turf

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

NORTHROP
Wollongong
Level 1, 57 Kembla Street, Wollongong, N.S.W. 2500
Ph (02) 4226 3333 Email: southcoast@northrop.com.au
ABN 81 094 433 100

PROJECT: **SUBBASE PLATYPUS**
120 High St, North Sydney NSW 2060

DRAWING TITLE: **STRUCTURAL DRAWING SPECIFICATION NOTES - SHEET 1**

JOB NUMBER: **230309**
DRAWING NUMBER: **S00.01**
REVISION: **5**
DRAWING SHEET SIZE = A1

CONCRETE MATERIALS

CM1. CARRY OUT ALL CONCRETE WORK IN ACCORDANCE WITH AS3600-2018 AND NATSPEC CONCRETE STANDARDS.

CM2. PORTLAND CEMENT :
- STANDARD – TO AS3972-1997

CM3. BLENDED CEMENTS :
- STANDARD – TO AS3972-1997
- REQUIREMENT – USE ONLY WHEN SPECIFIED.

CM4. FLY ASH :
- STANDARD – TO AS3582.1-1998 "FINE GRADE" ONLY.
- REQUIREMENT – ONLY WHEN SPECIFIED. ALTERNATIVE MIX DESIGN WITH FLY ASH WILL BE CONSIDERED, PROVIDED THE CEMENTITIOUS MATERIAL MEETS THE PERFORMANCE REQUIREMENT OF THE CEMENT TYPE SPECIFIED.

CM5. SILICA FUME :
- STANDARD – TO AS3972-1997
- REQUIREMENT – ONLY WHEN SPECIFIED. ALTERNATIVE MIX DESIGN WITH SILICA FUME WILL BE CONSIDERED, PROVIDED THE CEMENTITIOUS MATERIAL MEETS THE PERFORMANCE REQUIREMENT OF THE CEMENT TYPE SPECIFIED.

CM6. AGGREGATE :
- STANDARD – TO AS2758.1-1998
- FINE AGGREGATE – DENSE, NATURALLY OCCURRING SAND OR ROCK, CRUSHED OR UNCRUSHED, AND EITHER SINGLE SOURCED OR BLENDED, CONFORMING TO GRADING REQUIREMENTS OF 'TABLE 3', UNCRUSHED FINE AGGREGATE OFAS2758.1-1998
- COARSE AGGREGATE – CLEAN, HARD, DURABLE PARTICLES OF DENSE, NATURALLY OCCURRING GRAVEL OR ROCK, CRUSHED OR UNCRUSHED, AND EITHER SINGLE SOURCED OR BLENDED, CONFORMING TO GRADING REQUIREMENTS OF 'TABLE 1', 20mm GRADED AGGREGATE OF AS2758.1-1998.
- PARTICLE DENSITY – TO AS2758.1-1998 CLAUSE 8.1, MINIMUM 2100 kg/m^3
- BULK DENSITY – TO AS2758.1-1998 CLAUSE 8.3, MINIMUM 2100 kg/m^3
- WATER ABSORPTION – TO AS2758.1-1998 CLAUSE 8.3, MAXIMUM 2.5%
- DURABILITY – TO AS2758.1-1998 CLAUSE 10 CONCRETE EXPOSURE CLASSIFICATION– "SEVERE".
- ALKALI REACTIVITY – TEST FOR ALKALI REACTIVE MATERIALS TO AS2758.1 CLAUSE 14.3. SEPARATE TESTING REQUIRED ON EACH SINGLE SOURCED AGGREGATE.
- PARTICLE SHAPE – TO AS2758.1 CLAUSE 9.3 AND THE PROPORTION OF MISSHAPEN PARTICLES USING A 2:1 RATIO IS NOT TO EXCEED 35% WHEN DETERMINED IN ACCORDANCE WITH AS 1141.14-2007.

CM7. WATER :
- SPECIAL CLASS CONCRETE – FROM A TOWN POTABLE WATER SUPPLY.
- NORMAL CLASS CONCRETE – RECYCLED WATER ACCEPTED.

CM8. CHEMICAL ADMIXTURES :
- TO AS 1478. USE IN ACCORDANCE WITH AS 1478 AND MANUFACTURER'S DIRECTIONS. ADMIXTURES CONTAINING CHLORIDES OR NITRATES PROHIBITED.

CONCRETE TESTING

CT1. REQUIREMENT :
- PRODUCTION ASSESSMENT – TESTING CARRIED OUT BY THE BATCHING PLANT.
- PROJECT ASSESSMENT – TESTING OF SAMPLES TAKEN ON SITE AT DISCHARGE POINT.

CT2. PROVIDE EVIDENCE OF PRODUCTION ASSESSMENT TO AS1379-2007 PRIOR TO POURING.

CT3. CONCRETE SHRINKAGE AND CONCRETE FOR SLABS (UP TO 110mm THICK) ON GROUND, TO BE VERIFIED BY PRODUCTION ASSESSMENT.

CT4. CARRY OUT PROJECT ASSESSMENT FOR REMAINDER OF CONCRETE AS FOLLOWS :
- SUPPLY OF CONCRETE SHALL BE FROM A CONCRETE BATCHING PLANT THAT CARRIES OUT PRODUCTION ASSESSMENT FOR THE GRADES OF CONCRETE SPECIFIED FOR THIS PROJECT.
- CONCRETE SHALL BE SUPPLIED AND TESTED IN ACCORDANCE WITH AS1379-2007 AND AS1012.
- THE ORGANISATION(S) RESPONSIBLE FOR SAMPLING AND TESTING OF CONCRETE TO HAVE RELEVANT 'NATA' LABORATORY REGISTRATION, BE INDEPENDENT, AND USE TRAINED, COMPETENT PERSONNEL FOR THE TAKING OF SAMPLES AND SPECIMENS AND THE PREPARATION OF MATERIALS AND WORK FOR TESTING.
- SLUMP AT TIME OF POURING TO BE WITHIN THE PERMISSIBLE TOLERANCE IN AS1379-2007 FOR NOMINAL SLUMP SPECIFIED.
- AT LEAST 1 SAMPLE FOR EVERY 50m^3 SHALL BE TAKEN AT THE SITE, BUT NOT LESS THAN 3 SAMPLES SHALL BE TAKEN PER POUR. FIRST AND LAST BATCH PER DAY TO BE SAMPLED, THE OTHER TAKEN PROGRESSIVELY DURING THE POUR, RECORDING LOCATION IN POUR WHERE SAMPLE WAS TAKEN.
- IT IS PERMISSIBLE TO REDUCE THE NUMBER OF SAMPLES TO 2 FOR POURS OF LESS THAN 30m^3, AND 1 FOR POURS OF LESS THAN 10m^3, SAMPLE CONSISTS OF AT LEAST 3 CYLINDERS. ONE CYLINDER SHALL BE TESTED AT 7 DAYS. TWO CYLINDERS SHALL BE TESTED AT 28 DAYS. 7 & 28 DAY TEST RESULTS TO BE SENT IMMEDIATELY TO NORTHROP CONSULTING ENGINEERS.
- IF MORE THAN ONE STRENGTH GRADE IS BEING USED IN A POUR, EACH STRENGTH GRADE SHALL BE CONSIDERED A SEPARATE POUR FOR THE PURPOSES OF TESTING.

CONCRETE (ELAPSED DELIVERY TIMES)

CE1. ELAPSED TIME BETWEEN THE WETTING OF THE MIX AND THE DISCHARGE OF THE MIX AT THE SITE MUST NOT EXCEED THE CRITERIA IN THE ELAPSED DELIVERY TIMETABLE BELOW:

ELAPSED DELIVERY TIME TABLE

CONCRETE TEMPERATURE AT TIME OF DISCHARGE (°C)	MAXIMUM ELAPSED TIME (HOURS)
< 24	2.00
24 to 27	1.50
27 to 30	1.00
30 to 32	0.75
32 to 35	0.50

IF THE ELAPSED TIME IS LONGER THAN THE CORRESPONDING TIME IN THE TABLE ABOVE, OR THE TEMPERATURE IS GREATER THAN 35°C, EITHER NORTHROP CONSULTING ENGINEERS OR THE CONCRETE MIX DESIGN ENGINEER ARE TO BE CONTACTED TO CONFIRM WHETHER PLACEMENT IS TO PROCEED OR IF THE POUR IS TO BE STOPPED. IF THE POUR IS STOPPED, PRIOR TO ANY FURTHER CONCRETE PLACEMENT NORTHROP CONSULTING ENGINEERS ARE TO BE CONTACTED TO INSPECT THE WORKS AND DETERMINE WHAT, IF ANY, RECTIFICATION WORKS ARE REQUIRED.
IF THE CONCRETE TEMPERATURE AT THE TIME OF DISCHARGE IS NOT ≥ 5°C, CONCRETE SHALL BE REJECTED. IF AIR TEMPERATURE IS ≤ 10°C, (FOR ≥ A 12 HOUR PERIOD) SUBMIT "COLD WEATHER CONCRETING PROCEDURES" FOR APPROVAL.

CHEMICAL ANCHORS

CA01. UNLESS NOTED OTHERWISE, CHEMICAL ANCHORS SPECIFIED IN THESE DRAWINGS REFER RAMSET REO 502 CHEMICAL INJECTION ANCHORS.

CA02. ALTERNATIVE CHEMICAL ANCHORS MAY BE SUBSTITUTED WITH PRIOR PERMISSION FROM THE SUPERINTENDENT.

CA03. MINIMUM EDGE DISTANCE AND SPACING SETOUT OF THE ANCHORS ARE SPECIFIED ON THESE DRAWINGS. IF THE INSTALLED DISTANCES ARE LESS THAN THAT SPECIFIED NOTIFY THE SUPERINTENDENT FOR INSTRUCTION.

CA04. CHEMICAL ANCHORS ARE TO BE STIRCTLY INSTALLED TO MANUFACTURERS INSTALLATION PROCEDURE.

CA05. DIAMETER OF HOLES TO MANUFACTURES SPECIFICATION FOR NOMINATED BOLT/BAR DIAMETER. DRILL HOLES USING A ROTARY PERCUSSION DRILL. DO NOT CORE DRILL HOLES.

CA06. CLEAN AND DEGREASE BOLT/BARS PRIOR INSTALLATION.

CA07. ENSURE CHEMICAL IS ALLOWED TO FULLY CURE IN ACCORDANCE WITH MANUFACTURE'S DETAILS PRIOR TO LOADING BOLTS/BARS.

CONCRETE MASONRY

CM1. MASONRY CONSTRUCTION IS TO CONFORM TO AS3700-2001.
- MORTAR CLASSIFICATION = M4
- DURABILITY CLASSIFICATION OF BUILT IN COMPONENTS = R4
- DURABILITY GRADE OF EXTERNAL MASONRY UNITS = EXPOSURE

CM2. THE CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF THE MASONRY UNITS SHALL BE 15MPa OR GREATER.

CM3. BED UNITS IN FRESHLY PREPARED MORTAR, UNIFORMLY MIXED CEMENT, LIME AND SAND IN THE RATIO OF 1:1:6 or 1:0.5 CONFORMING TO AS3700-2001.

CM4. GROUT FILL FOR BLOCKWORK:
- COMPRESSIVE STRENGTH = N20MPa
- MAXIMUM AGGREGATE SIZE = 10mm
- SLUMP = 225mm
- MINIMUM PORTLAND CEMENT CONTENT = 300kg/m^3
- COMPACT THE GROUT USING A MECHANICAL VIBRATOR AT CONTROL OR CONSTRUCTION JOINTS IN SLABS

CM5. CONTROL JOINTS IN UNREINFORCED WALLS SHALL BE PROVIDED AS FOLLOWS;
CLASS A & S - 5m MAX CTS
CLASS M - 5m MAX CTS (UP TO 4m HIGH WALL), 3.9m MAX CTS (4.0m to 8.5m HIGH WALL)
CLASS H - 4.5m MAX CTS (UP TO 4m HIGH WALL), 3.2m MAX CTS (4.0m to 8.5m HIGH WALL)
- JOINTS TO BE 0.47m MINIMUM FROM CORNERS
- JOINT TO BE 4.5m MAXIMUM FROM CORNERS
- WHERE THE HEIGHT OF THE WALL CHANGES BY MORE THAN 20%, AT THE POSITION OF THE CHANGE
- WHERE THE WALL CHANGES IN THICKNESS
- AT CONTROL OR CONSTRUCTION JOINTS IN SLABS
- AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MASONRY MATERIAL

CM6. PROVIDE SLIDING HORIZONTAL TIES ACROSS JOINTS IN UNREINFORCED WALLS EQUIVALENT TO M.E.T 3-3 AT 400 CTS VERTICALLY IN EACH FACE OF THE BLOCKS.

CM7. CONTROL JOINTS IN REINFORCED WALLS SHALL BE PROVIDED AT 12.0m CENTRES, PROVIDE R16-400 (600 LONG) DOWELS, PAINT ONE END WITH BITUMEN & PROVIDED EXPANSION CAP.

CM8. THE BOTTOM COURSE OF ALL REINFORCED BLOCKWORK SHALL CONSIST OF E-SHAPED BLOCKS TO ENABLE CLEANOUT AND TYING OF STEEL.
- FULLY BED FACE SHELLS ONLY.
- CLEAN OUT ALL CORES AFTER EACH DAY'S LAYING.
- ENSURE STARTER BARS ARE CORRECTLY LOCATED IN FOOTINGS.

CM9. MASONRY TIES SHALL BE HOT DIP GALVANISED WITH MINIMUM COATING MASS OF 300g/m^2 AND MEDIUM DUTY CLASSIFICATION FOR CAVITIES UP TO 60mm WIDE & HEAVY DUTY FOR CAVITIES OVER 60mm WIDE. ANY FACE FIXED TIES SHALL BE FIXED USING A SCREW FIXING AND SHALL NOT BE NAILED.

CM10. THE TOP COURSE OF ALL FREESTANDING HOLLOW BLOCK MASONRY SHALL CONSIST OF SOLID CAPPING BLOCKS.

CM11. SPACING OF MASONRY TIES:
- ADJACENT TO WINDOWS AND RETURN WALLS = 400mm VERTICAL AND HORIZONTAL.
- SOLID MASONRY = 400mm VERTICAL AND HORIZONTAL
- OTHERWISE = 800mm VERTICAL AND HORIZONTAL

CM12. NON-LOADBEARING HOLLOW BLOCK WALLS SHALL FINISH 20mm SHORT OF SLAB SOFFIT AND SHALL BE FASTENED TO THE SOFFIT USING M.E.T - 4 SLIDING TIES OR APPROVED EQUIVALENT AT 400mm CENTRES U.N.O.

CM13. LOADBEARING HOLLOW BLOCK WALLS SHALL BE CAPPED WITH M.E.T. GRAPHITE GREASED SLIP JOINT OVER TOP COURSE OF BLOCKWORK.

CM14. WHERE MASONRY ADJOINS STRUCTURAL STEEL OR PASSES A RETURN WALL ON THE INNER SKIN, INSTALL MEDIUM DUTY TIES @ 400 MAXIMUM CT. SHOT FIX TIES TO STEELWORK.

CM15. MINIMUM COVER TO REINFORCEMENT FROM THE INSIDE FACE OF THE FACE SHELL IS TO BE 25mm.

CM16. NO AIR ENTRAINING AGENTS (BYCOL, ETC.) ARE TO BE USED WITHOUT PRIOR WRITTEN PERMISSION FROM NORTHROP CONSULTING ENGINEERS.

CM17. MATERIALS INCLUDING MORTAR, CONCRETE, GROUT SHALL COMPLY WITH SECTION 10 OF AS3700-2001. MASONRY UNITS SHALL COMPLY WITH AS/NZS 4455.1-2008. WALL TIES SHALL COMPLY WITH AS/NZS 2699.1-2000.

CM18. MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 11 OF AS3700-2001.

CM19. DO NOT CONSTRUCT UNREINFORCED OR NON-LOAD BEARING REINFORCED MASONRY WALLS ON SUSPENDED CONCRETE SLABS UNTIL SLAB HAS BEEN STRIPPED AND DE-PROPPED.

CM20. ALL LINTELS SUPPORTING BLOCKWORK ARE TO BE HOT DIP GALVANISED WITH MINIMUM COATING MASS OF 300g/m^2.
PROVIDE 1 LINTEL TO EACH WALL LEAF. DO NOT CUT ON SITE. KEEP LINTELS 6mm CLEAR OF DOOR HEADS AND WINDOW FRAMES. PACK MORTAR BETWEEN THE ANGLE UPSTAND AND SUPPORT MASONRY UNITS.
MINIMUM BEARING EACH END OF LINTELS:
- SPANS 0mm to 1800mm = 200mm BEARING EACH END.
- SPANS 1801mm to 3000mm = 400mm BEARING EACH END.

PROPPING OF LINTELS:
TO PREVENT DEFLECTION OR EXCESSIVE ROTATION, TEMPORARILY PROP PROPRIETARY COLD-FORMED LINTELS UNTIL THE MASONRY REACHES ITS REQUIRED STRENGTH. MINIMUM PROPPING PERIOD IS TO BE 7 DAYS.

WORKPLACE HEALTH AND SAFETY

WHS1. THE CONTRACTOR AND ALL SUBCONTRACTORS ARE RESPONSIBLE FOR CONSTRUCTING THE WORK IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY (WHS) ACT 2011; WHS REGULATIONS 2017; RELEVANT CODES OF PRACTICE, AUSTRALIAN STANDARDS AND OTHER REGULATORY REQUIREMENTS. THE PRINCIPLE CONTRACTOR MUST INFORM ALL STAKEHOLDERS, INCLUDING NORTHROP, OF NEW HAZARDS IDENTIFIED IN THE COURSE OF PLANNING AND UNDERTAKING THE WORKS.

WHS2. DURING THE DESIGN OF THE STRUCTURE NORTHROP HAS IDENTIFIED RESIDUAL HAZARDS RELATING TO THE DESIGN OF THE STRUCTURAL WORKS THAT WE CONSIDER TO BE UNUSUAL OR NON-TYPICAL. HAZARDS WHICH ARE NORMAL WORKPLACE HAZARDS, ARE TO BE MANAGED BY PERSONS IN CONTROL OF THE WORKPLACE THROUGH A WHS SYSTEM TO MANAGE THE NORMAL HAZARDS ASSOCIATED WITH CONSTRUCTION, USE AND MAINTENANCE OF THE STRUCTURE. THE RESIDUAL HAZARDS IDENTIFIED ON THE NORTHROP DRAWINGS ARE NOT AN ENTIRE ASSESSMENT OF HAZARDS, AND DO NOT RELIEVE OTHER PARTIES OR STAKEHOLDERS OF THE THEIR RESPONSIBILITY UNDER THE WHS ACT 2011, WHS REGULATIONS 2017, AND THE CODE OF PRACTICE FOR SAFE DESIGN OF STRUCTURES.

WHS3. TEMPORARY BRACING AND SUPPORT OF STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE MAINTAINED DURING ALL STAGES OF CONSTRUCTION.

WHS4. RESIDUAL HAZARDS ARE SHOWN ON THE NORTHROP DRAWINGS.
IDENTIFIED BY: S1

CLAY BRICK MASONRY

CB1. MASONRY CONSTRUCTION IS TO CONFORM TO AS3700-2018.
- MORTAR CLASSIFICATION = M4
- DURABILITY CLASSIFICATION OF BUILT IN COMPONENTS = R4
- DURABILITY GRADE OF EXTERNAL MASONRY UNITS = EXPOSURE

CB2. THE CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF THE MASONRY UNITS SHALL BE A MINIMUM OF 20MPa.

CB3. BED UNITS IN FRESHLY PREPARED MORTAR, UNIFORMLY MIXED CEMENT, LIME AND SAND IN THE RATIO OF 1:0.5:4.5 CONFORMING TO AS 3700-2011.

CB4. NO CUTTING, CHASING OR RAKING OF JOINTS IN EXCESS OF 5mm UNLESS AUTHORISED BY NORTHROP CONSULTING ENGINEERS FOR EVERY LOCATION.

CB5. CONTROL JOINTS IN UNREINFORCED WALLS SHALL BE PROVIDED AS FOLLOWS;
CLASS A & S - 8m MAX CTS & 5m CTS WHERE OPENINGS ≥ 0.9m x 0.9m OCCUR
CLASS M - 5m MAX CTS (UP TO 4m HIGH WALL), 3.9m MAX CTS (4.0m to 8.5m HIGH WALL)
CLASS H - 4.5m MAX CTS (UP TO 4m HIGH WALL), 3.2m MAX CTS (4.0m to 8.5m HIGH WALL)
- JOINTS TO BE 0.47m MINIMUM FROM CORNERS
- JOINTS TO BE 4.5m MAXIMUM FROM CORNERS
- JOINTS TO BE 4.0m MAXIMUM CTS AT PARAPETS
- WHERE THE HEIGHT OF THE WALL CHANGES BY MORE THAN 20%, AT THE POSITION OF THE CHANGE
- WHERE THE WALL CHANGES IN THICKNESS
- AT CONTROL OR CONSTRUCTION JOINTS IN SLABS
- AT JUNCTIONS OF WALLS CONSTRUCTED OF DIFFERENT MASONRY MATERIAL

CB6. MASONRY TIES SHALL BE GRADE 316 STAINLESS STEEL AND OF MEDIUM DUTY CLASSIFICATION FOR CAVITIES UP TO 60mm WIDE & HEAVY DUTY CLASSIFICATION FOR CAVITIES OVER 60mm WIDE. ANY FACE FIXED TIE SHALL BE FIXED USING A SCREW TYPE FIXING AND SHALL NOT BE NAILED.

CB7. PROVIDE SLIDING HORIZONTAL TIES ACROSS JOINTS IN WALLS EQUIVALENT TO MET 3-3 AT 460 CTS VERTICALLY IN EACH FACE OF THE BRICKS.

CB8. SPACING OF MASONRY TIES:
- 460mm VERTICALLY & 470mm HORIZONTALLY ADJACENT TO WINDOWS AND RETURN WALLS.
- 460mm VERTICALLY & 470mm HORIZONTALLY FOR SOLID MASONRY
- OTHERWISE, 600mm VERTICALLY AND HORIZONTALLY.

CB9. WHERE MASONRY ADJOINS STRUCTURAL STEEL, OR PASSES A RETURN WALL ON THE INNER SKIN PROVIDE MEDIUM DUTY TIES AT 360mm MAXIMUM CENTRES. SHOT FIX TIES TO STEELWORK.

CB10. LOADBEARING WALLS SHALL BE TOPPED WITH TWO (2) LAYERS OF ALCOR OVER THE TOP COURSE OF BRICKWORK, TROWEL A LAYER OF MORTAR FILLING ALL HOLES AND DEPRESSIONS IN TOP COURSE OF BRICKWORK UNDER THE ALCOR.

CB11. NON-LOADBEARING WALLS SHALL FINISH 20mm SHORT OF SLAB SOFFIT AND SHALL BE FASTENED TO THE SLAB SOFFIT USING M.E.T - 4 SLIDING TIES OR APPROVED EQUIVALENT AT 460mm CENTRES.

CB12. U.N.O. ALL MASONRY ANCHORS INTO CLAY MASONRY SHALL BE HILTI HIT-HY270 CHEMICAL INJECTION ANCHORS OR APPROVED EQUIVALENT & ANCHORS EXPOSED TO WEATHER SHALL BE GRADE 316 STAINLESS STEEL.

CB13. NO AIR ENTRAINING AGENTS (BYCOL, ETC) ARE TO BE USED WITHOUT PRIOR WRITTEN PERMISSION FROM NORTHROP CONSULTING ENGINEERS.

CB14. MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 11 OF AS3700.

CB15. DO NOT CONSTRUCT MASONRY WALLS ON SUSPENDED CONCRETE SLABS UNTIL SLAB HAS BEEN STRIPPED AND DEPROPPED.

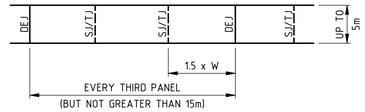
CB16. ALL LINTELS SUPPORTING BRICKWORK ARE TO BE GRADE 316 STAINLESS STEEL or R4 RATED LINTEL. PROVIDE 1 LINTEL TO EACH WALL LEAF. DO NOT CUT ON SITE. KEEP LINTELS 6mm CLEAR OF DOOR HEADS AND WINDOW FRAMES. PACK MORTAR BETWEEN THE ANGLE UPSTAND AND SUPPORT MASONRY UNITS.
MINIMUM LINTEL SIZES (AS PER AS4773.1) OR AS FOLLOWS:
- SPANS 0mm to 900mm = 10mm FLAT BAR.
- SPANS 901mm to 2100mm = 100 x 100 x 10 EA.
- SPANS 2101mm to 3100mm = 150 x 100 x 10 UA.

MINIMUM BEARING EACH END OF LINTELS:
- SPANS 0mm to 1800mm = 110mm BEARING EACH END.
- SPANS 1801mm to 3000mm = 230mm BEARING EACH END.

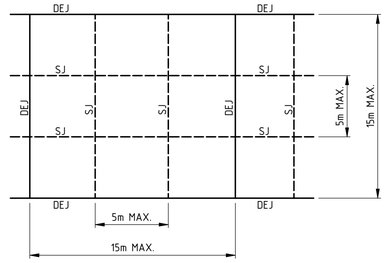
PROPPING OF LINTELS:
TO PREVENT DEFLECTION OR EXCESSIVE ROTATION, TEMPORARILY PROP PROPRIETARY COLD-FORMED LINTELS UNTIL THE MASONRY REACHES ITS REQUIRED STRENGTH. MINIMUM PROPPING PERIOD IS TO BE 7 DAYS.

PAVEMENT JOINTS

1. PROVIDE ISOLATION JOINTS BETWEEN NEW CONCRETE WORKS AND EXISTING STRUCTURES.
2. PAVEMENTS.
ALL PAVEMENTS ARE TO BE JOINTED AS FOLLOWS
U.N.O. ON THE DESIGN DRAWINGS.
3. DOWELLED EXPANSION JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX. CENTRES AS PER DETAIL.
4. SAWN JOINTS ARE TO BE LOCATED AT A MAX. SPACING OF 1.5m x WIDTH OF THE PAVEMENT.
5. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS.
6. TYPICAL PAVEMENT JOINT DETAIL TYPE A.



7. TYPICAL PAVEMENT JOINT DETAIL TYPE B.



8. KERB EXPANSION JOINTS SHALL BE FORMED 10mm ABLEFLEX FOR FULL DEPTH OF SECTION.
9. KERB EXPANSION JOINTS TO BE LOCATED AR DRAINAGE PITS, TANGENT POINTS OF CURVES / CORNERS AND AT 12m MAX CENTRES.
10. KERB TOOLED JOINTS TO BE MIN 3mm WIDE AND LOCATED AT MAX 3m CENTRES.
11. INTEGRAL KERB JOINTS SHALL MATCH THE LOCATION OF PAVEMENT JOINTS.

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY ISSUE	HA		RP	11.05.23
2	ISSUED FOR TENDER	HA		RP	24.05.23
3	REVISED TENDER ISSUE	HA		RP	10.08.23
4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT: TAYLOR
DRAWINGS NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT: turf

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

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Level 1, 57 Kembla Street, Wollongong, N.S.W. 2500
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ABN 81 094 433 100

PROJECT: SUBBASE PLATYPUS
120 High St, North Sydney NSW 2060

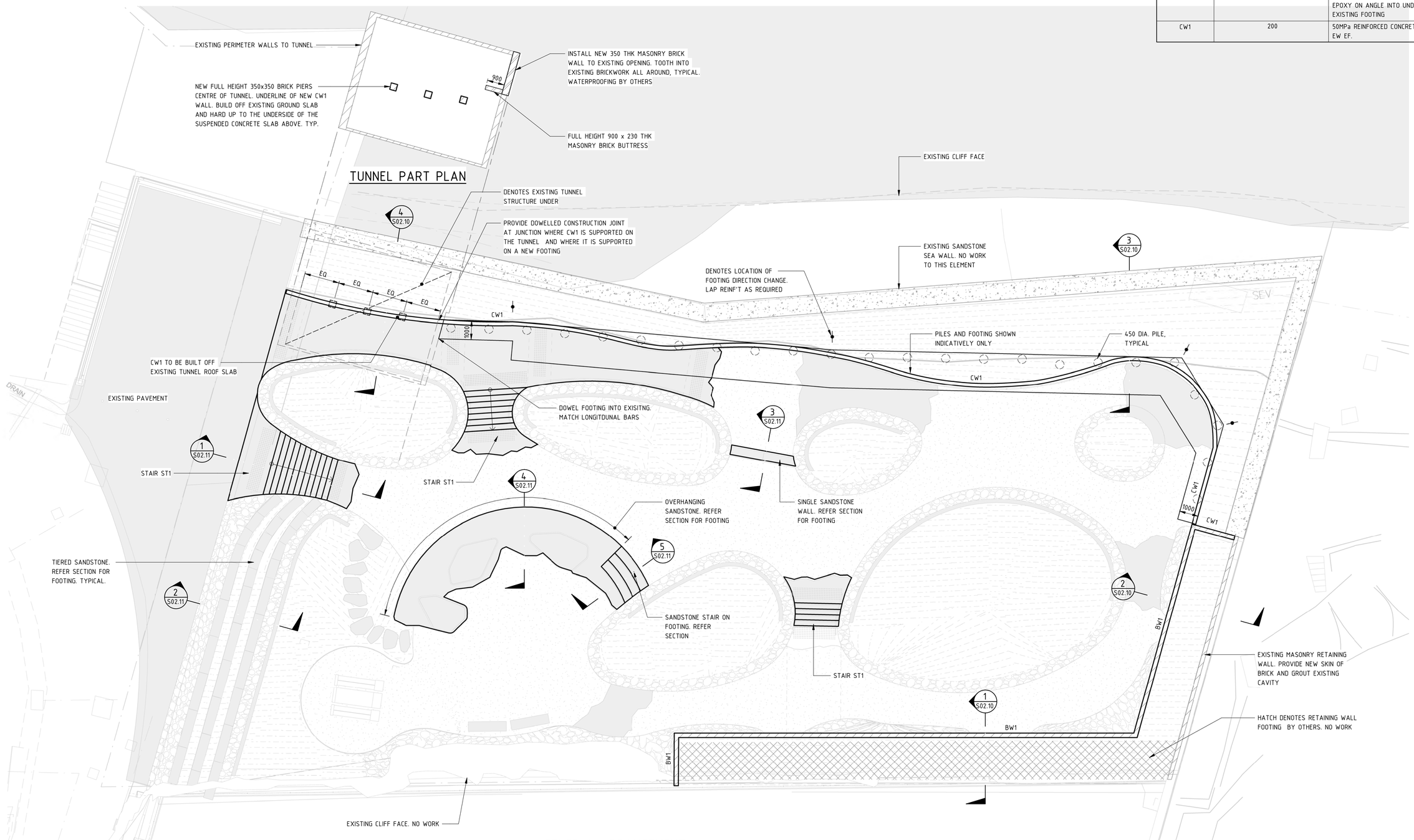
DRAWING TITLE: STRUCTURAL DRAWING SPECIFICATION NOTES - SHEET 2

JOB NUMBER: 230309
DRAWING NUMBER: S00.02
REVISION: 5
DRAWING SHEET SIZE = A1

NOTE: FOR SPECIFICATION NOTES, REFER TO DRAWING S00.01 - S00.02

WALL SCHEDULE

MARK	THICKNESS	COMMENT(S)
BW1	190	BRICK WALL. N16-400 DOWELS DRILL & EPOXY ON ANGLE INTO UNDERSIDE OF EXISTING FOOTING
CW1	200	50MPa REINFORCED CONCRETE - N12-200 EW EF.



GENERAL ARRANGEMENT

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY ISSUE	HA		RP	11.05.23
2	ISSUED FOR TENDER	HA		RP	24.05.23
3	REVISED TENDER ISSUE	HA		RP	10.08.23
4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT: TAYLOR

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ARCHITECT: turf

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NORTHROP
Wollongong
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ABN 81 094 433 100

PROJECT: **SUBBASE PLATYPUS**
120 High St, North Sydney NSW 2060

DRAWING TITLE: **STRUCTURAL DRAWING GENERAL ARRANGEMENT PLAN**

JOB NUMBER: **230309**

DRAWING NUMBER: **S01.10**

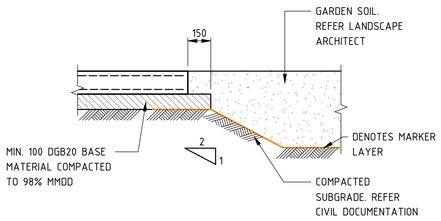
REVISION: **5**

DRAWING SHEET SIZE = A1

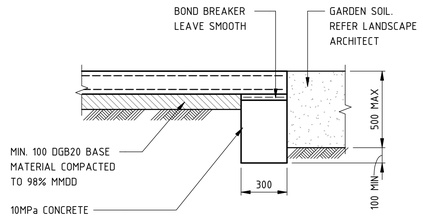
Autodesk Docs://230309 - FORESHORE SUBBASE PLATYPUS/230309-ST-R23-SUBBASE PLATYPUS.rvt

21/02/2024 1:31:05 PM

NOTE: FOR SPECIFICATION NOTES, REFER TO DRAWING S00.01 - S00.02

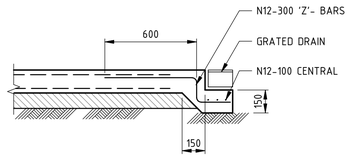


OR

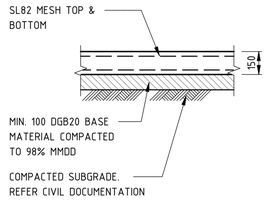


TYPICAL SLAB ON GROUND TO LEVEL GARDEN BED DETAIL

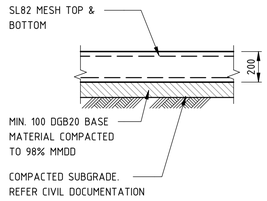
REFER LANDSCAPE ARCHITECT DRAWINGS FOR GARDEN SOIL REQUIREMENTS AND EXTENT



TYPICAL FOLD IN PAVEMENT AT GRATED DRAIN DETAIL

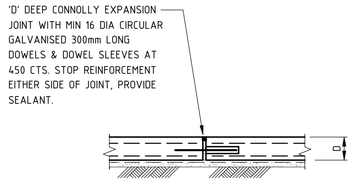


RIGID PAVEMENT TYPE 1



RIGID PAVEMENT TYPE 2

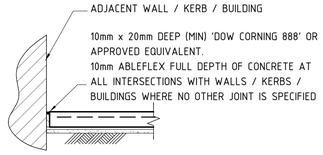
TYPICAL RIGID PAVEMENT TYPE DETAILS



TYPICAL DOWELED EXPANSION JOINT (DEJ) DETAIL

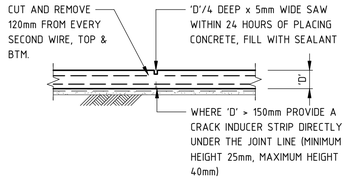
WHERE CONNECTING INTO EXISTING, USE EPOXY ANCHORS WITH MIN 200 EMBEDMENT

DENOTED ——DEJ—— ON PLAN



ISOLATION JOINT (IJ)

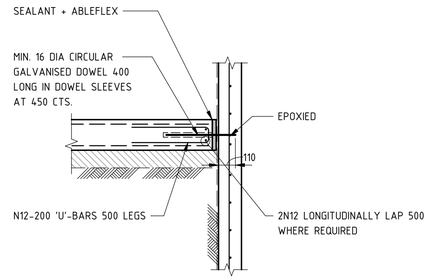
NOT SHOWN ON PLAN



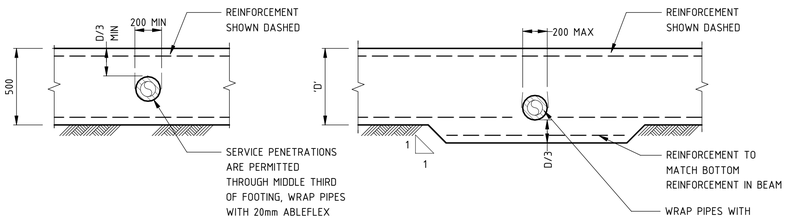
SAWN JOINT (SJ)

DENOTED ——SJ—— ON PLAN

JOINT TO BE SAWN AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY THAT IT WILL NOT BE DAMAGED BY SAWING (MAXIMUM 24 HOURS)



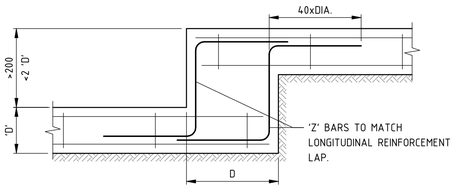
TYPICAL PAVEMENT TO RETAINING WALL JOINT DETAIL



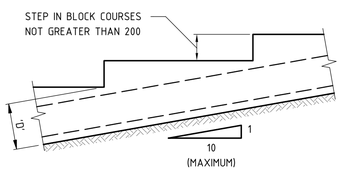
CENTRAL PENETRATION

PENETRATION IN BOTTOM 1/3 OF BEAM

TYPICAL FOOTING PENETRATION DETAILS

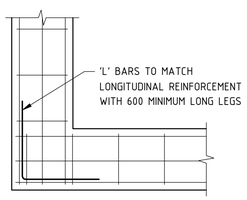


STEPPED FOOTING BEAM

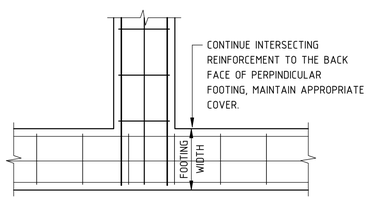


SLOPED FOOTING BEAM

TYPICAL FOOTING STEP DETAILS



CORNER



INTERSECTION

TYPICAL FOOTING JUNCTION DETAILS

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY ISSUE	HA		RP	11.05.23
2	ISSUED FOR TENDER	HA		RP	24.05.23
3	REVISED TENDER ISSUE	HA		RP	10.08.23
4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT: TAYLOR

DRAWINGS NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT: turf

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

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NORTHROP
Wollongong
Level 1, 57 Kembla Street, Wollongong, N.S.W. 2500
Ph (02) 4226 3333 Email: southcoast@northrop.com.au
ABN 81 094 433 100

PROJECT: **SUBBASE PLATYPUS 120 High St, North Sydney NSW 2060**

DRAWING TITLE: **STRUCTURAL DRAWING TYPICAL SECTIONS & DETAIL - SHEET 1**

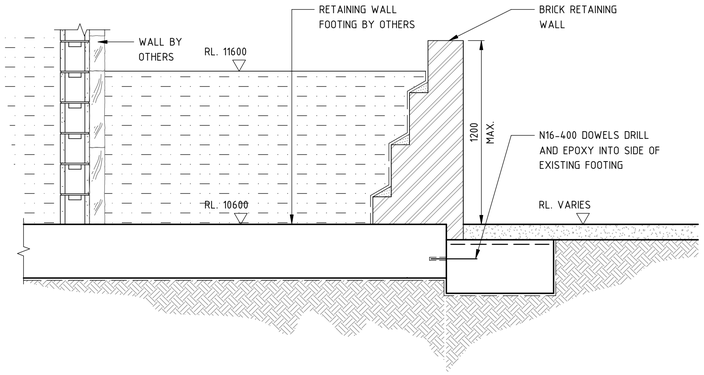
JOB NUMBER: **230309**

DRAWING NUMBER: **S02.00**

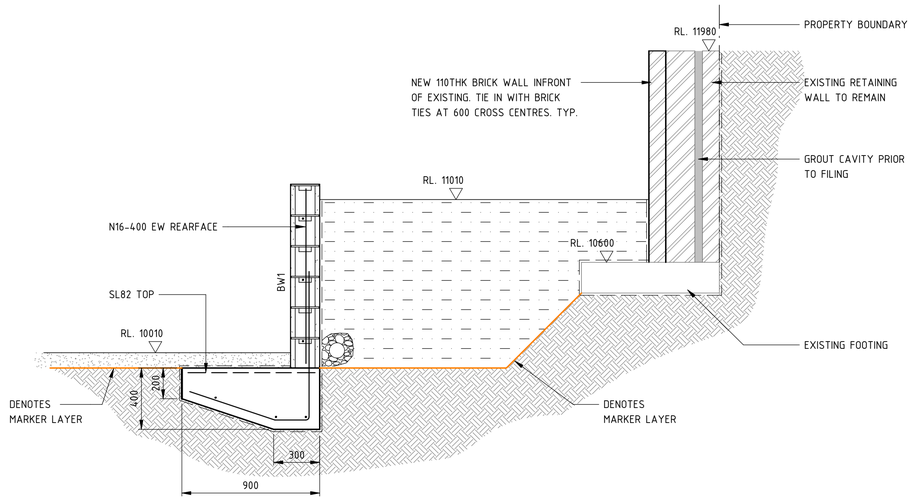
REVISION: **5**

DRAWING SHEET SIZE = A1

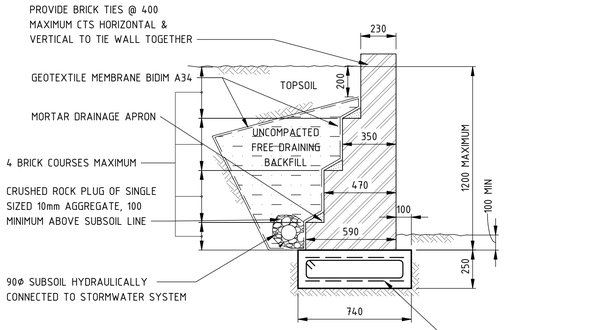
NOTE: FOR SPECIFICATION NOTES, REFER TO DRAWING S00.01 - S00.02



SECTION 1 S01.10



SECTION 2 S01.10



INCREASE WIDTH OF RETAINING WALL ONE BRICK WIDTH FOR EVERY FIVE COURSES IN HEIGHT. INCREASE WIDTH OF STRIP FOOTING TO SUIT

BRICKWORK RETAINING WALL

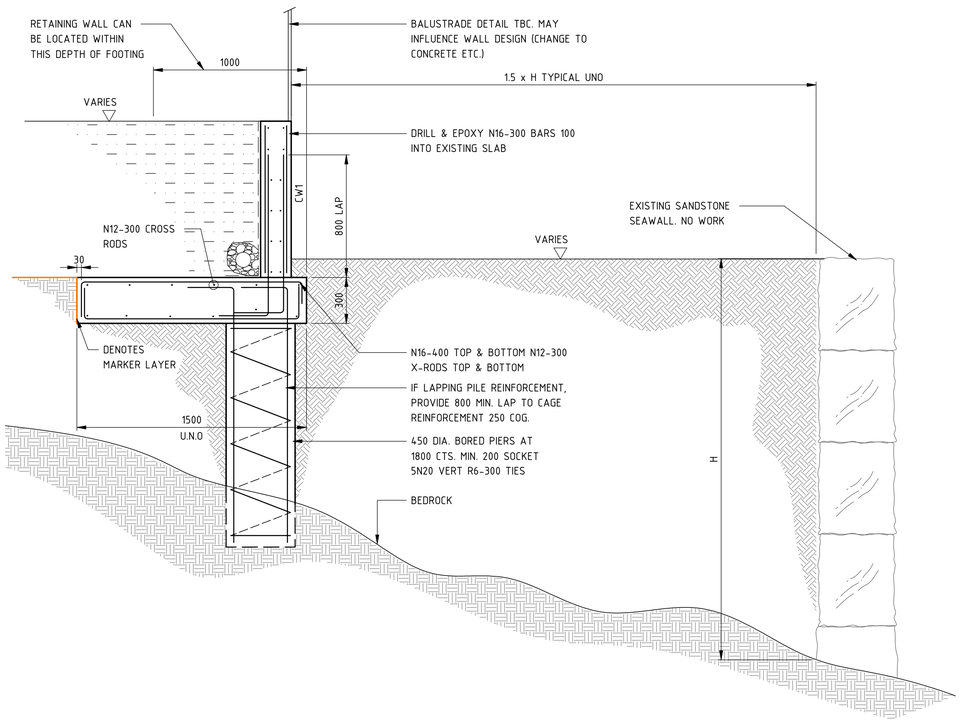
PROVIDE CONTROL JOINTS @ 8000mm MAXIMUM CTS

RETAINING WALL NOTES:

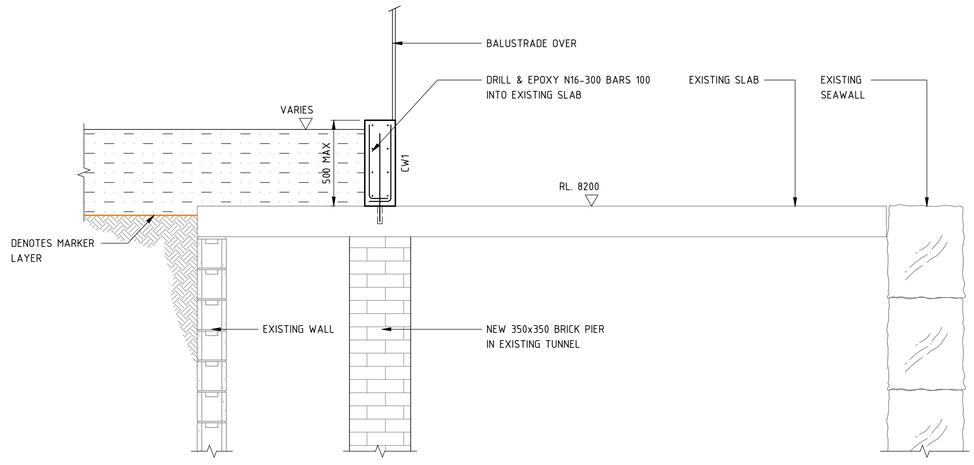
* BRICK STRENGTH = 20MPa
* MORTAR = 1:1:6, LIME : CEMENT : SAND
* THIS WALL HAS BEEN DESIGNED ASSUMING NO SURCHARGE. EG WHEEL LOADS OR BUILDING FOOTINGS WITHIN A DISTANCE EQUAL TO 1.5 x THE HEIGHT OF WALL FROM TOP OF WALL
* THE BUILDER IS TO MAINTAIN THE STABILITY OF THE WALL DURING BACKFILLING PROCEDURE
* REAR FACE OF WALL IS TO BE WATERPROOFED TO DETAILS BY OTHERS.

WALL SCHEDULE

MARK	THICKNESS	COMMENT(S)
BW1	190	BRICK WALL. N16-400 DOWELS DRILL & EPOXY ON ANGLE INTO UNDERSIDE OF EXISTING FOOTING
CW1	200	50MPa REINFORCED CONCRETE - N12-200 EW EF.



SECTION 3 S01.10



SECTION 4 S01.10

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

REV	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	PRELIMINARY ISSUE	HA		RP	11.05.23
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4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT: TAYLOR

DRAWINGS NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT: turf

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH ARCHITECT AND BUILDER BEFORE COMMENCING SHOP DRAWINGS OR SITE WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

0 200 400 600 800 1000 SCALE: 1:20

NORTHROP
Wollongong
Level 1, 57 Kembla Street, Wollongong, N.S.W. 2500
Ph (02) 4226 3333 Email: southcoast@northrop.com.au
ABN 81 094 433 100

PROJECT: **SUBBASE PLATYPUS**
120 High St, North Sydney NSW 2060

DRAWING TITLE: **STRUCTURAL DRAWING SECTIONS & DETAILS - SHEET 1**

JOB NUMBER: **230309**

DRAWING NUMBER: **S02.10**

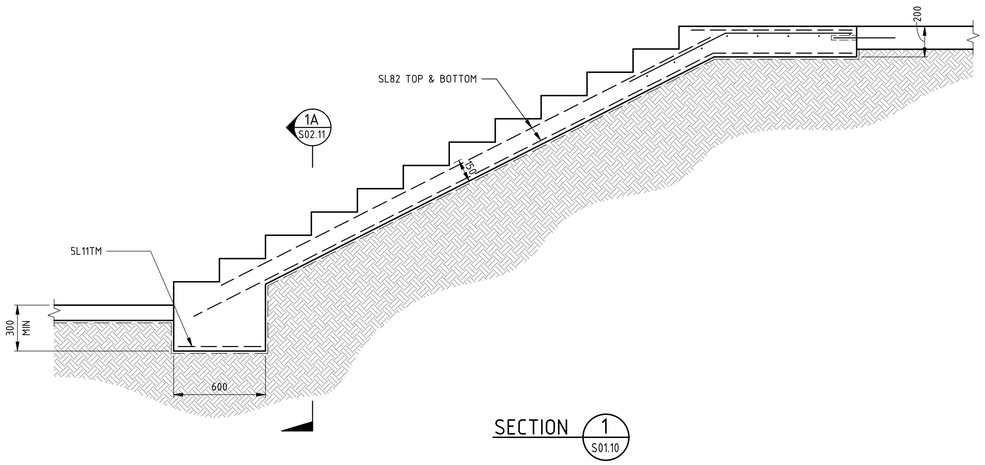
REVISION: **5**

DRAWING SHEET SIZE = A1

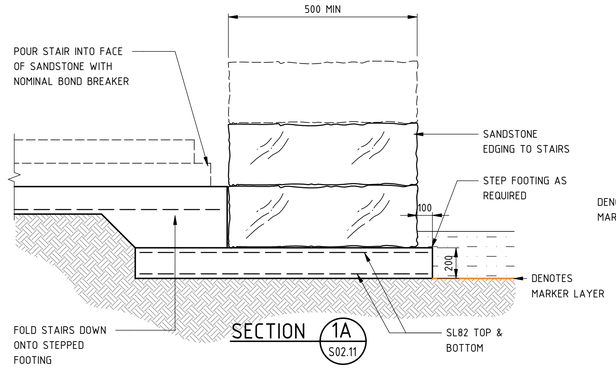
Autodesk Docs://230309 - FORESHORE SUBBASE PLATYPUS/230309-ST-R23-SUBBASE PLATYPUS.rvt

21/02/2024 1:31:20 PM

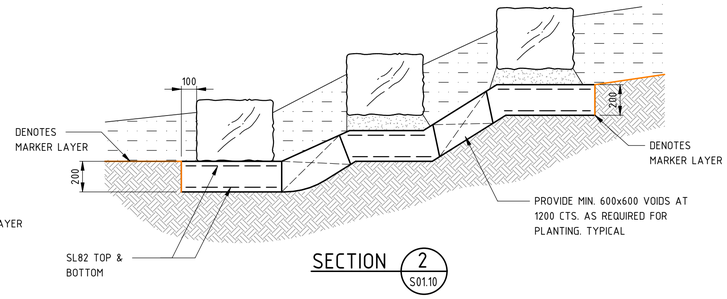
NOTE: FOR SPECIFICATION NOTES, REFER TO DRAWING S00.01 - S00.02



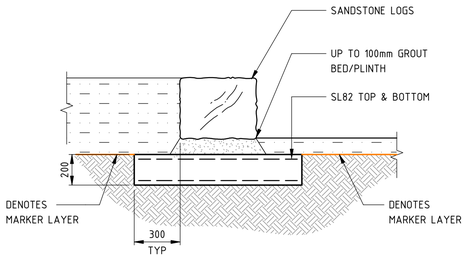
SECTION 1 S01.10



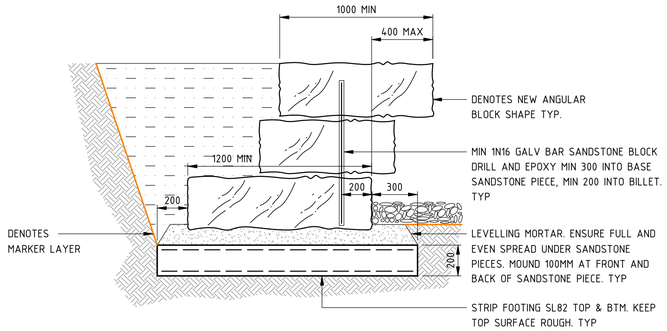
SECTION 1A S02.11



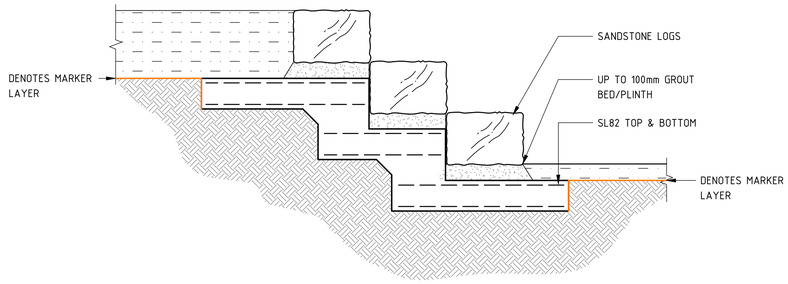
SECTION 2 S01.10



SECTION 3 S01.10



SECTION 4 S01.10



SECTION 5 S01.10

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

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4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24

CLIENT
TAYLOR

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ARCHITECT
turf

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Wollongong
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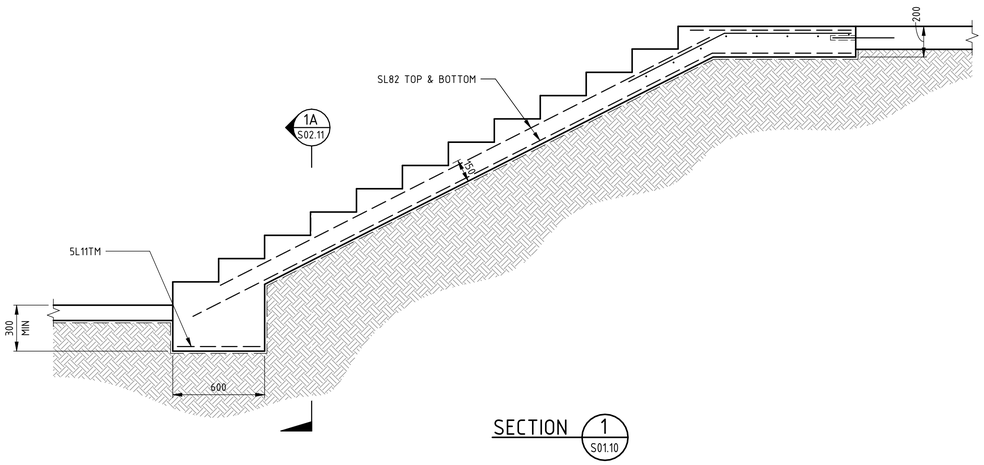
Ph (02) 4226 3333 Email: southcoast@northrop.com.au
ABN 81 094 433 100

PROJECT
SUBBASE PLATYPUS
120 High St, North Sydney NSW 2060

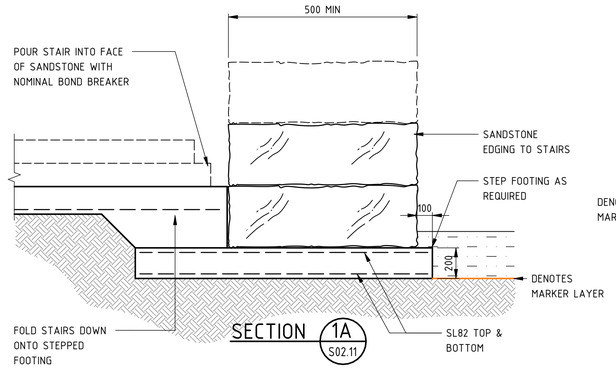
DRAWING TITLE
STRUCTURAL DRAWING SECTIONS & DETAILS - SHEET 2

JOB NUMBER **230309**
DRAWING NUMBER **S02.11**
REVISION **5**
DRAWING SHEET SIZE = A1

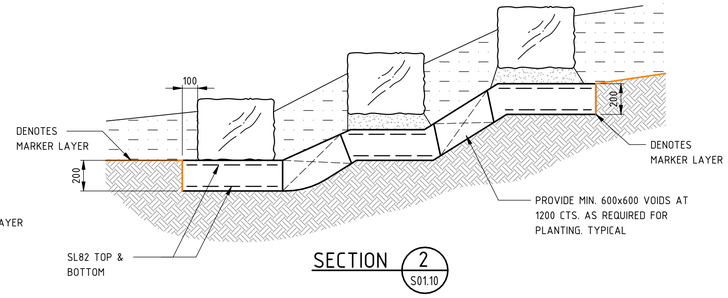
NOTE: FOR SPECIFICATION NOTES, REFER TO DRAWING S00.01 - S00.02



SECTION 1 S01.10



SECTION 1A S02.11



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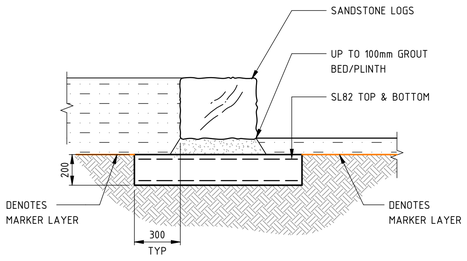
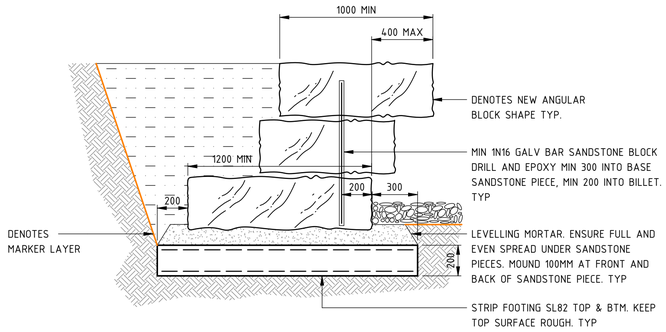
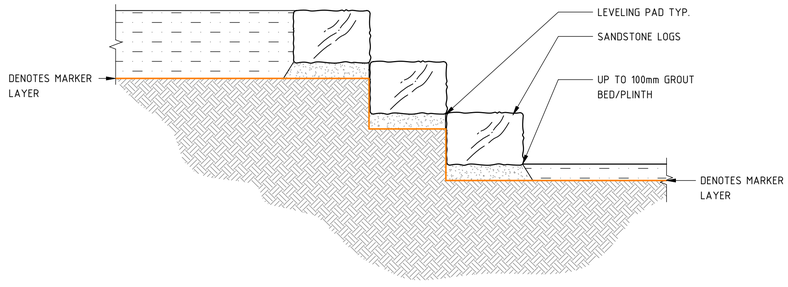


SECTION 3 S01.10



SECTION 4 S01.10



SECTION 5 S01.10

VERIFIER:
JOB MANAGER: R. PRATT
DESIGNED: R. PRATT
DRAWN: H. ABELLA

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4	REVISED TENDER ISSUE	NTH		RP	08.09.23
5	AS BUILT	TAT		RP	21.02.24
6	AS BUILT	SC		RP	15.03.24

CLIENT: TAYLOR

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ARCHITECT: turf

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Ph (02) 4226 3333 Email: southcoast@northrop.com.au
ABN 81 094 433 100

PROJECT: SUBBASE PLATYPUS
120 High St, North Sydney NSW 2060

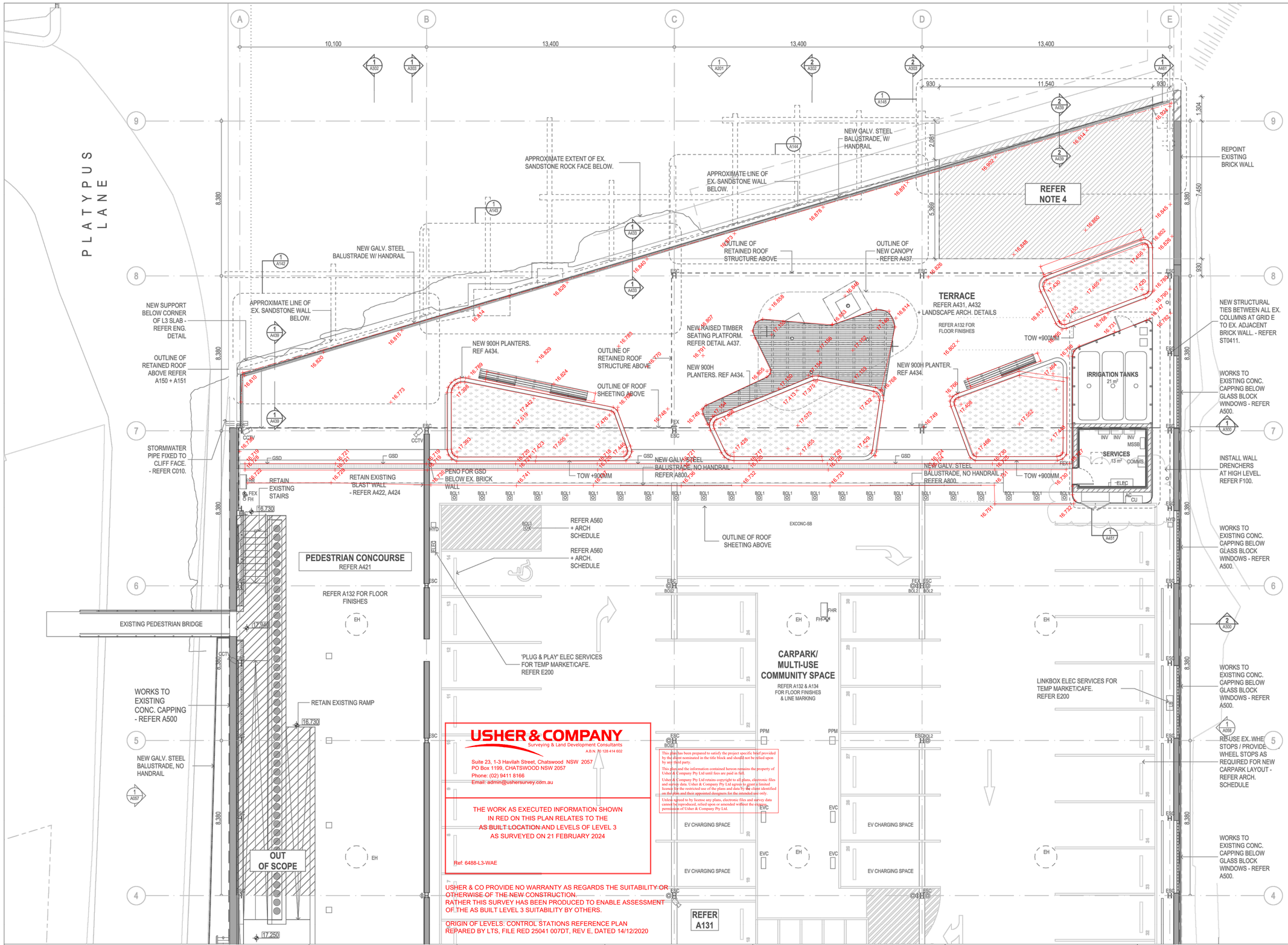
DRAWING TITLE: STRUCTURAL DRAWING SECTIONS & DETAILS - SHEET 2

JOB NUMBER: 230309
DRAWING NUMBER: S02.11
REVISION: 6
DRAWING SHEET SIZE = A1

Autodesk Docs://230309 - FORESHORE SUBBASE PLATYPUS/230309-ST-R23-SUBBASE PLATYPUS.rvt

15/03/2024 12:06:46 PM

I4 Registered Survey



GENERAL LEGEND

BAL[#]	BALUSTRADE TYPE [#]
BOL[#]	BOLLARD TYPE [#]
CJ	CONTROL JOINT
DB	DISTRIBUTION BOARD
DP	DOWNPIPE
EVC	ELECTRIC VEHICLE CHARGING STATION
FB	FIRE BLANKET
FEX	FIRE EXTINGUISHER
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FIP	FIRE INDICATOR PANEL
FW	FLOOR WASTE
GSD	GRATED STRIP DRAIN WITH HEEL GUARD
HR[#]	HANDRAIL TYPE [#]
HT	HEATER (EX. HERITAGE ITEM)
MSB	MECHANICAL SWITCH BOARD
PPM	PAID PARKING METER
RWO	RAINWATER OVERFLOW
SC	STEEL COLUMN
SL	STATIC LINE
SN[#]	SIGNAGE TYPE [#]
SPB	SUSPENDED PLANTER
TB	TIMBER BENCH
TGSI[#]	TACTILE GROUND SURFACE INDICATOR TYPE [#]
WS	WHEEL STOP

PREFIX

EX.	EXISTING ELEMENT

NOTE :
REFER TO FINISHES SCHEDULE FOR DETAILED MATERIAL AND COLOUR SELECTIONS.

MATERIALS & FINISHES LEGEND

BFC	BROOM FINISHED CONCRETE
BRK	BRICK
BLK	BLOCK WALL IN PAINT FINISH
CFC	FIBRE CEMENT SHEETING (REFER TO FINISHES SCHEDULE)
CT	CERAMIC WALL TILES
CONC	CONCRETE
CWWP	CONCRETE WALL W/ WATERPROOFING LAYER
GB	GLASS BLOCK
MS[#]	METAL SHEET TYPE [#]
PB	PLASTERBOARD
PBS	PLASTERBOARD SUSP. CEILING
PA[#]	PAINT FINISH TYPE [#]
PFM	PERFORATED METAL
RF	ROOF METAL SHEET
RBP	RECYCLED BRICK PAVERS. BRICKS TO BE COLLECTED FROM EX. BUILDING DURING DEMO WORKS, CLEANED & DECONTAMINATED FOR USE.
SB	SANDBLASTED CONCRETE
SPL	STEEL PLATE
SS	STAINLESS STEEL

NOTE :
REFER TO ARCH SCHEDULE FOR DETAILED MATERIAL AND COLOUR SELECTIONS.

NOTES:
1. LEAD PAINT REMEDIATION + REPAINTING REQUIRED TO ALL EX. L3 STEEL COLUMNS, ROOF TRUSSES + BLAST WALLS / SCOPE AND METHODOLOGY FOR HAZARDOUS MATERIAL REMEDIATION TO BE DETERMINED IN CONSULTATION WITH SHFT.
2. REFER TO F100 SHEET FOR THE STROBE LIGHTS AND THERMAL DETECTOR LOCATIONS.
3. ZONE OF NEW INFILL STRUCTURAL TOPPING SLAB - REFER A132 & STRUCT. ENG. DETAILS.

REFER A131
FOR CONTINUATION OF DRAWING

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602
Suite 23, 1-3 Havilah Street, Chatswood NSW 2057
PO Box 1199, CHATSWOOD NSW 2057
Phone: (02) 9411 8166
Email: admin@ushersurvey.com.au

THE WORK AS EXECUTED INFORMATION SHOWN IN RED ON THIS PLAN RELATES TO THE AS BUILT LOCATION AND LEVELS OF LEVEL 3 AS SURVEYED ON 21 FEBRUARY 2024

Ref: 6488-L3-WAE

USHER & CO PROVIDE NO WARRANTY AS REGARDS THE SUITABILITY OR OTHERWISE OF THE NEW CONSTRUCTION. RATHER THIS SURVEY HAS BEEN PRODUCED TO ENABLE ASSESSMENT OF THE AS BUILT LEVEL 3 SUITABILITY BY OTHERS.

ORIGIN OF LEVELS: CONTROL STATIONS REFERENCE PLAN REPARED BY LTS, FILE RED 25041 007DT, REV E, DATED 14/12/2020

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WSP
LEVEL 1
121 MARCUS CLARKE STREET
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ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK

ORIGINAL SHEET SIZE A1
0 1 2 3 4 5m Metres @ 1:100

REV	DATE	ISSUE DESCRIPTION	CHECK
A	11.03.22	ISSUE FOR CONSTRUCTION	AD
B	23.09.22	IFC - UPDATED	AD
C	21.10.22	IFC - FEX LOCATIONS UPDATED	AD
D	18.11.22	IFC - UPDATE	AD
E	17.02.23	IFC - SERVICES ENCLOSURE UPDATED	AD

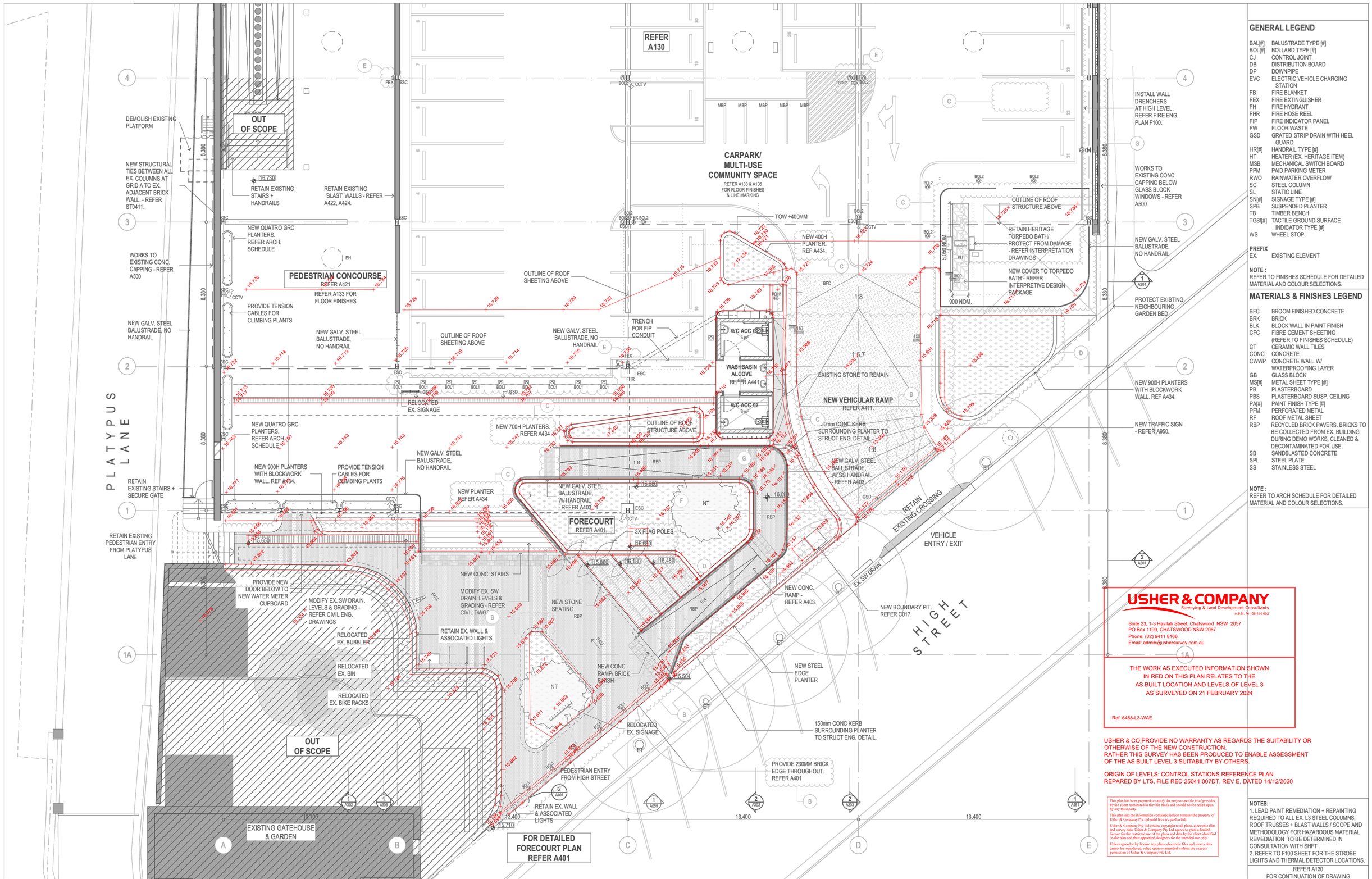
REV	DATE	ISSUE DESCRIPTION	CHECK

PROJECT
TORPEDO FACTORY RENEWAL PROJECT
120 High Street, North Sydney, NSW 2060 AUSTRALIA

TITLE
PLAN - LEVEL 3 EAST

SCALE 1:100	PROJECT CODE 20023
SHEET NO. A130	ISSUE E

FOR CONSTRUCTION



GENERAL LEGEND

BAL[#]	BALUSTRADE TYPE [#]
BOL[#]	BOLLARD TYPE [#]
CJ	CONTROL JOINT
DB	DISTRIBUTION BOARD
DP	DOWNPIPE
EVC	ELECTRIC VEHICLE CHARGING STATION
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TGS[#]	TACTILE GROUND SURFACE INDICATOR TYPE [#]
WS	WHEEL STOP

PREFIX

EX.	EXISTING ELEMENT

NOTE :
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MATERIALS & FINISHES LEGEND

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BLK	BLOCK WALL IN PAINT FINISH
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NOTE :
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PO Box 1199, CHATSWOOD NSW 2057
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Email: admin@ushersurvey.com.au

THE WORK AS EXECUTED INFORMATION SHOWN IN RED ON THIS PLAN RELATES TO THE AS BUILT LOCATION AND LEVELS OF LEVEL 3 AS SURVEYED ON 21 FEBRUARY 2024

Ref: 6488-L3-WAE

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ORIGIN OF LEVELS: CONTROL STATIONS REFERENCE PLAN REPARED BY LTS, FILE RED 25041 007DT, REV E, DATED 14/12/2020

NOTES:
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2. REFER TO F100 SHEET FOR THE STROBE LIGHTS AND THERMAL DETECTOR LOCATIONS.

REFER A130 FOR CONTINUATION OF DRAWING

CONSULTANTS

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ARCHITECT

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Fyshwick ACT 2609
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Phone +61 2 6280 7080
gmb@gmbarchitects.com
www.gmbarchitects.com

ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK

ORIGINAL SHEET SIZE A1

0 1 2 3 4 5m Meters @ 1:100

REV	DATE	ISSUE DESCRIPTION	CHECK
A	11.03.22	ISSUE FOR CONSTRUCTION	AD
B	22.07.22	IFC - EXTENT OF BRICK EDGE INDICATED	AD
C	23.09.22	IFC - UPDATED	AD
D	14.10.22	ADDITIONAL FORECOURT DETAILS	AD
E	21.10.22	IFC - FEX LOCATIONS UPDATED	AD
F	28.10.22	IFC - FLAG POLES PROVIDED	AD
G	18.11.22	IFC - UPDATE	AD

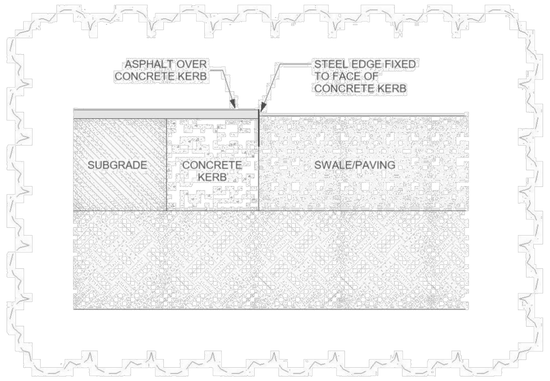
REV	DATE	ISSUE DESCRIPTION	CHECK

PROJECT
TORPEDO FACTORY RENEWAL PROJECT
120 High Street, North Sydney, NSW 2060 AUSTRALIA

TITLE
PLAN - LEVEL 3 WEST

SCALE	PROJECT CODE
1:100	20023
SHEET NO.	ISSUE
A131	G

FOR CONSTRUCTION



USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602
Suite 23, 1-3 Havilah Street, Chatswood NSW 2057
PO Box 1199, CHATSWOOD NSW 2057
Phone: (02) 9411 8166
Email: admin@ushersurvey.com.au

THE WORK AS EXECUTED INFORMATION SHOWN IN RED ON THIS PLAN RELATES TO THE AS BUILT LOCATION AND LEVELS OF LEVEL 1 AS SURVEYED ON 11 MARCH 2024

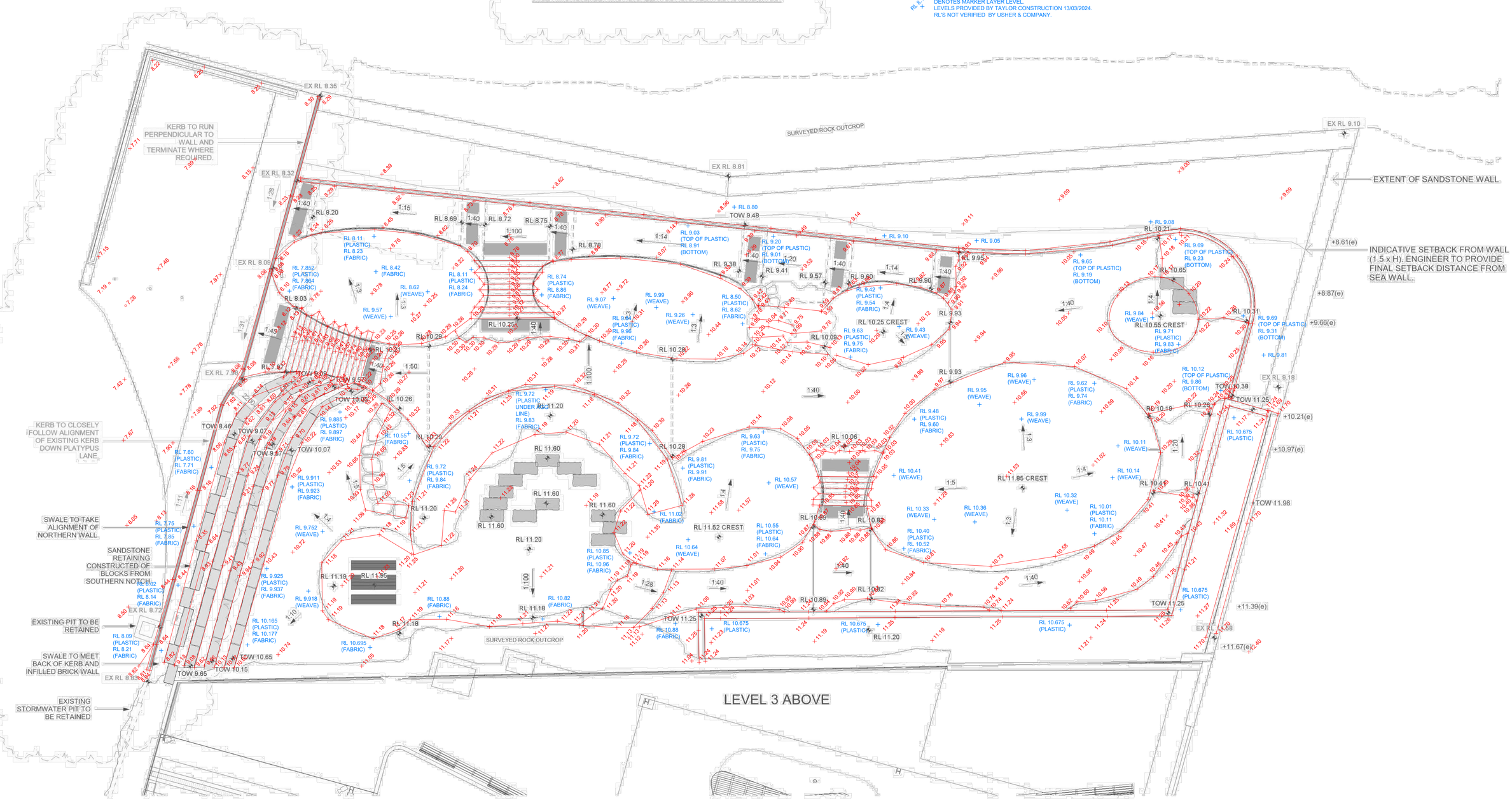
Ref: 6488-L1-WAE-2

USHER & CO PROVIDE NO WARRANTY AS REGARDS THE SUITABILITY OR OTHERWISE OF THE NEW CONSTRUCTION. RATHER THIS SURVEY HAS BEEN PRODUCED TO ENABLE ASSESSMENT OF THE AS BUILT LEVEL 1 SUITABILITY BY OTHERS.

ORIGIN OF LEVELS: CONTROL STATIONS REFERENCE PLAN
REPARED BY LTS, FILE RED 25041 007DT, REV E, DATED 14/12/2020

LEGEND:

RL 8.11 + DENOTES MARKER LAYER LEVEL.
LEVELS PROVIDED BY TAYLOR CONSTRUCTION 13/03/2024.
RL'S NOT VERIFIED BY USHER & COMPANY.



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SURVEY INFORMATION

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Rev.	Date	Description	Drawn	Checked
N	15/02/2024	FOR CONSTRUCTION	DR	MH
M	23/11/2023	FOR CONSTRUCTION	DR	MH
L	09/11/2023	FOR CONSTRUCTION	DR	MH
K	02/11/2023	FOR INFORMATION	DR	MH
J	19/09/2023	FOR INFORMATION	DR	MH
I	12/09/2023	FOR INFORMATION	DR	SK
H	28/08/2023	FOR INFORMATION	DR	SK
G	17/05/2023	FOR INFORMATION	DR	MH

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Phone (+61 2) 8394 9990
Email sydney@turfdesign.com

Client: Harbour Trust — Australian Government, Sydney Harbour Federation Trust

Project: Sub Base Platypus

Drawing Title: **Levels & Drawing Plan**

Drawing Status: FOR CONSTRUCTION

Scale: 1 : 100 @A1 | Plot Date: 16/02/2024 12:57:11 PM

Project No.: 2040 | Drawing No.: L-P-300 | Revision: N

SCALE 1:100 @ A1 , 1:200 @ A3

BW:\09\2040_Sub Base Platypus\2040_Sub Base Platypus_20_.rvt