Design Report - Civil

Bathurst Hospital Redevelopment

Prepared for Health Infrastructure / 24 January 2025

231092

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1.0 Executive Summary

The Site

Bathurst Hospital is located in the city of Bathurst and is part of Western NSW LHD. The subject site has a survey level difference of approximately 25m and falls from Howick Street towards Durham Street. The site has been developed several times since construction of the existing heritage building started in 1880 with the most recent major works completed in 2007. The new hospital is between two and three storeys with carparking at the lower ground level.

Geotechnical Conditions

A project specific geotechnical investigation has been undertaken by RCA Australia. The investigation indicates the existing subsurface conditions comprises variable depths of fill, over stiff residual clays and low strength rock. The depth of fill varies significantly across the site, extending to depths of up to 8m towards the east of the existing hospital building.

A preliminary contamination assessment was carried out as part of the geotechnical investigation. No concentrations of hydrocarbons, metals or pesticides were detected in excess of human health criteria as part of this investigation. Additional information has been made available which indicates a number of deposits of asbestos containing material which have previously been removed from site or encapsulated. Ground water was not encountered during the investigation.

A contamination investigation has been conducted by RCA Australia and provided preliminary advice. RCA considers that the site is suitable for the proposed development without further assessment or remediation however notes that management will be required during construction and for long-term use to minimise the potential of exposure to asbestos materials. Contingency planning and an unexpected finds protocol is also considered to be required to ensure that methodologies can be adjusted to account for any building waste, ash and other areas of asbestos materials which are encountered during the earthworks

Design

The proposed redevelopment involves expansion to the southeast and west of the existing main hospital building. This will include some partial demolition of the existing building, local to the expansion zones.

The expansion to the southeast will be in two parallel ‘wings’, housing a range of services across four and five levels. A semi-basement housing Mental Health and Drug & Alcohol Community Services is located in the northern ‘wing’. The southern ‘wing’ requires demolition of the existing two storey building housing Mental Health – Alcohol & Other Drug Services Unit.

The expansion to the west involves the demolition of the existing Adult Acute Mental Health Unit above ground floor level and the construction of a new single level Emergency Department (ED) on the retained ground floor structure. This allows the existing plant at Lower Ground Floor Level to remain operational during the project works. New Operating theatres are proposed at Level 1 and will extend west from the existing building over the new ED.

Under the future Masterplan for the campus, expansion has been tested through the planning phases of the design to ensure the project scope enables potential further investment and growth in site infrastructure. This includes a Community Green offering additional public spaces. The Community Green is unfunded and any future works would be subject to a separate planning approval and consultation process. Parking demand and availability would be considered in conjunction with any planned works.

A small extension to the Cancer Treatment Unit in the Daffodil Cottage is proposed as part of the project.

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Civil Engineering

The proposed development will require Civil design in accordance with Bathurst Regional Council requirements and Greenstar Building Council of Australia. To satisfy the above authority requirements, the following stormwater measures have been proposed:

- Minor stormwater drainage for ground surface runoff will be designed to the 20-year (5% AEP) storm event as well as generated roof water.
- Major stormwater drainage for ground surface runoff will be designed to the 100-year (1% AEP) storm event as well as generated roof water.
- On-site detention has been proposed prior to the legal point of discharge to mitigate post development flow to pre-developed flows for a 5-year (0.2 EY) storm event.
- Stormwater treatment has been proposed for the Eastern Extension, proposed landscape corridor, reconfigured ED drop-off, and new staff parking adjacent to Commonwealth Street. Stormwater treatment will consist of Bioretention/Raingarden systems, rainwater tank including reuse, and proprietary devices such as OceanGuard pit inserts.
- Stormwater will discharge to two legal points of discharge located at the northern end of Commonwealth Street and Mitre Street. No additional stormwater connections are proposed.
- Additional stormwater treatment measures have been proposed for the Proposed Works including a Bio-swale and OceanGuard pit inserts. Stormwater drainage through the existing carpark will remain in the future Masterplan.

The stormwater drainage network will be designed to cater for additional flows generated off proposed roof areas and overflows from potential rainwater tanks.

Bulk earthworks will be required to satisfy the proposed Architectural, Landscape Architectural, Structural and Civil design. The civil design has aimed to achieve a balanced cut/fill and net bulk earthworks volumes have been detailed in the concept report. Where possible, earth batters have been proposed with a maximum repose line of 1 (vertical) in 3 (horizontal) in line with Geotechnical report however, steeper batters may be achieved with proprietary soil stabilising techniques. Some minor retaining walls will be required near the proposed front entry and the proposed staff car parking adjacent to Commonwealth Street.

The subject site is located south of the Macquarie River and is not impacted by mainstream flooding in the 1% AEP flood event.

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2.0 Relevant SEARs

This Civil design report addresses the following relevant Secretary's Environmental Assessment Requirements (SEARs) in relation to the proposed Bathurst Hospital Redevelopment as set out in the tables below.

Table 1: Secretary's Environmental Assessment Requirements relevant to Concept Proposal

SEARS	Location in Report
13. Ground and Water Conditions *Provide a Surface Water Impact Assessment that assesses potential impacts on:* • *Surface water resources (quality and quantity) including related infrastructure, drainage lines, downstream assets and watercourses.*	**Section 5.3 and Section 5.4 – Surface water resources (quality and quantity) only.**
14. Water Management *Provide an Integrated Water Management Plan for the development that:* • *Is prepared in consultation with the local council and any other relevant drainage or water authority.* • *Details the proposed drainage design (stormwater) for the site including any on-site treatment, reuse and detention facilities, water quality management measures, and nominated discharge points.* • *Demonstrates compliance with the local council or other drainage or water authority requirements and avoid adverse downstream impacts.*	 **Section 5.1** **Section 5.3, 5.4 and 5.6** **Section 5.3, and 5.4**
Where water and drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards of, the local council or other drainage or water authority.	**Section 5.5**

TTW, believe we have addressed all relevant SEAR's related items as identified above within the civil engineering design as represented in the civil engineering drawings in Appendix B.

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3.0 Introduction

This Civil Design Report has been prepared by TTW on behalf of Health Infrastructure for the redevelopment of the Bathurst Hospital at 361-365 Howick Street, Bathurst.

The site is located at 361-365 Howick Street, Bathurst, in the Bathurst Local Government Area. It is occupied by Bathurst Health Service, a Level C referral facility in the Western NSW Local Health District.

This report accompanies a State Significant Development Application that seeks approval for the construction and operation of a new-build expansion, refurbishment and repurposing works to the existing Bathurst Health Service main hospital building.

3.1 Site Location and Context

Bathurst Hospital is in the city of Bathurst and is part of Western NSW LHD. The hospital site has a significant slope, with a fall of approximately 25m from Howick St along the southwestern boundary to Durham St at the northeast. The existing hospital buildings step down with the slope.

Bathurst hospital has been on the current site since 1880 when the original hospital building was constructed on the corner of Howick and Mitre streets. A major new hospital building to the north of the site was completed in 2007. The new hospital is between two and three storeys with carparking at the lower ground level.

A site aerial is provided in Figure 1 below:

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Figure 1: Site location – Bathurst Hospital

3.2 Geotechnical Conditions

A project specific geotechnical investigation has been undertaken by RCA Australia. The investigation indicates the existing subsurface conditions comprises variable depths of fill, over stiff residual clays and low strength rock. The depth of fill varies significantly across the site, extending to depths of up to 8m towards the east of the existing hospital building.

The Fill is predominantly a sandy soil and has been classified as 'uncontrolled fill' in the absence of placement and compaction details. This means it is unsuitable for use as a bearing layer for shallow foundations or slabs. The depth of the fill varies across the site, extending to depths of up to 8m at the eastern end of the proposed expansion. The Residual soil, medium plasticity clay, is classified as Class M – Moderately Reactive in accordance with Table 2.1 of AS2870-2011. Class 'M' represents a moderately reactive clay. The Residual soil is in a layer up to 2.4m thick. The low strength rock comprises Extremely Weathered Granite up to 5m in thickness overlying Highly Weathered Granite.

A preliminary contamination assessment was carried out as part of the geotechnical investigation works by RCA Australia. No concentrations of hydrocarbons, metals or pesticides were detected in excess of human health criteria as part of this investigation. Additional information has been made available which indicates a

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number of deposits of asbestos containing material have previously been removed or encapsulated. This will be investigated further in Schematic Design.

Ground water was not encountered during the investigation.

The figure below shows the soil conditions encountered during the investigations, with a section through the existing carparking in the zone of proposed expansion. The section shows the rock dipping towards Durham St, with significant depth of fill at BH8.

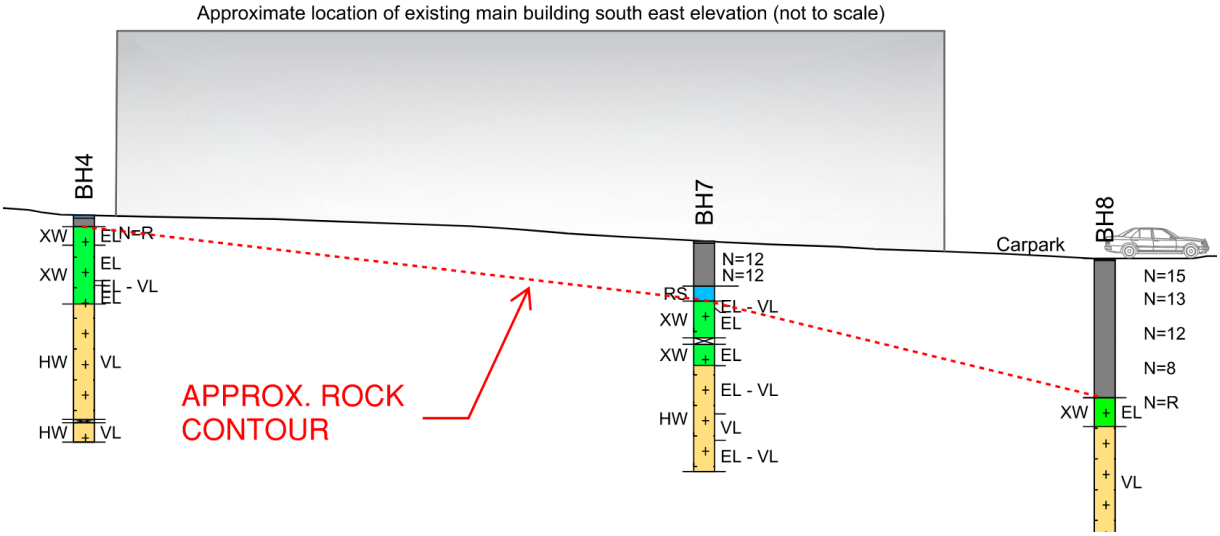


Figure 2 – Section showing rock contour looking northwest

3.3 Existing Contamination and Recommendations

A contamination investigation has been conducted by RCA Australia and provided preliminary advice. RCA considers that the site is suitable for the proposed development without further assessment or remediation however notes that management will be required during construction and for long-term use to minimise the potential of exposure to asbestos materials. Contingency planning and an unexpected finds protocol is also considered to be required to ensure that methodologies can be adjusted to account for any building waste, ash and other areas of asbestos materials which are encountered during the earthworks.

4.0 Proposed Development

Proposed works will include:

- A new-build, three-storey health services building expansion (including 1 plant level) to include overnight inpatient accommodation and non-admitted care services and a new hospital front-of house and entrance
- A new-build, two-storey expansion to the Emergency department and Operating Theatres (plus 1 plant level)
- A new-build, single-storey expansion to the existing Cancer Service building – Daffodil Cottage
- Refurbishment and repurposing to areas of the existing hospital
- Site establishment, demolition of some existing structure, cut and fill and remediation works
- Vehicular circulation and car parking improvements
- Tree removal
- Landscape works

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- Alteration and amplification of existing hospital plant and services infrastructure
- For a detailed project description, refer to the Environmental Impact Statement prepared by Ethos Urban.

In addition to the above, a community green landscape zone has been proposed between the heritage building and BHR this green is currently unfunded, and future works will be subjected to separate planning and approval process. A site plan of Project Scope can be seen in Figure 3 below.

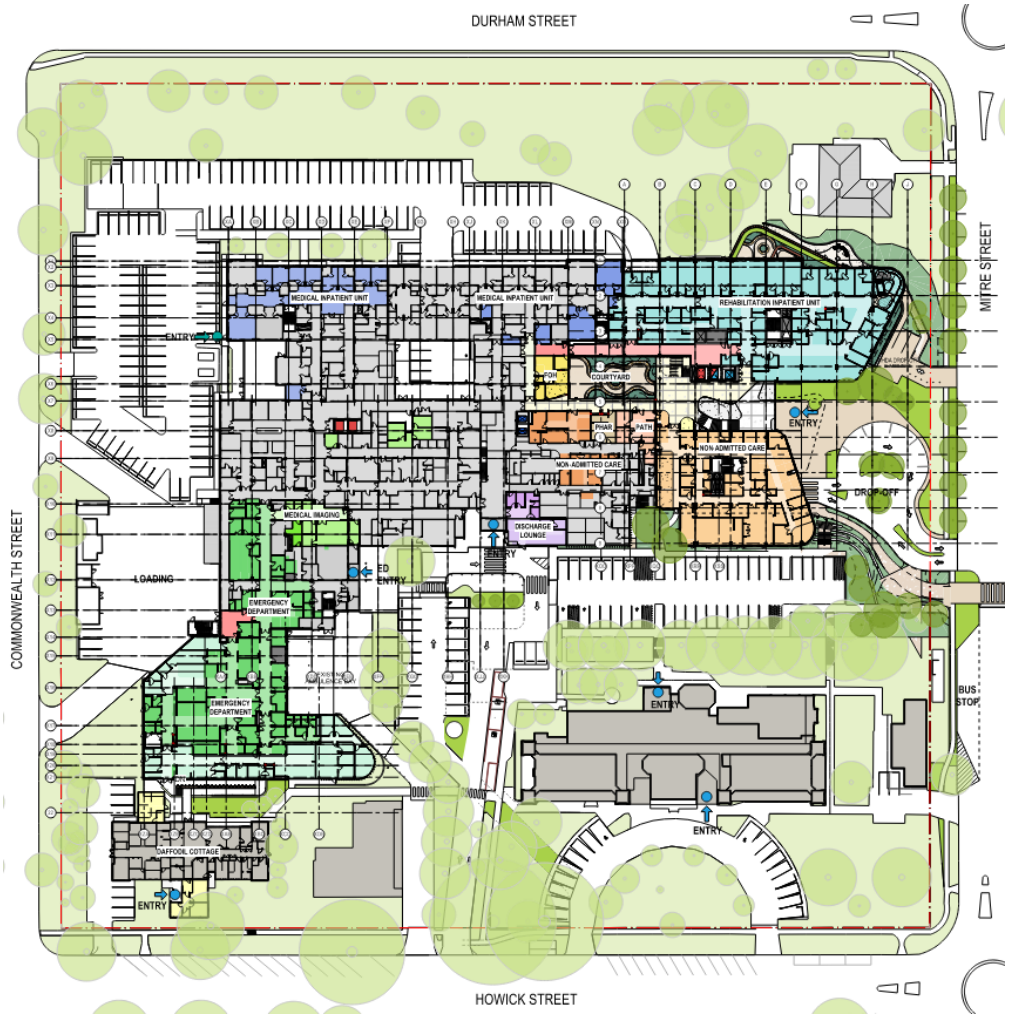


Figure 3 – Stage 1 Bathurst Hospital Redevelopment – Site Plan (Source: Billard Leece Partnership Pty Ltd)

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5.0 Stormwater

5.1 Stormwater Authority Requirements

Bathurst Regional Council Development Control Plan (DCP) and Engineering Guidelines define the requirements for the control, treatment, and discharge of stormwater from development sites within the Council area. This DCP, along with relevant Australian Standards, and industry guides have been used as the basis for the design of the proposed stormwater system.

Bathurst Hospital will also be assessed against Green Building Council Australia rating system. Stormwater Peak Discharge and stormwater Pollution Targets have been incorporated into the design requirements and are summaries below.

- Stormwater Peak Discharge - Ensure the post-development peak event stormwater discharge from the site does not exceed the pre-development peak event stormwater discharge, using a 5-year ARI.
- Stormwater Pollution Targets - Achieve pollution reduction in accordance with column A from "Table Emi-5.1: Pollution Reduction Targets".

5.1.1 Stormwater Conveyance

All internal proposed catchments from the site including roofs, paved areas, and other surfaces shall be designed to convey surface runoff to a suitable outlet. Flows draining off all sites must discharge to street gutter, inter-allotment drainage system or road drainage system. Bathurst Regional Council require the following guiding principles which should be adhered to, when designing drainage systems: -

- Cause no detriment to downstream properties by either increasing, concentrating, or diverting flows;
- Cause no detriment to upstream properties by ponding or damming flows.

Duration	Average Storm Recurrence Interval (Years)						
	1	2	5	10	20	50	100
5 min	59	78	104	121	143	174	199
6 min	55	73	97	112	133	162	185
7 min	52	69	92	106	125	152	173
8 min	49.5	65	87	100	118	143	163
9 min	47.2	62	83	95	112	136	155
10 min	45.1	59	79	91	107	129	147
12 min	41.7	55	72	83	98	119	135
15 min	37.6	49.1	65	75	88	106	120
20 min	32.7	42.6	56	64	76	91	103
30 min	26.5	34.4	45.1	51	60	72	82
40 min	22.6	29.3	38.2	43.5	51	61	69
50 min	19.9	25.8	33.5	38.0	44.3	53	60
60 min	17.9	23.2	30.0	33.9	39.5	47.1	53
90 min	13.8	17.8	22.8	25.7	29.9	35.5	39.9
2 hours	11.4	14.6	18.7	21.1	24.4	28.9	32.4
3 hours	8.66	11.1	14.1	15.8	18.3	21.6	24.1
4 hours	7.13	9.15	11.6	12.9	14.9	17.5	19.6
5 hours	6.14	7.86	9.89	11.0	12.7	14.9	16.6
6 hours	5.43	6.95	8.71	9.70	11.1	13.0	14.5
8 hours	4.48	5.72	7.13	7.92	9.06	10.6	11.8
10 hours	3.86	4.92	6.11	6.77	7.73	9.02	10.0
12 hours	3.41	4.35	5.38	5.95	6.79	7.91	8.77
16 hours	2.79	3.55	4.39	4.86	5.54	6.44	7.14
20 hours	2.38	3.03	3.75	4.14	4.72	5.49	6.09
24 hours	2.09	2.66	3.29	3.63	4.14	4.81	5.33
36 hours	1.56	1.98	2.44	2.69	3.06	3.56	3.94
48 hours	1.25	1.59	1.95	2.15	2.45	2.84	3.15
60 hours	1.04	1.33	1.63	1.80	2.04	2.37	2.62
72 hours	0.90	1.14	1.40	1.54	1.75	2.03	2.24

Figure 4 – Bathurst Regional Council Local Government Area Design Rainfall Intensities (mm/hr)

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Bathurst Regional Council Engineering guidelines also state:

> *"Where the downstream hydraulic capacity of one or more components in a drainage system is inadequate for the design flow, and/or where economically feasible, retarding basins are required at the discretion of the Director of Engineering Services."*

5.2 Existing Stormwater

The existing site stormwater and drainage network has been surveyed by Usher & Company, dated 17 July 2023 (refer to **Appendix A**). The existing buildings, carparks, footpaths and landscape zones are captured via a pit and pipe drainage network. The survey has not identified an on-site detention system, stormwater treatment system or rainwater tank on the site.

5.3 Proposed Stormwater Drainage System

5.3.1 Minor Stormwater Drainage

Minor stormwater drainage for surface runoff has been designed to cater for flows up to the 5% AEP storm event through an underground drainage network of pits and pipes. The schematic stormwater drainage system can be seen in Figure 5, Figure 6, and Figure 7 below. Refer to Appendix B for civil stormwater plans.

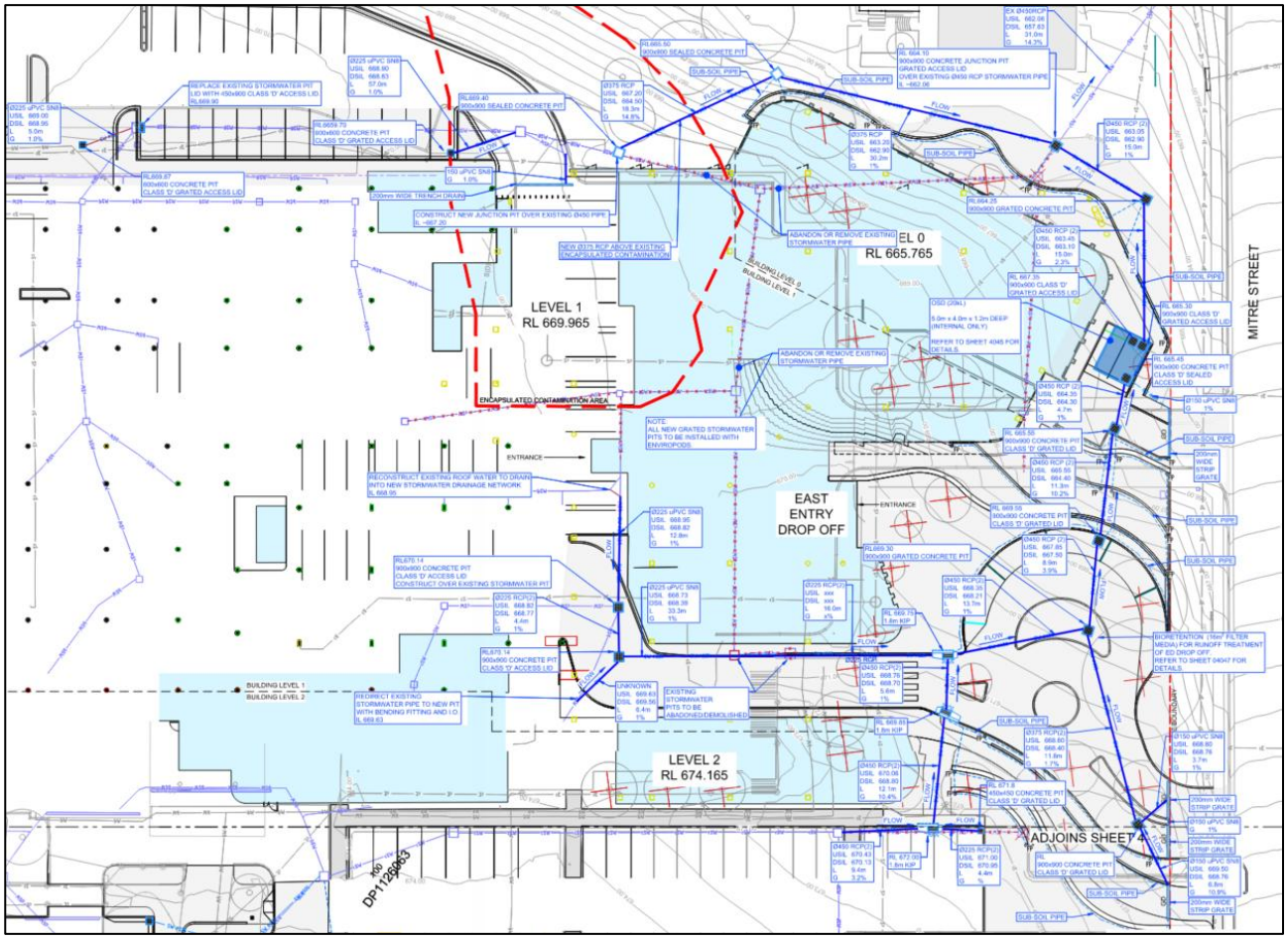


Figure 5 – Concept stormwater drainage system, Project Scope - East Extension

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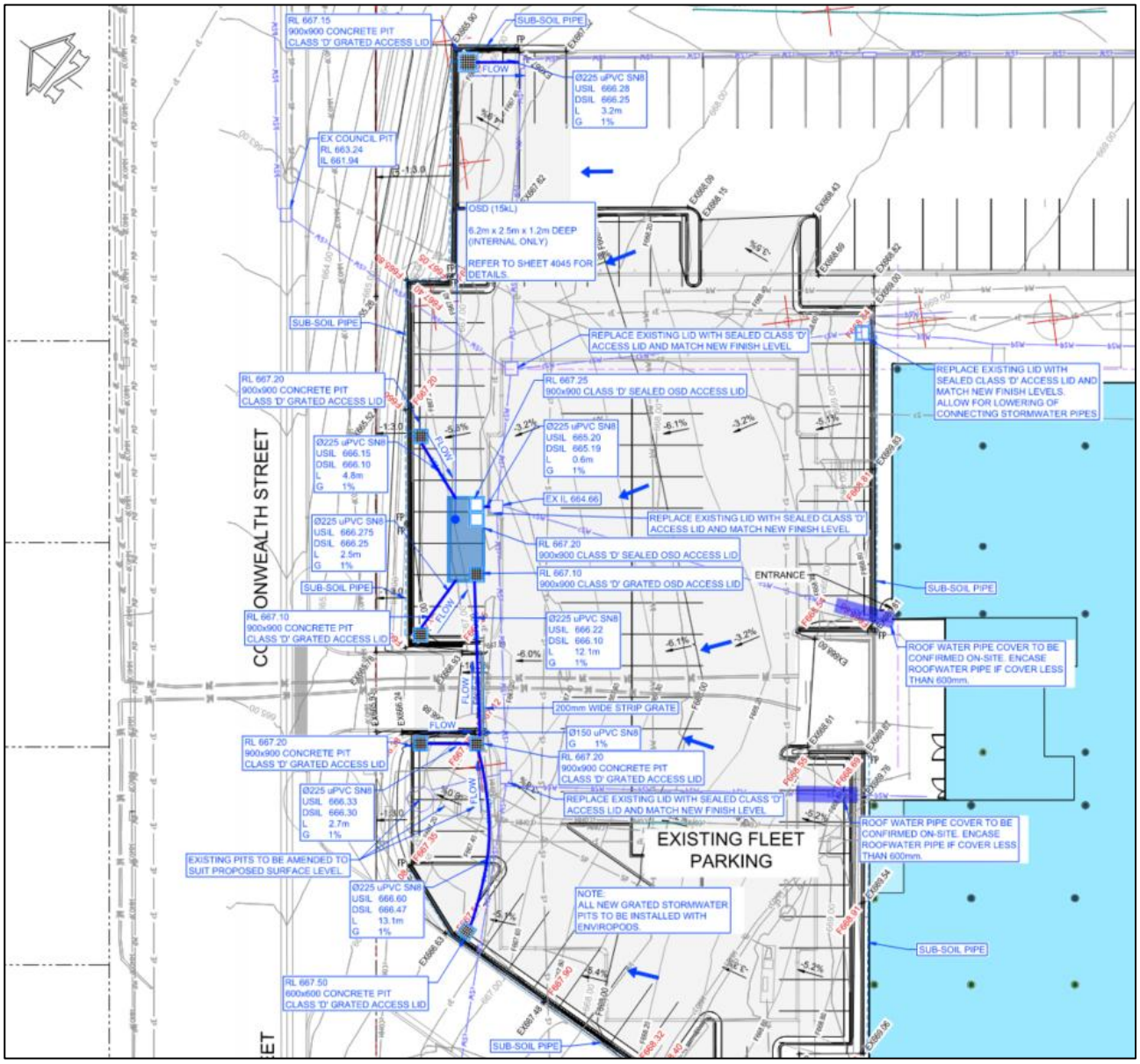


Figure 6 – Concept stormwater drainage system, Project Scope - Staff parking lot redesign

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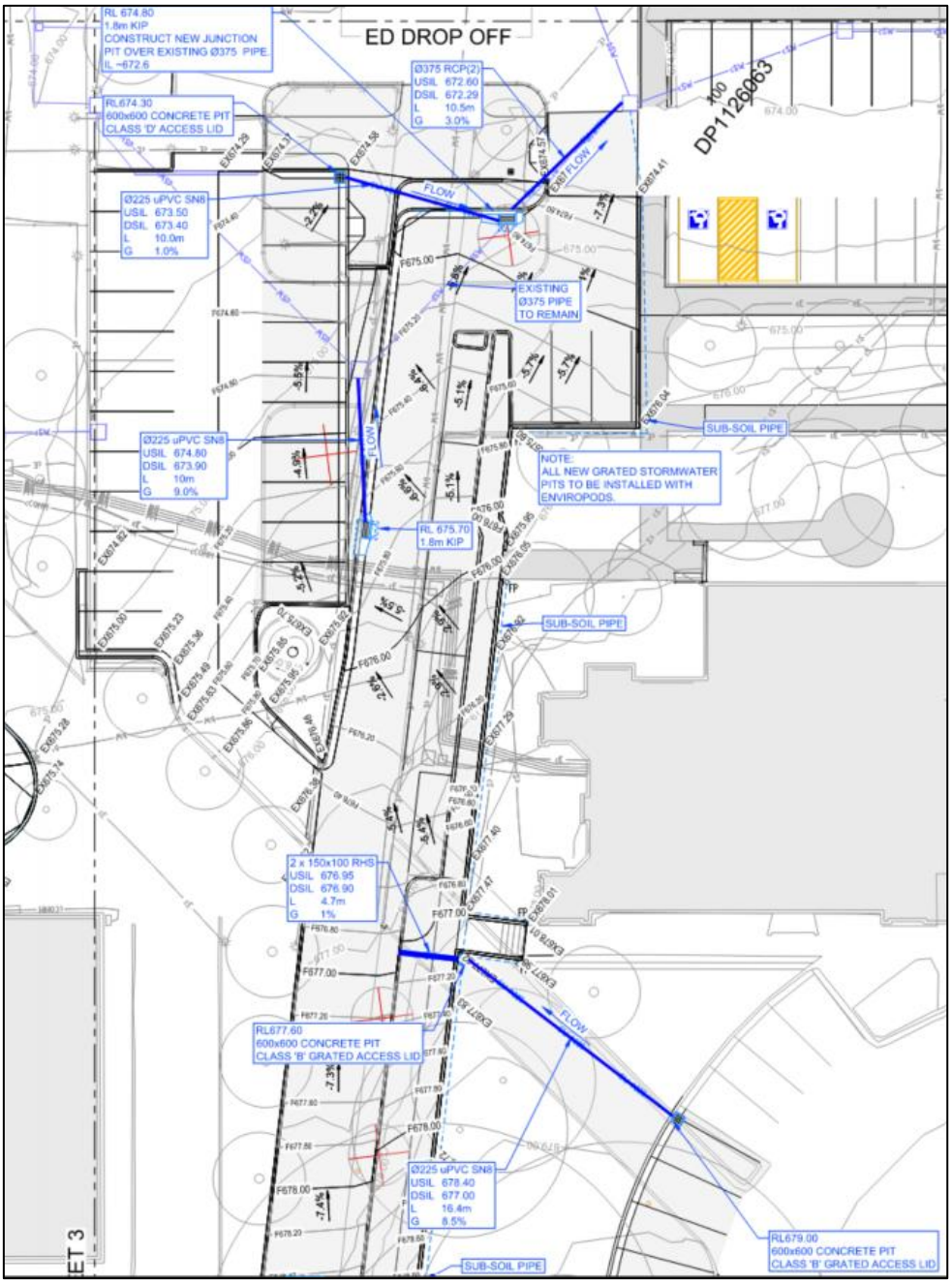


Figure 7 – Concept stormwater drainage system, Project Scope - ED Drop Off

5.3.2 Major Stormwater Drainage

Conveyance of storm events up to the 1% AEP shall be conveyed via overland in a controlled manner. Building floor levels adjacent to overland flow paths shall be designed 500mm above the overland flow path bank level or 1% AEP design flood event (whichever is greater).

A proposed swale located between the existing heritage building and the eastern extension to convey surface runoff from its immediate catchment as shown in Figure 5 above. The swale will be sized to convey all flows up to the 1% AEP storm event.

Consideration for future masterplan expansion of the community green has been considered and provision have been provided.

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5.3.3 On Site Detention

Following on from the above council requirement, on-site detention will be required to meet Greenstar requirements for Stormwater Emissions. Bathurst Hospital Redevelopment will be required to reduce stormwater peak discharge rates back to pre-development flow rates, based on the 5-year Annual Recurrence Interval (ARI). By satisfying this criterion, 1 credit point under the Greenstar initiative will be awarded.

DRAINS modelling has been completed and it has been determined that on-site detention will be required to mitigate 5-year ARI flows back to pre-development scenario, as shown in Table 2 below.

Table 2 - Summary of Pre-Development, Post Development and Mitigated Flow Rates

Catchment	Pre Dev (L/s)	Post Dev (L/s)	Post Dev with OSD (L/s)
Eastern Extension, Vegetation Corridor, and ED drop off	219	241	213
Western Staff Carpark redesign	208	233	202

A summary of the detention tanks required is summarised in Table 3 below.

Table 3 – On-site Detention tank Summary

Catchment	Volume
Eastern Extension, Vegetation Corridor, and ED drop off	20.1m^3
Western Staff Carpark redesign	14.8m^3

The location of the proposed on-site detention system on BHR can be seen in Appendix B within the stormwater drainage plans.

5.4 Stormwater Quality – Water Sensitive Urban Design (WSUD)

Bathurst Regional Council have not stipulated any WSUD requirements.

Following on from the above council requirement, stormwater quality will be required to meet Green Star requirements for Stormwater Emissions. Bathurst Hospital Redevelopment will be required to meet generated stormwater pollutant reduction targets specified in column A of table 26.2, Pollution Reduction Targets from the Green Star – Design & As Built v1.2 submission guidelines, see Figure 8 below. By satisfying this criterion, 1 credit point under the Greenstar initiative will be awarded and minimum stormwater quality targets would be satisfied.

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Table 26.2 Pollution Reduction Targets

Pollutant	Reduction Target (% of the typical urban annual load)		
	A	B	C
Total Suspended Solids (TSS)[1]	80%	80%	90%
Gross Pollutants	85%	90%	95%
Total Nitrogen (TN)[2]	30%	45%	60%
Total Phosphorus (TP)[2]	30%	60%	70%
Total Petroleum Hydrocarbons[3]	60%	90%	90%
Free Oils[3]	90%	90%	98%

Figure 8 – Greenstar Waterways Criteria

5.4.1 Assessment of Stormwater Pollutant Removal for Proposed Works

To achieve the minimum targets specified in Figure 8 column A above, MUSIC modelling has been undertaken to determine stormwater quality measures to be implemented into the stormwater drainage system. The following stormwater quality measures required include:

- 1 x Bioretention Basin (16m^2) collecting generated stormwater runoff from the eastern emergency drop off area.
- Ocean Protect OceanGuard inserted in all proposed surface inlet pits.
- 1 x 60kL Rainwater Tank is proposed for landscape irrigation reuse (rainwater reticulation and water balance has been designed by the hydraulic consultant).

A screen capture of the MUSIC model treatment train can be seen in Figure 9 below.

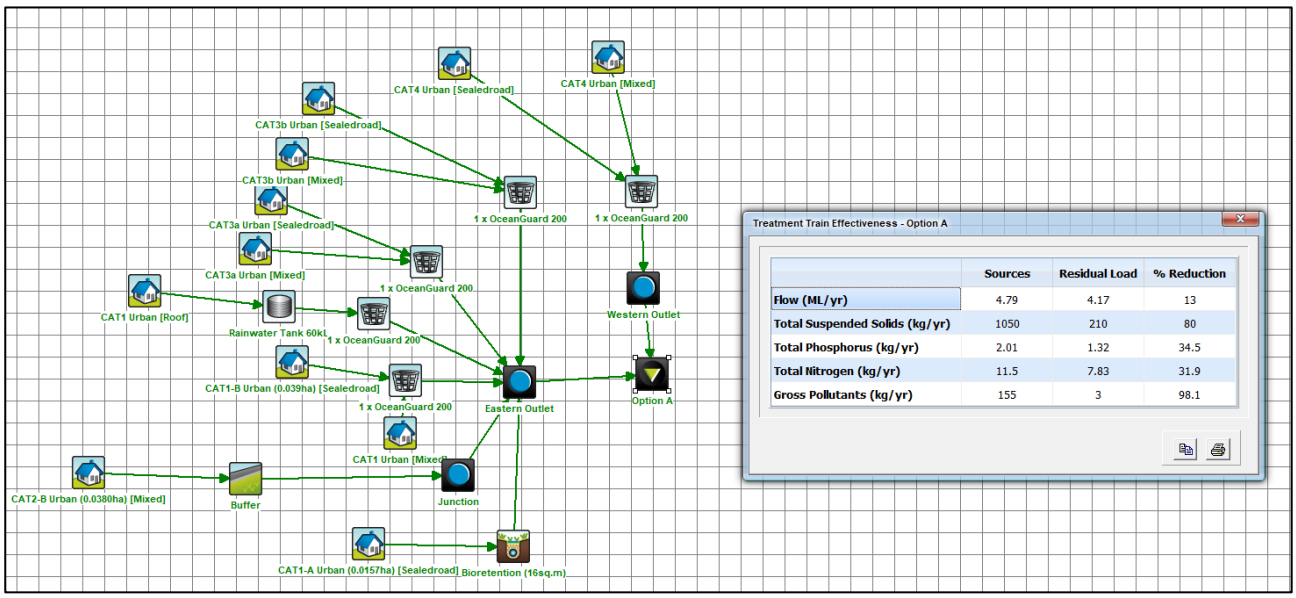


Figure 9 – MUSIC Model Treatment Train

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The results of the MUSIC modelling effectiveness are also shown in the table below. The table indicates that the proposed stormwater treatment devices are sufficient in order to meet the Greenstar pollutant column A reduction targets.

Table 4 - MUSIC Model Results for column A Greenstar requirements

Stormwater Pollutant	Min. Required Reduction (%)	Modelled Reduction (%)
Total Suspended Solids (TSS)	80	80.0
Total Nitrogen (TN)	30	31.9
Total Phosphorus (TP)	30	34.5
Gross Pollutants (GP)	85	98.1

5.4.2 Assessment of Total Petroleum Hydrocarbon and Free Oils Removal

The Green Star – Design and As Built V1.3 *(GBCA, 2019)* also includes a requirement for the removal of total petroleum hydrocarbons (TPHs) and free oils within stormwater shown in Figure 8. The GBCA (2021b) also provides the following advice to "FAQ F-00118":

"*While total petroleum hydrocarbons (TPH) and free oils cannot be readily modelled in MUSIC at the time of publishing this FAQ, it is possible to address petroleum hydrocarbons and free oils via stormwater treatment devices such as bioretention swales. The TPH and free oils will be further managed through the use of an "oil boom" which will reside in the OceanGuard pit inserts. The oil boom which will consist of a polypropylene sock allows for the further absorption of the hydrocarbons and free oils.*"

As OceanProtect have described previously in a correspondence to Green Buildings Council Australia (GBCA) on 9 November 2021, it is not possible to demonstrate compliance with the aforementioned 90% removal target – particularly given that TPH effluent concentration necessary to achieve this target (for average/ typical TPH stormwater runoff concentrations) is below the limit of detection for total petroleum hydrocarbons.

The OceanGuard® technology is a gully pit basket designed to fit within new and existing gully pits to remove pollution from stormwater runoff – and is particularly effective at removing gross pollutants and suspended solids. The Psorb Filter® is a proprietary stormwater treatment asset comprised of one or more structures that house rechargeable, media-filled cartridges that trap particulates and adsorb pollutants from stormwater runoff such as total suspended solids, hydrocarbons, nutrients, metals, and other common pollutants (e.g. oils).

Additional information (including case studies, performance monitoring, and peer review reports) is available in the following publications:

- A review of the application of OceanGuard® in Australia *(Dalrymple et al, 2021)*
- A review of the application of StormFilter® in Australia *(Dalrymple et al, 2021)*

As described in the aforementioned reports, the performance of both the OceanGuard® and Psorb Filter® technologies has been demonstrated in several 'real-world'/ 'field scale' performance monitoring studies. The MUSIC model of the site applies approved performance values for TSS, TP, TN and GP removal, which are based on these performance studies (and approved by the relevant local government authority).

Whilst we are not aware of any hydrocarbon monitoring undertaken for the OceanGuard® technology, 'real-world'/ 'field scale' hydrocarbon monitoring has been undertaken for the Psorb Filter® technology (as a 'stand-alone' stormwater treatment assets), with a mean 'oil and grease' reduction of 51% at one site and a mean TPH concentration reduction of 76% at another site (Stormwater Management Inc, 2000). Further information in relation to these studies is provided in the 9 November 2021 correspondence to GBCA.

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As noted in GBCA's response to FAQ "F-00118", MUSIC cannot reliably model TPH generation or removal. Nevertheless, the MUSIC model for the site demonstrates that the proposed strategy is predicted to remove approximately 80% (90% for the aspirational targets) of average annual total suspended solids and various studies *(e.g. cited in Walker et al (1994))* show that most hydrocarbons found in stormwater runoff are associated with fine particles (under 500 microns). *Colwill et al (1994)* also states that 70% of oils and 85% of polycyclic aromatic hydrocarbons are associated with solids in the stormwater and that, over a period of dry weather conditions, the highest oil content was found in the sediment range of 200 to 400 microns. *E2DesignLab (2015)* also demonstrated that the majority of sediment in urban stormwater runoff are fine particles.

Given that the majority of hydrocarbons are associated with solids and that high TSS load removals are predicted by the MUSIC model, the proposed stormwater treatment train will significantly reduce TPH concentrations from the site (likely to be below detectable levels). This treatment train outcome is consistent with the *Green Star – Design and As Built V1.3 (GBCA, 2019)* stormwater pollution removal target and GBCA (2021b) advice associated with the TPH and free oils removal target (outlined in FAQ F-00118).

5.5 Legal Point of Discharge

The existing council stormwater drainage network has been identified through a 'Dial Before You Dig' (DBYD) search. The DBYD has indicated two legal points of discharge for site generated stormwater runoff as shown in

Figure *10* and

Figure *11* below. The existing site appears to discharge stormwater on the north-east corner of Mitre and Commonwealth Street. Survey from Usher & Company has confirmed the existing legal points of discharge with extracts from the survey shown in

Figure 12 below. The stormwater pipe discharging into Commonwealth Street and Mitre Street has been indicated as a 375mm and 450mm respectively.

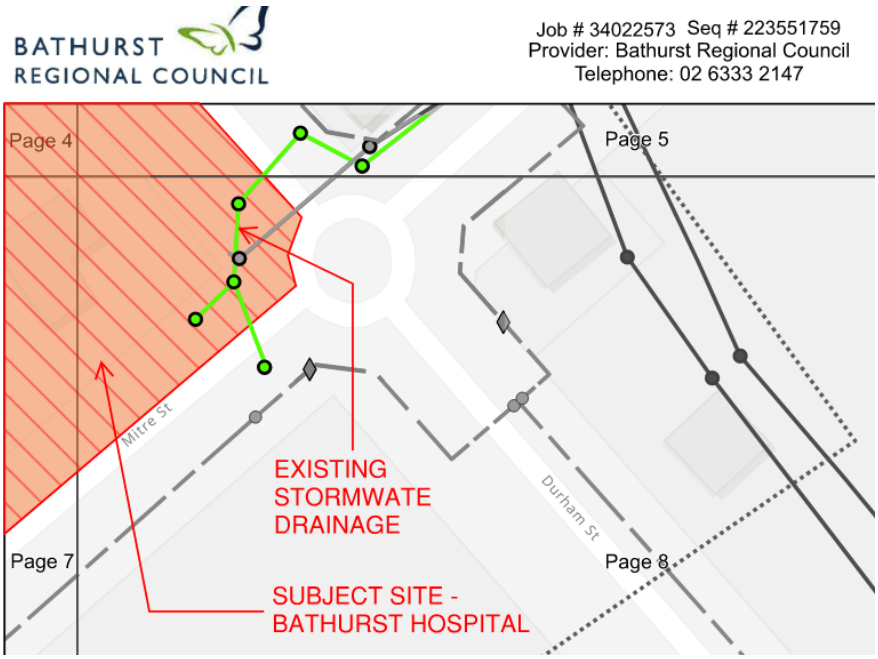


Figure 10 – Bathurst Regional Council Stormwater Drainage Plan, Cnr of Mitre St & Durham St

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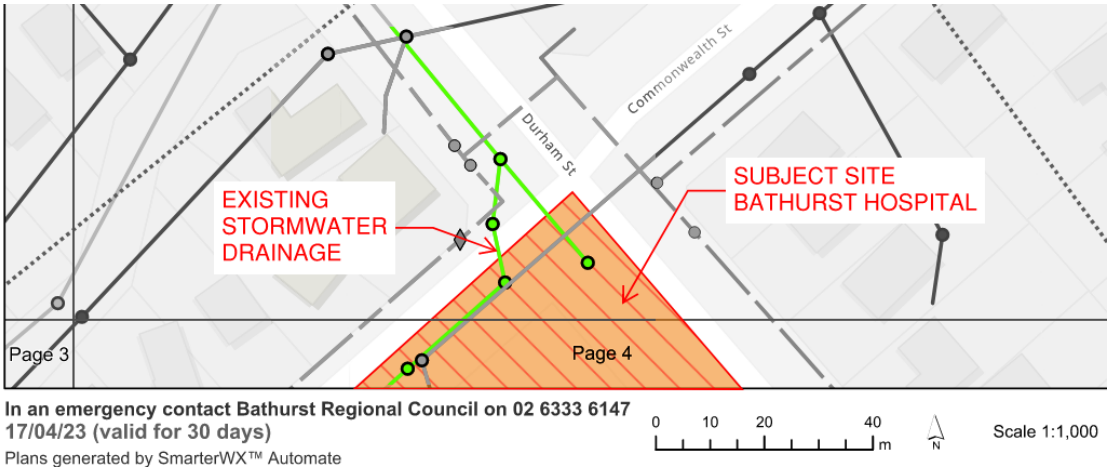


Figure 11 – Bathurst Regional Council Stormwater Drainage Plan, Cnr of Mitre St & Durham St

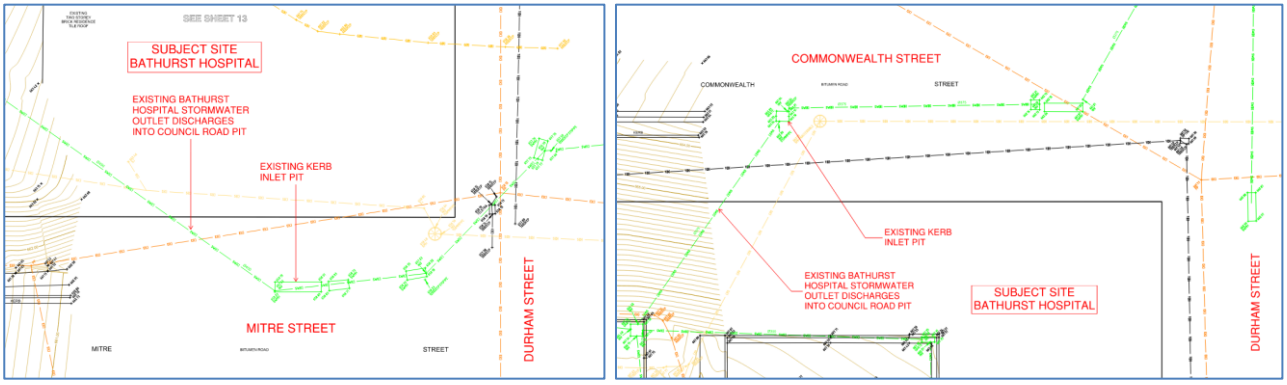


Figure 12: Existing stormwater Drainage Discharge, Commonwealth and Mitre Street

No additional drainage works will be proposed out site the Bathurst Hospital property boundaries. All existing stormwater connections will be retained and utilised for the proposed development.

5.6 Rainwater Harvesting

A 60kL rainwater tank has been sized by the Hydraulic consultant (Stantec) to provide non-potable reuse in support of Green Star requirements. 2,516m^2 of roof water runoff will drain into the rainwater tank and will be used for landscape irrigation purposes. Refer to the Hydraulic consultant drawings for location of Rainwater Tank.

Captured roof water runoff will be irrigated over 1,330m^2 of landscape area, refer to the hydraulic consultant for water balance requirements.

The proposed rainwater tank has been modelled in MUSIC and is part of the overall strategy for Water Sensitive Urban Design.

5.7 Response to SEARs Requirements

This report is to be read in conjunction with the Hydraulic and Geotechnical report for Integrated Water Management Plan response. No additional drainage works is proposed outside or within an easement.

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5.7.1 SEARs Item 13: Ground and Water Conditions

Section 5.3 and **5.4** provides a surface water impact assessment that assess potential impacts on Surface water resources (quality and quantity) including related infrastructure, drainage lines, downstream assets and watercourses. Based on the stormwater management measures implemented, this will ensure these impacts comply to authority requirements.

5.7.2 SEARs Item 14: Water Management

Point 1:
Item 14 point 1 has been addressed in **Section 5.1**, which outlines Bathurst Council's requirements for stormwater management. The section also highlights that the stormwater design will be assessed against the Green Star Building Council Australia's rating system, ensuring alignment with the developments minimum standards. Further, TTW has consulted with Bathurst Council on 26th of June 2024 regarding on street parking and other matters.

Point 2:
Item 14 point 2 has been covered in **Sections 5.3, 5.4, and 5.6**:

- **Section 5.4** details the stormwater treatment and water quality management measures for the Proposed Works, including the implementation of a bio-retention basin, ocean guards, and a 60-kL rainwater tank. Note: Non-potable reuse demand design and rainwater tank sizing has been undertaken by the Hydraulic consultant.
- **Section 5.3.3** outlines the detention facilities designed to mitigate stormwater runoff for the Proposed Works, with two on-site detention tanks (20.1m³ and 14.8m³) to reduce flows to pre-development levels.
- **Section 5.5** specifies the nominated discharge points on Mitre Street and Commonwealth Street, ensuring appropriate and compliant discharge of stormwater from the site.

Point 3:
Item 14 point 3 has been addressed in **Sections 5.3** and **5.4**:

- Table 4 in **Section 5.4.1** demonstrates compliance with water pollution targets set by Green Star, showing the effectiveness of the proposed stormwater treatment measures for the Project Scope.
- Table 2 in **Section 5.3.3** verifies that post-development peak stormwater discharge does not exceed pre-development levels for the Proposed Works, using a 5-year Average Recurrence Interval (ARI), in compliance with Bathurst Council's requirements. The proposed drainage design ensures no adverse impacts on downstream or upstream properties by preventing increased flow concentration, diversion, or ponding.

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6.0 Earthworks

A preliminary bulk earthworks assessment has been undertaken to determine approximate bulk earthworks volumes based on the current Architectural and Landscape Architectural plans. The Bathurst Hospital Redevelopment will have a net cut of roughly 3,463m^3. Refer to Appendix B for bulk earthworks civil plans.

To minimise the extend of exported fill from Bathurst Hospital Redevelopment, an opportunity to regrade the western batter north of the Doctor's Residence. The total bulk earthworks volume can be reduced to 2,705m^3 (cut) with the inclusion of relocated fill behind the doctor's residence as shown in Figure 13 below. This opportunity has been considered for value engineering.

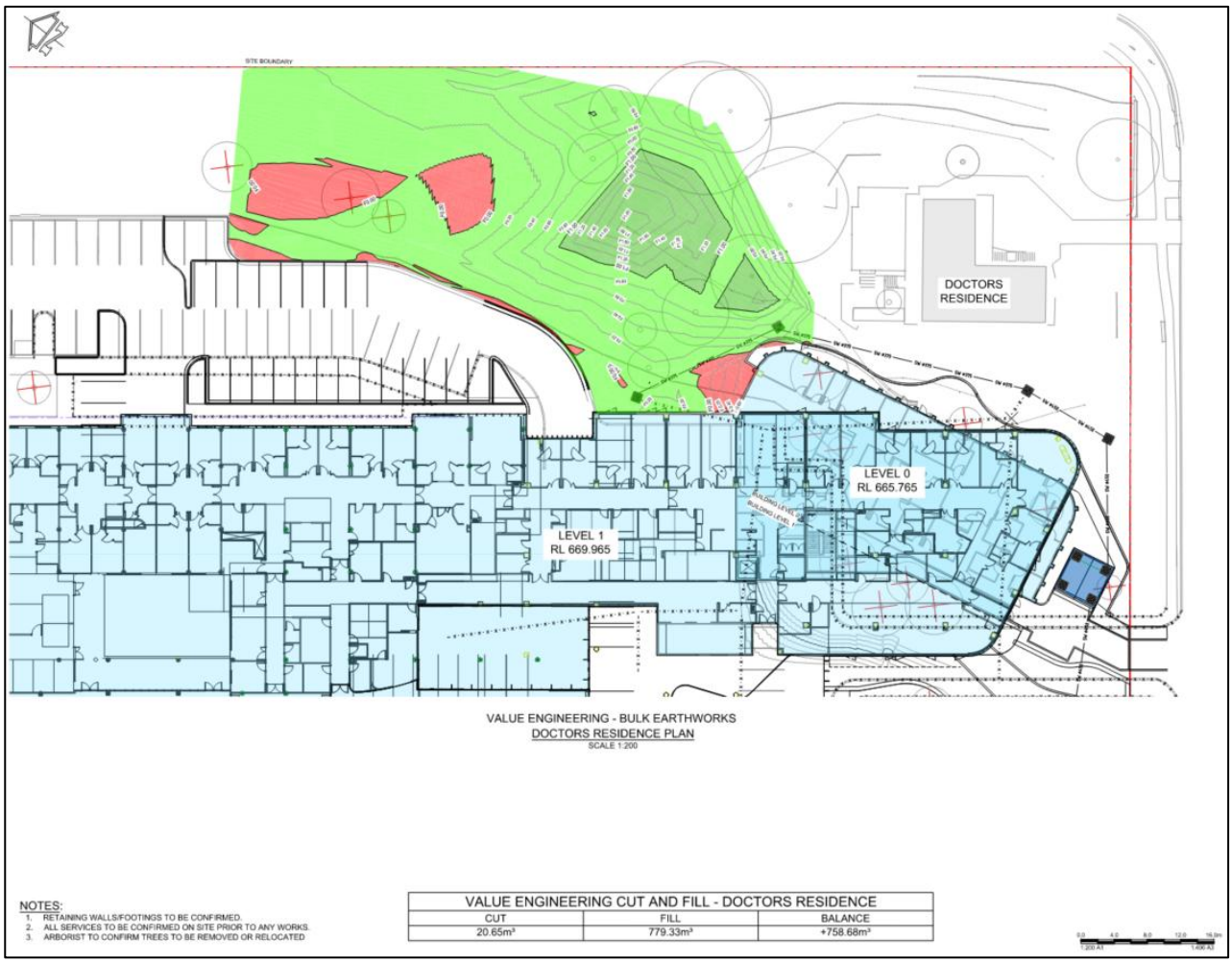


Figure 13: Bulk Earthworks VE Location

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7.0 Contamination

As discussed in Section 3.3 above, contamination has been identified on the Bathurst Hospital site. Contamination relocation has occurred on the Bathurst Hospital site due to previous developments and can be seen in the Figure 14.

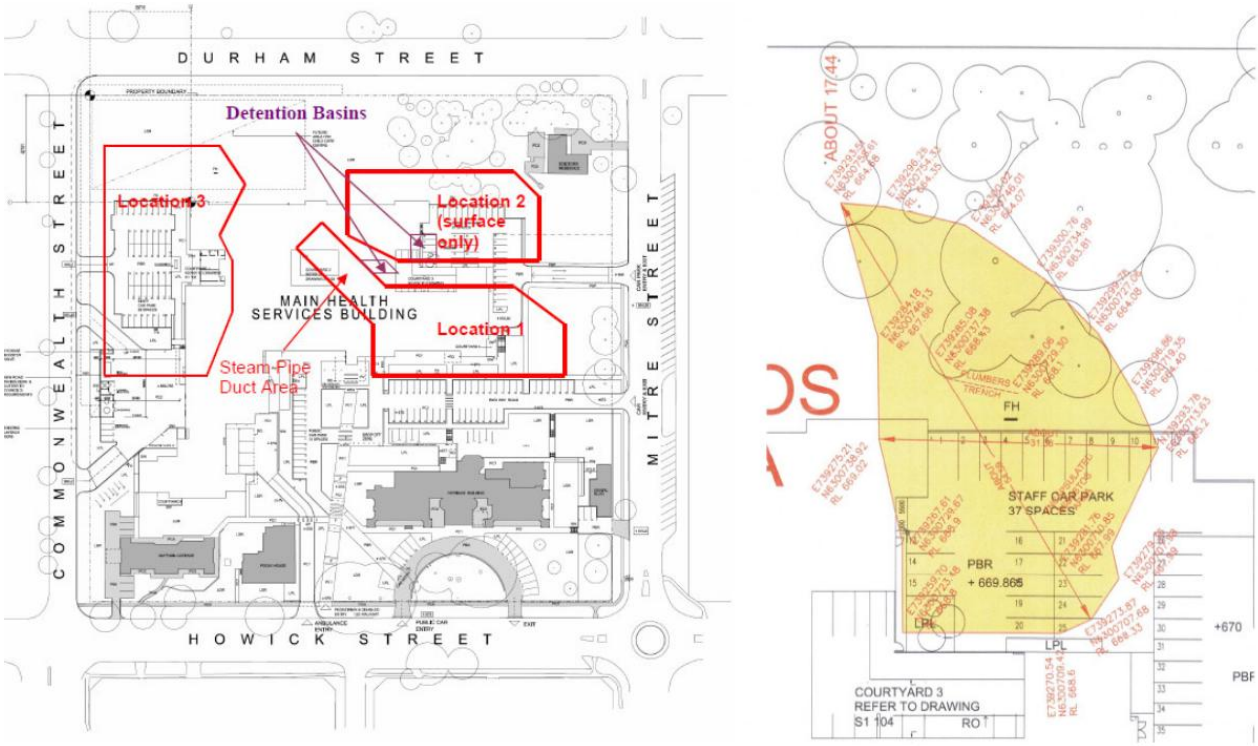


Figure 14: Areas Remediated by Excavation (left) and Encapsulation (right) (Source: RCA ref 16547-201/2)

During the Proposed Works, there will be minor encroachment above the encapsulation contamination area as shown in Figure 15 below.

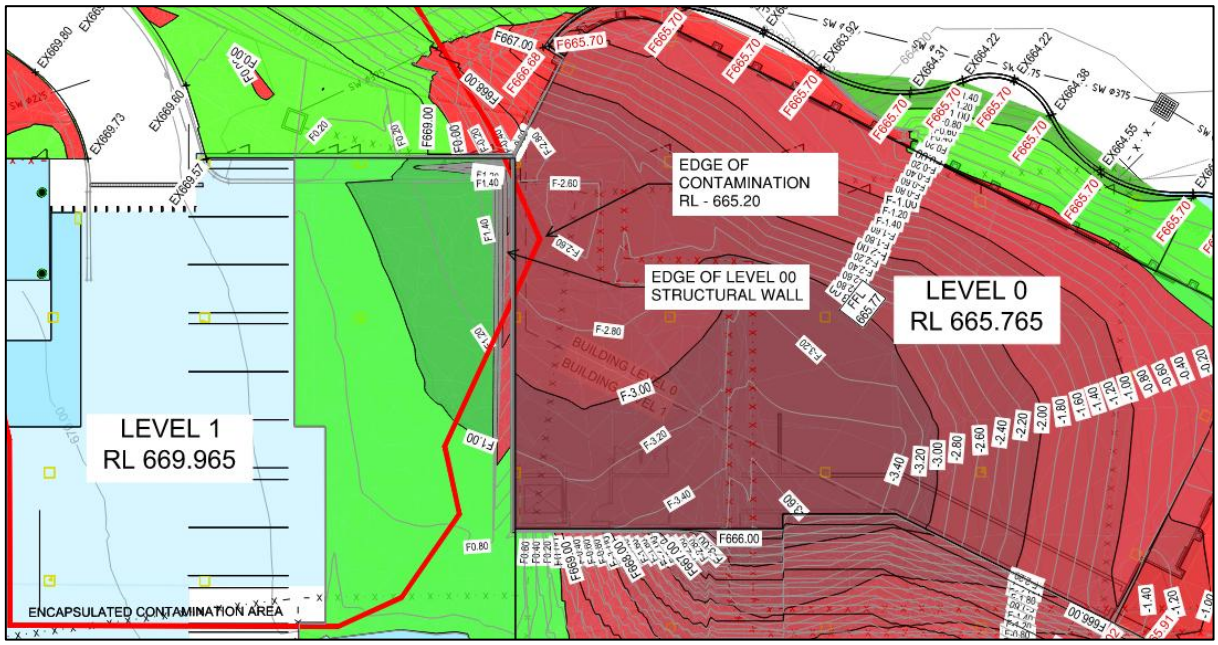


Figure 15: Known contamination encapsulation and proposed Level 00 (Civil Sheet BHR-TTW-DRW-CIV-STE-02-XX-012)

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During detailed bulk excavation, caution should be exercised when working in close proximity to encapsulated contamination area and should be conducted in accordance with advice provided in the Preliminary Site (Contamination) Assessment by RAC Australia (Ref 16547-201/2)

8.0 Erosion and Sediment Control

The disturbance of the site during construction must be controlled through erosion prevention and sediment control measures. Erosion and sediment control devices must comply with;

- Bathurst Regional Council DCP 2014
- Landcom's Managing Urban Stormwater: Soils and Construction Volume 1

8.1 Stormwater Quality During Construction

The proposed sedimentation and erosion control measures will prevent sediment laden stormwater from flowing into adjoining properties, bushland, roadways or receiving water bodies. Refer to the attached civil engineering plans in Appendix A for the proposed concept sediment and erosion control plan.

During the excavation of the basement, it is recommended that pump systems are used. Accumulated contaminated water is to be flocculated or filtered before discharge. Refer to the "pump out" notes shown on the Erosion and Sediment Control Plan provided in Appendix A.

Necessary measures will be adopted as may be necessary for erosion control, including the following where applicable:

- Staging: staging of operations (e.g. clearing, stripping, demolition);
- Restoration: progressive restoration of disturbed areas;
- Drains: temporary drains and catch drains;
- Dispersal: diversion and dispersal of concentrated flows to points where the water can pass through the site without damage;
- Spreader banks: or other structures to disperse concentrated silt traps;
- Construction and maintenance of silt traps to prevent discharge of scoured material to downstream areas;
- Temporary gassing: or other treatment to disturbed areas (eg. contour ploughing);
- Temporary fencing.

The builder will be required to liaise and comply with the requirements of Landcom's Managing Urban Stormwater: Soils and Construction Volume 1 and North Sydney Council. The builder will be required to apply dust and noise control measures to minimise disturbance to the functioning of neighbouring properties. The contractor will be required to demonstrate the proposed works equipment to be within acceptable limits for noise and vibration as determined by a registered acoustic consultant.

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9.0 Conclusion and Recommendations

This report provides a summary of the civil engineering and stormwater management requirements for the development at Bathurst Hospital Redevelopment. The stormwater design complies with the relevant standards and requirements of Bathurst Regional Council as outlined in the DCP and Green Star requirements for Stormwater Emissions.

The development requires the on-site stormwater drainage network to be upgraded to suit proposed expansion works whilst considering the existing network. On-site detention measures have been incorporated into the stormwater strategy to ensure Council receiving drainage network capacity is not reduced. In addition, Green Star has specified on-site detention requires for an adequate on-site detention system.

A 60KL rainwater tank will be provided and will be specified by the Hydraulic consultant. WSUD will be met using a mixture of proprietary and conventional techniques such as a bioretention basin, bioswale, cartridge filters, pit inserts and rainwater tank. MUSIC modelling demonstrates that the proposed strategy will achieve The Green Star - Design and As Built V1.3 (GBCA, 2019) column A annual stormwater pollutant load reduction targets for solids, nutrients and gross pollutants.

TPHs and free oils cannot be readily modelled in MUSIC and compliance with the removal targets for these pollutants cannot be accurately demonstrated. Nevertheless, the assessment in Section 0 will demonstrate significantly reduced TPH and free oils concentrations within stormwater from the site.

Impacts on the environment as identified within the scope of the works, have had appropriate mitigation measures applied to reduce those impacts within the design, construction and operational phases of the development.

10.0 Mitigation Measures

Project Stage Design (D) Construction (C) Operation (O)	Mitigation Measures	Relevant Section of Report
(D) (O)	*Implementation of Water Sensitive Urban Design including provision of on-site detention to reduce peak flows and bio-filtration to pollutant loads on downstream waters*	*Section 5.0*
(C)	*Erosion Sediment Control will be implemented during the construction stage to reduce disturbed area, loss of soils/pollution of downstream waterways and dust disturbance.*	*Section 8.0*

Prepared by
TTW (NSW) PTY LTD



TRISTAN DOHERTY
Senior Civil Engineer

Authorised By

TTW (NSW) PTY LTD



Adrian Hall
Associate

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Appendix A

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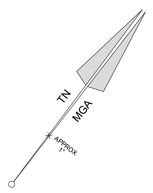
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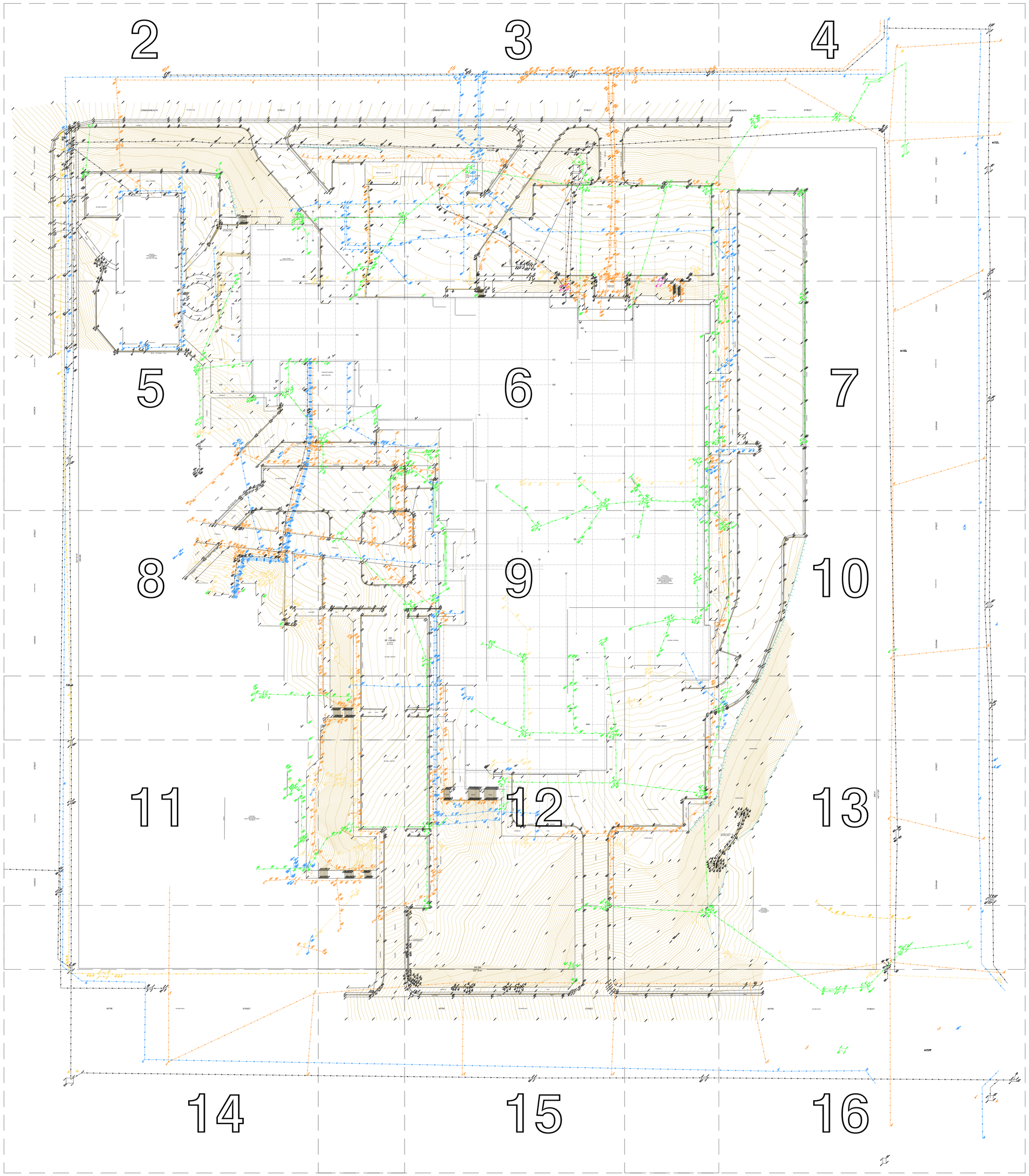
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LEGEND

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ELECTRICITY	
GAS	
GAS	
SEWER	
SEWER	
SEWER	
STORMWATER	
STORMWATER	
STORMWATER	
TELECOMMUNICATION	
TELECOMMUNICATION	
TELECOMMUNICATION	
UNIDENTIFIED	
WATER	
WATER	

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
IC	INSPECTION COVER
INV	INVERT
LP	LIGHT POLE
PP	POWER POLE
RWB	RETAINING WALL BOTTOM
RWT	RETAINING WALL TOP
SMH	SEWER MANHOLE
SJ	SEWER JUNCTION
SV	STOP VALVE
SWMH	STORMWATER MANHOLE
WS	WATER SERVICE
TELP	TELSTRA PILLAR
UNK	UNKNOWN
1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL. 450 MILLIMETRE DIAMETER PIPE





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SCALE 1:400

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SHOWING PARTIAL DETAIL AND LEVELS
AT BATHURST BASE HOSPITAL
BEING LOT 100 IN DP 1126063

LGA:	BATHURST REGIONAL
SUBURB:	WEST BATHURST
ORIGIN:	SEE NOTES

REDUCTION RATIO:	1:400
DATUM:	AHD
DATE OF SURVEY:	11 & 12 MAY & 7 JUNE 2023
SURVEYED BY:	PT
DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

AO

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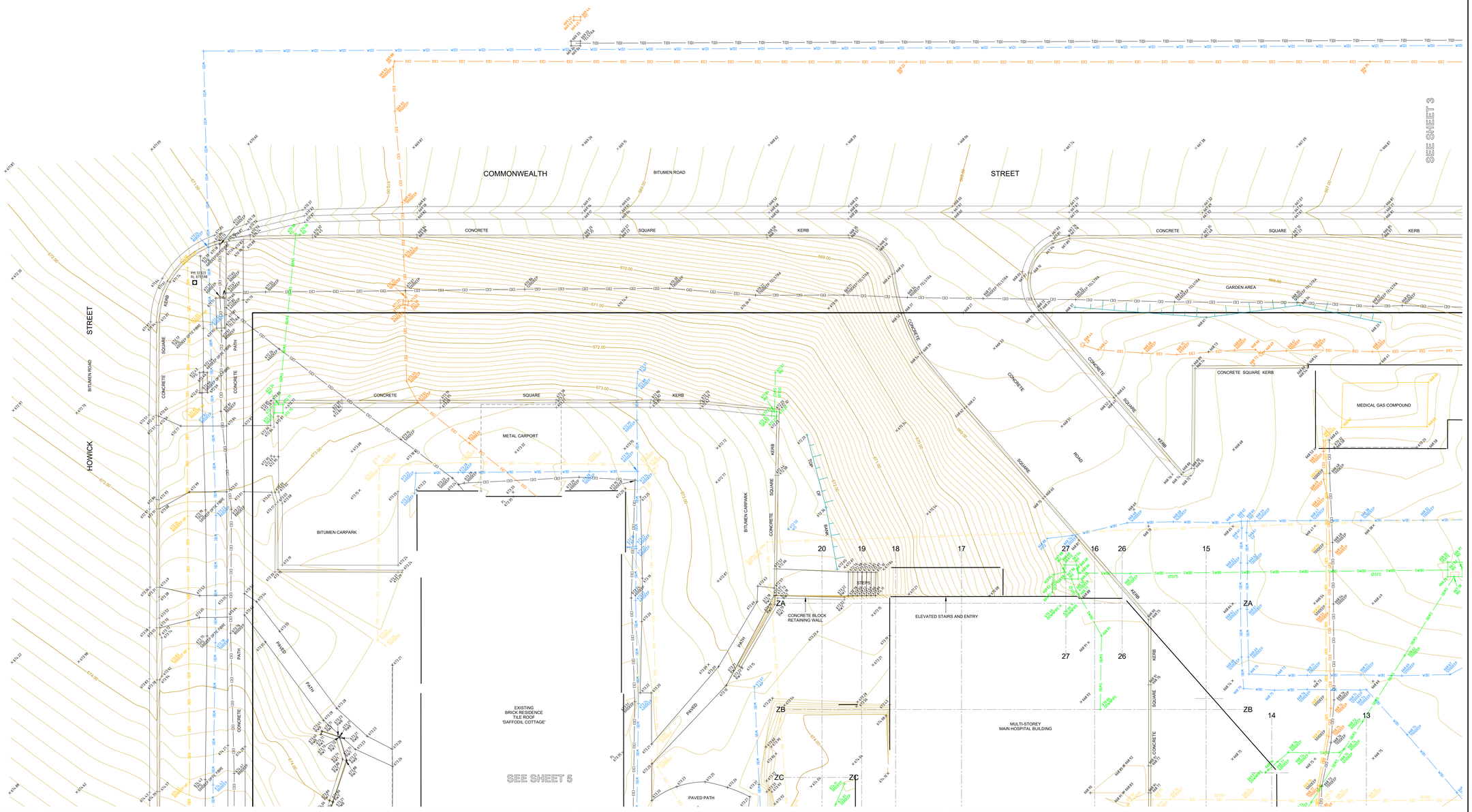
LEGEND

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EB1	ELECTRICITY
EB2	ELECTRICITY
GAS	GAS
GS1	GAS
SW0	SEWER
SW1	SEWER
SW2	SEWER
SW30	STORMWATER
SW12	STORMWATER
SW20	STORMWATER
TB1	TELECOMMUNICATION
TC1	TELECOMMUNICATION
TD1	TELECOMMUNICATION
UNK	UNIDENTIFIED
W30	WATER
W20	WATER

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EBOX	ELECTRICITY BOX
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FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
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MGA
GRID



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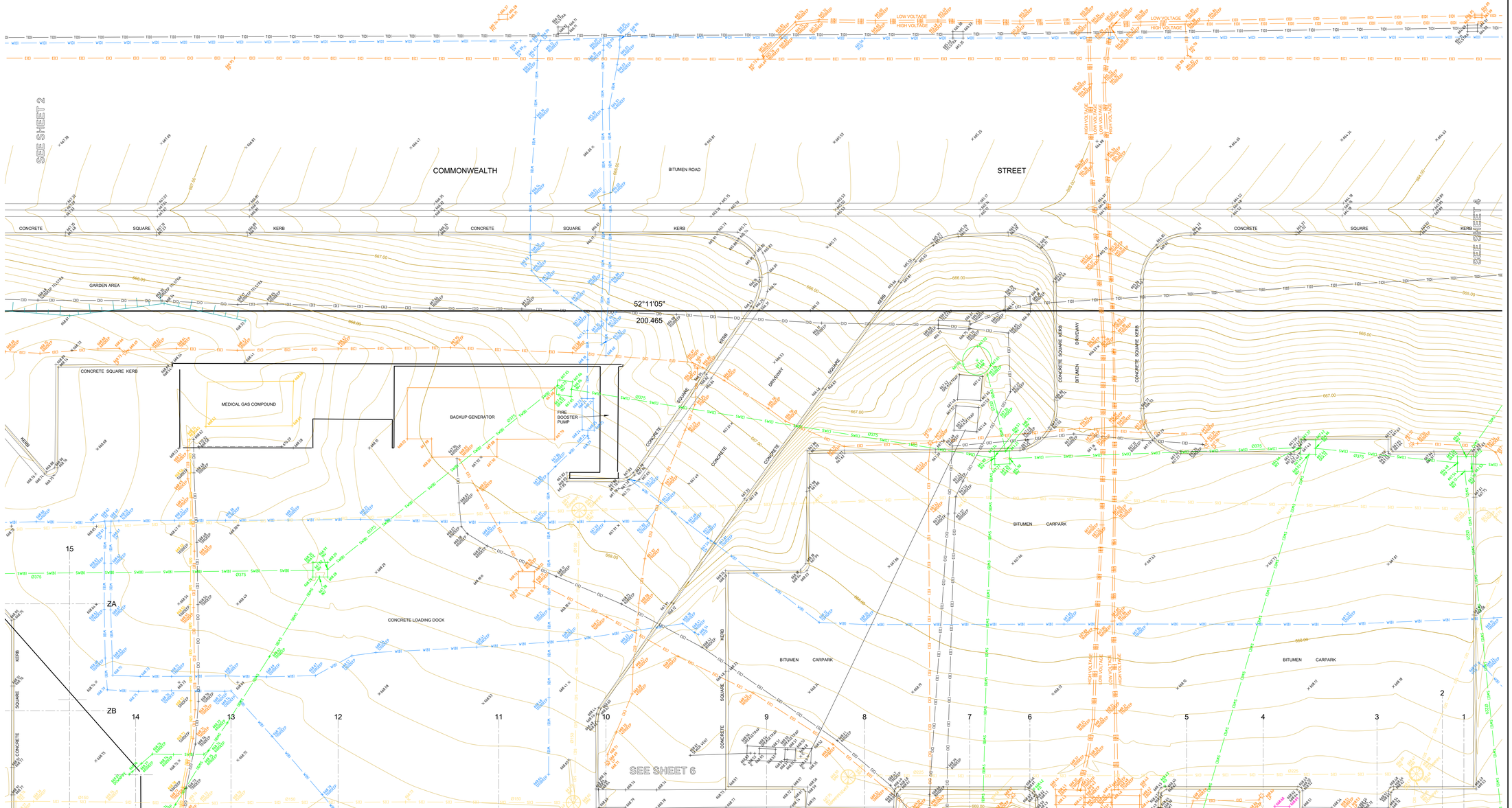
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EE(I)	ELECTRICITY
ED(I)	ELECTRICITY
GA(I)	GAS
GD(I)	GAS
SA(I)	SEWER
SC(I)	SEWER
SS(I)	SEWER
SW(I)	STORMWATER
SW12	STORMWATER
SW20	STORMWATER
TB(I)	TELECOMMUNICATION
TI(I)	TELECOMMUNICATION
TU(I)	TELECOMMUNICATION
UI	UNIDENTIFIED
W(I)	WATER
W(D)	WATER

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PM 11178
MGA EASTING: 739254.315
MGA NORTHING: 6300687.445
RL (AHD): 660.646

PM 11215
MGA EASTING: 739155.133
MGA NORTHING: 6300638.023
RL (AHD): 660.810

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DIAL BEFORE YOU DIG www.1100.com.au

LEGEND

EB0	ELECTRICITY
EB1	ELECTRICITY
EB2	ELECTRICITY
GB0	GAS
GB2	GAS
SA0	SEWER
SA1	SEWER
SA2	SEWER
SW0	STORMWATER
SW12	STORMWATER
SW20	STORMWATER
TB0	TELECOMMUNICATION
TE0	TELECOMMUNICATION
TE0	TELECOMMUNICATION
UNK	UNIDENTIFIED
WB0	WATER
WB2	WATER

DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
IC	INSPECTION COVER
INV	INVERT
LP	LIGHT POLE
PP	POWER POLE
RWB	RETAINING WALL BOTTOM
RWT	RETAINING WALL TOP
SMH	SEWER MANHOLE
SJ	SEWER JUNCTION
SV	STOP VALVE
SWMH	STORMWATER MANHOLE
WS	WATER SERVICE
TELP	TELSTRA PILLAR
UNK	UNKNOWN
1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL, 450 MILLIMETRE DIAMETER PIPE

TN
MGA
Scale Factor

SCALE 1:100

SEE SHEET 7

PM 11178
EL 660.646

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602

Suite 3, 64-68 McNamara Street, Orange NSW 2800
PO Box 8069, ORANGE NSW 2800
Phone: (02) 6361 1422
Email: admin@ushersurvey.com.au

Amendments

ISSUE	DATE	DETAILS
INITIAL	17-07-2023	

PLAN:

SHOWING PARTIAL DETAIL AND LEVELS
AT BATHURST BASE HOSPITAL
BEING LOT 100 IN DP 1126063

LGA:	BATHURST REGIONAL
SUBURB:	WEST BATHURST
ORIGIN:	SEE NOTES
REDUCTION RATIO:	1:100
DATUM:	AHD
DATE OF SURVEY:	11 & 12 MAY & 7 JUNE 2023
SURVEYED BY:	PT
DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

PLAN REFERENCE: 8681-STG2-DET
SHEET 4 OF 16

AO

ISSUE: INITIAL

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LEGEND

EB0	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EG1	ELECTRICITY	
EG0	ELECTRICITY	
GB0	GAS	
GD0	GAS	
SA0	SEWER	
SA1	SEWER	
SE0	SEWER	
SW30	STORMWATER	
SW10	STORMWATER	
SW20	STORMWATER	
TB0	TELECOMMUNICATION	
TC0	TELECOMMUNICATION	
TD0	TELECOMMUNICATION	
UNI	UNIDENTIFIED	
W30	WATER	
W20	WATER	

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
IC	INSPECTION COVER
INV	INVERT
LP	LIGHT POLE
PP	POWER POLE
RWB	RETAINING WALL BOTTOM
RWT	RETAINING WALL TOP
SMH	SEWER MANHOLE
SJ	SEWER JUNCTION
SV	STOP VALVE
SWMH	STORMWATER MANHOLE
WS	WATER SERVICE
TELP	TELSTRA PILLAR
UNK	UNKNOWN
1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL. 450 MILLIMETRE DIAMETER PIPE

TN MGA

0 1 2 3 4 5 10
SCALE 1:100

SEE SHEET 2

SEE SHEET 6

SEE SHEET 6

STREET

BITUMEN ROAD

HOWICK

EXISTING BRICK RESIDENCE TILE ROOF 'DAFFODIL COTTAGE'

BRICK RETAINING WALL

CONCRETE BLOCK RETAINING WALL

ELEVATED STAIRS AND ENTRY

MULTI-STOREY MAIN HOSPITAL BUILDING

GARDEN AREA

ELEVATED COURTYARD

CONCRETE PARKING

AMBULANCE BAY

BITUMEN CARPARK

BITUMEN CARPARK

BITUMEN

DRIVEWAY

CONC. SQUARE KERB

STRIP GRATE

USHER & COMPANY
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SHOWING PARTIAL DETAIL AND LEVELS
AT BATHURST BASE HOSPITAL
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DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

AO

PLAN REFERENCE: 8681-STG2-DET
SHEET 5 OF 16

ISSUE: INITIAL

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LEGEND

EB0	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EB1	ELECTRICITY	
EB5	ELECTRICITY	
GA0	GAS	
GB5	GAS	
SA0	SEWER	
SA1	SEWER	
SA2	SEWER	
SW3B	STORMWATER	
SW1C	STORMWATER	
SW2C	STORMWATER	
TB1	TELECOMMUNICATION	
TC1	TELECOMMUNICATION	
TD1	TELECOMMUNICATION	
	UNIDENTIFIED	
W3D	WATER	
W2D	WATER	

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
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UNK	UNKNOWN
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TN MGA Surveyor

0 1 2 3 4 5 10
SCALE 1:100

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DATUM:	AHD
DATE OF SURVEY:	11 & 12 MAY & 7 JUNE 2023
SURVEYED BY:	PT
DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

AO

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SHEET 6 OF 16

ISSUE: INITIAL

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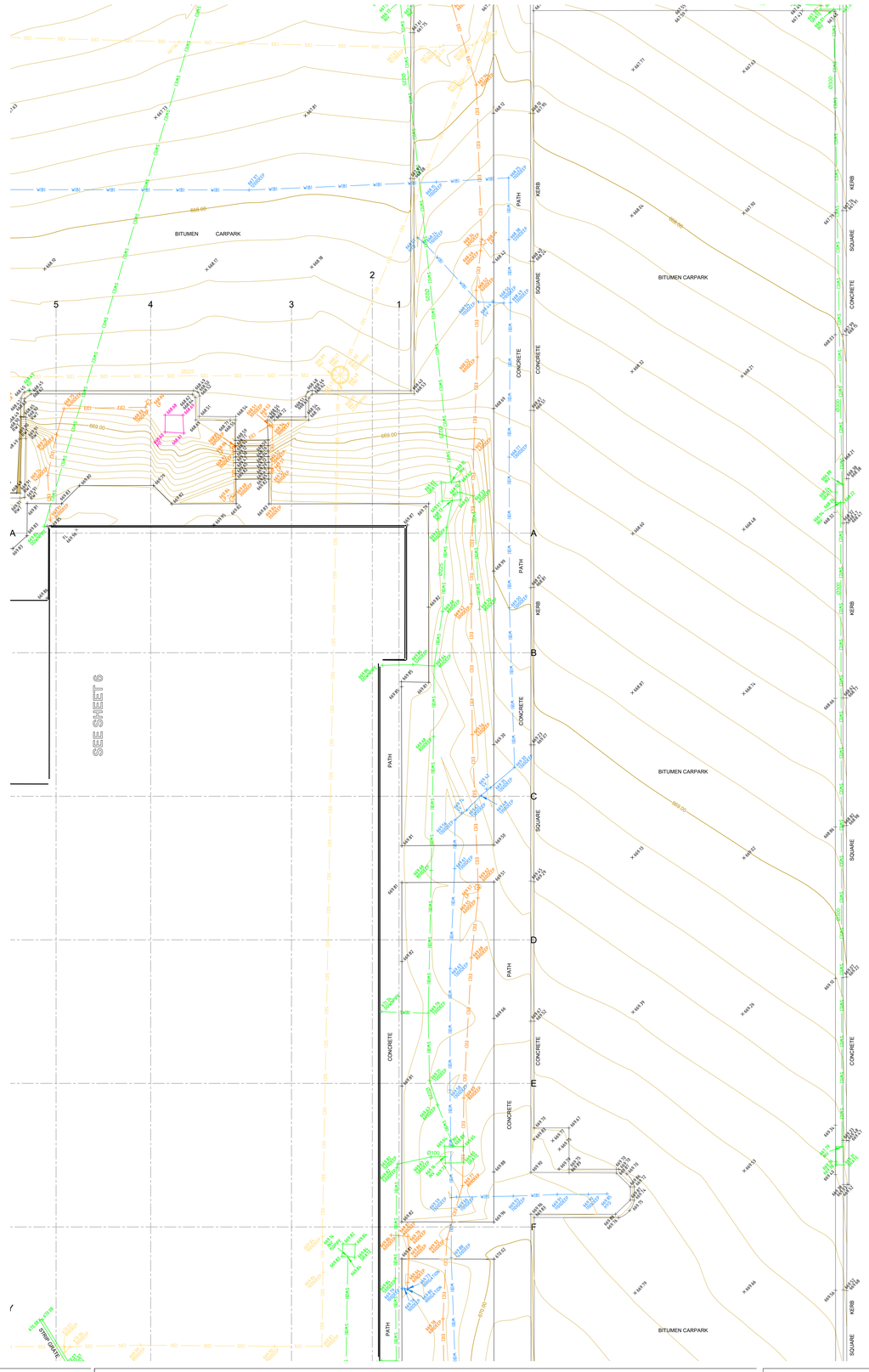
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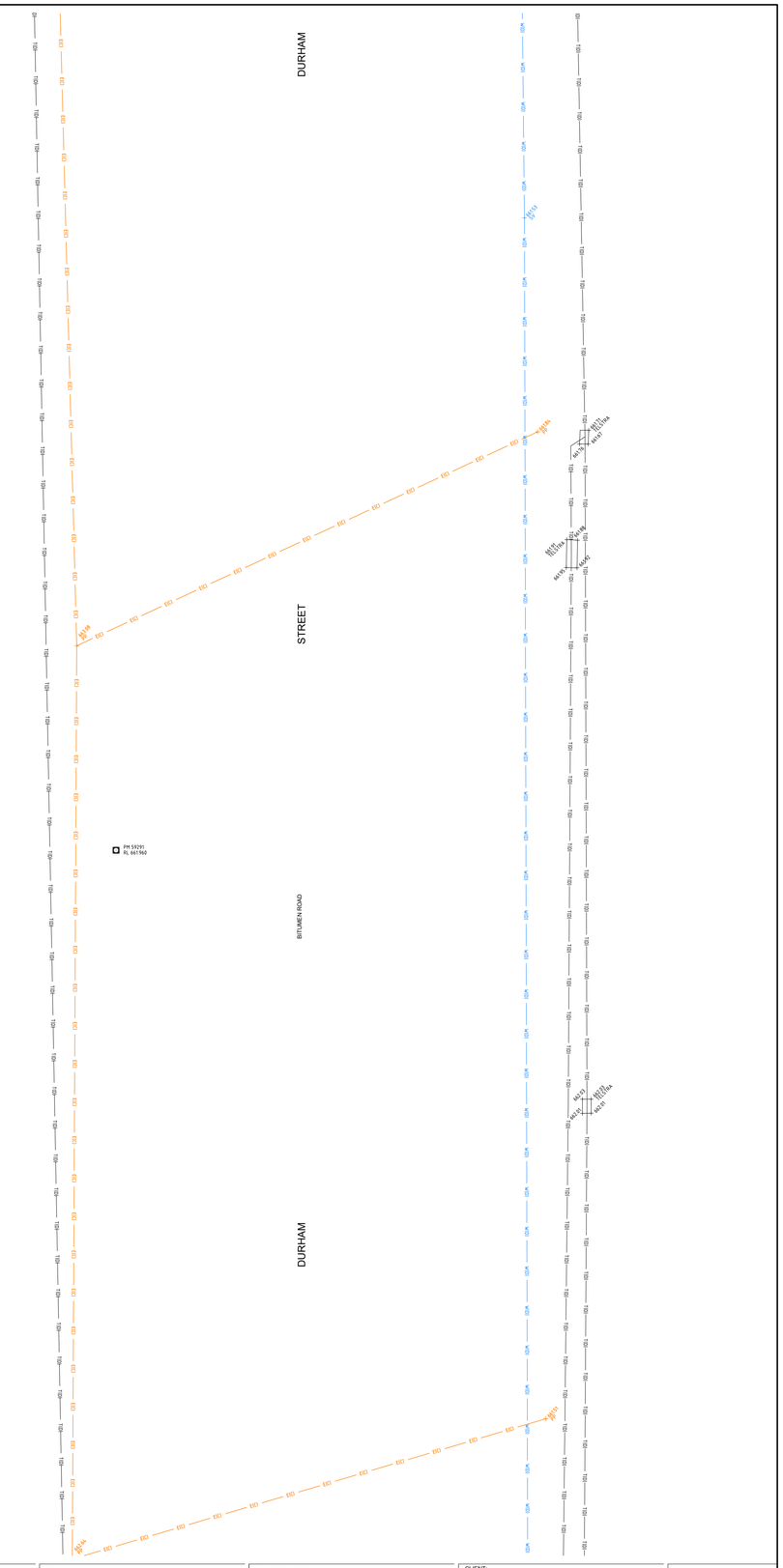
LEGEND

EB1	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EB2	ELECTRICITY	
EB3	ELECTRICITY	
GB1	GAS	
GB2	GAS	
SW1	SEWER	
SW2	SEWER	
SW3	SEWER	
SW30	STORMWATER	
SW32	STORMWATER	
SW20	STORMWATER	
TB1	TELECOMMUNICATION	
TB2	TELECOMMUNICATION	
TB3	TELECOMMUNICATION	
UNID	UNIDENTIFIED	
W30	WATER	
W20	WATER	

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
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UNK	UNKNOWN
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TN
MGA
Bearings





0 1 2 3 4 5 10
SCALE 1:100

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AO

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SHEET 7 OF 16

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TN MGA Grid Meridian

0 1 2 3 4 5 10
SCALE 1:100

STREET

BITUMEN ROAD

HOWICK

322°10'10"
206.085

PM 11215
RL 660.80 (E)

SEE SHEET 5

SEE SHEET 11

FF

BITUMEN CARPARK

DRIVEWAY

BITUMEN

CONC SQUARE KERB

CONCRETE

SQUARE

KERB

PATH

STRIP GRATE

13

100
DP 1126063
4.134 ha
BY TITLE

CONC

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602

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ISSUE: INITIAL

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PM 11178
MGA EASTING: 739254.315
MGA NORTHING: 6300887.445
RL (AHD): 660.646

PM 11215
MGA EASTING: 739155.133
MGA NORTHING: 6300638.023
RL (AHD): 660.810

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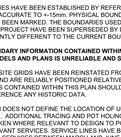
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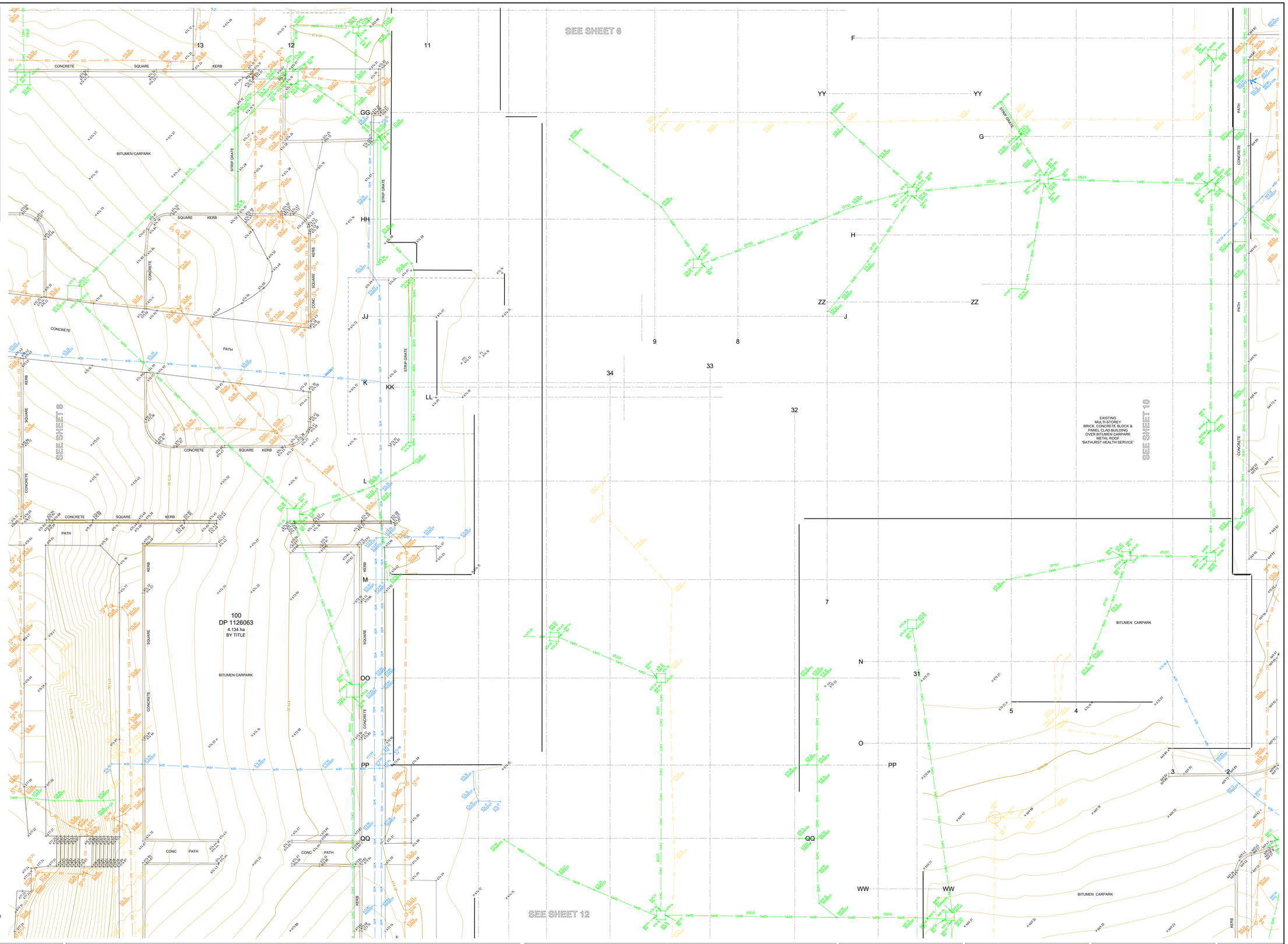
DIAL BEFORE YOU DIG www.1100.com.au

LEGEND

EB0	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EE0	ELECTRICITY	
ED0	ELECTRICITY	
GA0	GAS	
GD0	GAS	
SA0	SEWER	
SC0	SEWER	
SE0	SEWER	
SW3B	STORMWATER	
SW1D	STORMWATER	
SW2D	STORMWATER	
T3B	TELECOMMUNICATION	
T1D	TELECOMMUNICATION	
T2D	TELECOMMUNICATION	
U0	UNIDENTIFIED	
W3B	WATER	
W2D	WATER	

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
IC	INSPECTION COVER
INV	INVERT
LP	LIGHT POLE
PP	POWER POLE
RWB	RETAINING WALL BOTTOM
RWT	RETAINING WALL TOP
SMH	SEWER MANHOLE
SJ	SEWER JUNCTION
SV	STOP VALVE
SWMH	STORMWATER MANHOLE
WS	WATER SERVICE
TELP	TELSTRA PILLAR
UNK	UNKNOWN
1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL, 450 MILLIMETRE DIAMETER PIPE





0 1 2 3 4 5 10
SCALE 1:100

USHER & COMPANY
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PO Box 8069, ORANGE NSW 2800
Phone: (02) 6361 1422
Email: admin@ushersurvey.com.au

Amendments

ISSUE	DATE	DETAILS
INITIAL	17-07-2023	

PLAN:

SHOWING PARTIAL DETAIL AND LEVELS
AT BATHURST BASE HOSPITAL
BEING LOT 100 IN DP 1126063

LGA:	BATHURST REGIONAL
SUBURB:	WEST BATHURST
ORIGIN:	SEE NOTES
REDUCTION RATIO:	1:100
DATUM:	AHD
DATE OF SURVEY:	11 & 12 MAY & 7 JUNE 2023
SURVEYED BY:	PT
DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

AO

PLAN REFERENCE: 8681-STG2-DET
SHEET 9 OF 16

ISSUE: INITIAL

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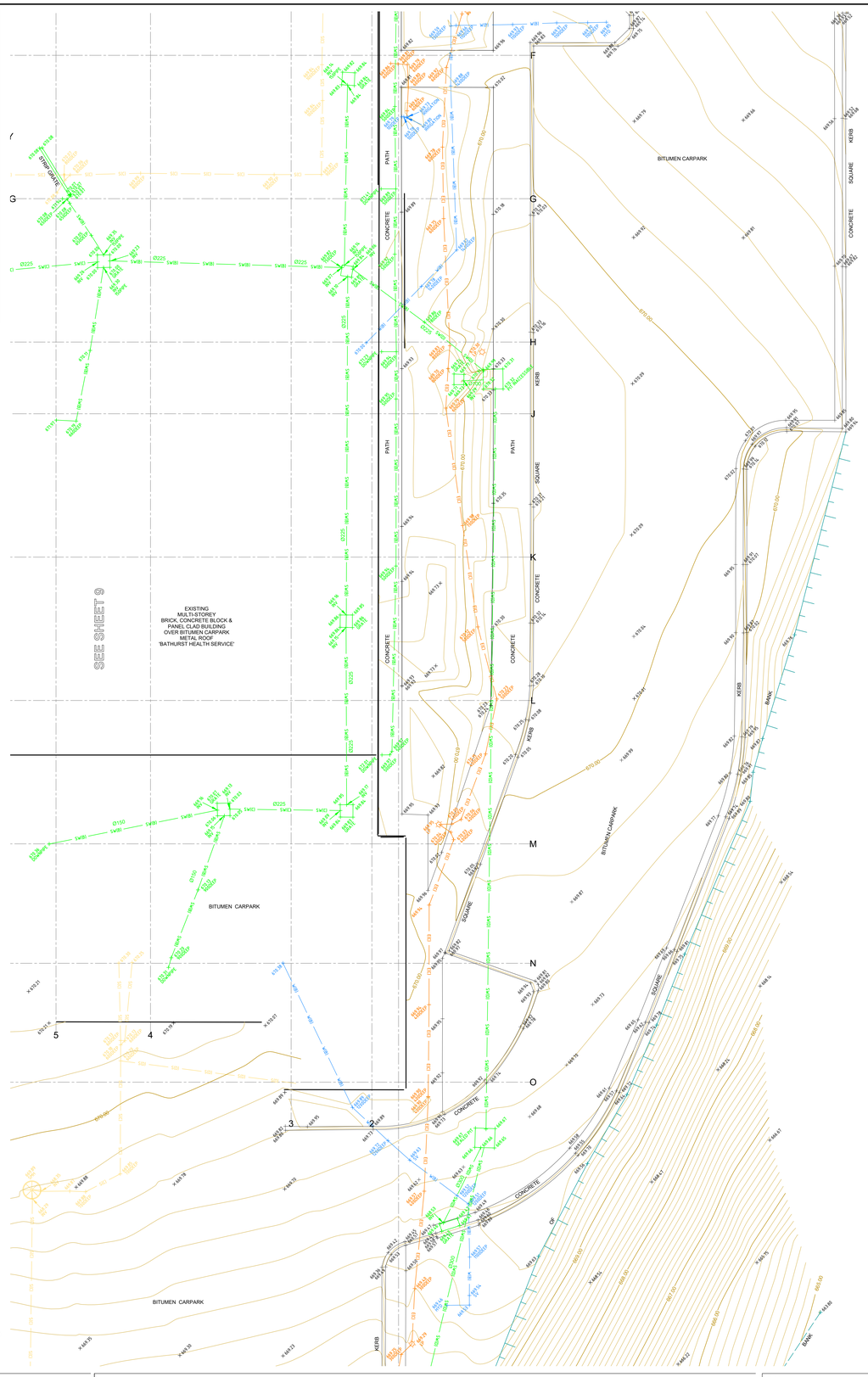
LEGEND

EB1	ELECTRICITY
EE1	ELECTRICITY
ED1	ELECTRICITY
GA1	GAS
GD1	GAS
SA1	SEWER
SC1	SEWER
SD1	SEWER
SWB1	STORMWATER
SWC1	STORMWATER
SWD1	STORMWATER
TB1	TELECOMMUNICATION
TC1	TELECOMMUNICATION
TD1	TELECOMMUNICATION
?	UNIDENTIFIED
WB1	WATER
WD1	WATER

DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
IC	INSPECTION COVER
INV	INVERT
LP	LIGHT POLE
PP	POWER POLE
RWB	RETAINING WALL BOTTOM
RWT	RETAINING WALL TOP
SMH	SEWER MANHOLE
SJ	SEWER JUNCTION
SV	STOP VALVE
SWMH	STORMWATER MANHOLE
WS	WATER SERVICE
TELP	TELSTRA PILLAR
UNK	UNKNOWN
115DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL, 450 MILLIMETRE DIAMETER PIPE

TN MGA Bearings



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SHEET 10 OF 16

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LEGEND

EB0	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EB1	ELECTRICITY	
EB3	ELECTRICITY	
GAS	GAS	
GD3	GAS	
SW0	SEWER	
SW1	SEWER	
SW2	SEWER	
SW30	STORMWATER	
SW32	STORMWATER	
SW20	STORMWATER	
TB0	TELECOMMUNICATION	
TC0	TELECOMMUNICATION	
TD0	TELECOMMUNICATION	
UNIDENTIFIED		
W30	WATER	
W20	WATER	

EBOX	ELECTRICITY BOX
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HYD	HYDRANT
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UNK	UNKNOWN
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TN MGA Bearings

STREET

BITUMEN ROAD

HOWICK

PM 11215
RL 660.810

SEE SHEET 8

SEE SHEET 14

EXISTING TWO STOREY BRICK HERITAGE BUILDING TILE ROOF

RIDGE

CONC PATH

KERB

BITUMEN CARPARK

SQUARE

CONCRETE

PATH

DRIVEWAY

BITUMEN

SEE SHEET 12

0 1 2 3 4 5 10

SCALE 1:100

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DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

AO

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SHEET 11 OF 16

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LEGEND

EB1	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EB2	ELECTRICITY	
EB3	ELECTRICITY	
GAS	GAS	
GAS1	GAS	
SEW	SEWER	
SEW1	SEWER	
SEW2	SEWER	
SW30	STORMWATER	
SW12	STORMWATER	
SW20	STORMWATER	
TB1	TELECOMMUNICATION	
TB2	TELECOMMUNICATION	
TB3	TELECOMMUNICATION	
UNK	UNIDENTIFIED	
W30	WATER	
W20	WATER	

EBOX	ELECTRICITY BOX
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FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
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1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL, 450 MILLIMETRE DIAMETER PIPE

TN MGA

0 1 2 3 4 5 10
SCALE 1:100

SEE SHEET 9
SEE SHEET 11
SEE SHEET 13
SEE SHEET 15

200.365

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SHEET 12 OF 16

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EL(1)	ELECTRICITY
ED(1)	ELECTRICITY
GA(1)	GAS
GD(1)	GAS
SA(1)	SEWER
SA(2)	SEWER
SD(1)	SEWER
SW(3)	STORMWATER
SW(1)	STORMWATER
SW(2)	STORMWATER
TB(1)	TELECOMMUNICATION
TI(1)	TELECOMMUNICATION
TD(1)	TELECOMMUNICATION
	UNIDENTIFIED
W(3)	WATER
W(2)	WATER

DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)

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TN MGA

SCALE 1:100

SEE SHEET 10
SEE SHEET 12
SEE SHEET 16

206.41
142°11'50"

STREET
BITUMEN ROAD
DURHAM

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ISSUE: INITIAL

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CONTOUR INTERVAL 1.0m MAJOR, 0.1m MINOR.

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PM 11178
MGA EASTING: 739254.315
MGA NORTHING: 6300687.445
RL (AHD): 660.646

PM 11215
MGA EASTING: 739155.133
MGA NORTHING: 6300638.023
RL (AHD): 660.810

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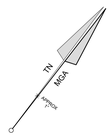
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LEGEND

EB1	ELECTRICITY
EB2	ELECTRICITY
EB3	ELECTRICITY
GAS	GAS
SEWER	SEWER
SEWER	SEWER
SW1	STORMWATER
SW2	STORMWATER
SW3	STORMWATER
TEL	TELECOMMUNICATION
TEL	TELECOMMUNICATION
TEL	TELECOMMUNICATION
UNIDENTIFIED	UNIDENTIFIED
WATER	WATER
WATER	WATER

DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)

EBOX	ELECTRICITY BOX
EOT	END OF TRACE
FFL	FINISHED FLOOR LEVEL
HP	HIGH PRESSURE
HYD	HYDRANT
IC	INSPECTION COVER
INV	INVERT
LP	LIGHT POLE
PP	POWER POLE
RWB	RETAINING WALL BOTTOM
RWT	RETAINING WALL TOP
SMH	SEWER MANHOLE
SJ	SEWER JUNCTION
SV	STOP VALVE
SWMH	STORMWATER MANHOLE
WS	WATER SERVICE
TELP	TELSTRA PILLAR
UNK	UNKNOWN
1150DEEP450P/PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL, 450 MILLIMETRE DIAMETER PIPE



SEE SHEET 11

MITRE

BITUMEN ROAD

STREET

CONCRETE

BITUMEN

PATH

DRIVEWAY

SEE SHEET 15

0 1 2 3 4 5 10

SCALE 1:100

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602
Suite 3, 64-68 McNamara Street, Orange NSW 2800
PO Box 8069, ORANGE NSW 2800
Phone: (02) 6361 1422
Email: admin@ushersurvey.com.au

Amendments

ISSUE	DATE	DETAILS
INITIAL	17-07-2023	

PLAN:

SHOWING PARTIAL DETAIL AND LEVELS
AT BATHURST BASE HOSPITAL
BEING LOT 100 IN DP 1126063

LGA:	BATHURST REGIONAL
SUBURB:	WEST BATHURST
ORIGIN:	SEE NOTES
REDUCTION RATIO:	1:100
DATUM:	AHD
DATE OF SURVEY:	11 & 12 MAY & 7 JUNE 2023
SURVEYED BY:	PT
DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

PLAN REFERENCE: 8681-STG2-DET
SHEET 14 OF 16

AO

ISSUE: INITIAL

NOTES

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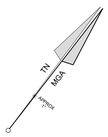
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LEGEND

EB0	ELECTRICITY	DENOTES UNDERGROUND SERVICE TYPE AND QUALITY LEVEL (AS 5488)
EB1	ELECTRICITY	
EB2	ELECTRICITY	
GAS	GAS	
GD2	GAS	
SEW	SEWER	
SD2	SEWER	
SW2	SEWER	
SW30	STORMWATER	
SW12	STORMWATER	
SW20	STORMWATER	
TB1	TELECOMMUNICATION	
TD1	TELECOMMUNICATION	
TD2	TELECOMMUNICATION	
UNID	UNIDENTIFIED	
W30	WATER	
W20	WATER	

EBOX	ELECTRICITY BOX
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TELP	TELSTRA PILLAR
UNK	UNKNOWN
1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL, 450 MILLIMETRE DIAMETER PIPE



SEE SHEET 12
SEE SHEET 14
SEE SHEET 16

200.365
232°16'40"

MITRE
BITUMEN ROAD
STREET

0 1 2 3 4 5 10
SCALE 1:100

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602

Suite 3, 64-68 McNamara Street, Orange NSW 2800
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SW20	STORMWATER	
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TC0	TELECOMMUNICATION	
TD0	TELECOMMUNICATION	
T00	UNIDENTIFIED	
W30	WATER	
W20	WATER	

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UNK	UNKNOWN
1150DEEP450PIPE	DENOTES SERVICE 1150 MILLIMETRES DEEP BELOW SURFACE LEVEL. 450 MILLIMETRE DIAMETER PIPE

TN
MGA
GRID NORTH

SEE SHEET 13

EXISTING TWO STOREY BRICK RESIDENCE TILE ROOF

CONCRETE | PATH | CONCRETE | SQUARE | KERB

MITRE | BITUMEN ROAD | STREET

EOM 15859
RL 657.170

0 1 2 3 4 5 10
SCALE 1:100

USHER & COMPANY
Surveying & Land Development Consultants
A.B.N. 70 128 414 602
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DRAWN BY:	LL

CLIENT: HEALTH INFRASTRUCTURE

PLAN REFERENCE: 8681-STG2-DET
SHEET 16 OF 16

AO

ISSUE: INITIAL

Appendix B

Civil Plans – SSDA

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BATHURST HOSPITAL REDEVELOPMENT

361 HOWICK STREET, WEST BATHURST NSW 2795

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06.07.2024 12:39 PM

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD



LOCALITY PLAN

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GENERAL
COVER SHEET

Project No	Revision Date
231092-TTW-11-DR-CI-00001	17.05.2024
Scale	Drawn by / Checked by
	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-00-XX-001	D

Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

DRAWING INDEX

GENERAL

BHR-TTW-DRW-CIV-STE-00-XX-001	COVER SHEET
BHR-TTW-DRW-CIV-STE-00-XX-003	DRAWING INDEX
BHR-TTW-DRW-CIV-STE-00-XX-004	GENERAL NOTES & LEGEND SHEETS 1
BHR-TTW-DRW-CIV-STE-00-XX-005	GENERAL NOTES & LEGEND SHEETS 2
BHR-TTW-DRW-CIV-STE-00-XX-011	GENERAL ARRANGEMENT PLAN SHEET 1
BHR-TTW-DRW-CIV-STE-00-XX-012	GENERAL ARRANGEMENT PLAN SHEET 2
BHR-TTW-DRW-CIV-STE-00-XX-013	GENERAL ARRANGEMENT PLAN SHEET 3
BHR-TTW-DRW-CIV-STE-00-XX-014	GENERAL ARRANGEMENT PLAN SHEET 4

GEOMETRY

BHR-TTW-DRW-CIV-STE-01-XX-011	ALIGNMENT CONTROL AND GRADING PLAN SHEET 1
BHR-TTW-DRW-CIV-STE-01-XX-012	ALIGNMENT CONTROL AND GRADING PLAN SHEET 2
BHR-TTW-DRW-CIV-STE-01-XX-013	ALIGNMENT CONTROL AND GRADING PLAN SHEET 3
BHR-TTW-DRW-CIV-STE-01-XX-014	ALIGNMENT CONTROL AND GRADING PLAN SHEET 4

EARTHWORKS

BHR-TTW-DRW-CIV-STE-02-XX-001	EARTHWORKS NOTES & LEGEND
BHR-TTW-DRW-CIV-STE-02-XX-011	CUT AND FILL VOLUMES PLAN SHEET 1
BHR-TTW-DRW-CIV-STE-02-XX-012	CUT AND FILL VOLUMES PLAN SHEET 2
BHR-TTW-DRW-CIV-STE-02-XX-013	CUT AND FILL VOLUMES PLAN SHEET 3
BHR-TTW-DRW-CIV-STE-02-XX-014	CUT AND FILL VOLUMES PLAN SHEET 4

PAVEMENT

BHR-TTW-DRW-CIV-STE-03-XX-001	PAVEMENT NOTES & LEGEND SHEET 1
BHR-TTW-DRW-CIV-STE-03-XX-002	PAVEMENT NOTES & LEGEND SHEET 2
BHR-TTW-DRW-CIV-STE-03-XX-011	PAVEMENT PLAN SHEET 1
BHR-TTW-DRW-CIV-STE-03-XX-012	PAVEMENT PLAN SHEET 2
BHR-TTW-DRW-CIV-STE-03-XX-013	PAVEMENT PLAN SHEET 3
BHR-TTW-DRW-CIV-STE-03-XX-014	PAVEMENT PLAN SHEET 4
BHR-TTW-DRW-CIV-STE-03-XX-041	DETAILS SHEET 1
BHR-TTW-DRW-CIV-STE-03-XX-042	DETAILS SHEET 2

STORMWATER

BHR-TTW-DRW-CIV-STE-04-XX-001	STORMWATER NOTES AND LEGEND SHEET 1
BHR-TTW-DRW-CIV-STE-04-XX-011	STORMWATER & SUBSOIL DRAINAGE PLAN SHEET 1
BHR-TTW-DRW-CIV-STE-04-XX-012	STORMWATER & SUBSOIL DRAINAGE PLAN SHEET 2
BHR-TTW-DRW-CIV-STE-04-XX-013	STORMWATER & SUBSOIL DRAINAGE PLAN SHEET 3
BHR-TTW-DRW-CIV-STE-04-XX-014	STORMWATER & SUBSOIL DRAINAGE PLAN SHEET 4
BHR-TTW-DRW-CIV-STE-04-XX-041	DETAILS SHEET 1
BHR-TTW-DRW-CIV-STE-04-XX-042	DETAILS SHEET 2
BHR-TTW-DRW-CIV-STE-04-XX-043	DETAILS SHEET 3
BHR-TTW-DRW-CIV-STE-04-XX-044	DETAILS SHEET 4
BHR-TTW-DRW-CIV-STE-04-XX-045	DETAILS SHEET 5 - MHU CAR PARK DETENTION TANK
BHR-TTW-DRW-CIV-STE-04-XX-046	DETAILS SHEET 6 - FLEET PARKING DETENTION TANK
BHR-TTW-DRW-CIV-STE-04-XX-047	DETAILS SHEET 7 - MAIN ENTRANCE BIORETENTION

RETAINING WALLS

BHR-TTW-DRW-CIV-STE-06-XX-041	DETAILS SHEET 1

TRAFFIC CONTROL DEVICES

BHR-TTW-DRW-CIV-STE-07-XX-011	HOWICK STREET ON-STREET PARKING SHEET 1
BHR-TTW-DRW-CIV-STE-07-XX-012	HOWICK STREET ON-STREET PARKING SHEET 2
BHR-TTW-DRW-CIV-STE-07-XX-013	MITRE STREET ON-STREET PARKING SHEET 1
BHR-TTW-DRW-CIV-STE-07-XX-015	DURHAM STREET ON-STREET PARKING SHEET 1

SEDIMENT AND EROSION CONTROL

BHR-TTW-DRW-CIV-STE-09-XX-101	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
BHR-TTW-DRW-CIV-STE-09-XX-111	SEDIMENT AND EROSION CONTROL PLAN SHEET 1
BHR-TTW-DRW-CIV-STE-09-XX-112	SEDIMENT AND EROSION CONTROL PLAN SHEET 2
BHR-TTW-DRW-CIV-STE-09-XX-113	SEDIMENT AND EROSION CONTROL PLAN SHEET 3
BHR-TTW-DRW-CIV-STE-09-XX-114	SEDIMENT AND EROSION CONTROL PLAN SHEET 4

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C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD
E	08.07.2024	90% DD ISSUE	SD	TD

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STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
GENERAL
DRAWING INDEX

Project No	Revision Date
231092-TTW-11-DR-CI-00003	08.07.2024

Scale	Drawn by	Checked by
N.T.S.	SD	TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-00-XX-003	E

Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

GENERAL

1. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORKS. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
2. STRIP ALL TOPSOIL FROM THE CONSTRUCTION AREA. ALL STRIPPED TOPSOIL SHALL BE DISPOSED OF OFF-SITE UNLESS DIRECTED OTHERWISE.
3. MAKE SMOOTH CONNECTION WITH ALL EXISTING WORKS.
4. COMPACT SUBGRADE UNDER BUILDINGS AND PAVEMENTS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.1.1. COMPACTION UNDER BUILDINGS TO EXTEND 2M MINIMUM BEYOND BUILDING FOOTPRINT.
5. ALL WORK ON PUBLIC PROPERTY, PROPERTY WHICH IS TO BECOME PUBLIC PROPERTY, OR ANY WORK WHICH IS TO COME UNDER THE CONTROL OF THE STATUTORY AUTHORITY; THE CONTRACTOR IS TO ENSURE THAT THE DRAWINGS USED FOR CONSTRUCTION HAVE BEEN APPROVED BY ALL RELEVANT AUTHORITIES PRIOR TO COMMENCEMENT SITE.
6. ALL WORK ON PUBLIC PROPERTY, PROPERTY WHICH IS TO BECOME PUBLIC PROPERTY, OR ANY WORK WHICH IS TO COME UNDER THE CONTROL OF THE STATUTORY AUTHORITY IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT AUTHORITY. THE CONTRACTOR SHALL OBTAIN THESE REQUIREMENTS FROM THE AUTHORITY. WHERE THE REQUIREMENTS OF THE AUTHORITY ARE DIFFERENT TO THE DRAWINGS AND SPECIFICATIONS, THE REQUIREMENTS OF THE AUTHORITY SHALL BE APPLICABLE.
7. FOR ALL TEMPORARY BATTERS REFER TO GEOTECHNICAL RECOMMENDATIONS.

BOUNDARIES AND EASEMENTS

1. THE PROPERTY BOUNDARY AND EASEMENT LOCATIONS SHOWN ON TAYLOR THOMSON WHITTING DRAWING'S HAVE BEEN BASED ON INFORMATION RECEIVED FROM : USHER & COMPANY, SURVEYING & LAND DEVELOPMENT CONSULTANTS

2. TAYLOR THOMSON WHITTING MAKES NO GUARANTEES THAT THE BOUNDARY OR EASEMENT INFORMATION SHOWN IS CORRECT. TAYLOR THOMSON WHITTING WILL ACCEPT NO LIABILITIES FOR BOUNDARY INACCURACIES. THE CONTRACTOR/BUILDER IS ADVISED TO CHECK/CONFIRM ALL BOUNDARIES IN RELATION TO ALL PROPOSED WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. BOUNDARY INACCURACIES FOUND ARE TO BE REPORTED TO THE SUPERINTENDENT PRIOR TO CONSTRUCTION STARTING.

SURVEY

ORIGIN OF LEVELS:	PM 11178 & RL (AHD): 660.646, PM 11215 & RL (AHD): 660.810
DATUM OF LEVELS:	AHD
COORDINATE SYSTEM:	M.G.A
SURVEY PREPARED BY:	USHER & COMPANY, SURVEYING & LAND DEVELOPMENT CONSULTANTS
SETOUT POINTS:	MGA EASTING: 739254.315 & MGA NORTHING: 6300887.445, MGA EASTING: 739155.133 & MGA NORTHING: 6300638.023

1. TAYLOR THOMSON WHITTING DOES NOT GUARANTEE THAT THE SURVEY INFORMATION SHOWN ON THESE DRAWINGS IS ACCURATE AND WILL ACCEPT NO LIABILITY FOR ANY INACCURACIES IN THE SURVEY INFORMATION PROVIDED TO US FROM ANY CAUSE WHATSOEVER.

UNDERGROUND SERVICES - WARNING

1. THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON TAYLOR THOMSON WHITTINGS DRAWINGS HAVE BEEN PLOTTED FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES. THIS INFORMATION HAS BEEN PREPARED SOLELY FOR THE AUTHORITIES OWN USE AND MAY NOT NECESSARILY BE UPDATED OR ACCURATE.
2. THE POSITION OF SERVICES AS RECORDED BY THE AUTHORITY AT THE TIME OF INSTALLATION MAY NOT REFLECT CHANGES IN THE PHYSICAL ENVIRONMENT SUBSEQUENT TO INSTALLATION.
3. THE CONTRACTOR MUST CONFIRM THE EXACT LOCATION AND EXTENT OF SERVICES PRIOR TO CONSTRUCTION AND NOTIFY ANY CONFLICT WITH THE DRAWINGS IMMEDIATELY TO THE ENGINEER/SUPERINTENDENT.
4. THE CONTRACTOR IS TO GET APPROVAL FROM THE RELEVANT STATE SURVEY DEPARTMENT, TO REMOVE/ADJUST ANY SURVEY MARK. THIS INCLUDES BUT IS NOT LIMITED TO; STATE SURVEY MARKS (SSM), PERMANENT MARKS (PM), CADASTRAL REFERENCE MARKS OR ANY OTHER SURVEY MARK WHICH IS TO BE REMOVED OR ADJUSTED IN ANY WAY.
5. TAYLOR THOMSON WHITTING PLANS DO NOT INDICATE THE PRESENCE OF ANY SURVEY MARK. THE CONTRACTOR IS TO UNDERTAKE THEIR OWN SEARCH.

DIAL BEFORE YOU DIG (DBYD)

1. PUBLIC SERVICE UTILITY INFORMATION SHOWN ON PLAN HAS BEEN COMPLIED FROM INFORMATION RECEIVED FROM DIAL BEFORE YOU DIG INQUIRY, REFERENCE NUMBER No.34022573 OBTAINED ON 17.04.2023 UNLESS SPECIFICALLY SHOWN OTHERWISE, THIS LOCATION AND DEPTH OF SERVICES SHOWN ON THIS PLAN HAVE NOT BEEN VERIFIED.
2. THE LOCATION OF SERVICES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED AS ACCURATELY AS POSSIBLE FROM DIAGRAMS PROVIDED BY SERVICE AUTHORITIES AND SHOULD BE CONFIRMED BY SITE INSPECTION."

SITE WORKS

1. ALL BASECOURSE MATERIAL TO COMPLY WITH RMS SPECIFICATION NO 3051 AND COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
2. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
3. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH AN APPROVED SELECT MATERIAL AND COMPACTED TO A MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1

PUBLIC DOMAIN WORKS

1. PUBLIC DOMAIN WORKS ARE NOT TO COMMENCE UNTIL THESE DRAWINGS ARE STAMPED AS APPROVED.

TENDER DOCUMENTATION

1. THESE DRAWINGS ARE PRELIMINARY DRAWINGS ISSUED FOR TENDER AS AN INDICATION OF THE EXTENT OF WORKS ONLY. THEY ARE NOT A COMPLETE CONSTRUCTION SET OF DRAWINGS.
2. TO DETERMINE THE FULL EXTENT OF WORK, THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND OTHER CONTRACT DOCUMENTS. ALLOW FOR ALL ITEMS SHOWN ON ARCHITECTURAL AND OTHER DRAWINGS AS NOT ALL ITEMS ARE SHOWN ON THE STRUCTURAL/CIVIL WORKS DRAWINGS.
3. SHOULD ANY AMBIGUITY, ERROR, OMISSIONS, DISCREPANCY, INCONSISTENCY OR OTHER FAULT EXIST OR SEEM TO EXIST IN THE DOCUMENTS, IMMEDIATELY NOTIFY IN WRITING TO THE SUPERINTENDENT.
4. RATES SHOWN ON THE DRAWINGS ARE FOR THE FINAL STRUCTURE/CIVIL WORKS IN PLACE AND DO NOT ALLOW FOR ANY WASTAGE, ROLLING MARGINS, OVER SUPPLY OR FABRICATION REQUIREMENTS. ETC.

DESIGN AND CONSTRUCT DOCUMENTATION

1. THE LEVEL OF DETAIL / DESIGN REFLECTED IN THESE DOCUMENTS IS BASED ON THE UNDERSTANDING THIS WILL BE BUILT AS PART OF A DESIGN & CONSTRUCT CONTRACT.
2. THE CONTRACTOR SHALL RETAIN THE RESPONSIBILITY TO UNDERTAKE DETAILED DESIGN, CONFIRM COMPLIANCE WITH RELEVANT STANDARDS, CONSENT CONDITIONS & THE SPECIFICATION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE FINAL DESIGN IS CO-ORDINATED FULLY WITH OTHER CONSULTANTS.
4. NO VARIATION WILL BE ACCEPTED FOR DESIGN AMENDMENTS REQUIRED TO MEET THE FUNCTIONAL OBJECTIVE OF THIS DOCUMENTATION.

SAFETY IN DESIGN

CONTRACTOR TO REFER TO APPENDIX B OF THE CIVIL SPECIFICATION FOR THE CIVIL RISK AND SOLUTIONS REGISTER.

1. EXISTING SERVICES
   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.

2. 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 PRACTICABLY POSSIBLE FROM EXISTING STRUCTURE(S).

3. EXISTING TREES
   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 PRACTICABLY POSSIBLE FROM EXISTING TREES. ADVICE NEEDS TO BE SOUGHT FROM ARBORIST AND/OR LANDSCAPE ARCHITECT ON MEASURES REQUIRED TO PROTECT TREES.

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

5. EXCAVATIONS
   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.

6. GROUND CONDITIONS
   CONTRACTOR TO BE AWARE OF THE SITE GEOTECHNICAL CONDITIONS. REFER TO GEOTECHNICAL REPORT BY

   - RCA AUSTRALIA
   - GEOTECHNICAL INVESTIGATION, RCA ref 16547-202/2, AUGUST 2023.

7. HAZARDOUS MATERIALS
   EXISTING ASBESTOS PRODUCTS & 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 ADOPTED AND APPROPRIATE PPE TO BE USED WHEN HANDLING ALL HAZARDOUS MATERIALS. REFER TO GEOTECHNICAL/ENVIRONMENTAL REPORT BY

   - RCA AUSTRALIA
   - GEOTECHNICAL INVESTIGATION, RCA ref 16547-202/2, AUGUST 2023

8. CONFINED SPACES
   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 AND USE APPROPRIATE PPE WHEN ENTERING CONFINED SPACES.

9. MANUAL HANDLING
   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.

10. WATER POLLUTION
    CONTRACTOR TO ENSURE APPROPRIATE MEASURES ARE TAKEN TO PREVENT POLLUTANTS FROM CONSTRUCTION WORKS CONTAMINATING THE SURROUNDING ENVIRONMENT.

11. SITE ACCESS/EGRESS
    CONTRACTOR 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. VEHICLE MOVEMENT
    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.

BOUNDARIES

EXISTING	REMOVED	PROPOSED	
			BLOCK BOUNDARY
			BLOCK BOUNDARY EXTINGUISHED

BUILDINGS

EXISTING	REMOVED	PROPOSED	
			BUILDING ENVELOPE
			FUTURE BUILDING ENVELOPE
			BASEMENT OUTLINE
			BUILDING AWNING
			BUILDING DOUBLE DOOR ENTRY
			BUILDING SINGLE DOOR ENTRY
			BUILDING SLIDING DOOR ENTRY

LANDSCAPE

EXISTING	REMOVED	PROPOSED	
			FENCE LINE
			FENCE LINE ON BOUNDARY
			PROPERTY ACCESS GATE
			BUILDING SLIDING DOOR ENTRY TREE REPRESENTATION MAY VARY BASED ON LANDSCAPE CONSULTANT OR SURVEY INFORMATION
			PAVEMENT
			SOFT LANDSCAPE
			TREE PROTECTION ZONE
			STRUCTURAL ROOT ZONE
			RETAINING WALL

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05.07.2024 6:34 PM

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GENERAL
GENERAL NOTES AND LEGEND
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-00004	05.07.2024
Scale	**Drawn by** / **Checked by**
	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-00-XX-004	D

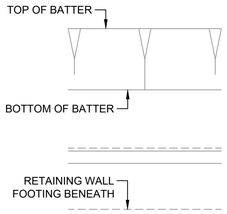
Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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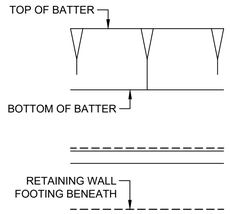
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RETAINING

EXISTING



PROPOSED



BATTER

WALL

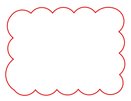
RETAINING WALL

PARKING

EXISTING	REMOVED	PROPOSED	
			PAINTED ARROW - STRAIGHT THROUGH
			PAINTED ARROW - STRAIGHT THROUGH OR TURN LEFT ONLY
			PAINTED ARROW - STRAIGHT THROUGH OR TURN EITHER DIRECTION
			PAINTED ARROW - TURN EITHER DIRECTION
			PAINTED ARROW - TURN LEFT ONLY
			ACCESSIBILITY SYMBOL
			PARKING BAY WHEEL STOP - PERPENDICULAR
			PARKING BAY - PARALLEL
			PARKING OR TRAFFIC SIGN
			BOLLARD
			GUARD RAIL

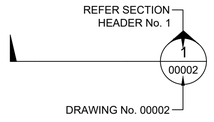
FOR A MORE COMPREHENSIVE LINES AND SIGNS LEGEND REFER 07000 SERIES DRAWINGS

REVISION

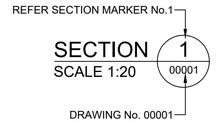
LATEST CHANGE	ON HOLD	
		CLOUDING

REFERENCING

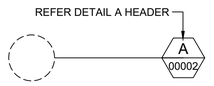
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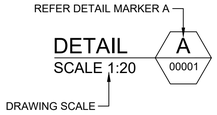


HEADER



INDICATIVE SECTION NUMBER 1





DETAIL LETTER A

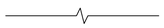


ELEVATION NUMBER 1

PLAN
SCALE 1:20

PLAN TITLE

SECTIONS

EXISTING	PROPOSED	
		REDUCED LEVEL
		HORIZONTAL SLOPE RATIO
		VERTICAL SLOPE RATIO
		PIPE INVERT LEVEL
		PIPE INVERT LEVEL
		WATER LEVEL
		TOP OF WALL LEVEL
		BREAK LINE
		PIPE BREAK

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GENERAL
GENERAL NOTES AND LEGEND SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-00005	05.07.2024
Scale	**Drawn by** / **Checked by**
	SD / TD

90% DD ISSUE
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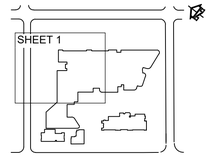
Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-00-XX-005	D

Taylor Thomson Whitting

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A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

EXISTING STAFF PARKING

ADJOINS SHEET 2

NEW CARPARK CIRCULATION CONNECTION BETWEEN EXISTING CARPARKS IN ACCORDANCE WITH AS 2890.1.

2.4m WIDE x 5.4m DEEP PARKING BAYS IN ACCORDANCE WITH AS 2890.1 TYPICAL

NEW STORMWATER DETENTION TANK. REFER 04 SERIES DRAWINGS

NEW CARPARK STORMWATER DRAINAGE. REFER 04 SERIES DRAWINGS

EXISTING VEHICLE CROSSING AND LAYBACK TO REMAIN

COMMONWEALTH STREET

SERVICES CONSULTANT TO REVIEW DEPTH AND ALIGNMENT OF EXISTING BELOW GROUND SERVICES AND PROVIDE ADVICE ON POSSIBLE PROTECTION OR RELOCATION.

EXISTING FLEET PARKING

ENTRANCE

EXISTING SUB-STATION

RETAINING WALL/FOOTINGS TO BE CONFIRMED

5.8

5.8

9.5

RWT

RWT

LEVEL 1
RL 669.965

ENTRANCE

BUILDING LEVEL 1
BUILDING LEVEL 2

LEVEL 2
RL 674.165

ENTRANCE

ED DROP OFF

4.9
MIN 5.8 REQUIRED

5.8
MIN 5.8 REQUIRED

ED ENTRANCE

EXISTING PEDESTRIAN CROSSING TO BE RETAINED

SITE BOUNDARY

COMMONWEALTH STREET

ADJOINS SHEET 3

NOTES:
1. RETAINING WALLS/FOOTINGS TO BE CONFIRMED.
2. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GENERAL ARRANGEMENT PLAN SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-00011	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-00-XX-011	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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07.07.2024 5:33 PM

NOTES:

1. RETAINING WALLS/FOOTINGS TO BE CONFIRMED.
2. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

ADJOINS SHEET 1

DOCTORS RESIDENCE

LEVEL 1
RL 669.965

LEVEL 0
RL 665.765

LEVEL 2
RL 674.165

BUILDING LEVEL 0
BUILDING LEVEL 1
BUILDING LEVEL 2

MITRE STREET

SITE BOUNDARY

ENTRANCE

EAST ENTRY DROP OFF

ADAPT EXISTING VEHICLE CROSSING AND LAYBACK TO SUIT NEW DRIVEWAY

CONSTRUCT NEW VEHICLE CROSSING AND LAYBACK

PROPOSED STORMWATER DETENTION TANK.REFER 04 SERIES DRAWINGS

PROPOSED STORMWATER FOR EASTERN EXPANSION. REFER 04 SERIES DRAWINGS

ADJOINS SHEET 4

100 DP1126063

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

SHEET 2

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GENERAL ARRANGEMENT PLAN SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-00012	17.05.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

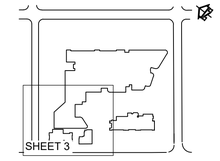
90% DD ISSUE
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Drawing No. BHR-TTW-DRW-CIV-STE-00-XX-012 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
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A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ADJOINS SHEET 1

COMMONWEALTH STREET

SITE BOUNDARY

BUILDING LEVEL 2

LEVEL 2
RL 674.165

ENTRANCE

ED DROP OFF

ED ENTRANCE

MIN 5.8 REQUIRED

4.9

EXISTING PEDESTRIAN CROSSING TO BE RETAINED

REMOVE SEGMENT OF EXISTING KERB AND ISLAND. REFER 03 SERIES DRAWINGS

2.6m WIDE x 5.4m DEEP PARKING BAYS IN ACCORDANCE WITH AS 2890.1 TYPICAL

NEW PAVEMENT TO ACCOMMODATE NEW PARKING BAYS . REFER 03 SERIES DRAWINGS

REMOVE SEGMENT OF EXISTING KERB. REFER 03 SERIES DRAWINGS

EXISTING KERB AROUND CISTERN TO BE MAINTAINED

DAFFODIL COTTAGE

POOLE HOUSE

ENTRANCE

APPROXIMATE LOCATION OF EXISTING TREES REFER ARBORIST FOR DETAILS

ADJOINS SHEET 4

SITE BOUNDARY

HOWICK STREET

NOTES:

1. RETAINING WALLS/FOOTINGS TO BE CONFIRMED.
2. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GENERAL ARRANGEMENT PLAN SHEET 3

Project No	Revision Date
231092-TTW-11-DR-CI-00013	17.05.2024
Scale	Drawn by / Checked by
1:200	SD / TD

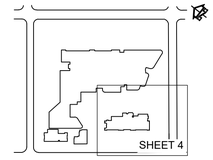
90% DD ISSUE
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Drawing No. BHR-TTW-DRW-CIV-STE-00-XX-013 Revision D

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Structural Civil Traffic Façade
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A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

BUILDING LEVEL 1
BUILDING LEVEL 2
LEVEL 2
RL 674.165
ENTRANCE
ADJOINS SHEET 2
ED DROP OFF
DP1126063
100
RW
SITE BOUNDARY
NEW RETAINING WALLS.
REFER 06 SERIES TYPICAL.
REMOVE SEGMENT OF EXISTING KERB.
REFER 03 SERIES DRAWINGS
EXISTING ACCESS TO
HERITAGE BUILDING TO
BE MAINTAINED.
EXISTING ACCESS PEDESTRIAN
FOOTPATH TO REMAIN
NEW ACCESSIBLE PARKING BAY IN
ACCORDANCE WITH AS 2890.6 TYPICAL
DDA COMPLIANT PEDESTRIAN TRAVEL ROUTE
ADMIN
HERITAGE
BUILDING
WILLOW
BUILDING
MITRE STREET
NEW STAIRS TO
HERITAGE BUILDING
REMOVE SEGMENT OF EXISTING RETAINING WALL.
SITE BOUNDARY
NEW VEHICLE CROSSING AND
LAYBACK TO COUNCIL STANDARDS
ADJOINS SHEET 3
HOWICK STREET
0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

NOTES:
1. RETAINING WALLS/FOOTINGS TO BE CONFIRMED.
2. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
GENERAL
ARRANGEMENT PLAN
SHEET 4

Project No	Revision Date
231092-TTW-11-DR-CI-00014	17.05.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

90% DD ISSUE
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-00-XX-014	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT NOTES AND LEGENDS

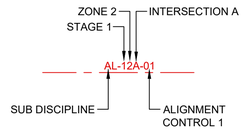
03.09.2024 2:42 PM

ALIGNMENT

CONTROL LINE

STRING NOTATION

AL-01	ROAD ALIGNMENT CONTROL 1
KR-01	KERB RETURN CONTROL 1
DWC-01	DRIVEWAY CENTER CONTROL 1
DRL-01	DRIVEWAY LEFT EDGE CONTROL 1
DWR-01	DRIVEWAY RIGHT RIGHT CONTROL 1
PA-01	PATH CONTROL 1
RW-01	RETAINING WALL CONTROL 1
NW-01	NOISE WALL CONTROL 1
DR-01	OPEN DRAINAGE CHANNEL CONTROL 1



SAMPLE STRING NAMING FOR STAGED PROJECTS

HORIZONAL GEOMETRY

CONTROL LINE

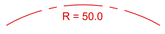
STRING NOTATION



TANGENTIAL POINT DUMBBELL AT 12.345m



CHAINAGE TICK AT 10.0m



RADIUS IS EQUAL TO 50.0m

SURFACE

EXISTING

PROPOSED

CONTOUR

SPOT LEVEL

2.0% CROSS FALL GRADE ARROW

GEOMETRIC ANNOTATIONS

CH	CHAINAGE
TP	TANGENTIAL POINT
R	RADIUS
RL	REDUCE LEVEL
eRL	EXISTING REDUCED LEVEL
FFL	FINISHED FLOOR LEVEL
TOW	TOP OF WALL LEVEL
BOW	BOTTOM OF WALL LEVEL

NOTE

GEOMETRY NOTES AND LEGEND IS TO READ IN CONJUNCTION WITH GENERAL NOTES AND LEGEND. REFER DRAWING No. 00002

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GEOMETRY NOTES AND LEGEND

Project No	Revision Date
231092-TTW-11-DR-CI-01001	05.07.2024
Scale	**Drawn by** / **Checked by**
N.T.S.	SD / TD

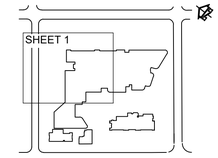
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-01-11-001	C

Taylor Thomson Whitting
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ALL RETAINING WALL HEIGHTS ARE MEASURED BETWEEN TOP OF FOOTING AND TOP OF WALL. REFER TO RETAINING WALL DETAILS ON SHEET 06041

EXISTING STAFF PARKING

EXISTING FLEET PARKING

ADJOINS SHEET 2

ADJOINS SHEET 3

COMMONWEALTH STREET

SITE BOUNDARY

LEVEL 1
RL 669.965

LEVEL 2
RL 674.165

BUILDING LEVEL 1

BUILDING LEVEL 2

ENTRANCE

ED ENTRANCE

ED DROP OFF

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GEOMETRY
ALIGNMENT CONTROL
AND GRADING PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-01011	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

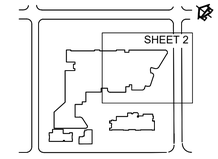
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Drawing No. BHR-TTW-DRW-CIV-STE-01-XX-011 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ADJOINS SHEET 1

DOCTORS RESIDENCE

MITRE STREET

LEVEL 0
RL 665.765

LEVEL 1
RL 669.965

LEVEL 2
RL 674.165

BUILDING LEVEL 0
BUILDING LEVEL 1
BUILDING LEVEL 2

ENTRANCE

EAST ENTRY
DROP OFF

SITE BOUNDARY

DP1126063

ADJOINS SHEET 4

ALL RETAINING WALL HEIGHTS ARE MEASURED BETWEEN TOP OF FOOTING AND TOP OF WALL. REFER TO RETAINING WALL DETAILS ON SHEET 06041

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
GEOMETRY
ALIGNMENT CONTROL
AND GRADING PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-01012	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

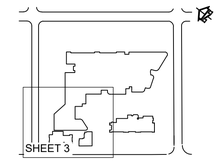
Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-01-XX-012	D

Taylor Thomson Whitting
Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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A	17.01.2023	DRAFT SCHEMATIC	AS	TD
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C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ADJOINS SHEET 1

COMMONWEALTH STREET

SITE BOUNDARY

BUILDING LEVEL 2

LEVEL 2
RL 674.165

ENTRANCE

ED DROP OFF

ED ENTRANCE

DAFFODIL COTTAGE

POOLE HOUSE

HOWICK STREET

ADJOINS SHEET 4

ALL RETAINING WALL HEIGHTS ARE MEASURED BETWEEN TOP OF FOOTING AND TOP OF WALL. REFER TO RETAINING WALL DETAILS ON SHEET 06041

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
GEOMETRY ALIGNMENT CONTROL AND GRADING PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-01013	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

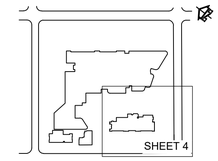
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Drawing No. BHR-TTW-DRW-CIV-STE-01-XX-013 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ALL RETAINING WALL HEIGHTS ARE MEASURED BETWEEN TOP OF FOOTING AND TOP OF WALL. REFER TO RETAINING WALL DETAILS ON SHEET 06041

ADJOINS SHEET 2

ADJOINS SHEET 3

ED DROP OFF

ED ENTRANCE

ENTRANCE

BUILDING LEVEL 1

BUILDING LEVEL 2

LEVEL 2
RL 674.165

ADMIN
HERITAGE
BUILDING

WILLOW
BUILDING

SITE BOUNDARY

MITRE STREET

HOWICK STREET

100 DP1126063

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
GEOMETRY
ALIGNMENT CONTROL
AND GRADING PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-01014	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-01-XX-014	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

BULK EARTHWORKS (02000 SERIES DRAWINGS)

1. ALL BULK EARTHWORKS SETOUT FROM GRID LINES U.N.O.
2. ALL BATTERS AT A SLOPE OF 1:2 U.N.O.
3. EXCAVATED MATERIAL MAY BE USED AS STRUCTURAL FILL PROVIDED: -

- IT COMPLIES WITH THE SPECIFICATION REQUIREMENTS FOR FILL MATERIAL.
- THE PLACEMENT MOISTURE CONTENT COMPLIES WITH THE GEOTECHNICAL CONSULTANTS REQUIREMENTS, AND ALLOWS FILLING TO BE PLACED AND PROOF ROLLED IN ACCORDANCE WITH THE SPECIFICATION. WHERE NECESSARY THE CONTRACTOR MUST MOISTURE CONDITION THE EXCAVATED MATERIAL TO MEET THESE REQUIREMENTS.

4. ALL SUBGRADE MATERIAL TO BE PLACED AND COMPACTED AT OPTIMUM MOISTURE CONTENT (OMC) IN ACCORDANCE WITH AS 1289.5.1.1 TO THE FOLLOWING STANDARD DRY DENSITIES: -

LOCATION	COMPACTION	TOLERANCE
BENEATH PAVEMENTS AND BUILDINGS	98%	± 2%
BENEATH LANDSCAPED AREAS	95%	± 2%

5. BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH A 10 TONNE MINIMUM ROLLER TO TEST SUBGRADE AND THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 3mm MOVEMENT UNDER ROLLER). SOFT SPOTS TO BE REPLACED WITH GRANULAR FILL U.N.O.
6. CONTRACTOR SHALL PLACE SAFETY BARRIERS AROUND EXCAVATIONS IN ACCORDANCE WITH RELEVANT SAFETY REGULATIONS.
7. FOR INTERPRETATION OF BULK EARTHWORKS FOOT PRINT LINE SHOWN ON THE BULK EARTHWORKS DRAWINGS REFER TO THE BULK EARTHWORKS CONSTRUCTION LEGEND.
8. BULK EARTHWORK DRAWINGS ARE NOT TO BE USED FOR DETAILED EXCAVATION.
9. REFER TO GEOTECHNICAL REPORT PREPARED BY: -

- RCA AUSTRALIA.
- GEOTECHNICAL INVESTIGATION AND AUGUST 2023.

ASSUMPTIONS:

1. LANDSCAPE ASSUMED 300mm SETDOWN
2. 250mm ASSUMED SLAB ON GROUND
3. FOOTPATH PAVEMENT ASSUMED 220mm
4. ASSUMED 300mm SITE STRIPPING

CUT/FILL VOLUMES

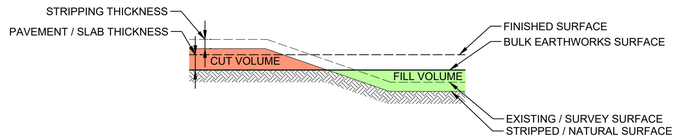
CUT: -4265m^3
FILL: 1061m^3

NET: -3203m^3

EXCLUDES DETAILED EXCAVATION

SURFACE

EXISTING	PROPOSED	
— — —696.000— — —	696.000	CONTOUR
	-1.5	DEPTH CONTOUR



EARTHWORKS VOLUME DIAGRAM

BULK EARTHWORKS VOLUMES		
CUT(m^3)	FILL(m^3)	BALANCE (+/-)
4666.9	1961.8	2705.05m^3

ELEVATIONS TABLE			
NUMBER	MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOR
1	-4.000	-3.000	
2	-3.000	-2.000	
3	-2.000	-1.000	
4	-1.000	0.000	
5	0.000	1.000	
6	1.000	2.000	
7	2.000	3.000	

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A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
EARTHWORKS NOTES AND LEGEND

Project No	Revision Date
231092-TTW-11-DR-CI-02001	05.07.2024

Scale	Drawn by	Checked by
	SD	TD

90% DD ISSUE
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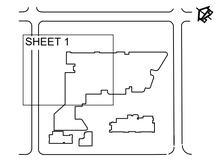
Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-02-XX-001	D

Taylor Thomson Whitting

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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

EXISTING STAFF PARKING

ADJOINS SHEET 2

EXISTING FLEET PARKING

COMMONWEALTH STREET

SITE BOUNDARY

LEVEL 1
RL 669.965

BUILDING LEVEL 1
BUILDING LEVEL 2

LEVEL 2
RL 674.165

ED DROP OFF

ADJOINS SHEET 3

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
EARTHWORKS
CUT AND FILL
VOLUMES PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-02011	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

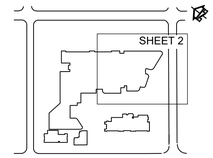
Drawing No. BHR-TTW-DRW-CIV-STE-02-XX-011 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ADJOINS SHEET 1

SITE BOUNDARY

ENCAPSULATED CONTAMINATION AREA

DOCTORS RESIDENCE

LEVEL 0
RL 665.765

LEVEL 1
RL 669.965

LEVEL 2
RL 674.165

EAST ENTRY DROP OFF

MITRE STREET

BUILDING LEVEL 1

BUILDING LEVEL 2

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
EARTHWORKS
CUT AND FILL
VOLUMES PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-02012	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

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NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-02-XX-012	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
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D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
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Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
EARTHWORKS
CUT AND FILL
VOLUMES PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-02013	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

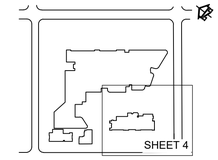
90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-02-XX-013	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

ED DROP OFF

DP1126063

BUILDING LEVEL 1
BUILDING LEVEL 2
LEVEL 2
RL 674.165

ADJOINS SHEET 2

SITE BOUNDARY

ADMIN
HERITAGE
BUILDING

WILLOW
BUILDING

MITRE STREET

ADJOINS SHEET 3

BOUNDARY

HOWICK STREET

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

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TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
EARTHWORKS
CUT AND FILL
VOLUMES PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-02014	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-02-XX-014	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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03.09.2024 8:17 AM

DURHAM STREET

DURHAM STREET

DURHAM STREET

DURHAM STREET

COMMONWEALTH STREET

COMMONWEALTH STREET

COMMONWEALTH STREET

MITRE STREET

MITRE STREET

MITRE STREET

HOWICK STREET

HOWICK STREET

HOWICK STREET

DALY STREET

LEDGEND

AREA OF DISTURBANCE

SHEET 1

Rev	Date	Revision	By	Chk.
A	08.08.2024	90% DD ISSUE	SD	TD
B	15.08.2024	90% DD ISSUE AMENDED	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
EARTHWORKS DISTURBANCE PLAN

Project No	Revision Date
231092-TTW-11-DR-CI-02020	15.08.2024
Scale	**Drawn by** / **Checked by**
1:500	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No. BHR-TTW-DRW-CIV-STE-02-XX-020 Revision B

Taylor Thomson Whitting
Structural Civil Traffic Façade
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07.07.2024 5:48 PM

CONCRETE

1. PLACE CONCRETE OF THE FOLLOWING CHARACTERISTIC COMPRESSIVE STRENGTH f'c IN ACCORDANCE WITH AS 1379.
2.

LOCATION	f'c MPa (28 DAYS)	SPECIFIED SLUMP	NOMINAL AGG. SIZE
KERBS	S20	80	20
RETAINING WALL FOOTINGS	S40	80	20

3. USE TYPE 'GP' CEMENT, UNLESS OTHERWISE SPECIFIED.
4. ALL CONCRETE SHALL BE SUBJECT TO PROJECT ASSESSMENT AND TESTING TO AS 1379.
5. CONSOLIDATE BY MECHANICAL VIBRATION. CURE ALL CONCRETE SURFACES AS DIRECTED IN THE SPECIFICATION.
6. FOR ALL FALLS IN SLAB, DRIP GROOVES, REGLETS, CHAMFERS ETC. REFER TO ARCHITECTS DRAWINGS AND SPECIFICATIONS.
7. UNLESS SHOWN ON THE DRAWINGS, THE LOCATION OF ALL CONSTRUCTION JOINTS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.
8. NO HOLES OR CHASES SHALL BE MADE IN THE SLAB WITHOUT THE APPROVAL OF THE ENGINEER.
9. CONDUITS AND PIPES ARE TO BE FIXED TO THE UNDERSIDE OF THE TOP REINFORCEMENT LAYER.
10. SLURRY USED TO LUBRICATE CONCRETE PUMP LINES IS NOT TO BE USED IN ANY STRUCTURAL MEMBERS.
11. ALL SLABS CAST ON GROUND REQUIRE SAND BLINDING WITH A CONCRETE UNDERLAY

CONCRETE FINISHING

1. ALL EXPOSED CONCRETE PAVEMENTS ARE TO BE BROOMED FINISHED.
2. ALL EDGES OF THE CONCRETE PAVEMENT INCLUDING KEYED AND DOWELLED JOINTS ARE TO BE FINISHED WITH AN EDGING TOOL.
3. CONCRETE PAVEMENTS WITH GRADES GREATER THAN 10 % SHALL BE HEAVILY BROOMED FINISHED.
4. CARBORUNDUM TO BE ADDED TO ALL STAIR TREADS AND RAMPED CROSSINGS U.N.O.

FORMWORK

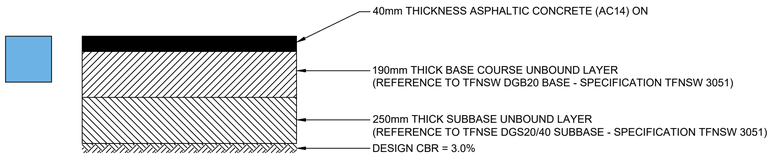
1. THE DESIGN, CERTIFICATION, CONSTRUCTION AND PERFORMANCE OF THE FORMWORK, FALSEWORK AND BACKPROPPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PROPOSED METHOD OF INSTALLATION AND REMOVAL OF FORMWORK IS TO BE SUBMITTED TO THE SUPERINTENDENT FOR COMMENT PRIOR TO WORK BEING CARRIED OUT.

PAVEMENT TYPES

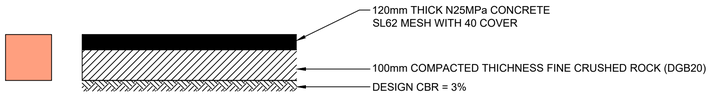
ASPHALT PAVEMENT
SCALE 1:10

CONCRETE PAVEMENT
SCALE 1:10

LANDSCAPE BY OTHERS



PAVEMENT TYPE 1
ASPHALT-VEHICULAR
SCALE N.T.S



PAVEMENT TYPE 2
PEDESTRIAN
SCALE N.T.S

CONCRETE REINFORCEMENT

1. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW. ON THE DRAWINGS THIS IS FOLLOWED BY A NUMERAL WHICH INDICATES THE SIZE IN MILLIMETRES OF THE REINFORCEMENT.

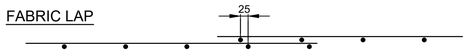
SYMBOL	TYPE	GRADE
N	HOT ROLLED RIBBED BAR	DN500N
R	PLAIN ROUND BAR	R250N
SL	SQUARE MESH	500L
RL	RECTANGULAR MESH	500L

2. PROVIDE BAR SUPPORTS OR SPACERS TO GIVE THE FOLLOWING CONCRETE COVER TO ALL REINFORCEMENT UNLESS OTHERWISE NOTED ON DRAWINGS.

LOCATION	COVER (MM)
FOOTINGS	50
WALLS	30

3. COVER TO REINFORCEMENT ENDS TO BE 50 mm U.N.O.
4. PROVIDE N12-450 SUPPORT BARS TO TOP REINFORCEMENT AS REQUIRED, LAP 500 U.N.O.
5. MAINTAIN COVER TO ALL PIPES, CONDUITS, REGLETS, DRIP GROOVES ETC
6. ALL COGS TO BE STANDARD COGS UNLESS NOTED OTHERWISE.
7. FABRIC END AND SIDE LAPS ARE TO BE PLACED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS TO ACHIEVE A FULL TENSILE LAP. FABRIC SHALL BE LAID SO THAT THERE IS A MAXIMUM OF 3 LAYERS AT ANY LOCATION.

FABRIC LAP



8. LAPS IN REINFORCEMENT SHALL BE MADE ONLY WHERE SHOWN ON THE DRAWINGS UNLESS OTHERWISE APPROVED. LAP LENGTHS AS PER TABLE BELOW.

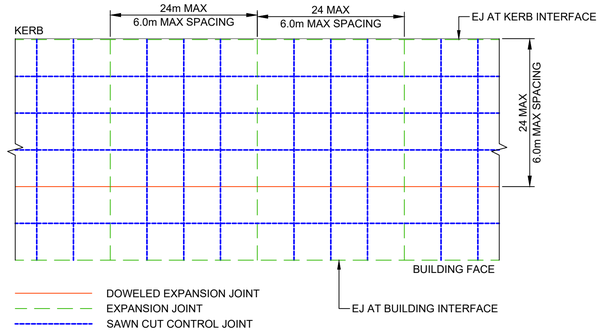
TENSION LAPS		
BAR SIZE	TOP BARS IN BANDS AND BEAMS	ALL OTHER BARS
N12	570	480
N16	800	700
N20	1150	950
N24	1500	1250
N28	1850	1500
N32	2250	1800
N36	2700	2100

COMPRESSION LAPS	
BAR SIZE	
N16	640
N20	800
N24	960
N28	1120
N32	1280
N36	1440

ASSUMPTIONS:
1. TOP BARS IN BANDS AND BEAMS:
   MORE THAN 300mm OF CONCRETE BELOW THE BAR.
2. MINIMUM COVER OF 25mm AND MINIMUM STIRRUP SIZE OF N12 GIVING Cd=37mm; THEREFORE MINIMUM CLEAR SPACING BETWEEN BARS = 2 X Cd = 74mm. MINIMUM COVER IS BASED ON THE NEW A2 EXPOSURE CLASSIFICATION FOR INTERIOR, NON-RESIDENTIAL WHICH REQUIRES 25mm COVER FOR 32Mpa CONCRETE,
3. f'c = 32Mpa
   ALL OTHER BARS:
1. LESS THAN 300mm OF CONCRETE BELOW THE BAR.
2. MINIMUM COVER OF 25mm GIVING Cd = 25mm; THEREFORE MINIMUM CLEAR SPACING BETWEEN BARS = 2 X Cd = 50mm.
3. f'c = 32Mpa.
   COLUMNS:
1. COVER TO COLUMNS = 40mm (30+10)k7 = 1.25
2. COVERS FOR FIRE RATING ARE TO BE DESIGNED BY THE ENGINEER.

VEHICULAR PAVEMENT JOINTING (03000 SERIES DRAWINGS)

1. ALL VEHICULAR PAVEMENTS TO BE JOINTED AS SHOWN ON DRAWINGS.
2. DOWEL BARS ARE TO BE IN ACCORDANCE WITH GIVEN DETAIL. REFER 03000 SERIES DRAWINGS.
3. DOWELED EXPANSION JOINTS SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 24.0M CENTRES.
4. SAWN JOINTS SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 6.0M CENTRES OR 1.5 X THE SPACING OF PERPENDICULAR SAWN JOINTS.
5. PROVIDE 10mm WIDE FULL DEPTH EXPANSION JOINTS BETWEEN BUILDINGS/STRUCTURES AND ALL CONCRETE OR UNIT PAVERS.
6. THE TIMING OF THE SAW CUT IS TO BE CONFIRMED BY THE CONTRACTOR ON SITE. SITE CONDITIONS WILL DETERMINE HOW MANY HOURS AFTER THE CONCRETE POUR BEFORE THE SAW CUTS ARE COMMENCED. REFER TO THE SPECIFICATION FOR WEATHER CONDITIONS AND TEMPERATURES REQUIRED.
7. VEHICULAR PAVEMENT JOINTING AS FOLLOWS.



PEDESTRIAN PATH JOINTING (03000 SERIES DRAWINGS)

1. EXPANSION JOINTS ARE TO BE LOCATED WHERE POSSIBLE AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 6.0M CENTRES.
2. WEAKENED PLANE JOINTS ARE TO BE LOCATED AT A MAX 1.5 X WIDTH OF THE PAVEMENT.
3. WHERE POSSIBLE JOINTS SHOULD BE LOCATED TO MATCH KERBING AND / OR ADJACENT PAVEMENT JOINTS.
4. ALL PEDESTRIAN FOOTPATH JOINTING AS FOLLOWS (UNO).

KERBING

INCLUDES ALL KERBS, GUTTERS, DISH DRAINS, CROSSINGS AND EDGES.

1. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON MINIMUM 75mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
2. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12M CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
3. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3M CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
4. BROOMED FINISHED TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
5. IN THE REPLACEMENT OF KERBS - EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASE COURSE AND SURFACE IS TO BE LAID 900mm WIDE TO MATCH EXISTING MATERIALS AND THICKNESSES. EXISTING ALLOTMENT DRAINAGE PIPES ARE TO BE BUILT INTO THE NEW KERB WITH A 100mm DIA HOLE. EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
PAVEMENT
NOTES AND LEGEND
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-03001	05.07.2024
Scale	Drawn by / Checked by
	SD / TD

90% DD ISSUE
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-03-XX-001	D

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KERB TYPES

PLAN	PROFILE	DESCRIPTION
KG S-KG		KERB AND GUTTER SLOTTED KERB AND GUTTER
KO		KERB ONLY
FK		FLUSH KERB
DD		DISH DRAIN
MK		MOUNTABLE KERB
MKG		MOUNTABLE KERB AND GUTTER
IKO		INTEGRAL KERB ONLY
IMK		INTEGRAL MOUNTABLE KERB
KT		KERB AND TOE
CK		CASTELLATED KERB
		THICKENED EDGE

NOTE

PAVEMENT NOTES AND LEGEND IS TO READ IN CONJUNCTION WITH GENERAL NOTES AND LEGEND. REFER DRAWING No. 00002

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
PAVEMENT
NOTES AND LEGEND
SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-03002	05.07.2024

Scale	Drawn by	Checked by
	SD	TD

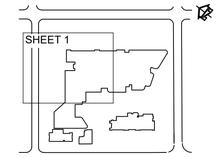
90% DD ISSUE
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-03-XX-002	D

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A	09.02.2023	SCHEMATIC DESIGN	AS	TD
B	17.05.2024	50% DD ISSUE	SD	TD
C	05.07.2024	90% DD ISSUE	SD	TD

EXISTING STAFF PARKING

ADJOINS SHEET 2

EXISTING FLEET PARKING

COMMONWEALTH STREET

SITE BOUNDARY

ADJOINS SHEET 3

LEVEL 1
RL 669.965

LEVEL 2
RL 674.165

BUILDING LEVEL 1
BUILDING LEVEL 2

ENTRANCE

ED ENTRANCE

ED DROP OFF

K&G

KO

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
PAVEMENT
PLAN
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-03011	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

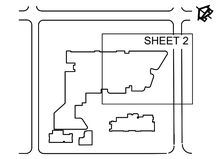
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Drawing No. BHR-TTW-DRW-CIV-STE-03-XX-011 Revision C

Taylor Thomson Whitting
Structural Civil Traffic Façade
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Rev	Date	Revision	By	Chk.
A	09.02.2023	SCHEMATIC DESIGN	AS	TD
B	17.05.2024	50% DD ISSUE	SD	TD
C	05.07.2024	90% DD ISSUE	SD	TD

ADJOINS SHEET 1

DOCTORS RESIDENCE

MITRE STREET

LEVEL 0
RL 665.765

LEVEL 1
RL 669.965

LEVEL 2
RL 674.165

BUILDING LEVEL 0
BUILDING LEVEL 1
BUILDING LEVEL 1
BUILDING LEVEL 2

ENTRANCE

ENTRANCE

EAST ENTRY
DROP OFF

SITE BOUNDARY

ADJOINS SHEET 4

DP1126063

K&G

KO

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

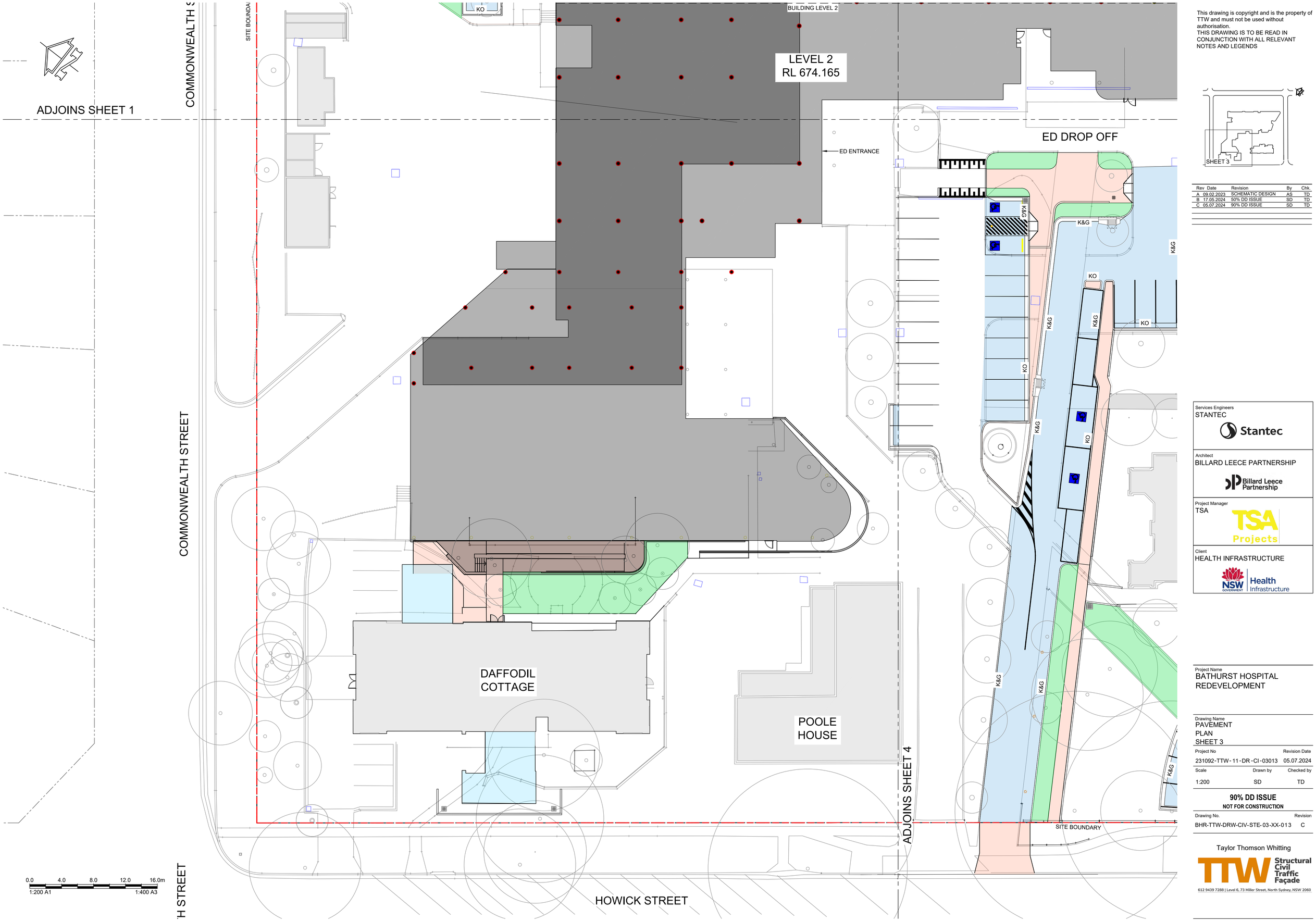
Drawing Name
PAVEMENT
PLAN
SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-03012	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

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NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-03-XX-012	C

Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060



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Rev	Date	Revision	By	Chk.
A	09.02.2023	SCHEMATIC DESIGN	AS	TD
B	17.05.2024	50% DD ISSUE	SD	TD
C	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
PAVEMENT
PLAN
SHEET 3

Project No	Revision Date
231092-TTW-11-DR-CI-03013	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

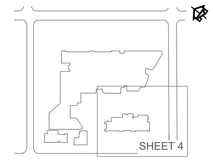
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-03-XX-013	C

Taylor Thomson Whitting
Structural Civil Traffic Façade
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Rev	Date	Revision	By	Chk.
A	09.02.2023	SCHEMATIC DESIGN	AS	TD
B	17.05.2024	50% DD ISSUE	SD	TD
C	05.07.2024	90% DD ISSUE	SD	TD
D	17.09.2024	FOR TENDER	SD	TD

ENTRANCE
ED DROP OFF
BUILDING LEVEL 1
BUILDING LEVEL 2
LEVEL 2
RL 674.165
ADJOINS SHEET 2
100 DP1126063
K&G
KO
SITE BOUNDARY
ADMIN
HERITAGE
BUILDING
WILLOW
BUILDING
MITRE STREET
ADJOINS SHEET 3
HOWICK STREET
0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
PAVEMENT
PLAN
SHEET 4

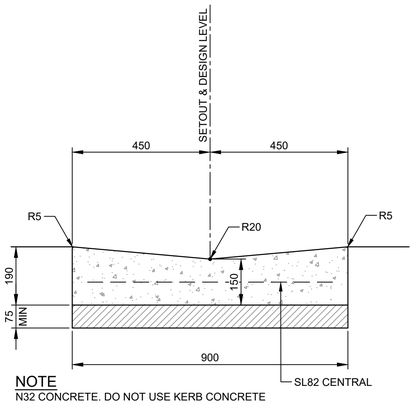
Project No	Revision Date
231092-TTW-11-DR-CI-03014	17.09.2024

Scale	Drawn by	Checked by
1:200	SD	TD

90% DD ISSUE
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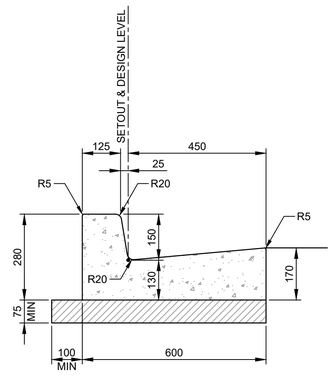
Drawing No.	Revision
BHR-TTW-DRW-CIV-**STE** 03-11-014	D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

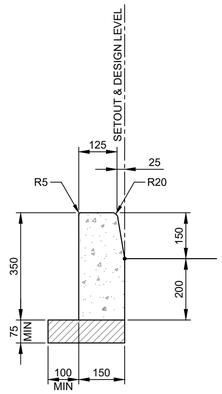


NOTE
N32 CONCRETE. DO NOT USE KERB CONCRETE

DISH DRAIN (DD)
SCALE 1:10



KERB AND GUTTER (KG)
SCALE 1:10



KERB ONLY (KO)
SCALE 1:10

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Rev	Date	Revision	By	Chk.
A	09.02.2023	SCHEMATIC DESIGN	AS	TD
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C	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
PAVEMENT
DETAILS
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-03041	C

Scale	Drawn by	Checked by
	SD	TD

90% DD ISSUE
NOT FOR CONSTRUCTION

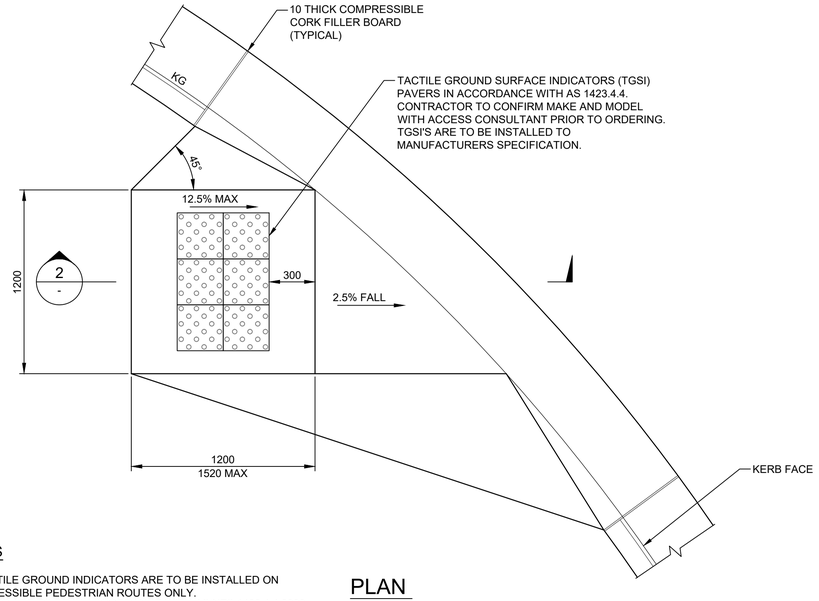
Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-03-XX-041	C

Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

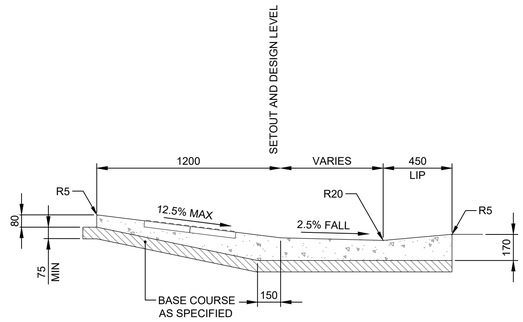
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05.07.2024 8:48 PM

Rev	Date	Revision	By	Chk.
A	09.02.2023	SCHEMATIC DESIGN	AS	TD
B	17.05.2024	50% DD ISSUE	SD	TD
C	05.07.2024	90% DD ISSUE	SD	TD



PLAN



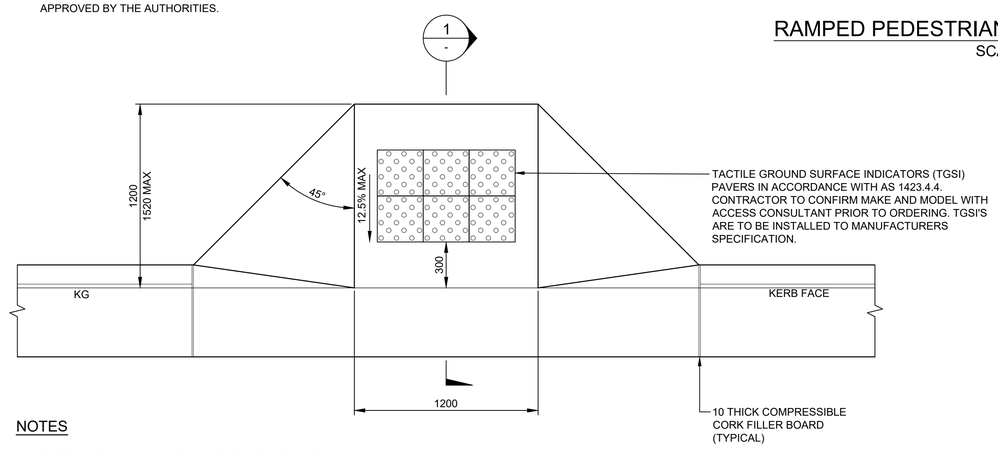
SECTION 2 -

NOTES

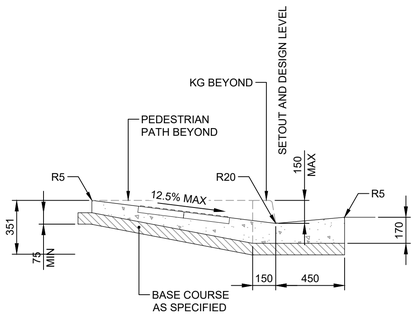
1. TACTILE GROUND INDICATORS ARE TO BE INSTALLED ON ACCESSIBLE PEDESTRIAN ROUTES ONLY.
2. TGSI'S ARE TO BE IN ACCORDANCE WITH AS/NZS 1428.4.4 2009.
3. TGS'S SHALL NOT BE INSTALLED WITHIN KERB RAMPS UNLESS APPROVED BY THE AUTHORITIES.

RAMPED PEDESTRIAN CROSSING - ON CURVE

SCALE 1:20



PLAN



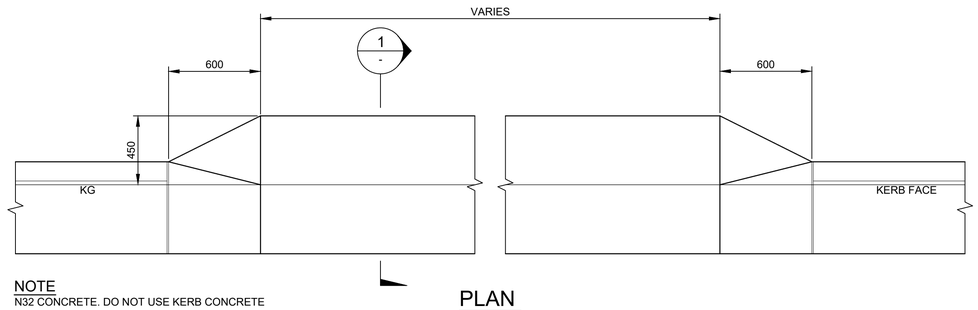
SECTION 1 -

NOTES

1. TACTILE GROUND INDICATORS ARE TO BE INSTALLED ON ACCESSIBLE PEDESTRIAN ROUTES ONLY.
2. TGSI'S ARE TO BE IN ACCORDANCE WITH AS/NZS 1428.4.4 2009.
3. TGS'S SHALL NOT BE INSTALLED WITHIN KERB RAMPS UNLESS APPROVED BY THE AUTHORITIES.

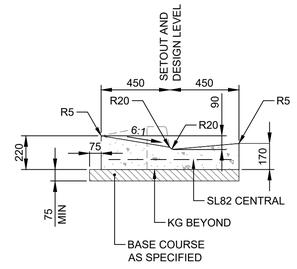
RAMPED PEDESTRIAN CROSSING - ON STRAIGHT

SCALE 1:20



NOTE
N32 CONCRETE. DO NOT USE KERB CONCRETE

PLAN



SECTION 1 -

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
PAVEMENT DETAILS SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-03042	C
Scale	**Drawn by / Checked by**
	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-03-XX-042	C

Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

STORMWATER DRAINAGE

1. STORMWATER DESIGN CRITERIA

   (A) AVERAGE EXCEEDANCE PROBABILITY: -
   - 1% AEP FOR ROOF DRAINAGE TO FIRST EXTERNAL PIT
   - 5% AEP FOR PAVED AND LANDSCAPED AREAS

   (B) RAINFALL INTENSITIES : -
   - TIME OF CONCENTRATION: 5 MINUTES
   - 1% AEP = 163.2mm/hr
   - 20% AEP = 92.04mm/hr

   (C) RAINFALL LOSSES: -
   - IMPERVIOUS AREAS: IL = 1.5mm CL = 0mm/hr
   - PERVIOUS AREAS: IL = 14.7mm CL = 2.16mm/hr

2. PIPES 300 DIA AND LARGER TO BE REINFORCED CONCRETE CLASS "2" APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS U.N.O.
3. PIPES UP TO 300 DIA MAY BE SEWER GRADE UPVC WITH SOLVENT WELDED JOINTS, SUBJECT TO APPROVAL BY THE ENGINEER
4. EQUIVALENT STRENGTH VCP OR FRP PIPES MAY BE USED SUBJECT TO APPROVAL.
5. PRECAST PITS MAY BE USED EXTERNAL TO THE BUILDING SUBJECT TO APPROVAL BY ENGINEER.
6. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE MANUFACTURED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
7. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED UPVC SEWER GRADE PIPE IS TO BE USED.
8. GRATES AND COVERS SHALL CONFORM WITH AS 3996-2006, AND AS 1428.1 FOR ACCESS REQUIREMENTS.
9. PIPES ARE TO BE INSTALLED IN ACCORDANCE WITH AS 3725. ALL BEDDING TO BE TYPE H2 U.N.O.
10. CARE IS TO BE TAKEN WITH INVERT LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
11. ALL STORMWATER PIPES TO BE 150 DIA AT 1.0% MIN FALL U.N.O.
12. SUBSOIL DRAINS TO BE SLOTTED FLEXIBLE UPVC U.N.O.
13. ADOPT INVERT LEVELS FOR PIPE INSTALLATION (GRADES SHOWN ARE ONLY NOMINAL).

STORMWATER PIPE INFORMATION

PIPE INFORMATION

UPSTREAM INVERT LEVEL
PIPE INTERNAL DIAMETER
PIPE MATERIAL AND CLASS
PIPE LENGTH
HYDRAULIC FLOW RATE
PIPE GRADE
DOWNSTREAM INVERT LEVEL

TIE INFORMATION

TIE LENGTH
TIE DEPTH
TIE DIAMETER

STORMWATER STRUCTURE IDENTIFICATION

LINE NUMBER 1 - STRUCTURE NUMBER 2

SUBSOIL DRAINAGE

1. ALL SUBSOIL DRAINAGE WORKS ARE TO BE COMPLETED IN ACCORDANCE WITH THE RELEVANT STANDARDS AND SPECIFICATIONS OUTLINED IN THE PROJECT SPECIFICATION.
2. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
3. SUBSOIL DRAINS TO BE Ø100 SLOTTED FLEXIBLE uPVC UNLESS NOTED OTHERWISE.
4. ALL SUBSOIL DRAINS ARE TO BE AT MINIMUM 1% GRADE UNLESS NOTED OTHERWISE.
5. ALL SUBSOIL DRAINS TO BE RODDED PRIOR TO THE PLACEMENT OF ASPHALT.
6. ALL SUBSOIL DRAINS ARE DRAWN DIAGRAMMATICALLY FOR CLARITY. REFER TO TYPICAL DETAIL FOR SUBSOIL SETOUT.

STORMWATER LEGEND

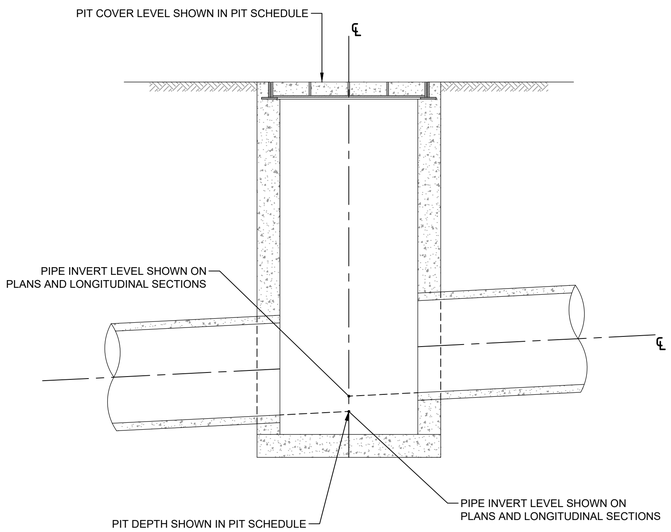
DP	DOWN PIPE
RP	RODDING POINT
PO	PLANTER OUTLET
RO	RAINWATER OUTLET
FP	SUB-SOIL FLUSH POINT
GPT	GROSS POLLUTANT TRAP
	OVERLAND FLOW ARROW
	CONCRETE INCASED PIPE
	SWALE DRAIN

STORMWATER ANNOTATIONS

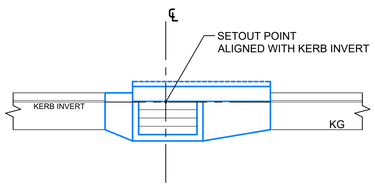
IL	PIPE INVERT LEVEL
OL	PIPE OBVERT LEVEL
CL	PIT COVER LEVEL
WL	WATER LEVEL

NOTE

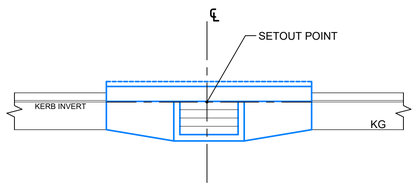
STORMWATER DRAINAGE NOTES AND LEGEND IS TO READ IN CONJUNCTION WITH GENERAL NOTES AND LEGEND. REFER DRAWING No. 00002



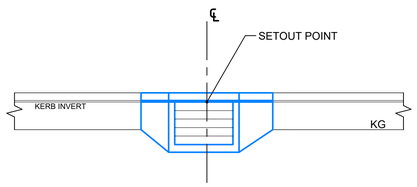
DESIGN INVERT LEVELS AT STORMWATER STRUCTURES
SCALE 1:20



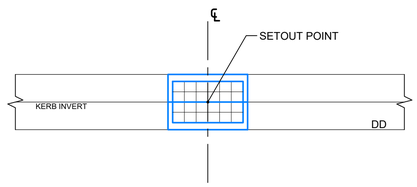
KERB INLET SUMP (KIS) ON GRADE
SCALE 1:50



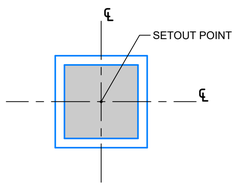
KERB INLET SUMP (KIS) IN SAG
SCALE 1:50



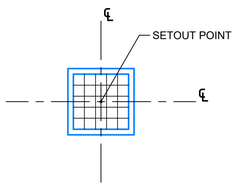
KERB GRATED INLET SUMP (KGI)
SCALE 1:50



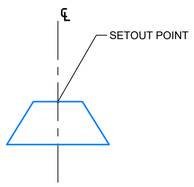
DISH DRAIN GRATED INLET SUMP (DDI)
SCALE 1:50



JUNCTION PIT
SCALE 1:50



GRATED INLET SUMP
SCALE 1:50



HEADWALL
SCALE 1:50

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Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER
NOTES AND LEGEND
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-04001	17.05.2024
Scale	**Drawn by** / **Checked by**
	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-001	C

Taylor Thomson Whitting
Structural Civil Traffic Façade
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SHEET 1

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

RL 667.15
900x900 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

SUB-SOIL PIPE

Ø225 uPVC SN8
USIL 666.28
DSIL 666.25
L 3.2m
G 1%

EX COUNCIL PIT
RL 663.24
IL 661.94

OSD (15kL)
6.2m x 2.5m x 1.2m DEEP
(INTERNAL ONLY)
REFER TO SHEET 4045 FOR DETAILS.

EXISTING STAFF PARKING

ADJOINS SHEET 2

REPLACE EXISTING LID WITH SEALED CLASS 'D' ACCESS LID AND MATCH NEW FINISH LEVEL

REPLACE EXISTING LID WITH SEALED CLASS 'D' ACCESS LID AND MATCH NEW FINISH LEVELS. ALLOW FOR LOWERING OF CONNECTING STORMWATER PIPES

RL 667.20
900x900 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

RL 667.25
900x900 CLASS 'D' SEALED OSD ACCESS LID

Ø225 uPVC SN8
USIL 665.20
DSIL 665.19
L 0.6m
G 1%

Ø225 uPVC SN8
USIL 666.15
DSIL 666.10
L 4.8m
G 1%

EX IL 664.66

REPLACE EXISTING LID WITH SEALED CLASS 'D' ACCESS LID AND MATCH NEW FINISH LEVEL

Ø225 uPVC SN8
USIL 666.275
DSIL 666.25
L 2.5m
G 1%

RL 667.20
900x900 CLASS 'D' SEALED OSD ACCESS LID

RL 667.10
900x900 CLASS 'D' GRATED OSD ACCESS LID

ENTRANCE

SUB-SOIL PIPE

RL 667.10
900x900 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

Ø225 uPVC SN8
USIL 666.22
DSIL 666.10
L 12.1m
G 1%

ROOF WATER PIPE COVER TO BE CONFIRMED ON-SITE. ENCASE ROOFWATER PIPE IF COVER LESS THAN 600mm.

200mm WIDE STRIP GRATE

Ø150 uPVC SN8
G 1%

RL 667.20
900x900 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

REPLACE EXISTING LID WITH SEALED CLASS 'D' ACCESS LID AND MATCH NEW FINISH LEVEL

Ø225 uPVC SN8
USIL 666.33
DSIL 666.30
L 2.7m
G 1%

EXISTING FLEET PARKING

ROOF WATER PIPE COVER TO BE CONFIRMED ON-SITE. ENCASE ROOFWATER PIPE IF COVER LESS THAN 600mm.

EXISTING PITS TO BE AMENDED TO SUIT PROPOSED SURFACE LEVEL.

Ø225 uPVC SN8
USIL 666.60
DSIL 666.47
L 13.1m
G 1%

NOTE:
ALL NEW GRATED STORMWATER PITS TO BE INSTALLED WITH ENVIROPODS.

SUB-SOIL PIPE

RL 667.50
600x600 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

SUB-SOIL PIPE

COMMONWEALTH STREET

SITE BOUNDARY

ADJOINS SHEET 3

LEVEL 1
RL 669.965

BUILDING LEVEL 1
BUILDING LEVEL 2

LEVEL 2
RL 674.165

ED DROP OFF

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-04011	17.05.2024
Scale	Drawn by / Checked by
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No. BHR-TTW-DRW-CIV-STE-04-XX-011 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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ADJOINS SHEET 1

ADJOINS SHEET 4

SHEET 2

DOCTORS RESIDENCE

MITRE STREET

ENCAPSULATED CONTAMINATION AREA

ENCAPSULATED CONTAMINATION AREA

LEVEL 1
RL 669.965

LEVEL 2
RL 674.165

EAST ENTRY DROP OFF

ENTRANCE

ENTRANCE

BUILDING LEVEL 0

BUILDING LEVEL 1

BUILDING LEVEL 1

BUILDING LEVEL 2

EL 0
RL 665.765

REPLACE EXISTING STORMWATER PIT LID WITH 450x900 CLASS 'D' ACCESS LID.
RL669.90

Ø225 uPVC SN8
USIL 669.00
DSIL 668.95
L 5.0m
G 1.0%

RL6659.70
600x600 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

RL669.87
600x600 CONCRETE PIT
CLASS 'D' GRATED ACCESS LID

Ø225 uPVC SN8
USIL 668.90
DSIL 668.83
L 57.0m
G 1.0%

RL669.40
900x900 SEALED CONCRETE PIT

150 uPVC SN8
G 1.0%

200mm WIDE TRENCH DRAIN

CONSTRUCT NEW JUNCTION PIT OVER EXISTING Ø450 PIPE.
IL ~667.20

NEW Ø375 RCP ABOVE EXISTING ENCAPSULATED CONTAMINATION

RECONSTRUCT EXISTING ROOF WATER TO DRAIN INTO NEW STORMWATER DRAINAGE NETWORK
IL 668.95

RL670.14
900x900 CONCRETE PIT
CLASS 'D' ACCESS LID
CONSTRUCT OVER EXISTING STORMWATER PIT

Ø225 RCP(2)
USIL 668.82
DSIL 668.77
L 4.4m
G 1%

RL670.14
900x900 CONCRETE PIT
CLASS 'D' ACCESS LID

REDIRECT EXISTING STORMWATER PIPE TO NEW PIT WITH BENDING FITTING AND I.O.
IL 669.63

UNKNOWN
USIL 669.63
DSIL 669.56
L 6.4m
G 1%

EXISTING STORMWATER PITS TO BE ABADONED/DEMOLISHED

NOTE:
ALL NEW GRATED STORMWATER PITS TO BE INSTALLED WITH ENVIROPODS.

Ø225 uPVC SN8
USIL 668.95
DSIL 668.82
L 12.8m
G 1%

Ø225 uPVC SN8
USIL 668.73
DSIL 668.39
L 33.3m
G 1%

Ø225 RCP(2)
USIL xxx
DSIL xxx
L 16.0m
G x%

Ø375 RCP
USIL 667.20
DSIL 664.50
L 18.3m
G 14.8%

RL665.50
900x900 SEALED CONCRETE PIT

SUB-SOIL PIPE

SUB-SOIL PIPE

Ø375 RCP
USIL 663.20
DSIL 662.90
L 30.2m
G 1%

ABANDON OR REMOVE EXISTING STORMWATER PIPE

ABANDON OR REMOVE EXISTING STORMWATER PIPE

EX COUNCIL PIT
RL 659.19
IL 657.63

EX Ø450RCP
USIL 662.06
DSIL 657.63
L 31.0m
G 14.3%

RL 664.10
900x900 CONCRETE JUNCTION PIT
GRATED ACCESS LID
OVER EXISTING Ø450 RCP STORMWATER PIPE
IL ~662.06

Ø450 RCP (2)
USIL 663.05
DSIL 662.90
L 15.0m
G 1%

RL664.25
900x900 GRATED CONCRETE PIT

Ø450 RCP (2)
USIL 663.45
DSIL 663.10
L 15.0m
G 2.3%

RL 667.35
900x900 CLASS 'D'
GRATED ACCESS LID

OSD (20kL)

5.0m x 4.0m x 1.2m DEEP
(INTERNAL ONLY)

REFER TO SHEET 4045 FOR DETAILS.

SUB-SOIL PIPE

RL 665.30
900x900 CLASS 'D'
GRATED ACCESS LID

RL 665.45
900x900 CONCRETE PIT
CLASS 'D' SEALED
ACCESS LID

Ø150 uPVC SN8
G 1%

Ø450 RCP (2)
USIL 664.35
DSIL 664.30
L 4.7m
G 1%

RL 665.55
900x900 CONCRETE PIT
CLASS 'D' GRATED LID

SUB-SOIL PIPE

200mm WIDE STRIP GRATE

Ø450 RCP (2)
USIL 665.55
DSIL 664.40
L 11.3m
G 10.2%

RL 669.55
900x900 CONCRETE PIT
CLASS 'D' GRATED LID

SUB-SOIL PIPE

Ø450 RCP (2)
USIL 667.85
DSIL 667.50
L 8.9m
G 3.9%

SUB-SOIL PIPE

RL669.30
900x900 GRATED CONCRETE PIT

Ø450 RCP(2)
USIL 668.35
DSIL 668.21
L 13.7m
G 1%

RL 669.75
1.8m KIP

BIORETENTION (16m² FILTER MEDIA) FOR RUNOFF TREATMENT OF ED DROP OFF.
REFER TO SHEET 04047 FOR DETAILS.

Ø225 RCP

Ø450 RCP(2)
USIL 668.76
DSIL 668.70
L 5.6m
G 1%

RL 669.85
1.8m KIP

SUB-SOIL PIPE

Ø375 RCP(2)
USIL 668.60
DSIL 668.40
L 11.8m
G 1.7%

Ø150 uPVC SN8
USIL 668.80
DSIL 668.76
L 3.7m
G 1%

Ø450 RCP(2)
USIL 670.06
DSIL 668.80
L 12.1m
G 10.4%

RL 671.8
450x450 CONCRETE PIT
CLASS 'D' GRATED LID

200mm WIDE STRIP GRATE

Ø150 uPVC SN8
G 1%

200mm WIDE STRIP GRATE

Ø450 RCP(2)
USIL 670.43
DSIL 670.13
L 9.4m
G 3.2%

RL 672.00
1.8m KIP

Ø225 RCP(2)
USIL 671.00
DSIL 670.95
L 4.4m
G %

RL
900x900 CONCRETE PIT
CLASS 'D' GRATED LID

Ø150 uPVC SN8
USIL 669.50
DSIL 668.76
L 6.8m
G 10.9%

SUB-SOIL PIPE

200mm WIDE STRIP GRATE

SUB-SOIL PIPE

SITE BOUNDARY

DP1126063

100

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-04012	17.05.2024
Scale	Drawn by / Checked by
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No. BHR-TTW-DRW-CIV-STE-04-XX-012 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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ADJOINS SHEET 1

COMMONWEALTH STREET

SITE BOUNDARY

BUILDING LEVEL 2

LEVEL 2
RL 674.165

ED DROP OFF

ED ENTRANCE

NOTE:
ALL NEW GRATED STORMWATER PITS TO BE INSTALLED WITH ENVIROPODS.

SUB-SOIL PIPE

Ø150 STORMWATER PIPE TO COLLECT RAINWATER OUTLETS

CONNECT NEW Ø150 uPVC SN8 PIPE INTO EXISTING STORWATER PIT
IL 643.60

EXISTING STORMWATER PIT
RL 644.21
IL 672.99

DAFFODIL COTTAGE

POOLE HOUSE

Ø150 uPVC SN8
USIL 672.51
DSIL 674.35
L 15.8m
G 1%

SUB-SOIL PIPE

FLOW

EXISTING PIT
IL 672.34

RL673.30
450x450 CONCRETE PIT
CLASS 'B' GRATED ACCESS LID

Ø150 uPVC SN8
USIL 672.65
DSIL 674.52
L 13m
G 1%

RL673.30
450x450 CONCRETE PIT
CLASS 'B' GRATED ACCESS LID

HOWICK STREET

ADJOINS SHEET 4

SITE BOUNDARY

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

SHEET 3

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
STORMWATER
AND SUBSOIL DRAINAGE
PLAN SHEET 3

Project No	Revision Date
5.07.2024TTW-11-DR-CI-04013	17.05.2024
Scale	Drawn by / Checked by
1:200	SD / TD

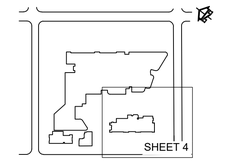
90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No. BHR-TTW-DRW-CIV-STE-04-XX-013 Revision D

Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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07.07.2024 2:43 PM



Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

RL 674.80
1.8m KIP
CONSTRUCT NEW JUNCTION PIT OVER EXISTING Ø375 PIPE.
IL ~672.6

RL674.30
600x600 CONCRETE PIT
CLASS 'D' ACCESS LID

Ø375 RCP(2)
USIL 672.60
DSIL 672.29
L 10.5m
G 3.0%

Ø225 uPVC SN8
USIL 673.50
DSIL 673.40
L 10.0m
G 1.0%

Ø225 uPVC SN8
USIL 674.80
DSIL 673.90
L 10m
G 9.0%

RL 675.70
1.8m KIP

EXISTING Ø375 PIPE TO REMAIN

SUB-SOIL PIPE

NOTE:
ALL NEW GRATED STORMWATER PITS TO BE INSTALLED WITH ENVIROPODS.

2 x 150x100 RHS
USIL 676.95
DSIL 676.90
L 4.7m
G 1%

RL677.60
600x600 CONCRETE PIT
CLASS 'B' GRATED ACCESS LID

Ø225 uPVC SN8
USIL 678.40
DSIL 677.00
L 16.4m
G 8.5%

SUB-SOIL PIPE

RL679.00
600x600 CONCRETE PIT
CLASS 'B' GRATED ACCESS LID

INSTALL EN IN PAVEMEI INLET PITS

ENTRANCE

ED DROP OFF

BUILDING LEVEL 1
BUILDING LEVEL 2

LEVEL 2
RL 674.165

ADJOINS SHEET 2

ADJOINS SHEET 3

ADMIN HERITAGE BUILDING

WILLOW BUILDING

SITE BOUNDARY

MITRE STREET

HOWICK STREET

DP1126063

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER AND SUBSOIL DRAINAGE PLAN SHEET 4

Project No	Revision Date
231092-TTW-11-DR-CI-04014	17.05.2024
Scale	Drawn by / Checked by
1:200	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-014	D

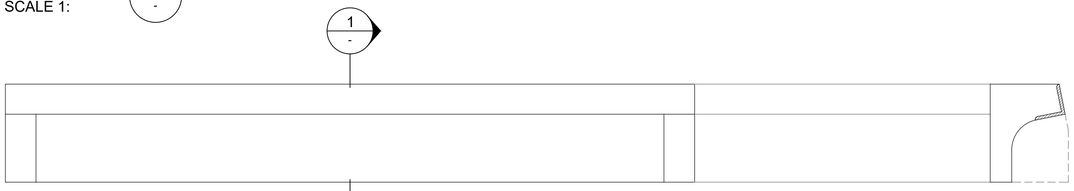
Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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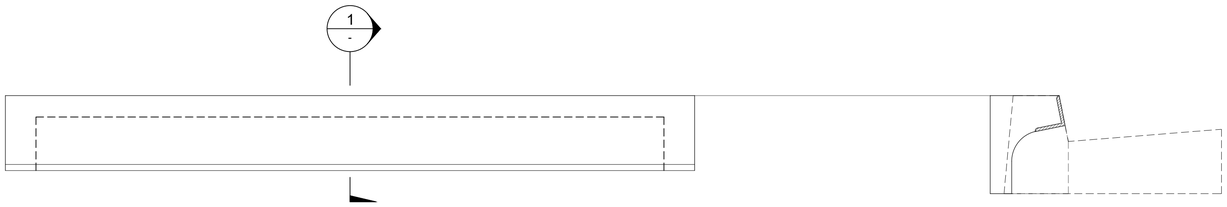


ELEVATION 1 - TRANSPORT NSW -SA3 PRECAST CONCRETE LINTEL
SCALE 1:



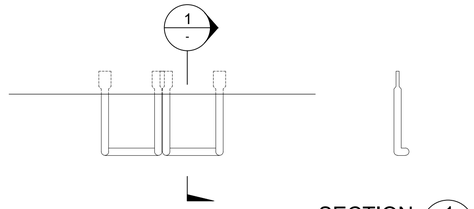
ELEVATION 1 - TRANSPORT NSW -SA2 PRECAST CONCRETE LINTEL
SCALE 1:

SECTION 1 -
SCALE 1:10



SECTION 1 -
SCALE 1:10

TRANSPORT NSW - SA2 PRECAST CONCRETE LINTEL
SCALE 1:10

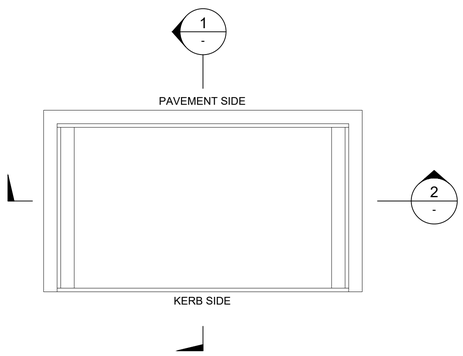


SECTION 1 -
SCALE 1:10

TRANSPORT NSW - TYPICAL STEP IRON DETAILS
SCALE 1:10



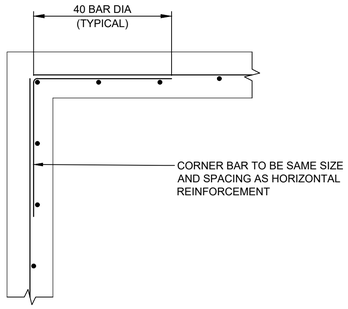
SECTION 2 -
SCALE 1:10



TRANSPORT NSW - SA2 WELDED STEEL FRAME
SCALE 1:10



SECTION 1 -
SCALE 1:10



PLAN
CORNER BAR - SINGLE LAYER
SCALE 1:10

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
STORMWATER
DETAILS
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-04041	05.07.2024

Scale	Drawn by	Checked by
	SD	TD

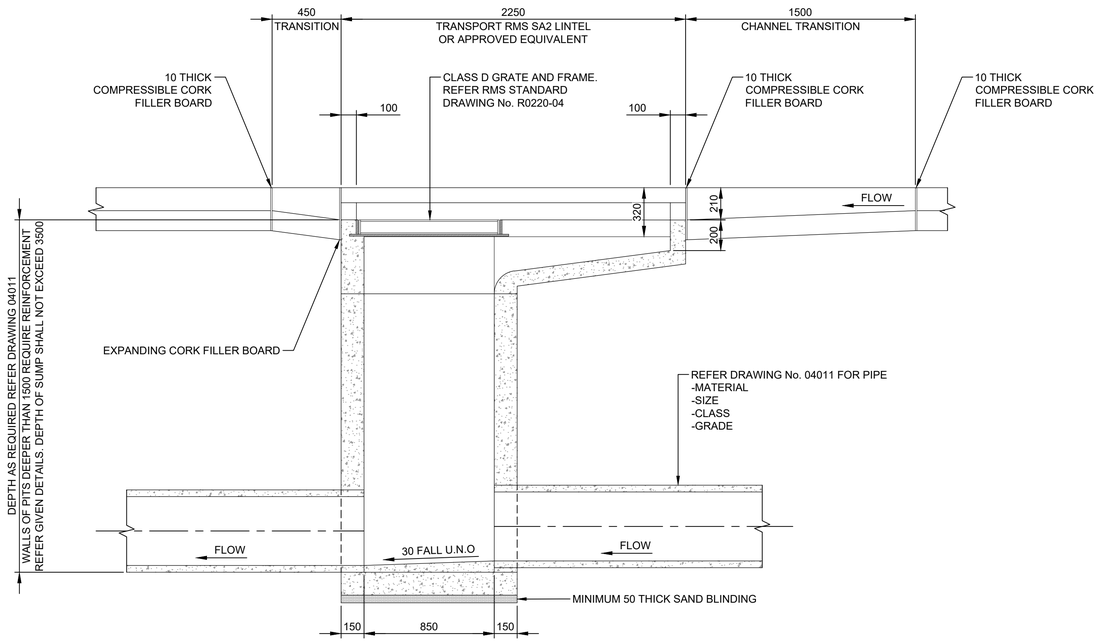
90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-041	D

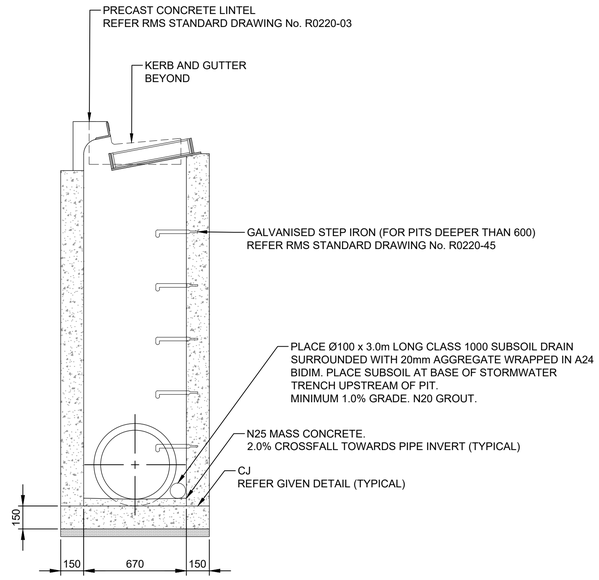
Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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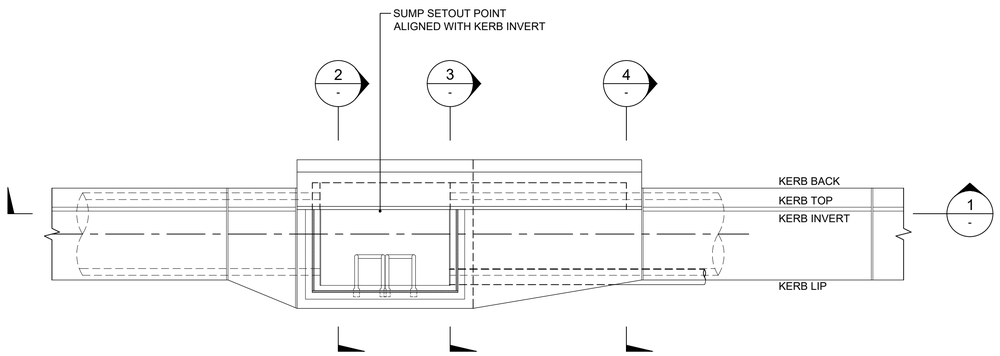
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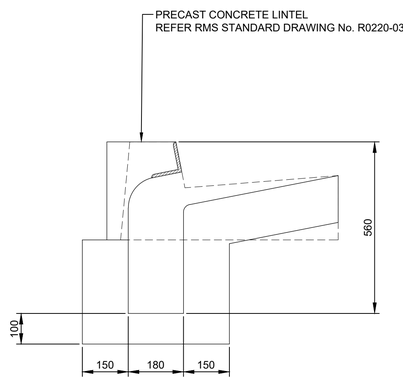


SECTION 1
SCALE 1:20

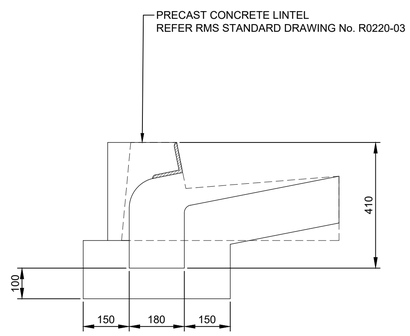


SECTION 2
SCALE 1:20





SECTION 3
SCALE 1:10



SECTION 4
SCALE 1:10

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
STORMWATER
DETAILS
SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-04042	05.07.2024

Scale	Drawn by	Checked by
	SD	TD

90% DD ISSUE
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-042	D

Taylor Thomson Whitting

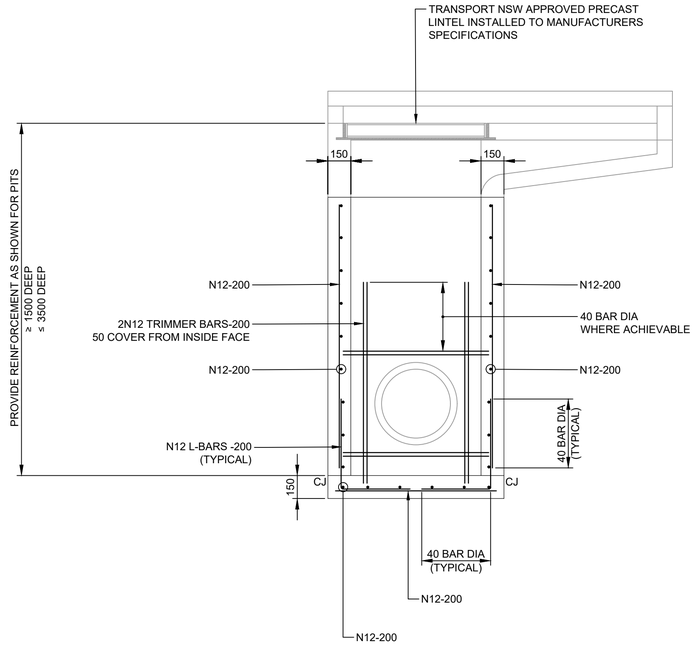
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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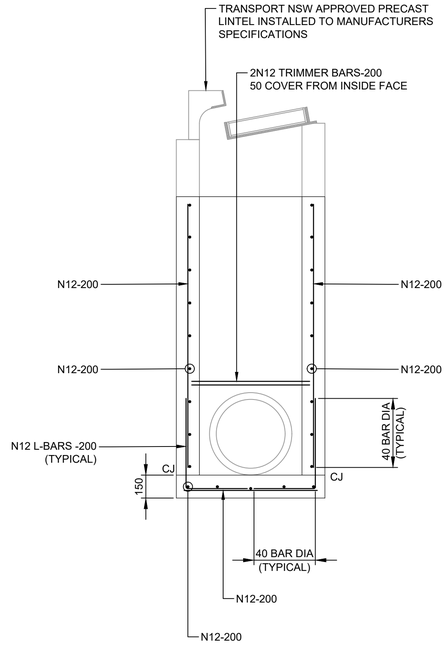
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NOTES

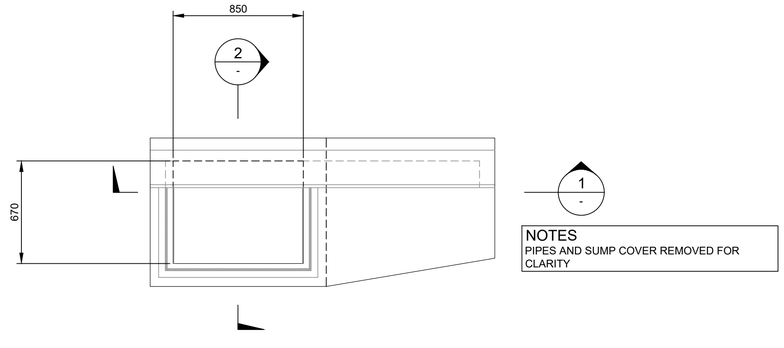
1. CONCRETE STRENGTH 25MPa.
2. SIDE WALLS OF PITS DEEPER THAN 1500 ARE TO BE REINFORCED IN ACCORDANCE WITH GIVEN DETAIL.
3. STEP IRONS ARE REQUIRED WHERE PITS ARE DEEPER THAN 1200.
4. REFER DRAWING No. 00002 FOR CONCRETE NOTES



SECTION 1 / -
SCALE 1:20

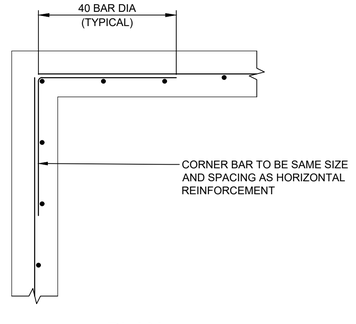


SECTION 2 / -
SCALE 1:20



NOTES
PIPES AND SUMP COVER REMOVED FOR CLARITY

KERB INLET SUMP (KIS) ON GRADE
FOR PIPES UP TO Ø450
SCALE 1:20



PLAN
CORNER BAR - SINGLE LAYER
SCALE 1:10

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER DETAILS SHEET 3

Project No	Revision Date
231092-TTW-11-DR-CI-04043	05.07.2024

Scale	Drawn by	Checked by
	SD	TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-043	D

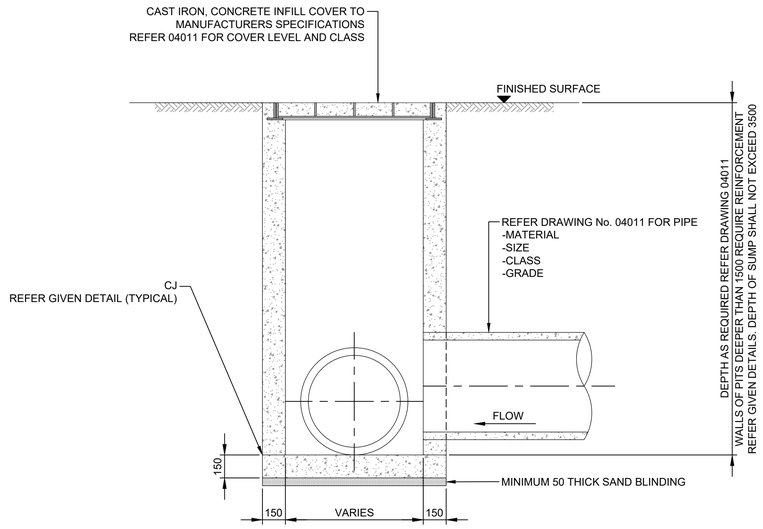
Taylor Thomson Whitting
Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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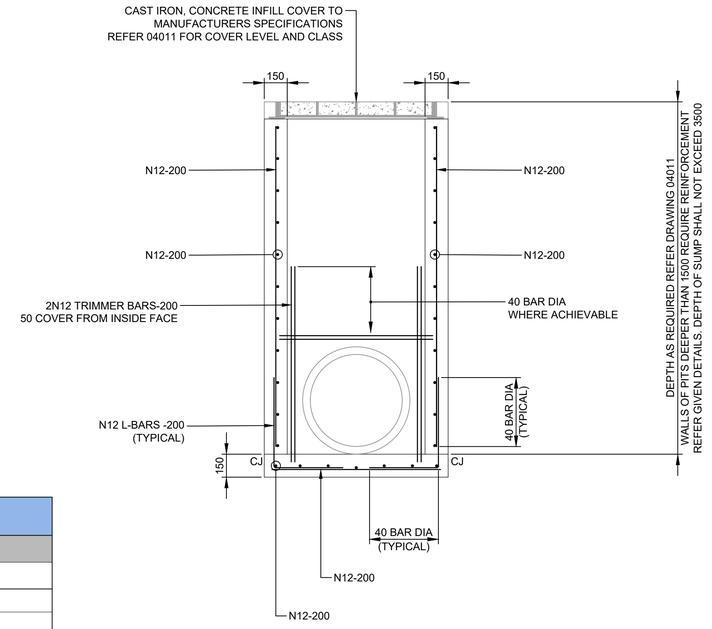
NOTES

1. CONCRETE STRENGTH 25MPa.
2. SIDE WALLS OF PITS DEEPER THAN 1500 ARE TO BE REINFORCED IN ACCORDANCE WITH GIVEN DETAIL.
3. STEP IRONS ARE REQUIRED WHERE PITS ARE DEEPER THAN 1200.
4. REFER DRAWING No. 00002 FOR CONCRETE NOTES

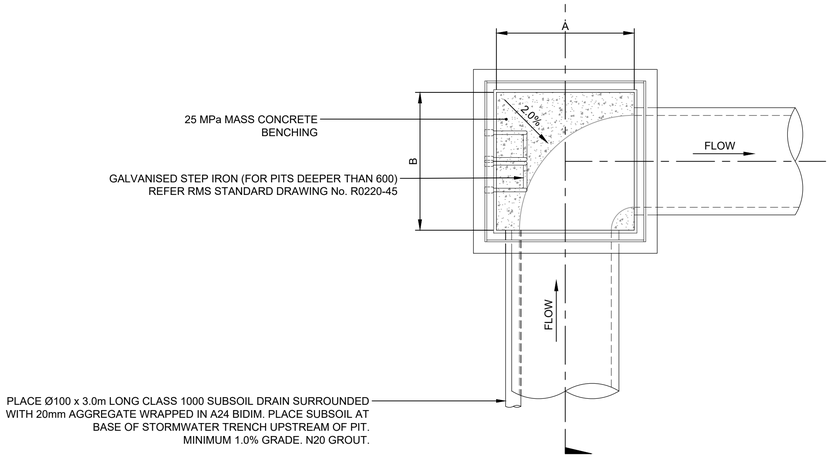


SECTION 1 / - SCALE 1:20

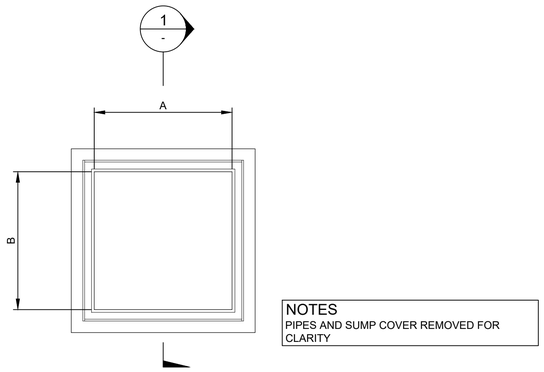
SIZE REQUIREMENTS	
GOVERNED BY MAXIMUM PIPE DIAMETER	
PIPE Ø	A, B
300	600
600	900
900	1200
1200	1600



SECTION 1 / - SCALE 1:20



JUNCTION PIT (JP)
FOR PIPES UP TO Ø900
SCALE 1:20



NOTES
PIPES AND SUMP COVER REMOVED FOR CLARITY

JUNCTION PIT (JP)
FOR PIPES UP TO Ø900
SCALE 1:20

Rev	Date	Revision	By	Chk.
A	17.01.2023	DRAFT SCHEMATIC	AS	TD
B	09.02.2023	SCHEMATIC DESIGN	AS	TD
C	17.05.2024	50% DD ISSUE	SD	TD
D	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER DETAILS SHEET 4

Project No	Revision Date
231092-TTW-11-DR-CI-04044	05.07.2024
Scale	Drawn by / Checked by
	SD / TD

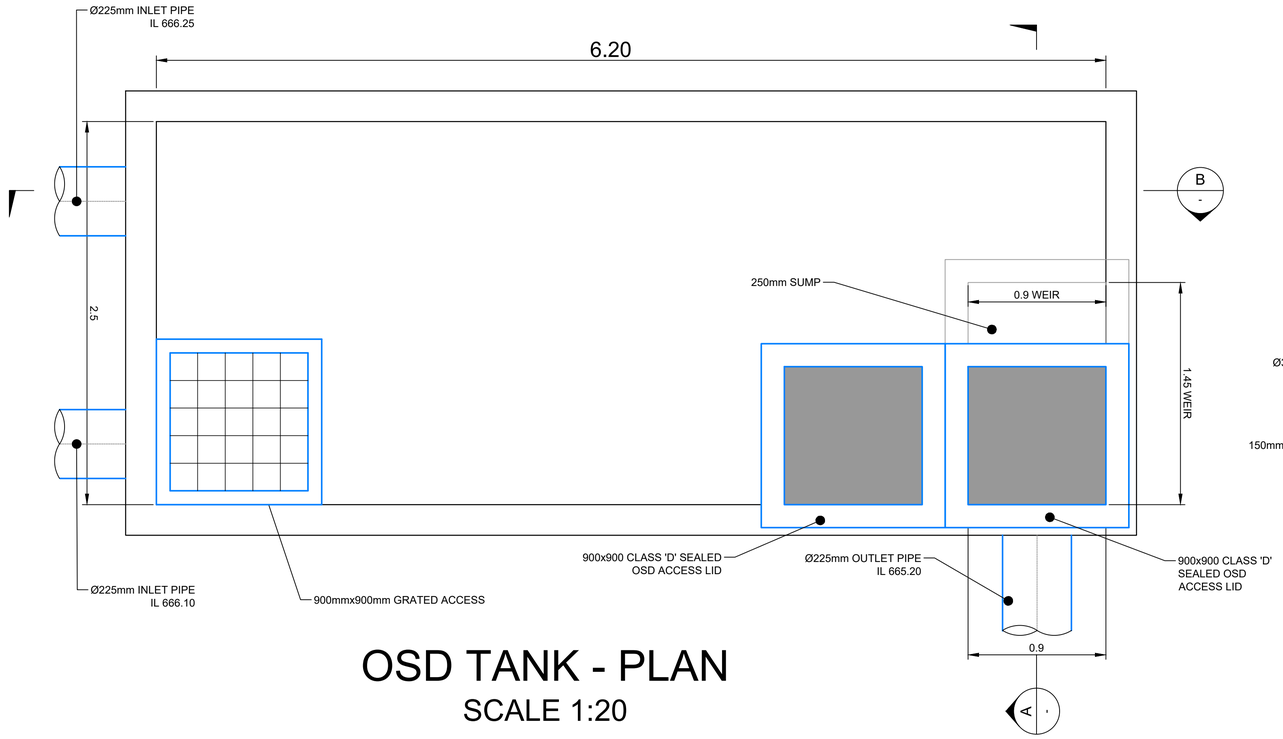
90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-044	D

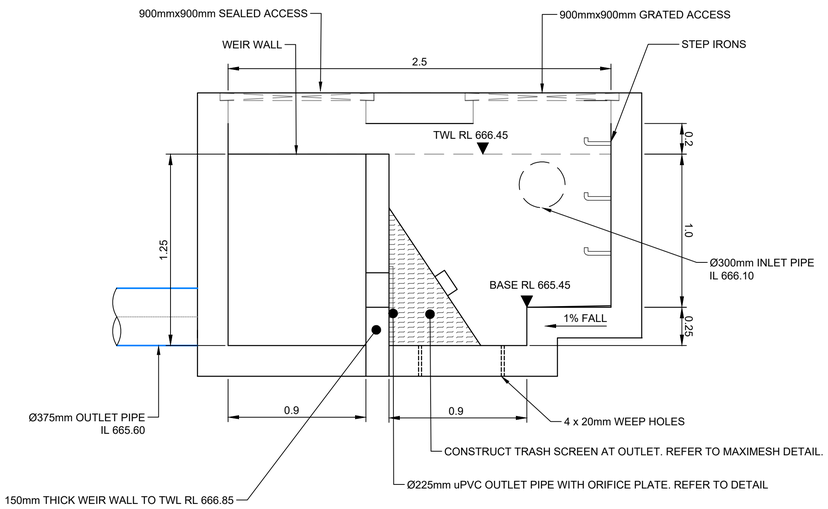
Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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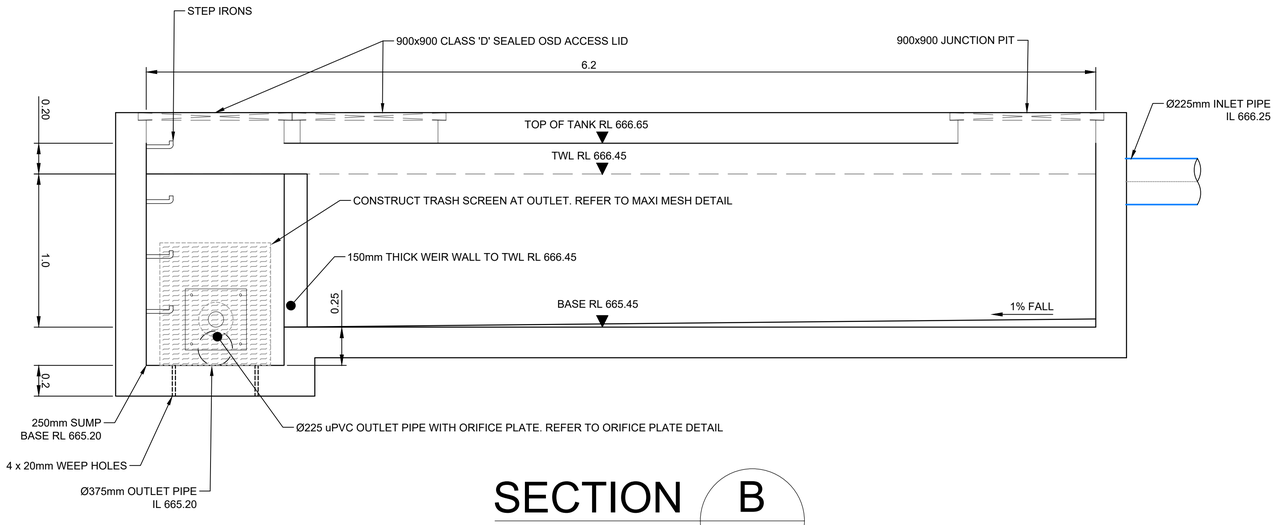
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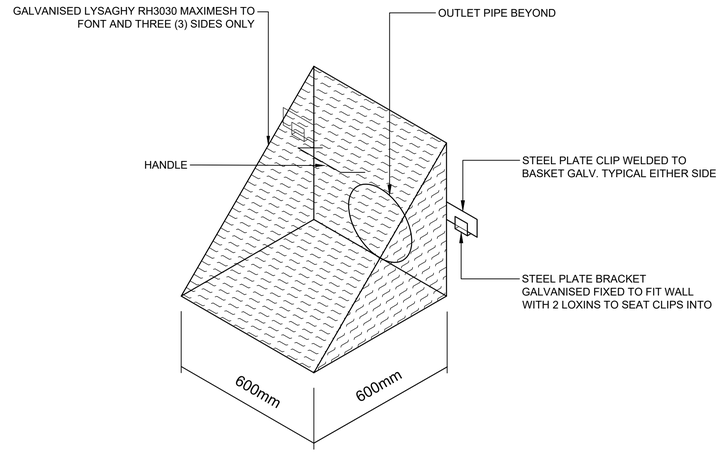
OSD TANK - PLAN
SCALE 1:20



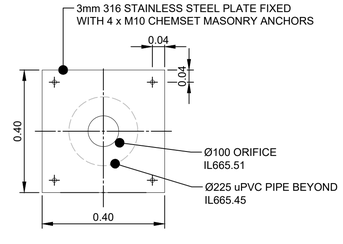
SECTION A
SCALE 1:20



SECTION B
SCALE 1:20



MAXIMESH DETAIL
N.T.S.



ORIFICE PLATE DETAIL
SCALE 1:10

NOTES:
1. DIMENSIONS SHOWN ARE INTERNAL ONLY
2. ALL DIMENSIONS SHOWN ARE IN METERS (m) UNLESS OTHERWISE NOTED

0 400 800 1200 1600mm
1:20 A1 1:40 A3

0 200 400 600 800mm
1:10 A1 1:20 A3

Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	DR	TD

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
STORMWATER DETAILS
FLEET PARKING DETENTION TANK
SHEET 5

Project No	Revision Date
231092-TTW-11-DR-CI-04045	20.06.2024
Scale	Drawn by / Checked by
	SD / TD

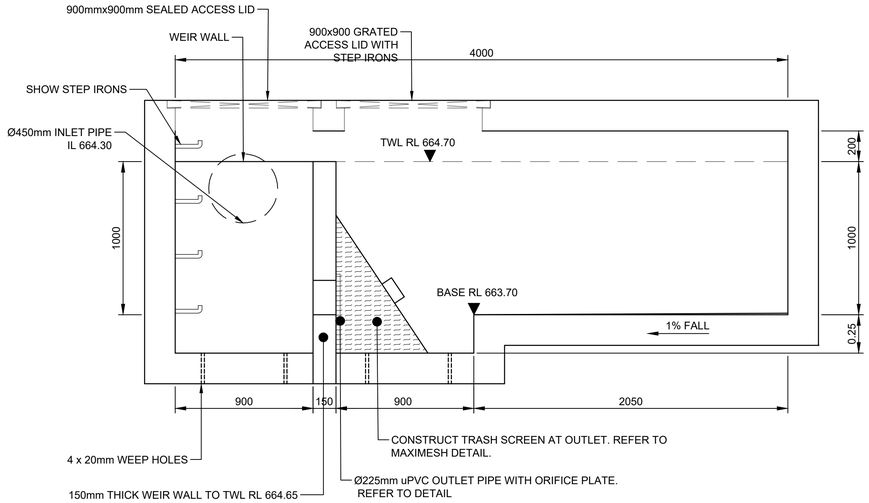
90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-045	A

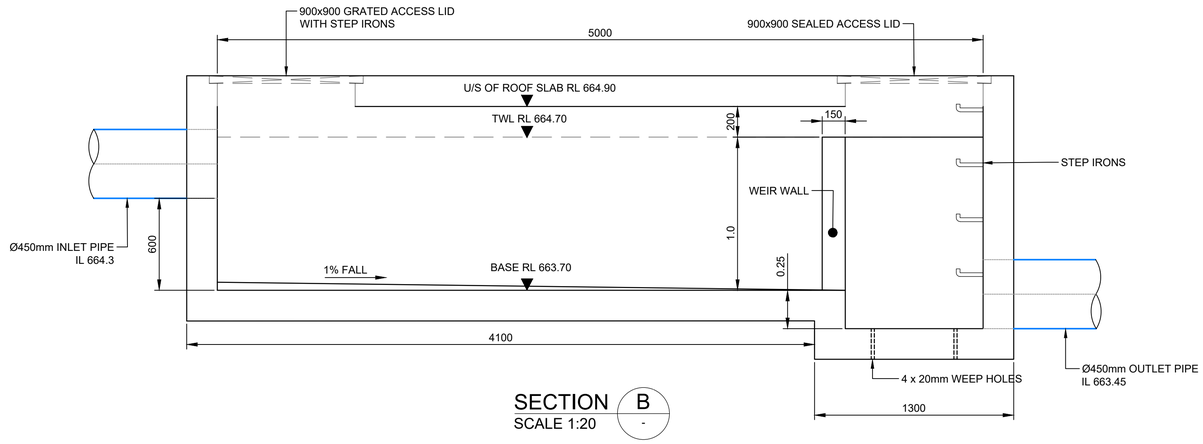
Taylor Thomson Whitting
TTW Structural Civil Traffic Façade
612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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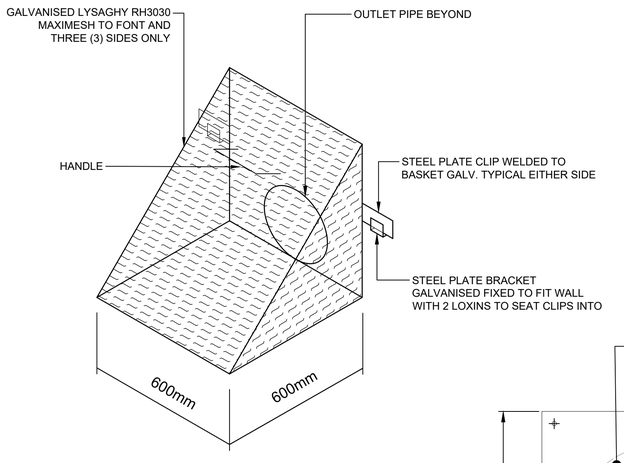


SECTION A
SCALE 1:20

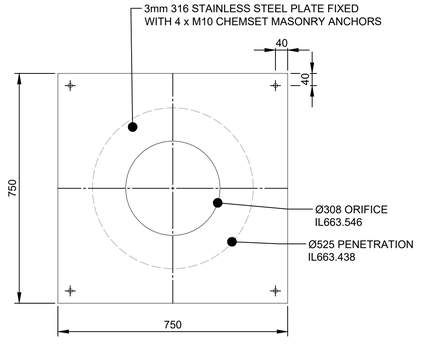


SECTION B
SCALE 1:20

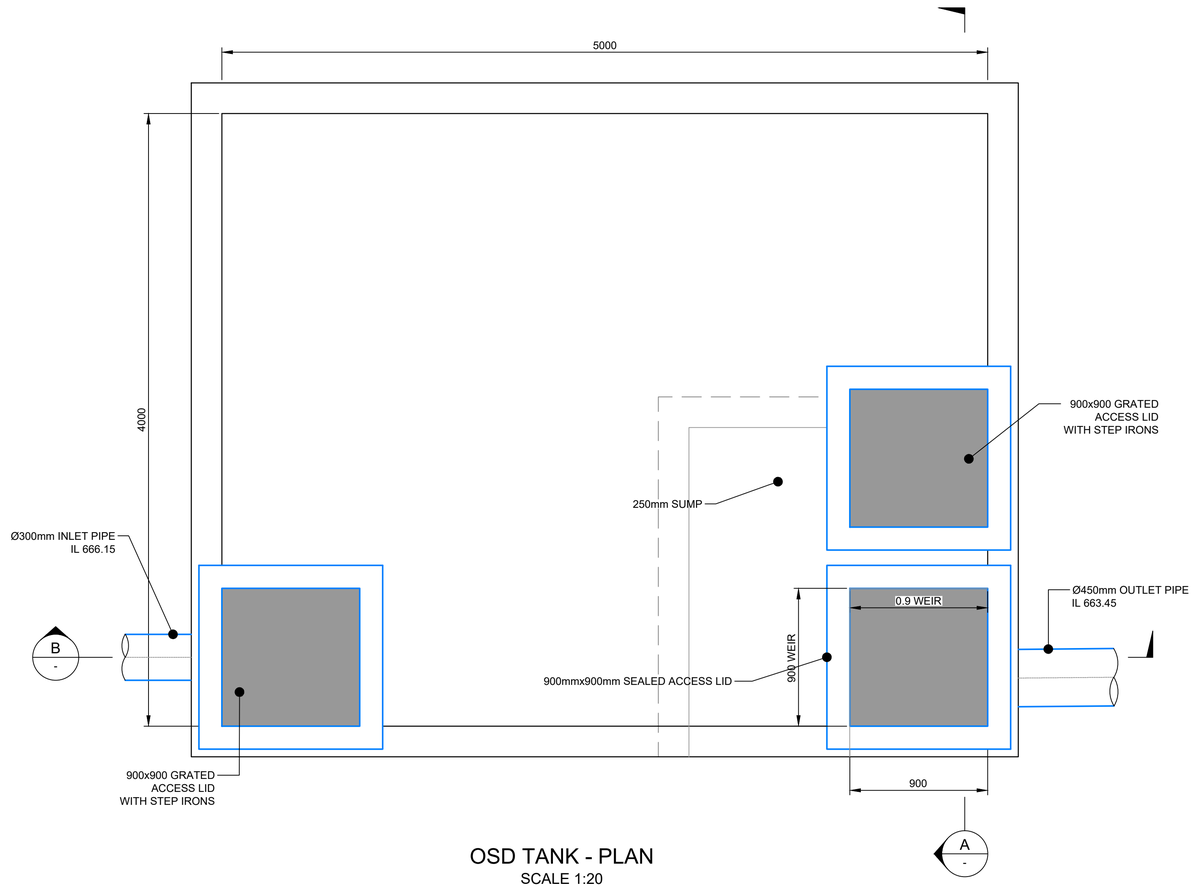
Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD



MAXIMESH DETAIL
N.T.S.



ORIFICE PLATE DETAIL
SCALE 1:10



OSD TANK - PLAN
SCALE 1:20

0 400 800 1200 1600mm
1:20 A1 1:40 A3

0 200 400 600 800mm
1:10 A1 1:20 A3

NOTES:
1. DIMENSIONS SHOWN ARE INTERNAL ONLY
2. ALL DIMENSIONS SHOWN ARE IN METERS (m) UNLESS OTHERWISE NOTED

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Architect
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Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER DETAILS
MHU CAR PARK DETENTION TANK
SHEET 6

Project No	Revision Date
231092-TTW-00-DR-CI-04046	05.07.2024
Scale	**Drawn by** / **Checked by**
-	SD / TD

90% DD ISSUE
NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-046	A

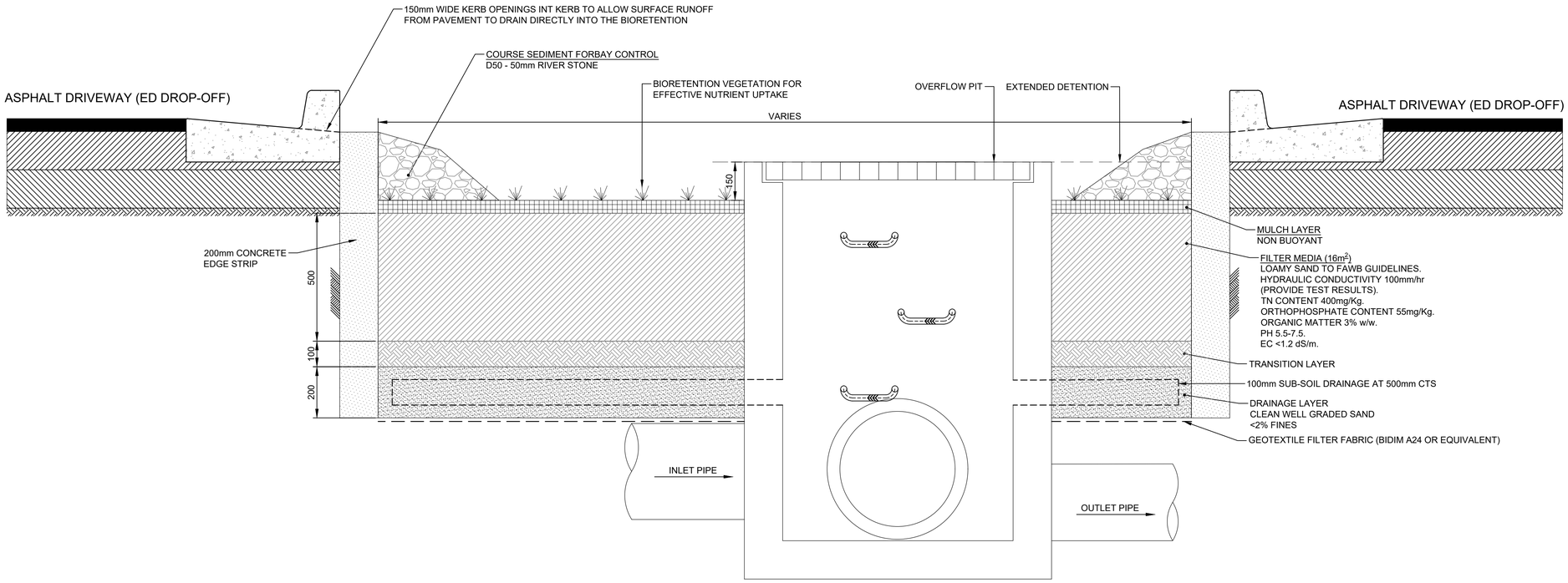
Taylor Thomson Whitting
TTW Structural Civil Traffic Façade

612 9439 7288 | Level 6, 73 Miller Street, North Sydney, NSW 2060

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06.07.2024 7:13 PM

Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	TD	TD



BIOBASIN DETAIL
SCALE 1:10

FILTER MEDIA SPECIFICATION

1. FILTER MEDIA SHALL BE A LOAMY SAND.
2. FREE OF RUBBISH, DELETERIOUS MATERIAL, TOXICANT.
3. FREE OF ORGANIC MATTER.
4. HYDRAULIC CONDUCTIVITY = 100-30Omm/hr MEASURED USING ASTMF1815-0.6 METHOD
5. WELL GRADED, ALL PARTICLE SIZE RANGES FROM 0.75mm TO 4.75mm SIZE (DEFINED BY AS1289.3.6.1 - 1995)
   - CLAY & SILT (<0.05mm) <3%
   - VERY FINE SAND (0.05-0.15mm) 5-30%
   - FINE SAND (0.15-0.25mm) 10-10%
   - MEDIUM TO COARSE SAND (0.25-1.0mm) 40-60%
   - COARSE SAND (1.0-2.0mm) 7-10%
   - FINE GRAVEL (2.0-3.4mm) <3%

TRANSITION LAYER

1. CLEAN WELL GRADED SAND/COURSE SAND MATERIAL CONTAINING LITTLE OR NO FINE.

DRAINAGE LAYER

1. CLEAN, FINE GRAVEL (2-5mm).

DRAINAGE PIPE

1. SLOTTED Ø150mm UPVC PIPE (CONSISTENT WITH AS/NZs/245).
2. JOINTS SHALL BE SOLVENT CEMENT GLUED.
3. BENDS SHALL BE 45.°

VEGETATION PLANTING DETAILS FOR BIO RETENTION

1. MINIMUM 8 PLANTS PER SQUARE METRE. WHICH PLANTED FROM 50mm TUBES OR HIKO CELLS.

2. SOME PLANT SPECIES THAT CAN BE USED.
   - Banksia robur
   - Correa alba
   - Dianella Cearulea 'King Alfred' (Blue flax-lily)
   - Dichelachne micrantha
   - Doryanthes excels
   - Imperata cynlindrical (Blady Grass)
   - Isolepsis nodosa
   - Lomandra longifolia (Matrush)
   - Melaleuca thymifolia
   - Westringia fruiticosa
   - Acmena smithii
   - Callistemon sp

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Architect
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Project Manager
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Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
STORMWATER BIORETENTION DETAIL ED DROP OFF

Project No	Revision Date
231092-TTW-11-DR-CI-04047	05.07.2024
Scale	**Drawn by** / **Checked by**
1:10	TD / TD

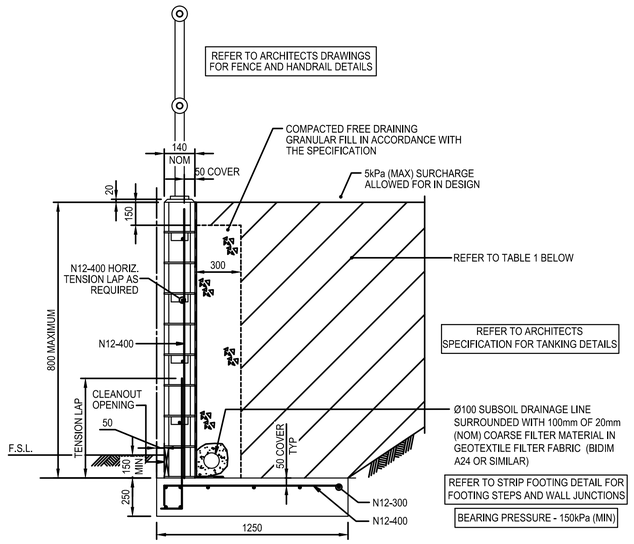
90% DD ISSUE
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-04-XX-0047	A

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Structural Civil Traffic Façade
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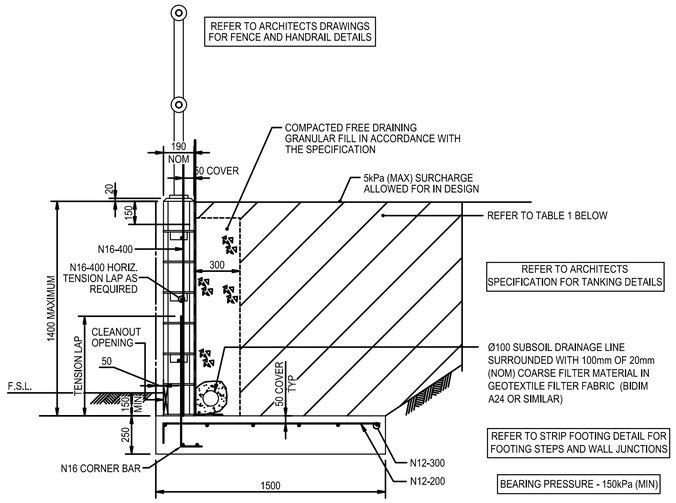
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03.09.2024 9:35 AM



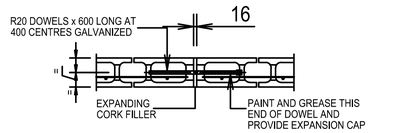
RETAINING WALL 800mm (MAX)

SCALE 1: 20



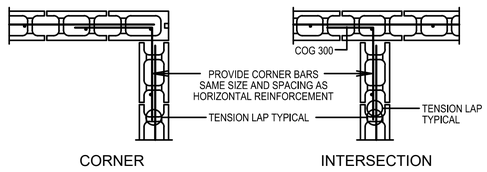
RETAINING WALL 1400mm (MAX)

SCALE 1: 20



TYPICAL CONTROL JOINT DETAIL

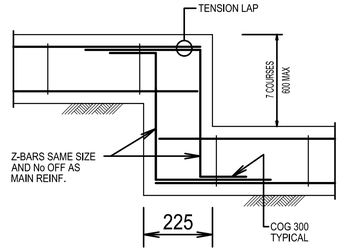
(8000 MAX. CTS U.N.O.) SCALE 1: 10



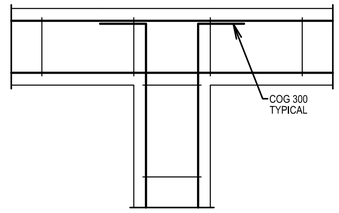
JUNCTION DETAILS

SCALE 1: 10

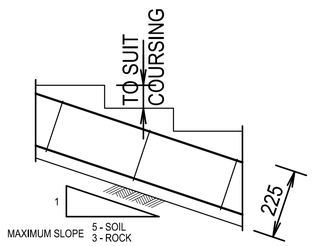
Rev	Date	Revision	By	Chk.
A	09.02.2023	SCHEMATIC DESIGN	AS	TD
B	17.05.2024	50% DD ISSUE	SD	TD
C	05.07.2024	90% DD ISSUE	SD	TD



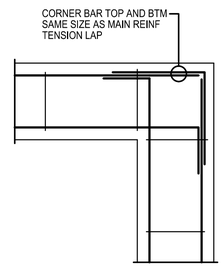
STEP



JUNCTION



STEP - GENTLE SLOPES



CORNER

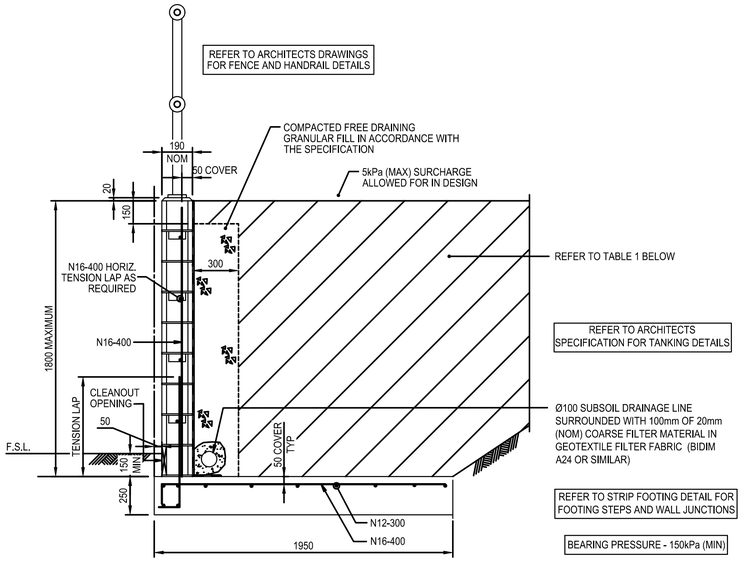
STRIP FOOTING DETAILS

SCALE 1: 10

RETAINING WALL REVERSE FOOTING OPTION

SCALE 1: 20

Type	Height (H)	Width (W)	Width (K)	A Bars	B Bars
RWA1	800	800	500	N12-400	N12-400
RWA2	1400	1500	650	N16-400	N16-400
RWA3	1800	2500	750	N16-400	N16-400



RETAINING WALL 1800mm (MAX)

SCALE 1: 20

0 400 800 1200 1600mm
1:20 A1 1:40 A3

0 200 400 600 800mm
1:10 A1 1:20 A3

Services Engineers
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Stantec

Architect
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Billard Leece Partnership

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TSA
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HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
RETAINING WALLS DETAILS

Project No	Revision Date
231092-TTW-11-DR-CI-06041	05.07.2024
Scale	Drawn by / Checked by
	SD / TD

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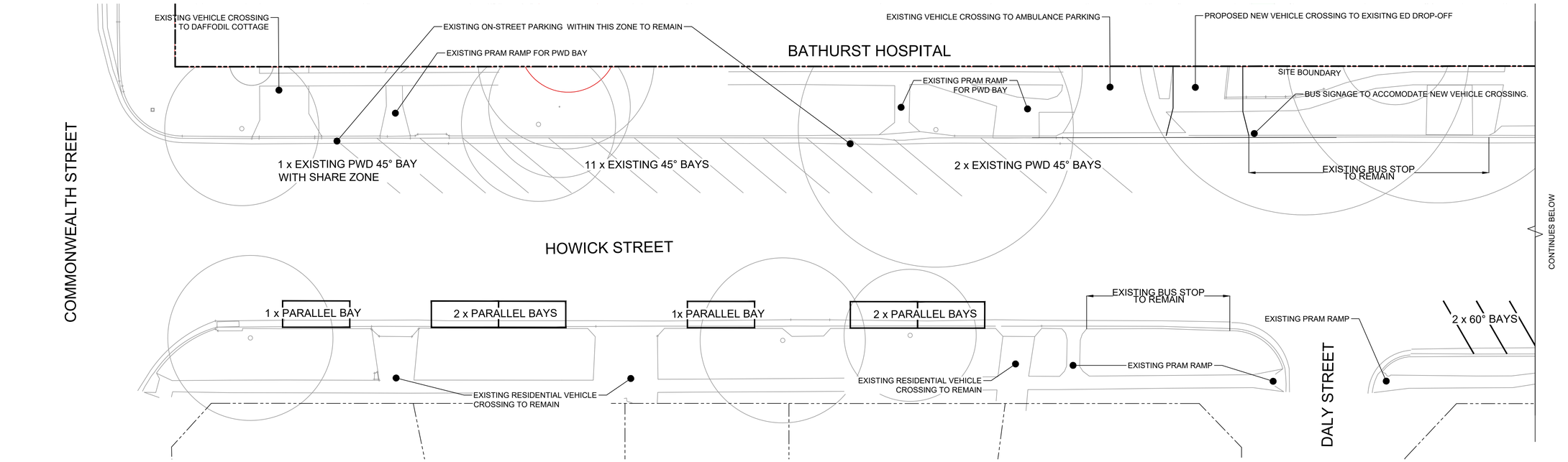
Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-06-XX-041	C

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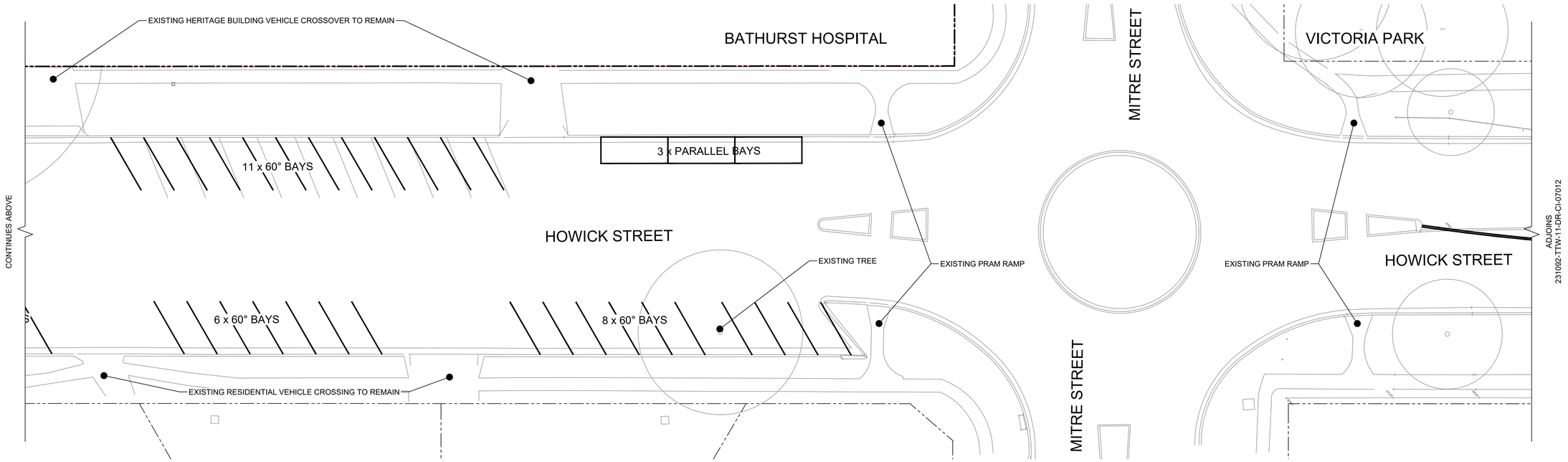
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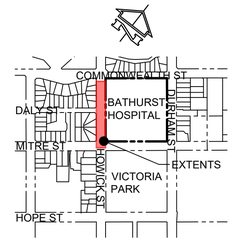
0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3



HOWICK STREET ON-STREET PARKING
PLAN
SCALE 1:200



HOWICK STREET ON-STREET PARKING CONTINUTED
PLAN
SCALE 1:200



Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD

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HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
ON-STREET PARKING
HOWICK STREET
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-07011	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

90% DD ISSUE
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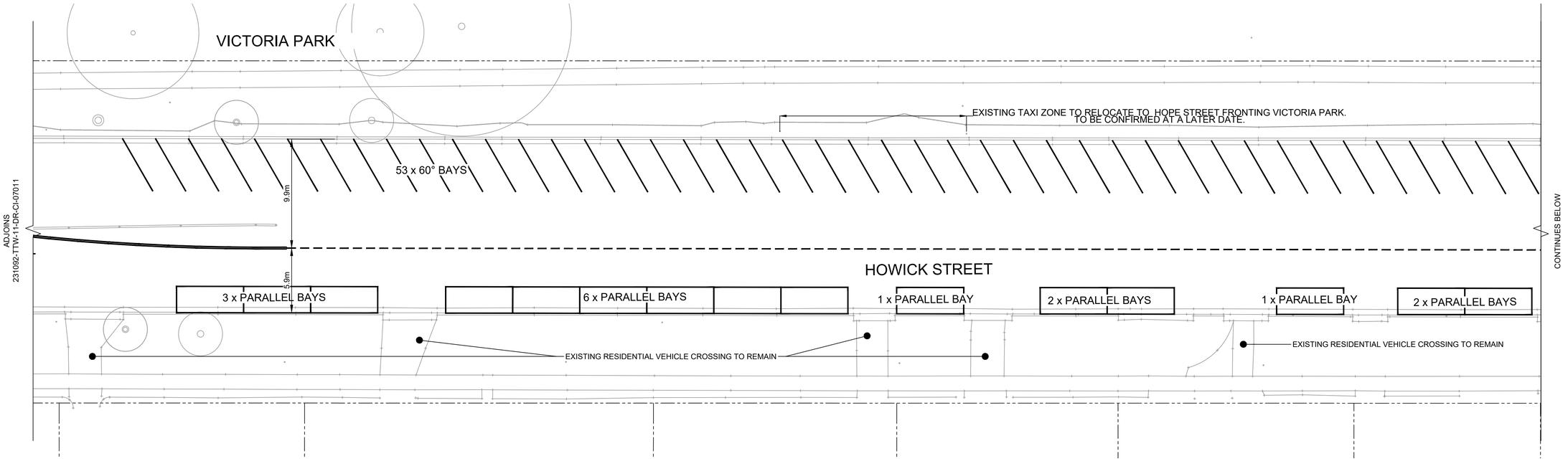
Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-07-XX-011	A

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Structural Civil Traffic Façade
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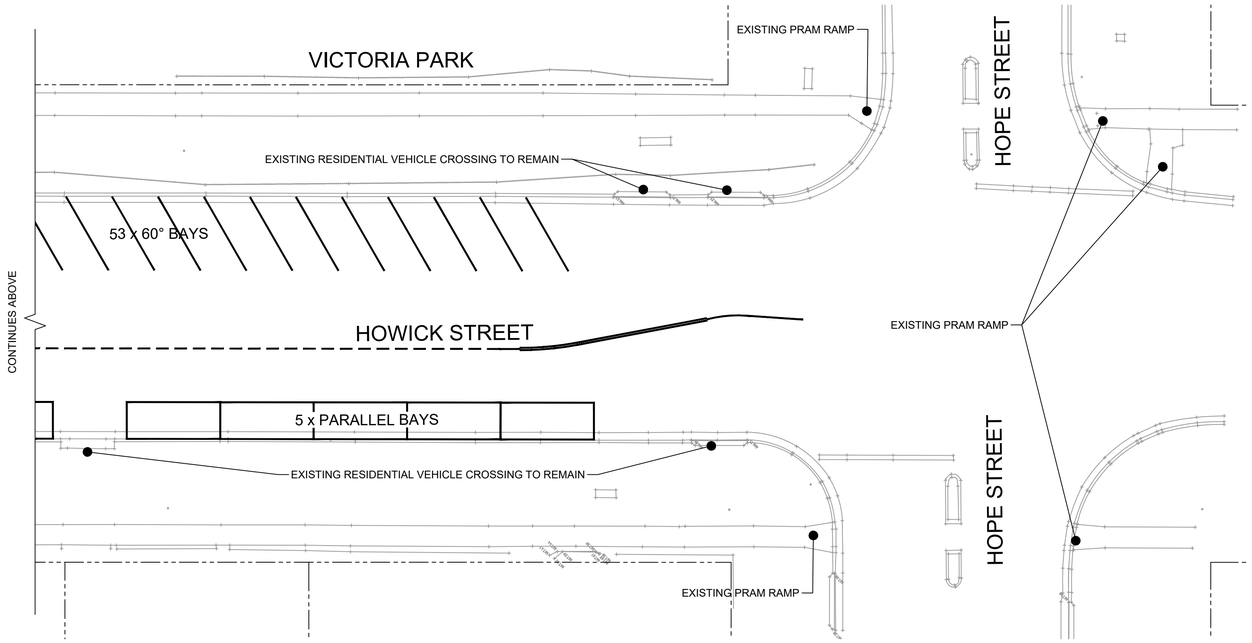
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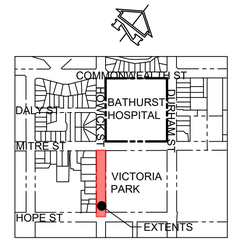
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1:200 A1 1:400 A3



HOWICK STREET ON-STREET PARKING CONTINUED
PLAN
SCALE 1:200



HOWICK STREET ON-STREET PARKING CONTINUTED
PLAN
SCALE 1:200



Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD

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Project Manager
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HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
ON-STREET PARKING
HOWICK STREET
SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-07012	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

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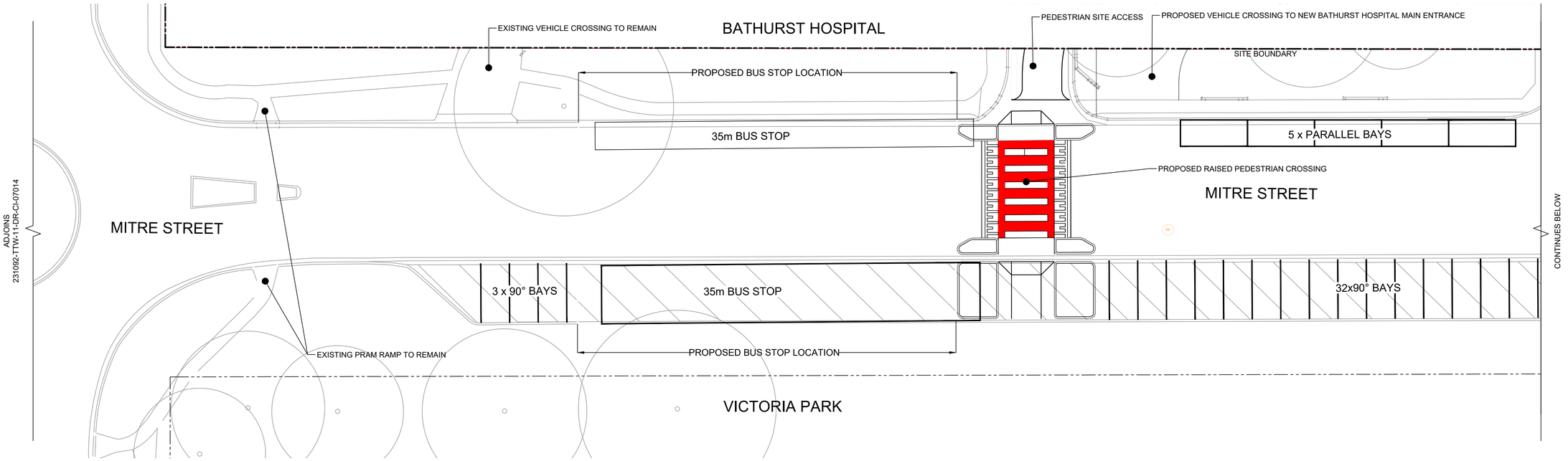
Drawing No. BHR-TTW-DRW-CIV-STE-07-XX-012 Revision A

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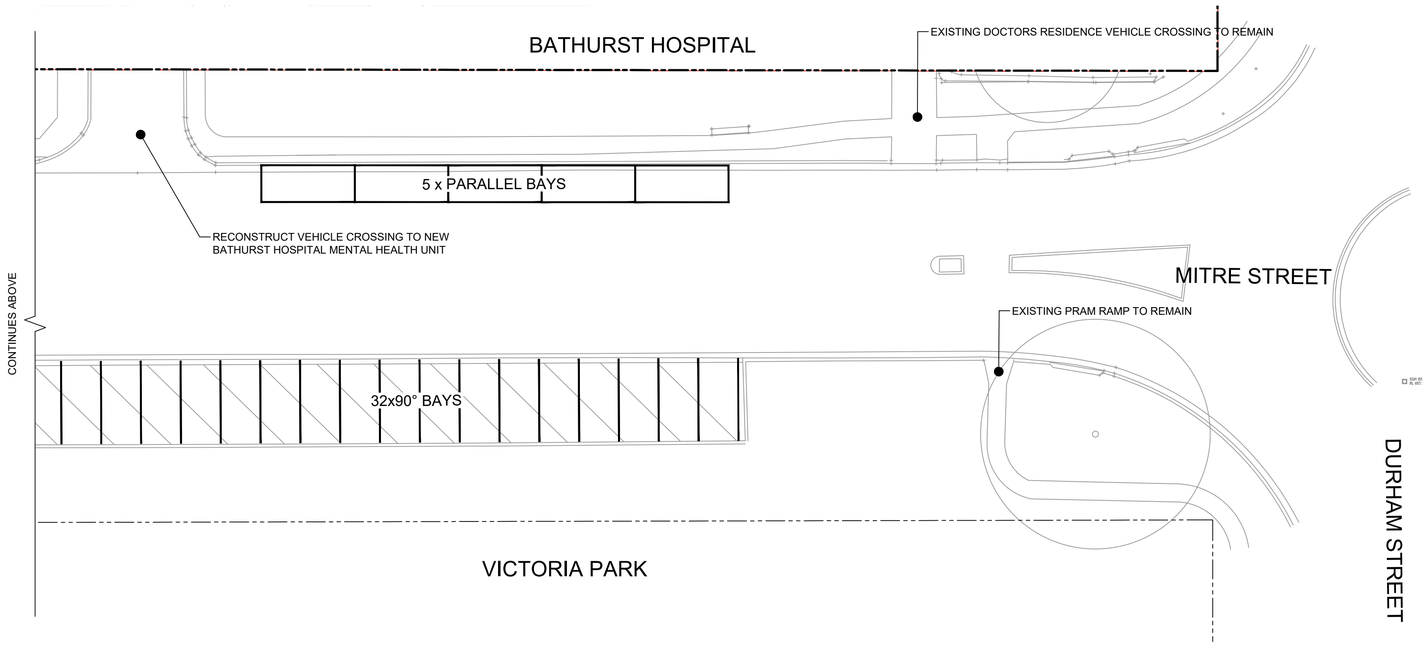
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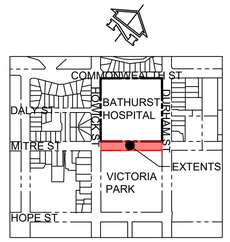
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MITRE STREET ON-STREET PARKING
PLAN
SCALE 1:200



MITRE STREET ON-STREET PARKING CONTINUED
PLAN
SCALE 1:200



Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD

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Project Manager
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HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
ON-STREET PARKING
MITRE STREET
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-07013	05.07.2024
Scale	**Drawn by** / **Checked by**
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-07-XX-013	A

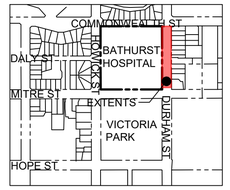
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NOTE: ON-STREET PARKING BASED OFF NEARMAP IMAGERY.
SUBJECT TO ADDITIONAL SURVEY DURING DETAILED DESIGN.

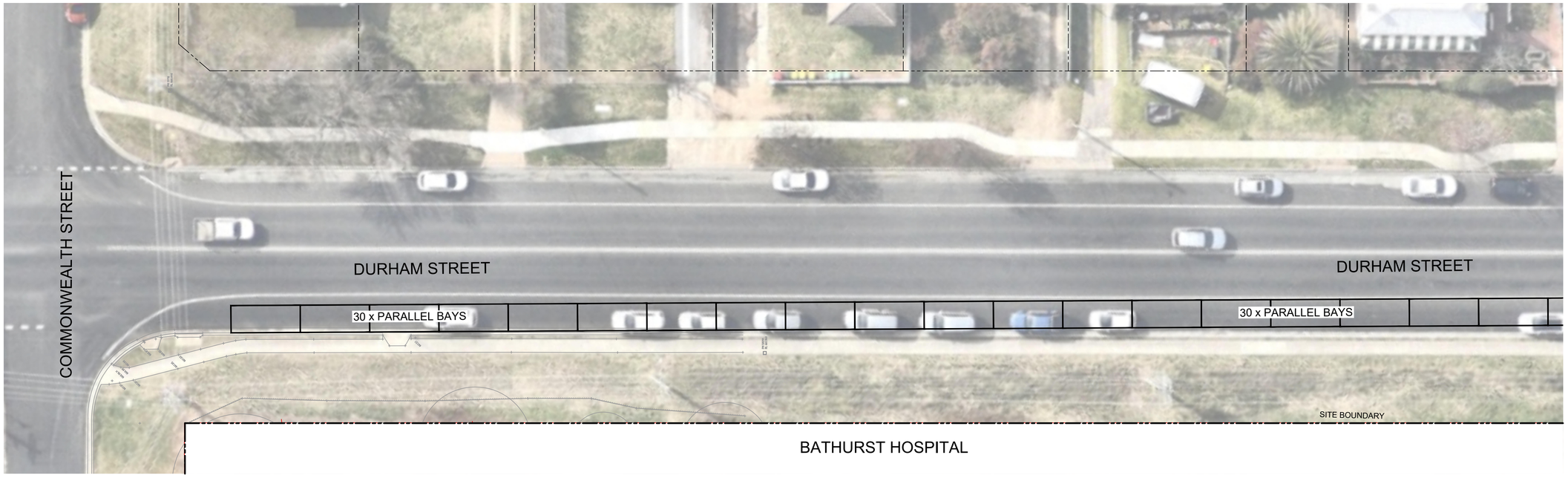
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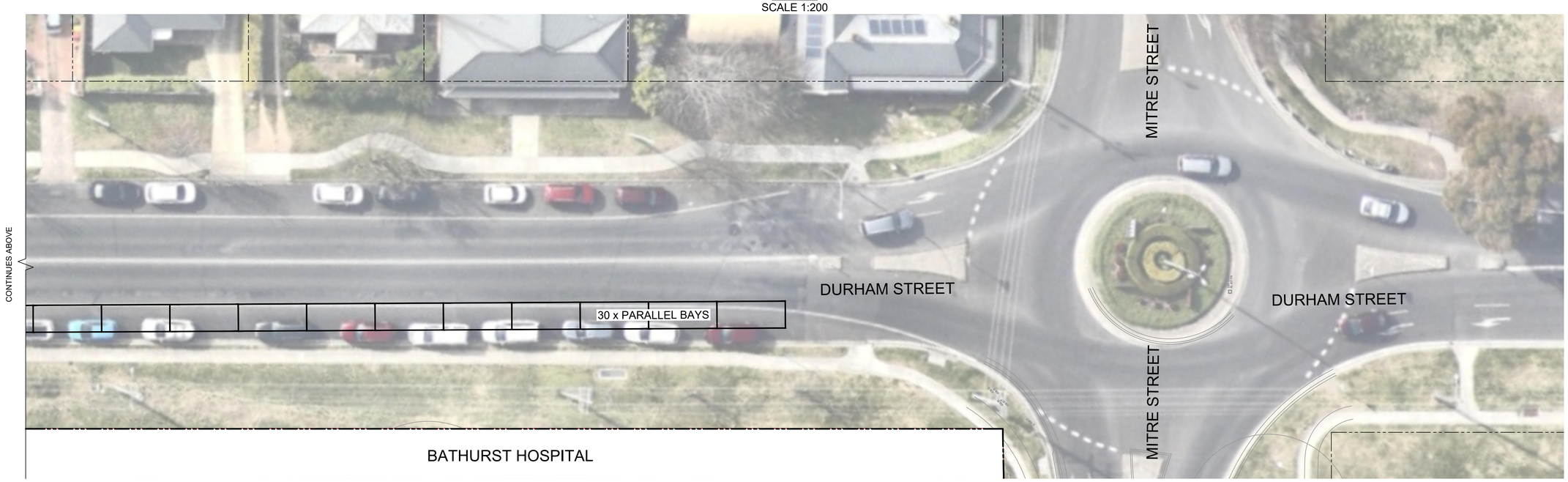
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Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD



DURHAM STREET ON-STREET PARKING
PLAN
SCALE 1:200



DURHAM STREET ON-STREET PARKING CONTINUTED
PLAN
SCALE 1:200

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Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
ON-STREET PARKING
DURHAM STREET
SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-07014	05.07.2024
Scale	**Drawn by** / **Checked by**
1:200	SD / TD

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NOT FOR CONSTRUCTION

Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-07-XX-014	A

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EROSION AND SEDIMENT CONTROL LEGEND

TEMPORARY SITE FENCE TYPE 1

TEMPORARY SITE FENCE TYPE 2

TEMPORARY SITE FENCE TYPE 3

* ALL FENCING TO BE IN ACCORDANCE WITH STANDARD NOTES

TEMPORARY OVERLAND FLOW PATH

TEMPORARY LEASING ZONE

TEMPORARY SITE ACCESS GATE TYPE 1

TEMPORARY SITE ACCESS GATE TYPE 2

EXISTING TREE TO BE RETAINED

TREE PROTECTION ZONE (TPZ)
2m FROM TREE DRIPLINE

EXISTING TREE TO BE REMOVED

* TREE REPRESENTATION MAY VARY BASED ON SURVEY INFORMATION

TEMPORARY CONSTRUCTION WASTE BINS

BRICK CUT WASH ZONE

CONSTRUCTION MATERIALS STOCKPILE

TEMPORARY SITE SHEDS

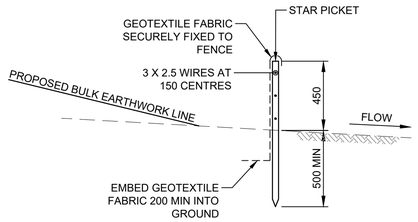
TEMPORARY STABILISED CONSTRUCTION ENTRANCE

EROSION AND SEDIMENT CONTROL NOTES

1. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   (A) LOCAL AUTHORITY REQUIREMENTS,
   (B) EPA - POLLUTION CONTROL MANUAL FOR URBAN STORMWATER,
   (C) LANDCOM NSW - MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION ("BLUE BOOK").
2. EROSION AND SEDIMENT CONTROL DRAWINGS AND NOTES ARE PROVIDED FOR THE WHOLE OF THE WORKS. SHOULD THE CONTRACTOR STAGE THESE WORKS THEN THE DESIGN MAY REQUIRE TO BE MODIFIED. VARIATION TO THESE DETAILS MAY REQUIRE TO BE APPROVED BY THE RELEVANT AUTHORITIES. THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE IMPLEMENTED AND ADOPTED TO MEET THE VARYING SITUATIONS AS WORK ON SITE PROGRESSES.
3. MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES TO THE SATISFACTION OF ACT ENVIRONMENT PROTECTION.
4. WHEN STORMWATER PITS ARE CONSTRUCTED PREVENT SITE RUNOFF ENTERING THE PITS UNLESS SILT FENCES ARE ERECTED AROUND PITS.
5. MINIMISE THE AREA OF SITE BEING DISTURBED AT ANY ONE TIME.
6. PROTECT ALL STOCKPILES OF MATERIALS FROM SCOUR AND EROSION. DO NOT STOCKPILE LOOSE MATERIAL IN ROADWAYS, NEAR DRAINAGE PITS OR IN WATERCOURSES.
7. ALL SOIL AND WATER CONTROL MEASURES ARE TO BE PUT BACK IN PLACE AT THE END OF EACH WORKING DAY, AND MODIFIED TO BEST SUIT SITE CONDITIONS.
8. CONTROL WATER FROM UPSTREAM OF THE SITE SUCH THAT IT DOES NOT ENTER THE DISTURBED SITE.
9. ALL CONSTRUCTION VEHICLES SHALL ENTER AND EXIT THE SITE VIA THE TEMPORARY CONSTRUCTION ENTRY/EXIT.
10. ALL VEHICLES LEAVING THE SITE SHALL BE CLEANED AND INSPECTED BEFORE LEAVING.
11. MAINTAIN ALL STORMWATER PIPES AND PITS CLEAR OF DEBRIS AND SEDIMENT. INSPECT STORMWATER SYSTEM AND CLEAN OUT AFTER EACH STORM EVENT.
12. CLEAN OUT ALL EROSION AND SEDIMENT CONTROL DEVICES AFTER EACH STORM EVENT.

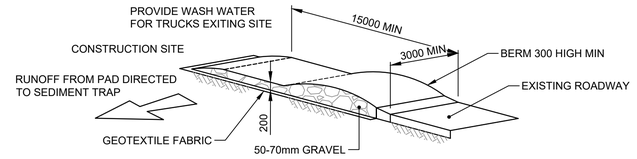
SEQUENCE OF WORKS

1. PRIOR TO COMMENCEMENT OF EXCAVATION THE FOLLOWING SOIL MANAGEMENT DEVICES MUST BE INSTALLED.
1.1. CONSTRUCT SILT FENCES BELOW THE SITE AND ACROSS ALL POTENTIAL RUNOFF SITES.
1.2. CONSTRUCT TEMPORARY CONSTRUCTION ENTRY/EXIT AND DIVERT RUNOFF TO SUITABLE CONTROL SYSTEMS.
1.3. CONSTRUCT MEASURES TO DIVERT UPSTREAM FLOWS INTO EXISTING STORMWATER SYSTEM.
1.4. CONSTRUCT SEDIMENTATION TRAPS/BASIN INCLUDING OUTLET CONTROL AND OVERFLOW.
1.5. CONSTRUCT TURF LINED SWALES.
1.6. PROVIDE SANDBAG SEDIMENT TRAPS UPSTREAM OF EXISTING PITS.
2. CONSTRUCT GEOTEXTILE FILTER PIT SURROUND AROUND ALL PROPOSED PITS AS THEY ARE CONSTRUCTED.
3. ON COMPLETION OF PAVEMENT PROVIDE SAND BAG KERB INLET SEDIMENT TRAPS AROUND PITS.
4. PROVIDE AND MAINTAIN A STRIP OF TURF ON BOTH SIDES OF ALL ROAD AFTER THE CONSTRUCTION OF KERBS.

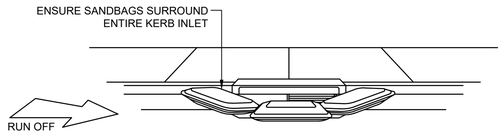


NOTE
ENDS OF SILTATION FENCE TO RETURNED UP SLOPE TO PREVENT RUNOFF

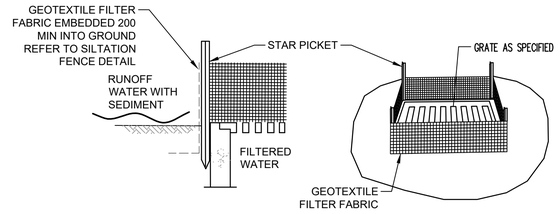
SILTATION FENCE DETAIL
SCALE 1:20



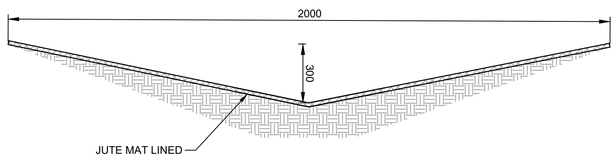
TEMPORARY CONSTRUCTION EXIT
NTS



SANDBAG KERB INLET SEDIMENT TRAP
NTS



GEOTEXTILE FILTER PIT SURROUND
NTS



DIVERSION CHANNEL DETAIL
SCALE 1:20

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Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
SEDIMENT AND EROSION CONTROL NOTES AND LEGEND SHEET

Project No	Revision Date
231092-TTW-00-DR-CI-09101	A
Scale	**Drawn by** / **Checked by**
1:20	SD / TD

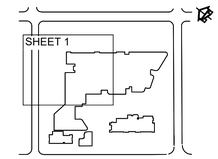
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-09-XX-101	A

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Structural Civil Traffic Façade
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A	05.07.2024	90% DD ISSUE	SD	TD

SILT FENCING IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09201

SITE FENCING IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101

PROVIDE SILT PROTECTION AROUND EXISTING AND NEW STORMWATER INLETS IN ACCORDANCE WITH GIVEN NOTES AND DETAILS 09201 AND 09202 (TYPICAL)

EXISTING DRIVEWAY TO BE USED FOR CONSTRUCTION VEHICLE ACCESS (TYPICAL)

STABILISED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101 AND 09102 (TYPICAL)

SITE ACCESS GATES TO SWING INTO SITE (TYPICAL)

BRICK CUT AND WASH ZONE

SITE SHEDS AND AMENITIES

DEMOLITION AND CONSTRUCTION WASTE RECYCLING BINS

CONSTRUCTION MATERIALS STOCKPILE

COMMONWEALTH STREET

SITE BOUNDARY

KIF

IF

SF

NOTES:

1. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
ENVIRONMENTAL
EROSION CONTROL PLAN
PLAN SHEET 1

Project No	Revision Date
231092-TTW-11-DR-CI-09111	05.07.2024
Scale	**Drawn by** / **Checked by**
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-09-XX-111	A

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NOTES:

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PROVIDE LEVEL SPREADER OVER 10 METERS TO ALLOWS SURFACE WATER TO SHEET FLOW INTO DURHAM STREET

DIVERSION SWALE LINE WITH JUKE MAT

ENCAPSULATED CONTAMINATION AREA

PROVIDE SILT PROTECTION AROUND EXISTING AND NEW STORMWATER INLETS IN ACCORDANCE WITH GIVEN NOTES AND DETAILS 09201 AND 09202 (TYPICAL)

SITE SHEDS AND AMENITIES

CONSTRUCTION MATERIALS STOCKPILE

DEMOLITION AND CONSTRUCTION WASTE RECYCLING BINS

ENCAPSULATED CONTAMINATION AREA

SILT FENCING IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09201

SITE ACCESS GATES TO SWING INTO SITE (TYPICAL)

STABILISED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101 AND 09102 (TYPICAL)

EXISTING DRIVEWAY TO BE USED FOR CONSTRUCTION VEHICLE ACCESS (TYPICAL)

BRICK CUT AND WASH ZONE

SITE FENCING IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101

MITRE STREET

SITE BOUNDARY

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

SHEET 2

Rev	Date	Revision	By	Chk.
A	05.07.2024	90% DD ISSUE	SD	TD

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
ENVIRONMENTAL EROSION CONTROL PLAN PLAN SHEET 2

Project No	Revision Date
231092-TTW-11-DR-CI-09112	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

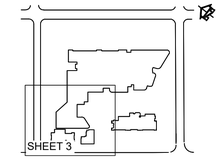
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Drawing No. BHR-TTW-DRW-CIV-STE-09-XX-112 Revision A

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COMMONWEALTH STREET

HOWICK STREET

SITE BOUNDARY

PROVIDE SILT PROTECTION AROUND EXISTING AND NEW STORMWATER INLETS IN ACCORDANCE WITH GIVEN NOTES AND DETAILS 09201 AND 09202 (TYPICAL)

CONSTRUCTION MATERIALS STOCKPILE

DEMOLITION AND CONSTRUCTION WASTE RECYCLING BINS

SITE SHEDS AND AMENITIES

SILT FENCING IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09201

EXISTING FOOTPATH TO BE USED FOR CONSTRUCTION VEHICLE ACCESS (TYPICAL)

STABILISED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101 AND 09102 (TYPICAL)

BRICK CUT AND WASH ZONE

SITE ACCESS GATES TO SWING INTO SITE (TYPICAL)

IF

NOTES:

1. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

Services Engineers
STANTEC
Stantec

Architect
BILLARD LEECE PARTNERSHIP
Billard Leece Partnership

Project Manager
TSA
TSA Projects

Client
HEALTH INFRASTRUCTURE
NSW GOVERNMENT Health Infrastructure

Project Name
BATHURST HOSPITAL REDEVELOPMENT

Drawing Name
ENVIRONMENTAL EROSION CONTROL PLAN PLAN SHEET 3

Project No	Revision Date
231092-TTW-11-DR-CI-09113	05.07.2024
Scale	Drawn by / Checked by
1:200	SD / TD

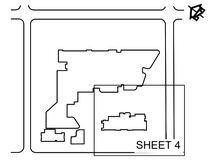
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-09-XX-113	A

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PROVIDE SILT PROTECTION AROUND EXISTING AND NEW STORMWATER INLETS IN ACCORDANCE WITH GIVEN NOTES AND DETAILS 09201 AND 09202 (TYPICAL)

CONSTRUCTION MATERIALS STOCKPILE

DEMOLITION AND CONSTRUCTION WASTE RECYCLING BINS

SITE SHEDS AND AMENITIES

SILT FENCING IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09201

EXISTING FOOTPATH TO BE USED FOR CONSTRUCTION VEHICLE ACCESS (TYPICAL)

STABILISED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101 AND 09102 (TYPICAL)

BRICK CUT AND WASH ZONE

SITE ACCESS GATES TO SWING INTO SITE (TYPICAL)

SITE BOUNDARY

SITE ACCESS GATES TO SWING INTO SITE (TYPICAL)

EXISTING DRIVEWAY TO BE USED FOR CONSTRUCTION VEHICLE ACCESS (TYPICAL)

STABILISED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH GIVEN NOTES AND DETAILS ON 09101 AND 09102 (TYPICAL)

SITE BOUNDARY

DP1126063

MITRE STREET

HOWICK STREET

0.0 4.0 8.0 12.0 16.0m
1:200 A1 1:400 A3

NOTES:.
1. ALL SERVICES TO BE CONFIRMED ON SITE PRIOR TO ANY WORKS.

Services Engineers
STANTEC

Architect
BILLARD LEECE PARTNERSHIP

Project Manager
TSA

Client
HEALTH INFRASTRUCTURE

Project Name
BATHURST HOSPITAL
REDEVELOPMENT

Drawing Name
ENVIRONMENTAL
EROSION CONTROL PLAN
PLAN SHEET 4

Project No	Revision Date
231092-TTW-11-DR-CI-09114	05.07.2024
Scale	Drawn by / Checked by
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Drawing No.	Revision
BHR-TTW-DRW-CIV-STE-09-XX-114	A

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