

NSW Health Infrastructure
**Darcy Road Multi Storey Car
Park**
SSD - Civil Report

Rev B | 29 October 2015

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 236482

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Document Verification

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Appendices

Appendix A

Civil Drawings

1 Introduction

This report summarises the civil concept design for the Darcy Road Multi Storey Car Park (MSCP) in support of the State Significant Development (SSD) application.

The project consists of a multi storey car park located on the site of an existing at-grade car park within the Westmead Hospital Site. It is bounded by Institute Road to the north east, Darcy Road to the west, and the existing Oral Health building to the south. In addition to the car park, the project includes vehicle and pedestrian access to the site from Darcy Road and Institute Road, localised modifications to the existing interfacing roads, provision of a small at-grade car park adjacent to the MSCP, demolition of the existing cooling tower building, landscaping and extension of Institute Road.

This report addresses the key civil design issues relating to the site and the approval requirements. It is supported by a set of preliminary SSD application drawings which are listed in and included in Table 1.

Table 1 SSD Application Drawings

Drawing Number	Title
MSC-ARP-CV-DG-3001	Cover Sheet
MSC-ARP-CV-DG-3002	Locality Plan, Drawing Schedule and Legend
MSC-ARP-CV-DG-3003	General Notes
MSC-ARP-CV-DG-3010	Soil and Water Management Plan
MSC-ARP-CV-DG-3011	Soil and Water Management Details
MSC-ARP-CV-DG-3100	Demolition Plan Sheet 1 of 4
MSC-ARP-CV-DG-3101	Demolition Plan Sheet 2 of 4
MSC-ARP-CV-DG-3102	Demolition Plan Sheet 3 of 4
MSC-ARP-CV-DG-3103	Demolition Plan Sheet 4 of 4
MSC-ARP-CV-DG-3200	Roadworks and Drainage Plan Sheet 1 of 4
MSC-ARP-CV-DG-3201	Roadworks and Drainage Plan Sheet 2 of 4
MSC-ARP-CV-DG-3202	Roadworks and Drainage Plan Sheet 3 of 4

MSC-ARP-CV-DG-3203	Roadworks and Drainage Plan Sheet 4 of 4
MSC-ARP-CV-DG-3210	Roadworks Longitudinal Sections
MSC-ARP-CV-DG-3300	Drainage Longitudinal Sections

2 Geometric Design

The geometric design includes the internal access roads, modifications to the external road networks, extension of Institute Road and bulk earthworks.

2.1 Internal Roads

Internal roads provide access from the surrounding road network to the car park. Each road has been designed to grade away from the car park to direct stormwater runoff away. At the tie-ins to the existing road network, dish drains are to be provided along the alignment of the existing kerb.

2.2 External Roads

The external roadwork consists of the localised widening to Institute Road the site entry/ exits and the extension of Institute Road to the east to tie in with the new road being constructed during the early works. The road grading at the widening of Institute Road is to be designed to match the existing road cross fall.

2.3 Retaining walls

Where feasible surrounding the MSCP, earthworks batters are to be provided in lieu of retaining walls. However at several locations (ie lift lobby) earthworks batters are not feasible and retaining walls are necessary and shall be provided in the structural design for the car park.

Three external retaining walls are to be provided between the car park and the Oral Health building. These retaining walls are required for the provision of a stormwater overland flow path. These requirements are discussed in further detail in Section 3.3. The retaining wall heights vary to a maximum of 1.6m.

The proposed at-grade car park is located adjacent to Car Park WH6 which is 2-3m lower in elevation. Therefore a retaining wall is required at the interface between the two car parks.

2.4 Earthworks

The earthworks for the site is being driven by the finished floor level of the car parks and the access road designs to tie into the car park and existing road network. Additional earthworks will be required to provide on-site detention of stormwater runoff beneath the at-grade car park.

2.4.1 Contamination

Douglas Partners has undertaken studies and ground investigations at the site. It is suspected that asbestos waste is present across the site (refer to Douglas Partners Drawing No. C1, “Areas of Potential Environmental Concern Westmead Hospital Redevelopment Hawkesbury Road, Westmead” for further details).

The earthworks design for the car park is influenced by the finished floor levels and road tie in levels. Therefore there is limited scope to reduce the amount of potential asbestos excavation in the vicinity of the car park. Where possible, elsewhere on the site, including the access roads and landscaping, the design levels have attempted to tie in to existing ground levels or minimise the depth of excavation to limit the risk of exposing asbestos.

3 Stormwater Concept Plan

The stormwater drainage design addresses the capture of stormwater runoff from the site, including the MSCP, at-grade car park, access roads and landscaping and the discharge from site into the existing stormwater infrastructure. It also addresses the water quality treatment, on-site detention (OSD) and potential for flooding.

The stormwater drainage design of the MSCP is to be documented by the project hydraulic engineer. The civil design includes an allowance for the capture and discharge of the car park OSD tank and for a pumped discharge (if required) to manage the limited stormwater entering Lower Ground Level as a result of water borne on vehicles or similar.

The external civil drainage consists of:

- pit and pipe network and OSD for the at-grade car park and MSCP access roads
- series of trench drains for the capture of surface runoff from pedestrian footpaths

All stormwater pits and trench drains located within pedestrianised areas are to be heelsafe. Similarly, those located within the roads and at-grade car park will be bicycle safe.

All new stormwater pipes are to be minimum DN375 (with the exception of upvc pipes discharging from trench drains).

Due to the grading of the site, the proposed pits located in the MSCP access road and the trench drains are at a lower elevation than the surrounding surface levels. However this is consistent with the grading and drainage design of the existing at-grade car park which also provides stormwater pits at a lower elevation to the receiving network. During the detailed design, a hydraulic grade line (HGL) analysis of the network will be carried out to check for network surcharge.

3.1 Water Quality

Section 3.3.6 of the Parramatta City Council Development Control Plan (DCP) outlines the requirements for Water Sensitive Urban Design (WSUD) including water quality targets. Table 2 summarises the pollutant reductions targets specified in the DCP.

Table 2: Stormwater pollutant reduction targets

Pollutant	Reduction Target*
Gross Pollutants (>5mm)	90%
Total Suspended Solids (TSS)	85%
Total Phosphorus (TP)	60%
Total Nitrogen (TN)	45%
Hydrocarbons, motor oils, oil and grease	No visible flows up to 50% of the 1-year ARI peak flow

*Note: Targets are reductions in pollutant loads relative to the same development without treatment.

Water quality treatment for stormwater captured by the MSCP and at-grade car park will need to be provided by a proprietary product outside of the MSCP footprint.

At the current stage of design development, water quality modelling of the site has not been undertaken to confirm the specifications for the treatment device/s. This will be necessary in later stages of development to confirm compliance with the reduction targets.

3.2 On-Site Detention

Council's DCP also considers OSD as part of WSUD. The DCP specifies that OSD is to be provided in accordance with the Upper Parramatta River Catchment Trust (UPRCT) "*On-Site Stormwater Detention Handbook*" 4th edition, December 2005. This document outlines UPRCT's objectives for OSD as being:

- The primary objective is to not increase peak stormwater flows in any downstream area in any event up to and including the 100 year average recurrence interval (ARI) event (when comparing to 1999 conditions).
- The secondary objectives are to reduce post-development peak flows in the 1.5 year ARI event to as close as practical to natural levels and to integrate OSD with other water quality measures.

Based on these objectives, the Handbook specifies control standards for Site Reference Discharge (SRD) and Site Storage Requirements (SSR). Two rates are provided for each of these (based on site area) to account for the 1.5 year and 100 year ARI events.

The SRD can be calculated as follows:

- 40 L/s/ha for the primary (lower) orifice outlet (SRD_L) (for events up to 1.5 year ARI)

- 150 L/s/ha for the secondary (upper) orifice outlet (SRD_U) (or moderate to major storms).

Similarly the SSR can be calculated as follows (the SSR for the OSD storage is partitioned into extended detention (lower) and flood detention (upper) storages):

- 455 m³/ha for overall (total) storage (SSR_T)
- 300 m³/ha is the maximum SSR for the extended detention storage
- The difference between the total and extended detention storages is the flood detention storage.

The site for the Darcy Road car park will consist of the MSCP, at-grade car park, access roads and soft and hard landscaping.

Advice from Council is that the rates given in the UPRCT Handbook should be applied to impermeable surfaces, while soft-landscaped areas should be designed so as not to worsen conditions. With this in mind, storage will be provided for the car parks and access roads. Soft-landscaped areas have been designed so as not to interrupt overland flow paths or worsen conditions.

OSD for the MSCP will be provided within the car park footprint, and as such will be designed and specified by the project's hydraulic engineer based on the requirements outlined in Table 3 (calculated for a car park area of 4,800m²). The OSD for the at-grade car park will be provided in a below ground proprietary storage chamber. The storage requirements for the at-grade car park are also provided in Table 3 based upon a car park area of 1250m².

Table 3: OSD design criteria

	Design Criteria	MSCP Requirements	At-Grade Car Park
Discharge			
Site Reference Discharge, Lower Orifice – SRD _L	40 L/s/ha	19.2L/s	5L/s
Site Reference Discharge, Upper Orifice – SRD _U	150 L/s/ha	72L/s	19L/s
Storage			
Site Storage Requirements (Total) - SSR _T	455m ³ /ha	220m ³	57m ³
Site Storage Requirements (Extended Detention Storage)	300m ³ /ha	145m ³	38m ³
Site Storage Requirements (Flood Detention Storage)	Balance of total and extended detention storage	75m ³	19m ³

The OSD tank within the MSCP will need to provide a minimum of 220m³ storage. A minimum volume is specified as there is potential for it to increase depending upon the discharge and performance of the tank. Details of the tank configuration are pending, however it is understood that the tank will be provided within the MSCP between lower ground and ground floor levels. The finished floor level of lower ground is 18.0mAHD. This is lower than the existing, surrounding network's surface levels. If a connection is to be made from the MSCP OSD tank to this network, a HGL analysis will be required in subsequent design stages to check the performance of the tank with respect to the influences of high tailwater conditions. In the interim, the design which has been documented provides for a new stormwater connection from the MSCP, combining with the drainage from the at-grade car park and connecting into the existing trunk stormwater network downstream of the site where the influences of high tailwater conditions are less likely. HGL analysis will be required to confirm hydraulic performance of the network.

OSD for the at-grade car park is to be provided in a proprietary OSD tank beneath the car park surface. It is currently proposed to provide StormTech SC-310 or an approved equivalent. To achieve a storage volume of 57m³, a minimum of 135 cells are required which can be achieved in a 9x15 cell arrangement. A minimum volume is specified as it is subject to HGL analysis which may necessitate an increase if high tailwater conditions are present on site.

3.3 Flooding

The Darcy Road car park site is situated south of Toongabbie Creek. Flood mapping for the area shows that a significant part of the MSCP site lies within the footprint of the probable maximum flood (PMF) and has been defined as having a low hazard. Refer to Figure 1 and Figure 2 for an extract of the Parramatta City Council Flood Study maps. Table 4 indicates the approximate flood levels at site.

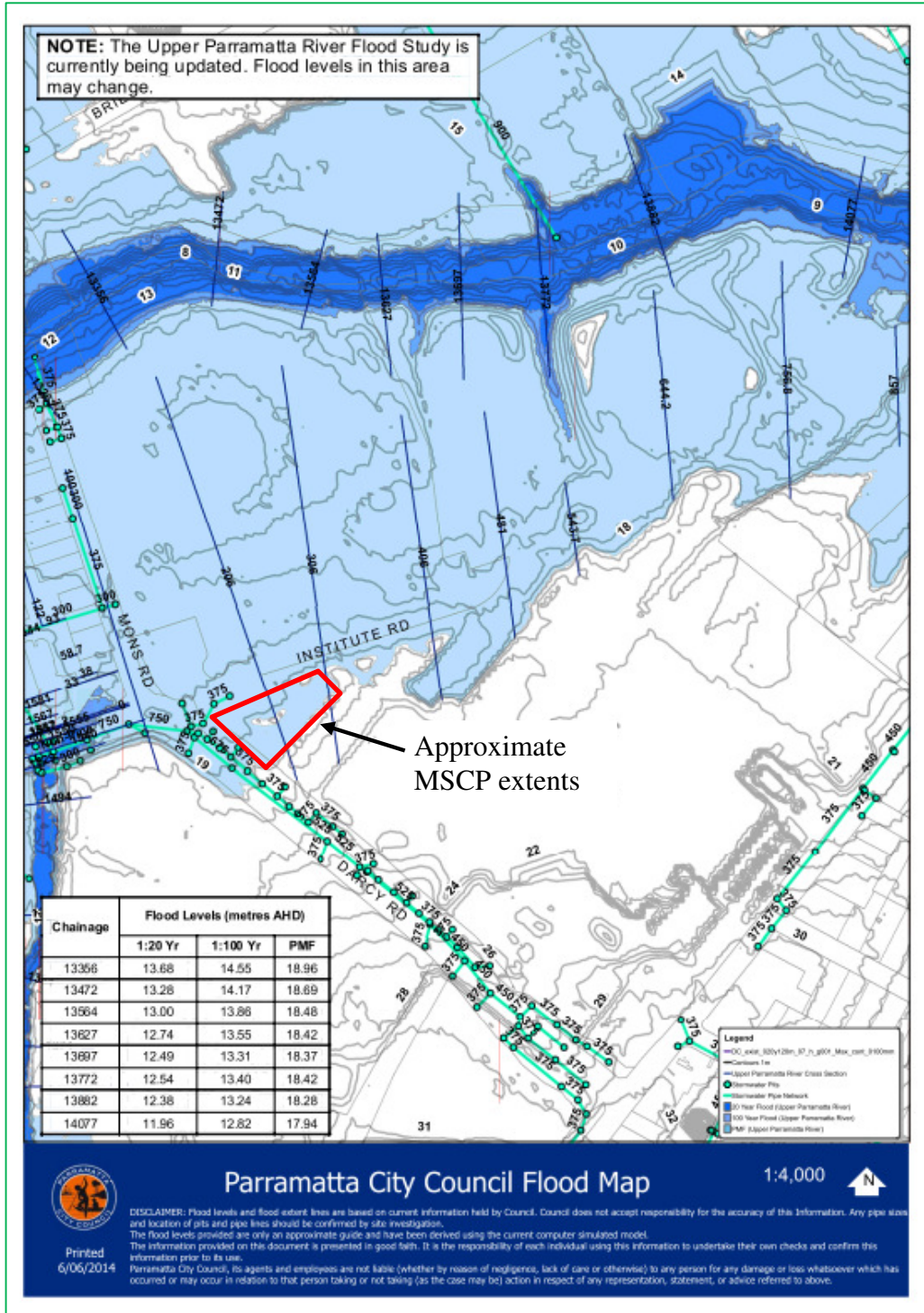


Figure 1: Flood map

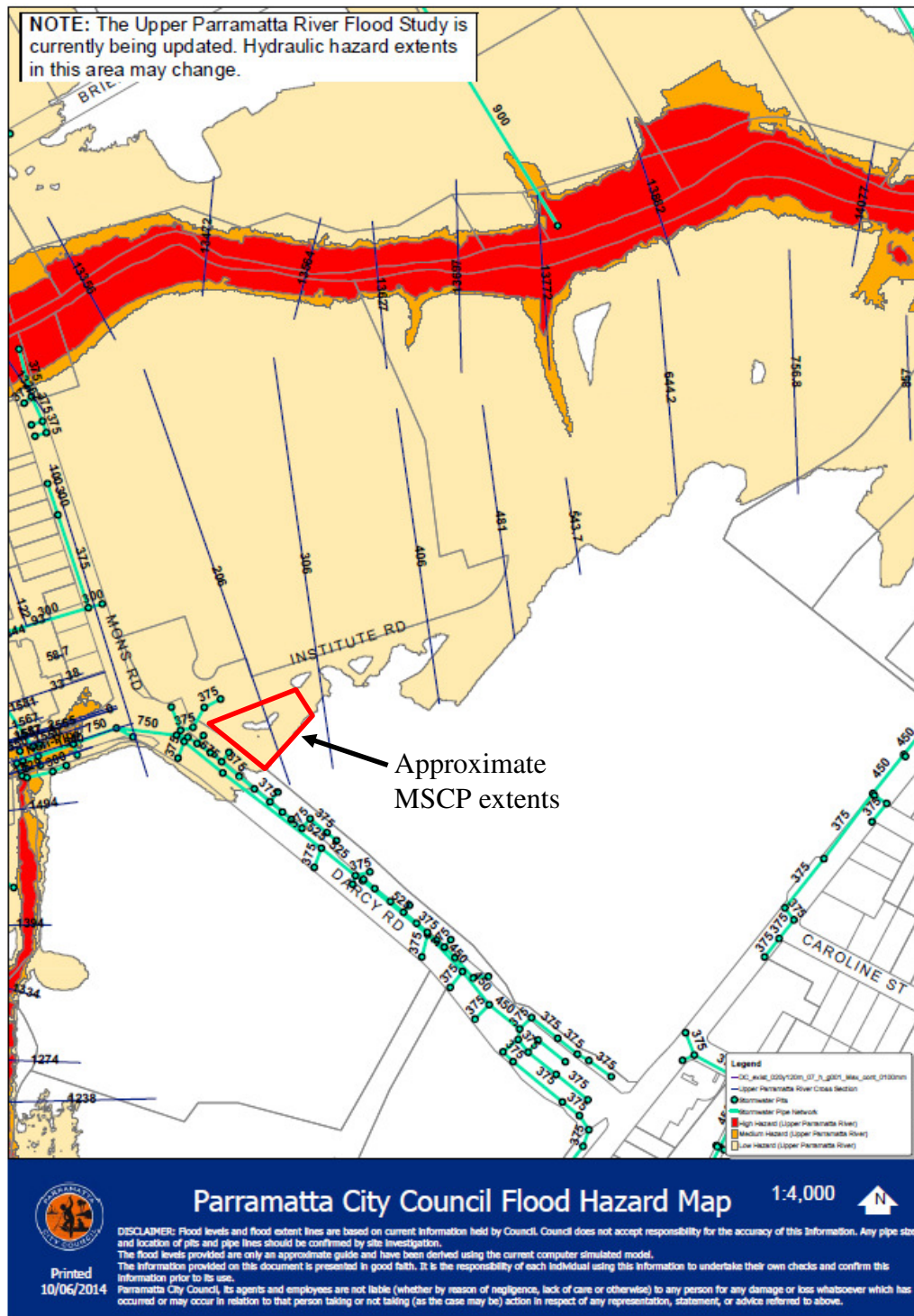


Figure 2: Flood hazard map

Table 4: Flood levels (interpreted from Ch133556 of Parramatta City Council flood hazard map provided in Figure 2)

ARI	20 Year	100 Year	PMF
Flood level (mAHD)	13.68	14.55	18.96

The existing and proposed levels across the site are typically greater than 17.0mAHD which indicates that the site is located above the 100 year flood level. Council defines “a low flood risk precinct is the area above the 100 year flood and includes all area up to and including the probable maximum flood”. On this basis the site is considered to be a low flood risk.

The “*Parramatta Development Control Plan*” (DCP), 2011 defines the planning and development controls depending upon the location and type of development. The DCP considers the landuse of a hospital as being “sensitive uses and facilities” which considers developments unsuitable within PMF affected areas. However, since the site being developed as a multi storey car park, it may also be interpreted as a commercial or industrial car park. On this basis the DCP requires that the following measures be implemented:

1. Car parking accommodating more than 3 vehicles must be protected from inundation by floods equal to or greater than the 100 year ARI flood and Ramp levels to be no lower than 0.5m above the 100 year ARI flood level.
2. The driveway providing access between the road and parking spaces shall be as high as practical and generally rising in the egress direction.

The proposed MSCP complies with the above requirements as the finished floor level (18.0mAHD) is located above 100 year ARI flood level (14.55mAHD) and the access roads grade away from the lower ground level of the car park to the road.

The majority of the proposed development within the site is within cut. Therefore the development is not anticipated to have a negative impact on flooding due to loss of flood storage.

An existing DN675 stormwater pipe traverses the site from west to east along the southern edge of the MSCP. This pipe is being relocated as part of the project works. The alignment of this pipe correlates with an overland flow for stormwater runoff in excess of the pipe capacity. Preliminary calculations have determined that the upstream catchment runoff in the 100 year ARI event is approximately 2.0m³/s. The pipe capacity (assuming flowing full and not under pressure) is 1.5m³/s. The balance of this, 0.5m³/s will be overland flow. The grading design for the site makes allowance for retaining an overland flow path route between the MSCP and the Oral Health building in a trapezoidal shaped channel. This channel has a 2.5m base with 1:3 batter slopes. The Oral Health building has two sets of fire stairs which impinge upon the grading of the overland flow path and a fire access route is indicated in this location. To maintain this fire access route and overcome the stairs impinging upon the overland flow path, retaining walls have been provided around each set of stairs. A 1.8m wide level path has been provided around the fire stairs for fire access. An additional retaining wall is required to the north east corner of the Oral Health building. A similar 1.4m wide path has been provided at this location for fire access. The design of these fire access routes requires further coordination with respect to BCA compliance. It may be necessary to physically separate the overland flow path from the fire access routes. This may be achieved by providing a culvert for the overland flow path and therefore providing a physical separation.

3.4 Climate Change

The design for the stormwater drainage is required to take into consideration the implications of climate change. This is to include a sensitivity analysis as a result of an increase in rainfall intensity (typically a 10% increase). The sensitivity analysis will form the basis of assessing the impacts of climate change upon the development. This may include amplifying the capacity of the proposed stormwater network or the acceptance of a reduced level of service. The implication of climate change upon main stream flooding is being addressed by Advisian.

4 Erosion and Sediment Control

During construction, sources of risk to water quality if not managed include:

- Erosion of soil from disturbed areas
- Stockpiling of topsoil and vegetation
- Transportation of cut or fill materials
- General earthworks, including stripping of topsoil, excavation or raising

Impacts from inappropriate management of the construction site on water quality could include:

- Increased sediment loads from exposed soil during rainfall events and dust blown off site causing high sediment loads to be washed or deposited into nearby creeks
- Increased sedimentation of downstream watercourses smothering aquatic life and affecting the ecosystems of downstream sensitive waterways, wetlands and floodplains.
- Increased levels of nutrients, metals and other pollutants, transported via sediment to downstream water courses
- Chemical, heavy metal, oil and grease, and petroleum hydrocarbon spills from construction machinery directly polluting downstream waterways.
- Siltation of pit and pipe networks reducing the conveyance capacity of the network.
- Water borne transport of asbestos containing material.

Erosion and sediment control for the site has been provided in accordance with Landcom's "*Soil and Construction Manual*" (commonly known as the Blue Book), Volume 1, March 2004. In accordance with Table 2.1 of the Blue Book, a Soil and Water Management Plan has been prepared for the site due to the area of disturbance being greater than 2,500m².

Measures that have been adopted to minimise water quality impacts are indicated on the erosion and sediment control plans which include:

- Implementation of appropriate controls in place before the removal of topsoil and commencement of earthworks
- Onsite water management using sediment traps, silt fencing etc.
- Appropriate construction methodology for cutting and embankment erosion management
- Stockpile management.

As the annual volume of soil loss for the site is less than 150m³, a sediment basin is not required as stated in Note 54 of Appendix M of the Blue Book.

A summary of the method for selecting parameters is included below:

- R – Rainfall Erosivity – 2583 – Calculated using the equation $R = 164.74 \cdot (1.1177)^S \cdot S^{0.6444}$ provided in Appendix A2 of the Blue Book where S is the 2-year, 6 hour ARI rainfall event (10.9mm/hr).
- K – Soil Erodibility Factor – 0.05 – this needs to be confirmed with soil testing for the site. In the absence of any data, this value has been adopted based on the range provided in the Blue Book (0.005 to 0.075).
- LS – Length Slope Factor – This factor depends on the terrain gradient and slope length. The site is relatively flat with most gradients being less than 1%. A maximum slope length of 40m has been adopted.
- P – Erosion Control Practice Factor – 1.3 – based on a compacted and smooth surface condition from Table A2 of the Blue Book.
- C – Cover Factor – 1.0 – assumes there is no grass cover.
- 5-day 85th percentile rainfall depth – 33.1mm – based on the data for Parramatta North from Figure 6.5 of the Blue Book.
- Cv – volumetric runoff coefficient – 0.64 – based on a soil with high runoff potential from Table F2 of Appendix F3 of the Blue Book.

5 Existing Services Impact Assessment

Numerous existing utility services traverse the site. This includes utilities servicing the existing at-grade car park and cooling tower building which will be abandoned as part of the development. However there are also a number of existing services traversing the site which provide connections to the wider network which will need to be maintained (whether in their current location or in a relocated position). These services are described in the following sections.

5.1 Stormwater

A DN675 stormwater pipe originating to the southwest side of Oral Health building, traverses the site from west to east along the alignment of the southern edge of the proposed multi storey car park. The manhole and pipes under the

proposed wall will need to be relocated. This location is preferably between the multi storey car park and Oral Health building

The existing at-grade car park stormwater drainage network will need to be demolished or capped and abandoned.

5.2 Sewer

There is an existing Sydney Water DN300 salt glazed wear sewer pipe located to the north of the proposed multi storey car park. The proposed road works will traverse the existing sewer pipe. The protection of this pipe (eg concrete encasement may be necessary depending upon the depth of cover achieved to the service.

5.3 Water

An existing DN200 PVC-U Sydney Water pipe runs along the east side of Darcy Road. Whilst this service should not be affected by the proposed car park development, may require concrete encasement for the length of service beneath the vehicle access crossing. Confirmation to be obtained during detailed design.

An existing fire water supply pipe passes between the multi storey car park and the Oral Health building. This pipe is to be retained as a result of the development, and will be detailed by the hydraulic engineer.

5.4 Electrical

There are underground electrical cables under the existing car park which are understood to supply power to the existing lighting. These may be abandoned as a result of the development. This is to be documented by the electrical engineer.

There are existing Endeavour Energy underground cables along the east side of Darcy Road. This electrical cable should not be affected by the proposed works with the exception of the potential for localised lowering under the vehicle access road to the site.

Electrical cables are located on the southern side of Institute Road. This includes the power supply to the street lighting. The location of an existing light pole clashes with the proposed vehicle access and will require relocating. Due to the localised widening of Institute Road, the electrical cables will either require relocating to be behind the proposed kerb line or to be protected.

5.5 Telecommunications

There is an existing DN100 Telstra PVC conduit containing Telstra and Ucomm optic fibre which is located in the southern verge of Institute Road. The proposed road widening and drive way along Institute Road will traverse the existing optic fibre. The protection or relocation of the conduit and services will be required.

An existing Optus cable runs along the east side of Darcy Road. This cable should not be affected by the proposed road works with the exception of the potential for localised lowering under the vehicle access road to the site.

5.6 Gas

There are no existing gas services within the proposed site.

Appendix A

Civil Drawings



WESTMEAD HOSPITAL REDEVELOPMENT
Building health. Transforming lives.

DARCY ROAD MULTI STOREY CAR PARK

Civil Works

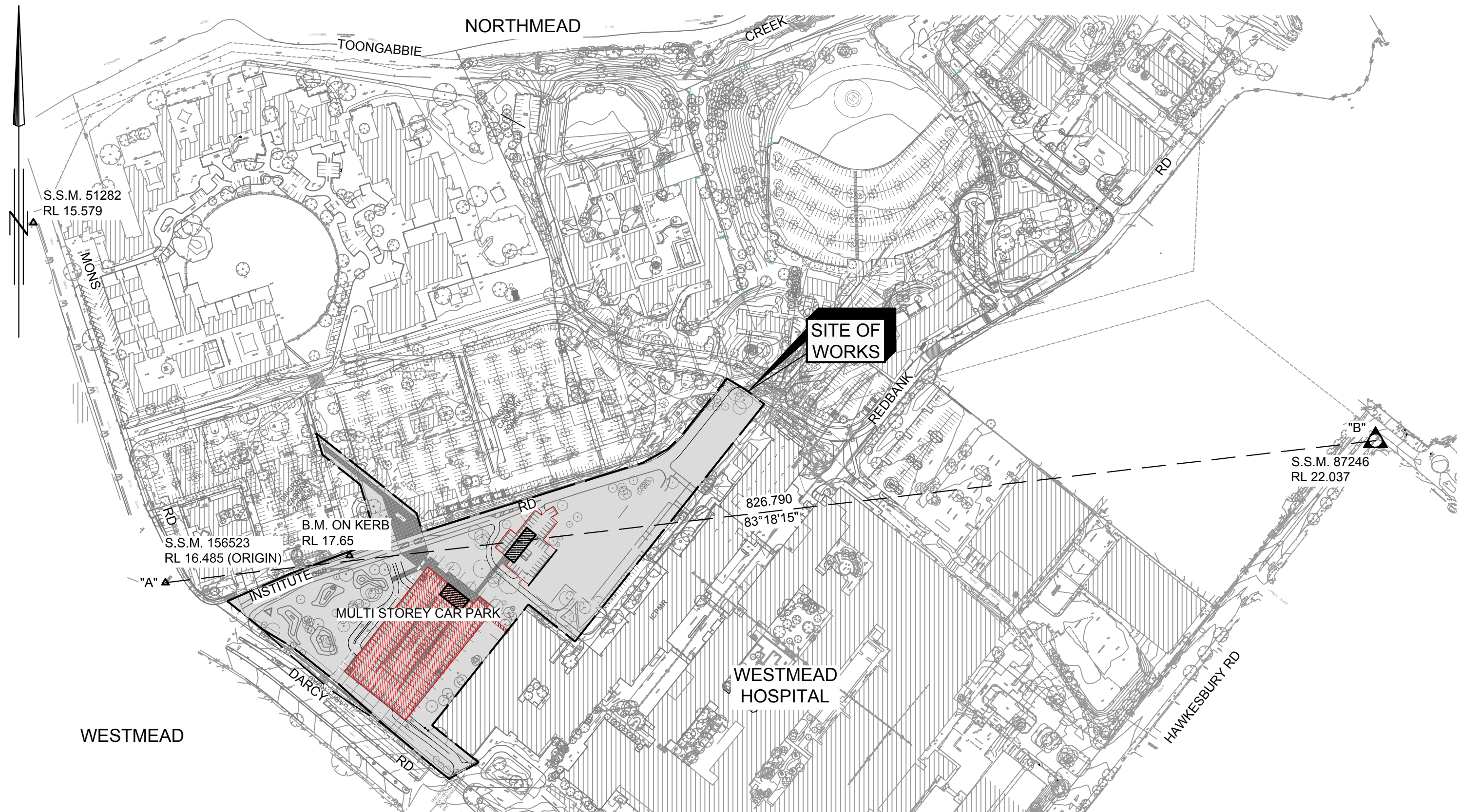
October 2015

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DRAFT



LOCALITY PLAN
SCALE 1:2 500

REFERENCE DRAWINGS PARRAMATTA CITY COUNCIL (PCC) STANDARD DRAWINGS (REFER TO SPECIFICATION)

DRAWING No.	TITLE
DS1	KERBS AND LAYBACKS
DS2	ROOFWATER OUTLET
DS3	FOOTPATH
DS4	KERB RAMP
DS5	DISH DRAIN CROSSING DETAIL
DS6	TYPICAL CYCLEWAY/SHARED PATHWAY
DS8	STANDARD VEHICULAR CROSSING
DS9	HEAVY DUTY VEHICULAR CROSSING
DS10	VEHICULAR CROSSING PROFILES
DS11B	SIGN SUPPORT POST
DS21	STANDARD KERB INLET PIT (ON GRADE)
DS23	STANDARD SURCHARGE PIT
DS24	GRATED SAG PIT USING PRECAST LINTEL
DS25	SURFACE INLET PIT FOR FOOTPATHS
DS25	SURFACE INLET PIT FOR OPEN SPACE AREAS
DS26	STANDARD JUNCTION PIT
DS26	HEAVY DUTY JUNCTION PIT
DS31	TWIN GRATED GULLY PIT WITH EXTENDED KERB INLET
DS33	SUBSOIL DRAINAGE DETAILS
DS36	HEADWALLS FOR CULVERTS UP TO 900 DIAMETER
DS37	STANDARD FOR INSTALLATION OF PIPELINES AND RESTORATION OF TRENCHES
DS43	TREE PROTECTION TIMBER HOARDING

DRAWING SCHEDULE

DRAWING No.	ISSUE	TITLE
GENERAL		
MSC-ARP-CV-DG-3001	2	COVER SHEET
MSC-ARP-CV-DG-3002	2	LOCALITY PLAN, DRAWING SCHEDULE AND LEGEND
MSC-ARP-CV-DG-3003	1	GENERAL NOTES
SOIL AND WATER		
MSC-ARP-CV-DG-3010	2	SOIL AND WATER MANAGEMENT PLAN
MSC-ARP-CV-DG-3011	1	SOIL AND WATER MANAGEMENT DETAILS
DEMOLITION WORKS		
MSC-ARP-CV-DG-3100	2	DEMOLITION PLAN SHEET 1 OF 4
MSC-ARP-CV-DG-3101	2	DEMOLITION PLAN SHEET 2 OF 4
MSC-ARP-CV-DG-3102	1	DEMOLITION PLAN SHEET 3 OF 4
MSC-ARP-CV-DG-3103	1	DEMOLITION PLAN SHEET 4 OF 4
ROADWORKS		
MSC-ARP-CV-DG-3200	2	ROADWORKS AND DRAINAGE PLAN SHEET 1 OF 4
MSC-ARP-CV-DG-3201	2	ROADWORKS AND DRAINAGE PLAN SHEET 2 OF 4
MSC-ARP-CV-DG-3203	1	ROADWORKS AND DRAINAGE PLAN SHEET 3 OF 4
MSC-ARP-CV-DG-3204	1	ROADWORKS AND DRAINAGE PLAN SHEET 4 OF 4
MSC-ARP-CV-DG-3210	2	ROADWORKS LONGITUDINAL SECTIONS
DRAINAGE		
MSC-ARP-CV-DG-3300	2	DRAINAGE LONGITUDINAL SECTIONS

LEGEND

EXISTING

	BOUNDARY
	DRIVEWAY, PATHWAY OR CYCLEWAY
	TOP OF BATTER
	BOTTOM OF BATTER
	SPOT LEVEL
	KERB AND GUTTER
	DISHED CROSSING
	STORMWATER
	STORMWATER PIT
	SEWERAGE
	SEWER MAINTENANCE HOLE
	SEWERAGE - TRADE WASTE
	SEWER TUNNEL
	WATER SUPPLY
	STOP VALVE HYDRANT
	WATER FIRE SUPPLY
	TELSTRA
	TELSTRA PIT
	ELECTRICITY
	ELECTRICITY POLE
	TELECOMMUNICATION
	GAS
	TREE

PROPOSED

	PROJECT BOUNDARY
	EASEMENT BOUNDARY
	KERB AND GUTTER TO PCC STD DRG No DS1
	EDGE STRIP TO PCC STD DRG No DS1
	MEDIAN KERB TO PCC STD DRG No DS1
	DISH CROSSING TO PCC STD DRG No DS1
	HEAVY DUTY LAYBACK TO PCC STD DRG No DS1
	VEHICULAR CROSSING TO PCC STD DRG No DS1
	PEDESTRIAN RAMPS TO PCC STD DRG No DS4
	DOUBLE BARRIER LINE (BB)
	HOLDING LINE (TB)
	PAVERS
	KERB RETURN No. 1
	STREET NAME SIGN & POST TO PCC STD DRG No DS11
	STREET SIGN & POST TO PCC STD DRG No DS11
	DRAINAGE CATCHMENT BOUNDARY
	Ø100 SUBSOIL DRAINAGE LINE TO PCC STD DRG No DS33
	Ø450 STORMWATER DRAINAGE PIPELINE
	STORMWATER PIT No 6 - LINE No 301
	STANDARD GRATED KERB INLET PIT TO PCC STD DRG No DS21
	STANDARD GRATED SAG PIT TO PCC STD DRG No DS24
	STANDARD SURFACE INLET GRATED PIT TO PCC STD DRG No DS25
	STANDARD JUNCTION PIT TO PCC STD DRG No DS26
	TRENCH DRAIN

FUTURE

	BOUNDARY AND KERB ALIGNMENTS
	DRIVEWAY, PATHWAY OR CYCLEWAY

1:2500 0 50 100 150 200 250m

REV	DESCRIPTION	DRAWN	CHECK	DATE
1	PRELIMINARY ISSUE	ADC	KJS	15/10/15
2	PRELIMINARY ISSUE	ADC	KJS	29/10/15

DRAFT
NOT FOR CONSTRUCTION

CLIENT:

NSW HEALTH
INFRASTRUCTURE



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North Sydney NSW 2060

P: (02) 9978 5427
F: (02) 8904 1377
www.hinfra.health.nsw.gov.au

PROJECT MANAGER:

PRICE WATERHOUSE
COOPERS

Darling Park Tower 2
201 Sussex St
Sydney NSW 2000



P: (02) 9266 0000
F: (02) 9266 9999
www.pwc.com.au

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HDR | RD + MSJ

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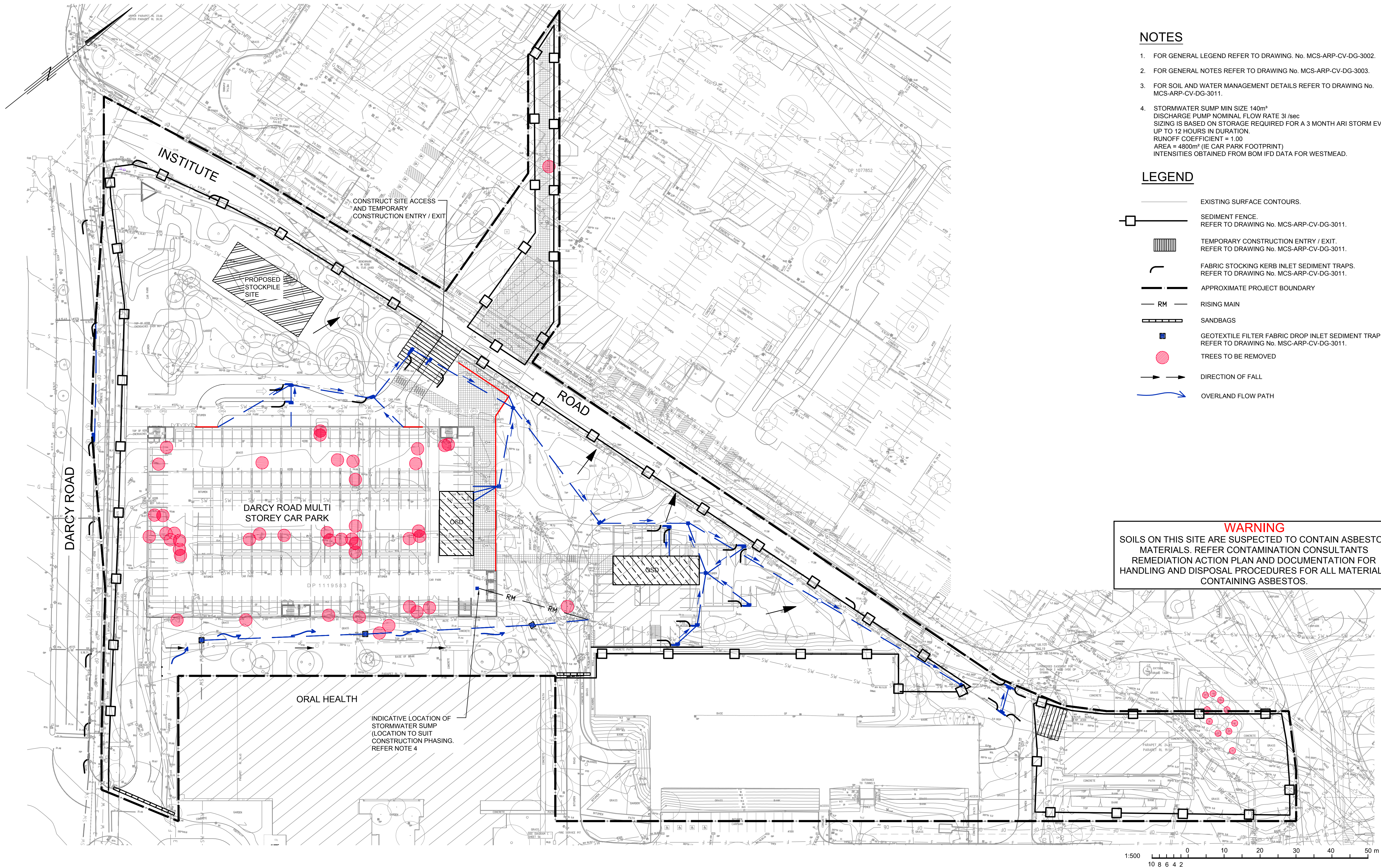


DARCY ROAD MULTI STOREY CAR PARK
Cnr Institute Road and Darcy Road
Westmead NSW 2145



DRAWING TITLE
LOCALITY PLAN,
DRAWING SCHEDULE AND
LEGEND

SCALE: AS SHOWN	DCHRS NUMBER: 5335	CHECKED: KJS
PROJECT NUMBER: 236482	DRAWING NUMBER: MSC-ARP-CV-DG-3002	ISSUE: 2



REV	DESCRIPTION	DRAWN	CHECK	DATE
1	PRELIMINARY ISSUE	ADC	KJS	15/10/15
2	PRELIMINARY ISSUE	ADC	KJS	29/10/15

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CLIENT:

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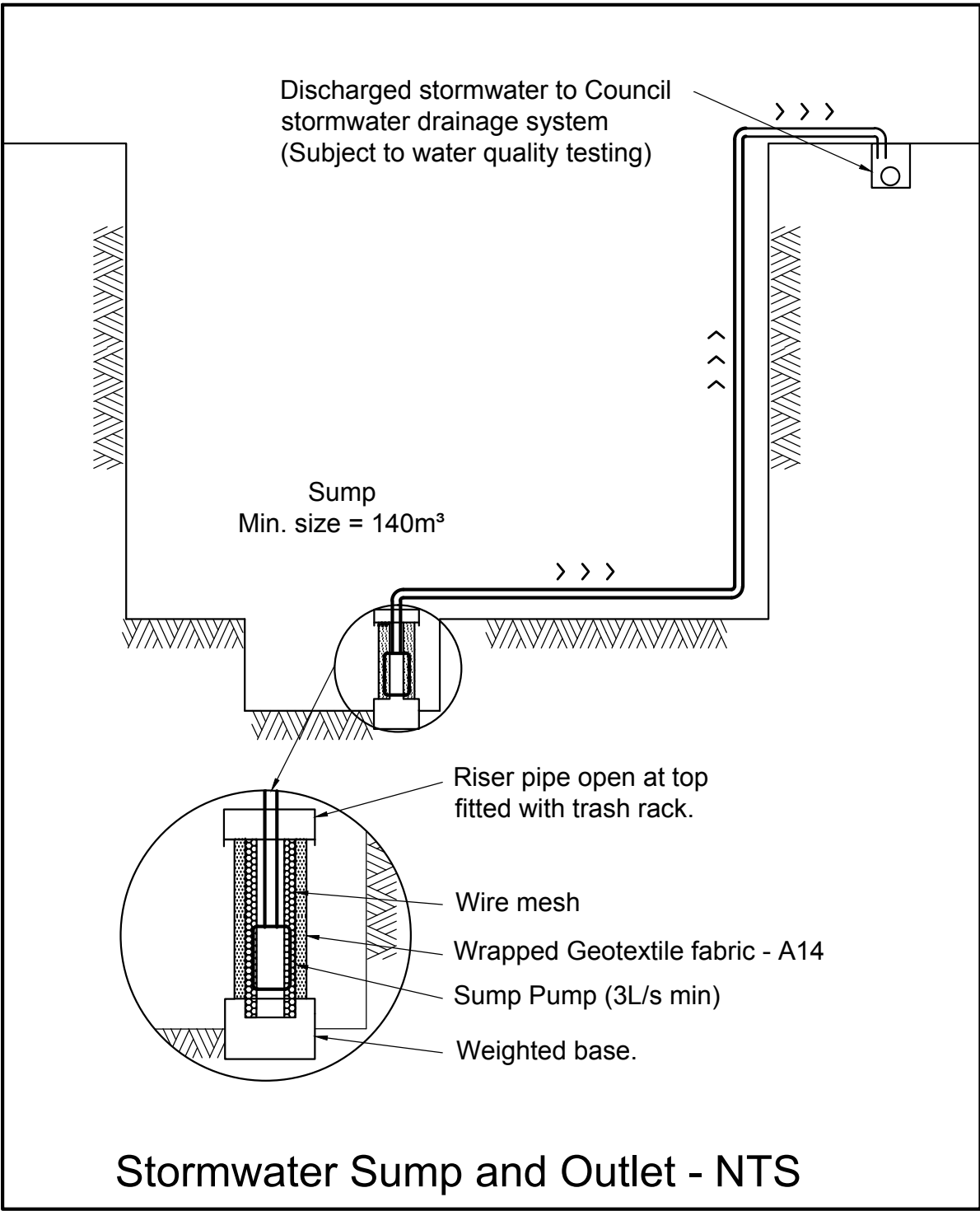
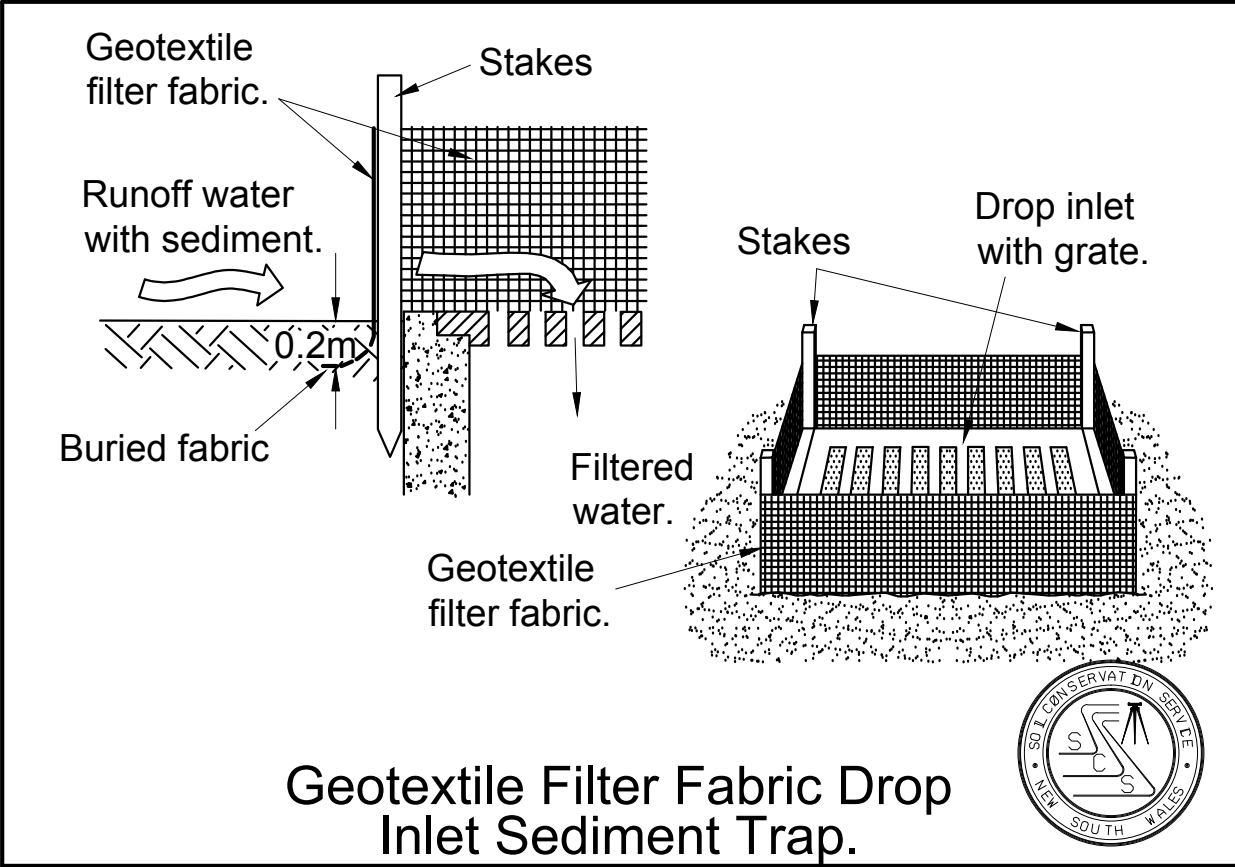
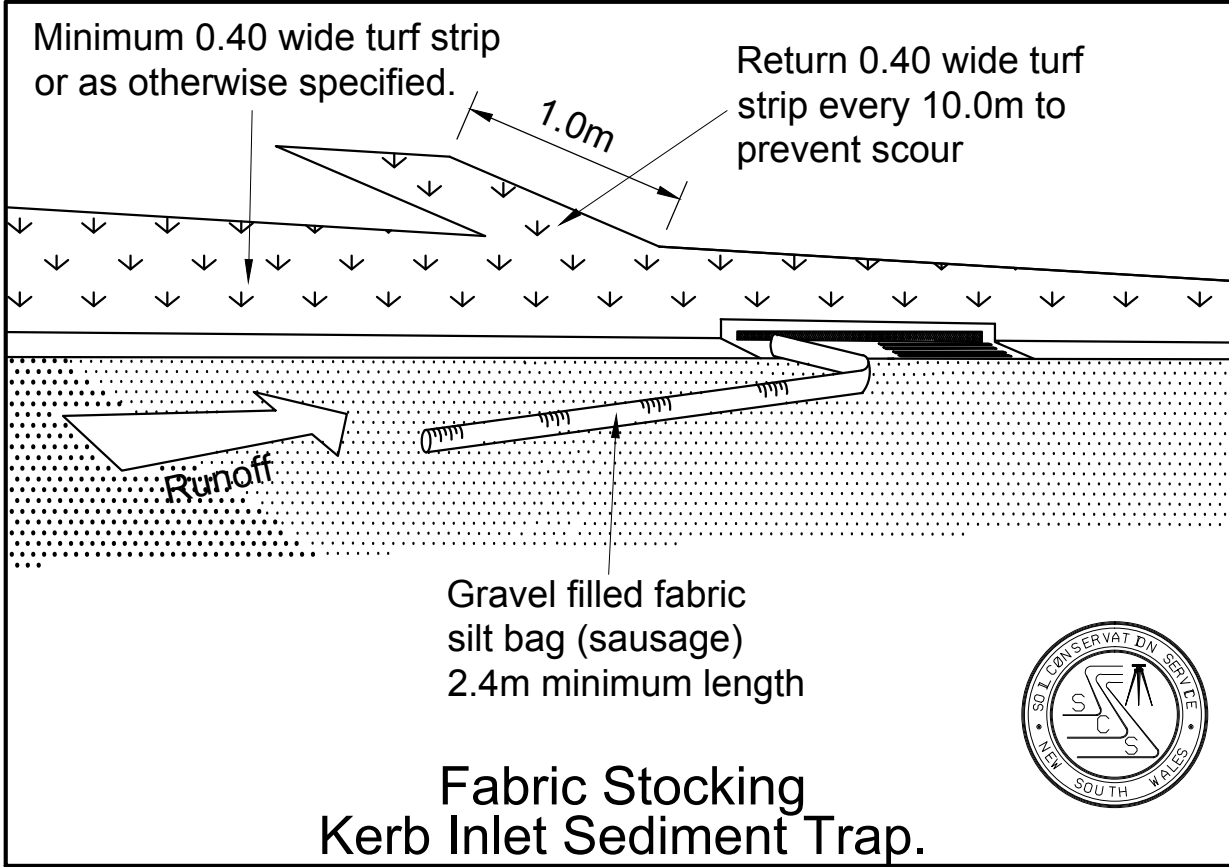
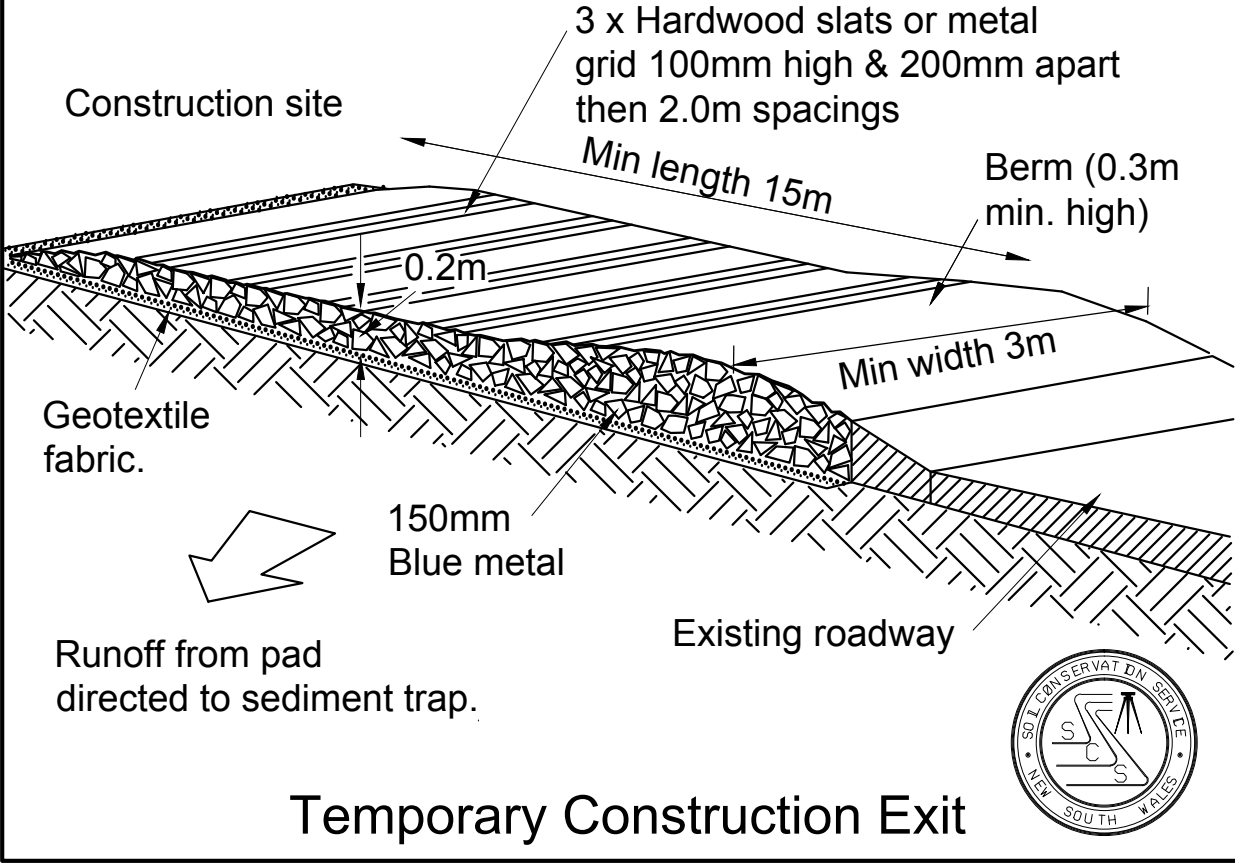
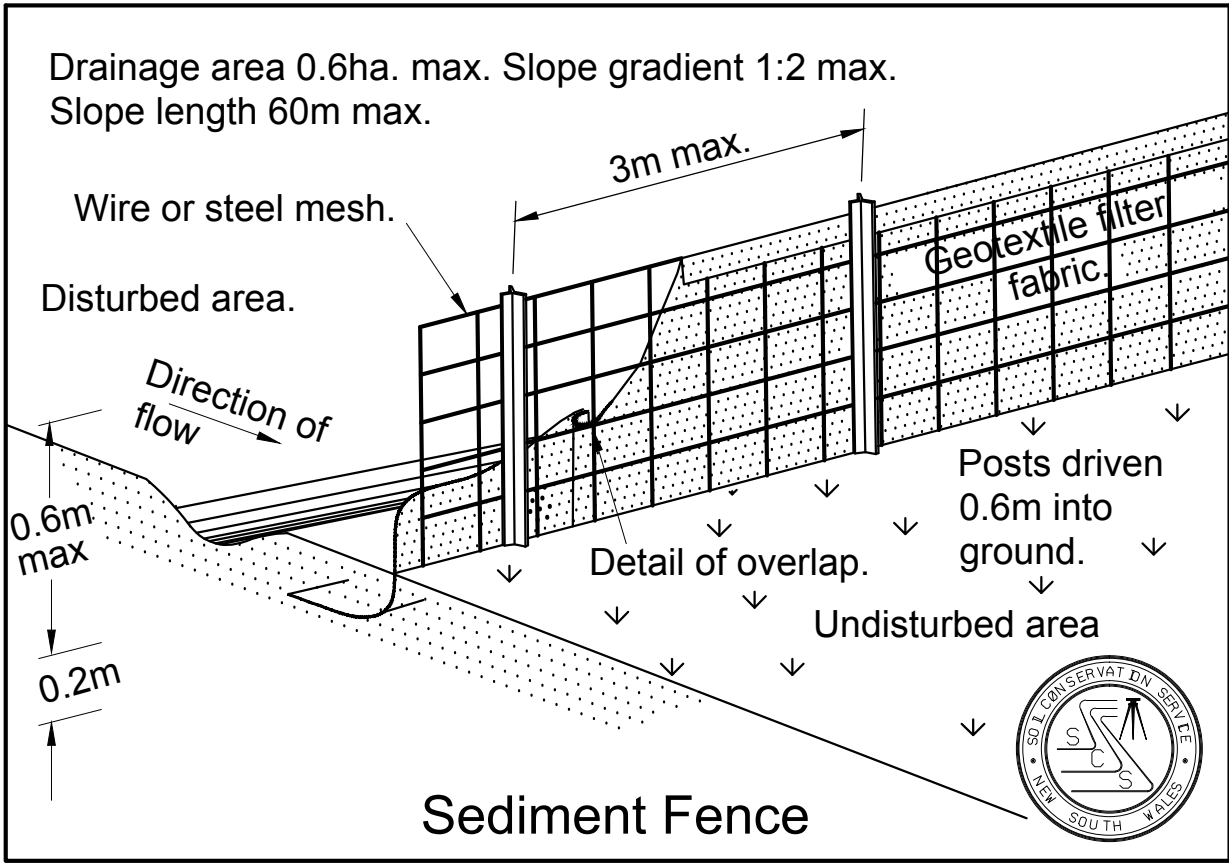
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Cnr Institute Road and Darcy Road
Westmead NSW 2145



DRAWING TITLE
SOIL AND WATER
MANAGEMENT PLAN

SCALE: 1:500
DOCS NUMBER: 5335

PROJECT NUMBER: 236482
DRAWING NUMBER: MSC-ARP-CV-DG-3010
CHECKED: KJS
ISSUE: 2



REV	DESCRIPTION	DRAWN	CHECK	DATE
1	PRELIMINARY ISSUE	ADC	KJS	15/10/15

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WESTMEAD HOSPITAL REDEVELOPMENT
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DRAWING TITLE:
SOIL AND WATER
MANAGEMENT DETAILS

SCALE: AS SHOWN DOHRS NUMBER: 5335 CHECKED: KJS

PROJECT NUMBER: 236482 DRAWING NUMBER: MSC-ARP-CV-DG-3011 ISSUE: 1