

**Legend**

●

Existing Pits

—

Existing Pipes

▭

Existing Buildings Retained

▨

Proposed Buildings Layout

—

Retaining Walls/Fences

---

SCGT Boundary

—

1% AEP Peak Flood Level Contours (mAHD)

**1% AEP Peak Flood Depths (m)**

0 - 0.1

0.1 - 0.25

0.25 - 0.5

0.5 - 0.75

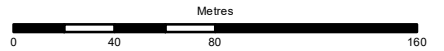
0.75 - 1

> 1

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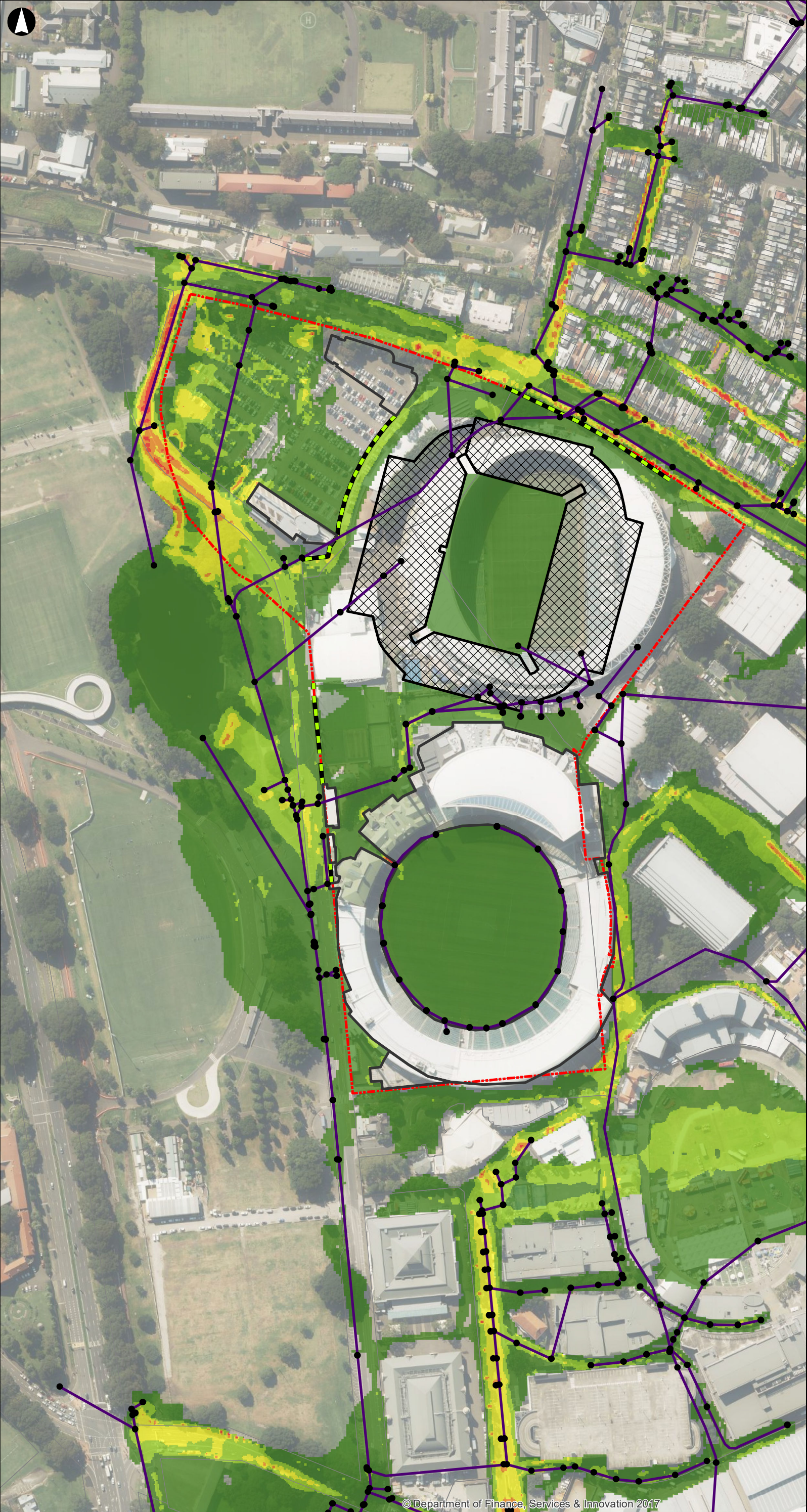
Client

Job Title  
**Sydney Football Stadium**

**Peak Flood Depth and Level  
Proposed Development Scenario  
(Reference Design with Mitigation)  
1% AEP Event**

Scale at A3		1:3000	
Job No	260159	Figure Status	Preliminary
Figure No	3.1D	Revision	P2





**Legend**

●

Existing Pits

—

Existing Pipes

□

Existing Buildings

▨

Proposed Buildings Layout

—

Retaining Walls/Fences

---

SCGT Boundary

**1% AEP Peak Flood Velocity (m/s)**

0.0 - 0.5

0.6 - 1.0

1.1 - 1.5

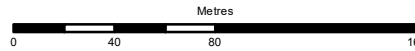
1.6 - 2.0

> 2.0

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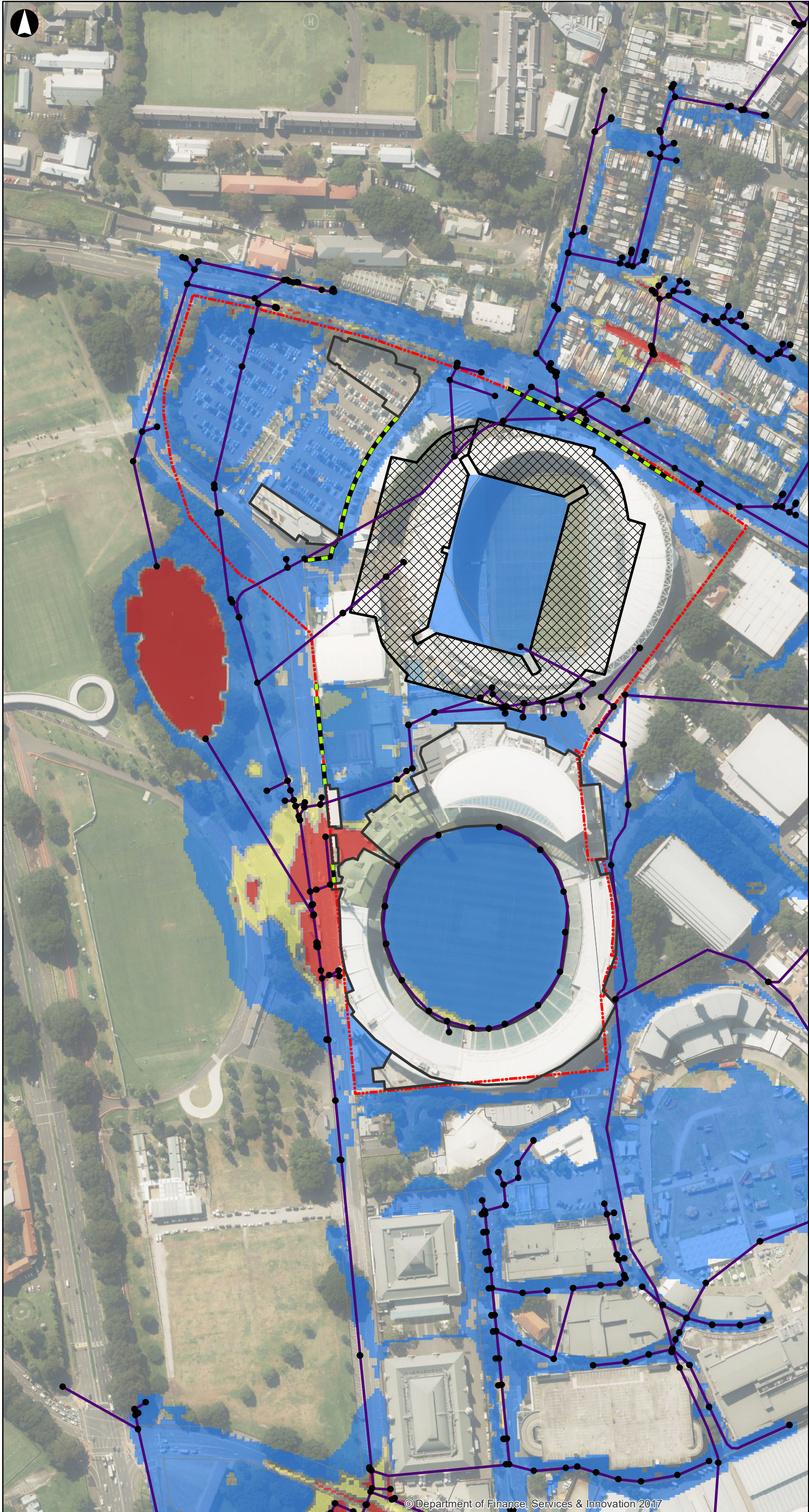
Job Title  
**Sydney Football Stadium**

**Peak Flood Velocities  
Proposed Development Scenario  
(Reference Design with Mitigation)  
1% AEP Event**

Scale at A3  
**1:3000**

Job No <b>260159</b>	Figure Status <b>Preliminary</b>	Revision <b>P1</b>
Figure No <b>3.1V</b>		





**Legend**

- Existing Pits
- Existing Pipes
- Existing Buildings
- Proposed Buildings Layout
- Retaining Walls/Fences
- SCGT Boundary

**Flood Hazard**

- High Hazard
- Transition
- Low Hazard

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Job Title

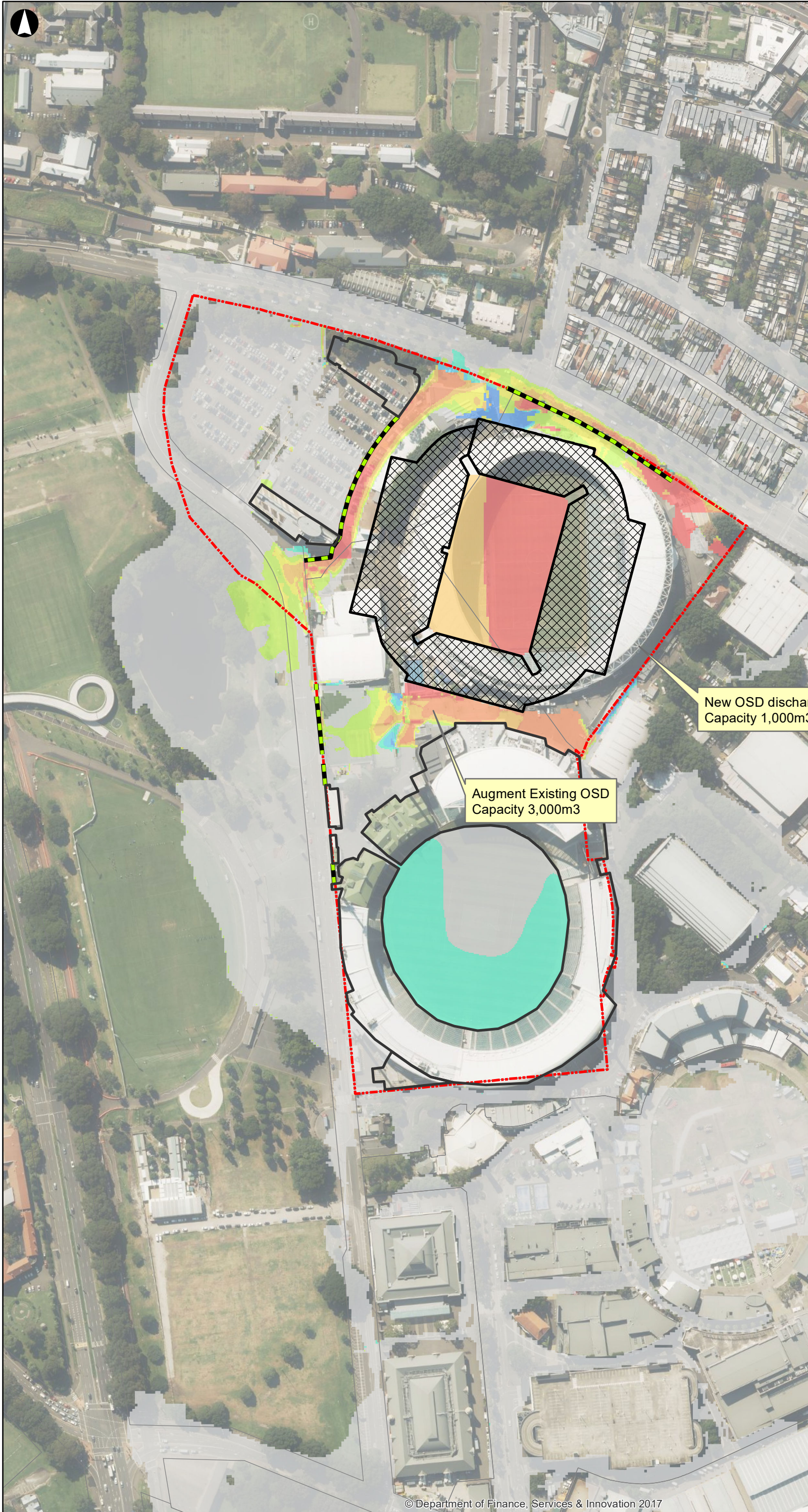
Sydney Football Stadium

**Peak Flood Hazard  
Proposed Development Scenario  
(Reference Design with Mitigation)  
1% AEP Event**

Scale at A3  
**1:3000**

Job No <b>260159</b>	Figure Status <b>Preliminary</b>
Figure No <b>3.1H</b>	Revision <b>P1</b>





**Legend**

Existing Buildings Retained

Proposed Buildings Layout

Retaining Walls/Fences

SCGT Boundary

**Peak Flood Level Change (m)**

< -0.1

-0.1 - -0.05

-0.05 - -0.01

-0.01 - 0.01 (No Impact)

0.01 - 0.03

0.03 - 0.05

0.05 - 0.1

0.1 - 0.3

> 0.3

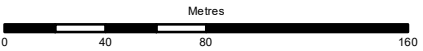
Note: This figure has been produced by comparing the proposed development flooding levels presented in Figure 3.1D (rev. P2, dated 19/04/18) with the Arup refined existing model flooding levels as presented in Figure 1.1D (rev. P2, dated 19/04/18).

Flooding impacts report changes in peak flood level (m AHD). Note this is not the same as peak water depth.

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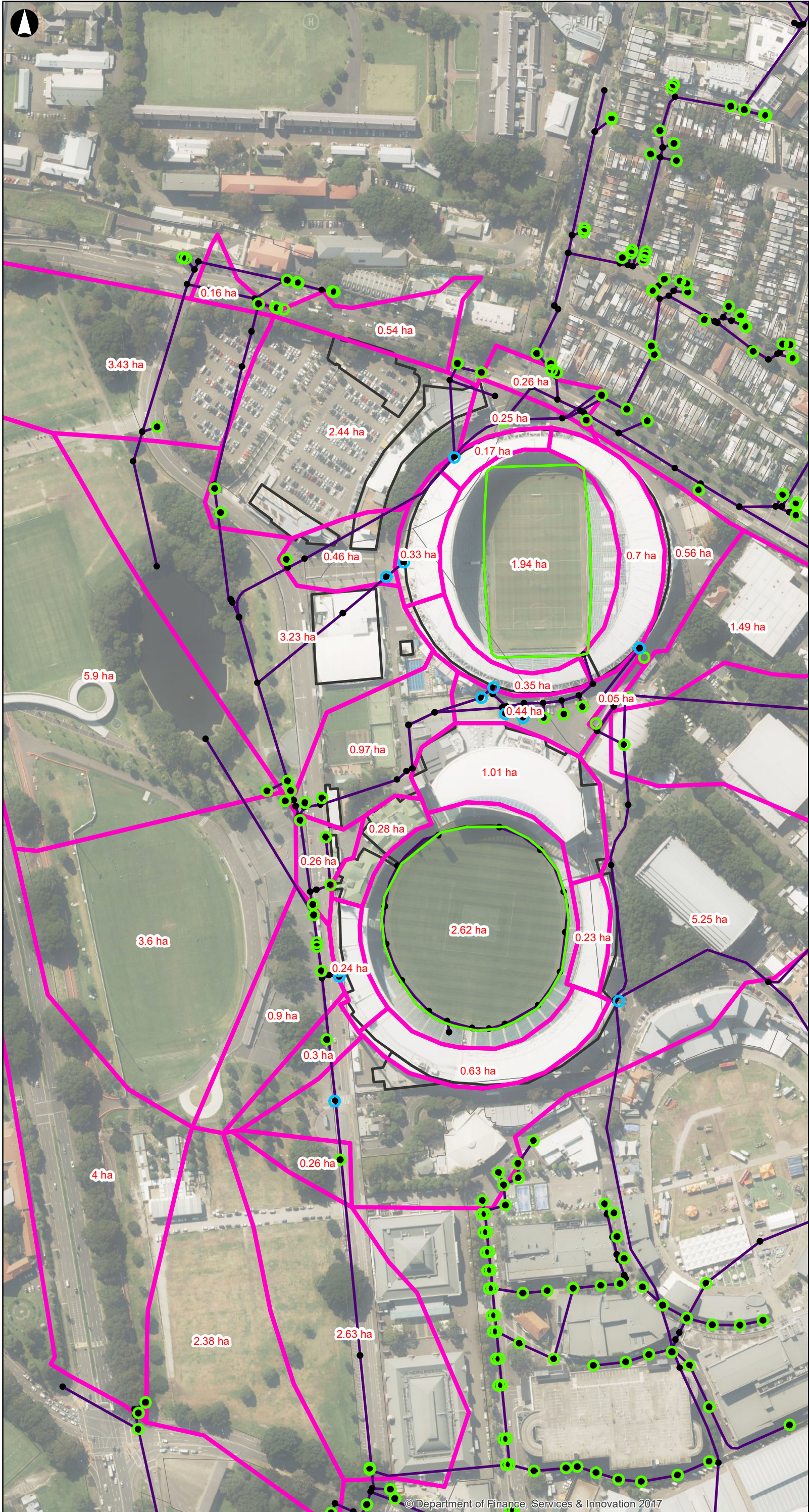
Job Title  
**Sydney Football Stadium**

**Peak Flood Level Impact  
Proposed Development Scenario  
(Reference Design with Mitigation)  
1% AEP Event**

Scale at A3  
**1:3000**

Job No <b>260159</b>	Figure Status <b>Preliminary</b>	Revision <b>P2</b>
Figure No <b>3.1A</b>		



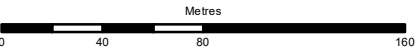


- Legend**
- 1D Rainfall Applied Location
  - 2D Rainfall Applied Location
  - Existing Pits
  - Existing Pipes
  - Existing Catchments
  - Existing Buildings

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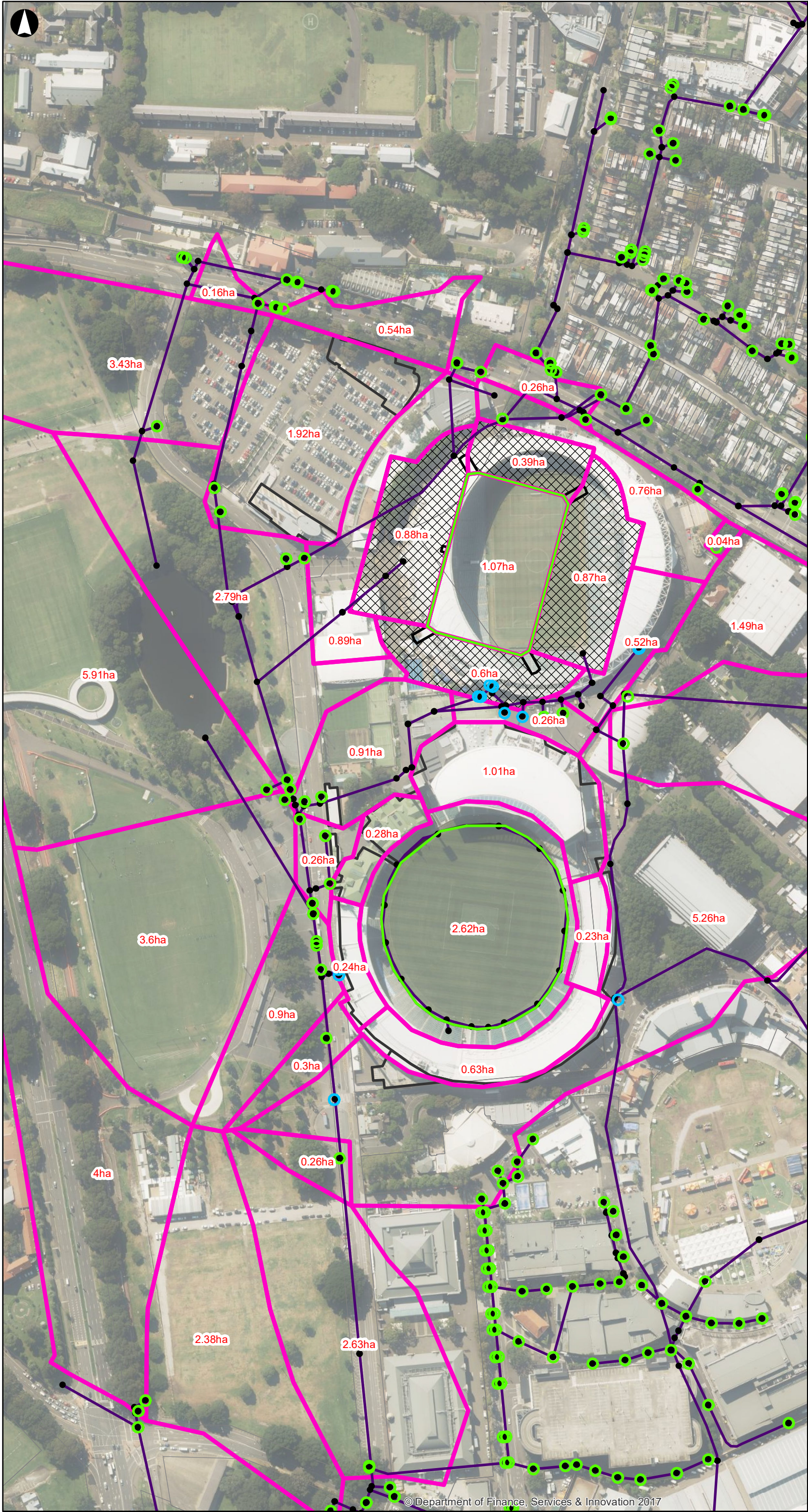
Job Title  
**Sydney Football Stadium**

**Flood Model Subcatchments  
Existing Conditions**

Scale at A3  
**1:3,000**

Job No <b>260159</b>	Figure Status <b>Preliminary</b>	Revision <b>P1</b>
Figure No <b>9.1</b>		





Legend

1D Rainfall Applied Location

2D Rainfall Applied Location

Existing Pits

Existing Pipes

Proposed Catchments

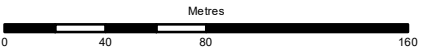
Existing Buildings

Proposed Buildings Layout

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Job Title  
**Sydney Football Stadium**

Flood Model Subcatchments  
Proposed Development Scenario  
(Reference Design)

Scale at A3  
**1:3,000**

Job No  
**260159**

Figure No  
**9.2**

Figure Status  
**Preliminary**

Revision  
**P1**

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J:\260000\260159-00 Sydney Football Stadium\Work\Internal\Design\Civil\Flooding\GIS\mxd\Definition\_Des\_Report\_180424\Figure9.2 - Proposed catchments.mxd

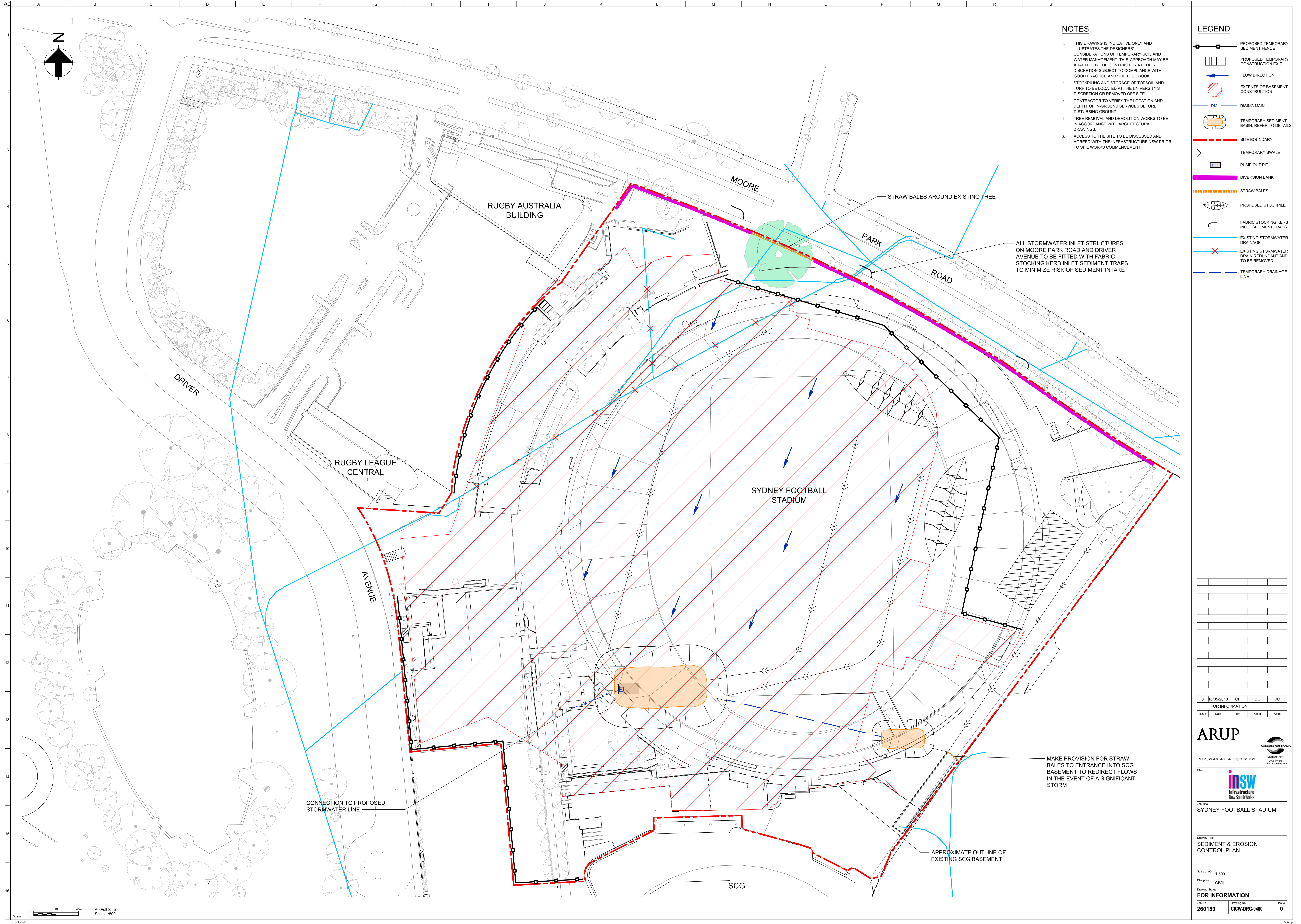
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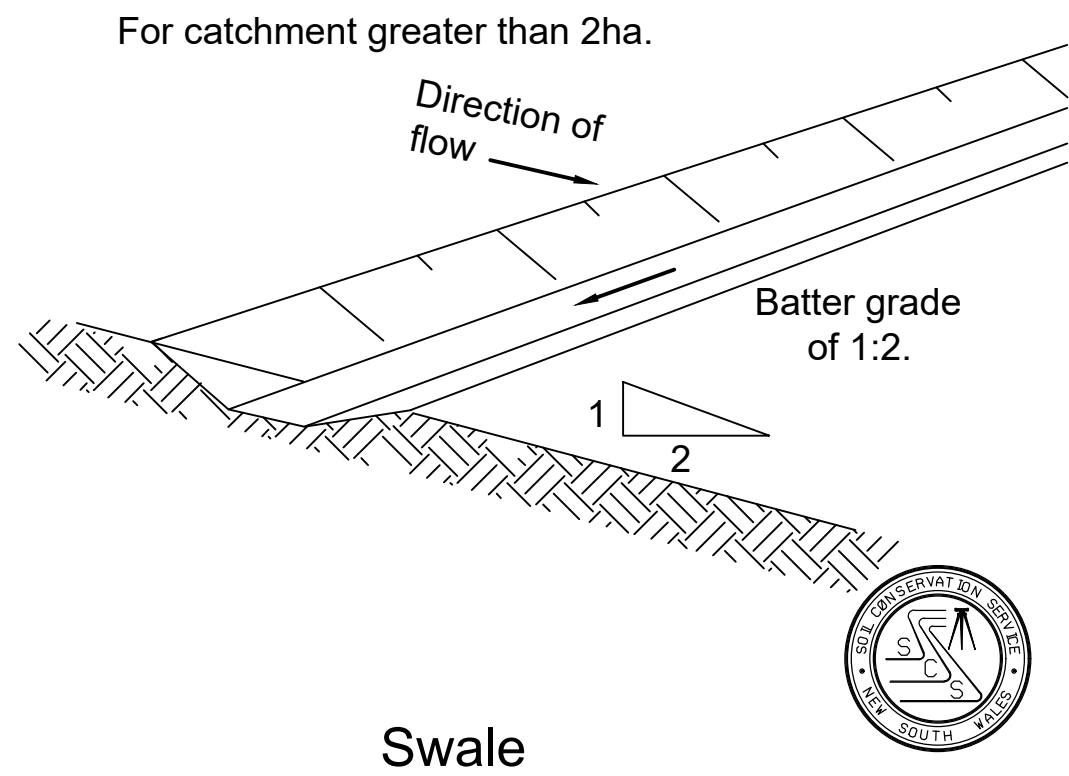
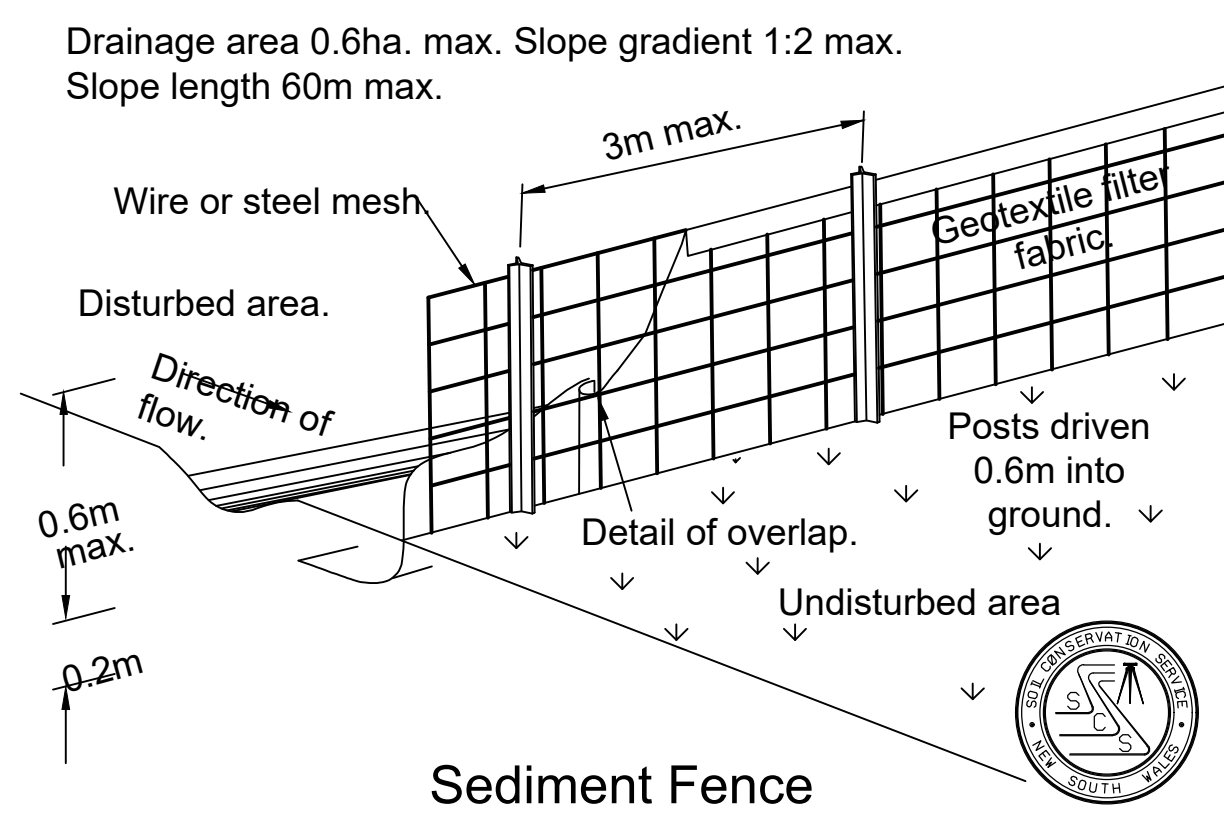
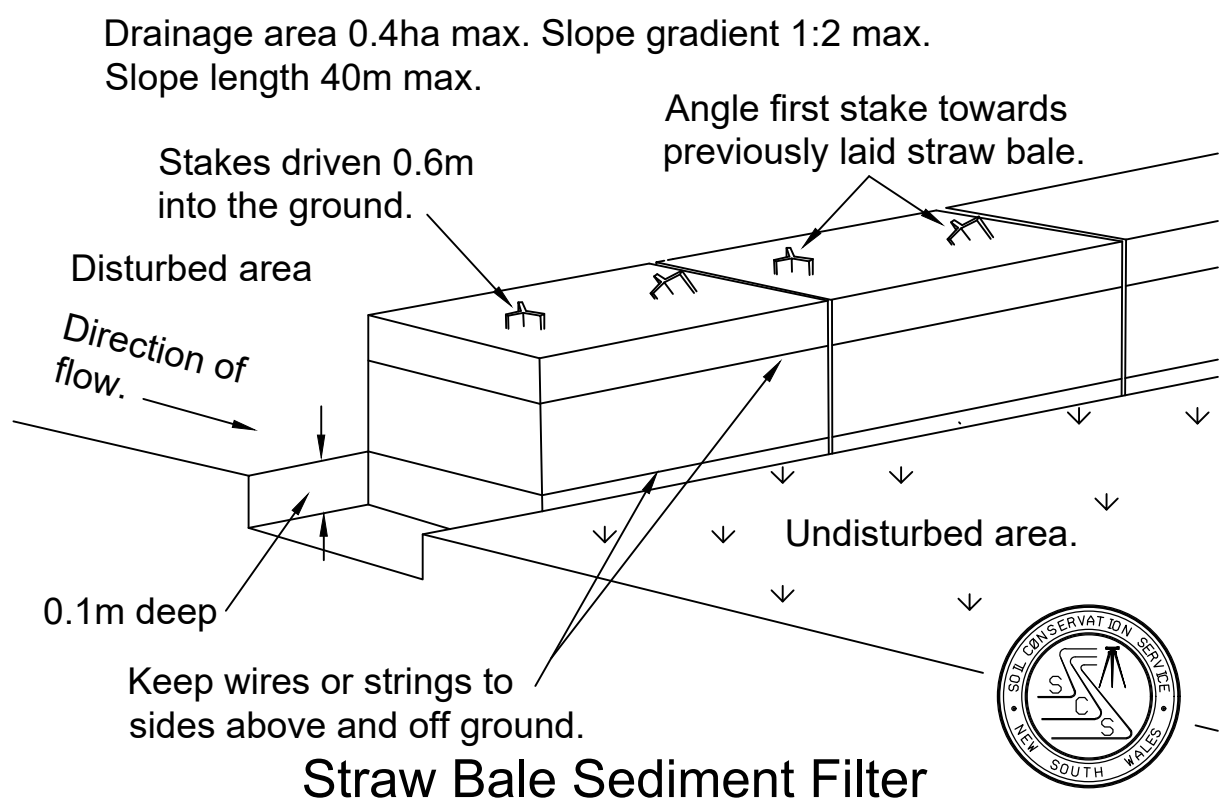
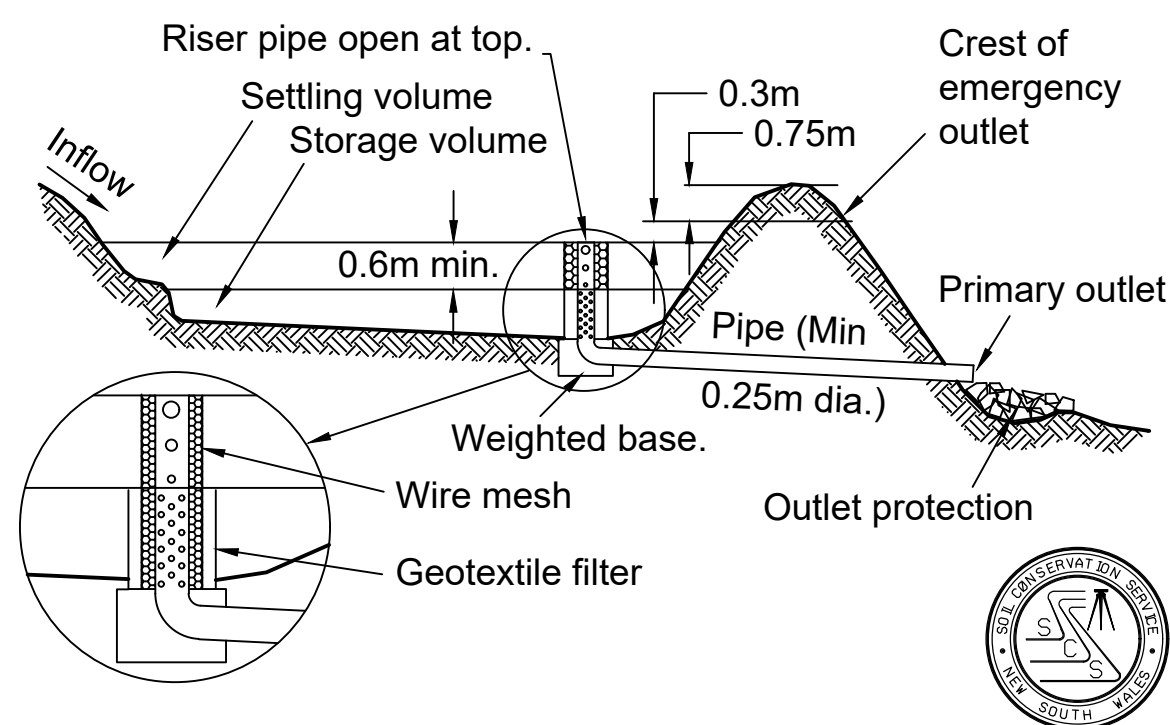
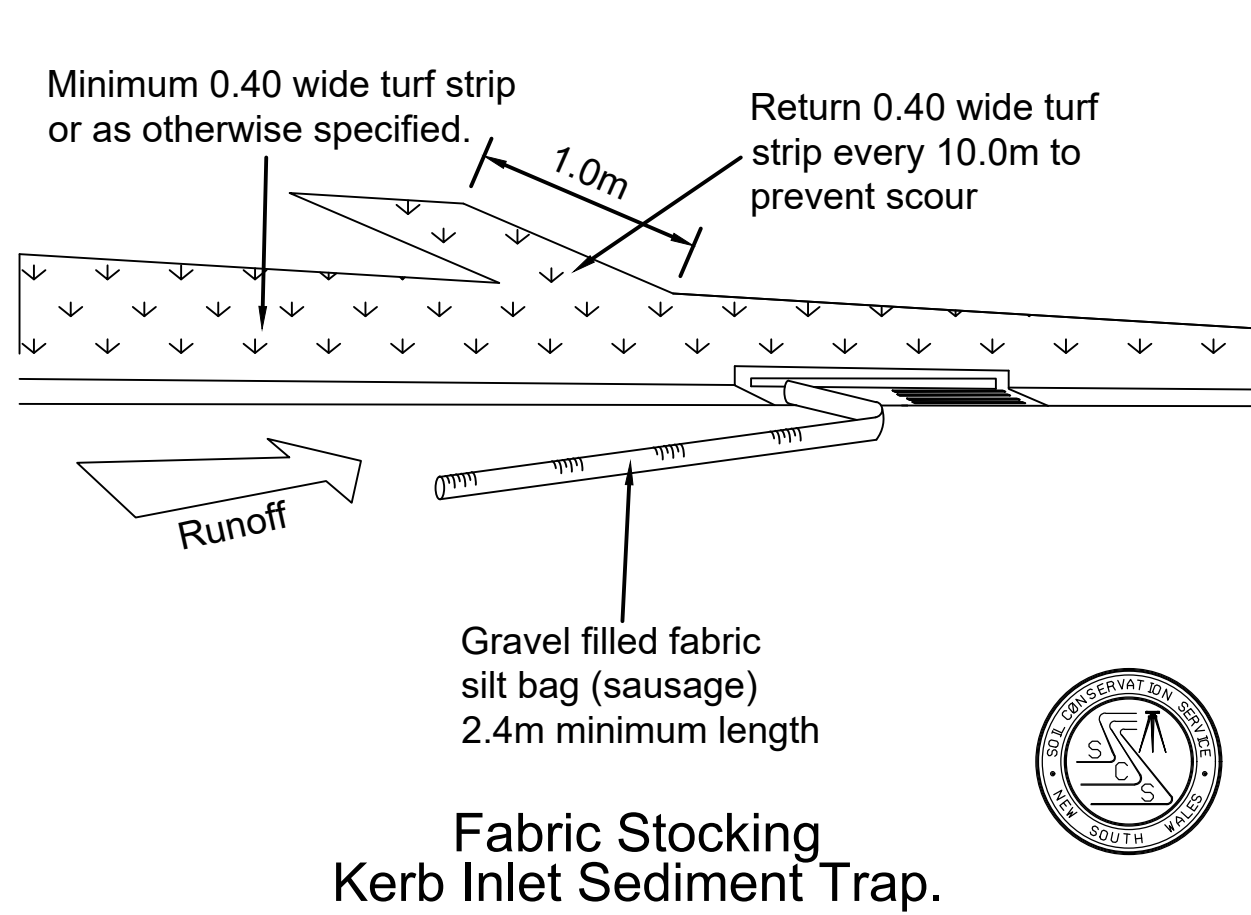
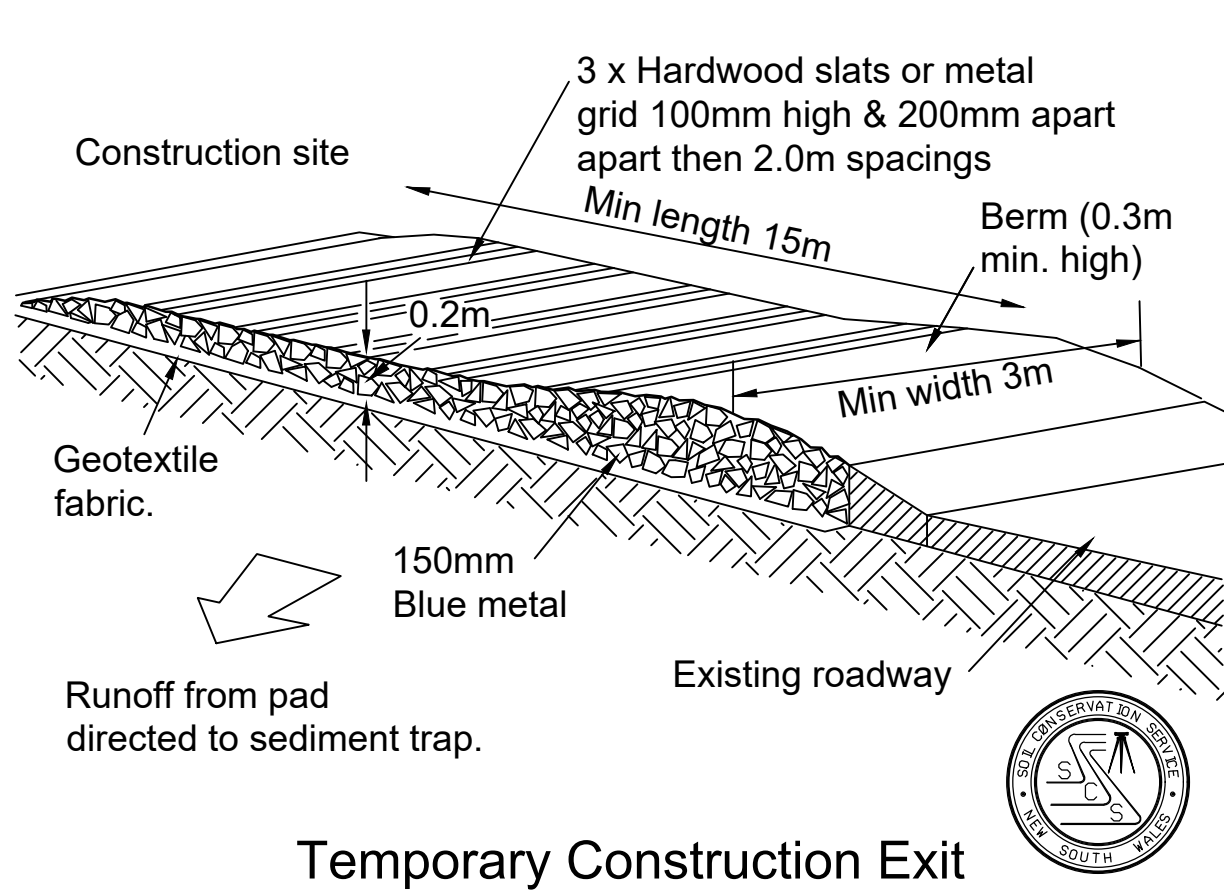
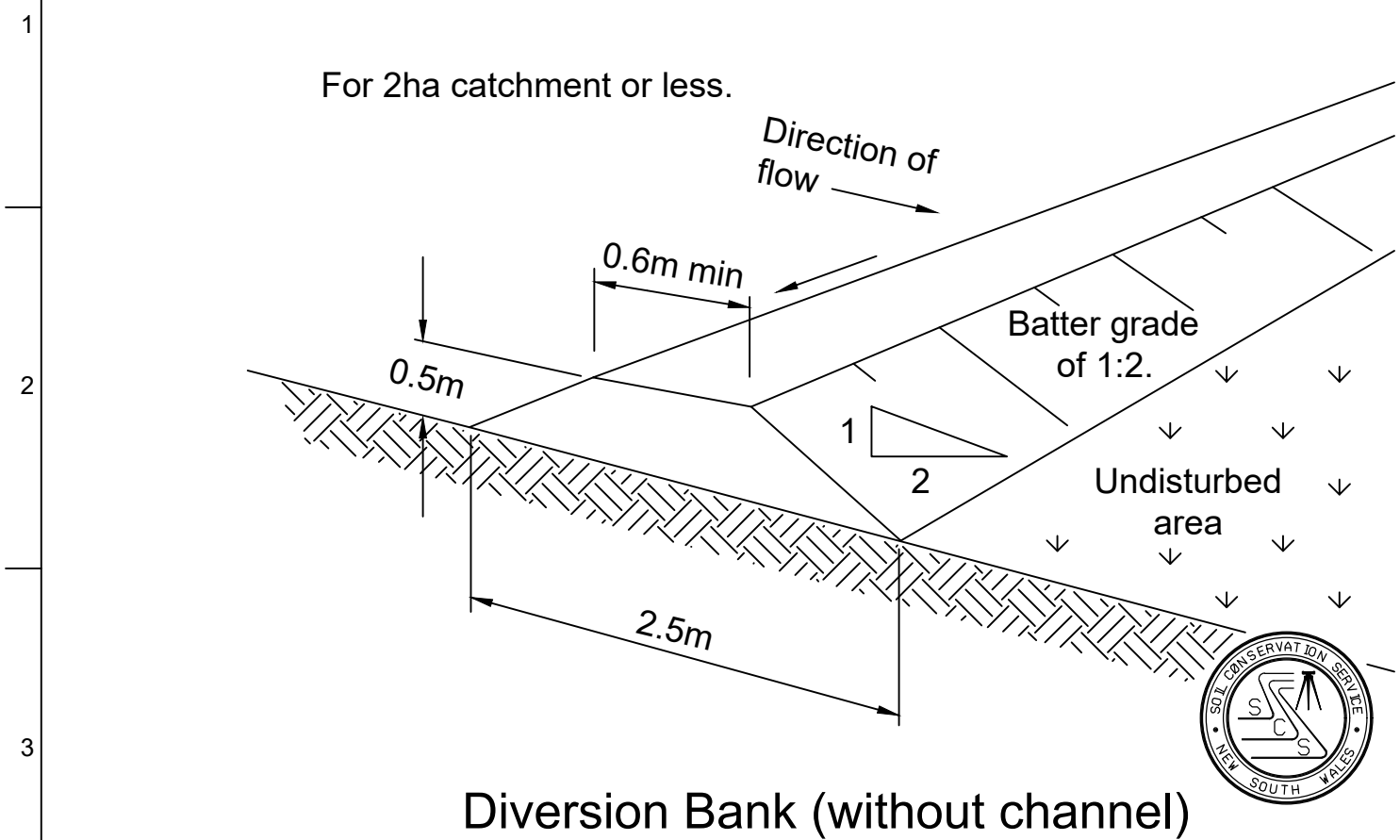
## **Appendix B**

### **Sediment and Erosion Control Plan**









NOTES

- FOR SEDIMENT EROSION CONTROL PLAN REFER TO DWG CICW-DRG-0400

0 16/05/2018 CF DC DC

FOR INFORMATION

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Member Firm

Arup Pty Ltd

ABN 10 000 000 000

Client

**insw**

Infrastructure

New South Wales

Job Title

SYDNEY FOOTBALL STADIUM

Drawing Title

SEDIMENT & EROSION CONTROL DETAILS

Scale at A0

NTS

Discipline

CIVIL

Drawing Status

FOR INFORMATION

Job No	Drawing No	Issue
260159	CICW-DRG-0401	0

0 10 20m

A0 Full Size

Scale 1:500

Do not scale



## Appendix C

### Flood Risk Modelling - Technical Approach and Analysis



## **Flood Risk Modelling – Technical Approach & Analysis**

---

### **Existing conditions and flooding risks**

The precinct is located within the Centennial Park catchment area. Arup has reviewed the City of Sydney Council Centennial Park Flood Study (Final Report dated April 2016) in detail to understand the existing picture of flooding. This study demonstrates that localised flooding occurs during all modelled events from a 2-year Average Recurrence Interval (ARI) up to a 100-year ARI event with significantly deeper and more widespread flooding occurring during the Probable Maximum Flooding (PMF) event.

### **Recent precinct development**

As there has been ongoing development in the area since the City of Sydney Council Centennial Park Flood Study it was considered appropriate to incorporate these changes into an updated flood model, along with making other changes to more accurately reflect the existing SFS site conditions. This was necessary to gain an accurate understanding of the differences between existing and proposed scenarios and hence the likely effect of the proposed redevelopment on flooding

These changes include:

- The redevelopment of the Noble, Bradman and Messenger stands and associated drainage modifications;
- The construction of the Australian Rugby Development Centre; and
- The completed Rugby League Central building.

This exercise also offered the opportunity to include several other refinements using detailed site information from a variety of sources including Sydney Water, City of Sydney Council, Roads and Maritime Services (Roads and Maritime) as well as the SC&SGT.

Changes to Moore Park Road to incorporate a cyclelink will be explored in more detail as part of the Stage 2 SSDA application and/or at an appropriate point in the future when design information is available.

### **Original flood model**

As part of the concept design Arup obtained permission from City of Sydney Council to review the Centennial Park TUFLOW hydraulic model. The purpose of reviewing the model was to understand the input parameters used in its construction and look for opportunities to refine these inputs using information available in the concept design.

The intent of this exercise was to improve the model accuracy such that it provides the most representative drainage and flooding results for the SFS site and surrounding areas.



## Arup modifications

Having completed our assessment of the existing TUFLOW model and reviewed the site-specific information made available, the following issues have been identified and the associated refinements incorporated into the concept design TUFLOW model:

- Updates with site specific topographic survey level information;
- Inclusion of as-built information for the Noble, Bradman and Messenger stands, including finished surface levels and the OSD tank;
- Addition of walls and other barriers to flow included using site and aerial photography;
- Inclusion of the Australian Rugby Development Centre (ARDC);
- Inclusion of Rugby League Central building;
- Inclusion of SCG and Allianz Stadium detailed as-built drainage information;
- Refinements to in-ground drainage using Sydney Water record drawings;
- Inclusion of the pipe outlets for Kippax Lake connecting to the Sydney Water trunk along Driver Avenue;
- Creation of flow paths to allow inundation of the SCG and SFS pitches;
- Refinements of the building footprints to match existing conditions; and
- Refinements to catchments based on built environment features and knowledge of the existing drainage network.

These modifications are supported by our own site observations from a ground truthing exercise undertaken to verify site falls and barriers/obstructions to flow. This was complemented by anecdotal information provided by Peter Mallaby – the Trust Maintenance Supervisor for 29 years – who has detailed knowledge of the existing drainage systems and historic flooding episodes on site.

## Catchments

Existing catchments as included in the flood modelling are shown in Figure 13. Delineation of the sub-catchments has been based on existing topography and runoff distribution based on the property and road drainage network.