

Central Park Block 4S Student Accommodation

SSD Stormwater Report

December 2012

Frasers Broadway Pty Ltd



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Executive Summary

Frasers Broadway is currently redeveloping the former Carlton United Brewery site, Central Park, into a mixed use precinct. Mott MacDonald has been engaged by Frasers Broadway to undertake the detailed design of the roads and stormwater for Central Park. This report relates specifically to the proposed Block 4S within the precinct, as indicated on the General Arrangement Plan (Drg. MMD-286054-C-PA-CD-0004).

Mott MacDonald has previously undertaken a stormwater quantity management study for the whole site. This report has been submitted and approved by City of Sydney Council and Sydney Water. The site stormwater reticulation system has been designed as part of this study and has been designed to accommodate flows resulting from the development of all Blocks on the site.

Measures related to sediment and erosion control are also addressed within this report.

1. Introduction

1.1 Existing Site

The Central Park site is bounded by Broadway, Abercrombie Street, O'Connor Street, Wellington Street and Kensington Street in Chippendale. The site is situated within the Blackwattle Bay (SWC 17) catchment. Block 4S is located at the west of the site, and is bounded by Irving Street to the south, Abercrombie Street to the west, the proposed Central Park Avenue to the east and Block 4N to the north.

1.2 Data

A surface and underground services survey of the site and road reserves surrounding the site was undertaken by surveyors Degotardi, Smith and Partners as part of the project investigation. This survey includes details of the trunk lines and local street drainage.

The following surveys have been referenced or used to form the base survey:

- Blackwattle Bay SWC 17 Asset Survey by AWT – 1997
- Detail and Levels Survey of the Carlton & United Brewery Site by Degotardi, Smith & Partners – 6th July 2006
- Underground Services Survey of the Frasers Broadway Site by Degotardi, Smith & Partners – 12th February 2008
- Detail and Levels Survey of the Catchment Area South of Frasers Broadway Site by Degotardi, Smith & Partners – 25th February 2008

1.3 Existing Stormwater

An infrastructure package lodged as a separate PA (Main Park and Associated Infrastructure, Reference number MP08_0210) has been constructed. This encompasses roads and stormwater at the south of the site and a detention tank (approx. 2000 cu.m) under the main park. The majority of the site drains to the detention tank with the exception of some minor areas at the site's periphery which cannot grade to the tank. Additionally, a PA for the Stage 2 infrastructure (MP09_0164) encompassing the remainder of the site's roads and stormwater has been approved and is currently under construction.

2. Proposed Development

2.1 Site Grading

Filling and grading of the site has been carefully considered and optimised respecting the following constraints:

- Proposed buildings and carpark entrances are above the 100 year ARI flood level including freeboard (where applicable);
- Flood depths on internal roads are safe for vehicles and pedestrians;
- Internal stormwater and kerb and gutter has sufficient grade to achieve self cleansing velocities; and
- Overland flow can be conveyed through the site without trapped low points.

2.2 Site Stormwater Reticulation

The site stormwater system has been designed to accept the 20 year and 100 year design flows (piped and overland respectively) from Block 4S.

The proposed Block 4S will discharge to the street stormwater system in Central Park Avenue (approved under Project Applications MP 09_0164 and MP08_0210). The street stormwater system has been designed to accommodate flows from Block 4S and all developed blocks throughout the site.

The proposed Stormwater Reticulation for the site is indicated on Drawing MMD-286054-C-PA-CD-0006 – Concept Stormwater Layout Plan.

2.3 Water Quality

Water quality management, water storage and harvesting issues for the broader site are being addressed by WSP.

A Concept Erosion and Sediment Control Plan has been developed for works associated with Block 4S. Refer to drawing MMD-286054-C-PA-CD-0005 for details.

3. Conclusion

The site stormwater system has been designed to accommodate flows resulting from the development of all blocks within the site. Stormwater from Block 4S will discharge to the stormwater line in Central Park Avenue.

The outcomes of the approved Stormwater Quantity Management Strategy for the site, including implementation of appropriate Flood Planning Levels, will be incorporated in the design.

The proposals for Block 4S will meet the parameters agreed in the approved Stormwater Quantity Management Strategy.

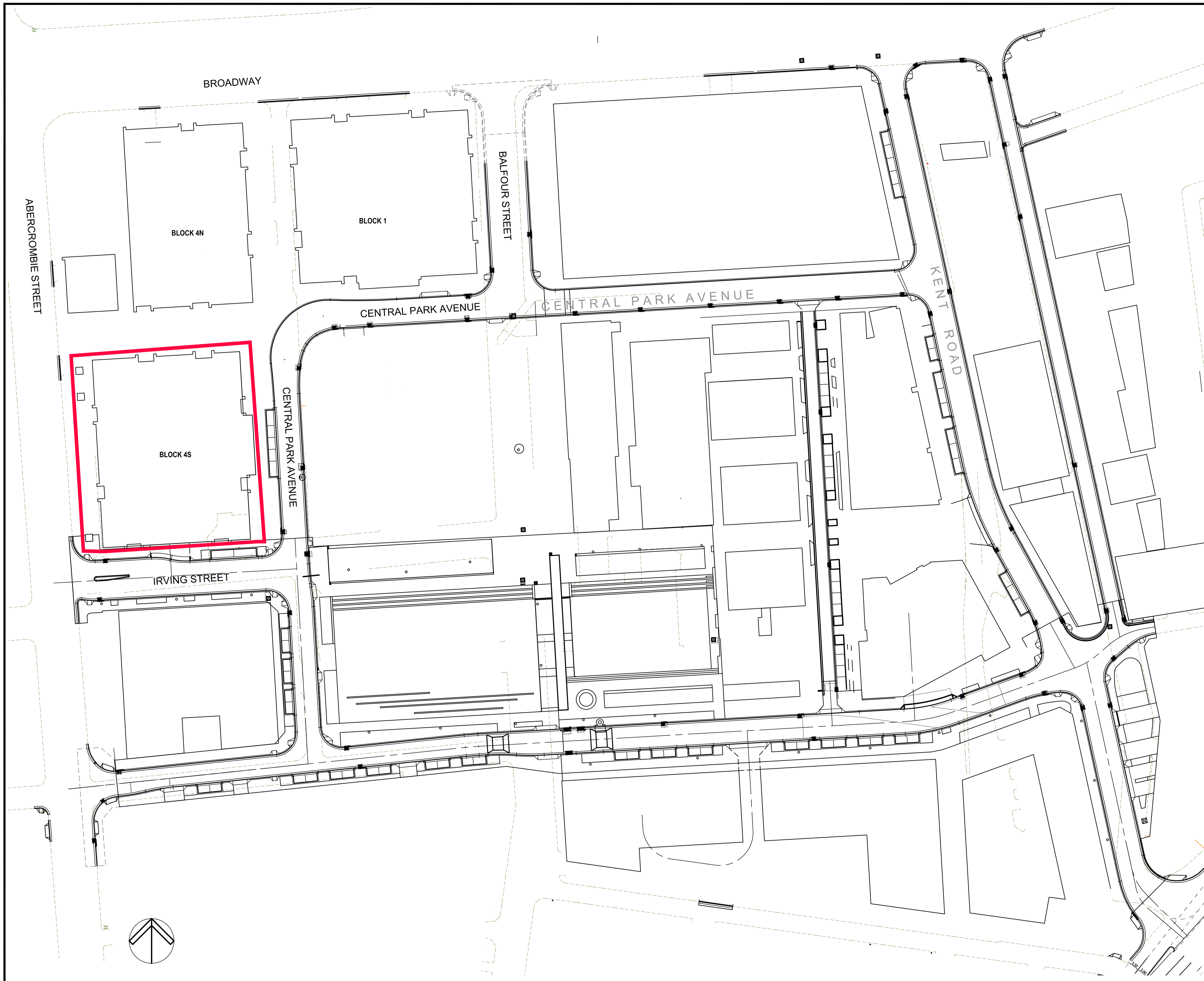
Measures relating to erosion and sediment control will be implemented as part of the development works.

Appendices

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Appendix A. Drawings

- MMD-286054-C-PA-CD-0004 – General Arrangement Plan
- MMD-286054-C-PA-CD-0005 – Concept Sediment & Erosion Control Plan
- MMD-286054-C-PA-CD-0006 – Concept Stormwater Layout Plan



Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	15.11.12	MM	ISSUED FOR PROJECT APPLICATION	CB	XXXX



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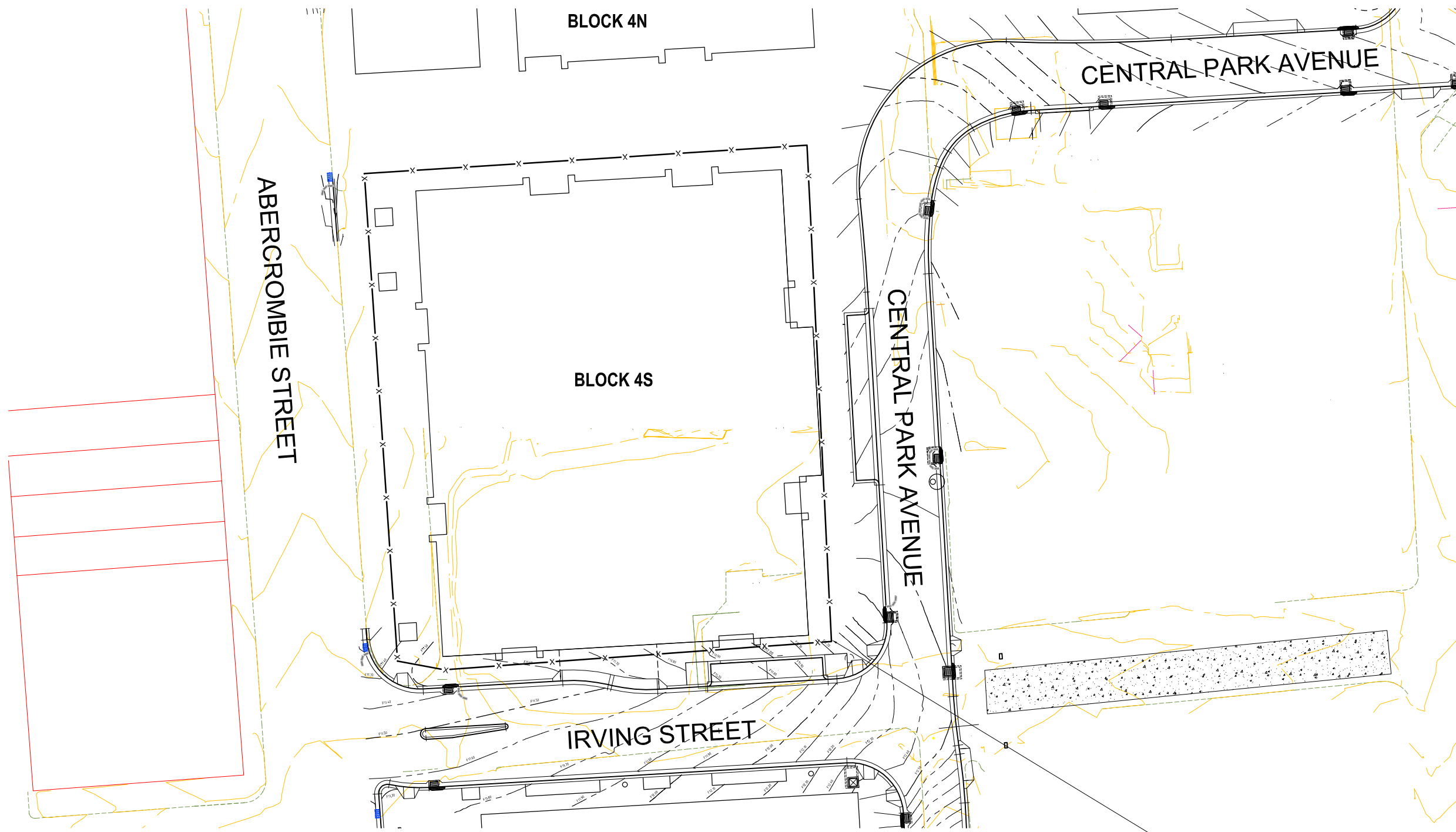


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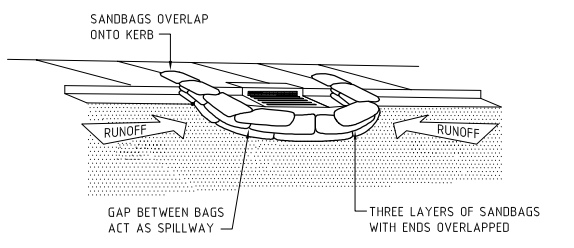
Title
CENTRAL PARK
BLOCK 4S
GENERAL ARRANGEMENT PLAN

Designed	CB	Eng check	
Drawn	MM	Coordination	
Dwg check		Approved	
Scale at A1	1:500	Status	PRELIM
		Rev	P1

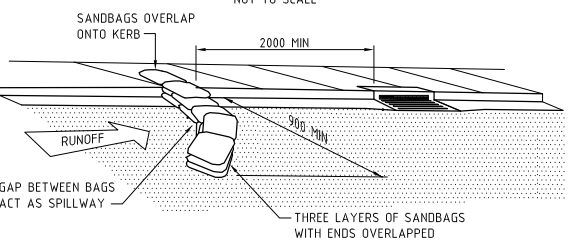
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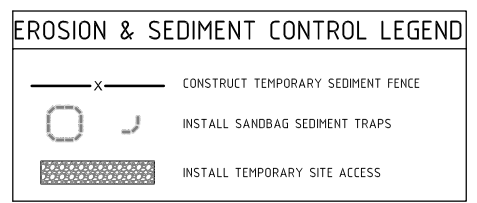
NOTE:
ALL INTERNAL DRAINAGE TO BE CO-ORDINATED AND RELEVANT EROSION AND SEDIMENT CONTROL DEVICES IMPLEMENTED.



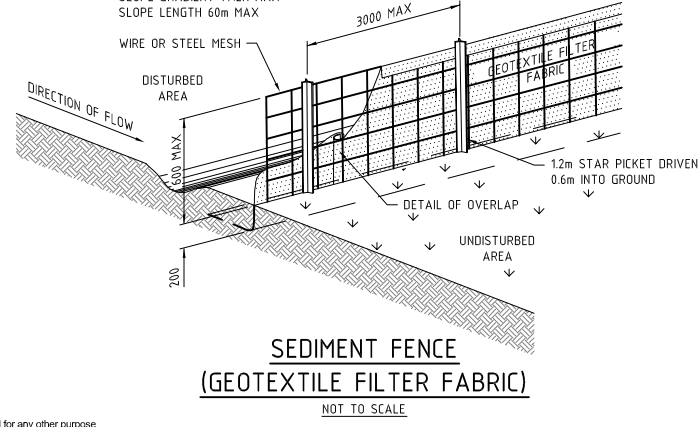
SEDIMENT TRAP FOR KERB INLET (AT LOW POINT - SANDBAG)
NOT TO SCALE



SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG)
NOT TO SCALE



DRAINAGE AREA 0.6ha MAX
SLOPE GRADIENT 1V:2H MAX
SLOPE LENGTH 60m MAX



SEDIMENT FENCE (GEOTEXTILE FILTER FABRIC)
NOT TO SCALE

PLAN
SCALE 1:250

SOIL AND WATER MANAGEMENT NOTES

- SWM1 THIS IS A CONCEPTUAL SOIL AND WATER MANAGEMENT PLAN (SWMP) ONLY, AND SHOWS A POSSIBLE WAY OF MANAGING SOIL EROSION. THE CONTRACTOR SHALL PREPARE A DETAILED PLAN AND OBTAIN APPROVAL FROM THE RELEVANT AUTHORITY - PRIOR TO THE COMMENCEMENT OF ANY WORKS.
- SWM2 THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS, AND ANY OTHER PLANS, WRITTEN INSTRUCTIONS, SPECIFICATION OR DOCUMENTATION THAT MAY BE ISSUED AND RELATING TO DEVELOPMENT OF THE SUBJECT SITE.
- SWM3 THE CONTRACTOR WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE CONSISTENT WITH 'MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION' - ALSO KNOWN AS 'THE BLUE BOOK'.
- SWM4 ALL BUILDERS AND SUB-CONTRACTORS SHALL BE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS.
- SWM5 WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, IE THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
- SWM6 "SEDIMENT" FENCING WILL BE INSTALLED AS INDICATED ON THE PLANS AND AT THE DIRECTION OF SITE SUPERINTENDENT TO ENSURE CONTAINMENT OF SEDIMENT. THE SEDIMENT FENCING WILL OUTLET OR OVERFLOW UNDER STABILISED CONDITIONS INTO THE SEDIMENT BASIN, TO SAFELY CONVEY WATER INTO A SUITABLE FILTERING SYSTEM SHOULD THE PORES IN THE FABRIC BLOCK.
- SWM7 UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS, WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.
- SWM8 TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.
- SWM9 FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.
- SWM10 AT LEAST WEEKLY AND AFTER EVERY RAIN FALL EVENT, THE CONTRACTOR WILL INSPECT THE SITE AND ENSURE THAT - DRAINS OPERATE EFFECTIVELY AND INITIATE REPAIR OR MAINTENANCE AS REQUIRED, SPILLED SAND (OR OTHER MATERIALS) IS REMOVED FROM HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS, GUTTERS, PAVED AREAS AND DRIVEWAYS. SEDIMENT IS REMOVED FROM BASINS AND/OR TRAPS WHEN LESS THAN 20m³ OF TRAPPING CAPACITY REMAIN PER 1000m² OF DISTURBED LANDS, AND/OR LESS THAN 500mm DEPTH REMAINS IN THE SETTLING ZONE. ANY COLLECTED SEDIMENT WILL BE DISPOSED IN AREAS WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS IS UNLIKELY. REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND INITIATE UPGRADING OR REPAIR AS APPROPRIATE.

PROVIDE SEDIMENT FENCE REFER TO DETAIL

Notes

Key to symbols

Reference drawings

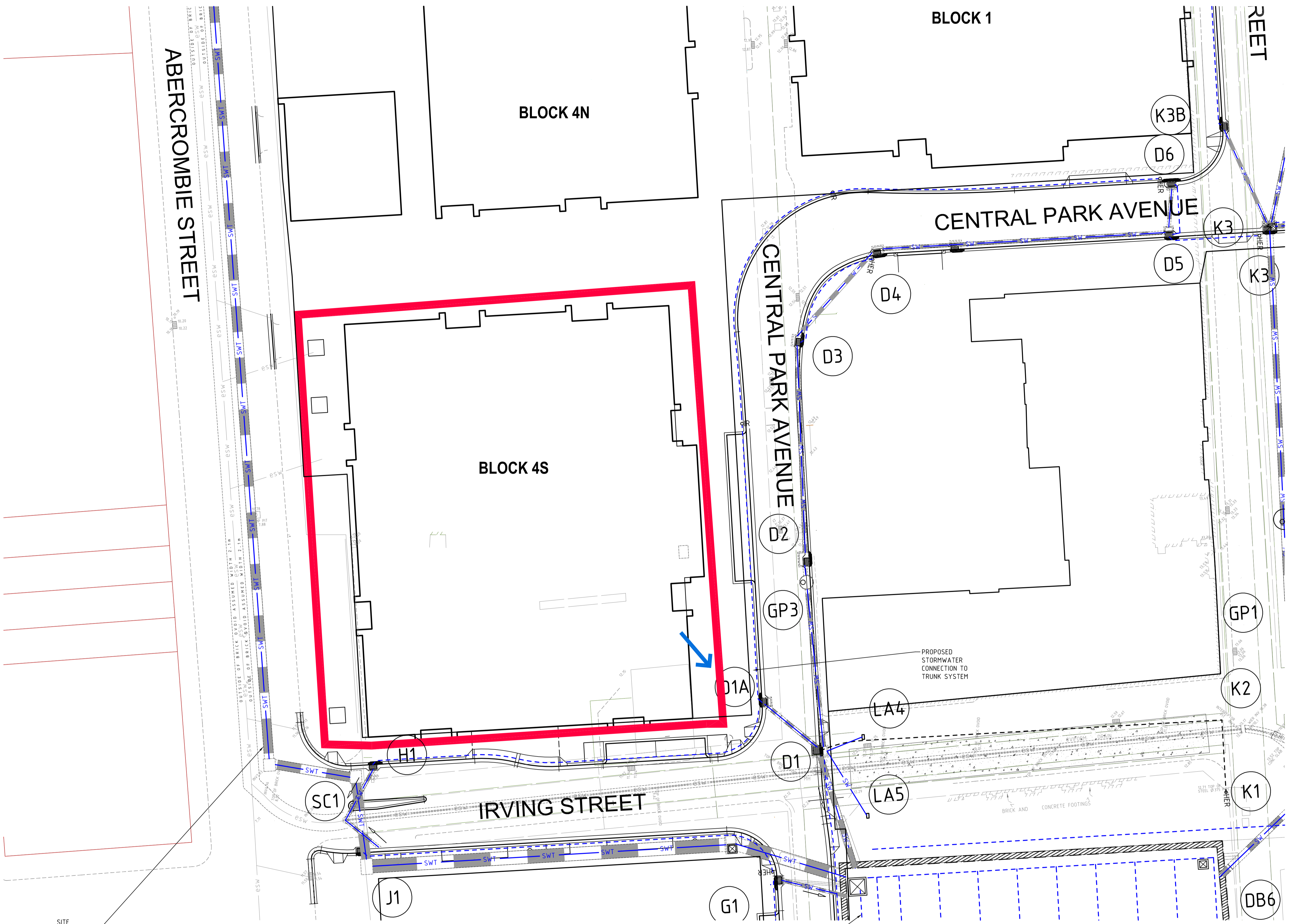
Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	14.11.12	MM	ISSUED FOR PROJECT APPLICATION	CB	XXXX



Title
CENTRAL PARK BLOCK 4S CONCEPT EROSION & SEDIMENT CONTROL PLAN

Designed	CB	Eng check	
Drawn	MM	Coordination	
Dwg check		Approved	
Scale at A1	1:250	Status	PRELIM
Rev			P1

Drawing Number
MMD-286054-C-PA-CD-0005



PLAN
SCALE 1:250

NOTE:
ALL ROADS AND STORMWATER SHOWN ON THIS PLAN HAVE BEEN APPROVED UNDER PROJECT APPLICATION MP09_0164 AND MP08_0210

Notes

Key to symbols

Reference drawings

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Title
**CENTRAL PARK
BLOCK 4S
CONCEPT STORMWATER
LAYOUT PLAN**

Designed	CB	Eng check	
Drawn	MM	Coordination	
Dwg check		Approved	
Scale at A1	1:250	Status	PRELIM
Rev			P1
Drawing Number		MMD-286054-C-PA-CD-0006	