HYDRAULIC | CIVIL | FIRE

SPARKS +PARTNERS CONSULTING ENGINEERS

Suites 6 & 7, 2-6 Hunter Street
PARRAMATTA NSW 2150

Contact 02 9891 5033
admin@sparksandpartners.com.au

sparksandpartners.com.au

INTEGRATED WATER CYCLE MANAGEMENT REPORT

HUNTINGWOOD PROCESSING EXPANSION – STAGE 1

65 HUNTINGWOOD DRIVE, HUNTINGWOOD
(LOT1 DP866251)

Date:	18 June 2025
Revision:	001
Issue:	50% Issue
Ref. No.:	24334

Prepared for: **Arnott's Biscuits Limited**
C/- FDC Construction

Disclaimer

This specification (including any enclosures and attachments) has been prepared for the exclusive use and benefit of the addressee(s) and solely for the purpose for which it is provided. Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party. We do not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report.

Document Control

Revision	Date	Description	Prepared	Reviewed	Approved
1	18.02.25	DRAFT Issue	DD	MW	MW
2	18.06.25	50% Issue	DD	MW	MW

Prepared by	Daniel Drewitt	Revision	1
Approved by	Morgan Walter	Revision	1

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

Sparks & Partners have been engaged by FDC on behalf of Arnott's Biscuits Limited, to provide civil engineering services to support the proposed modification to the approved State Significant Development Application (SSDA) (SSD-17352813) for 65 Huntingwood Drive, Huntingwood. The engineering services include the design and documentation of the stormwater drainage infrastructure and finished pavement levels for the proposed development.

The Department of Planning, Housing and Infrastructure (DPHI), being the approval authority for the proposed development, requires a report to address the proposed modifications to the approved SSDA for 65 Huntingwood Drive, Huntingwood. Consideration has also been given to the agency comments from Blacktown City Council (BCC). In response to this requirement Sparks and Partners have undertaken modelling of the proposed integrated water management measures and prepared this report to demonstrate that the proposed development identifies and incorporates water conservation and stormwater management measures into its design and operation in accordance with Blacktown City Council Development Control Plan 2015 Part J

2. INTRODUCTION

2.1 Existing Site

The site is located at 65 Huntingwood Drive, Huntingwood and has an approximate total area of 163,933m^2. The property is bounded by Huntingwood Drive along its northern boundary, Brabham Drive along its western boundary, neighbouring industrial lots along its eastern boundary and the M4 motorway along its southern boundary. The site is occupied by Arnotts Biscuits Limited and is used for their Australian manufacturing operations. The site consists of several large industrial buildings, asphalt parking, concrete hardstand and landscaping. A playing field also acts as an above ground on-site detention (OSD) tank for a portion of the existing site. A copy of the existing site survey is provided in Appendix A for reference, along with an aerial image in Figure 1 below.

Figure 1. Figure 1. Site Locality Plan (Source: Near Maps)

2.2 Proposed Development

The proposal seeks to modify the approved expansion of the Arnott's facility by introduction a Stage 1 development that includes the construction and operation of the following buildings/facilities:

- Oven Annex
- Engineering shed, including minor hardstand extensions to accommodate the facility
- Chocolate manufacturing building, including ancillary high voltage building
- Enrobing annex
- Packing material warehouse

The new process facility (now stage 2) that was approved for the north-western corner of the site was assessed in an earlier report (20214_C_RPT_IWCM) prepared in support of the original SSDA. This earlier report remains applicable to the new processing facility notwithstanding the minor amendments to building at ground level. Detailed architectural plans of the proposed development have been prepared by HLA Architects and are to be read in conjunction with this report.

3. INTEGRATED WATER MANAGEMENT

3.1 General

The objective of integrated water management is to provide a strategy that brings together the different aspects of the water cycle rather than an ad hoc approach to water management. This includes the management aspects of freshwater, wastewater and stormwater. The following integrated water management strategies have been considered and addressed for the proposed development:

1. Employ an integrated water collection and recycling system for capturing and recycling roofwater.
2. Control the quality of stormwater that is disposed of from the site.
3. Control the quantity of stormwater that is discharged for the site.

To demonstrate the above concept stormwater drainage plans and associated details have been prepared along with detailed modelling using the BCC endorsed MUSIC software package. The concept stormwater drainage plans detail the location of the water management infrastructure including pits, pipes, on-site stormwater (OSD) tank, rainwater tank (RWT), OceanGuard filter baskets, Stormfilter cartridges and Jellyfish filters and are included in Appendix A.

3.2 Water Conservation

Water usage reduction is to be achieved throughout the development through the use of water use fittings which comply with the minimum standards defined by the Water Efficiency Labelling and Standards (WELS) scheme.

3.3 Rainwater Reuse

The proposed development does not include an increase in the number of toilets or the area of landscaping within the site. Considering this it is proposed that no rainwater tanks will be provided as there is no non potable water demand for the proposed works.

3.4 Stormwater Quality

The development is located within Section 7.11 Contributions Plan No. 19 Voluntary Contribution Scheme Boundary as per BCC mapping within Part J of their DCP. It is proposed that the development will not enter into a Voluntary Planning Agreement (VPA) with Blacktown Council.

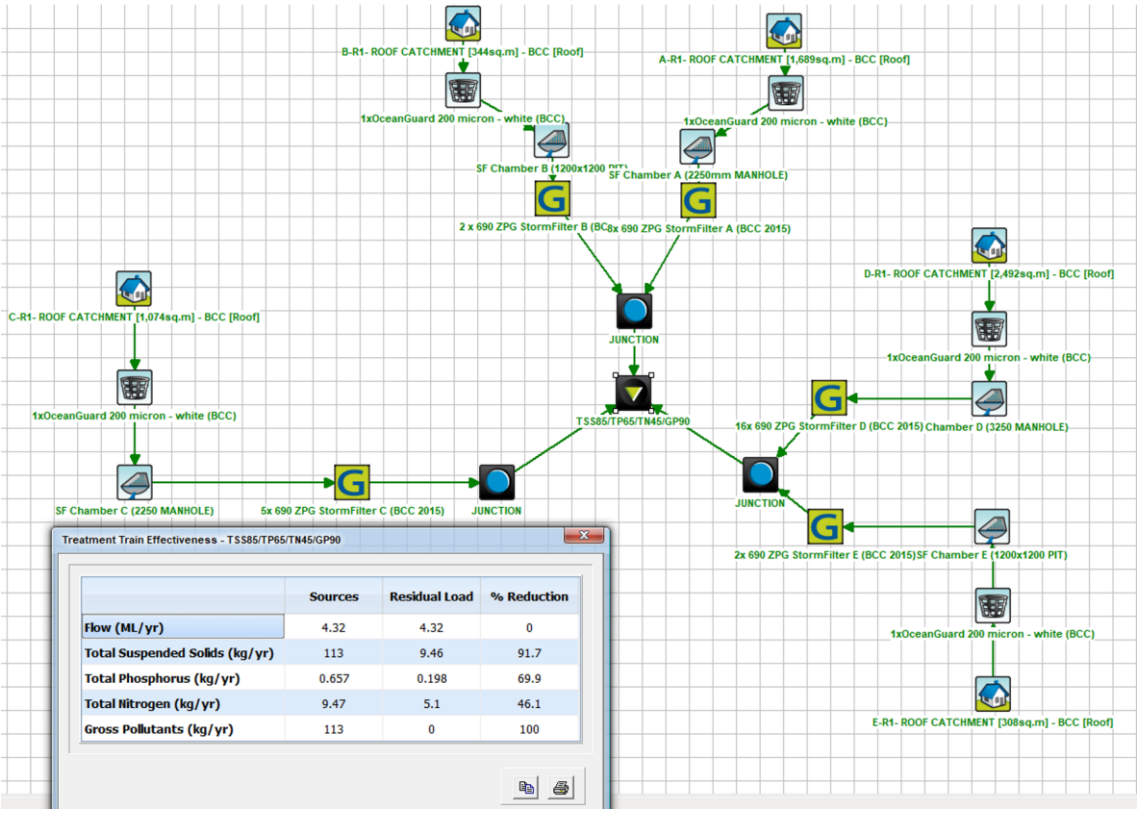
As per Council's WSUD Developer Handbook 2020 the development is treatment stormwater runoff to achieve Council's pollution reduction targets for gross pollutants, suspended solids, phosphorous, nitrogen and hydrocarbons.

A treatment train of a 33 x 690 ZPG Ocean Protect 'StormFilter' cartridges and 5 x Ocean Protect 'OceanGuard' pit inserts have been proposed for use within the development to achieve Blacktown Council's pollution reduction targets. A 90% reduction in hydrocarbons within the system is to be achieved through the installation of oil baffles within the stormfilter pits. Design drawings and a WSUD catchment plan are attached in Appendix A.

Modelling of the proposed treatment measures has been undertaken using MUSIC software package version 6. The modelling inputs have been based on the pre-loaded BCC nodes using MUSIC-link. The modelling results of the water quality achieved for the site is detailed in Table 1 – MUSIC Model Results below, along with a figure of the prepared model.

	Source Load	Residual Load	% Reduction Achieved	BCC % Reduction Requirement	Compliance with BCC Requirement
Gross Pollutants (kg/yr)	113	0	100	90	Y
Total Suspended Solids (kg/yr)	113	9.46	91.7	85	Y
Total Phosphorous (kg/yr)	0.657	0.198	69.9	65	Y
Total Nitrogen (kg/yr)	9.47	5.1	46.1	45	Y

Table 1. MUSIC Model Results



3.5 Stormwater Quantity

The existing site at 65 Huntingwood Drive, Huntingwood already includes three (3) on-site stormwater detention systems. These systems are.

1. Above ground basin located at the corner of Huntingwood Drive and Brabham Dr.
2. Above ground basin located due south of the above basin adjacent Arnott's distribution access driveway.
3. Below ground tank located in the southwestern corner of the site.

Majority of the site drains to the first above ground basin which captures runoff from the staff car park, half the main Arnotts manufacturing building, entrance driveway and landscaping areas around the northwestern corner of the site. The other half of manufacturing building, eastern and southern eastern concrete hardstand and landscaping areas drain into the second above ground basin. Arnotts distribution building along the southern boundary of the site drains to both the second above ground basin and the below ground OSD tank.

In the context of the proposed development all proposed ancillary buildings and annexes will continue to drain into their respective OSD systems as per the existing conditions on site. Considering this it's proposed that no additional OSD system or amendments to the exiting systems are required as the site has sufficiently sized OSD systems to comply with the requirements of Blacktown City Council.

3.6 Maintenance and Monitoring

To ensure the continued efficient and correct operation of the proposed integrated water management infrastructure a 'maintenance and monitoring schedule' is included in Appendix B of this plan. The schedule details the frequency of inspections, what is to be inspected and what rectifications to make if required for the water management infrastructure located within the proposed development. The schedule is to be implemented upon commissioning of the water management infrastructure and remain in place for the life of the development; with all records kept on site for inspection should the approval authority deem it necessary.

CONCLUSION

Based on the preparation of the concept stormwater drainage plans and MUSIC modeling results it is demonstrated that the principles of integrated water management have been incorporated into the design and operation of the proposed development at 65 Huntingwood Drive, Huntingwood in accordance with BCCDCP 2015 Part J. It is demonstrated that the proposed development achieves reductions in potable water import by capturing rainwater on site and reusing this for non-potable uses including irrigation and toilet flushing, achieves pollution reduction targets set by council, and employs OSD for the control of stormwater discharge from the site in accordance with targets set by council. It is also demonstrated that the proposed development employs water conservation measures that will continue to operate effectively and efficiently through the implementation and use of a monitoring and maintenance schedule ensuring the integrity of the system is maintained.

APPENDIX A. CONCEPT DRAINAGE PLANS

PROPOSED INDUSTRIAL DEVELOPMENT
LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD
CIVIL WORKS

SITE / LOCATION (IMAGE COURTESY OF NEARMAP 25/01/2025)

DRAWING SCHEDULE

NOT TO SCALE

DEVELOPMENT APPLICATION

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hla architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DRAWING TITLE: CIVIL DESIGN COVER SHEET

DATE	DRAWN	DESIGNED	CHECKED
AUG 2025	--	--	--

SCALE	SIZE	REVISION
NTS		1

PROJECT No: 25182

DRAWING No: DA1101

SURVEY

1. LEVELS BASED ON SURVEY PREPARED BY:
   SEAM SPATIAL, REF. 2119 REV A & 24.01.25]

APPROVAL AUTHORITY

1. CIVIL DESIGN IS SUBJECT TO APPROVAL FROM THE FOLLOWING AUTHORITIES:
   1.1. BLACKTOWN COUNCIL

STORMWATER DESIGN CRITERIA

1. DESIGN CRITERIA.
   1.1. ROOF DRAINAGE - 1:100YR ARI
   1.2. PIPED DRAINAGE - 1:20YR ARI
   1.3. OVERLAND FLOWS - GAP FLOW BETWEEN 1:20YR ARI & 1:100YR ARI

DESIGN GUIDES

1. BLACKTOWN CITY COUNCIL - DCP - PART J WATER SENSITIVE URBAN DESIGN AND INTEGRATED WATER CYCLE MANAGEMENT, 2015
2. BLACKTOWN CITY COUNCIL WSUD DEVELOPER HANDBOOK, 2020
3. BLACKTOWN CITY COUNCIL ENGINEERING GUIDE FOR DEVELOPMENTS, 2005
4. AS1428.1:2009 DESIGN FOR ACCESS AND MOBILITY, PART 1: GENERAL REQUIREMENTS FOR ACCESS - NEW BUILDING WORKS
5. AS2890.2:2002 PARKING FACILITIES, PART 2: OFF-STREET COMMERCIAL VEHICLE FACILITIES
6. AS2890.6:2009 PARKING FACILITIES, PART 6: OFF-STREET PARKING FOR PEOPLE WITH DISABILITIES
7. AS3500.3:2018 PLUMBING AND DRAINAGE, PART 3: STORMWATER DRAINAGE

RAINWATER RE-USE

RAINWATER TANK

EFFECTIVE VOLUME: 2 kL

ROOF CATCHMENT AREA: 344m^2

REUSE:

1 TOILET FLUSHING

DEVELOPMENT APPLICATION (DA)

1. DOCUMENTS ARE PROVIDED FOR DA APPROVAL PURPOSES ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION
2. STORMWATER DESIGN SHOWN IS CONCEPTUAL ONLY AND SUBJECT TO FINAL DESIGN AT CONSTRUCTION CERTIFICATE STAGE
3. FINISHED LEVELS SHOWN ARE CONCEPTUAL ONLY AND SUBJECT TO DETAILED DESIGN AT CONSTRUCTION CERTIFICATE STAGE. FINAL FINISHED LEVELS TO BE ±0.5m FROM LEVELS SHOWN

SITE WORKS - GENERAL

1. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH LOCAL COUNCIL, AUSTRALIAN AND AUTHORITY STANDARDS.
2. ALL TRENCHING WORKS ARE TO BE RESTORED TO ORIGINAL CONDITION.
3. THE INTEGRITY OF ALL EXISTING AND NEW SERVICES IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. ALL PLANS ARE TO BE READ IN CONJUNCTION WITH APPROVED ARCHITECTS, STRUCTURAL ENGINEERS AND OTHER CONSULTANT'S PLANS. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER FOR CLARIFICATION.
5. THE ENGINEER SHALL BE GIVEN A MIN. OF 48 HOURS NOTICE FOR ALL STORMWATER DRAINAGE AND PAVEMENT INSPECTIONS. CONCRETE SHALL NOT BE DELIVERED UNTIL ENGINEERS APPROVAL IS OBTAINED.

SITE WORKS - ACCESS AND SAFETY

1. ALL WORKS ARE TO BE UNDERTAKEN IN A SAFE MANNER IN ACCORDANCE WITH ALL STATUTORY AND INDUSTRIAL RELATION REQUIREMENTS.
2. ACCESS TO ADJACENT BUILDINGS AND PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
3. WHERE NECESSARY SAFE PASSAGE SHALL BE PROVIDED FOR VEHICLES AND PEDESTRIANS THROUGH OR ADJACENT TO THE SITE.

EXISTING UTILITIES

1. UTILITY INFORMATION SHOWN ON PLAN DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE BASED ON AVAILABLE DOCUMENTARY EVIDENCE
2. THE PRESENCE OF A UTILITY SERVICE, SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION PRIOR TO THE COMMENCEMENT OF ROAD WORKS, AND THE RELATED UTILITY PLANS OBTAINED BY DIALING 110 OR FAX 130 652 077 (DIAL BEFORE YOU DIG)
3. UTILITY LOCATION,SIZE AND DEPTH TO BE CONFIRMED BY SERVICE LOCATING OR NON-DESTRUCTIVE EXCAVATION PRIOR TO CONSTRUCTION. ALL CLASHES WITH PROPOSED SERVICES ARE TO BE RESOLVED
4. CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE RELEVANT SERVICES AUTHORITIES OF THE WORKS AND VERIFY THE LOCATION OF ALL EXISTING SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITIES COMMENCING
6. THE CONTRACTOR SHALL LIAISE AND COORDINATE THE TIMING OF THE CONSTRUCTION OF THE WORKS WITH THE RELEVANT SERVICES CONCURRENTLY AT THIS SITE
7. THE CONSTRUCTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED TO EXISTING SERVICES AS A RESULT OF THE CONSTRUCTION WORKS

SEDIMENT AND EROSION CONTROL

1. THE CONTRACTOR SHALL INSTIGATE ALL SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH COUNCIL AND THE "BLUE BOOK" (MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION, PRODUCED BY THE DEPARTMENT OF HOUSING). THESE MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED.
2. THE SEDIMENT & EROSION CONTROL PLAN PRESENTS CONCEPTS ONLY, THE CONTRACTOR SHALL AT ALL TIMES BE RESPONSIBLE FOR THE ESTABLISHMENT & MANAGEMENT OF A DETAILED SCHEME MEETING COUNCIL'S DESIGN, AND ALL OTHER REGULATORY AUTHORITY REQUIREMENTS.
3. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE SHALL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
   a. INSTALL ALL TEMPORARY SEDIMENT FENCES AND BARRIER FENCES. WHERE FENCES ARE ADJACENT TO EACH OTHER THE SEDIMENT FENCE CAN BE INCORPORATED INTO THE BARRIER FENCE.
   b. CONSTRUCT TEMPORARY STABILISED SITE ACCESS. INCLUDING SHAKE DOWN AND WASH PAD.
   c. INSTALL SEDIMENT CONTROL MEASURES AS OUTLINED ON THESE SEDIMENT AND CONTROL PLANS (ONCE APPROVED)
4. THE CONTRACTOR SHALL UNDERTAKE SITE DEVELOPMENT WORKS SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF MINIMUM WORKABLE SIZE.
5. AT ALL TIMES AND IN PARTICULAR DURING WINDY AND DRY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. TACKIFIERS MAY BE USED TO CONTROL DUST DURING EXTENDED PERIODS OF DRY WEATHER.
6. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) SHALL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
7. WATER SHALL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN STABILISED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED OUT.
8. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED / REHABILITATED.
9. THE CONTRACTOR SHALL ALLOW FOR THE ESTABLISHMENT OF ANY OTHER EROSION PROTECTION MEASURES (IF APPLICABLE).
10. THE CONTRACTOR SHALL REGULARLY INSPECT (MINIMUM TWICE PER WEEK) ALL EROSION AND SEDIMENT CONTROL MEASURES TO ENSURE THEY ARE OPERATING EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN REGULARLY AND AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.
11. ACCEPTABLE RECEPTORS SHALL BE USED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER. WASTE FROM THESE RECEPTORS SHALL BE DISPOSED OF IN ACCORDANCE WITH REGULATORY AUTHORITY REQUIREMENTS. PAY ALL FEES AND PROVIDE EVIDENCE OF SAFE DISPOSAL.

STORMWATER

1. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS AS2032, AS3500 AND AS3725 AS A MINIMUM.
2. ALL PIPES LESS THAN OR EQUAL TO Ø300mm IN SIZE ARE TO BE SOLVENT WELD-JOINTED uPVC CLASS SN6 U.N.O.
3. ALL PIPES Ø375mm OR GREATER IN SIZE ARE TO BE MIN. CLASS 2 REINFORCED CONCRETE PIPE (RCP) WITH SPIGGOT AND SOCKETED JOINT OR FIBRE REINFORCED CONCRETE (FRC) WITH DOUBLE RUBBER RING COLLARED JOINT, OR SN8 RIBBED POLYPROPYLENE PIPE (STORMPRO, BLACKMAX ETC) U.N.O.
4. ALL PIPES ARE TO BE LAID AT MIN. 1.0% GRADE U.N.O.
5. PIPE BEDDING IS TO BE HS2 UNDER ROADS AND TRAFFICKED AREAS AND SHALL BE H2 IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS U.N.O.
6. ALL PIPE BENDS AND JUNCTIONS ARE TO BE MADE WITH EITHER PURPOSE MADE FITTINGS OR STORMWATER DRAINAGE PITS.
7. MINIMUM COVER FROM THE OBVERT OF THE STORMWATER PIPE OF 300mm IS TO BE PROVIDED IN LANDSCAPED AREAS AND 300mm IN VEHICULAR TRAFFICKED AREAS U.N.O.
8. WHERE MINIMUM COVER CANNOT BE ACHIEVED, CONCRETE ENCASEMENT OF THE AFFECTED PIPE MAY BE UNDERTAKEN WITH 20MPa CONCRETE WITH A MIN. COVER OF 150mm TO ALL SIDES OF THE PIPE. THE CONTRACTOR SHALL CONFIRM THIS REQUIREMENT WITH THE ENGINEER OR SUPERINTENDENT.
9. LAID PIPELINES ARE TO HAVE THE FOLLOWING CONSTRUCTED TOLERANCES:
   a. HORIZONTAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT;
   b. VERTICAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT.
10. ALL DRAINAGE PITS ARE TO BE CAST IN-SITU. PRECAST DRAINAGE PITS MAY BE USED WITH APPROVAL FROM THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PRECAST PIT INSTALLATION WORK METHOD STATEMENT FOR ASSESSMENT BY THE ENGINEER FOR APPROVAL.
11. DRAINAGE PIT COVERS ARE TO BE EITHER GALVANISED STEEL OR CAST IRON CLASS 'B' IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS AND CLASS 'D' IN ALL VEHICULAR TRAFFICKED AREAS U.N.O.
12. DRAINAGE PIT COVERS ARE TO BE 'HEELSAFE' TYPE IN ALL PEDESTRIAN TRAFFICKED AREAS U.N.O.
13. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED PRIOR TO COMMENCING WORKS ON SITE.
14. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
15. DOWN PIPES CONNECTED DIRECT TO PIPES TO BE CONNECTED AT 45° TO THE FLOW DIRECTION WITH A CLEANING EYE PROVIDED AT GROUND LEVEL.

FINISHED LEVELS

1. LEVELS BASED ON SITE SURVEY INFORMATION. THE CONTRACTOR SHALL VERIFY LEVELS PRIOR TO CONSTRUCTION COMMENCEMENT, ANY DISCREPANCIES SHALL BE NOTIFIED TO THE ENGINEER OR SUPERINTENDENT FOR CLARIFICATION
2. CARPARK & SERVICE AREA LAYOUT AND GRADES TO COMPLY WITH AS2890.
3. DRIVEWAY LAYOUT AND DESIGN TO COMPLY WITH APPROVAL AUTHORITY ACCESS DRIVEWAY DESIGN AND CONSTRUCTION SPECIFICATION.
4. ALL CONTOUR LINES & SPOT LEVELS INDICATE FINISHED PAVEMENT LEVELS U.N.O. ON PLAN.
5. PERMANENT BATTER SLOPES ARE TO HAVE A MAXIMUM GRADE OF 1V:3H.
6. ALL FOOTPATHS ARE TO FALL AWAY FROM THE BUILDING AT 2.5% NOMINAL. GRADE.
7. ALL PAVEMENTS ARE TO BE SET AT 50mm BELOW THE FINISHED FLOOR LEVEL OF THE WAREHOUSE AND OFFICE AREAS U.N.O

DESIGN SUMMARY (BLACKTOWN)

1. STORMWATER TREATMENT:
   REFER TO INTEGRATED WATER CYCLE MANAGEMENT REPORT BY SPARK AND PARTNERS CONSULTING ENGINEERS.

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hla architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DRAWING TITLE: CIVIL DESIGN SPECIFICATION SHEET

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
NTS		1

PROJECT No: 24334

DRAWING No: DA1201

LEGEND

SEDIMENT FENCE

MESH AND GRAVEL INLET FILTER

GEOTEXTILE INLET FILTER

SEDIMENT & EROSION CONTROL NOTES

1. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS
2. REFER TO DA2701 FOR SEDIMENT AND EROSION CONTROL DETAILS

INSTALL AND MAINTAIN SEDIMENT FENCE AROUND ALL DISTURBED AREAS. REFER TO DETAIL ON SHEET C2701

INSTALL AND MAINTAIN GRAVEL FILTER AROUND ALL STORMWATER PITS AFTER PAVEMENT IS CONSTRUCTED (TYPICAL)

DISTURBED SITE AREAS ARE TO BE SPRAYED DAMP IF WIND SPEEDS EXCEED 35.0km/h AS PER THE 'BLUE BOOK'

0 4 10 20
1:200

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hlg architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia DNV·GL ISO 9001 JAS-ANZ

DRAWING TITLE: CIVIL DESIGN CONCEPT SEDIMENT & EROSION CONTROL PLAN - ENGINEERING SHED

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

PROJECT No	SCALE	SIZE	REVISION
24334	1:200		1

DRAWING No: DA2101

SEDIMENT & EROSION CONTROL NOTES

1. REFER TO DA2101 FOR LEGEND AND NOTES

INSTALL AND MAINTAIN GRAVEL FILTER AROUND ALL STORMWATER PITS AFTER PAVEMENT IS CONSTRUCTED (TYPICAL)

DISTURBED SITE AREAS ARE TO BE SPRAYED DAMP IF WIND SPEEDS EXCEED 35.0km/h AS PER THE 'BLUE BOOK'

INSTALL AND MAINTAIN SEDIMENT FENCE AROUND ALL DISTURBED AREAS. REFER TO DETAIL ON SHEET C2701

SITE BOUNDARY

1:200 0 4 10 20

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hla architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia DNV·GL ISO 9001 JAS-ANZ

DRAWING TITLE: CIVIL DESIGN CONCEPT SEDIMENT & EROSION CONTROL PLAN - CHOCOLATE BUILDING

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

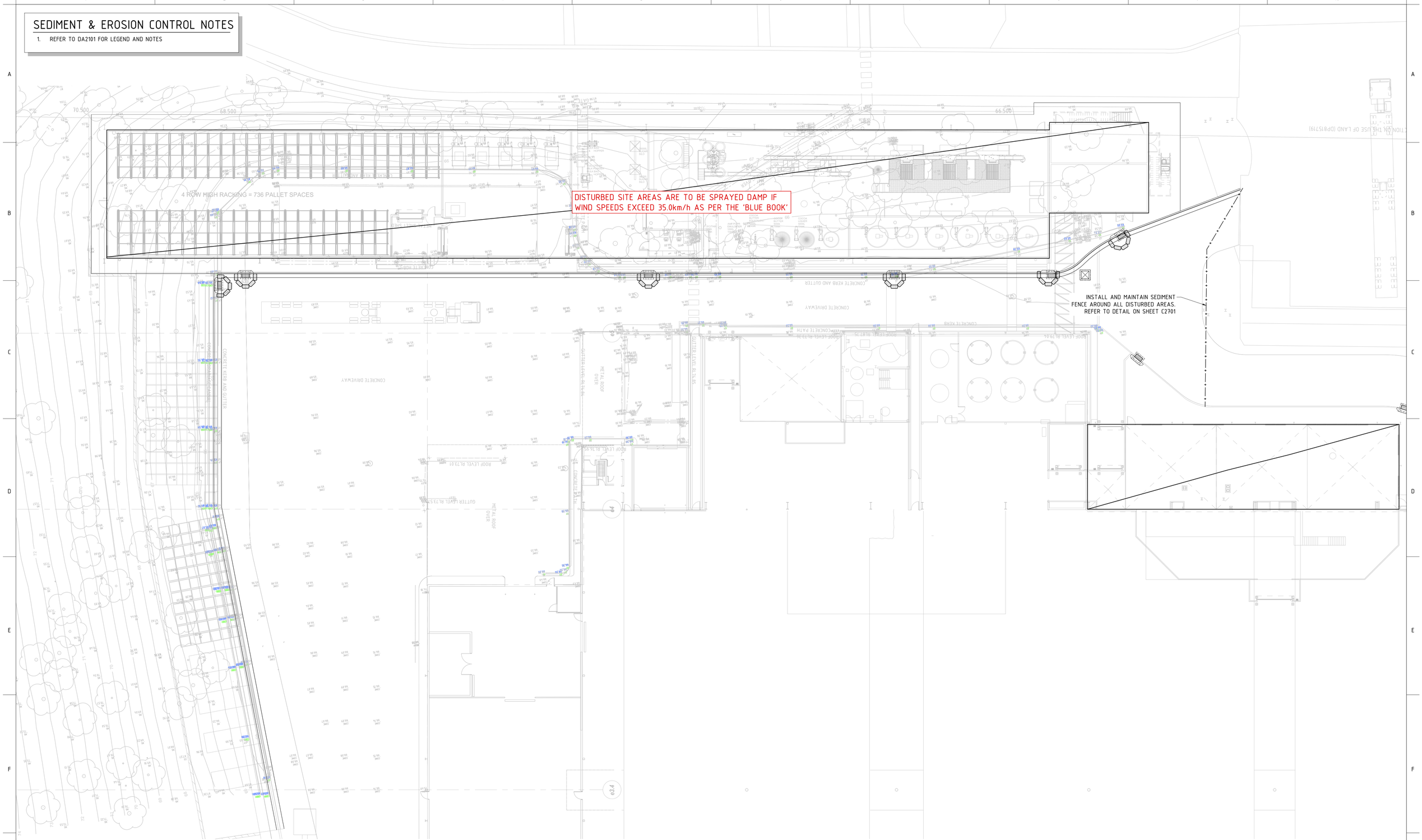
SCALE	SIZE	REVISION
1:200		1

PROJECT No: 24334

DRAWING No: DA2111

SEDIMENT & EROSION CONTROL NOTES

1. REFER TO DA2101 FOR LEGEND AND NOTES



0 4 10 20
1:200

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT ©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

ARCHITECT: hla architects

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

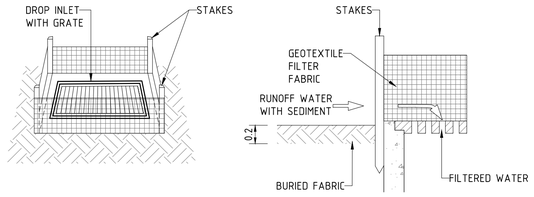
HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia DNV·GL ISO 9001 JAS-ANZ

DRAWING TITLE: CIVIL DESIGN
CONCEPT SEDIMENT & EROSION CONTROL PLAN - PACKING WAREHOUSE

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		1

PROJECT No: 24334
DRAWING No: DA2121

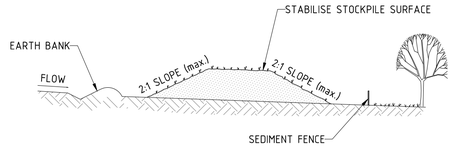


GEOTEXTITLE INLET FILTER

NOT TO SCALE

NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.0m LONG STAR PICKETS INTO GROUND AT THE FOUR CORNERS OF PIT WALLS. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

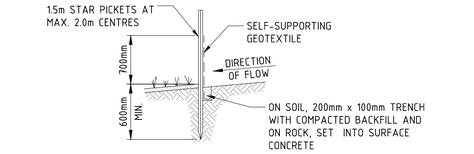


STOCKPILE

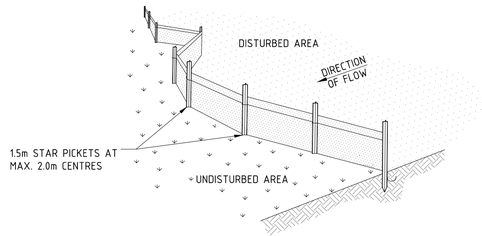
NOT TO SCALE

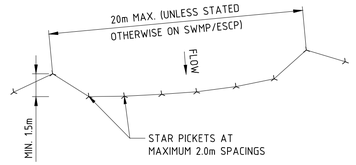
NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. 4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.



SECTION DETAIL





PLAN

SEDIMENT FENCE

NOT TO SCALE

NOTES:

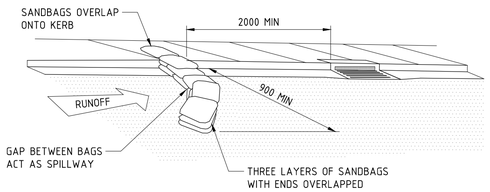
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50L/s IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 200mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND AT 2.0m INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

STABILISED SITE ACCESS

NOT TO SCALE

MAINTENANCE

- THE TEMPORARY ACCESS SHALL BE MAINTAINED IN A CONDITION THAT PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY,
- THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT,
- ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.
- INSTALL BARRIER ON EITHER SIDE OF SHAKER PAD TO ENSURE VEHICLES ARE GUIDED ON TO THE PAD.
- INVERT OF SHAKER PAD TO BE DRAINED VIA AGRICULTURAL PIPE WRAPPED IN GEOTEXTILE FABRIC.



SEDIMENT TRAP FOR KERB INLET (ONGRADE SAND BAGS)

NOT TO SCALE

NOT TO SCALE

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hlg architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

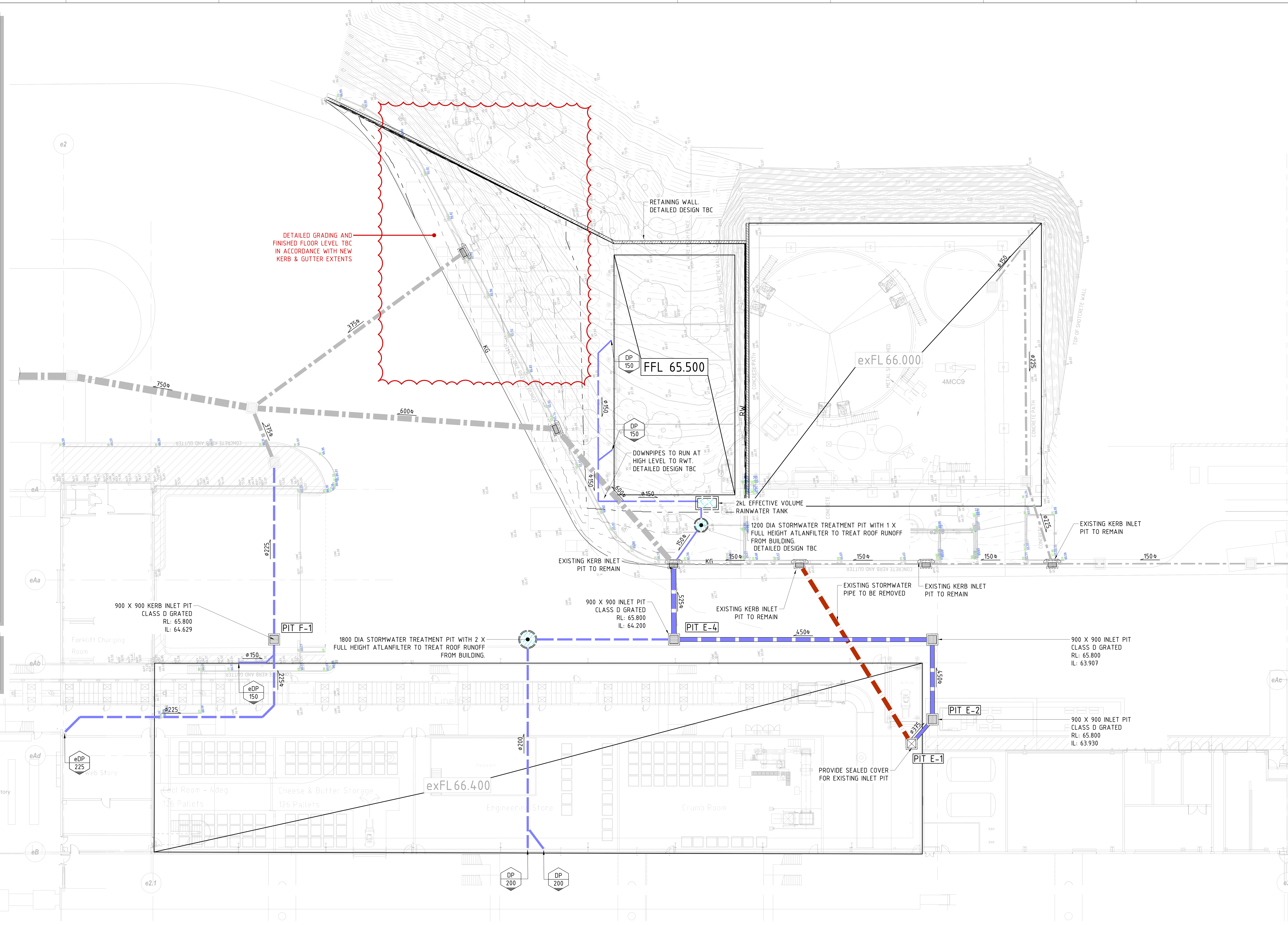
HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DRAWING TITLE: CIVIL DESIGN
CONCEPT SEDIMENT & EROSION CONTROL DETAILS

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		1

PROJECT No: 24334
DRAWING No: DA2701



LEGEND

- PROPOSED STORMWATER PIPE (≤ø300)
- PROPOSED STORMWATER PIPE (≥ø375)
- EXISTING STORMWATER PIPE
- EXISTING STORMWATER PIPE TO BE REMOVED OR REDUNDANT
- PROPOSED STORMWATER INLET PIT (GRATED COVER)
- PROPOSED STORMWATER JUNCTION PIT (SEALED COVER)
- EXISTING KERB INLET PIT
- EXISTING STORMWATER INLET PIT (LEFT: GRATED COVER - RIGHT:SEALED COVER)
- EXISTING STORMWATER PIT TO BE REMOVED (LEFT: GRATED COVER - RIGHT:SEALED COVER)
- GTD — PROPOSED GRATED TRENCH DRAIN
- DRAINAGE SWALE
- ø225 — PIPE FLOW DIRECTION AND SIZE
- eø225 — EXISTING PIPE FLOW DIRECTION AND SIZE
- DP — PROPOSED DOWNPIPE
- DP / 150 — FLOW DIRECTION, SERVICES, DIAMETER, FLOW DIRECTION. SERVICES: DP = DOWNPIPE, OF = OVERFLOW
- TREATMENT CHAMBER/DEVICE
- 20.000 — FINISHED SURFACE MAJOR CONTOUR LINE
- 20.100 — FINISHED SURFACE MINOR CONTOUR LINE
- 20.150 — FINISHED SURFACE CREST/TRANSITION LINE
- FFL 555.555 — FINISHED FLOOR LEVEL OF PROPOSED BUILDING
- + FS55.555 — FINISHED SURFACE LEVEL
- + TOW55.555 — TOP OF WALL LEVEL
- + BOW55.555 — BOTTOM OF WALL LEVEL
- + TOK55.555 — TOP OF KERB LEVEL
- + IOK55.555 — INVERT OF KERB LEVEL
- FALL 5.0% / FALL 1:20 — DIRECTION OF SURFACE FALL
- PROPERTY BOUNDARY LINE
- EASEMENT BOUNDARY LINE
- IK — PROPOSED INTEGRAL KERB - REFER DETAIL
- RW — RETAINING WALL
- DRAINAGE SWALE
- VEHICLE BARRIER FENCE
- PEDESTRIAN FENCE

STORMWATER MANAGEMENT NOTES

1. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS
2. REFER TO DA4301 FOR STORMWATER CATCHMENT PLAN
3. REFER TO DA4701 FOR STORMWATER MANAGEMENT DETAILS

0 4 10 20
1:200

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
28.02.25	PRELIMINARY ISSUE	DD	1
11.09.25	80% SSDA ISSUE	DD	2

KEY PLAN

PRELIMINARY

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hlc architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC I CIVIL I FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

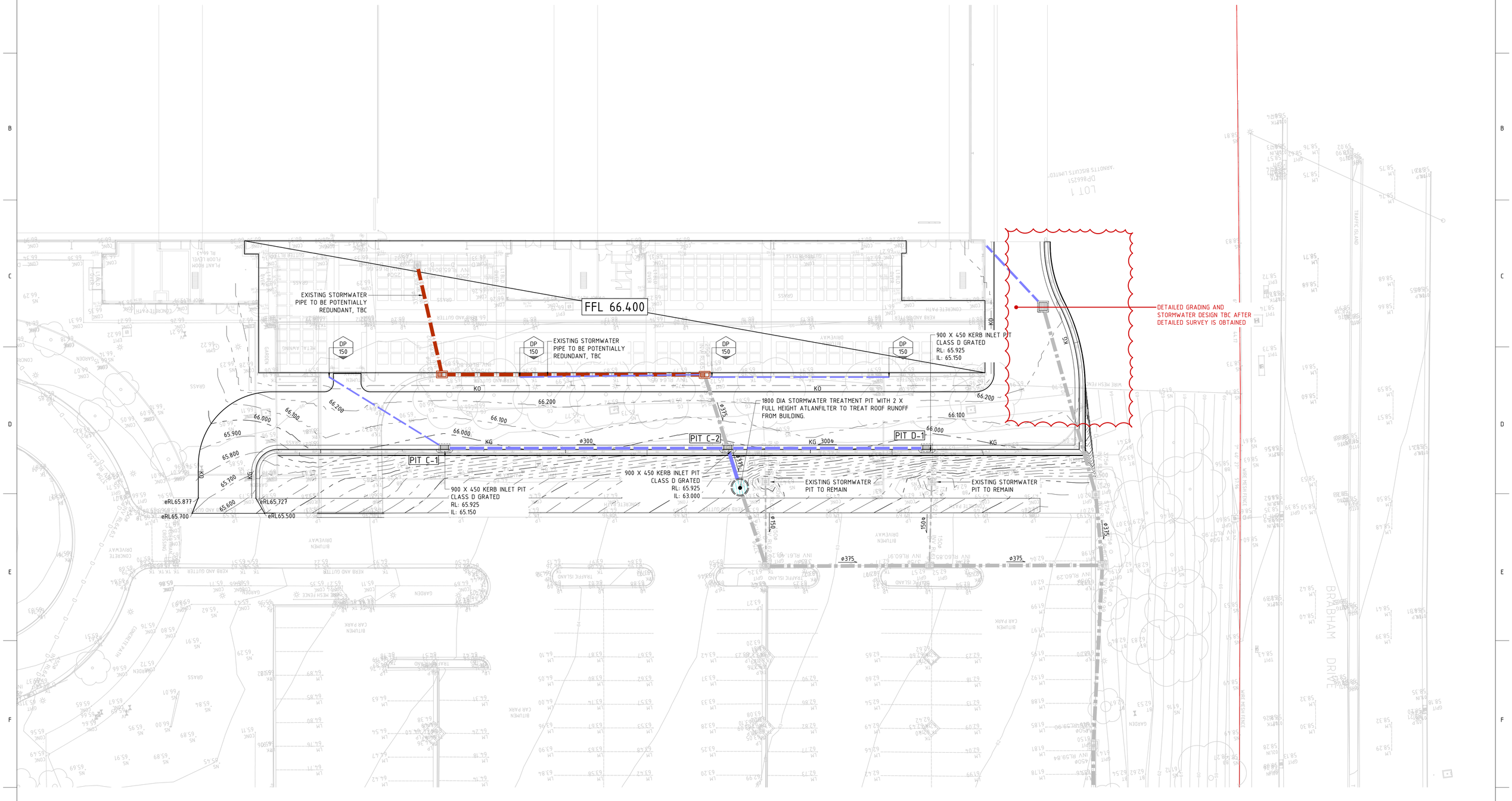
DRAWING TITLE: CIVIL DESIGN CONCEPT STORMWATER & GRADING PLAN - ENGINEERING SHED

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

PROJECT No	SCALE	SIZE	DRAWING No	REVISION
24334	1:200		DA4101	2

STORMWATER MANAGEMENT NOTES

1. REFER TO DA4101 FOR LEGEND AND NOTES



0 4 10 20
1:200

PRELIMINARY

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
28.02.25	PRELIMINARY ISSUE	DD	1
11.09.25	80% SSDA ISSUE	DD	2

DATE	AMENDMENT	INIT	REV

KEY PLAN

CLIENT
Charter Hall

BUILDER
FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS
LOT 1, DP 866251,
65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT
hlg architects

SPARKS+PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DRAWING TITLE
CIVIL DESIGN
CONCEPT STORMWATER &
GRADING PLAN - CHOCOLATE
BUILDING

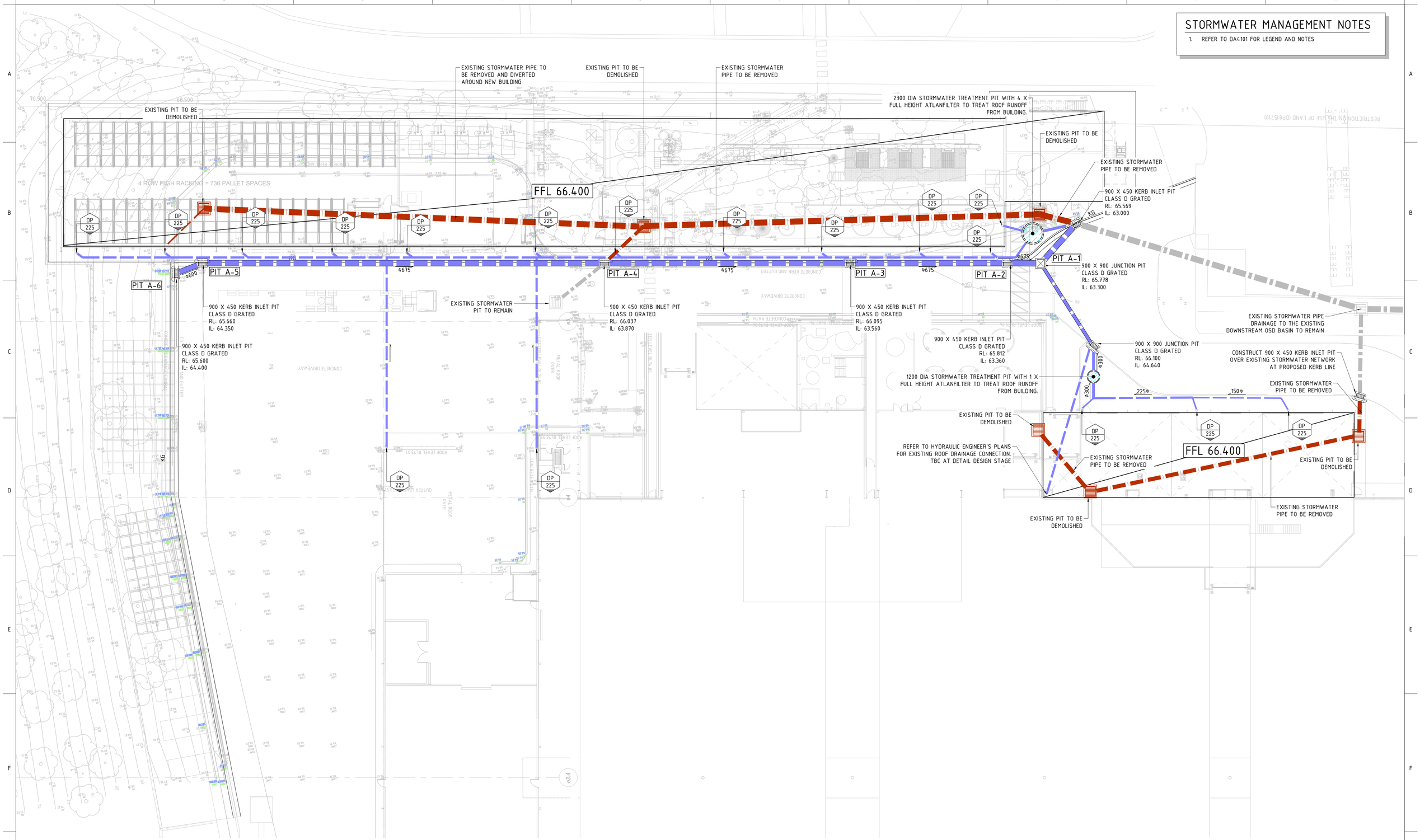
DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		2

PROJECT No 24334
DRAWING No DA4111

STORMWATER MANAGEMENT NOTES

1. REFER TO DA4101 FOR LEGEND AND NOTES



0 4 10 20
1:200

PRELIMINARY

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
28.02.25	PRELIMINARY ISSUE	DD	1
11.09.25	80% SSDA ISSUE	DD	2

DATE	AMENDMENT	INIT	REV

KEY PLAN

CLIENT
Charter Hall

BUILDER
FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS
LOT 1, DP 866251,
65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT
hla architects

SPARKS+PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia DNV·GL ISO 9001 JAS-ANZ

DRAWING TITLE
CIVIL DESIGN
CONCEPT STORMWATER & GRADING PLAN - PACKING WAREHOUSE

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		2

PROJECT No 24334

DRAWING No DA4121

LEGEND

A-R1 - PROPOSED ROOF CATCHMENT AREA TO OCEANGUARD (344m²)

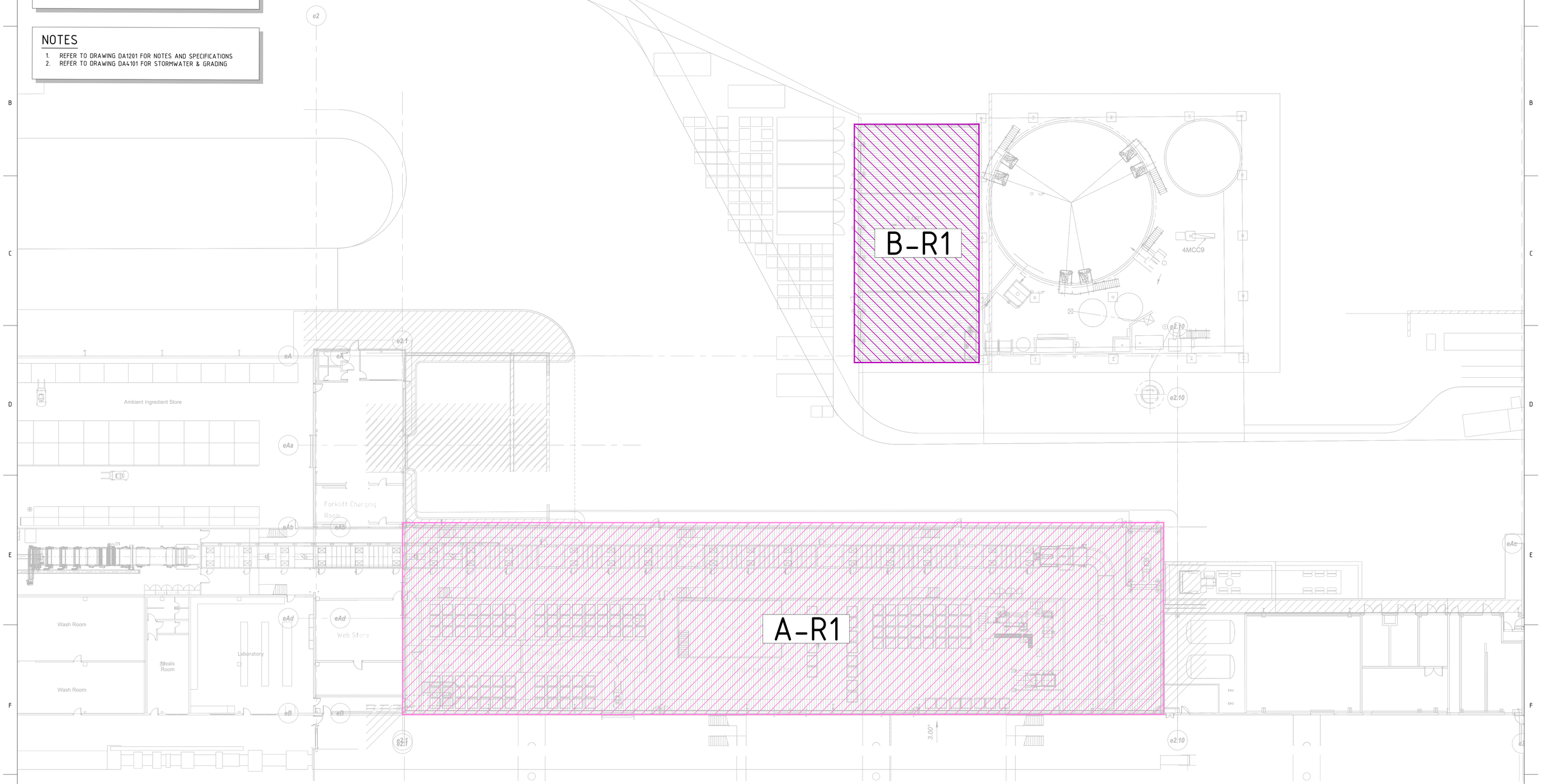
TOTAL CATCHMENT AREA TO SFA = 344m²

B-R1 - PROPOSED ROOF CATCHMENT AREA TO SFA (1,689m²)

TOTAL CATCHMENT AREA TO SFB = 1,689m²

NOTES

1. REFER TO DRAWING DA1201 FOR NOTES AND SPECIFICATIONS
2. REFER TO DRAWING DA4101 FOR STORMWATER & GRADING



1:200

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

ARCHITECT: hlc architects

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DEVELOPMENT APPLICATION

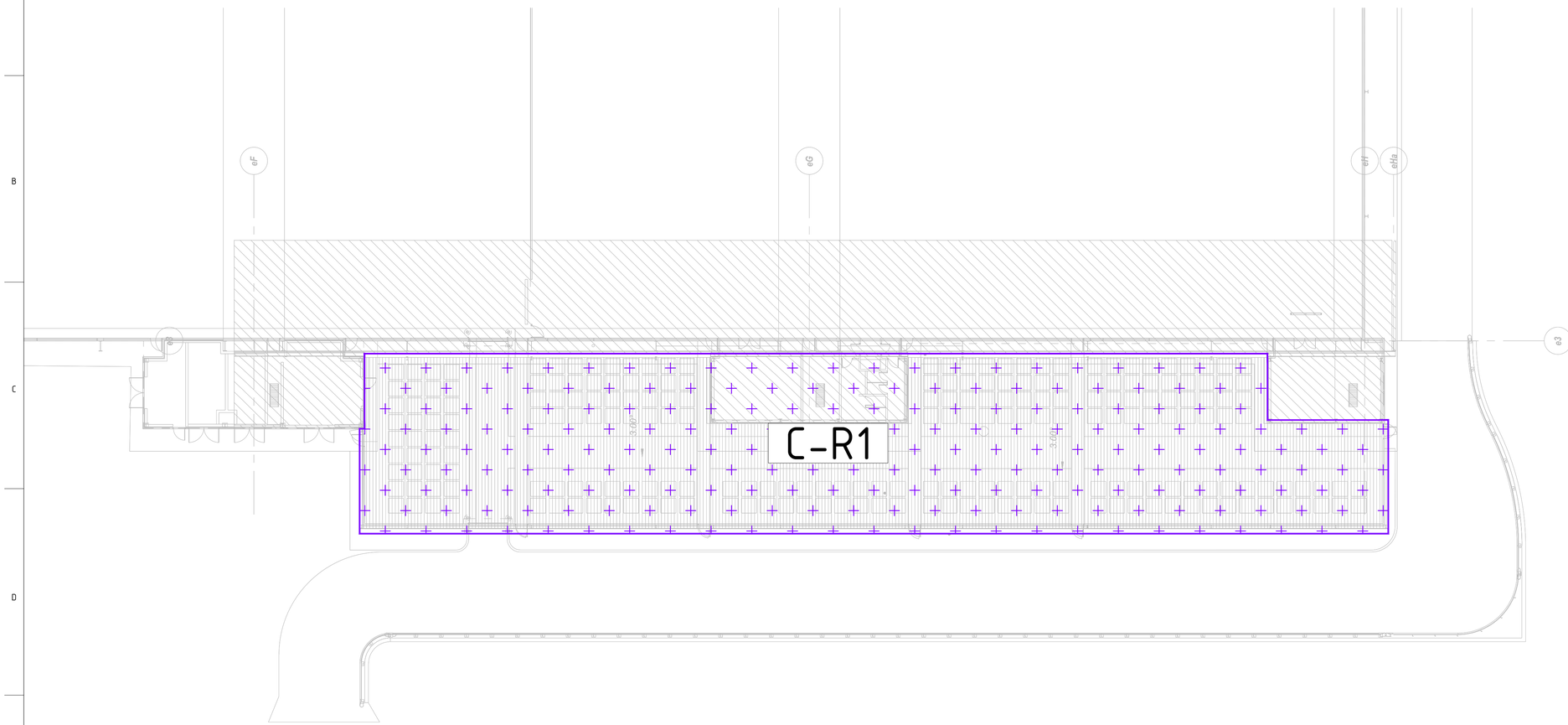
DRAWING TITLE: CIVIL DESIGN CONCEPT CATCHMENT PLAN - ENGINEERING SHED

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		1

PROJECT No: 24334

DRAWING No: DA4301



LEGEND

C-R1 - PROPOSED ROOF CATCHMENT AREA TO SFC (1,074m²)

TOTAL CATCHMENT AREA TO SFC = 1,074m²

NOTES

1. REFER TO DRAWING DA1201 FOR NOTES AND SPECIFICATIONS
2. REFER TO DRAWING DA4101 FOR STORMWATER & GRADING

0 4 10 20
1:200

DEVELOPMENT APPLICATION

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT ©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hlg architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

DRAWING TITLE: CIVIL DESIGN
CONCEPT CATCHMENT PLAN - CHOCOLATE BUILDING

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		1

PROJECT No: 24334
DRAWING No: DA4311

LEGEND

D-R1 - PROPOSED ROOF CATCHMENT AREA TO SFA (2,492m²)

TOTAL CATCHMENT AREA TO SFD = 2,492m²

E-R1 - PROPOSED ROOF CATCHMENT AREA TO SFA (308m²)

TOTAL CATCHMENT AREA TO SFE = 308m²

NOTES

1. REFER TO DRAWING DA1201 FOR NOTES AND SPECIFICATIONS
2. REFER TO DRAWING DA4101 FOR STORMWATER & GRADING

D-R1

E-R1

ROW HIGH RACKING - 73# PALLET SPACES

1:250
0 5 12.5 25

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hla architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA · FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia · DNV·GL ISO 9001 · JAS-ANZ

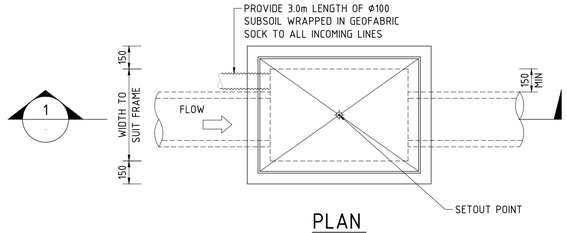
DEVELOPMENT APPLICATION

DRAWING TITLE: CIVIL DESIGN
CONCEPT CATCHMENT PLAN - PACKING WAREHOUSE

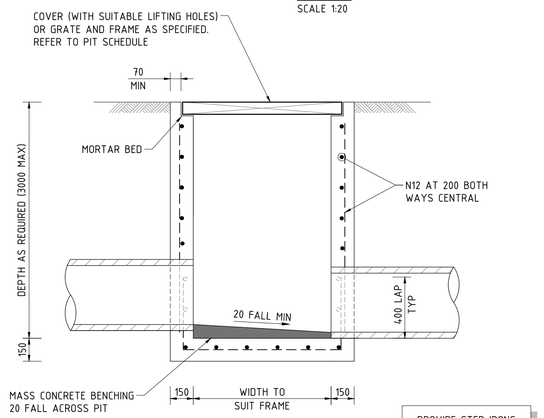
DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:200		1

PROJECT No: 24334
DRAWING No: DA4321



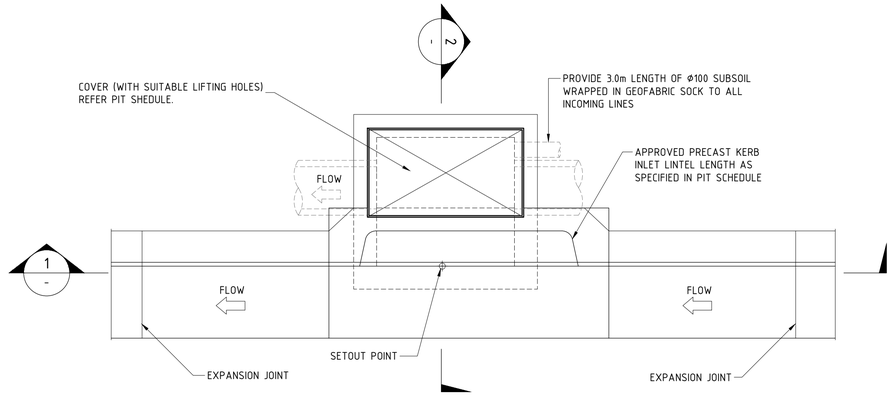
PLAN
SCALE 1:20



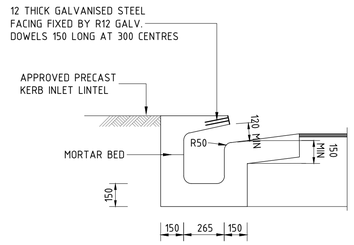
PROVIDE STEP IRONS
IF PIT DEEPER THAN
1000 (REFER DETAIL)

SECTION 1
SCALE 1:20

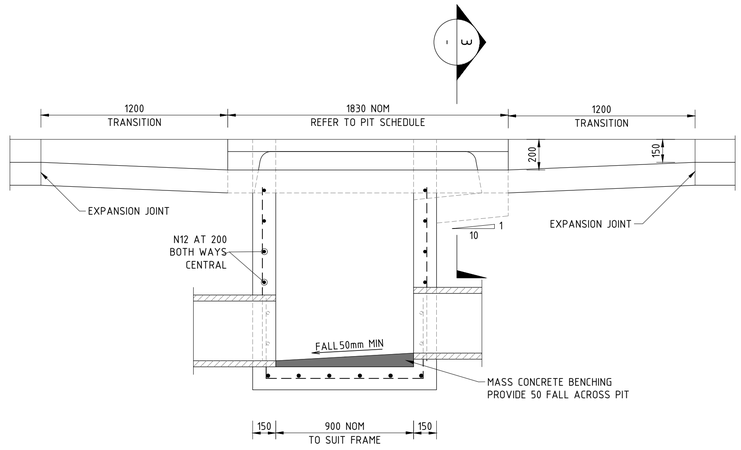
SURFACE INLET / JUNCTION PIT
(PIPE SIZES ≤ Φ450)



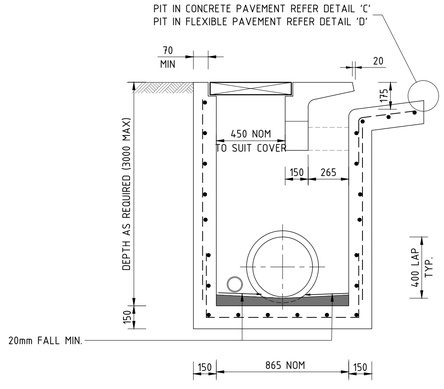
PLAN
SCALE 1:20



SECTION 3
SCALE 1:20

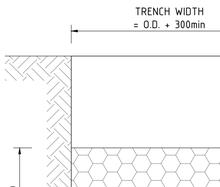


SECTION 1
SCALE 1:20



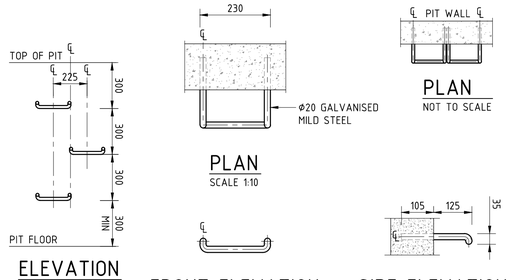
SECTION 2
SCALE 1:20

KERB INLET PIT (PIPE SIZE ≤ Φ450)
SCALE 1:20



GENERAL AREAS

TYPICAL PIPE TRENCH
SCALE 1:10



ELEVATION
NOT TO SCALE

PLAN
SCALE 1:10

PLAN
NOT TO SCALE

FRONT ELEVATION
SCALE 1:10

SIDE ELEVATION
SCALE 1:10

STEP IRON PLACEMENT TO PIT WALL
NOT TO SCALE

NOTES
1. TRENCH WIDTH MAY NEED TO BE INCREASED SUBJECT TO ACHIEVING ADEQUATECOMPACTION.
2. MINIMUM PIPE COVER: NOT UNDER ROADS
   - = 300mm (NOT UNDER ROADS)
   - = 600mm FOR CLASS 2 PIPES (UNDER ROADS)
3. THE CONTRACTOR SHALL ENSURE THAT THE SHORING OF TRENCHES IS INSTALLED AS REQUIRED BY STATUTORY REQUIREMENTS.
4. ENSURE BACKFILLING COMPACTION MEETS THE FOLLOWING STANDARDS
   - A) TRENCHES UNDER PAVED AREAS & BUILDINGS - 100% SMDD
   - B) TRENCHES NOT UNDER PAVEMENTS - 90% SMDD

0 0.4 1 2
1:20
0 0.2 0.5 1
1:10

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS. REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT©

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
11.09.25	80% SSDA ISSUE	DD	1

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hla architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC | CIVIL | FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia DNV·GL ISO 9001 JAS-ANZ

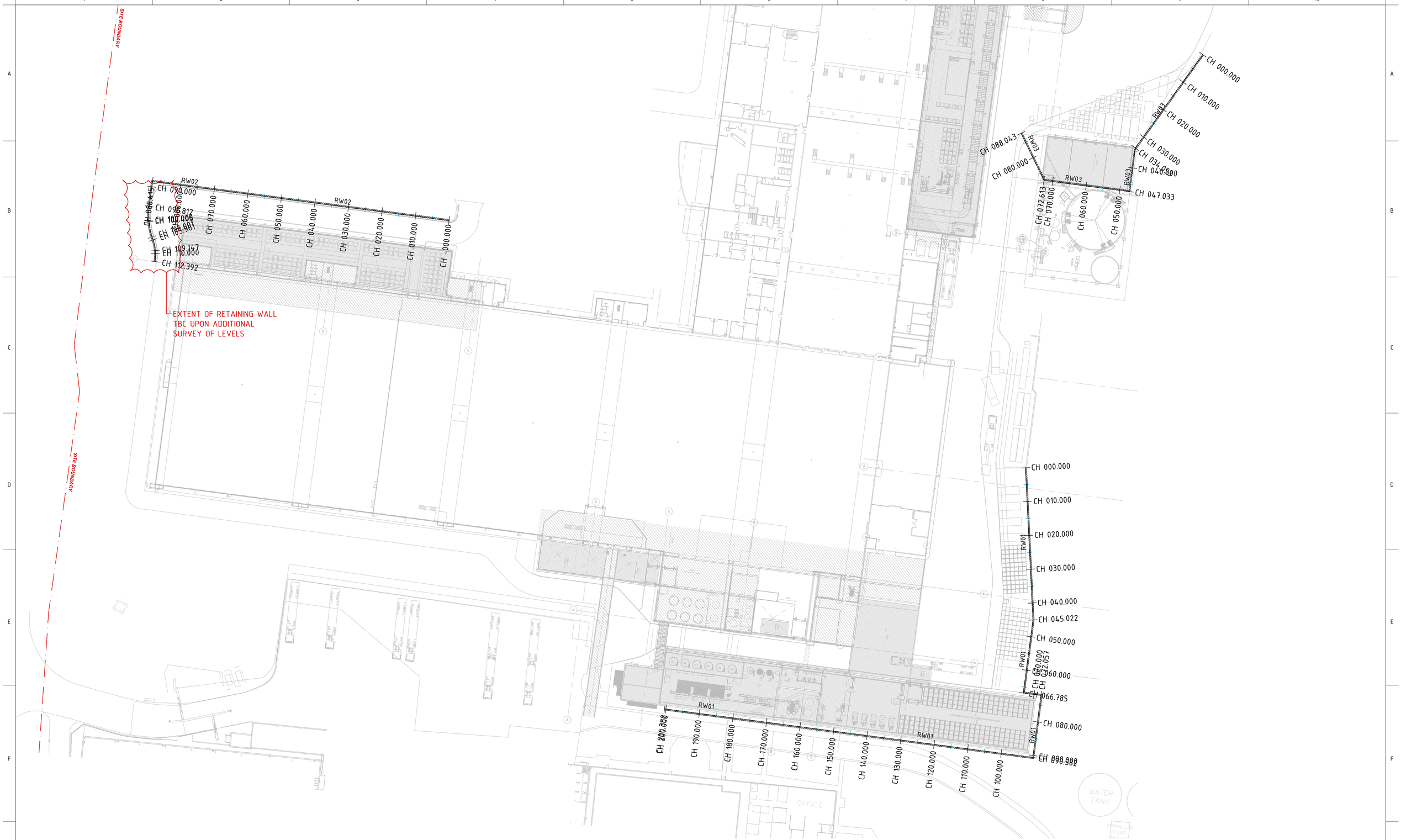
DRAWING TITLE: CIVIL DESIGN CONCEPT STORMWATER MANAGEMENT DETAILS

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
AS SHOWN		1

PROJECT No: 24334

DRAWING No: DA4701



0 10 25 50
1:500

PRELIMINARY ISSUE

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
31.01.25	50% ISSUE	MY	1
11.09.25	80% SSDA ISSUE	DD	2

KEY PLAN

CLIENT: Charter Hall

BUILDER: FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS: LOT 1, DP 866251, 65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT: hla architects

SPARKS+PARTNERS CONSULTING ENGINEERS HYDRAULIC I CIVIL I FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia DNV·GL ISO 9001 JAS-ANZ

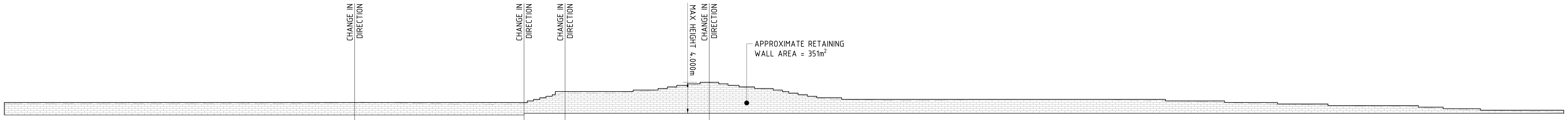
DRAWING TITLE: CIVIL DESIGN
CONCEPT RETAINING WALL
ALIGNMENT PLAN

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

SCALE	SIZE	REVISION
1:500		2

PROJECT No: 24334

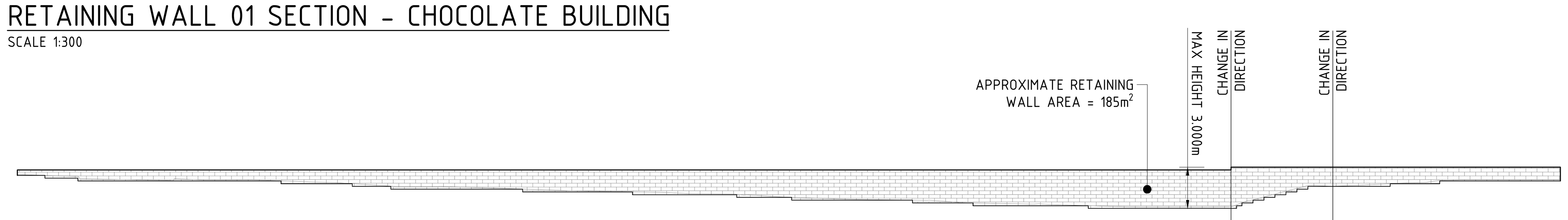
DRAWING No: DA5301



DATUM R.L. 60.000

CHAINAGE	APPROXIMATE RETAINING HEIGHT	TOP OF RETAINING WALL	BOTTOM OF RETAINING WALL	EXISTING SURFACE LEVELS
0.000	1.600	67.700	66.100	67.539
45.022				
66.785		66.100 / 66.300		
70.800	2.800	68.700 / 69.100	66.300	68.615
72.057				
80.800	3.000	69.100 / 69.300	66.300	69.072
84.000	3.200	69.300 / 69.500	66.300	69.288
90.582	4.000	70.300	66.300	70.254
107.600	2.000	68.300 / 68.100	66.300	68.087
149.200	1.800	68.100 / 67.900	66.300	67.908
156.800	1.600	67.900 / 67.700	66.300	67.697
163.600	1.400	67.700 / 67.500	66.300	67.499
170.100	1.200	67.500 / 67.300	66.300	67.312
181.700	1.000	67.300 / 67.100	66.300	67.077
184.900	0.800	67.100 / 66.900	66.300	66.908
189.700	0.600	66.900 / 66.700	66.300	67.707
200.382	0.400	66.700	66.300	66.419

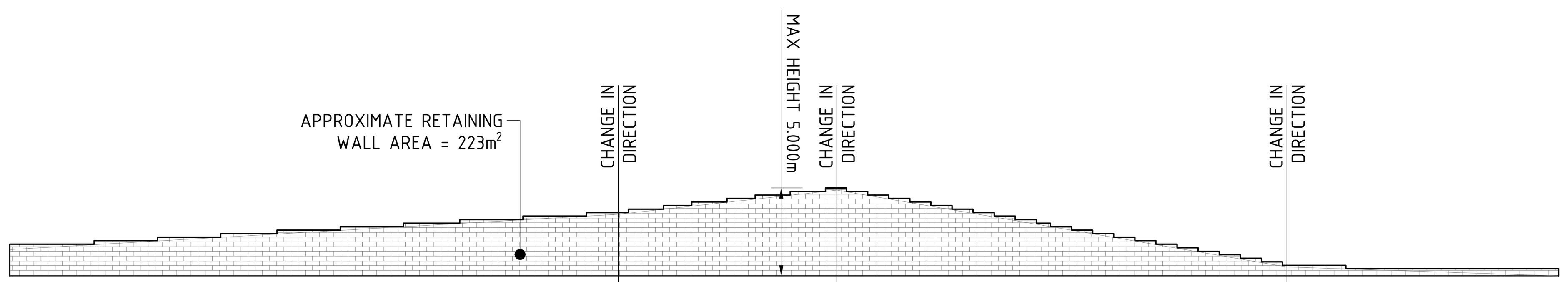
RETAINING WALL 01 SECTION - CHOCOLATE BUILDING
SCALE 1:300



DATUM R.L. 60.000

CHAINAGE	APPROXIMATE RETAINING HEIGHT	TOP OF RETAINING WALL	BOTTOM OF RETAINING WALL	EXISTING SURFACE LEVELS
0.000	0.400	66.200	65.800	65.871
2.000	0.600	66.200	65.800 / 65.600	65.807
4.400	0.800	66.200	65.600 / 65.400	65.727
19.200	1.000	66.200	65.400 / 65.200	65.441
24.400	1.200	66.200	65.200 / 65.000	65.203
27.200	1.400	66.200	65.000 / 64.800	65.026
36.800	1.600	66.200	64.800 / 64.600	64.807
44.800	1.800	66.200	64.600 / 64.400	64.605
52.400	2.000	66.200	64.400 / 64.200	64.429
56.400	2.200	66.200	64.200 / 64.000	64.211
65.200	2.400	66.200	64.000 / 63.800	64.003
69.600	2.600	66.200	63.800 / 63.600	63.805
78.000	2.800	66.200	63.600 / 63.400	63.609
88.415		66.200 / 66.400		
94.000	1.600	66.400	64.800 / 65.000	65.070
95.812				
100.000	1.400	66.400	65.000 / 65.200	65.205
103.600	1.200	66.400	65.200 / 65.400	65.438
112.392	1.000	66.400	65.400	65.472

RETAINING WALL 02 SECTION - PACKING BUILDING
SCALE 1:300



DATUM R.L. 60.000

CHAINAGE	APPROXIMATE RETAINING HEIGHT	TOP OF RETAINING WALL	BOTTOM OF RETAINING WALL	EXISTING SURFACE LEVELS
0.000	1.800	67.300	65.500	67.000
8.400	2.200	67.500 / 67.700	65.500	67.506
15.200	2.600	67.900 / 68.100	65.500	67.878
25.600	3.200	68.500 / 68.700	65.500	68.500
34.614	3.600	69.100	65.500	69.000
47.052	5.000	70.500	65.500	70.370
51.200	4.400	69.900 / 69.700	65.500	69.662
60.400	2.800	68.300 / 68.100	65.500	68.092
68.800	1.400	66.900 / 66.700	65.500	66.658
72.657	0.600	66.100	65.500	66.000
76.000	0.600	66.100 / 65.900	65.500	65.892
87.930	0.400	65.900	65.500	65.500

RETAINING WALL 03 SECTION - ENGINEERING BUILDING
SCALE 1:300

AS SHOWN

IMPORTANT
- DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS & ARCHITECTURAL DRAWINGS ONLY
- DRAWINGS TO BE READ IN CONJUNCTION WITH SPECIFICATION.
- THE INFORMATION ON THIS DRAWING REMAINS THE PROPERTY OF SPARKS & PARTNERS CONSULTING ENGINEERS REPRODUCTION OF THE WHOLE OR PART OF THE DOCUMENT CONSTITUTES AN INFRINGEMENT OF COPYRIGHT®

NORTH POINT

REFERENCES

DATE	AMENDMENT	INIT	REV
31.01.25	50% ISSUE	MY	1
11.09.25	80% SSDA ISSUE	DD	2

DATE	AMENDMENT	INIT	REV

KEY PLAN

CLIENT
Charter Hall

BUILDER
FDC CONSTRUCTION & FITOUT PTY LTD

PROJECT ADDRESS
LOT 1, DP 866251,
65 HUNTINGWOOD DRIVE, HUNTINGWOOD

ARCHITECT
hlc architects

DEVELOPMENT APPLICATION

SPARKS+PARTNERS
CONSULTING ENGINEERS
HYDRAULIC I CIVIL I FIRE
Suites 6 & 7, 2-6 Hunter Street | PO Box 979 | Parramatta | NSW 2150
P 02 9891 5033 | E admin@sparksandpartners.com.au
https://sparksandpartners.com.au/

HCAA FPA AUSTRALIA GOLD MEMBER Fire Protection Association Australia

DRAWING TITLE
CIVIL DESIGN
CONCEPT RETAINING WALL
ELEVATION PLAN

DATE	DRAWN	DESIGNED	CHECKED
JAN 2025	DD	DD	MW

PROJECT No	SCALE	SIZE	DRAWING No	REVISION
24334	1:300		DA5401	2

APPENDIX B. MAINTENANCE & MONITORING SCHEDULE

Job No.: 24334

Date: 18 June 2025

Author Name: Daniel Drewitt

Signature:

PROJECT ADDRESS: 65 HUNTINGWOOD DRIVE, HUNTINGWOOD (LOT 1 DP866251)

General Notes:

1. Maintenance is to be carried out with regard to relevant occupational health and safety guidelines and standards. This includes all confined space, traffic management, fall arrest and other requirements.
2. Initial monitoring and inspections of the stormwater system post commissioning are to be carried out every 3 months for the first year of operation. The amount and type of debris is to be noted and recorded. This information shall be used to determine if modification of the frequency of inspections is required.
3. The frequency of inspections shown in the stormwater maintenance schedule are the maximum periods. Inspection frequencies may be reduced upon completion of the initial monitoring and inspection program as noted in note 2.
4. Blank copies of the maintenance schedule are to be made and filled out during each subsequent inspection with the details kept on site for future reference.

Inspected by: ……

Date of Inspection: ……

Date of Next Inspection: ……

Item to be Inspected	Frequency	Performed by	Inspected	Maintenance Required	Maintenance Procedure	Maintenance Completed
			Yes/No	Yes/No		Date
General						
Eaves/Box Guttering System and Downpipes	Six Monthly/ After Major Storm	Owner / Maintenance Contractor			Inspect and remove any build up of sediment, debris, litter and vegetation within gutter system.	
Stormwater surface inlet and junction pits	Four Monthly/ After Major Storm	Owner / Maintenance Contractor			Remove grate and inspect internal walls and base, repair where required. Remove any collected sediment, debris, litter and vegetation. (e.g. Vacuum/eductor truck) Inspect and ensure grate is clear of sediment, debris, litter and vegetation. Ensure flush placement of grate on refitment	
General inspection of complete stormwater drainage system (that's visible)	Bi-annually	Owner / Maintenance Contractor			Inspect all drainage structures noting any dilapidation, carry out required repairs.	

Rainwater Tank						
First Flush Device	6 Monthly	Owner / Maintenance Contractor			Inspect first flush device to ensure correct operation. Remove accumulated litter & debris. If device is not functioning properly repair or replace.	
Internal Inspection	6 Monthly	Owner / Maintenance Contractor			Check for evidence of access by animals, birds or insects including the presence of mosquito larvae. If present, identify access point and close. If evidence of algal growth, find and close points of light entry.	
Tank and tank roof	6 Monthly	Owner / Maintenance Contractor			Check structural integrity of tank including roof and access covers. Any dilapidation including holes or gaps are to be noted and repaired.	
Stormwater Treatment Measures						
ZPG StormFilter Catridges	Refer Manufactures Manual	Maintenance / Specialised Contractor			Refer to manufacturer's operation and maintenance manual.	
OceanGuard Pit Baskets	Refer Manufactures Manual	Maintenance / Specialised Contractor			Refer to manufacturer's operation and maintenance manual.	