

19 November 2021
Job No: 21300

Penrith City Council
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**Re: Proposed Industrial/Commercial Development, 4 Johnson Place, Cranebrook –
Flood Impact Assessment**

Attention Penrith City Council,

We Sparks & Partners Consulting Engineers have undertaken a Flood Impact Assessment (FIA) of the proposed industrial/commercial development at 4 Johnson Place, Cranebrook, with the results of the assessment detailed below. The FIA is to be read in conjunction with the report titled *Stormwater and Flood Management Report, Proposed Warehouse Facility, 4 Johnsons Place Cranebrook, ref: 21300* by Sparks and Partners.

Flood Impact

Local Overland Flooding

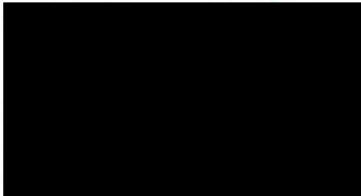
The development has been assessed against the 1%AEP local overland flood extents as detailed in the *Waterside Green Addendum Flood Study 2014* assessment prepared by ACOR. The assessment found the development sits outside the overland flow extents and will have no impact on the local overland flow that is conveyed in the drainage channel located on the southern boundaries of the lot. A plan showing the location of the overland flow extents in relation to the development is provided in annexure A for reference.

Mainstream Flooding

The mainstream 1% AEP flood level of 24.400m AHD has been assessed against the development proposal and the existing survey of the site. Cut and filling works are proposed within the development with fill works occurring on the western and southern boundaries and cut works occurring in the northern portion of the site. Assessing the proposed finished surface levels against the flood level noted above results in areas of flood storage loss and areas of flood storage gain. A loss of approximately 26.8m³ in flood storage occurs due to the fill works located on the southern and northern boundaries, with approximately 27.5m³ of flood storage gain occurring due to the cut works in the northern portion of the site. This results in an overall net flood storage gain of 0.7m³ for the development. It is therefore assessed that the development will have no impact on the existing mainstream flooding regime and flood levels within the area, and no flood impacts will occur to adjacent properties. A plan showing the extents of the flood storage loss and gain in relation to the development is provided in annexure A for reference.

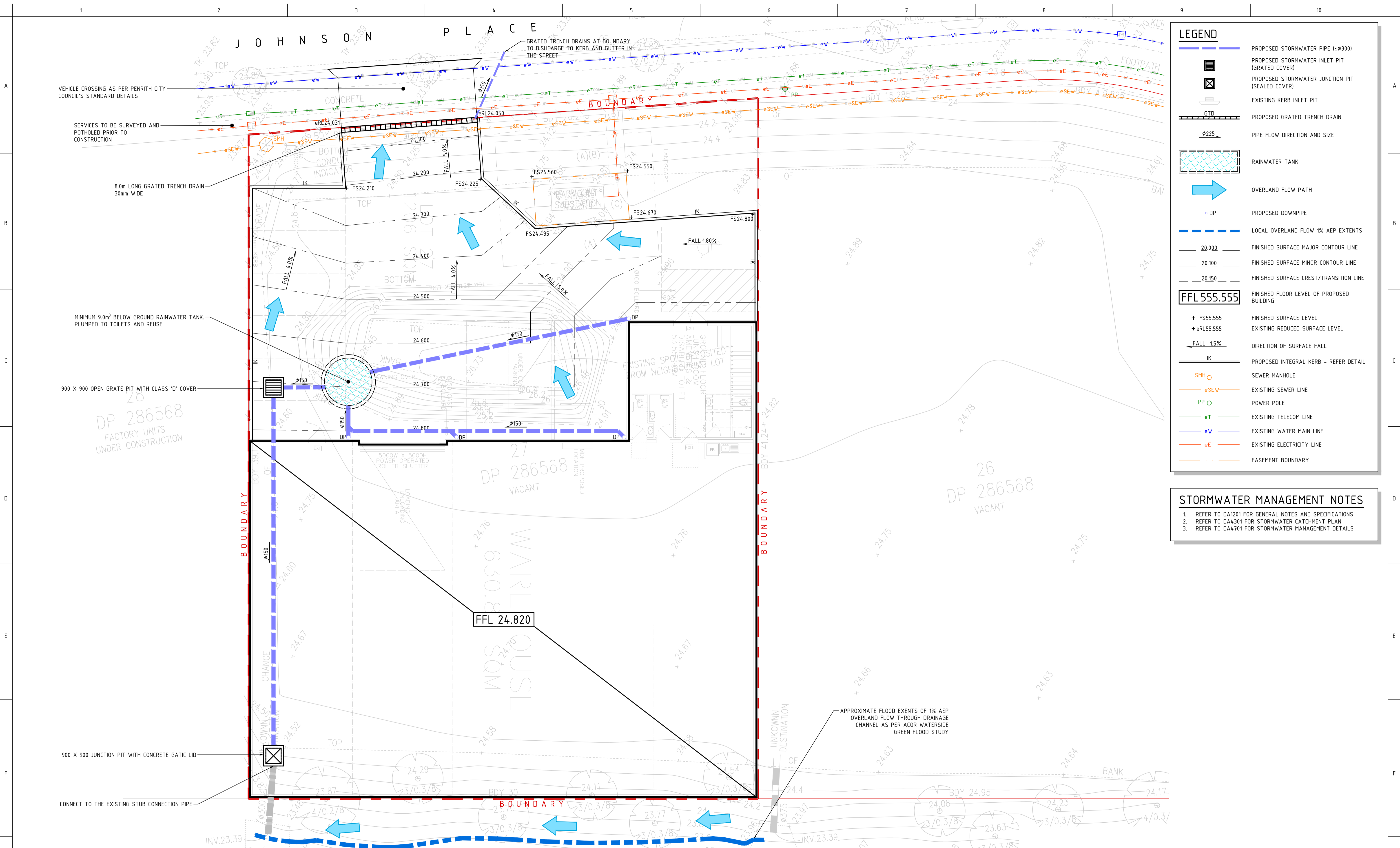
Should you have any questions with regard to the above please do not hesitate to contact the undersigned.

Regards,



Benjamin Barrett
Senior Civil Engineer
Sparks & Partners Consulting Engineers
BE Civil MIEAust CPEng NER RPEQ VBA
benjamin@sparksandpartners.com.au

Annexure A – Flood Impact Assessment Plan



LEGEND

- PROPOSED STORMWATER PIPE (≤φ300)
- PROPOSED STORMWATER INLET PIT (GRATED COVER)
- PROPOSED STORMWATER JUNCTION PIT (SEALED COVER)
- EXISTING KERB INLET PIT
- PROPOSED GRATED TRENCH DRAIN
- PIPE FLOW DIRECTION AND SIZE
- RAINWATER TANK
- OVERLAND FLOW PATH
- PROPOSED DOWNPIPE
- LOCAL OVERLAND FLOW 1% AEP EXTENTS
- FINISHED SURFACE MAJOR CONTOUR LINE
- FINISHED SURFACE MINOR CONTOUR LINE
- FINISHED SURFACE CREST/TRANSITION LINE
- FFL 555.555 FINISHED FLOOR LEVEL OF PROPOSED BUILDING
- + FSS5.555 FINISHED SURFACE LEVEL
- +eRL55.555 EXISTING REDUCED SURFACE LEVEL
- FALL 1.5% DIRECTION OF SURFACE FALL
- IK PROPOSED INTEGRAL KERB - REFER DETAIL
- SMH SEWER MANHOLE
- eSEW EXISTING SEWER LINE
- PP POWER POLE
- eT EXISTING TELECOM LINE
- eW EXISTING WATER MAIN LINE
- eE EXISTING ELECTRICITY LINE
- EASEMENT BOUNDARY

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

DEVELOPMENT APPLICATION ISSUE

IMPORTANT
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REFERENCES

DATE	AMENDMENT	INIT	REV	DATE	AMENDMENT	INIT	REV
03.11.21	DA ISSUE	MG	1				
19.11.21	DA ISSUE	MG	2				

STRUCTURAL	-
MECHANICAL	-
ELECTRICAL	-
CIVIL	SPARKS AND PARTNERS CONSULTING ENGINEERS

CLIENT	
BUILDER	

PROJECT
PROPOSED INDUSTRIAL DEVELOPMENT
4 JOHNSON PLACE, CRANE BROOK
CIVIL SERVICES

ARCHITECT
APEX
BUILDINGS & DESIGN PTY LTD

SPARKS+PARTNERS
CONSULTING ENGINEERS
HYDRAULIC | CIVIL | FIRE

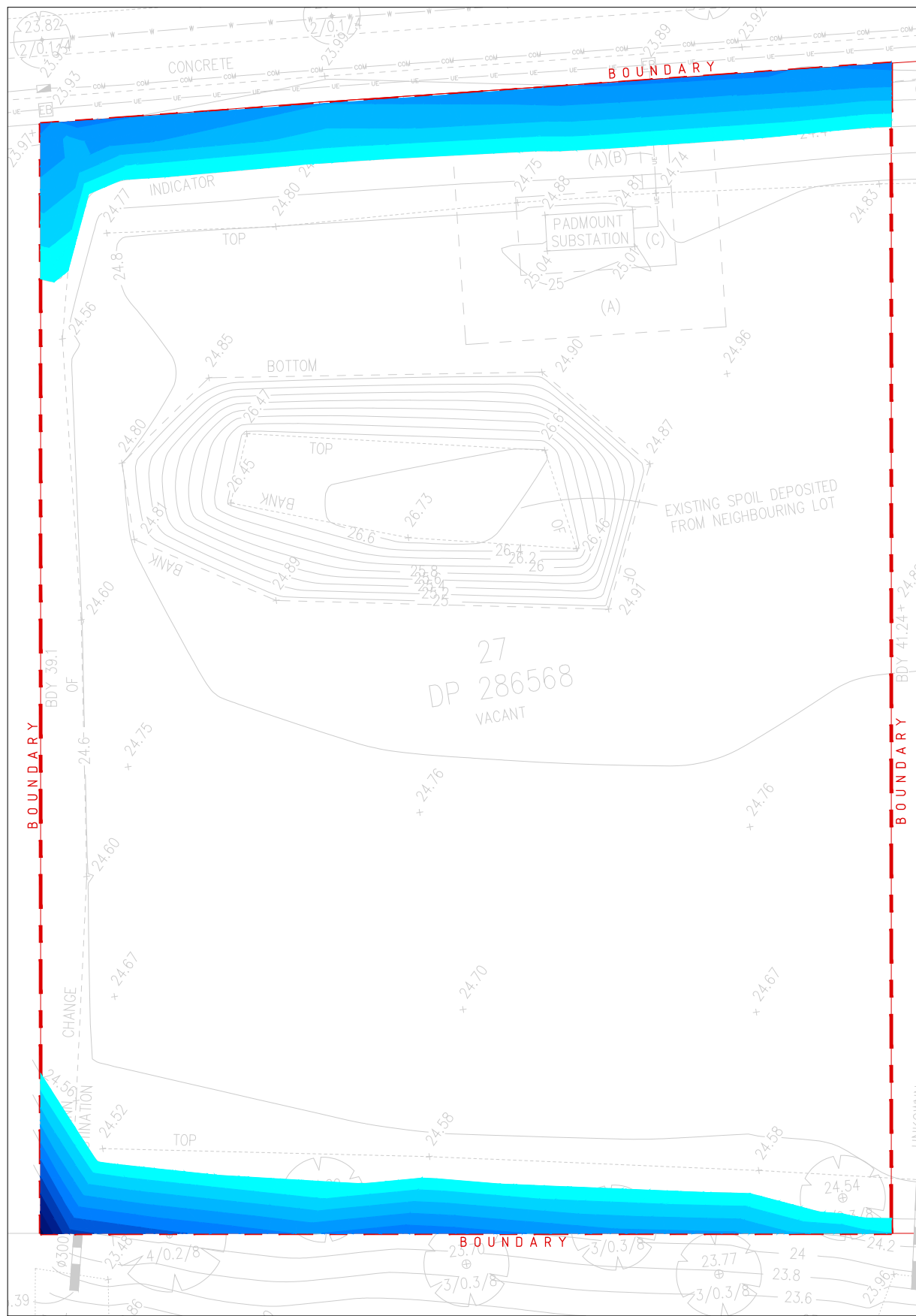
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FPA
Fire Protection Association
CORPORATE MEMBER

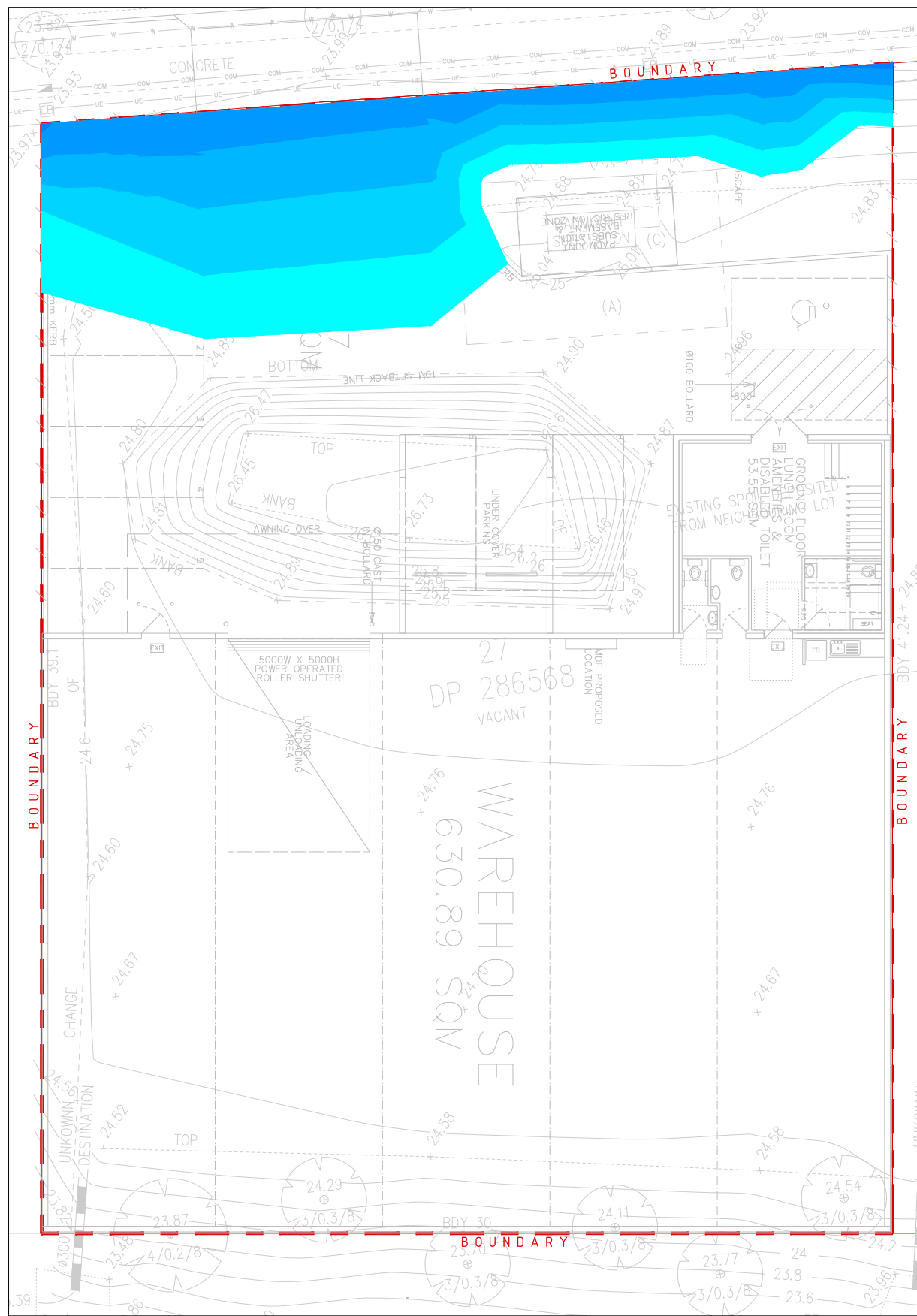
DNV-GL
QUALITY SYSTEM CERTIFICATION
ISO 9001

HCAA

DRAWING TITLE	CIVIL DESIGN CONCEPT STORMWATER & GRADING PLAN
DATE	OCT 2021
PROJECT No	21300
DRAWING No	DA4101
DRAWN	MG
DESIGNED	MG
CHECKED	BB
SCALE	1:100 @ A1
SIZE	A1
REVISION	2



EXISTING FLOOD STORAGE
SCALE 1:100



PROPOSED FLOOD STORAGE
SCALE 1:100

FLOOD STORAGE OFFSET SUMMARY

FLOOD STORAGE VOLUME GAIN/LOSS SUMMARY:

EXISTING FLOOD STORAGE VOLUME =	26.8m ³
PROPOSED FLOOD STORAGE VOLUME =	27.5m ³
NET FLOOD STORAGE VOLUME INCREASE =	0.7m³

- FLOOD MANAGEMENT NOTES**
1. MAINSTREAM NEPEAN RIVER 1% AEP FLOOD LEVEL IS 24.400m
 2. THE DEVELOPMENT RESULTS IN A NET FLOOD STORAGE INCREASE OF APPROXIMATELY 0.7m³. THEREFORE, THE DEVELOPMENT WILL HAVE NO IMPACT ON FLOODING WITHIN THE ADJACENT PROPERTIES AND WITHIN THE LOCAL AREA.
 3. REFER TO DA1201 FOR GENERAL NOTES AND SPECIFICATIONS
 4. REFER TO DA4101 FOR SITEWORKS & DRAINAGE PLAN

LEGEND

Flow Depth	Flow Depth Range
	0 TO 0.1m
	0.1 TO 0.2m
	0.2 TO 0.3m
	0.3 TO 0.4m
	0.4 TO 0.5m
	0.5 TO 0.6m
	0.6 TO 0.7m
	0.7 TO 0.8m
	0.8 TO 0.9m
	0.9 TO 1.0m

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03.11.21	DA ISSUE	MG	1				

CLIENT	BUILDER	ARCHITECT

STRUCTURAL	MECHANICAL	ELECTRICAL	CIVIL
			SPARKS AND PARTNERS CONSULTING ENGINEERS

PROJECT: PROPOSED INDUSTRIAL DEVELOPMENT 4 JOHNSON PLACE, CRANE BROOK CIVIL SERVICES

APEX BUILDING SYSTEMS PTY LTD

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FPA FIRE PROTECTION ASSOCIATION OF AUSTRALIA CORPORATE MEMBER

DNV-GL

HCAA

DEVELOPMENT APPLICATION ISSUE

DRAWING TITLE: CIVIL DESIGN CONCEPT FLOOD EXTENTS PLAN

DATE	DRAWN	DESIGNED	CHECKED
OCT 2021	MG	MG	BB
PROJECT No	SCALE	SIZE	REVISION
21300	1:100 @ A1	A1	
DRAWING No	1		
DA8101			