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FLOOD IMPACT ASSESSMENT REPORT

for Proposed Total Asset Management Redevelopment at Nepean Hospital

Client: **Health Infrastructure**

Property: **Lots 4, DP 1238301**
Kingswood, NSW, 2747

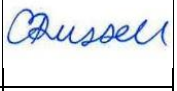
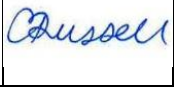
Date: **17 January 2024**

Document Identification

Our Reference: **NSW211526**

For and on behalf of ACOR Consultants Pty Ltd

Quality Information

Version	Description	Date	Author	Reviewer	Signature
R01	Flood Impact Assessment Report	23.11.2023	Harrison Bush	Caitlin Russell	
R02	Flood Impact Assessment Report	15.12.2023	Harrison Bush	Caitlin Russell	
R03	Flood Impact Assessment Report	17.01.2024	Caitlin Russell	Caitlin Russell	

Distribution

No. of Copies	Format	Distributed to	Date
1 (v 1.0)	PDF	Jeff Chan	23.11.2023
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1 (v 3.0)	PDF	Jeff Chan	17.01.2024

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Annexures

1.0 Introduction

ACOR Consultants Pty Ltd (ACOR) has been engaged to prepare a Flood Impact Assessment Report in accordance with the requirements of Chapter C3 (Water Management), Section 3.5 (Flood Planning) of the Penrith Development Control Plan 2014 Volume 1 (Penrith City Council 2014) and the Penrith Local Environmental Plan 2010. The report is to support the REF submission for the proposed development of the Total Asset Management (TAM) facility at Nepean Hospital.

In the preparation of this report ACOR has relied upon certain data and information contained within the following documents:

- Architectural plans prepared by prepared by Fortey + Grant Architecture, Project Number 2124, dated 13 September 2023;
- Site survey prepared by Veris, Project Number 203037, ref: DETL-002C, dated 12 May 2022;
- Penrith Development Control Plan 2014 Volume 1;
- Penrith Local Environmental Plan 2010;
- Flood Level Enquiry letter prepared by Penrith City Council, reference: P-601652-X6F4, dated 11 December 2023;
- 'College, Orth and Werrington Creeks Catchment Overland Flow Flood Study' prepared by Catchment Simulation Solutions dated June 2017;
- 'Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas' published by the Hawkesbury-Nepean Floodplain Management Steering Committee (HNFMSC), dated 2006; and
- 'Floodplain Development Manual: the management of flood liable land' published by NSW Department of Infrastructure, Planning and Natural Resources (NSW DIPNR), dated April 2005.
- 'Flood Risk Management Manual 2023: the policy and management of flood liable land' published by NSW Department of Planning and Environment (NSW DPE), dated 2023.

The purpose of this report is to provide the private certifying authority with sufficient information to assess the proposed development which is located on flood affected lands.

2.0 Site Description

The site is known as Lots 4, DP1238301, Derby Street, Kingswood, NSW. The site is located to the northern side of Derby Street, just west of the intersection with Somerset Street. The surrounding developments include a mixture of Low and Medium-Density Residential development as well as Mixed Use zoned properties.

The site is a small zone in the south-eastern corner of the Nepean Hospital Campus with a proposed development area of approximately 2000 m^2. The site is zoned SP2 Health Services Facility. The existing site is a gravel pavement used for parking the hospital's fleet vehicles. An aerial photograph of the hospital campus with the extent of the proposed TAM development is provided within Figure 1.

Figure 1 - Aerial photo of Nepean Hospital Campus and proposed TAM development

The site is generally falls from the north-west corner to the south-east corner towards Derby Street, with an average grade of 2.8%. Elevations on site are generally within the range of 52.00 m AHD to 50.23 m AHD.

The proposed development includes a new single storey building comprising office and workshop spaces, as well as break out spaces and amenities and an internal access road which provides vehicular access to the area directly to the north of the development. The workshop floor levels are proposed to be terraced to allow for flush entries along the adjacent on-grade driveway.

The principal features of the proposed development are depicted in the Architectural plans prepared by Fortey + Grant Architecture, Project Number 2124, dated 13 September 2023. Copies of these plans are enclosed in Annexure A.

3.0 Flood Characteristics

3.1 1% AEP Storm Event

The TAM site falls within the College, Orth and Werrington Creeks catchment and flooding of this area is the subject of the ‘College, Orth and Werrington Creeks Catchment Overland Flow Flood Study’ prepared by Catchment Simulation Solutions dated June 2017.

The south-eastern corner of the TAM site has been identified as flood effected for all storm events from the 50% AEP to the 1% AEP, with a small area of what appears to be localised ponding. Flood depths are only shown to be up to 200mm deep for all storms. However, outside the site boundary along Derby Street, the area is not shown to be flood affected for any storm event up to and including the 1% AEP. Due to the uniform flood depths identified on site throughout a variety of storm events, as well as the absence of flooding in the adjacent roadway, the flooding identified on site is suspected to be due to an anomaly in the model. Refer Figure 2 below for the 1% AEP flood extents.

Figure 2 - 1% AEP Flood Depths Map (Catchment Simulation Solutions)

Along this site boundary the existing carpark only has landscaping with a 150mm kerb. Therefore, any water ponding in this corner will only be to a maximum depth of 150mm before overtopping the kerb and overflowing into the road reserve along Derby Street. Other areas of the site that do not drain towards the existing kerb currently fall directly to the street. Given these existing conditions on site, the 200mm of flooding identified in the modelling is considered to not be representative of actual flood characteristics in the existing scenario.

As part of the proposed development the existing kerb is to be demolished and replaced with a new driveway entry that will fall to the Derby Street kerb level. Therefore, no water ponding will be able to occur anywhere on site, with the entire lot falling directly to the street. This will not impact flooding downstream as the system downstream is not currently flood affected, and the flooding identified on site is considered a misrepresentation of the existing scenario.

3.2 PMF Storm Event

The southern corner of the site becomes inundated in the Probable Maximum Flood (PMF) event. A Flood Certificate obtained from Penrith City Council notes that at the southern end of the site the PMF Flood Level is 51.20 m AHD. A copy of the Flood Certificate is enclosed in Annexure D.

Proposed floor levels for the development are generally above this for the administration area and northern workshops. The three southernmost workshops (HVAC Workshop, Plumbers Workshop and Electrical Workshop) all have a proposed floor level of 50.90 m AHD which would

result in minor inundation during the PMF of up to 300mm depth. We note that as per the Penrith City Council DCP, the requirements for the site are for the development to be above the 1% AEP storm event plus freeboard, which is addressed in Section 3.1 above and 4.1 below.

Nonetheless, in the PMF flood event there is minimal inundation of the site and building and a safe evacuation route to the north of the site exists to enable evacuation of personnel from the three workshops which may become inundated.

3.3 Flood Hazard Categorisation

Provisional Flood Hazard maps for the 1% AEP and the PMF in the flood study report categorise flooding on the site as 'Low Hazard'. Figure L2 from the flood study report provides an explanation of the Low and High hazard categories and has been reproduced in Figure 3 below.

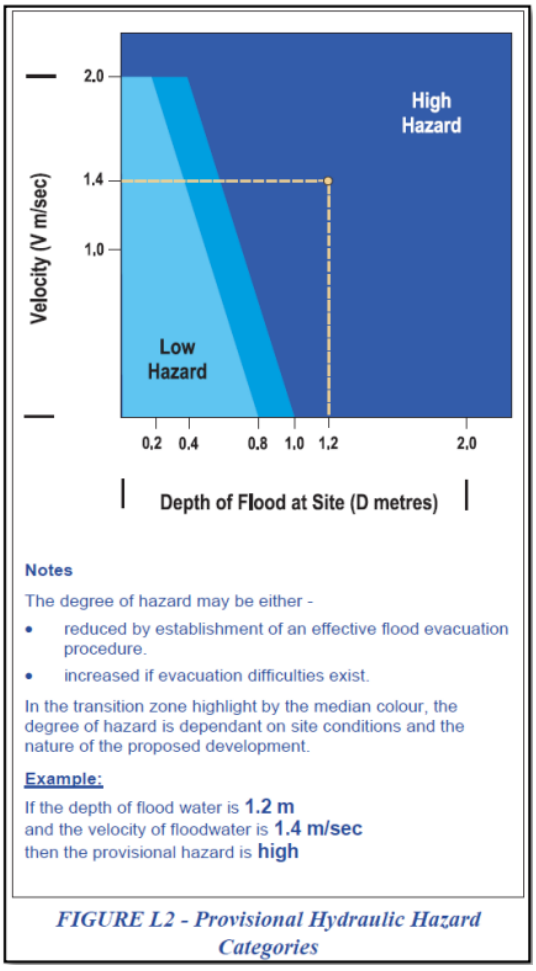


Figure 3 - Flood Hazard Categories (Figure L2 from the 'College, Orth and Werrington Creeks Flood Study Report')

Relating this to the General flood hazard vulnerability curve which has categories H1 (lowest hazard) to H6 (highest hazard) the "Low Hazard" zone of the chart in Figure 3 typically relates to categories H1 to H3. Having due regard for Section 3.1 and 3.2 above, we note that expected flooding on site is localised to the southeastern corner only, and a hazard category of up to H3 is only likely to occur in rain events larger than the 1% AEP.

4.0 Flood Risk Management

Based on the foregoing, we offer the following response, having due regard for the requirements of Section 3.5 (Flood Planning) of the Penrith DCP 2014 Volume 1, Penrith LEP 2010, and 'Floodplain Development Manual' (NSW DIPNR 2005).

4.1 Floor Level

The flood planning level (FPL) for habitable floor levels on the site can be determined based on the 1% AEP flood level plus a nominal freeboard of 0.5m. If the flood depths from the flood maps are taken, then, based on the existing survey levels, the FPL for the site would be 51.00 m AHD.

The proposed floor levels vary for the administration and workshop areas of the building. The lowest workshops have a proposed FFL 50.90 m AHD. The administration and other workshop rooms have proposed FFL of 51.36 m AHD, 51.20 m AHD and 51.6 m AHD respectively. The lowest workshop level provides a 400mm freeboard to the assumed 1% AEP flood level and all other workshops and the administration areas of the building are above the FPL.

As stated above, the flooding show on plan is assumed to be an anomaly in the model and flooding within the site is not expected to occur in the proposed condition with a driveway layback, noting that the adjacent Derby Street is not shown as flood affected. Based on the foregoing the proposed floor levels and achieved freeboards are acceptable and generally in line with the requirements of Section 3.5 (Flood Planning) of the Penrith DCP 2014 Volume 1.

4.2 Building Components and Method

All proposed buildings are located outside of the 1% AEP flood extents. There is therefore no requirement to consider flood compatible building components for the proposed development.

4.3 Flood Affectation

The proposed development will freely drain towards Derby Street as per the existing conditions on site. Given the identification of the flooding on site as an anomaly in the modelling and the negligible changes to the runoff characteristics of the site, there will be no impact on the existing 1% AEP flood storage or extents.

4.4 Evacuation

The State Emergency Service of New South Wales (SES) is responsible for providing flood updates and issuing Flood Evacuation Warnings and Flood Evacuation Orders. Flood information issued by the SES may be received by local, radio and television news, SMS messaging, Facebook and doorknocking in affected communities. The timing for evacuation of persons is to be established in consultation with the SES.

As the site is located outside the 1% AEP floodwater extents and the development will not impact the flood characteristics on site, the existing scenario will remain for occupants of the site.

In the event that the 1% AEP flood event is expected to be exceeded, strategies should be adopted in accordance with NSW Government operational guidelines and SES Emergency Evacuation operational guidelines. Evacuation from site in the event of the 1% AEP being exceeded is priority as no shelter in place for events larger than this is provided. There is an available evacuation route to the north of the site as the northern boundary is not flood affected.

5.0 Conclusion

The site has been identified as being subject to flooding from the 50% AEP up to the 1% AEP storm event. Analysis of the existing site and of the results in the flood modelling indicate that this flooding is not a true representation of the conditions on site but rather an anomaly in the flood modelling that has incorrectly identified the site as flood affected.

Given the lack of flood affectation in the adjacent area along Derby Street, the proposed development will not impact local flood characteristics. Due to the identified lack of flooding on site, with all localised ponding being relived due to the proposed works, there is little need for ongoing flood risk management on the site.

Notwithstanding, the proposed development complies with the flood control requirements of Penrith City Council as stipulated in the Penrith Development Control Plan for an Industrial/Commercial Development.

6.0 References

Catchment Simulation Solutions. (2017). *College, Orth and Werrington Creeks Catchment Overland Flow Flood Study*. Sydney, NSW: Author.

Penrith City Council. (2014). *Penrith Development Control Plan 2014.*

Penrith City Council. (2010). *Penrith Local Environmental Plan 2010*.

Hawkesbury-Nepean Floodplain Management Steering Committee (HNFMSC). (2006). *Reducing Vulnerability of Buildings to Flood Damage: Guidance on Building in Flood Prone Areas*. Available from https://www.ses.nsw.gov.au/media/2247/building_guidelines.pdf

New South Wales Department of Infrastructure, Planning and Natural Resources (NSW DIPNR). (2005). *Floodplain Development Manual: the management of flood liable land*. Sydney, NSW: Author.

New South Wales Department of Planning and Environment (NSW DPE). (2023). *Flood Risk Management Manual: the policy and manual for the management of flood liable land*. Sydney, NSW: Author.

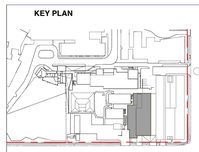
ANNEXURE A

Architectural plans prepared by Fortey + Grant Architecture, Project Number 2124, dated 13 September

BUILDING CLASSIFICATION CLASS 5 (ADMINISTRATION)
BUILDING CLASSIFICATION CLASS 8 (WORKSHOPS)
TYPE C CONSTRUCTION
PROVIDE SPRINKLER SYSTEM THROUGHOUT
WALLS WITHIN 3000mm OF AN EXISTING STRUCTURE TO BE FRL 60/60/60
ALL EXISTING DOORS TO SWING IN THE PATH OF TRAVEL
FIRE HOSE REALS TO BE LOCATED WITHIN 4m OF AND EXIT DOOR
ENERGY PROVISIONS OF SECTION J APPLY
PROVIDE SLIP RESISTANT SURFACES TO RAMPS, LANDINGS, TREADS AND NOSINGS
PROVIDE SLIP RESISTANT SURFACES TO DRIVEWAY WALKWAYS BATHROOMS
WORKSHOPS, ADMIN AREAS AND ENTRYS

01 GROUND FLOOR GENERAL ARRANGEMENT PLAN 1:100

KEY PLAN



REV	DESCRIPTION	DATE
A	FOR COMMENT	13/09/02

DIMENSIONS

USE FIGURED DIMENSIONS, DO NOT SCALE. CONTRACTORS MUST VERIFY ALL DIMENSIONS ON THE SITE BEFORE COMMENCING ANY WORK OR MAKING ANY SHOP DRAWING WHICH MUST BE SUBMITTED AND REVIEWED BEFORE MANUFACTURE.

FIXTURES, FITTINGS & EQUIPMENT SPECIFICATIONS

SUBSTITUTE FF&E EQUIPMENT SPECIFICATIONS
THE FIT-OUT DESIGN AND DOCUMENTATION HAS BEEN COMPLETED ON THE BASIS OF FF&E AND EQUIPMENT ADVISED TO THIS OFFICE AT THE TIME OF BRIEFING THE DESIGN. THE DESIGN PROVISIONS FOR FF&E AND EQUIPMENT INCORPORATES SPATIAL ALLOCATIONS, SERVICING, LOADING AND ACCESS CLEARANCES AND WHERE APPROPRIATE, SERVICES REQUIREMENTS, HAVING DUE REGARD FOR SURROUNDING FIXTURES AND FITTINGS. IT SHOULD BE NOTED THAT SUBSTITUTE FF&E OR EQUIPMENT WITH ALTERNATE SPECIFICATIONS SHOULD NOT BE PROCURED PRIOR TO VALIDATING THOSE SPECIFICATIONS AGAINST THE ITEM CONTROL SCHEDULE AND DESIGN PROVISIONS IN THE MODEL. THIS OFFICE ACCEPTS NO RESPONSIBILITY FOR THE PROCURSMENT OF SUBSTITUTE FF&E AND EQUIPMENT WHICH HAS NOT BEEN REVIEWED AND VALIDATED AGAINST THE ORIGINAL DESIGN PROVISIONS.

SERVICE POINTS DISCLAIMER

THE SERVICE POINTS IDENTIFIED ON THESE DRAWINGS HAVE BEEN OVERLAYED FROM THE BUILDING SERVICES ENGINEERING MODEL AND ARE PROVIDED FOR INFORMATION AND SET-OUT PURPOSES ONLY. WE HAVE BEEN ADVISED BY THE SERVICES ENGINEERS THAT THE POINTS REPRESENTED ON THESE DRAWINGS ARE CORRECT AT THE TIME OF PUBLICATION. THIS OFFICE DOES NOT WARRANT THE ACCURACY OF THIS DATA. REFER TO THE BUILDING SERVICES ENGINEERING DOCUMENTATION FOR THE INSTALLATION OF THE SERVICES POINTS, AND THE INTERFACE BETWEEN THE SERVICES POINTS AND THE RESPECTIVE ENGINEERING SYSTEMS.

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Mascot NSW 2020
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email: james@fgarch.com.au

Nominated Architect James grant Reg NO 6540

Builder

DONNELLEY CONSTRUCTIONS
Office: 9634 1233
PO Box 8132, Baulkham Hills BC NSW 215

Client

HEALTH INFRASTRUCTURE

Project

NEPEAN HOSPITAL TAM

Derby Street, Kingswood, NSW, 2747

Drawing name

GROUND FLOOR - GENERAL ARRANGEMENT PLAN

Scale	Date Printed	Drawn	Approved
AS SHOWN @ A0	13/9/2023	JG	JG

Job Number	Drawing Number	REVISION
2124	A-01	A

ANNEXURE B

Site survey prepared by Veris, Project Number 203037, ref: DETL-002C, dated 12 May 2022

DISCLAIMER:

This plan of survey and its associated digital data was prepared under instruction to meet specification as agreed. This information should not be used or relied upon by any other party.

For the purpose of this plan, the boundary information shown is from Actmap digital data base only. Boundaries have not been surveyed therefore further survey and marking of boundaries may be required.

The symbols used in this plan and associated digital data do not necessarily reflect the size and orientation of the object they represent.

Tree canopies are shown as a circular representation only and may not reflect irregular canopies. Trees have been extracted using an automated process from remotely acquired point cloud data. As such, tree locations and tabulated details supplied are approximate only. A ground based survey is required to confirm the details of individual trees.

Services shown hereon have been determined from a combination of visual evidence and tracing by Veris UG Services.
Prior to any demolition, excavation or construction on the site the relevant authority should be contacted to establish detailed location and depth.

Survey data including services shown on this plan is correct at the date of survey. Site conditions may have altered since the date of survey & we advise that the survey data may need verification.

The easements shown have been derived from the ACTmapi data base. We recommend that the easement information shown be verified with a title search to ensure that it is accurate and current.

Every effort has been made to ensure that the model within this data set is an accurate representation of the actual surface. Isolated deflections in the surface could occur between surveyed data points and these deflections may not be in the model.

Plan to be read in conjunction with the digital data.

Notes:

A full boundary survey has been undertaken.

Bearings relate to MGA taken from DP 1114090. See North Point for approximate relationship to True North.

Services shown are indicative only. Positions are based on service diagrams provided by the relevant authorities. Field confirmation of the exact position should be made prior to any excavation work. Other services may exist which are not shown.

Levels are based on Australian Height Datum (AHD)

Ridge, Eave & Gutter heights have been obtained by an indirect method and are accurate for planning purposes only.

Adjoining buildings have been plotted for diagrammatic purposes only.

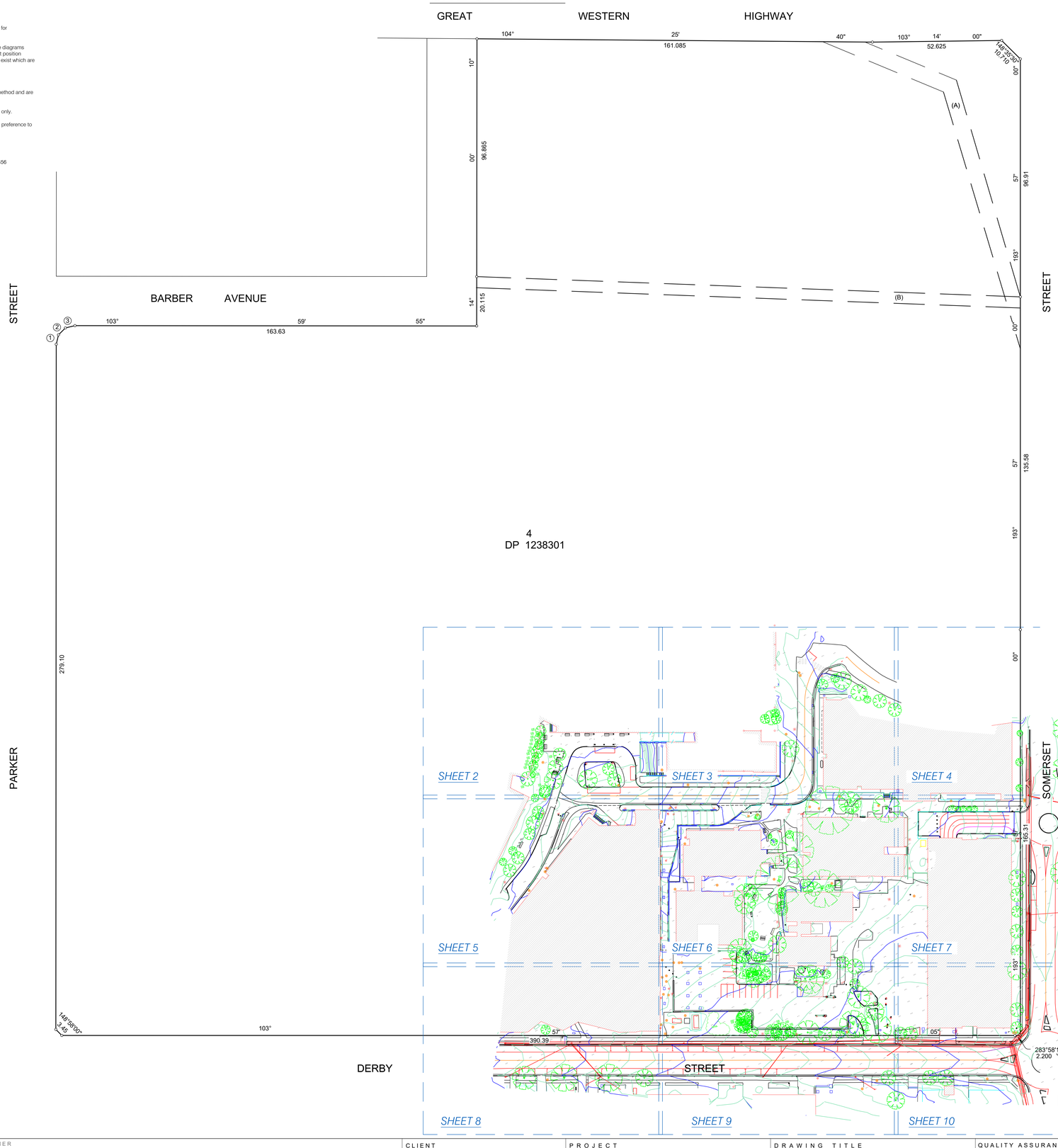
Contours are an indication of landform and should not be taken in preference to spot levels shown.

Contour interval 0.25 m

(A) EASEMENT TO DRAIN WATER 6.5 WIDE
(B) EASEMENT FOR WATER SUPPLY 4.527 WIDE VIDE DP 228456

SHORT BOUNDARIES		
	BEARING	DISTANCE
1	27°28'55"	3.985
2	58°59'25"	3.985
3	90°29'55"	3.985

SITE OVERVIEW



M.G.A.94

E BDGE (BRIDGE STRUCTURES)
- ABUTMENT
- BEACHING
- CULVERT

E BUIL (BUILD & STRUCTURES)
- BUILDING WALLS
- CONCRETE SLAB
- DECK
- MINOR BUILDING
- RAILING
- RETAINING WALL
- WALL

E CONT (PHOTOGRAMMETRY)
- CONTOUR - INDEX
- CONTOUR-STANDARD

E COMM (COMMUNICATIONS)
- OPTICAL FIBRE PIT
- OPTICAL FIBRE - UNDERGROUND
- TELEPHONE CABLE MARKER
- TELEPHONE CONDUIT
- TELEPHONE DISTRIBUTION PILLAR
- TELEPHONE - HOUSE CONNECTION
- TELEPHONE SINGLE CONCRETE PIT
- TELEPHONE TWIN CONCRETE PIT
- TELEPHONE SUMP

E CULT (CULTURAL)
- BOLLARD
- BUS STOP
- FENCE
- GATE
- LARGE SIGN
- ROAD SIGN
- SIGN POST

E DRAIN
- BOX CULVERT- 600 HIGH
- BOX CULVERT- 900 HIGH
- DRAINAGE JUNCTION MANHOLE
- DRAINAGE PIT
- END OF WINGWALL
- GRATED PIT
- GULLY PIT POINT
- HEADWALL BOTTOM
- HEADWALL TOP
- KERB INLET
- PIPE-300 DIA
- PIPE-375 DIA
- PIPE-450 DIA
- PIPE-525 DIA
- PIPE-600 DIA
- PIPE-750 DIA
- PIPE-900 DIA
- PIPE-1050 DIA
- PIPE-1500 DIA
- PIPE-UNSPECIFIED DIA
- STOP VALVE
- STORMWATER
- WATER COURSE

E ELEC
- CABLE JUNCTION BOX
- CABLE MANHOLE
- LINE-MINOR TRANSMISSION (UL)
- LINE - UNDERGROUND
- POLE-POWER
- POLE-POWER
- POLE-LIGHT
- POLE-LIGHT
- PYLON LEG(EL)
- TRANSFORMER CABINET (EC)

E GAS
- MAIN - HIGH PRESSURE PIPELINE
- MAIN - LOW PRESSURE

E LNMK
- ARROW-LEFT TURN
- ARROW-RIGHT TURN
- ARROW-STRAIGHT AHEAD
- ARROW-STRAIGHT AND RIGHT TURN
- BICYCLE LANE
- CONTINUITY
- DOUBLE BARRIER
- LANE
- PEDESTRIAN CROSSING
- UNBROKEN

E MISC
- UNIDENTIFIED SERVICE

E ROAD
- BACK OF KERB
- EDGE OF BITUMEN
- EDGE OF FORMATION
- EDGE OF PAVEMENT
- EDGE OF PAVEMENT(RC)
- EDGE OF TRACK
- EDGE OF UNSEALED ROAD
- FOOTPATH
- GUTTER FLOW LINE
- LIP LINE
- SAFETY BARRIER GUARD FENCE
- DOUBLE BARRIER
- TOP OF KERB

E TCS
- TRAFFIC CONTROL SIGNAL
- TRAFFIC SIGNAL CONTROLLER
- TRAFFIC SIGNAL JUNCTION BOX

E TOPO
- BREAKLINE OR RIDGE
- POND
- TREE FOLIAGE
- TREE FOLIAGE (TR)
- WATER EDGE LEVEL

E SEWER
- SEWER MAIN
- SEWER
- SEWER MANHOLE COVER

E WATER
- MAIN
- AIR VALVE
- HYDRANT
- STOP VALVE
- MAIN MARKER

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ISSUE	AMENDMENT	DATE
B	TAMS & CAMHS COMBINED	12/05/2022
C	UPDATED RLs, CARPARK ENTRY	13/05/2022

DISCLAIMER

This plan uses a combination of data derived from both traditional methods and Photogrammetry / LiDAR. LiDAR obtained on /12/2021.
Horizontal Spatial Accuracy: +/- 0.05m
Vertical Spatial Accuracy: +/- 0.10m
Data is indicative only in areas of vegetation.
Features have been located & categorised remotely & should be verified at the detailed design phase.

CLIENT

CBRE

PROJECT

NEPEAN STAGE 2
VARIATION
REDEVELOPMENT

DRAWING TITLE

DETAIL AND SERVICES PLAN

QUALITY ASSURANCE

Surveyor:	RT		
Drawn:	LG		
Checked by:	RT	Date:	13/05/22
Approved by:	VG	Date:	13/05/22

COMPLETION OF QUALITY ASSURANCE IS EVIDENCE THAT THE SURVEY WORK UNDERTAKEN AND THE PRESENTATION HAS BEEN VERIFIED AS CONFORMING WITH THE REQUIREMENTS OF THE QUALITY PLAN. WHERE THE QUALITY ASSURANCE IS INCOMPLETE ALL INFORMATION ON THIS DRAWING IS INTENDED FOR PRELIMINARY PURPOSES ONLY AS IT IS UNCHECKED.

Date of Survey:	APRIL 2022	Date of Plan:	13/05/22
Datum:	AHD	Co-ords:	MGA94
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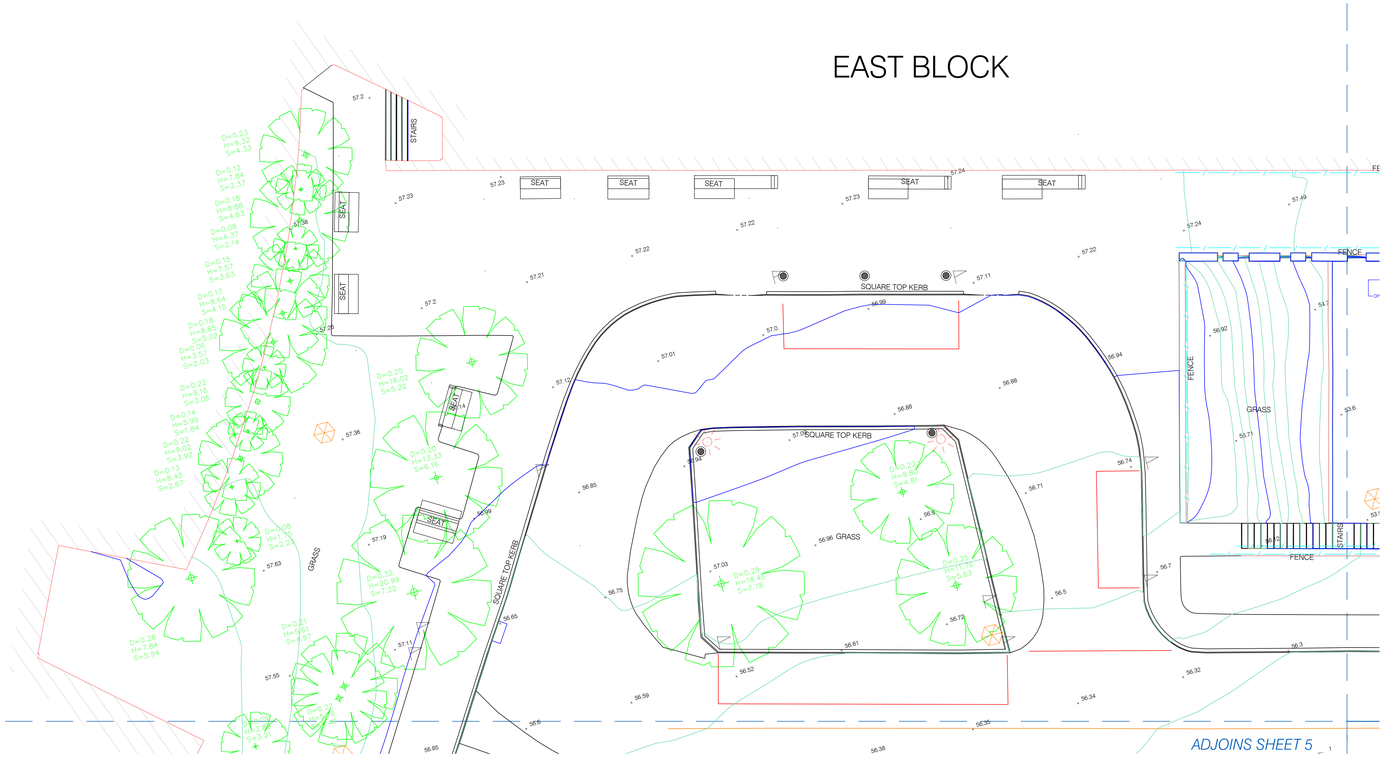
Cad ref :	203037-DETL-002C.dwg	Sheet	1 of 10

JOB NUMBER
203037

DRAWING NUMBER / ISSUE
DETL-002C

4

DP 1238301



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- TRAFFIC CONTROL SIGNAL
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E TOPO
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ISSUE	AMENDMENT	DATE
B	TAMS & CAMHS COMBINED	12/05/2022
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CLIENT

CBRE

PROJECT

NEPEAN STAGE 2
VARIATION
REDEVELOPMENT

DRAWING TITLE

DETAIL AND SERVICES PLAN

QUALITY ASSURANCE

Surveyor:	RT		
Drawn:	LG		
Checked by:	RT	Date:	13/05/22
Approved by:	VG	Date:	13/05/22

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JOB NUMBER: 203037

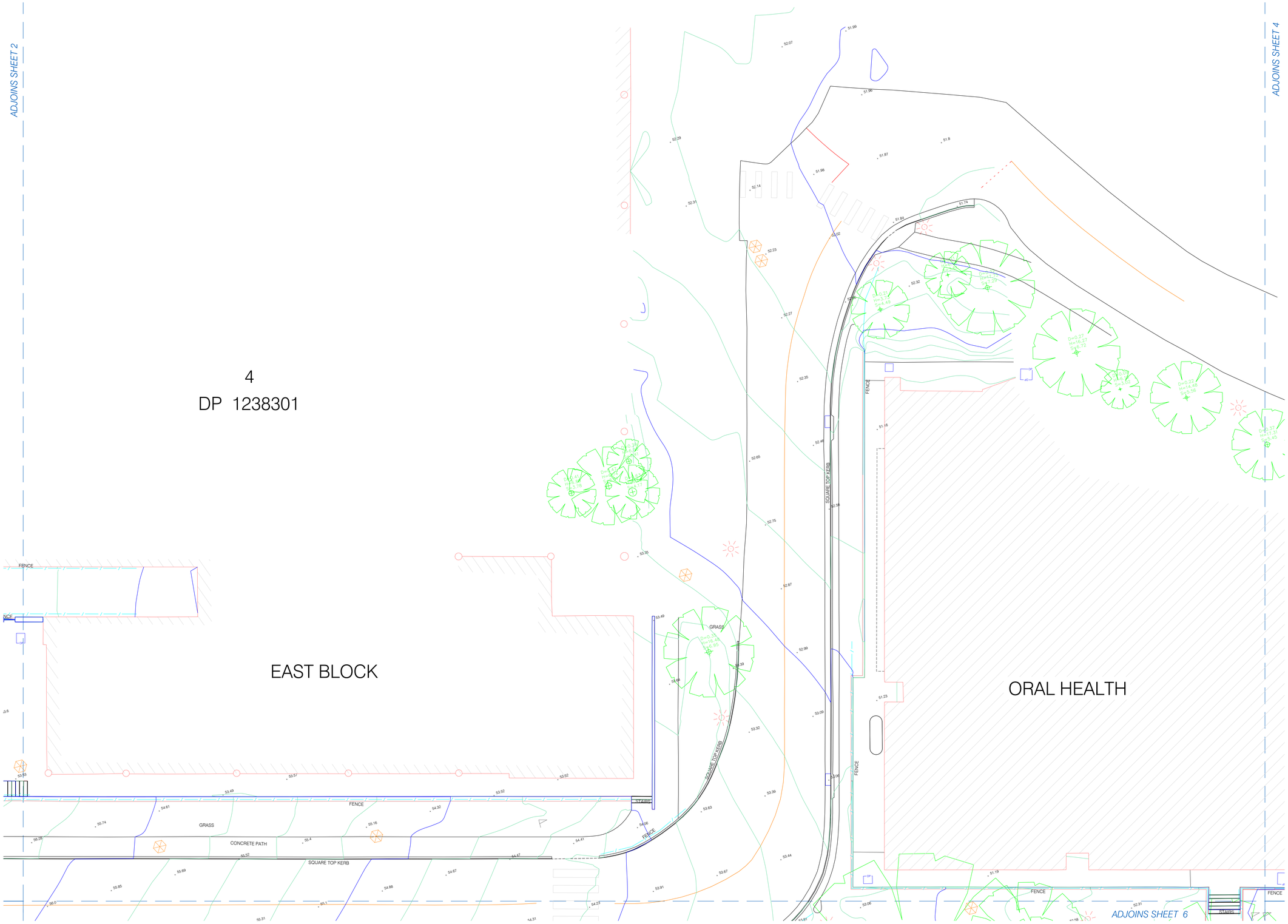
DRAWING NUMBER / ISSUE: DETL-002C

ADJOINS SHEET 2

ADJOINS SHEET 4

4

DP 1238301



M.G.A.94

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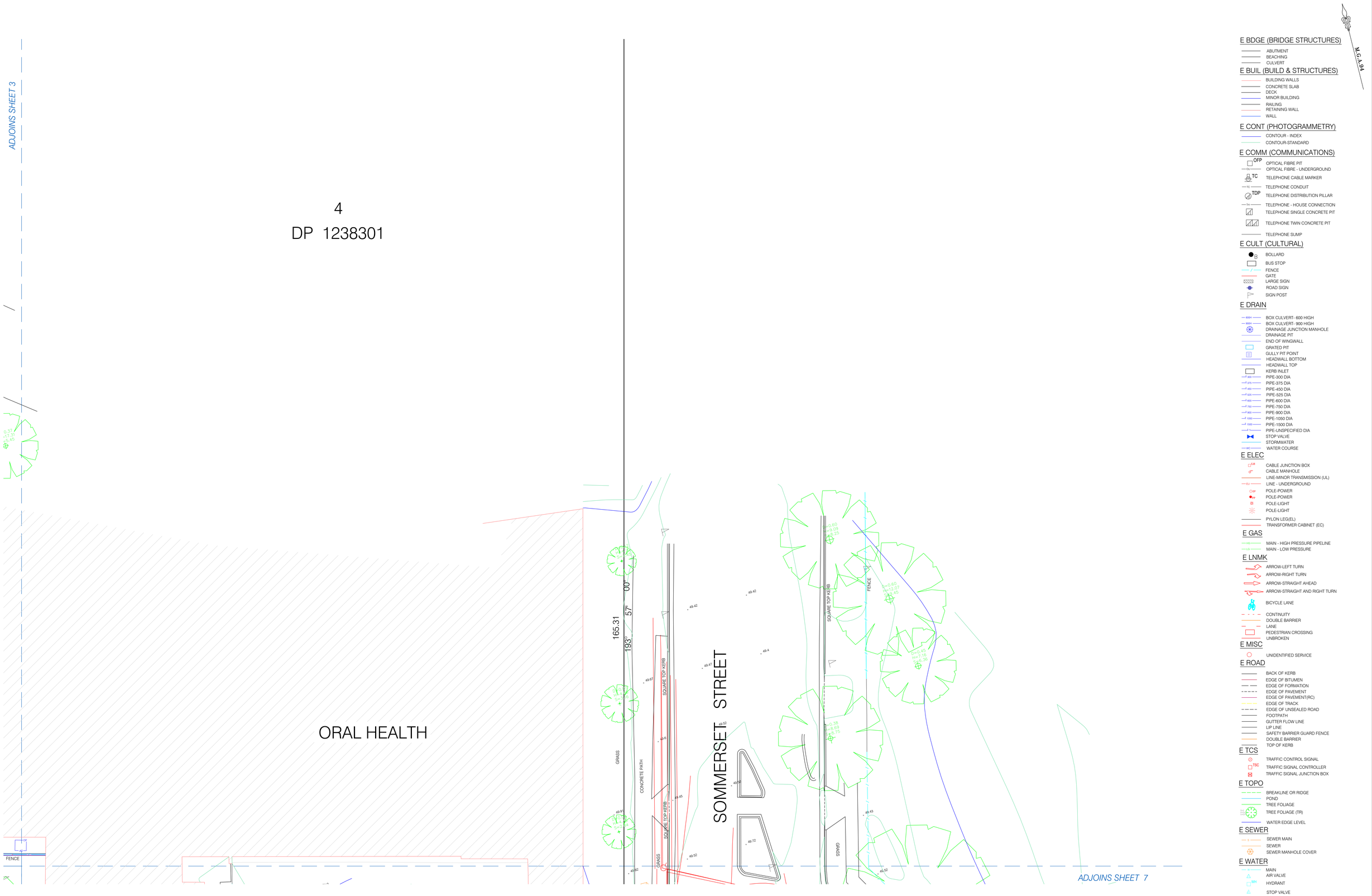

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ADJOINS SHEET 2

4

DP 1238301

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M.G.A.94

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NEPEAN STAGE 2
VARIATION
REDEVELOPMENT

DRAWING TITLE

DETAIL AND SERVICES PLAN

QUALITY ASSURANCE

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Drawn:	LG		
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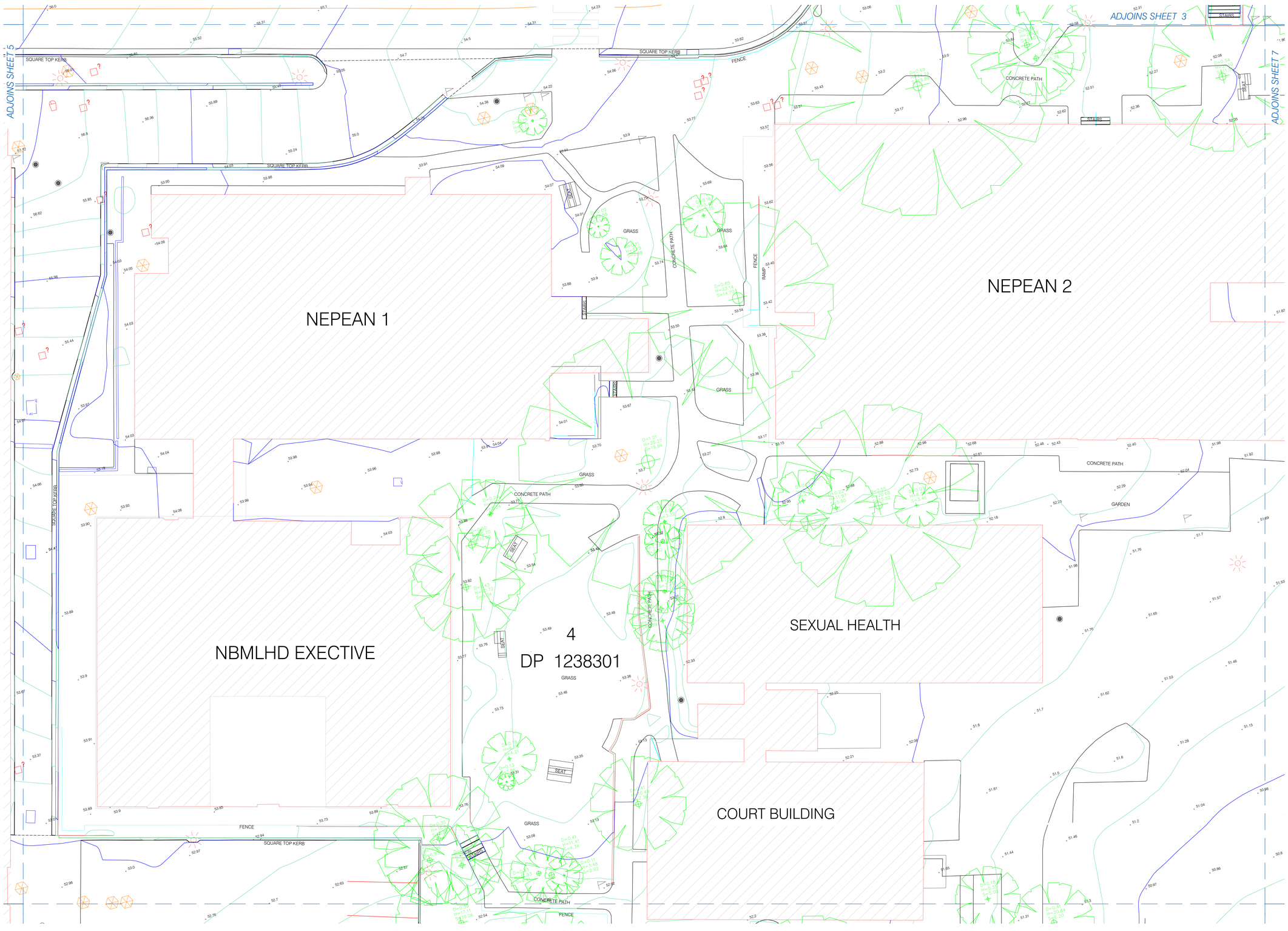

M.G.A.94

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ADJOINS SHEET 6

ADJOINS SHEET 4

ADJOINS SHEET 8

HARGRAVE STREET

SOMMERSET STREET

MULTI-LEVEL PUBLIC
AND STAFF CARPARKING

4
DP 1238301

165.31
193° 57' 00"

59'

FENCE
CONCRETE PATH
GRASS
SQUARE TOP KERB
STORE
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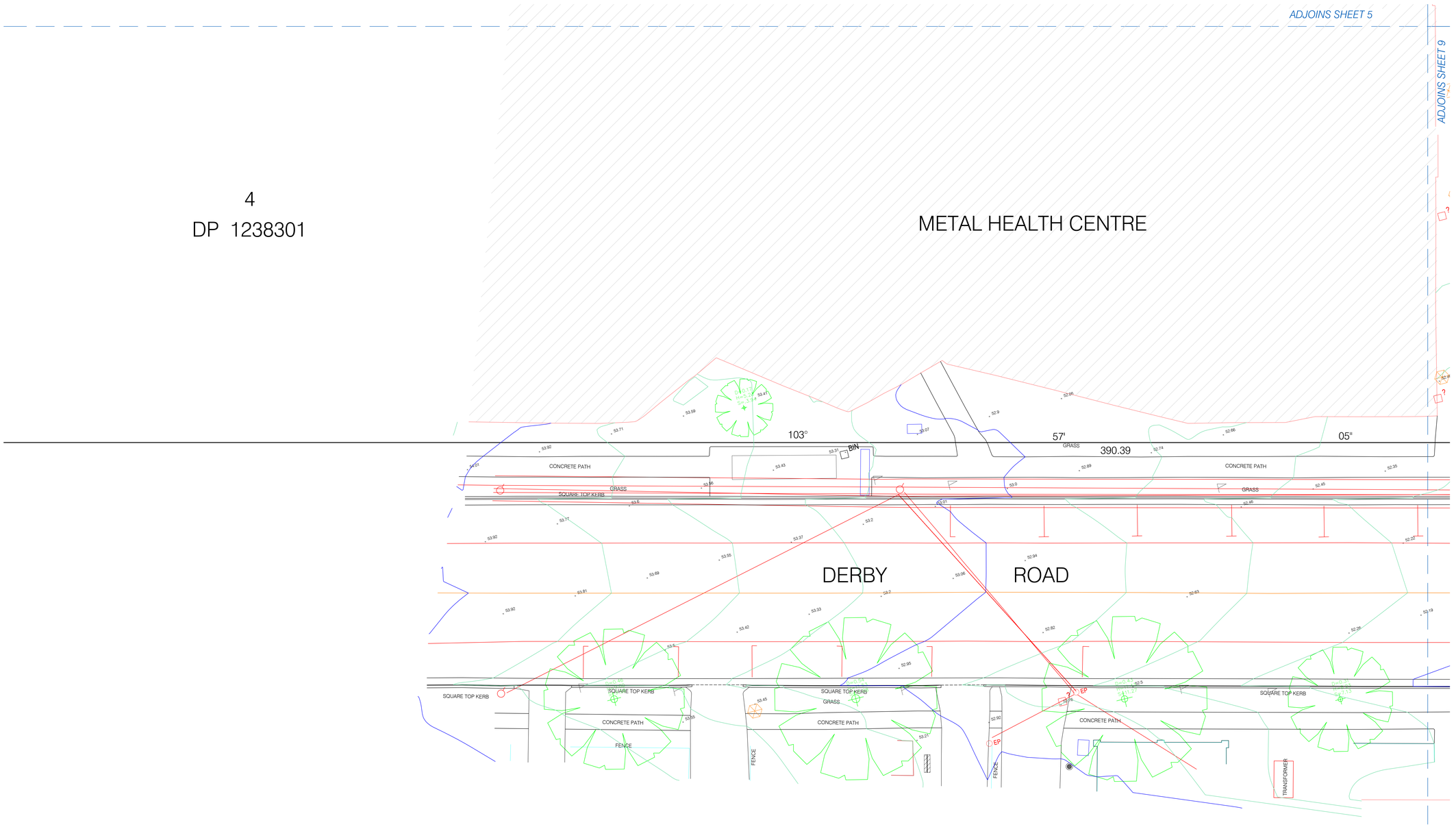

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CLIENT

CBRE

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NEPEAN STAGE 2
VARIATION
REDEVELOPMENT

DRAWING TITLE

DETAIL AND SERVICES PLAN

QUALITY ASSURANCE

Surveyor:	RT		
Drawn:	LG		
Checked by:	RT	Date:	13/05/22
Approved by:	VG	Date:	13/05/22

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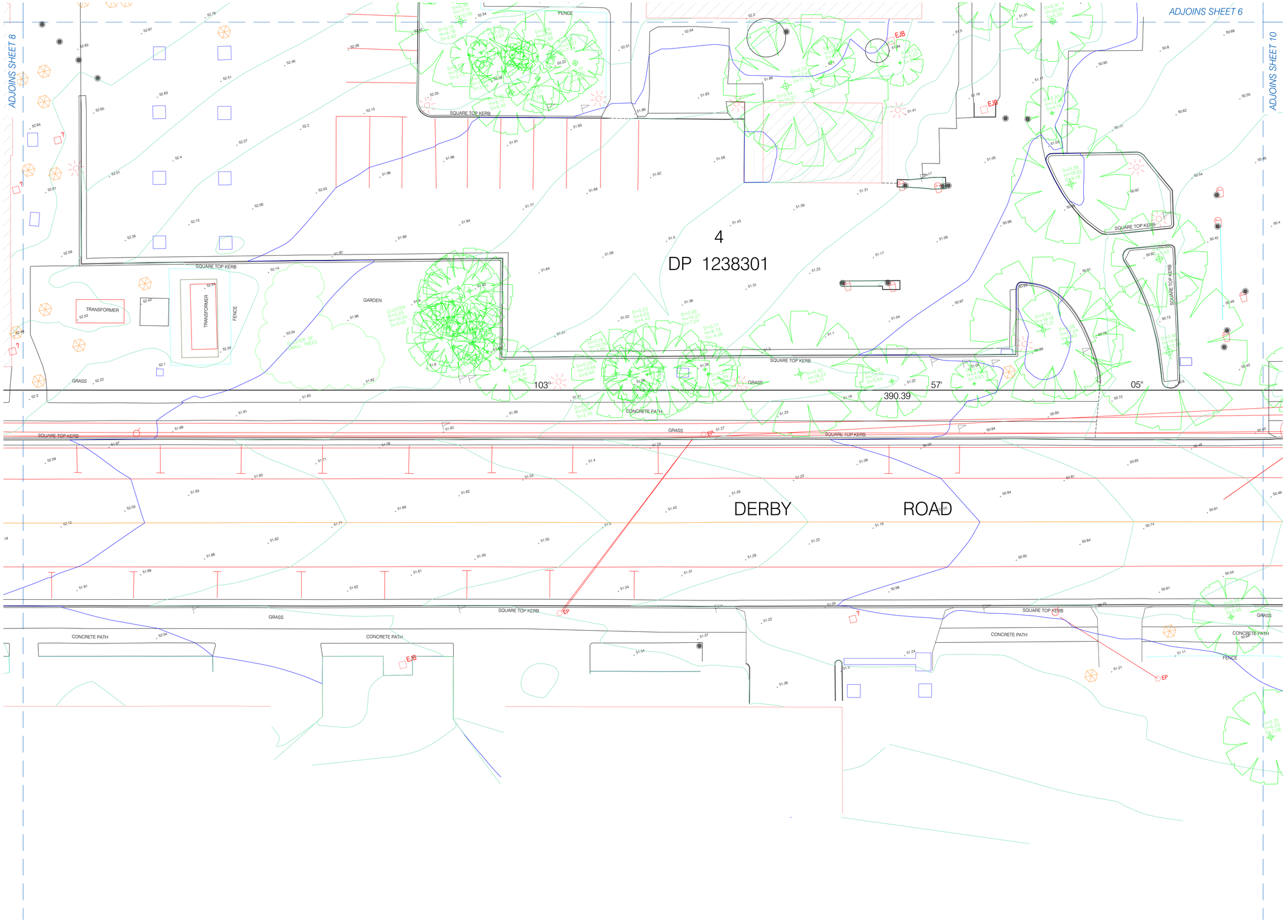

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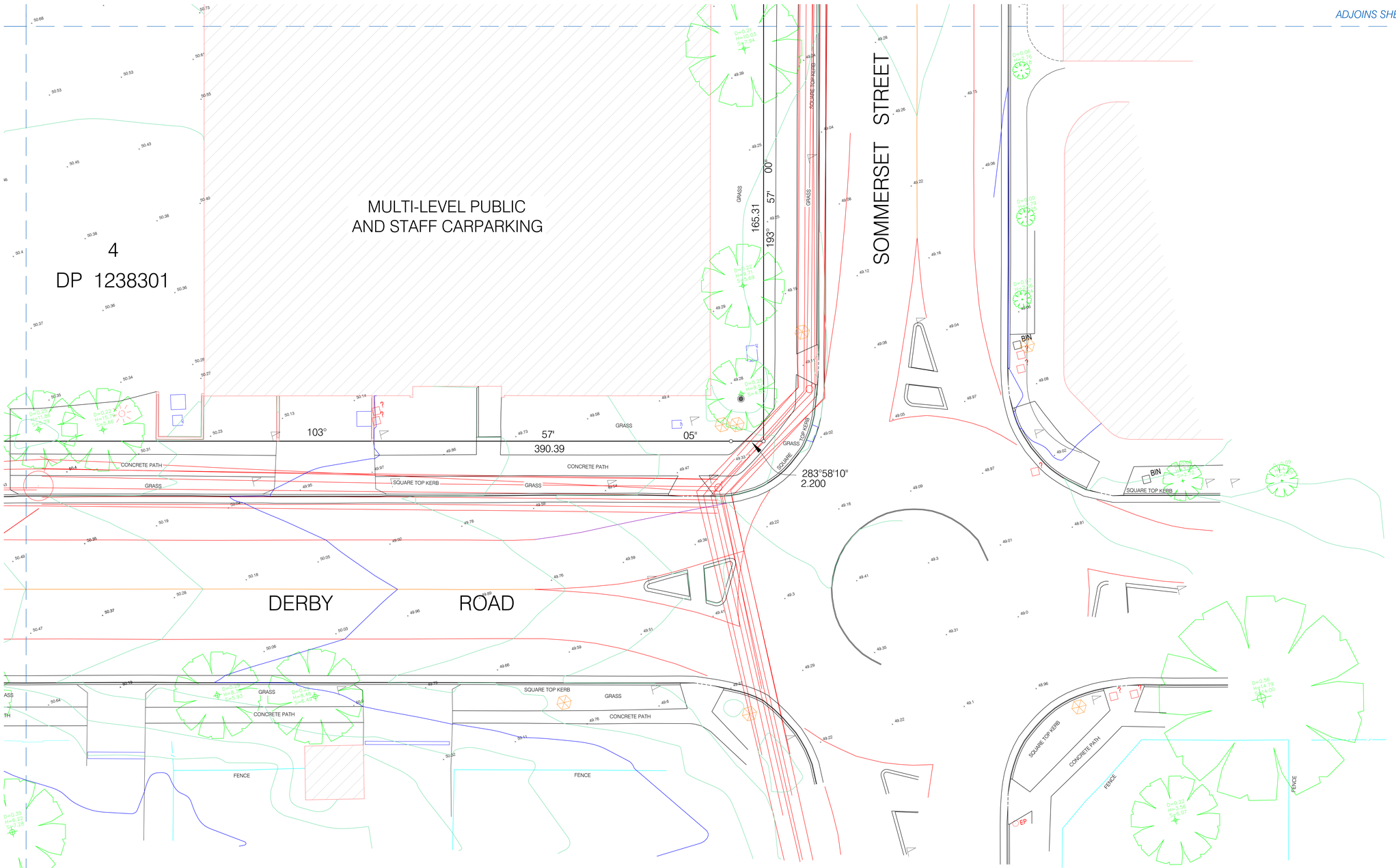

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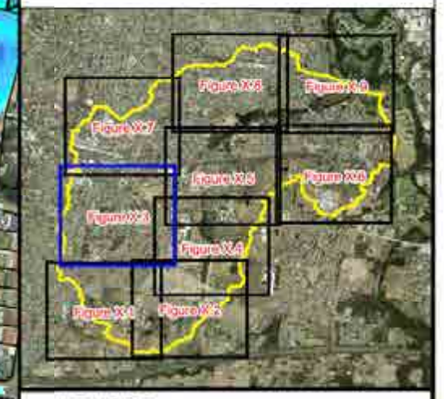
ANNEXURE C

Figure 19.3: Peak Design Floodwater Depths for the 1% AEP Flood by Catchment Simulation Solutions, 'College Orth and Werrington Creeks Catchment Overland Flow Flood Study', dated June 2017

PENRITH CITY COUNCIL



LEGEND

Depths (m)
- 0.15
- 0.20
- 0.30
- 0.50
- 1.00
- 2.00
- 3.00

Drainage Easement

Notes:

Water depths less than 0.15m not displayed.
Aerial photograph date: 2014.

Innundation across this area not mapped. Please refer to "Updated South Creek Flood Study" - (Worley Parsons, 2015)

N
W E
S

Scale 1:5,000 (at A3)

0 0.15 0.3

Km

Figure 19.3: Peak Design Floodwater Depths for the 1% AEP Flood

Prepared By:

Catchment Simulation Solutions
Suite 2.01, 210 George St
Sydney, NSW 2000

File Name: Fig19.3 Design floodwater depths for 1% AEP.wor

ANNEXURE D

Flood Level Enquiry letter prepared by Penrith City Council, reference: P-601652-X6F4, dated 11 December 2023

Our reference: P-601652-X6F4
Contact: Dr Elias Ishak
Telephone: 4732 7579

11 December 2023

Caitlin Russell
33 Herbert Street
ST LEONARDS NSW 2065

Dear Sir/Madam,

Flood Level Enquiry
Part Lot 4 DP 1238301 No 35 Derby Street Kingswood

Please find enclosed Flood Level information for the above property.

Should you require any further information please do not hesitate to contact me on 4732 7579.

Yours sincerely

Dr Elias Ishak
Senior Engineer – Floodplain Management

Penrith City Council
PO Box 60, Penrith
NSW 2751 Australia
T 4732 7777
F 4732 7958
penrith.city

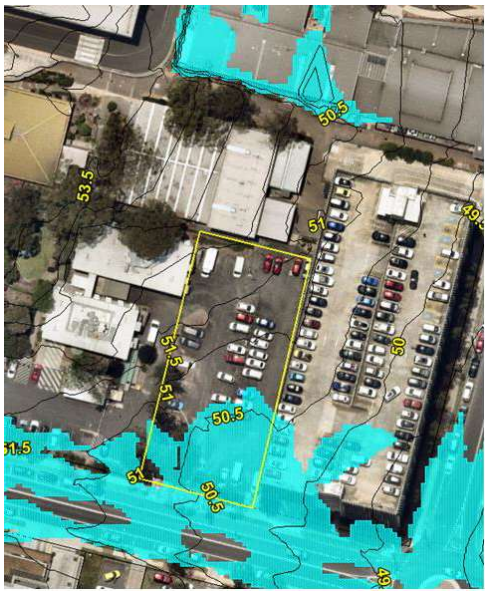
PENRITH CITY COUNCIL

Flood Information
Part Lot 4 DP 1238301 No 35 Derby Street Kingswood

Date of Issue: 11 December 2023

The PMF local overland flow flood levels affecting the proposed development area within above property are estimated to be RL52.1m AHD at the northern boundary and RL51.2m AHD at the southern boundary.

Property less than 0.5m above the 1% AEP flood level is subject to Penrith Development Control Plan 2014 Section C3.5 Flood Planning. The Penrith Development Control Plan 2014 is available from Council's website penrith.city.



Definitions

AEP – *Annual Exceedance Probability* – the chance of a flood of this size occurring in any one year.

AHD – *Australian Height Datum* – A standard level datum used throughout Australia, approximately equivalent to mean sea level.

Legend

	Extent of PMF local catchment overland flow path. Generally depths less than 150mm is not shown.

Notes:

1. The contours shown above in yellow numbering are at 0.5m intervals and are based on Aerial Laser Scanning (ALS) Survey undertaken in 2002. The contour levels are approximate and for general information only. Accurate ground levels should be obtained by a Registered Surveyor.
2. The flood level is based on current information available to Council at the date of issue. The flood level may change in the future if new information becomes available. The 1% AEP flood is the flood adopted by Council for planning controls. Rarer and more extreme flood events will have a greater effect on the property.
3. Council's studies are reflected in flood mapping for the City which show properties potentially affected by overland flows in excess of 150mm.
4. This property is shown on Council's flood mapping as potentially so affected.
5. Council imposes flood related development controls where, in its opinion, such controls are justified. Such controls may or may not be imposed with respect to this property in the event of an application for development consent.
6. If a development proposal is submitted with respect to this property, Council will consider the possibility of flood or overland flow in the context of the application. Council may impose a requirement that the applicant for development consent carry out a detailed assessment of the possible overland water flows affecting the property (a flood study) and/or may impose other controls on any development designed to ameliorate flood risk.
7. You are strongly advised if you propose to carry out development upon the property, that you retain the assistance of an experienced flooding engineer and have carried out a detailed investigation.
8. Council accepts no liability for the accuracy of the flood levels (or any other data) contained in this certificate, having regard to the information disclosed in Notes "1" to "4". As such you should carry out and rely upon your own investigations.

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PO Box 60, Penrith
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Dr Elias Ishak
Senior Engineer – Floodplain Management