

CONCEPTUAL STORMWATER MANAGEMENT PLAN

Proposed Niecon Life Sciences Centre

**Lumina Site 6B, Corner of Hill Street &
Frazer Street, Southport**

Lots 62 & 63 on SP338437

For GCHKP Pty Ltd

23 September 2024

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Client Contact:	William Nikiforides
Client Reference:	Lumina Site 6B, Corner of Hill Street & Frazer Street, Southport
Synopsis:	This <i>Conceptual Stormwater Management Plan</i> describes the existing site characteristics, and corresponding stormwater quantity and quality management controls to be implemented during the operation phase of the development.

Reviewed by RPEQ	Reg. No.	Signed	Date
Trent Purdon	12190		23 September 2024

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I	23 September 2024	Aaron Pianta	Trent Purdon

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GCHKP Pty Ltd - William Nikiforides	1	PDF

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Appendix D	OSKA Consulting Group, Post Development Catchment Plan (Ref: OSK5172/P003/F)
Appendix E	OSKA Consulting Group, Conceptual Stormwater Management Plan (Ref: OSK5172/P005/F)
Appendix F	OSKA Consulting Group, Sediment and Erosion Control Plan (Ref: OSK5172/P007/F); OSKA Consulting Group, Sediment and Erosion Control Details (Ref: OSK5172/P008/A)
Appendix G	OSKA Civil Consultants, Response to Healthy Waters Code (Ref: OSK5172-0006)

1.0 INTRODUCTION

1.1 Background

OSKA Civil Consultants has been commissioned by GCHKP Pty Ltd to prepare a Conceptual Stormwater Management Plan (CSWMP) to support a Development Application (DA) to the City of Gold Coast (CoGC) for the Proposed Niecon Life Sciences Centre situated at Lumina Site 6B, Corner of Hill Street & Frazer Street, Southport.

The subject site is described as Lots 62 & 63 on SP338437 and has a total site area of 0.20ha.

This revision H report has been prepared to reflect a reduction in building height and Gross Floor Area.

1.2 Scope

This CSWMP details the conceptual planning, layout and design of the stormwater management infrastructure for both the construction and operational phases of this development.

This CSWMP aims to:

- Establish the required performance criteria for both the existing and proposed stormwater quantity and quality improvement systems;
- Provide a conceptual design of stormwater infrastructure including stormwater quality improvement devices and stormwater quantity management controls;
- Demonstrate the modelled post-development stormwater quality discharging from the site does not adversely impact on the water quality and ecological values of downstream watercourses;
- Demonstrate stormwater runoff is conveyed through the site to a Lawful Point of Discharge (LPOD) in accordance with the Queensland Urban Drainage Manual (QUDM); and
- Provide reporting and monitoring mechanisms whereby the performance of this system can be measured enabling identification of corrective actions/alterations required to ensure the above mentioned objectives are maintained.

This CSWMP has been prepared in accordance with the IEAust *Australian Runoff Quality: Guide to Water Sensitive Urban Design*, Queensland State Planning Policy 2017, IPWEA *Queensland Urban Drainage Manual (QUDM) Fourth Edition (2017)* and City of Gold Coast (CoGC), *SC6.11 City Plan Policy – Land Development Guidelines*.

2.0 SITE DESCRIPTION

2.1 Location

The subject site is located on Lumina Site 6B, Corner of Hill Street & Frazer Street, Southport. The site fronts Frazer Street to the north and Hill Street to the west and is surrounded by commercial health properties to the south and east. The site covers a total combined area of 0.20ha, with details as summarised in Table 1 and as located in Figure 1.

Table 1: Site Description

Client	Lot and Property Description	Street Address
GCHKP Pty Ltd	Lots 62 & 63 on SP338437	Lumina Site 6B, Corner of Hill Street & Frazer Street, Southport

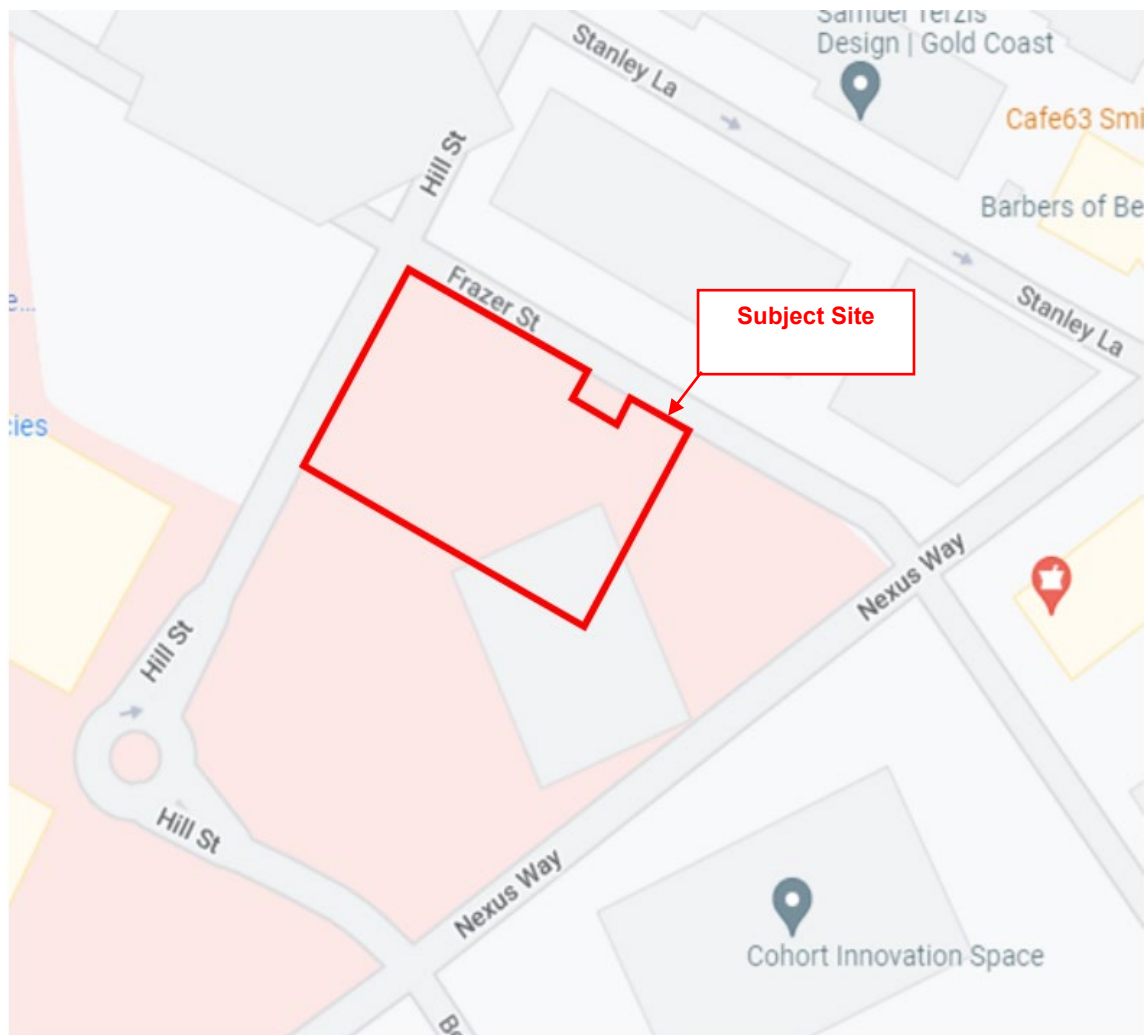


Figure 1: Locality Plan (Source: GoogleMaps)

2.2 Site Topography

The existing site is a constant grade of 5% with spot heights ranging from approximately RL 18m AHD to RL 16m AHD. The site generally slopes towards Frazer Street to the north. Based on the provided survey and aerial information, any stormwater runoff from ground surfaces drains to the stormwater drain to the north and west of the site.

Further information of the site survey has been provided by Bennett+Bennett, Verification Plot "Proposed Stage 6B Site", (Ref: 200083_001_VER) included as Appendix A.

2.3 Vegetation and Land Use

The subject site is currently vacant with gravel surface and some grass cover. There is currently no vehicular access to the site.

An aerial photograph taken on the 13th of November 2021 of the subject site is included in Figure 2.



Figure 2: Aerial Image of the Site (Source: Nearmap – Image taken 13th November 2021)

2.4 Proposed Development

The proposed development for the site consists of a 7-storey building for a centre of excellence for clinical care, research, innovation and industry. The proposed development contains two (2) levels of basement car parking. There are tenancies situated from Level 1 to Level 6 of the proposed building.

Ramp and driveway access to the site will be gained via Frazer Street to the north. This proposed driveway is connected to the basement car parks and above ground car parks.

Refer to Appendix B for further proposed architectural details prepared by Kris Kowalski Architects, Level 1 (Ref: 1793-DA_1_100) and Level 2 (Ref: 1793-DA_1_101).

2.5 Proposed Conceptual Drainage

The stormwater connection to the Lawful Point of Discharge (LPOD) is conceptual at this stage. The captured flows within the site are directed to the proposed surcharge pit at the front of the site before draining to the existing gully pit within Hill Street via gravity stormwater drainage. The proposed drainage regime for the development is to be facilitated by a Building Hydraulics consultant at the detailed design phase.

2.6 Rainfall Data

Rainfall intensity data has been obtained from the Australian Bureau of Meteorology's 2016 Design IFD Rainfall System. The data has been extracted for the nearest grid cell at Latitude 27.961 (S) and Longitude 153.385 (E). The IFD data and average rainfall intensities used in this report are in accordance with the procedures outlined in Geosciences Australia, Australian Rainfall and Runoff 2019.

3.0 DATA

Data which has been sourced or provided, in order to prepare this report for the site, was gathered from the following sources:

- Detailed site survey provided by Bennett+Bennett, Verification Plot "Proposed Stage 6B Site", (Ref: 200083_001_VER) included as Appendix A;
- Proposed Site Plan provided by Kris Kowalski Architects, Level 1 (Ref: 1793-DA_1_100) and Level 2 (Ref: 1793-DA_1_101) included as Appendix B;
- LIDAR data for the subject site sourced from Australian Government Elevation and Depth Foundation Spatial Data (ELVIS), Date Source: 2014, DEM Data;
- Rainfall and Meteorological 2016 IFD Data by the Australian Bureau of Meteorology;
- Information Extracted from CoGC City Plan Interactive Mapping – Version 7;
- Aerial Imagery by Nearmap (Accessed on 13th November 2021); and
- MUSIC data sourced from Rainfall Station 40609, Elanora.

4.0 SITE HYDROLOGY

4.1 Background

The following sections define the method and parameters utilised within the hydrologics of the site, in order to establish a simulation of the anticipated flow regime and peak discharge at the Lawful Point of Discharge (LPOD). A Rational Method calculation has been provided for comparison of the pre and post development peak flow rates.

The Rational Method (Section 4.3 of the Queensland Urban Drainage Manual - QUDM 2017) is a suitable estimation technique, given its flexibility in its data requirements and is able to produce satisfactory estimates of peak site discharges based on the following data input:

- specific intensity frequency duration (IFD) data;
- length/type of flow path;
- contributing catchment areas; and
- coefficient of discharge.

4.2 Pre Development

4.2.1 Catchment Definition and Lawful Point of Discharge

The pre-development site has been analysed as a singular internal catchment and has a contributing area of 2,000m². Stormwater captured on the ground surface drains towards an existing stormwater network within Hill Street and Frazer Street.

The existing Lawful Point of Discharge (LPOD) for the subject site (for analysis in accordance with QUDM), is at the existing pits situated within Hill Street and Frazer Street.

The catchment area and LPOD for the subject site are shown on OSKA Consulting Group, Pre Development Catchment Plan (Ref: OSK5172/P002/B) included as Appendix C.

From the original Stormwater Management Plan and master plan for the Gold Coast Parklands Redevelopment the subject site was proposed as a commercial land use consistent with the proposed land use. Flood modelling was undertaken for the overall precinct to ensure no adverse impact downstream from increases in runoff or changes to catchment discharge locations.

4.3 Post Development

4.3.1 Catchment Definition and Lawful Point of Discharge

The post-development scenario has been analysed as the same internal catchment as described in the pre-development scenario and has a total contributing area of 2,000m².

Stormwater collected from the roof, carpark and ground areas shall be conveyed via an internal network of pits and pipes, sized to capture the minor AEP events, and are directed to the existing pit (the site's LPOD) located in Hill Street.

The internal building drainage design to facilitate this stormwater strategy is to be designed by the Building Hydraulic Engineer at the detailed design phase.

The post development catchment area and LPOD are detailed on OSKA Consulting Group, Post Development Catchment Plan (Ref: OSK5172/P003/F) included as Appendix D.

4.3.2 Coefficient of Runoff

The post-development coefficients of runoff (C year) were determined using the fraction impervious method as specified in QUDM.

Based on the supplied architectural plans, the post-development catchment has approximately 2,000m² of impervious surfaces which equates to a fraction impervious (fi) of 1.0, equating to a C10 of 1.00, and C100 of 1.00. Using a one-hour, ten-year rainfall intensity (¹I₁₀) of 70.5 mm/hr, a C10 value of 0.90 has been adopted for the post-development catchment.

The following post-development Coefficients of Runoff (as shown in *Table 4*) have been adopted in accordance with QUDM Table 4.5.2, which apply the frequency factors for the standard Annual Exceedance Probability (AEP) design storms of 39%, 10%, 5% and 1% (corresponding to the 2, 10, 20 and 100-year ARI storms).

Table 2: Post Development Coefficient of Runoff

Catchment	C ₂	C ₁₀	C ₂₀	C ₁₀₀
POST	0.765	1.00	1.00	1.00

4.3.3 Time of Concentration

The Time Of Concentration for the post developed catchment has been calculated in accordance with QUDM Table 4.6.3 – Recommended roof drainage system travel times.

In accordance with Table 4.6.3 of QUDM, the post-development catchment will have a time of concentration that will incorporate 5 minutes of the roof to downpipes time plus one minute of pipe flow. This equates to a total travel time of six (6) minutes.

4.3.4 Design Flow Rates

Post-development peak flow rates have been calculated for the adopted storms using design rainfall intensities from the Bureau of Meteorology 2016 IFD Data. The Rational Method ($Q = 2.78 \times 10^{-3} CIA$) has been used to estimate the required design peak flow rates for the subject site. The post-development peak flows for the subject site are presented in Table 5.

Table 3: Post Development Peak Flow Estimation – Rational Method

POST					
Annual Exceedance Probability	AEP	39%	10%	5%	1%
Coefficient of Runoff	C	0.765	1.00	1.00	1.00
Area of Catchment (ha)	A	0.20	0.20	0.20	0.20
Average Rainfall Intensity (mm/h)	I	130.00	208.00	239.00	312.00
Peak Flow Rate (m ³ /s)	Q	0.060	0.116	0.130	0.170

The proposed development has demonstrated via a Rational Method assessment, and in comparison, to the existing Overall Gold Coast Parklands Master Plan, the fraction impervious of the site is within the expected parameters and land use. Therefore, it is not expected that there will be any increase in peak flow rates discharging from the site. Hence, no on-site detention measures will be required for this development.

4.4 External Catchments

The subject site and the surrounding area were examined to determine if any localised external catchments will contribute to the subject site. The subject site of Lumina Site 6b is part of a full site of Lots 62 and 63 on SP338437 that currently grades to the subject sites north-western boundary. The proposed building is built to boundary therefore will be impeding the existing overland flow. It is proposed to construct a diversion drain within the Public Plaza to account for interim flows until Lot 6A and Public Plaza are developed. The diversion drain is designed to capture predeveloped site flows from the external catchment.

The proposed diversion drain is sized to cater for the Q100 overland flow which has been calculated using QUDM's friends equation and City of Gold Coast City Plan Guidelines to determine the time of concentration. The diversion drain is proposed as 1.7m top width, 100mm base width with 1 in 4 sides and 200mm deep at 0.5% longitudinal grade toward the eastern boundary on Nexus Way. The Q100 flow rate to be captured within the diversion drain has been calculated as 0.160m³/s. Grass diversion drain parameters are shown in Table 4.

Table 4: Manning's Equation – Grass Diversion Drain

Manning n	0.045
Grade S	0.005
Width B (m)	0.1
Side slope G (1in)	4
Depth d (m)	0.20
X (m)	0.80
Effective B (m)	1.70
Area A (m²)	0.34
Slope length (m)	0.82
Wetted perimeter (m)	1.75
Hydraulic radius (m)	0.19
Velocity v (m/s)	0.52
Flow cumec (m³/s)	0.180
Q100 flow to be captured	0.160

The proposed diversion drain location and size is shown on OSKA Consulting Group, Post Development Catchment Plan (Ref: OSK5172/P003/F).

5.0 STORMWATER QUALITY ASSESSMENT

5.1 Background

The development of the land has the potential to increase the pollutant loads within stormwater runoff and downstream watercourses. During the construction phase of the development, disturbances to the existing ground have the potential to significantly increase sediment loads entering downstream drainage systems and watercourses. The operational phase of the development will potentially increase the amount of sediments and nutrients washing from the site.

It should be noted that water quality devices have been provided downstream of the site as part of the Overall Gold Coast Parklands Master Plan.

The following sections describe the construction and operational phase controls in compliance with Council guidelines.

5.2 Construction Phase

A high risk of stormwater pollution will occur from the site during the construction phase due to erosion and sediment transportation off-site to the receiving environment. The majority of this risk results from construction activities disturbing the site and exposing areas of soil to the direct erosive influence of the environment.

The following section outlines the procedures necessary to minimise erosion and control sediment during construction in accordance with the International Erosion Control Association (IECA) Best Practice ESC Document.

5.2.1 Key Pollutants

The key pollutants have been identified for the Construction Phase of this development.

Table 5: Key Pollutants, Construction Phase

Pollutant	Sources
Litter	Paper, construction packaging, food packaging, cement bags, material offcuts.
Sediment	Exposed soils and stockpiles during earthworks and building works.
Hydrocarbons	Fuel and oil spills, leaks from construction equipment and temporary car park areas.
Toxic Materials	Cement slurry, asphalt primer, solvents, cleaning agents, and wash waters (e.g., from tile works).
Acids or Alkaline substances	Acid sulphate soils, cement slurry and wash waters.

5.2.2 Sediment and Erosion Controls

Sediment and Erosion Control devices (S&EC) employed on the site shall be designed and constructed in accordance with the International Erosion Control Association (IECA) Best Practice ESC Document as shown on OSKA Consulting Group, Sediment and Erosion Control Plan (Ref: OSK5172/P007/F; OSKA Consulting Group, Sediment and Erosion Control Details (Ref: OSK5172/P008/A) included as Appendix F.

Pre-Construction

- Stabilised site access/exit onto Frazer Street to the north;
- Sediment fences to be located around the perimeter of the site;
- Sediment trap to be installed in the western of the site;
- Dust fencing to be installed if required; and
- Educate site personnel to the requirements of Erosion and Sediment Control Plan.

Initial Construction

- Maintain construction access/exit, sediment fencing, dust fences and all other existing controls as required;
- Construct diversion drains to convey disturbed site run-off to the temporary sediment traps; and
- Confine construction activities to stages to minimise areas of disturbance at any given time.

Second Stage Construction

- Maintain construction access/exit, sediment fencing, dust fences, diversion drain and all other existing controls as required;
- Progressively revegetate finished areas where applicable;
- Divert runoff from undisturbed areas around disturbed areas; and
- Drainage structure protection around field inlets and gully pits.

During construction, all areas of exposed soils allowing dust generation are to be suitably treated. Treatments will include covering the soil and watering. Road accesses are to be regularly cleaned to prevent the transmission of soil on vehicle wheels and eliminate any build-up of typical road dirt and tyre dust from delivery vehicles.

Adequate waste disposal facilities are to be provided and maintained on the site to cater for all waste materials such as litter, hydrocarbons, toxic materials, acids or alkaline substances.

5.2.3 Water Quality Monitoring and Inspections

To ensure that the water quality objectives are being met during the construction phase of the development, water quality monitoring shall be conducted. Water quality monitoring shall use a calibrated probe or sampling and testing at a NATA registered laboratory.

Location: Monitoring Stations MS1 shown on OSKA Consulting Group, *Sediment and Erosion Control Plan* (Ref: OSK5172/P007/F).

Parameters: Site discharge criteria.

Frequency: Following at least 30 mm of rainfall in a 24-hour period.

The contractor shall be responsible for the inspection and maintenance of all sediment and erosion control devices. Additional controls and review of existing controls shall be undertaken in response to the results of the above-mentioned monitoring program.

5.2.4 Reporting

An inspection report shall be written by a suitably qualified and experienced scientist/engineer following each water quality monitoring episode. The report shall include at least the following information:

- Name, address and real property description for the development site;
- Council file reference number (if known);
- Monitoring locations;
- Performance criteria;
- Results for each monitoring location, identifying any breaches of performance criteria;
- Recommended corrective actions to be taken and additional sediment and erosion controls, if required; and
- Inspection reports shall be provided to the contractor for their action and compilation in an on-site register.

If the above-mentioned performance criteria are exceeded and results from the downstream monitoring stations show significant deterioration from upstream results (if applicable), the contractor shall implement all recommendation of the inspection report within one (1) working day of receipt of the report.

5.3 Operational Phase

The proposed development is part of the Overall Gold Coast Parklands Master Plan, with the development density consistent with the original assumptions within the Master Plan Report with downstream stormwater quality devices proposal.

Subsequently it is not proposed to provide any on site stormwater quality devices, as water quality for the site is catered for in the downstream network.

6.0 CONCLUSIONS

OSKA Civil Consultants has been commissioned by GCHKP Pty Ltd to prepare a Conceptual Stormwater Management Plan (CSWMP) to support a Development Application (DA) to the City of Gold Coast (CoGC) for the proposed residential building situated at Lumina Site 6B, Corner of Hill Street & Frazer Street, Southport. This CSWMP intends to provide an optimised stormwater management system that would be compatible and readily integrated into the proposed site use.

This CSWMP details the conceptual planning, layout and design of the stormwater management infrastructure for both the construction and operational phases of this development and satisfies the requirements of the City of Gold Coast's Land Development Guidelines.

A calculation of anticipated post-development peak flow rates discharging from the site has been undertaken, with the percent impervious consistent with previous assumptions of the Overall Gold Coast Parklands Master Plan. Therefore, onsite stormwater detention and stormwater quality treatment will not be required for the site.

APPENDIX

A

Bennett+Bennett,
Verification Plot “Proposed Stage 6B
Site”,(Ref: 200083_001_VER)

LEGEND:

Road	Terrain
Kerb Back	Driveway
Kerb Invert	Footpath
Edge of Bitumen	Slab Edge
Edge of Gravel	Retaining Wall Base
Road Crown	Retaining Wall Top
Traffic Park Meter	Change of Grade
Traffic Light	Top of Bank
Traffic Pit	Toe of Bank
Traffic Sign	Waterline
Traffic Post Box	Garden Edge
Structures	Creek Toe of Bank
Building Line	Creek Top of Bank
Roof Ridgeline	Creek Invert
Fence Line	Creek Waterline
Gate	Tree
Hand Rail	Tree Canopy
Cattle Grid	Control Point/PSM
Bollard	Drainage
Sewer	Drainage line
Sewer Line	Open Drain
Valve	Manhole
Inspection Opening	Field Inlet
Manhole	Downpipe
Electrical	Communications
Electricity Line	Communication Line
Overhead Line	Overhead Line
Pits/Manholes	Pits/Manholes
Pole	Pillar
Street Light	Gas
Light In-Ground	Gas Line
Water	Valve
Water Line	Marker
Meter	Subsurface Utility -QL
Valve	* (A) * Quality A (H±50mm,V±50mm)
Fire Hydrant	* (B) * Quality B (H±300mm,V±500mm)
Tap	* (C) * Quality C (H±300mm,2D)
Sprinkler	* (D) * Quality D (Exist Record)
Fuel	
Fuel Line	
Fitting	

NOTES:

1. Drawn to scale on an A3 sheet.
2. Contour Interval... 0.25m
3. All levels are in metres on the Australian Height Datum referred to PM200150 R.L 25.253 AHD situated in Parklands Drive
4. All Boundaries are vide title and subject to confirmation by survey.
5. The Location of Underground services are in accordance with AS5488:2019, the Australian Standard for classification of Subsurface Utility Information (SUI). The exact nature and location of these services should be confirmed prior to construction.
6. Area vide title : 7488m²
7. Field Survey Completed on 02/09/2021
8. Proposed areas and measurements are subject to final survey

Level datum: AHD Derived (PM200150)
Horiz datum: MGA Derived DCDB (SP277512)
Coord Origin: DCDB (NE Cor Site)
GDA System: GDA2020 Coordinate System: Plane 1:1
Meridian: + 0°00'00" SP277512

Title:

VERIFICATION PLOT "PROPOSED STAGE 6B SITE" LOT 12 on SP275512 15 Nexus Way, Southport

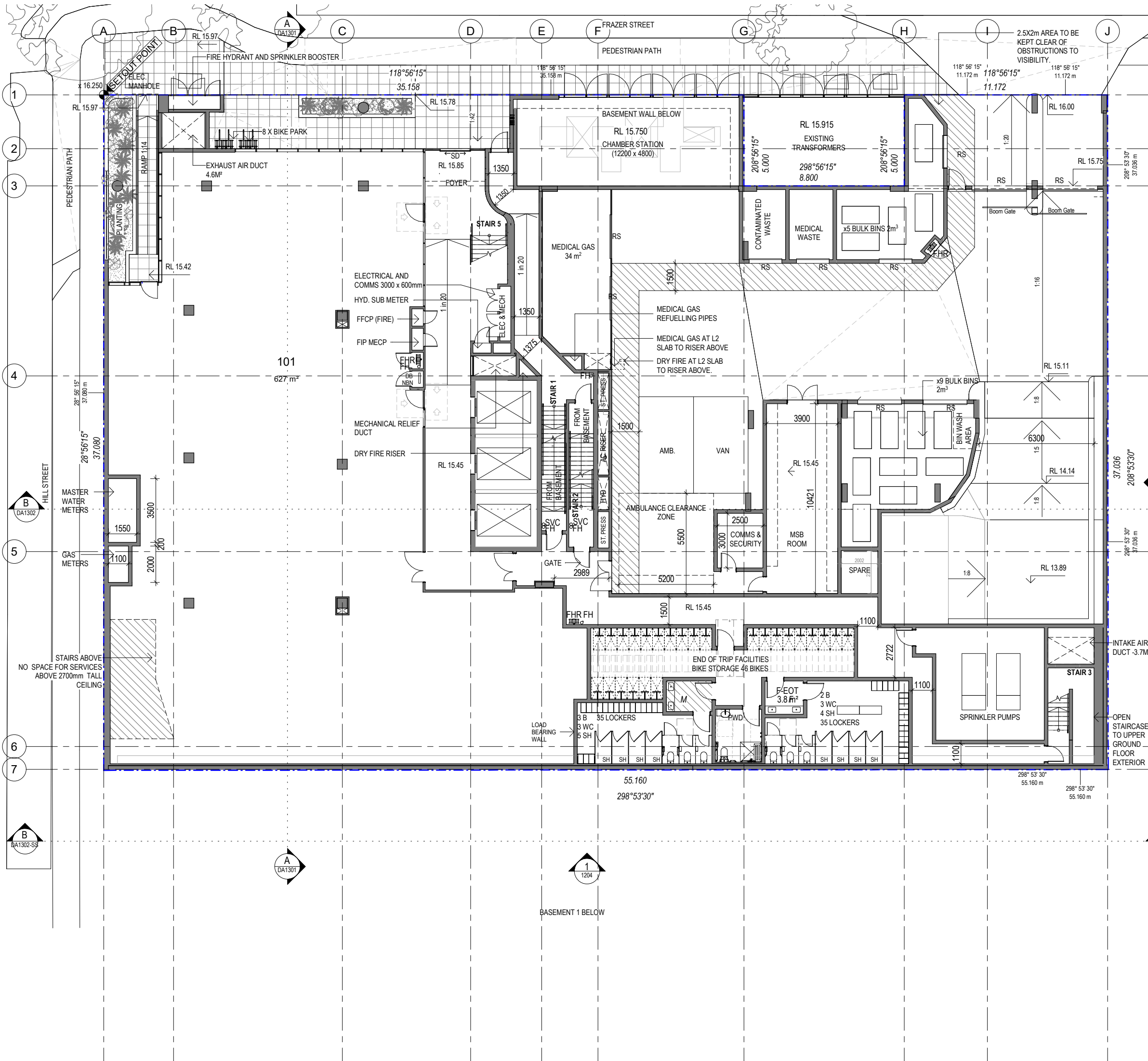
Client:	Nu-Dev Pty Ltd		
Locality:	Southport		
Local Gov:	Council of the City of Gold Coast		
Surveyed By:	BH	Approved:	GS
Date Created:	09/09/21	Scale:	1:500
File Ref:	200083		
Plan No:	200083_001_VER	Rev:	A



APPENDIX

B

Kris Kowalski Architects,
Level 1 (Ref: 1793-DA_1_100) and Level 2
(Ref: 1793-DA_1_101)



LEGEND

EVC	ELECTRIC VEHICLE CHARGER
T	TANDEM CAR PARK
V	VISITOR CAR PARK
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
SVC	SERVICE VALVE CONTROL
M	MALE AMENITIES
F	FEMALE AMENITIES
DB	DISTRIBUTION BOARD
SP	STAIR PRESS
SD	SLIDING DOOR
RS	ROLLER SHUTTER

NOTE:

ALL AREA FIGURES SHOWN ON FLOOR PLAN RELATE TO NLA

BICYCLE PARK SCHEDULE

END OF TRIP: 46
EXTERNAL: 8
TOTAL: 54

CLIENT:

NIECON
CREATING LIFESPACES

REV	DATE	BY	AMENDMENT
A	22.11.23	KG	INITIAL ISSUE
B	07.12.23	KL	GENERAL AMENDMENTS
C	12.12.23	KL	GENERAL AMENDMENTS

PROJECT:

CENTRE OF EXCELLENCE
FOR CLINICAL CARE,
RESEARCH, INNOVATION AND
INDUSTRY

AT:

LUMINA SITE 6B
CORNER OF HILL STREET &
FRAZER STREET
SOUTHPORT

DRAWING TITLE:

LEVEL 1

SCALE: 1:200 @A3

DATE: 13.12.23

JOB No. Dwg. No.

1793 DA 1100

Level 3a

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Facsimile: (07) 3003 1170
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ABN 34053355801

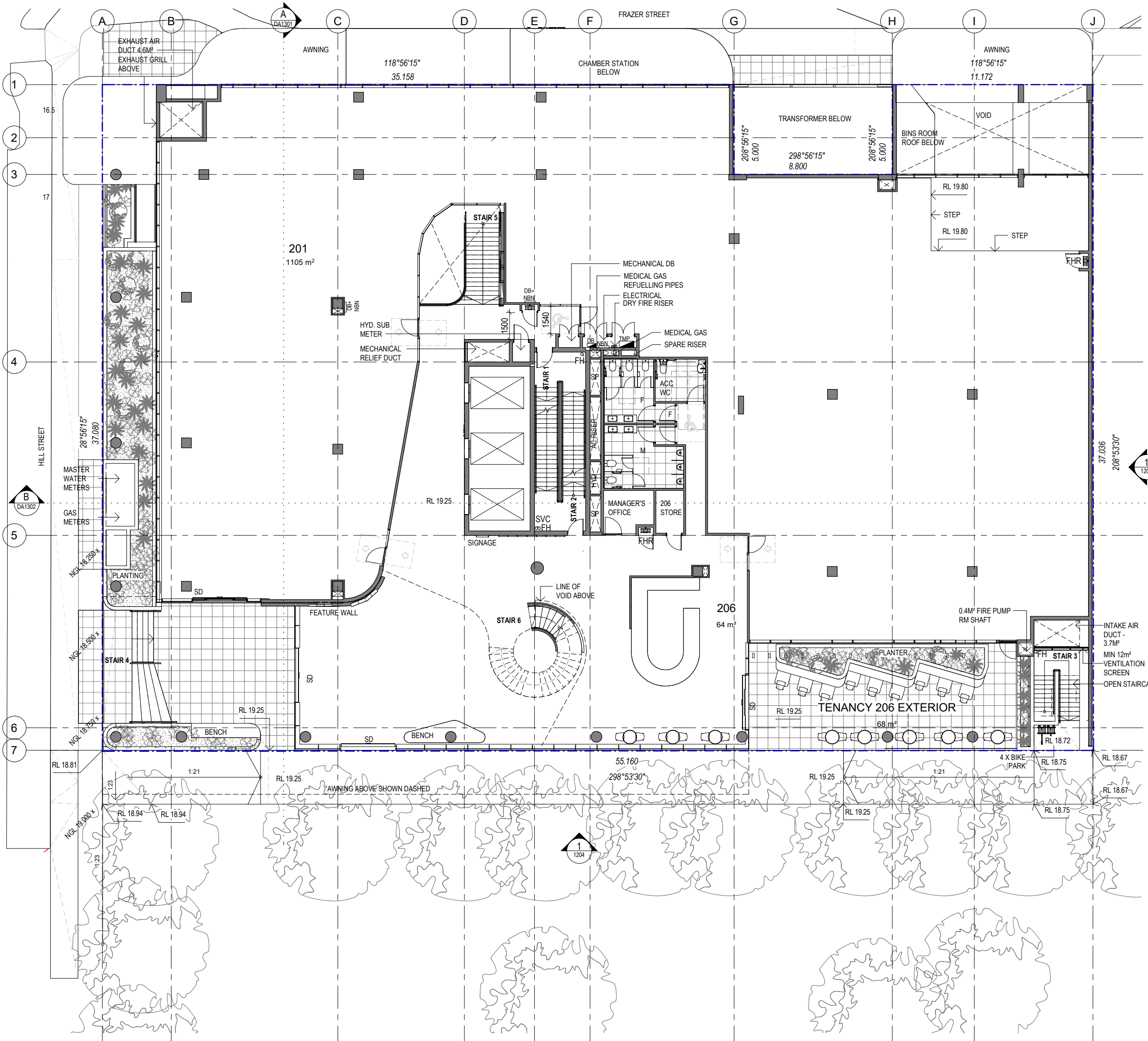


NORTH



REV

C



LEGEND

EVC	ELECTRIC VEHICLE CHARGER
T	TANDEM CAR PARK
V	VISITOR CAR PARK
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
SVC	SERVICE VALVE CONTROL
M	MALE AMENITIES
F	FEMALE AMENITIES
DB	DISTRIBUTION BOARD
SP	STAIR PRESS
SD	SLIDING DOOR
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NOTE:

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END OF TRIP: 46
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NIECON
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REV

REV	DATE	BY	AMENDMENT
A	22.11.23	KG	INITIAL ISSUE
B	07.12.23	KL	GENERAL AMENDMENTS

PROJECT:

CENTRE OF EXCELLENCE
FOR CLINICAL CARE,
RESEARCH, INNOVATION AND
INDUSTRY

AT:

LUMINA SITE 6B
CORNER OF HILL STREET &
FRAZER STREET
SOUTHPORT

DRAWING TITLE:

LEVEL 2

SCALE: 1:200 @A3

DATE: 05.12.2023

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ABN 3405335801

NORTH



REV

B

APPENDIX

C

OSKA Consulting Group,
Pre Development Catchment Plan
(Ref: OSK5172/P002/B)

LEGEND

- S --- STORMWATER CATCHMENT BOUNDARY
- (A) STORMWATER CATCHMENT I.D.
- 80.0 EXISTING SURFACE CONTOURS
- LPD LAWFUL POINT OF DISCHARGE
- FLOW DIRECTION

EXISTING SERVICES LEGEND

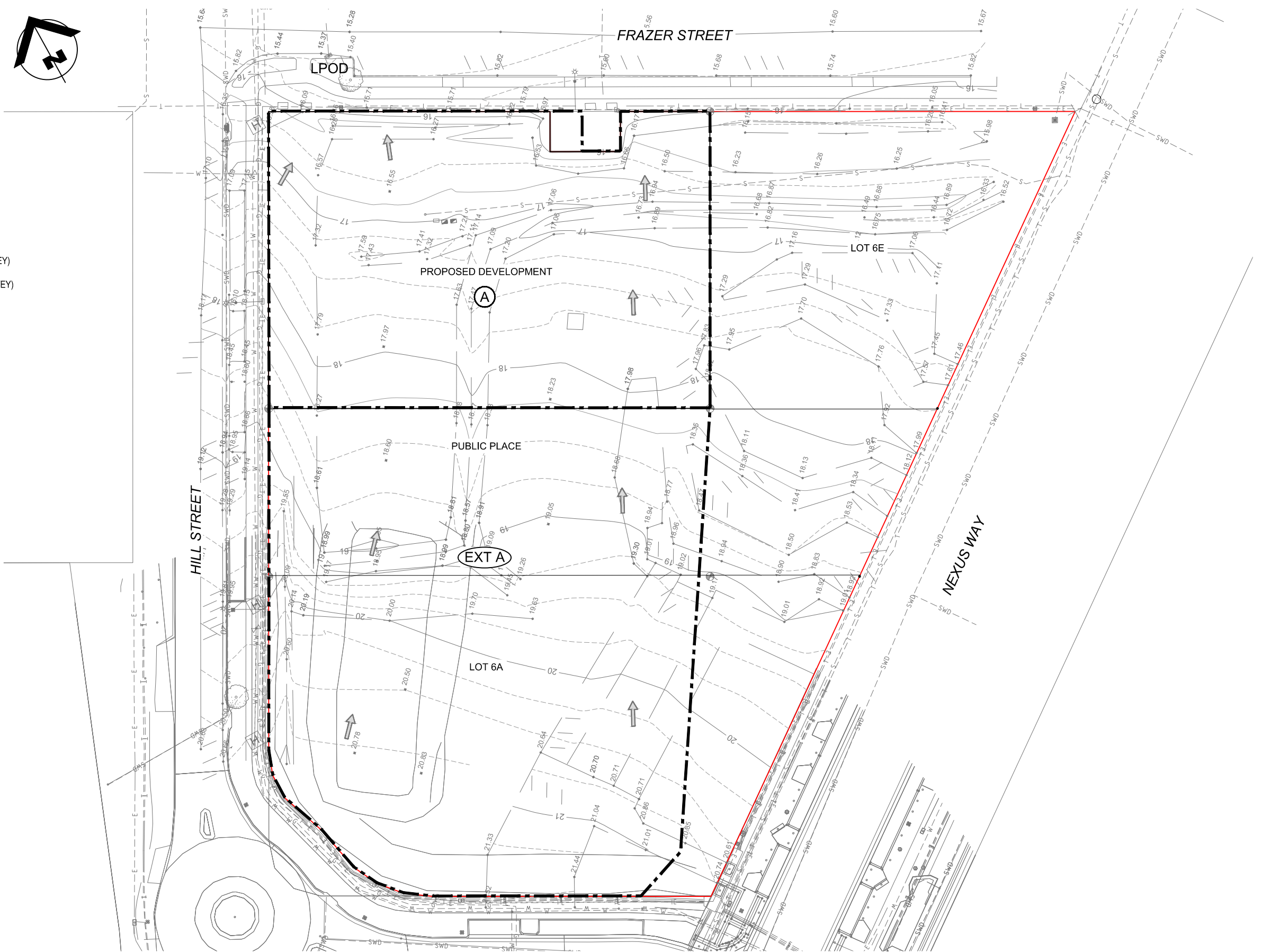
- S --- EXISTING SEWER MAIN (FROM SURVEY)
- W --- EXISTING WATER MAIN (FROM SURVEY)
- E --- EXISTING ELECTRICAL (FROM SURVEY)
- T --- EXISTING TELSTRA CONDUIT (FROM SURVEY)
- SWD --- EXISTING STORMWATER PIPE (FROM SURVEY)

STORMWATER CATCHMENT TABLE

STORMWATER CATCHMENT I.D.	AREA (m²)
A	2000
EXT A	3112

CONTRACTOR TO DETERMINE AND LOCATE ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS

REPORT ISSUE
NOT FOR CONSTRUCTION



ISSUE No.	DATE	AMENDMENT
B	23-08-22	ISSUED FOR REPORT
A	17-06-22	ISSUED FOR REPORT



CLIENT GCHKP PTY LTD	DESIGN EW	DRAWN EW	APPROVED TP
PROJECT CENTER OF EXCELLENCE FOR CLINICAL RESEARCH CORNER OF HILL STREET AND FRAZER STREET, SOUTHPORT, QLD, 4215			

SCALE 1:250 AT A1 1:500 AT A3

TITLE PRE DEVELOPMENT CATCHMENT PLAN	
0 5 10 15 20m	

PROJECT NO. OSK5172	
DWG NO. P002	ISSUE B

APPENDIX

D

OSKA Consulting Group,
Post Development Catchment Plan
(Ref: OSK5172/P003/F)

LEGEND

- STORMWATER CATCHMENT BOUNDARY
- STORMWATER CATCHMENT I.D.
- EXISTING SURFACE CONTOURS
- LPOD
- LAWFUL POINT OF DISCHARGE
- PROPOSED STORMWATER PIPE
- PROPOSED FIELD INLET
- EXTERNAL CATCHMENT DIVERSION DRAIN
- EXTERNAL CATCHMENT FLOW

STORMWATER CATCHMENT TABLE

STORMWATER CATCHMENT I.D.	AREA (m²)
A	2000
EXT A	3112

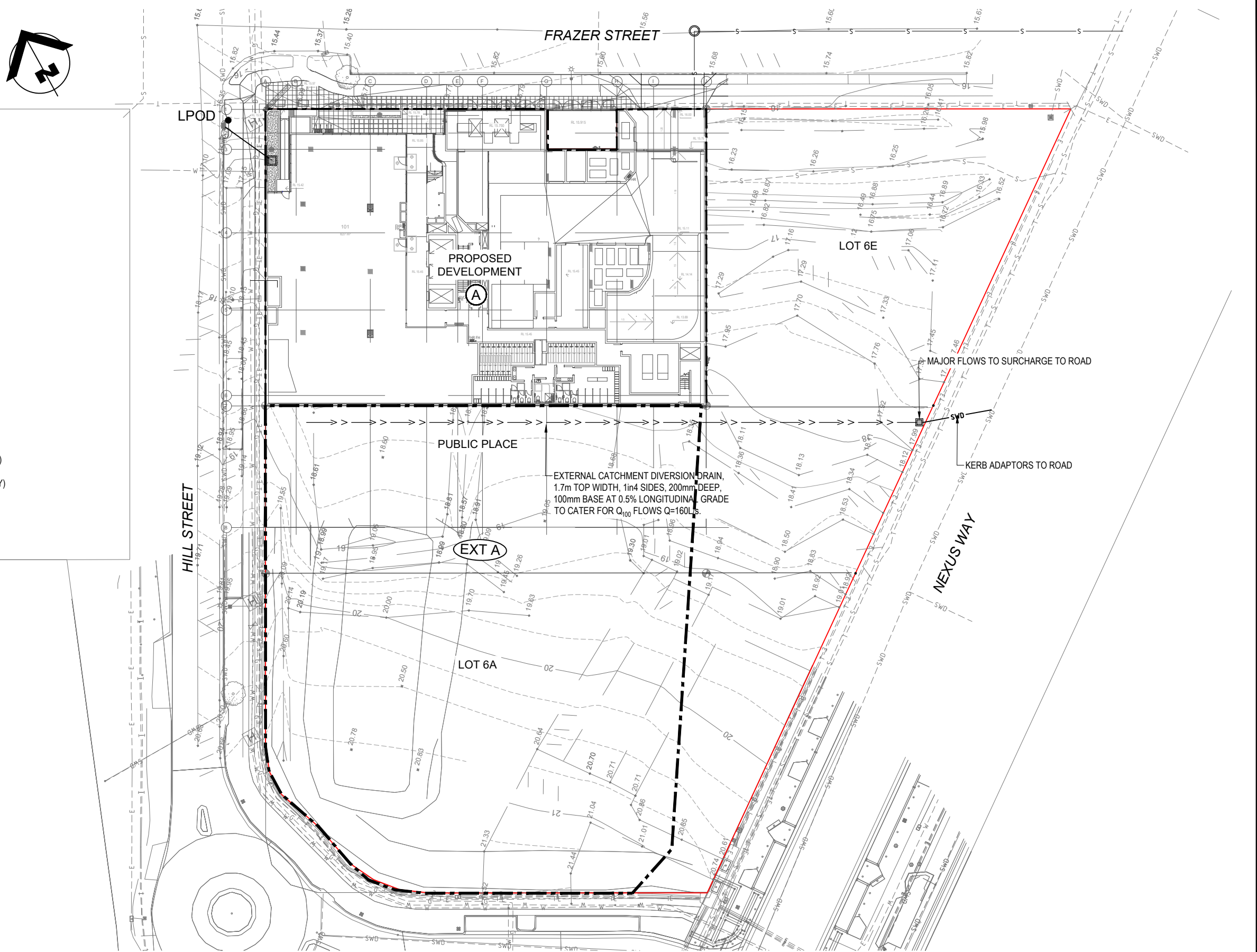
EXISTING SERVICES LEGEND

- EXISTING SEWER MAIN (FROM SURVEY)
- EXISTING WATER MAIN (FROM SURVEY)
- EXISTING ELECTRICAL (FROM SURVEY)
- EXISTING TELSTRA CONDUIT (FROM SURVEY)
- EXISTING STORMWATER PIPE (FROM SURVEY)

REPORT ISSUE

NOT FOR CONSTRUCTION

CONTRACTOR TO DETERMINE AND LOCATE ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS



E	01-12-23	ISSUED FOR REPORT - REVISED ARCHITECTURAL LAYOUT
D	25-01-23	RESPONSE TO RFI
C	07-10-22	REMOVAL OF QUALITY TANK
B	28-06-22	ISSUED FOR REPORT
A	17-06-22	ISSUED FOR REPORT
ISSUE No.	DATE	AMENDMENT



CLIENT	GCHKP PTY LTD
PROJECT	CENTER OF EXCELLENCE FOR CLINICAL RESEARCH CORNER OF HILL STREET AND FRAZER STREET, SOUTHPORT, QLD, 4215

DESIGN	DRAWN	APPROVED
EW	EW	TP

TITLE	PROJECT NO.
POST DEVELOPMENT CATCHMENT PLAN	OSK5172
SCALE	DWG NO.
1:250 AT A1 1:500 AT A3	P003
0 5 10 15 20m	ISSUE
	E

APPENDIX

E

OSKA Consulting Group,
Conceptual Stormwater Management Plan
(Ref: OSK5172/P005/F);

LEGEND

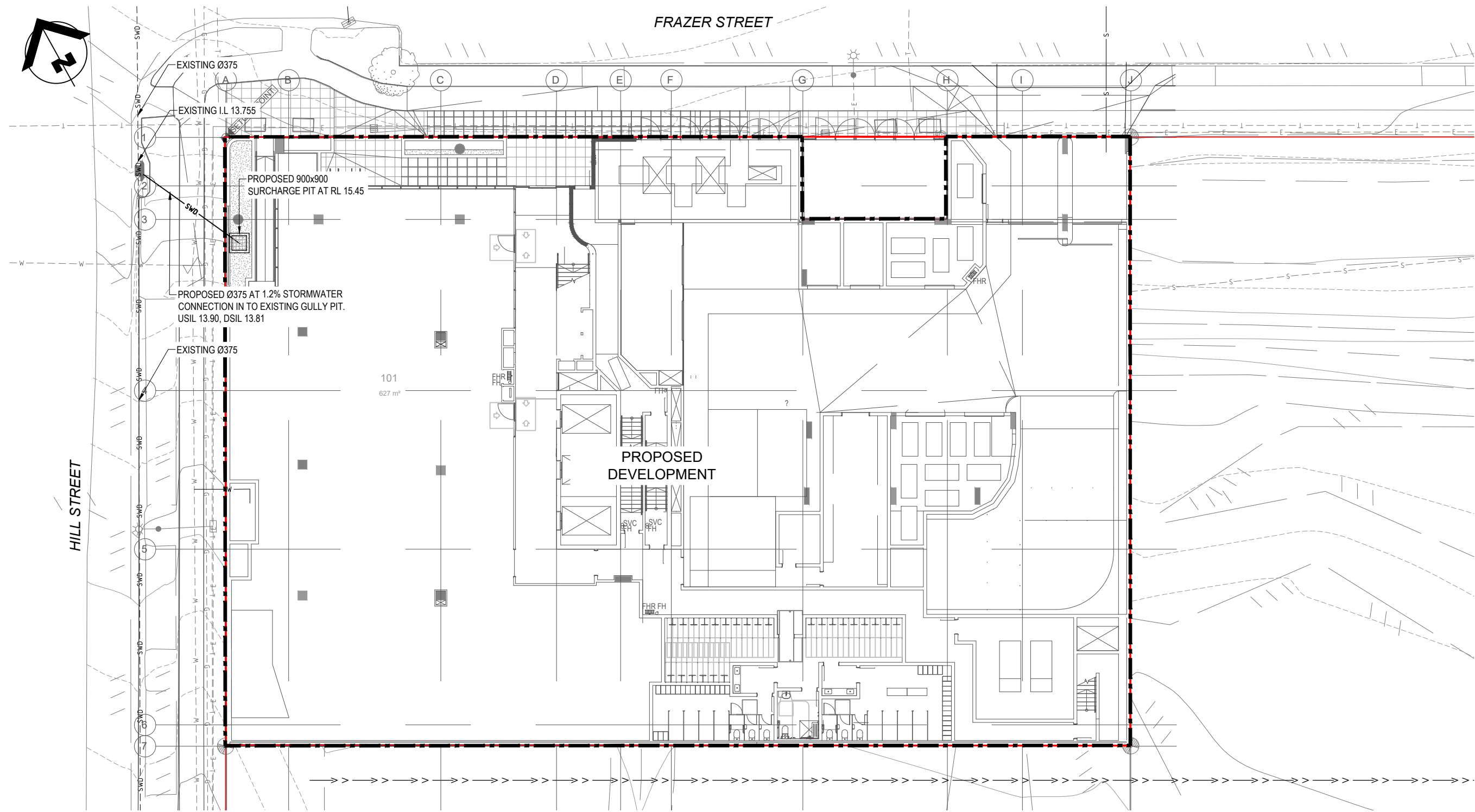
- PROPOSED STORMWATER PIPE
- STORMWATER CATCHMENT BOUNDARY
- SITE BOUNDARY
- EXISTING SURFACE CONTOURS

EXISTING SERVICES LEGEND

- EXISTING SEWER MAIN (FROM SURVEY)
- EXISTING WATER MAIN (FROM SURVEY)
- EXISTING ELECTRICAL (FROM SURVEY)
- EXISTING TELSTRA CONDUIT (FROM SURVEY)
- EXISTING STORMWATER PIPE (FROM SURVEY)

REPORT ISSUE
NOT FOR CONSTRUCTION

CONTRACTOR TO DETERMINE AND
LOCATE ALL EXISTING SERVICES PRIOR
TO COMMENCEMENT OF WORKS



E	01-12-23	ISSUED FOR REPORT - REVISED ARCHITECTURAL LAYOUT
D	25-01-23	RESPONSE TO RFI
C	07-10-22	REMOVAL OF QUALITY TANK
B	28-06-22	ISSUED FOR REPORT
A	17-06-22	ISSUED FOR REPORT
ISSUE No.	DATE	AMENDMENT



CLIENT	GCHKP PTY LTD
PROJECT	CENTER OF EXCELLENCE FOR CLINICAL RESEARCH CORNER OF HILL STREET AND FRAZER STREET, SOUTHPORT, QLD, 4215

DESIGN	DRAWN	APPROVED
EW	EW	TP

TITLE	STORMWATER MANAGEMENT PLAN
SCALE	1:125 AT A1 1:250 AT A3

PROJECT NO.	OSK5172
DWG NO.	P005
ISSUE	E

APPENDIX

F

OSKA Consulting Group,
Sediment and Erosion Control Plan
(Ref: OSK5172/P007/F;
OSKA Consulting Group, Sediment and
Erosion Control Details
(Ref: OSK5172/P008/A)

SEDIMENT & EROSION CONTROL LEGEND

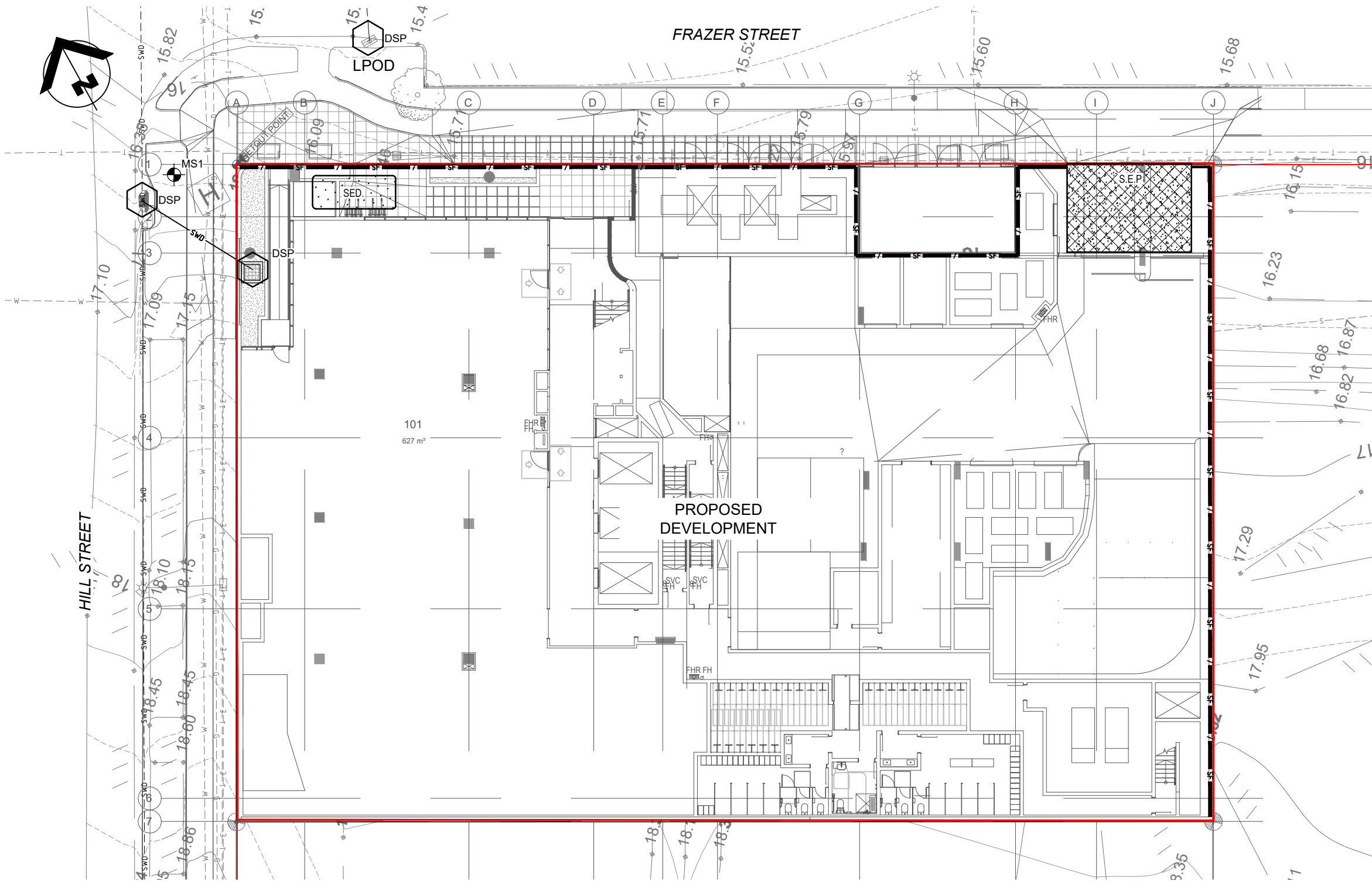
- SF SEDIMENT FENCE
- SED. SEDIMENT RETENTION BASIN
- S.E.P. LOCATION OF STABILISED ENTRY/EXIT POINT
- DSP DRAINAGE STRUCTURE PROTECTION
- MS1 WATER QUALITY MONITORING STATION
- FLOW ARROW
- LPOD LAWFUL POINT OF DISCHARGE
- 80.0 EXISTING SURFACE CONTOURS

EXISTING SERVICES LEGEND

- S EXISTING SEWER MAIN (FROM SURVEY)
- W EXISTING WATER MAIN (FROM SURVEY)
- E EXISTING ELECTRICAL (FROM SURVEY)
- T EXISTING TELSTRA CONDUIT (FROM SURVEY)
- SWD EXISTING STORMWATER PIPE (FROM SURVEY)

REPORT ISSUE
NOT FOR CONSTRUCTION

CONTRACTOR TO DETERMINE AND
LOCATE ALL EXISTING SERVICES PRIOR
TO COMMENCEMENT OF WORKS



E	01-12-23	ISSUED FOR REPORT - REVISED ARCHITECTURAL LAYOUT
D	25-01-23	RESPONSE TO RFI
C	07-10-22	REMOVAL OF QUALITY TANK
B	28-06-22	ISSUED FOR REPORT
A	17-06-22	ISSUED FOR REPORT
ISSUE No.	DATE	AMENDMENT



CLIENT	GCHKP PTY LTD
PROJECT	CENTER OF EXCELLENCE FOR CLINICAL RESEARCH CORNER OF HILL STREET AND FRAZER STREET, SOUTHPORT, QLD, 4215

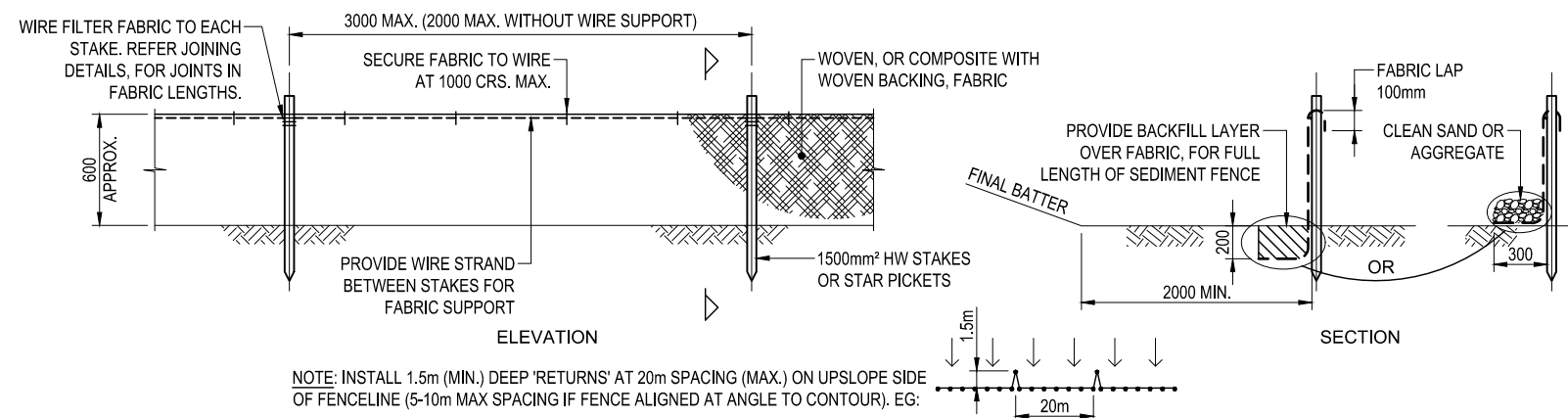
DESIGN	DRAWN	APPROVED
EW	EW	TP

TITLE	SEDIMENT AND EROSION CONTROL PLAN
SCALE	1:125 AT A1 1:250 AT A3

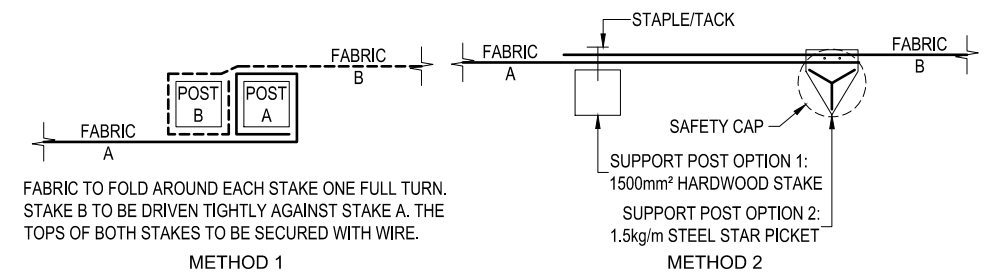
PROJECT NO.	OSK5172
DWG NO.	P007
ISSUE	E

REPORT ISSUE
NOT FOR CONSTRUCTION

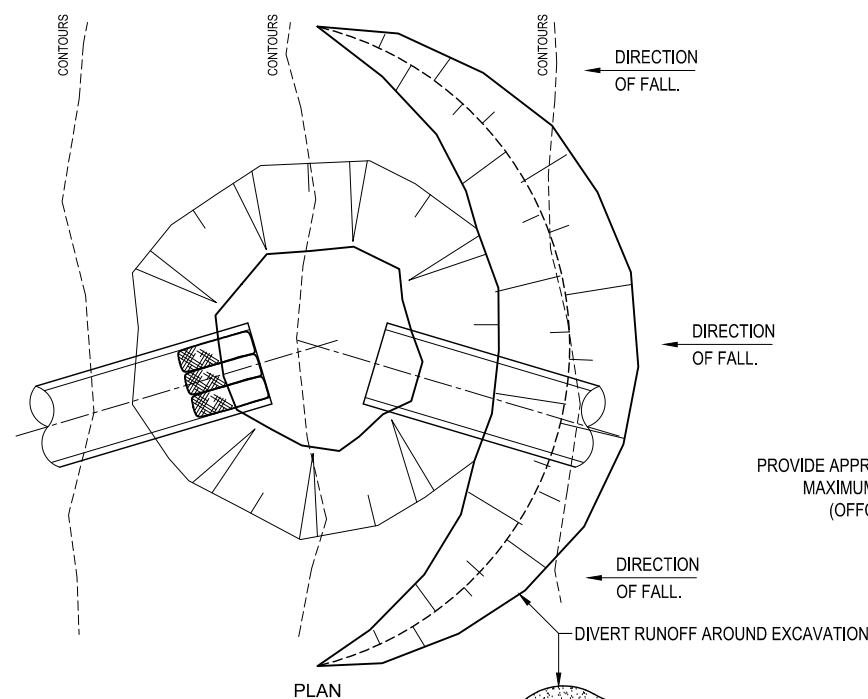
CONTRACTOR TO DETERMINE AND
LOCATE ALL EXISTING SERVICES PRIOR
TO COMMENCEMENT OF WORKS



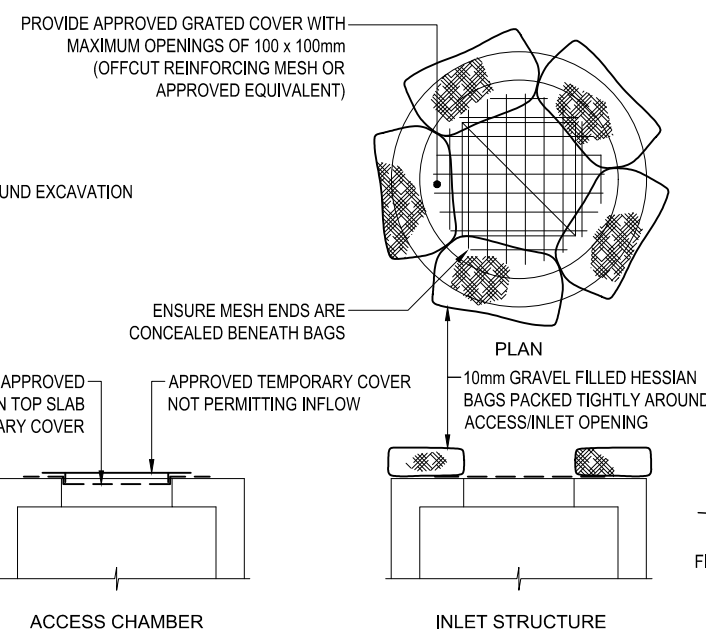
SEDIMENT FENCE DETAILS
N.T.S. ——— SF ——— DENOTES SEDIMENT FENCE. REFER PLAN FOR LOCATION AND EXTENTS.



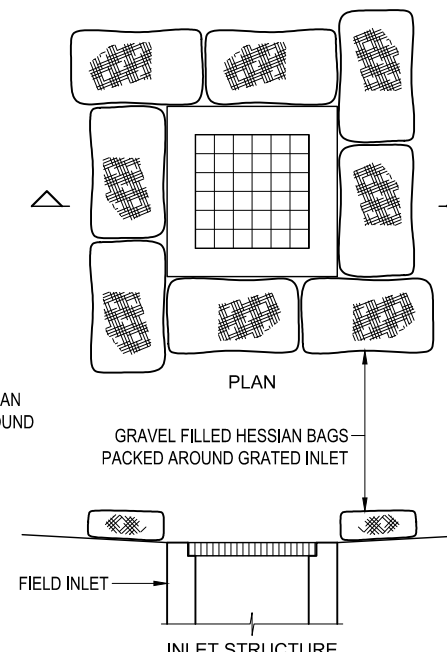
SEDIMENT FENCE FABRIC JOINING DETAILS
N.T.S.



STAGE 1
EXCAVATION AND PIPE INSTALLATION



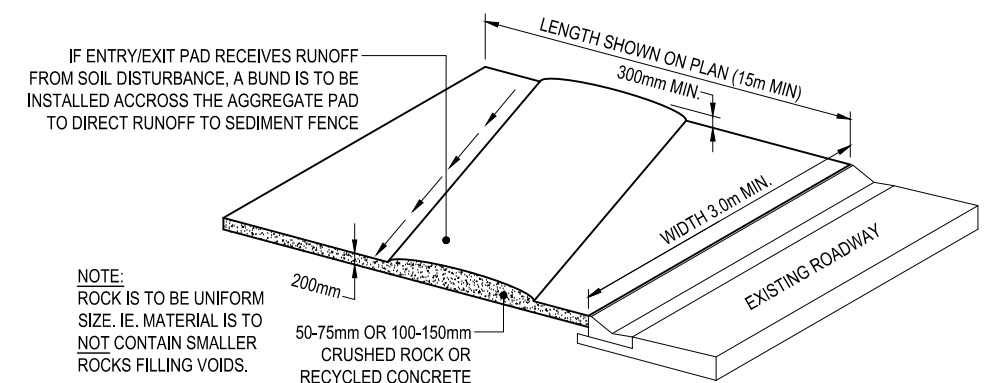
STAGE 2
STRUCTURE COMPLETE UP TO TOP SLAB



STAGE 3
STRUCTURE COMPLETE

ACCESS CHAMBER / INLET STRUCTURE
N.T.S.

DSP DENOTES DRAINAGE STRUCTURE PROTECTION, REFER PLAN FOR LOCATION & EXTENTS.



STABILISED ENTRY/EXIT POINT
N.T.S. OR APPROVED EQUIVALENT

SEP DENOTES STABILISED ENTRY/EXIT POINT, REFER PLAN FOR LOCATIONS.

ISSUE No.	DATE	AMENDMENT
A	17-06-22	ISSUED FOR REPORT



CLIENT	GCHKP PTY LTD
PROJECT	CENTER OF EXCELLENCE FOR CLINICAL RESEARCH CORNER OF HILL STREET AND FRAZER STREET, SOUTHPORT, QLD, 4215

DESIGN	EW
DRAWN	EW
APPROVED	TP

TITLE	SEDIMENT AND EROSION CONTROL DETAILS
SCALE	

PROJECT NO.	OSK5172
DWG NO.	P008
ISSUE	A

APPENDIX

G

OSKA Civil Consultants,
Response to Healthy Waters Code
(Ref: OSK5172-0006)

City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note:

For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

9.4.5 Healthy waters code

9.4.5.1 Application

This code applies to assessing material change of use or reconfiguring a lot for development where indicated within **Part 5 Tables of assessment** unless either of the following circumstances apply:

- (1) No increase in impervious area is required onsite for the development.
- (2) A stormwater quality and quantity management plan previously approved by the Council has been fully implemented within the existing development layout.

Note: Where a development proposal meets either (1) and (2) above, this code is not applicable.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

9.4.5.2 Purpose

- (1) The purpose of the Healthy waters code is to protect the quality of the city's waters from the impacts of development.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Urban stormwater quality management, wastewater management, and management of waters are based on the following principles:
 - (i) Development and construction activities are conducted to achieve the water quality objectives, as specified in the *Environmental Protection (Water) Policy 2009*.
 - (ii) The ongoing management of urban stormwater quality reflect the regional climate and the site's landscape characteristics.
 - (iii) Development is undertaken in accordance with best practice environmental management.

- (iv) Development avoids adverse impacts on the City of Gold Coast's waters or, where this is not feasible, adverse impacts are minimised.
- (b) Water resource catchments are protected from contamination by chemicals.
- (c) The drainage capacity of the Woongoolba Flood Mitigation Scheme Area for rainfall events up to 1 in 10 year 72 hours is maintained (contained within the Scheme drains within a 4 day period) and this capacity is not be eroded due to cumulative impact of development.

9.4.5.3 Specific benchmarks for assessment

Table 9.4.5-2: Healthy waters code – for assessable development

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Stormwater quality			
PO1 Development appropriately manages stormwater quality to: (a) protect natural ecosystems; (b) integrate stormwater treatment into the urban landscape; (c) protect water quality; (d) reduce runoff and peak flows; and (e) meet the water quality objectives and environmental values for Queensland waters.	AO1.1 Where development is: (a) for a dwelling house, dual occupancy or multiple dwelling on a lot less than 5000m²; or (b) light industry or business activity on a lot less than 2500m², it complies with the 'Deemed to comply' requirements detailed in the Stormwater quality management guidelines in SC6.11 City Plan policy – Land development guidelines, Section 4 – Stormwater drainage and water sensitive urban design standards.	A Conceptual Stormwater Management Plan (CSWMP) has been prepared for the proposed Residential development situated at <i>Lumina Site 6B, Corner of Hill Street & Frazer Street, Southport</i> . The site is currently catered for in a downstream stormwater quality device. Refer to OSKA Civil Consultants, Conceptual Stormwater Management Plan (Ref: OSK5172-0003) prepared for GCHP Pty Ltd.	
	AO1.2 Where development is:	N/A	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Note: Water quality objectives and environmental values for Queensland waters are contained within <i>Schedule 1 of the Environmental Protection (Water) Policy 2009</i> . Water quality objectives are locally specific and vary between and within river catchments.	(a) for a dwelling house, dual occupancy or multiple dwelling on a lot equal to or more than 5000m ² but less than 1.25 ha; or (b) light industry or business activity on a lot equal to or more than 2500m ² but less than 1.25 ha; (c) it complies with the 'Deemed to comply' requirements detailed in the Stormwater quality management guidelines in SC6.11 City Plan policy – Land development guidelines, Section 4 – Stormwater drainage and water sensitive urban design standards.		
	AO1.3 Where development is not listed in AO1 a Stormwater Quality Management Plan is prepared by a suitably-qualified person in accordance with the Stormwater quality management guidelines in SC6.11 City Plan policy – Land development guidelines, Section 8 – Engineering drawings, documents and reports.	A Conceptual Stormwater Management Plan (CSWMP) has been prepared for the Proposed Niecon Life Sciences Centre. The site is currently catered for in a downstream stormwater quality device. Refer to OSKA Civil Consultants, Conceptual Stormwater Management Plan (Ref:OSK5172-0003) prepared for GCHKP Pty Ltd.	
Stormwater quantity			
P02 Stormwater quantity management outcomes demonstrate no adverse impact on stormwater flooding or the drainage of properties external to the subject site.	AO2 A stormwater quantity management plan is prepared by a suitably qualified person and demonstrates: (a) achievable stormwater quantity control measures for discharge during both the construction and operational phases of development designed in accordance with the <i>Queensland Urban Drainage Manual (QUDM)</i> unless subject to specific requirements of SC6.11 City Plan policy – Land development guidelines, Section 4	N/A	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	– Stormwater drainage and water sensitive urban design standards; (b) on-site detention systems that are designed to restrict peak outflows for Q2, Q5, Q10, Q20 Q50 and Q100 to pre-development conditions.		
Woongoolba Flood Mitigation Scheme Catchment Area			
PO3 In the Woongoolba Flood Mitigation Scheme Catchment Area, shown on the Water catchments and dual reticulation overlay map , peak outflow and its timing for Q2, Q5 and Q10 for rainfall events up to 72 hours does not change as a result of development.	AO3 No acceptable outcome provided.	N/A	
Protection of natural flows (discharge)			
PO4 Construction and operational activities avoid or minimise adverse impacts of altered stormwater quality and quantity.	AO4 Development achieves the Frequent Flow Management and Waterway Stability Management design objectives as stated within <i>Chapter 2 – Section 2.4.2 of the Urban Stormwater Quality Planning Guidelines 2010</i> . Note: A site Stormwater Quality and Quantity Management Report prepared by a suitably qualified person is Council's preferred method required to be submitted to Council to address this Acceptable outcome. The intent in the above guidelines (<i>Urban Stormwater Quality Planning Guidelines 2010</i>) can be achieved by adopting Water Sensitive Urban Design (WSUD) concepts within the development.	A CSWMP has been prepared for the proposed development that addresses stormwater quality management. Refer to OSKA Civil Consultants, Conceptual Stormwater Management Plan (Ref: OSK5172-0003) prepared for GCHKP Pty Ltd.	
Wastewater management			
PO5	AO5	The proposed development does not propose to discharge wastewater into receiving waters. All	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Development does not discharge wastewater to receiving waters or areas external to the site unless demonstrated to be the best-practice environmental management for that site and takes into consideration: (a) the applicable water quality objectives for the receiving waters; and (b) the potential adverse impact on ecosystem health of receiving waters.	Where the development involves the discharge of wastewater, a Wastewater Management Plan (WWMP) is prepared, demonstrating compliance with the performance outcome, by a suitably qualified person and submitted to the Council, detailing all of the following: (a) wastewater type; (b) climatic conditions; (c) water quality objectives; (d) best-practice environmental management; (e) waste management hierarchy; and (f) the WWMP provides for the management of wastewater in accordance with a wastewater management hierarchy that: (i) avoids wastewater discharge to waterways; or (ii) if wastewater discharge to the environment cannot practicably be avoided wastewater discharge to waterways is minimised through re-use, recycling, recovery and treatment for disposal to sewer, surface water and groundwater.	wastewater will be discharged appropriately into Council's sewerage network.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Erosion and sediment control (ESC)			
PO6 Development does not cause erosion or allow sediments to leave the site.	AO6 An Erosion hazard assessment completed in accordance with the criteria in Table 9.4.5-3 is undertaken to establish the level of risk for soil erosion and sediment pollution to the environment. Where the Erosion hazard assessment has a risk score less than or equal to 10: A deemed to comply report is prepared by a suitably qualified person for Council approval, including conceptual location and design drawings of each treatment measure in plan and section views, in accordance with the <i>Best Practice Erosion and Sediment Control: International Erosion Control Association, (IECA) 2008, Australasia Chapter 2008</i> . Where the Erosion hazard assessment has a risk score greater than 10: A conceptual erosion and sediment control plan (ESCP) is prepared by a suitably qualified person for Council approval in accordance with the <i>Best Practice Erosion and Sediment Control: International Erosion Control Association, (IECA) 2008, Australasia Chapter 2008</i> .	The sediment and erosion control plan is included in OSKA Civil Consultants, Conceptual Stormwater Management Plan (Ref: OSK5172-0003) prepared for GCHKP Pty Ltd. The plan addresses devices and management measures to control erosion and sediment for the pre-construction, construction and post-construction phases of the development, in accordance with the Best Practice Erosion and Sediment Control: International Erosion Control Association, (IECA) 2008.	