

**Project No.: 64216
April 06, 2023**

DRAINAGE CONCEPT PROPOSAL

FOR

PROPOSED HOSPITAL ADDITIONS

47 KENNETH STREET

LONGUEVILLE

April 3, 2023

This document has been prepared as part of the Development Application submission to Council.
The document and attached drawings do not form part of the Construction Certificate documentation

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- 5- Stormwater Drainage Drawings**

1- Drainage Concept Proposal

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Project No.: 64216

April 3, 2023

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PROPOSED HOSPITAL ADDITIONS
47 KENNETH STREET
LONGUEVILLE**

BACKGROUND:

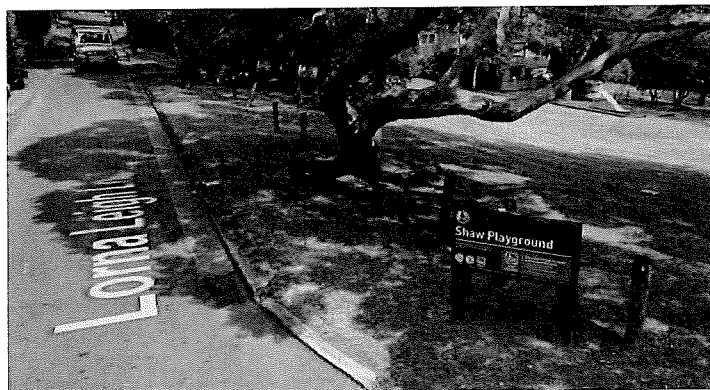
The proposed development site is located next to of the Longueville Private Hospital complex near the corner of Kenneth Street and Christina Street, Longueville on the western side of Kenneth Street. The development site is at 47 Kenneth Street.



The Surveyors drawings, Dunlop Thorpe Surveyors Pty Ltd confirm that the site has a total proposed development area of 878m² and slopes approx. around 0.5% down from the front to the back of the site. At the rear of the site is a public laneway Lorna Leigh Lane.

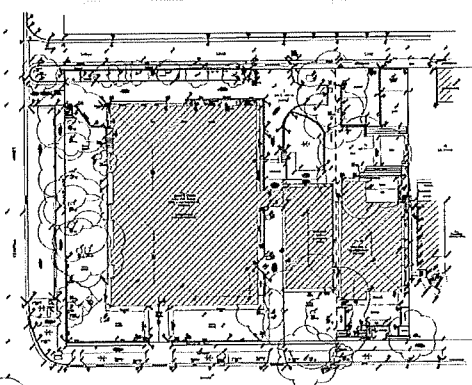
The attached Council Stormwater Asset Plan confirms that there is no Council drainage pipe network close to the site.

As such it is proposed therefore to install a new 375mm diameter drainage pipeline to drain down the laneway into the existing lintel pit in Lorna Leigh Lane opposite the park and Shaw playground near the corner of New Street. Two new pits will be installed along the length of the pipeline.



The proposed Hospital upgrade development site is located adjacent to the existing Hospital between the Hospital and a residential house at 47 Kenneth Street.

The proposed development site is occupied by two older style houses, one of which will be demolished to make way for the new additions. The other building, the Out-Patient Clinic for the Hospital will be retained and remain open for consultation.



The Design Criteria for this development is obtained from "Lane Cove Council Development Control Plan-Part O: "Stormwater Management Amendment 2 - 09 December 2011". The aim of this Policy as stated is to deliver effective integrated management of stormwater, rainwater, groundwater, and wastewater for long term sustainable social, ecological and economic outcomes.

Proposed New Additions

The single storey house between the Hospital and the Out-Patient Clinic is to be demolished to make way for the new Hospital wing and rehabilitation gym. Some new on-ground car parking will also be introduced at ground level.

We have calculated the proposed development site to have an additional impervious area of 321m².

The existing Hospital building on the southern side of the site has its own existing stormwater discharge system and will remain intact during the construction.

The BASIX report for this site confirms that no Rainwater reuse tank storage will be required for this development.

Council Drainage Requirements

According to Lane Cove council DCP -Part O: "Stormwater Management Amendment 2 - 09 December 2011 " Item 7.1.3: "All commercial developments and redevelopment where the footprint of the building is altered will require OSD" which necessitates an OSD requirement for the proposed additions.

The new development is required to provide OSD that is designed to capture and detain stormwater runoff for all storm events up to and including the 1% AEP storm event. The OSD system is to be designed in accordance with Council's "Stormwater Management Amendment 2 - 09 December 2011"

From Lane Cove Council's OSD Calculation Sheet, we have calculated the Permissible Site Discharge is 5.2 l/s requiring an On Site Detention storage of 9.38m³.

On-site Detention (OSD)

A new below ground On-site detention tank (OSD) facility is to be built beneath the new at grade carpark. The OSD discharge will drain by gravity directly via the OSD Discharge Control pipe to a new pit on the site boundary thence into the new drainage line to be installed in Lorna Leigh Lane.

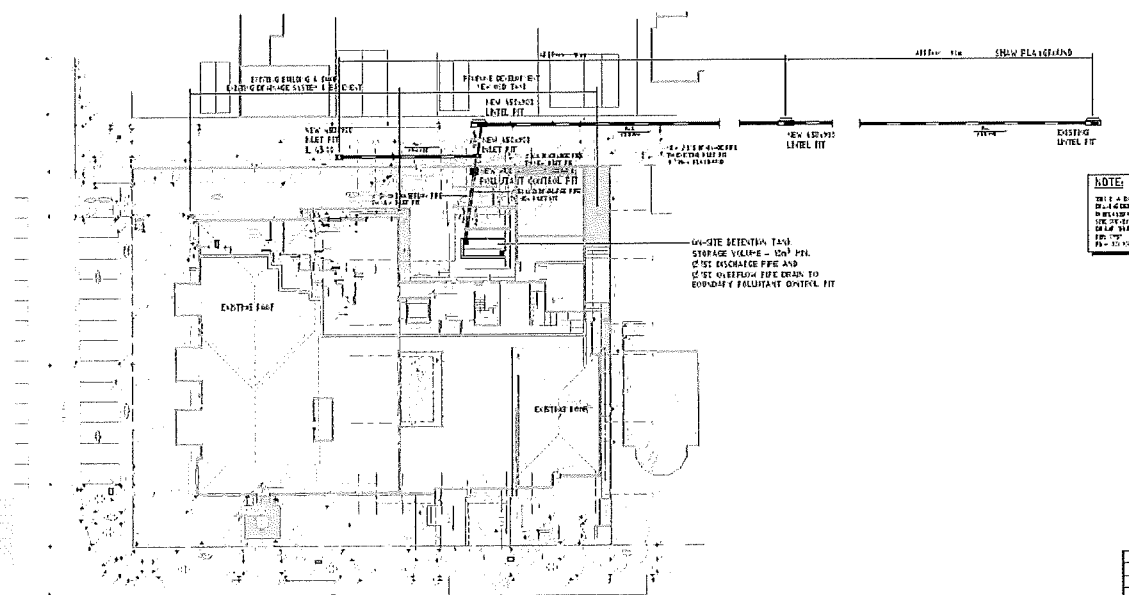
The new 375mm dia trunk drainage line will drain to the Council stormwater lintel pit near Shaw Playground which is approx.180m away.

The OSD facility will be 5.0m x 2.0m x 1.0m deep providing around 10.0m³ of stormwater storage with two 600 x 600 access openings constructed into the top of the tank. These access hatches will allow for maintenance access to the internals of

the tank. All access hatches to be fitted with childproof locks for the lids and internal step irons for access.

Discharge from the OSD will be regulated by a machined stainless-steel orifice plate of 80mm diameter over a 150mm diameter discharge pipe. The orifice plate will be protected from debris by a trash screen of Lysaghts Maximesh RH3030 or similar.

The discharge from the OSD tank will flow to a Boundary Catch Pit which will also act as a Gross Pollutant Trap before the stormwater flows discharge to the Councils stormwater pipe system. The estimated discharge into Councils pipe system will be restricted to 5.2 l/s which is the calculated permissible site discharge.



Any high-level emergency overflow surcharge from the OSD will also drain to the new Boundary Pit via an emergency 150mm dia pipe.

Compliance with Council Requirements

We confirm that the stormwater concept design has been carried out for the OSD system to comply with Council's DCP "Stormwater Management" and AS/NZS3500.3.

Summary

Our Drains calculations show that the minimum required storage volume for the retention tank is 10.0m³ for the 1:100yr ARI storm event without overflowing.

The post developed site discharge from the combined system will be 5.2 l/s which is below the Permissible Site Discharge 100-year ARI storm event.

Yours faithfully,

Paul Bekker BE. M IEAust. CP Eng. M ACEA
BEKKER ENGINEERING DESIGN BURO PTY LTD

2- Lane cove Council information
a - existing Council stormwater
system
b – Council DCP extracts

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Map Title



O.7 On-site Stormwater Detention Systems

OSD is required to limit discharges from developments to pre-development conditions. Council's OSD requirements have been formulated to ensure there is no increase in discharges from a site for rainfall events having a 1 in 100 year ARI.

OSD systems have three main elements:

1. Temporary Storage/Pondage

This may consist of an open surface pond/tank or a closed tank. It is designed to contain the excess volume of stormwater unable to pass through the discharge control during intense rainfall conditions.

2. Discharge Control Pit

This is the means of limiting the flow from the site. This may consist of a limited orifice or other means of reducing the flow of stormwater from the site.

3. Overflow Structure (Spillway)

A spillway or emergency outlet is to be provided from the temporary storage/pondage to cater for extreme storm events or any failure of the system to direct overflows away from items, which may be adversely affected by such flows.

7.1 When is OSD Required

7.1.1 Dwelling houses and dual occupancies

OSD will be required if one or more of the following criteria are satisfied:

- a) All new residential developments where the proposed impervious area of the site exceeds 35%.
- b) All alterations or additions to residential dwellings where the impervious area (including roof area, paving, swimming pools and driveways) increases by more than 50m².
- c) All alterations or additions to residential dwellings where the impervious area (including roof area, paving, swimming pools and driveways) increases by less than 50m² and the total impervious area of the site is greater than 65% of the total site area.
- d) Where successive developments take place on a residential dwelling within a 5 year period and the cumulative increase in the built-upon site area exceeds 50m² or the total impervious area is greater than 65% of the total site area.

7.1.2 Attached dwellings, multi-dwelling housing and residential flat buildings

All developments with more than two dwellings proposed on the site and the proposed impervious area of the site exceeds 35% will require OSD.

7.1.3 Commercial and industrial developments

All commercial developments and redevelopment where the footprint of the building is altered will require OSD.

7.1.4 Subdivisions

For a subdivision OSD will be required for any existing dwelling or structure on the site where the impervious area of that lot exceeds 35%.

NOTE: Driveways constructed with gravel or "grass-crete" or similar types of pavers will be considered to be impervious for OSD calculation purposes.

7.2 Exemption from OSD for dwelling houses and dual occupancies

- a) The proposal is a one-off residential extension that contributes less than 50m² of impervious area.
- b) The total existing and proposed impervious area of the development is less than 35%.
- c) The proposed development is for a dwelling house or dual occupancy and the property is within the OSD exclusion zone as shown on Council's plan in Appendix 12 – Map - OSD Exclusion and Catchment Map.

7.3 Exemption form OSD by Installing Rainwater Tanks for dwelling houses and dual occupancies

In order to encourage water reuse and the installation of rainwater tanks, Council will allow OSD storage capacity to be replaced with rainwater tanks for dwelling houses and dual occupancies only.

To gain exemption from OSD, the rainwater tanks are to incorporate the following:

- a) The rainwater tank is to have a minimum effective volume of 10.0m³ (10,000 l) for each dwelling.
- b) Rainwater draining to the tank is to drain from the roof surfaces only. No ground areas are to drain to the reuse tank.
- c) For new residential developments the entire roof area is to be connected to the rainwater tank.
- d) For alterations or additions a minimum roof area of 350m² (or the entire roof if it is less than 350m²) is to be connected to the rainwater tank.
- e) The rainwater reuse tanks are to be connected to all toilets, one outside tap and one cold water washing machine tap.
- f) Mosquito protection and a first flush device shall be fitted to the reuse tank.
- g) The overflow from the rainwater reuse tank is to drain by gravity to a Council approved stormwater system.

This exemption applies to the effective capacity of the rainwater tank. To allow for a 100mm air gap at the top of the tank and another 100mm sludge zone at the bottom. A 10,000l rainwater tank may have an effective capacity of only 9,500l which would therefore not satisfy the requirements for this exemption.

All areas not draining to the rainwater tank are to satisfy the drainage requirements of this DCP.

Drainage systems which incorporate rainwater tanks must comply with provisions for rainwater tanks listed State Environmental Planning Policy (Exempt and Complying Development Codes) and Section O.6 – Rainwater Tanks.

7.4 Design Criteria for OSD

Sufficient storage shall be provided to ensure peak flowrates at any point within the downstream drainage system do not increase as a result of the development during storms from the 1 in 5 year to the 1 in 100 year ARI storm events.

The Permissible Site Discharge (PSD) from all developments shall not exceed one hundred and forty litres per second per hectare (140l/s/ha).

The Site Storage Requirement (SSR) shall be designed to provide for 0.025m³ for each square metre of basin catchment.

7.4.1 What Must Drain to the Detention System

Stormwater runoff from all new impervious areas should be routed through the OSD system. It is not necessary to route runoff from pervious surfaces through the detention system.

Runoff entering the site from upstream properties should not be directed into the OSD system.

7.4.2 Runoff Bypassing the Storage Facility

A portion of the new impervious areas may discharge directly to Council's system if it cannot be drained to the storage facility, provided the PSD is reduced to compensate for the bypassed flows. The extent of impervious surfaces bypassing the storage facility may not be greater than 25% of the impervious area draining to the storage facility.

7.4.3 Storage Facility

OSD systems may be based on the following:

- a) above ground storage – in a grassed, landscaped area or driveway;
- b) below ground storage;
- c) a combination of the above.

Any above ground storage for medium density developments must be located in common areas (not in private courtyards etc).

The facility shall be designed to safely convey all overflows to an adequate Council drainage system. The total blockage case is to be considered.

Below ground storage facilities should possess the following characteristics:

- a) be structurally designed to adequately withstand all service loads and provide adequate service life (50 years).
- b) be graded to drain completely dry. Long term ponding of water over the floor of the basin is not permitted.
- c) contain an overflow outlet that does not direct overflows to other private property.
- d) contain an inspection/access grate 600x600mm directly over the outlet.
- e) to facilitate cleaning of the tank it is to have a minimum of two 600x600mm access grates where the clear internal height of the tank is less than 600mm. Additional grates are to be provided if the distance between access grates exceeds 10m.

- f) contain step irons where the tank depth is in excess of 1.2m.
- g) be located outside the root zone of trees that must be retained.
- h) have a child proof locking system for the surface grate where the depth of the tank is greater than 1.2m.

Above ground storage facilities on driveways and trafficable areas should possess the following characteristics:

- a) have a ponding depth no greater than 150mm.
- b) not restrict pedestrian access from the public road to buildings.
- c) be designed in a manner minimising inconvenience caused by the basin.
- d) be totally impervious.

Above ground storage facilities in landscaped areas, should possess the following characteristics:

- a) the calculated storage volume be increased by 20% to allow for the growth of vegetation and minor variations to the ground level that will occur as part of the general maintenance.
- b) have a ponding depth of no greater than 300mm where there is a vertical step into the basin.
- c) have a ponding depth no greater than 1.2m with side slopes into the basin of less than 15%.
- d) where the depth of the basin is in excess of 300mm and the side slopes exceed 15% or the depth is in excess of 1.2m, access is to be restricted by enclosing the area with a swimming pool type fence with childproof, self closing gates.
- e) not be located across the allotment boundaries.
- f) if an earth mound is used to retain the water, the crest width is to be not less than 1.0m wide.
- g) if a structure other than earth mounds is to be used to retain water, it shall be certified by the designing engineer to be structurally adequate to retain the design volume of water.
- h) be designed in a manner which minimises inconvenience caused by the basin.

7.4.4 Sharp Edged Orifices

Orifices are to be made of minimum 200x200mm flat stainless steel, 3mm thick. The orifice plate is to be tooled to the exact dimension as calculated. Orifice plates will need to be securely fastened in a central position over the outlet pipe using four (4) bolts and are to be flush with the wall to ensure that flow does not pass between the plate and the wall.

The following formula may be used to calculate the required orifice diameter.

$$Q = C A (2 G H)^{0.5} \times 10^3$$

Where Q=(PSD) flowrate through orifice in litres per second

C=0.61

A=cross sectional area of orifice in metres squared

G=9.81

H=depth of ponding from centre line of orifice

The design of the OSD system shall be undertaken in accordance with the design sheet in Appendix 14 – OSD Calculation Sheet, ILSAX or DRAINS. OSD calculations shall account for the total development site area.

7.4.5 Spillway

A spillway or overflow outlet is to be provided in all OSD systems as part of the operation of the system to cater for system failure or extreme storm events. This is to ensure that overflows are conveyed to the downstream drainage system and away from other properties.

7.4.6 Debris Screens

All outflow controls must be enclosed by a rustproof screen or wire cage to protect them against blockage. The screen should be attached to the wall, but should be removable without the use of tools to permit cleaning and easy inspection of the outlet control.

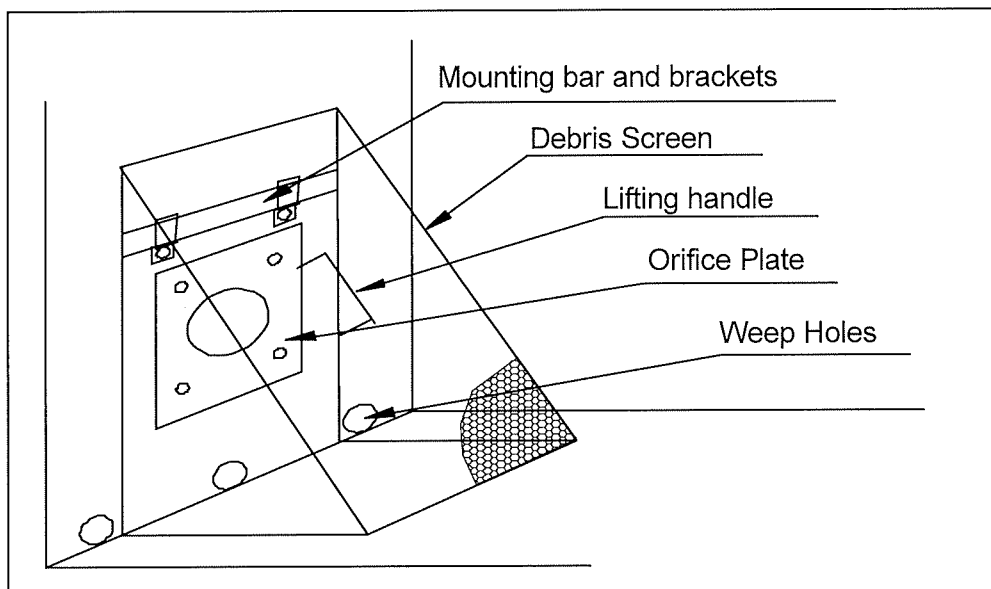


Figure 7-1 – Typical Installation of Debris Control Screen

7.4.7 Sediment Control Sumps

A sediment collection sump is to be provided below the orifice outlet to the stormwater detention system. This sump is to have a minimum depth of 200mm below the invert of the orifice. A typical sediment collection sump is shown in the figure below.

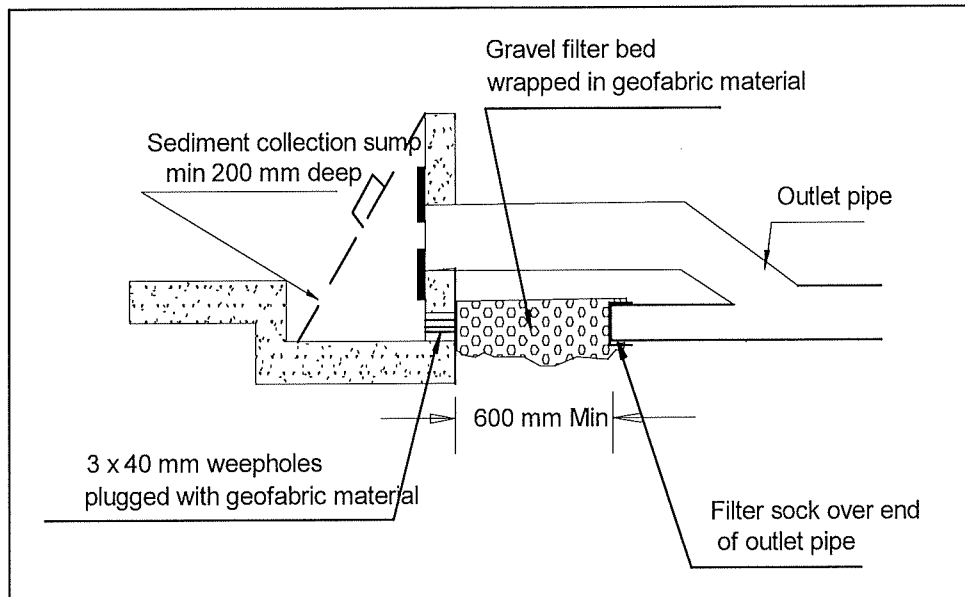
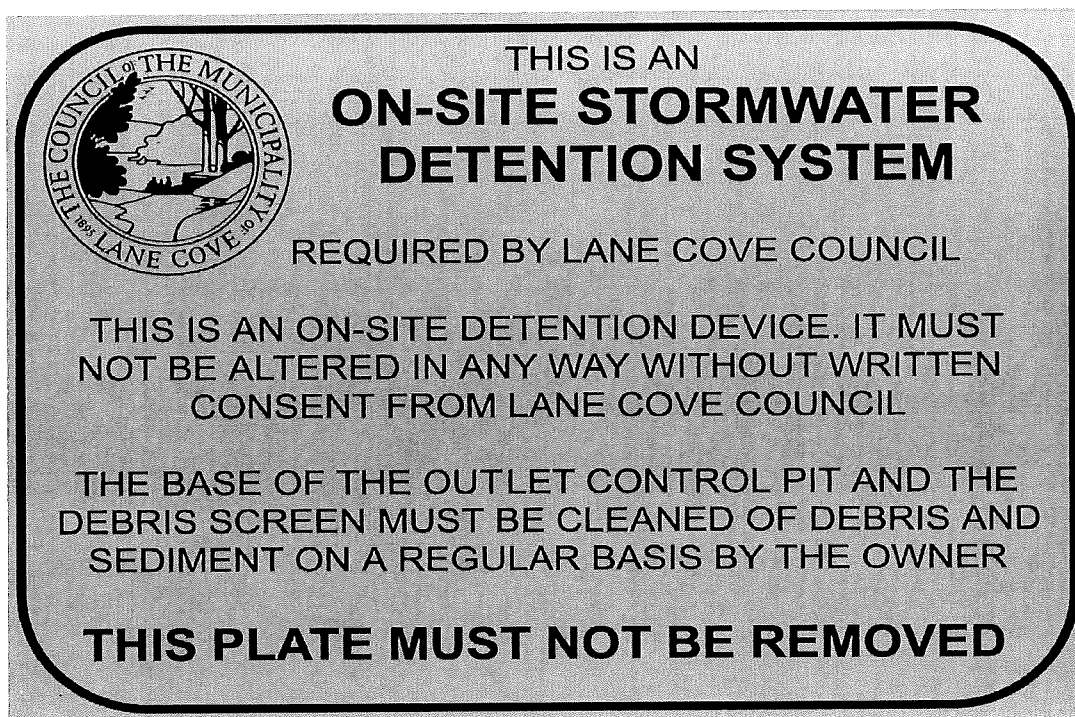


Figure 7-2 – Sediment Collection Sump with Drainage Filter

7.4.8 Marker Plates

All OSD systems are to have the following marker plate permanently attached to the wall of the tank or control pit directly above the debris screen. Marker plates can be purchased at Council's Customer Service.



7.5 Inspections

A compliance certificate must be obtained once the stormwater drainage system has been fully constructed and prior to the refund of any security deposits.

The accredited certifier shall inspect the OSD structure for the following:

- a) Pits, pipes and other drainage structures have been cleaned of any sediment and debris and all formwork has been removed.
- b) The pits, pipes and detention facility are free draining, i.e. they do not allow water to pond.
- c) A correctly sized orifice has been securely installed in the detention tank/control pit.
- d) A debris screen as per Council requirements has been installed at the outlet.
- e) The kerb has been repaired to Council's requirements where a new pipe connection has been made.
- f) The footway and any footpath paving has been fully restored to Council's standards where pipes were laid across the public footway.
- g) Certification of the system is to be made on the form supplied in Appendix 15 – OSD Certification Form
- h) A marker plate is affixed as per Council requirements.
- i) Where warning signs are required that they have been installed.

7.6 Works as Executed Drawings

A works-as-executed survey of the detention facility will need to be prepared and certified to demonstrate that the OSD system functions as per the intention of the approved design. A suitably qualified engineer must certify that the constructed system is satisfactory.

7.7 Positive Covenant for OSD Systems

A positive covenant will need to be executed and registered against the title of the property in accordance with Council's standard terms as outlined in Section 13 – Restrictions & Positive Covenants. This positive covenant must be on any linen plans for subdivision of the development. If no subdivision is proposed, the covenant shall be registered with the LPI with proof of registration provided to Council prior to the issue of an Occupation Certificate for the development.

3 – Survey Details

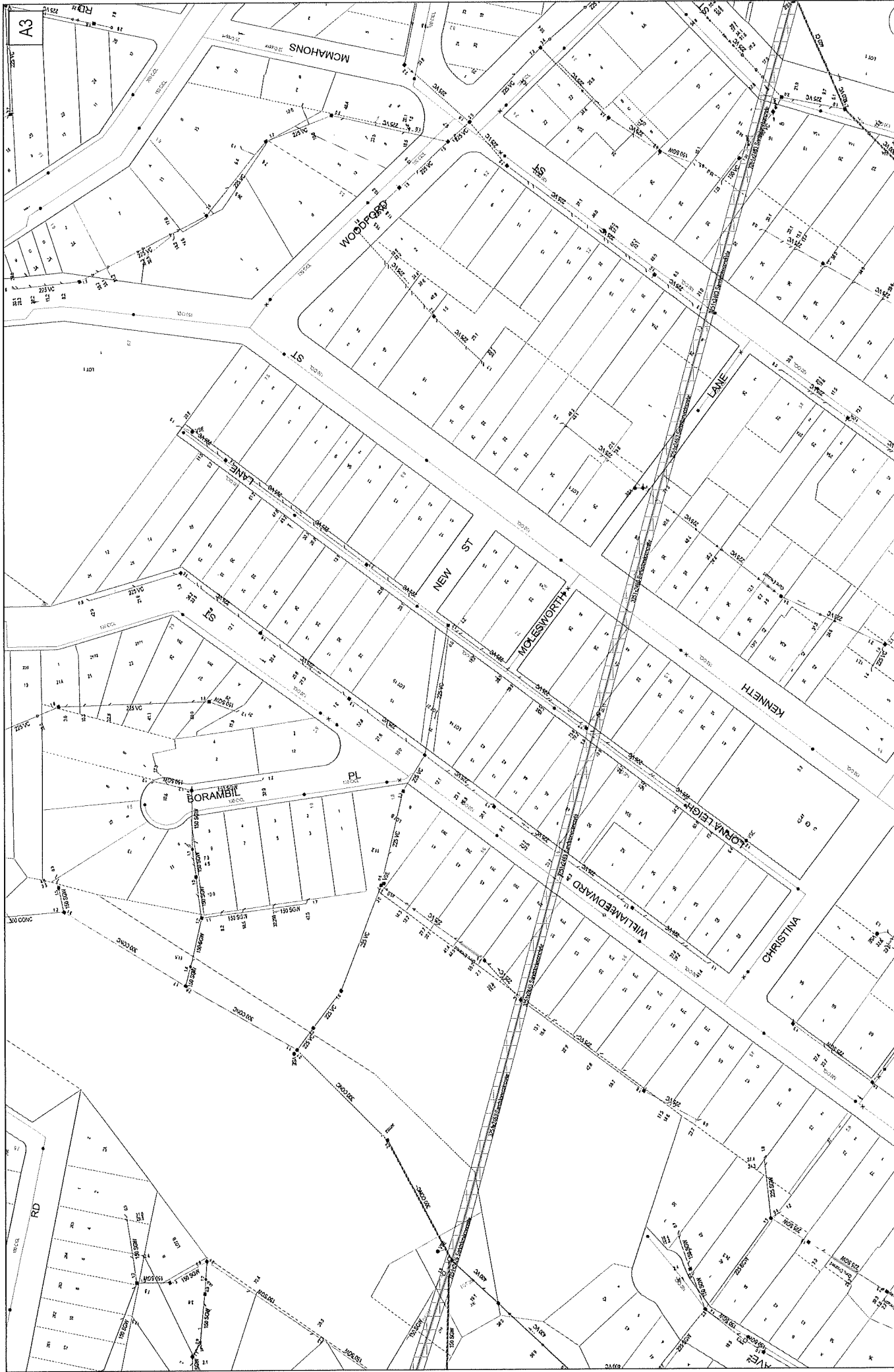
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OS OPENING BILL

[illegible]

ADJACENTS: 24 1/2" (204) N.W. 13 JOHNSON STREET SURVEYED	DRAWN: R.E.	CLIENT: LONGUEVILLE PRIVATE HOSPITAL	TITLE: PLAN OF THE LAND COMPRISED IN CERTIFICATES OF TITLE 1/578176 & 54/2459 AT LONGUEVILLE IN THE LGA OF LANE COVE	<p>DUNLOP THORPE & CO. PTY. LTD.</p> <p>SUBTENDERS 447 KENT STREET SYDNEY 2000</p> <p>DATE 14.08.2013</p> <p>PHONE 8263 8837</p> <p>FAX 8263 8837</p> <p>EMAIL dthorpe@dunlopthorpe.com.au</p> <p>www.dunlopthorpe.com.au</p>
SURVEYED: J.G.		CONVEYOR: ① 204, DUNLOP THORPE & COMPANY PTY. LTD. ② 204, DUNLOP THORPE & COMPANY PTY. LTD. AS TRUSTEES OF AN TRUSTEES OF AN TRUST, WHOMST THE WRITTEN PERMISSION OF THE CREDITORS BANK EXCEPT AS PERMITTED BY THE "CONVEYOR ACT 1988". ANY FURTHER DOWNGRADING, ELECTRICITY STORAGE, PUMP, CANY OR REPRODUCTION OF THE SURVEY SHOULD COMPLY NO THE NOTICE MUST NOT BE TAKEN		<p>REDUCTION 1:500</p> <p>SCALE 1" = 10'</p> <p>DATE 14.08.2013</p> <p>SHEET 1 OF 1 SHEETS</p> <p>REFERENCE NO. 17992</p>



4 – Stormwater Concept Calculations

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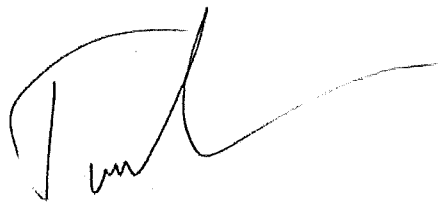
**PROPOSED ADDITIONS TO LONGUEVILLE
PRIVATE HOSPITAL AT 47 KENNETH STREET,
LONGUEVILLE, NSW.**

CONCEPT DESIGN OF ON-SITE DETENTION SYSTEM

STORMWATER CALCULATIONS

Date: 23th MARCH 2023

Job No.: 2122/A

A handwritten signature in black ink, appearing to read 'Tuan', with a long horizontal flourish extending to the right.

Prepared by: **TUAN NGUYEN,**
BE, MEM.

Checked by: **PAUL BEKKER,**
BE, MIEAust, CPEng, M ACEA

DESIGN CRITERIA

INTRODUCTION

As requested, we have carried out on-site detention stormwater calculations for this site. The specific purposes of the calculations are as follows:

- To design an On-Site Detention system to store and release stormwater to be in accordance with Lan Cove Development Control Plan- Part O: "Stormwater Management" Amendment 2 – 09 December 2011.
- Concept design extension of Council's drainage system using D375mm reinforced concrete pipe.

INVESTIGATIONS AND OBSERVATIONS

We determined details within the site from survey plan, architectural plans, and also by site investigations.

DISCUSSION AND ANALYSIS

The site is situated in Lane Cove Council. The catchment collected by the system is approximately 368 m². Total area of land is 2648m², however, only part of land to be developed.

- Proposed development site: 878 m²
- Existing impervious area: 470 m²
- Additional impervious area: 321 m²

There is no council's drainage system closed to the site. Therefore, 2 new pits and approximately 180m reinforced concrete pipe D375mm has been proposed to collect water run-off from development area and discharge to Council's existing pit at a distance of 170m approx. from the site.

The calculation of PSD & SSR using calculation sheet provided in Council's code for concept plan, detail design will be carried out in later stage. Key issues were as follows:

- An OSD is required as the footprint of building is altered. The OSD only carry new additional impervious area and carpark area (due to slope from boundary to lower floor)
- Existing stormwater system will be retained. New pits are proposed to collect water run-off from existing area to the proposed extension of council pipe.
- There is no discharge water running from proposed development to Lorna Leigh lane. Pollutant control pit has been proposed as required by council code

DESIGN STANDARDS & REFERENCES

The stormwater design complies specifically with the following:

- AS 3500.3
- Lane Cove Council's "Stormwater Management"

RESULTS

Please see attached drawings markup and hand written results.

PB - STORM WATER CALCS.

23 / 03 / 2023
2122/A

COUNCIL'S CODE :

O₄ - 4.1:

- Council's street drainage system must be extended to site
- kerb inlet pit must be constructed at a point near boundary
- Required a minimum ϕ 275 reinforced concrete pipe for council's system extended

O₇ - 7.1.3 :

- All commercial development & redevelopments where the footprint of the building is altered will require OSD

O₆ - Rain Watertank as offset volume of OSD is not shown

O₇ - OSD Calcs for 1 in 100 Year ARI

O₂ - storm water drainage from all developments shall operate under gravity

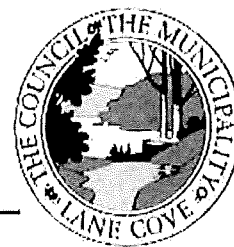
O₃ - 3.3.1 Pipe grade : min. 1% for all pipes

3.3.3 Min. Cover 600mm under sealed road.

3.4.1. Prior to connection to a Council drainage system a pollutant control pit is to be installed at the lowest point of the drainage system & located within 1.0m from the property boundary

Appendix 14 – OSD Calculation Sheet

ON-SITE DETENTION CALCULATION SHEET

DEVELOPMENT TYPE: COMMERCIALADDRESS: 47 KENNETH ST - LONGUEVILLE

Site Area (m²) 878 (A)

Total Impervious Area (roofs, driveways, hardstand etc) (m²) 791 (B)

Total Area draining to the Storage Facility (m²) (impervious and pervious areas) 368 (C)

New Impervious Area bypassing the Storage Facility 0 (D)

$\frac{(B)+(D)}{(B)} =$ 1.0 (E)

cannot be greater than 1.25.

Permitted Site Discharge (PSD) rate per m²If (D) = 0 then PSD = 0.014 l/sec/m²If (D) ≠ 0 then PSD = 0.014 × (E)^{-1.37} l/sec/m²0.014 (F)

PERMITTED SITE DISCHARGE (l/s) (C) × (F)

5.2 l/sStorage Volume per m²(G) = 0.0255 m³/m² for all Catchments0.0255 (G)SITE STORAGE REQUIREMENT (m³) ((C) + (D)) × (G)9.38 m³

OUTLET CONTROL - using a Sharp Edged Orifice Plate

Height Difference between top water level and Centre of Orifice (m) 1.0 (H)

ORIFICE DIAMETER (mm)

50 mm

$$= 21.9 \sqrt{\frac{PSD}{\sqrt{(H)}}}$$

Should pipe and pit losses be used to control outflow, the calculations are to be attached.

NOTE:
THIS IS A COMPLETION ENGINEERING AND SURVEY
DRAWING. IT IS THE RESPONSIBILITY OF THE
ENGINEER TO ENSURE THAT ALL INFORMATION
OBTAINED ON AN EXISTING SITE SURVEY
IS CORRECT AND COMPLETE.
DATE: 14/04/2010
PH: 182 7923 6437

NEW POLLUTANT PIT (A) SEDIMENT TRAP, DEBRIS SCREEN
AS REQUIRED BY COUNCIL'S CODE

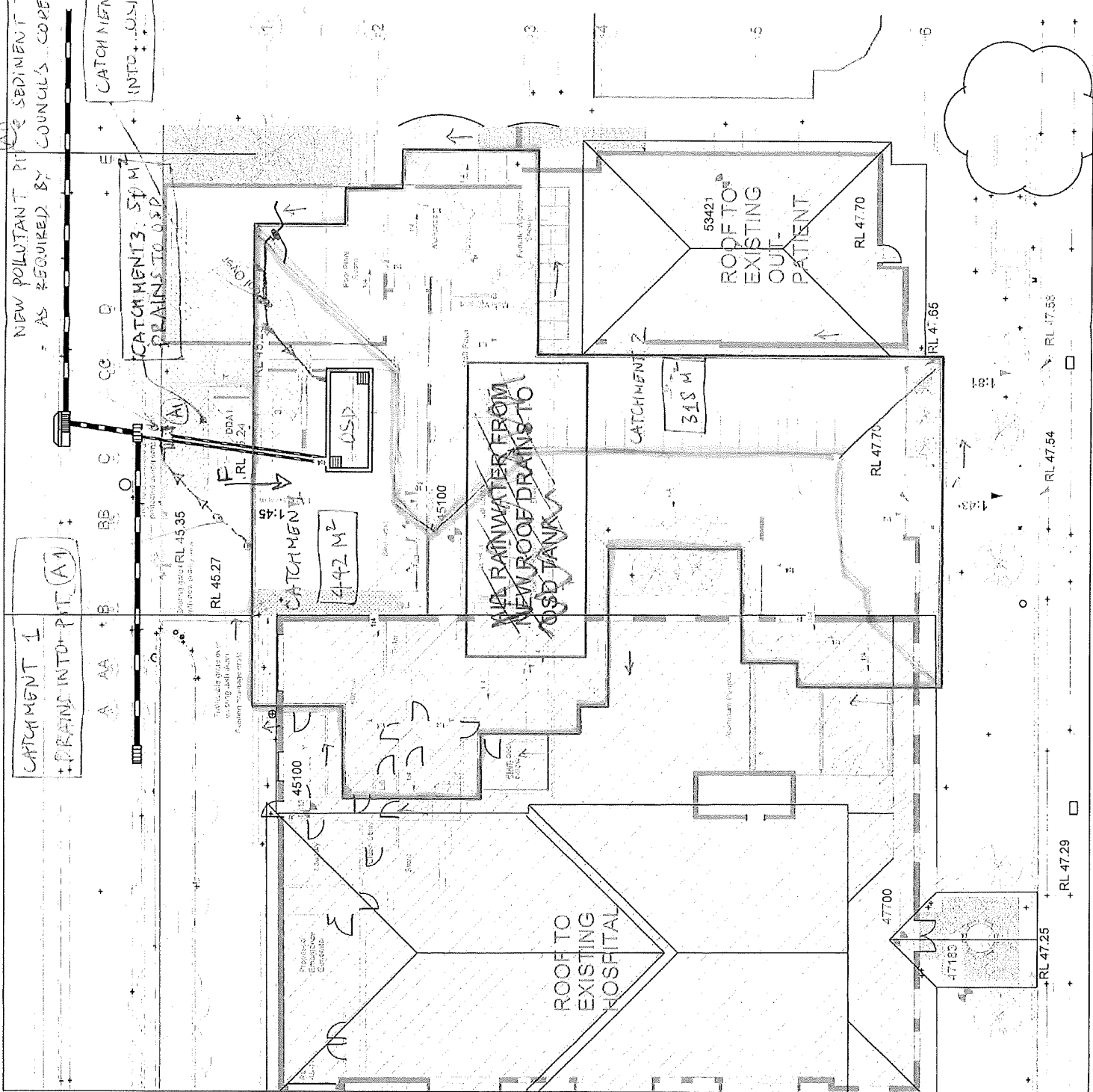
DRAINAGE CONCEPT PROPOSAL ROOF PLAN



LEGEND

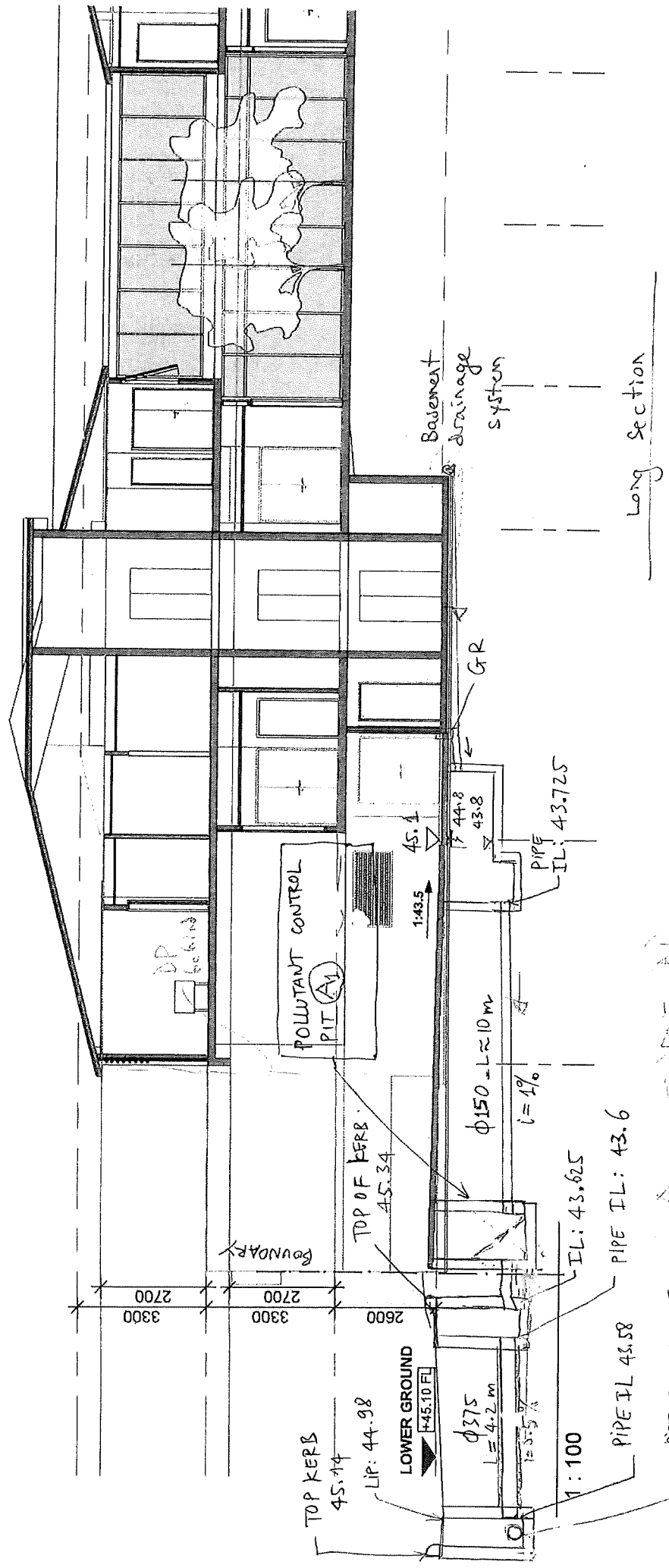
- DIRECTION OF FALLS FOR DRAINAGE LINES
- NEW Ø100 UP-V.C. SEWER CLASS
DISCHARGE DRAINAGE LINE WITH A MINIMUM FALL
OF 1.0 % UNLESS NOTED OTHERWISE

Σ AREA TO OSD: 318 + 50 = 368 M²
EXCEEDS NEW IMPERVIOUS AREA



REV	DATE	DESCRIPTION
P1	22.03.13	PRELIMINARY DWT, NOT FOR CONSTRUCTION
REV	DATE	DESCRIPTION
CLIENT		
Macquarie Health Corporation		
201 Catherine Street Sydney NSW 2004 Ph: 182 7923 6437		
PROJECT		
THE LONGUEVILLE PRIVATE HOSPITAL 45-47 KENNETH STREET LONGUEVILLE, NSW 2066		
DWG		
DRAINAGE CONCEPT PROPOSAL ROOF PLAN		
BEKKER		
bekker engineers design bureau Pty Ltd		
10/15-16/17 Phone: 182 7923 6437 Fax: 182 7923 6437 Email: info@bekkerdesign.com.au		
DRAWN		
SCALE	1:100	DATE
	18/04/2013	REV
	64216	DCP3
		P1

1 2 3 4 5 6



5 – Stormwater Concept Drawings

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ON-SITE DETENTION CALCULATIONS

- ALL ASPECTS OF DRAINAGE SYSTEMS TO BE
INSTALLED TO AS3500 REQUIREMENTS

ALL ROOF WATER FROM FRONT DOWNPIPE DRAINS TO ON-SITE DETENTION TANK AND DISCHARGE TO THE MAIN INLET PIT IN LORNA LEIGH LANE. THE FRONT CARPARK AREA'S WATER DRAINS TO THE BOUNDARY PIT.

PROVIDE CLEANOUP POINTS AT ALL CHANGES IN DIRECTION OF DRAINAGE LINES.


BUILDER TO ENSURE ALL PIPES ARE FLUSHED CLEAN PRIOR TO HANDOVER.

ALL PIPES TO CATER FOR THE 100 YEAR ARI.

BUILDER TO PROVIDE ALL DRAINAGE REQUIREMENTS TO COMPLY WITH AS3500 & COUNCIL REQUIREMENTS.

NEW DRAINAGE LINE IN LORNA LEIGH LANE BUILD DETAILS TO COUNCIL FOR APPROVAL AND CONSTRUCT TO COUNCIL SPECIFICATION.

NOTE:
THIS IS A COMPILED ENGINEERING AND SURVEY
DRAWING DEPICTING STRUCTURAL ELEMENTS
OVERLAYED ON AN EXISTING SITE SURVEY.
SITE SURVEY PREPARED BY:
DUNLAP THORPE & CO. P/L
REF: 17952 DATE: 14/08/2013
Ph: (02) 9283 4677

SCALE	1:100	DATE	March, 2023	DWG. NO.	64216	REV	P1
 BEKKER bekker engineers design bureau pty ltd suite 11/27 gardiner street, sydney nsw 2008 phone 61 2 9232 4444 postal address po box 517 northbridge, nsw 1500 email bekkers@bekkers.net.au							
PROJECT THE LONGVIEW PRIVATE HOSPITAL 471 KENNETH STREET LONGVIEW, NSW 2066							
DRG DRAINAGE CONCEPT PROPOSAL LOWER GROUND FLOOR PLAN							
CLIENT Macquarie Health Corporation Macquarie Health Corporation Level 10/100 Pitt Street Sydney NSW 2000 P.O. BOX 970							
P1 REV DATE DESCRIPTION 05/04/23 PRELIMINARY ONLY, NOT FOR CONSTRUCTION							

THIS IS A COMPILATION ENGINEERING AND SURVEY
DRAWING DEPICTING STRUCTURAL ELEMENTS
OVERLAYED ON AN EXISTING SITE SURVEY.
SITE SURVEY PREPARED BY :
DUNLOP THORPE & CO. P/L
REF. 17952 DATE 14/08/2013
Ph. - (02) 9283 6477

DIRECTION OF FALLS FOR DRAINAGE LINES

NEW Ø100 U.P.V.C. SEWER CLASS
DISCHARGE DRAINAGE LINE WITH A MINIMUM FALL
OF 1.0 % UNLESS NOTED OTHERWISE

[illegible]

Macquarie Health Corporation
301 Catherine Street
Leichardt NSW 2144
P. 02 9537192

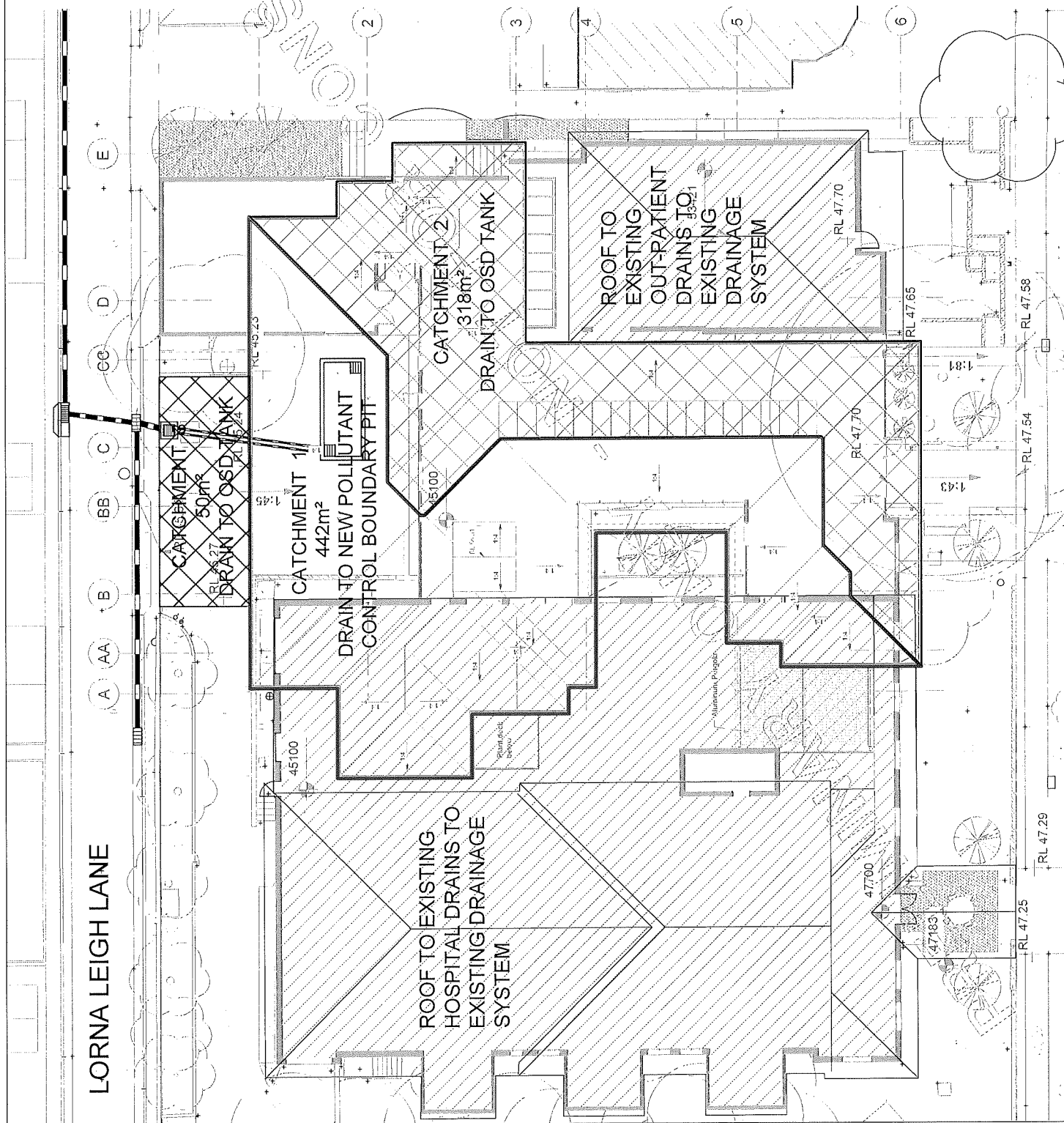
 Macquarie
Health Corporation

PROJECT
THE LONGUEVILLE PRIVATE HOSPITAL
47 KENNETH STREET
LONGUEVILLE, NSW 2066

DRG DRAINAGE CONCEPT PROPOSAL
ROOF CATCHMENT PLAN

BEKKER
bekker engineers
design burro pty ltd
suis 1/87 carpiel street, moorooka nsw 2068
phone: (62) 0603 0444 fax: (62) 0600 0911
email: bekkers@optusnet.au

DESIGNER	SCALE	DATE	DWG No.	REV
	1:100	March, 2023	64216	P1



NOTE:

THIS IS A COMPILATION ENGINEERING AND SURVEY
DRAWING DEPICTING STRUCTURAL ELEMENTS
OVLAYED ON AN EXISTING SITE SURVEY.
SITE SURVEY PREPARED BY:
DUNLOP THORPE & CO. P/L
REF: 17957 DATE: 16/08/2013

CATCHMENT 2 ROOF WATER
DRAINS TO OSD TANK
ANY DOWNPIPES CONNECTED TO
STORMWATER SYSTEM NEED TO
INSTALL FIRST FLUSH SYSTEM

ALL DOWNPIPES
WITH FIRST FLUSH
SYSTEM

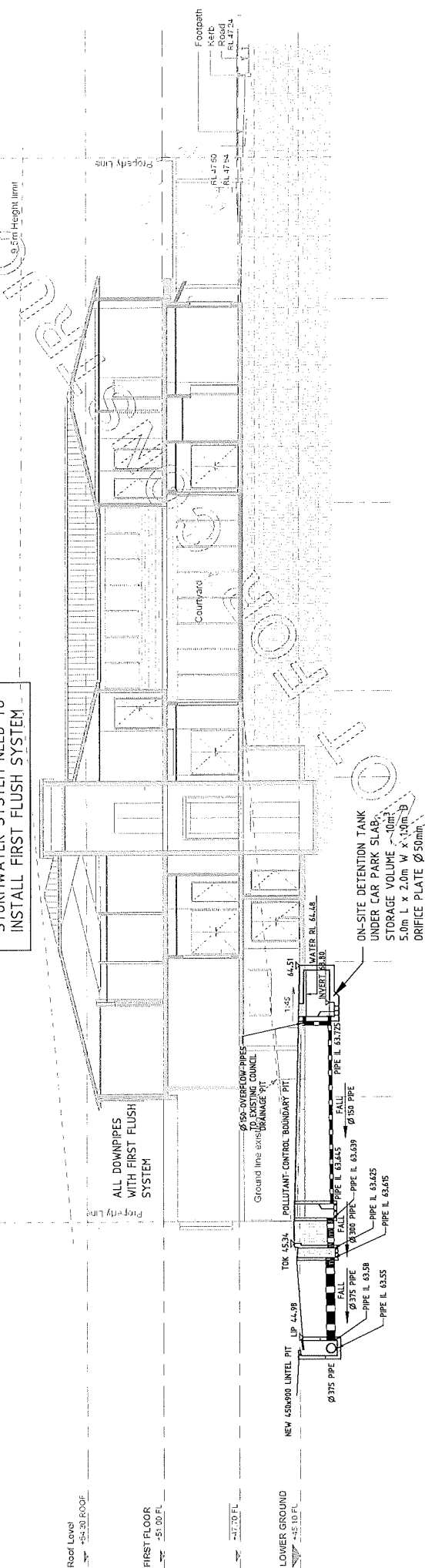
ON-SITE DETENTION TANK
UNDER CAR PARK SLAB.
STORAGE VOLUME $\sim 10\text{m}^3$
5.0m L x 2.0m W x 1.0m D
ORIFICE PLATE $\varnothing 50\text{mm}$

DRAINAGE CONCEPT PROPOSAL TYPICAL DRAINAGE SECTION

LEGEND

DIRECTION OF FALLS FOR DRAINAGE LINES

NEW Ø100 U.P.V.C. SEWER CLASS
DISCHARGE DRAINAGE LINE WITH A MINIMUM FALL
OF 1.0 % UNLESS NOTED OTHERWISE

[illegible]

135084

THE LONGUEVILLE PRIVATE HOSPITAL
47 KENNETH STREET
LONGUEVILLE, NSW 2066

DRAINAGE CONCEPT PROPOSAL
DRAINAGE SECTION

BEKER

**bekker engineers
design buro pty ltd**

Suite 1 / 0-7 Clarendon Street, Montreal, Quebec H3A 2B4
 Phone: (514) 392-6244 Fax: (514) 392-6111

SIGNED

SCALE	DATE	DWG No.	REV
1:100	March, 2023	64216	DCP3 P1