

8 June 2022

Attn: Mike Ryan
Erilyan Pty Ltd
1/27 Hotham Parade
Artarmon NSW 2064

mryan@erilyan.com.au

Northside West Health Clinic - Stormwater Management Plan and Water Sensitive Urban Design

Dear Mike

Stellen Consulting was engaged to assess the proposed development at 23-27 Lytton St, Wentworthville in reference to stormwater quantity and quality. Our previous report of 21 November 2021 outlines the proposed concept stormwater management system and its assessment in accordance with the relevant requirements of Holroyd Development Control Plan 2013.

Council responded with a series of technical comments on 13 April 2022.

Below is a summary of the design amendments and responses to these comments.

1. The proposed works will interfere with the existing sewer pits and sewer mains. The following matters need to be resolved prior to the determination of this application.

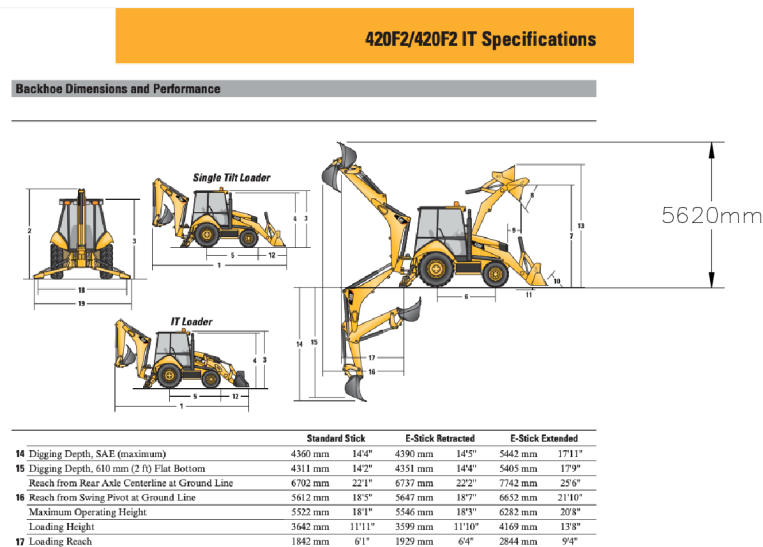
a. Separate approval shall be obtained for the storm water deviation design and construction works. Proposed realignment shall be located within the subject site.

The new pit and pipe alignment has been modified as suggested to be entirely on the subject property. One additional pit has been added and the design pipe size remains unchanged. The kiosk substation position has been adjusted to accommodate this. Please refer to drawing P170829-DR-101-2 and DRAINS results below, proving feasibility.

If a separate approval is required for the diversion, we recommend a DA condition requiring s68 approval for the detailed diversion design and connection.

b. No building or structures are permitted over the Council's stormwater pipe and/or associated easements. This has not been demonstrated.

The building is clear of the pipe for a height of 7m above the ground, a sufficient working space for a backhoe or small excavator for pipe maintenance or replacement.



Caterpillar Backhoe Machine Dimensions

A typical backhoe requires only 4-5m for normal working. A Caterpillar 420F2 has a maximum vertical working reach of approximately 5.6m.

2. Onsite stormwater detention shall be provided for entire site. In this regard,

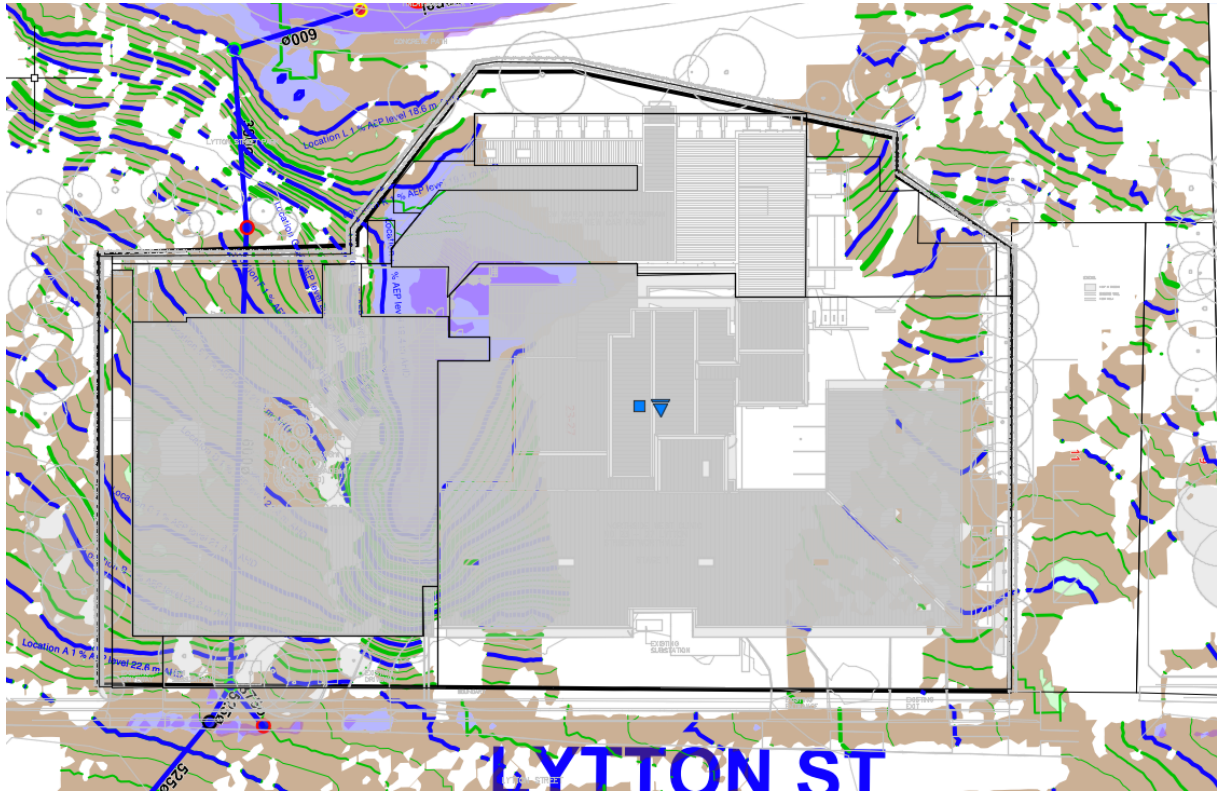
i. stormwater plans shall clearly show the contributing catchments to the OSD system. As built OSD details and calculations shall be submitted.

ii. OSD for the area that is located outside the contributing catchment shall be provided. Detail calculations shall be provided.

iii. OSD shall comply with Council's DCP and Upper Parramatta River Catchment Trust "On-Site Detention Handbook".

The approved and constructed Stage 1 OSD allowed for only 884m² of the existing roof to detention of the entire site. Refer attached drawing 2014-0241 H01/B by AJW dated 17/9/14 outlining the total impervious area originally designed for (approximately 5405m² or 81% of the site), and the total proposed impervious area (5455 or 82% of the site). In accordance with Cumberland Council OSD Policy (s4.8), the approved detention strategy excluded portions of the property subject to overland flow (as known at the time of design).

This proportion has increased with further modelling and now includes significant portions of both the original Stage 1 area and all of the Stage 2 (current proposal) area.



Existing and proposed projects overlaid on overland 1% AEP flood extents (Source: Finlaysons Creek Overland Flow Study (2017))

The current proposal area is therefore excluded from the OSD policy in the same way it was excluded in the Stage 1 design.

This is sensible policy because detention tanks in such low positions in the catchment not only fill with overland flow, becoming redundant when they are needed most, but also serve to compound the site discharge with the broader catchment peak flows.

Notwithstanding this, as discussed with council engineers on 27 April 2022, the proposed impervious area is approximately 45m² more than the area in the approved design for Stage 1. This small increase is immaterial to the function of the existing approved OSD system.

3. Stormwater runoff from the entire site shall be discharged by gravity system. In this regard, downstream easement(s) is required. Details have not been provided in the information submitted with the subject application.

The entire site discharges via gravity via the existing approved connections to Finlayson's Creek indicated on Stellen drawing P170829-DR-100-2 and AJW drawing 2014-0241 H03.

Please contact me with any questions regarding this report.

Kind regards,



Ian Warren
Senior Engineer

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T. 02 8021 9233
E. ian.warren@stellenconsulting.com.au

Appendix A – Architectural plans

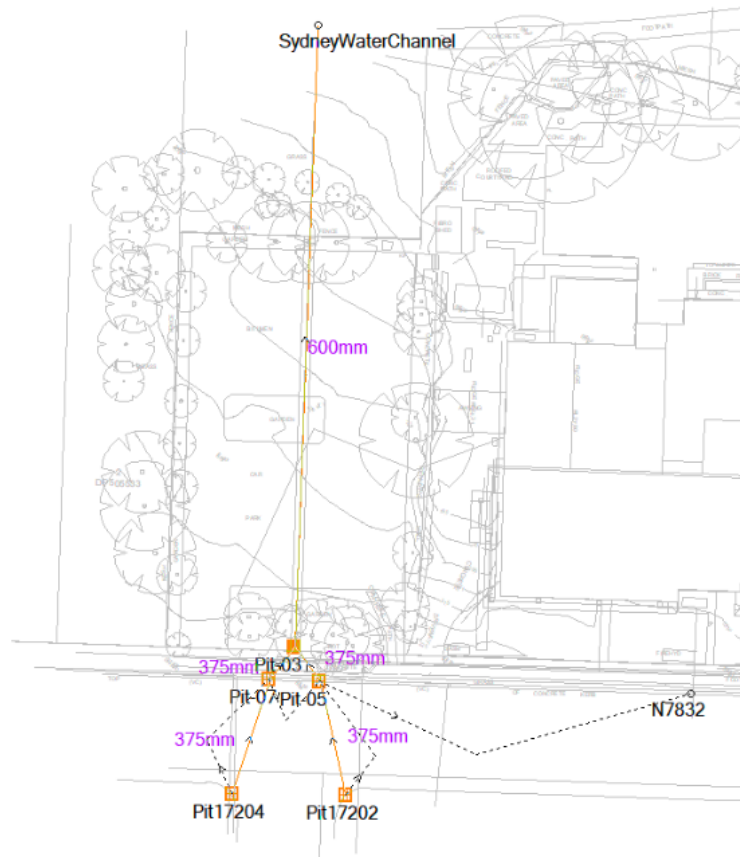
Architectural Plans by Team 2

[list final architectural documents here]

Existing Stormwater System by AJ Whipps Consulting Group

H01/B	Cover Sheet, Legend & Drawing Schedule
H02/B	Hydraulic Services, Site Plan
H03/C	Lower Ground Floor, Stormwater Services
H04/C	Ground Floor, Stormwater Services
H05/C	Level 1 Drainage Service
H06/C	Level 1 Pressure Service
H07/C	Roof
H08/B	Detail Sheet No. 1
H09/B	Detail Sheet No. 2

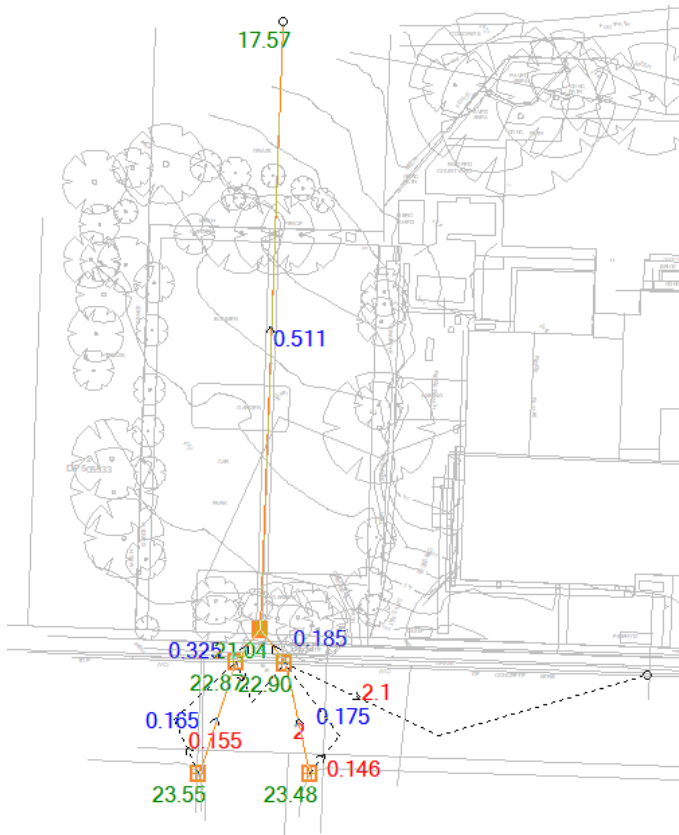
Appendix B – Drains Model Results



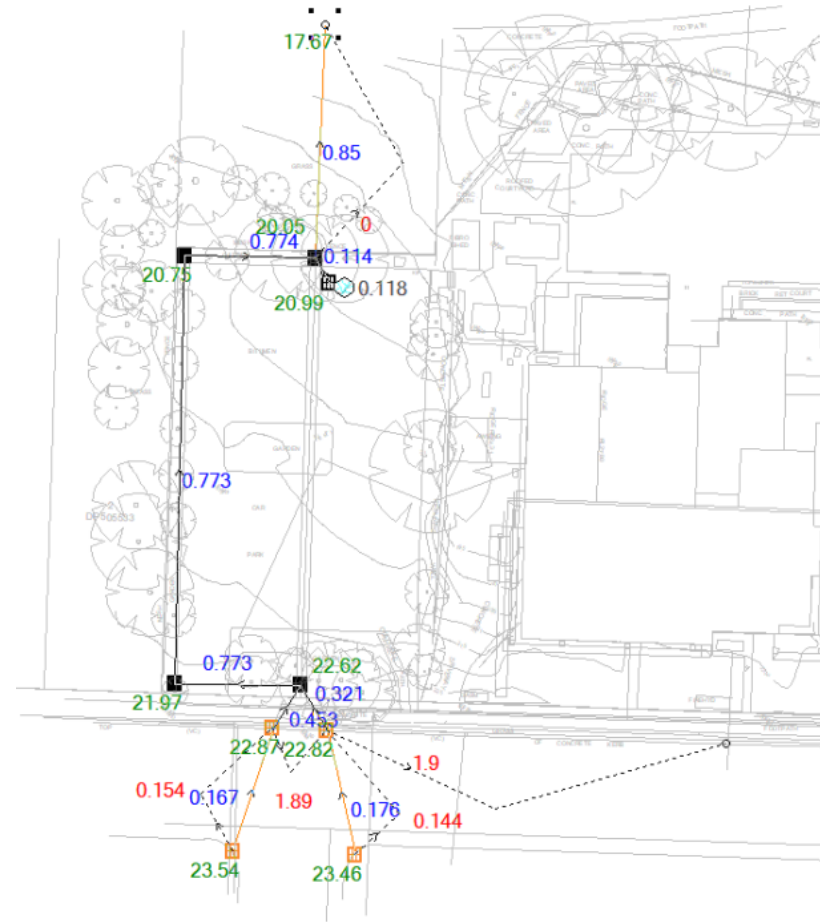
Pre-development Model



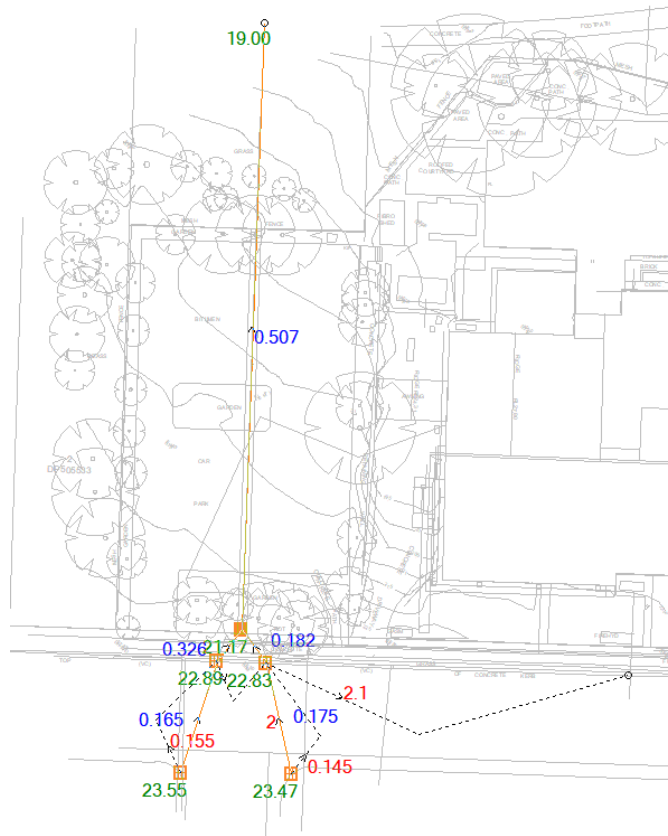
Post-development model



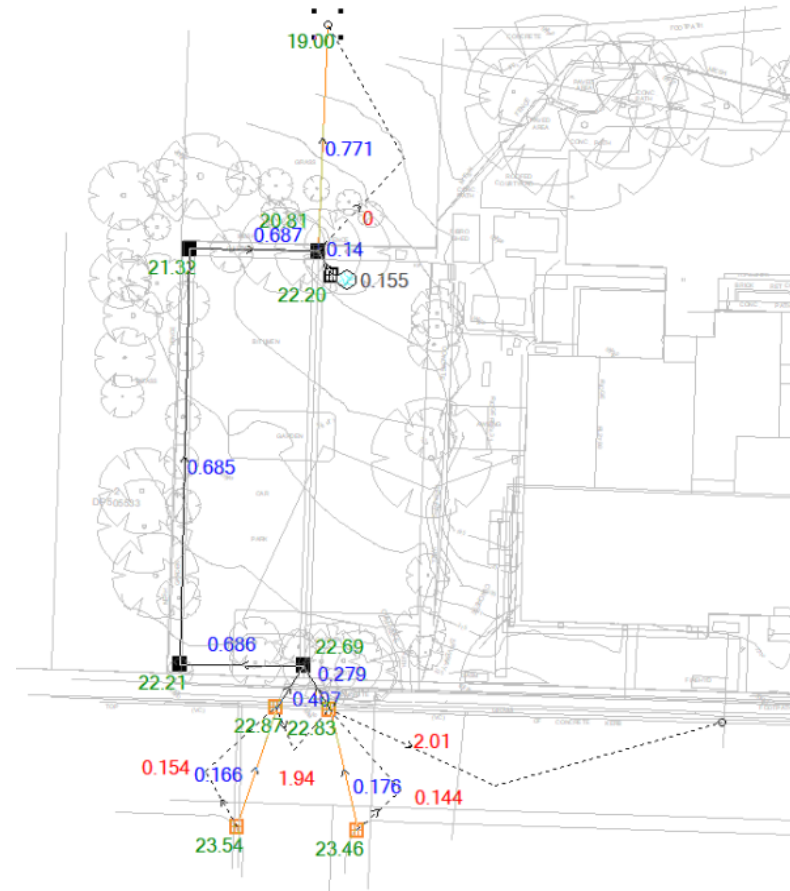
Pre-development 5% AEP



Post-development 5% AEP



Pre-development 1% AEP



Post-development 1% AEP

Appendix C – Stormwater Drawings

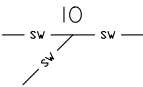
NORTHSIDE WEST CLINIC

STORMWATER MANAGEMENT PLAN

DRAWING INDEX:

- DR-000 LEGEND
- DR-100 PIPE LAYOUT – LOWER GROUND FLOOR
- DR-101 PIPE LAYOUT – GROUND FLOOR
- DR-102 SITE AREAS
- DR-110 DETAILS
- DR-200 STORMWATER DIVERSION
- DR-210 LONG SECTIONS – SHEET 1
- DR-220 PIT DETAILS – SHEET 1

LEGEND:

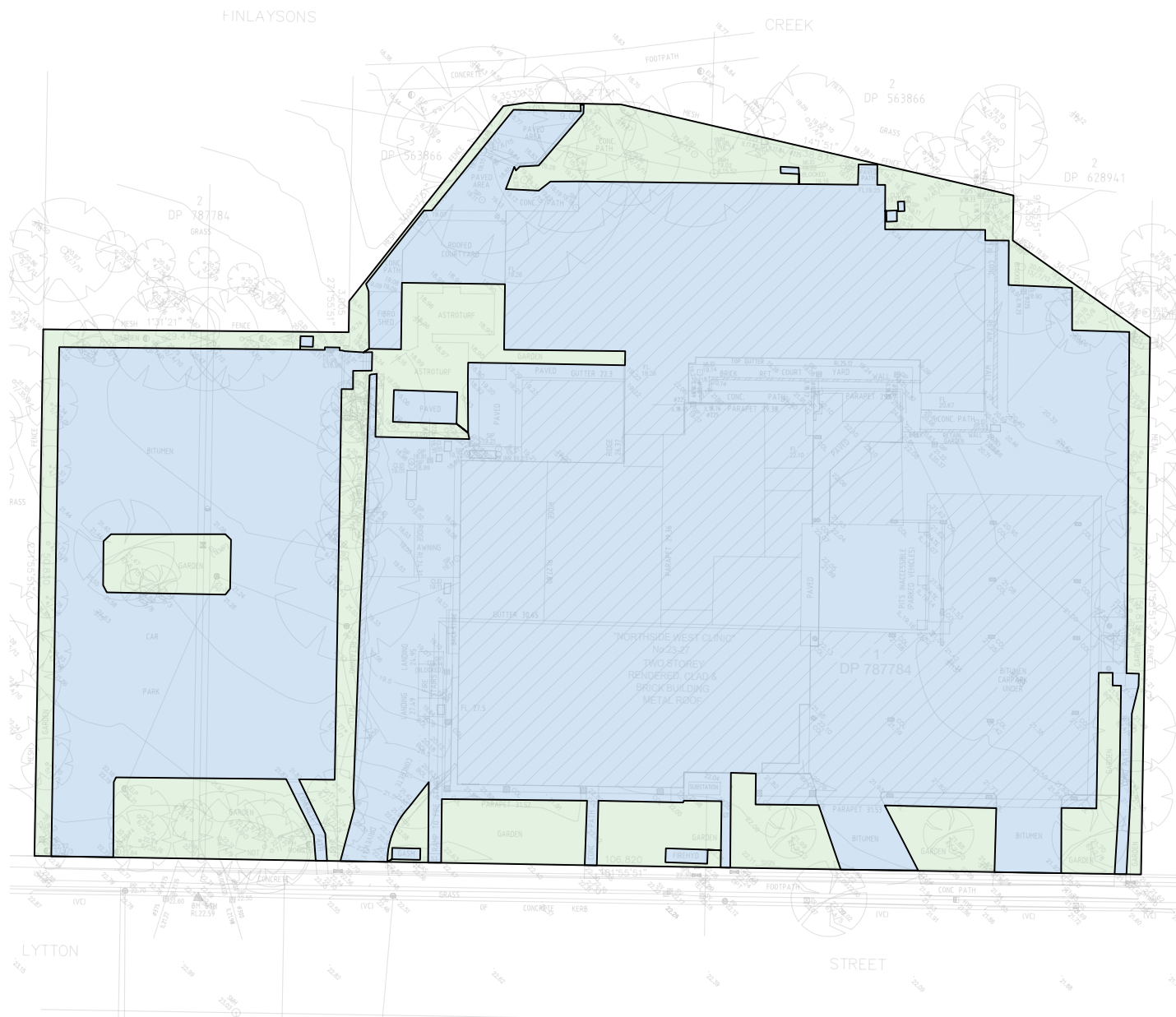
- sw — STORMWATER PIPE
- sw — EXISTING STORMWATER PIPE
- — — EXISTING SEWER PIPE
-  PROPOSED STORMWATER PIT
-  EXISTING STORMWATER PIT
-  INSPECTION OPENING

NOTES:

- ALL DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
- SITE LAYOUT BASED ON ARCHITECTURAL PLANS BY TEAM2 ARCHITECTS (REVISION 4).
- LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
- ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER’S RECOMMENDATIONS, SYDNEY CATCHMENT AUTHORITY RECOMMENDED PRACTICE, AND LOCAL COUNCIL, AS APPLICABLE.
- ALL INVERT LEVELS PROVIDED ON THIS DRAWING ARE REDUCED TO AHD AND BASED ON INTERPOLATED SURFACE LEVELS AND SYSTEM REQUIREMENTS
- WHERE POSSIBLE, PIPEWORK SHALL BE LOCATED EXTERNAL TO THE BUILDING.
- STORMWATER PIPES TO BE GRADED AT A MINIMUM 1% UNLESS NOTED OTHERWISE.
- GUTTER AND DOWNPIPE CONFIGURATION TO BE INSTALLED IN ACCORDANCE WITH AS3500, REFER TO HYDRAULIC SERVICES DRAWINGS FOR BUILDING AND ROOF DRAINAGE
- ALL PIPE AND CONDUITS TO BE MARKED IN ACCORDANCE WITH AS1345 – 1995.
- TRENCHES AND SERVICE SEPARATIONS IN ACCORDANCE WITH AS/NZS 5601, AS/NZS 3500, AND AS/CA S009.

NOT FOR CONSTRUCTION

This drawing is confidential and shall only be used for the purposes of this project.					Scale NA DO NOT SCALE. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED	THE SIGNING OF THIS TITLE BLOCK CONFIRMS THE DESIGN AND DRAFTING OF THIS PROJECT HAVE BEEN PREPARED AND CHECKED IN ACCORDANCE WITH THE STELLEN QUALITY ASSURANCE SYSTEM				 Stellen Stellen Consulting ABN 61 149 095 189	This design complies with: AS3500.3:2021	NORTHSIDE WEST CLINIC										
REVISIONS	2	YYA	08.06.2022	UPDATE TO COUNCIL RFI		IRW	DESIGNED	LES	CHECKED			SSD	LEGEND									
	1	LES	26.11.2021	REVISED EASEMENT LOCATION		SSD	DRAWN	YYA	CHECKED			IRW										
	0	LES	01.11.2021	APPROVED FOR SUBMISSION		LES	APPROVED	IRW	DATE			08.06.2022										
	C	LES	22.10.2021	DRAFT FOR REVIEW		LES							Size	A3	Status	APPROVED FOR SUBMISSION	Drw No.	DR-000	Rev.	2		
	B	YYA	15.07.2021	DRAFT FOR REVIEW		LES																
A	LES	08.06.2022	ISSUED FOR QS	IRW																		
No.	BY	DATE	DESCRIPTION		APPD																	



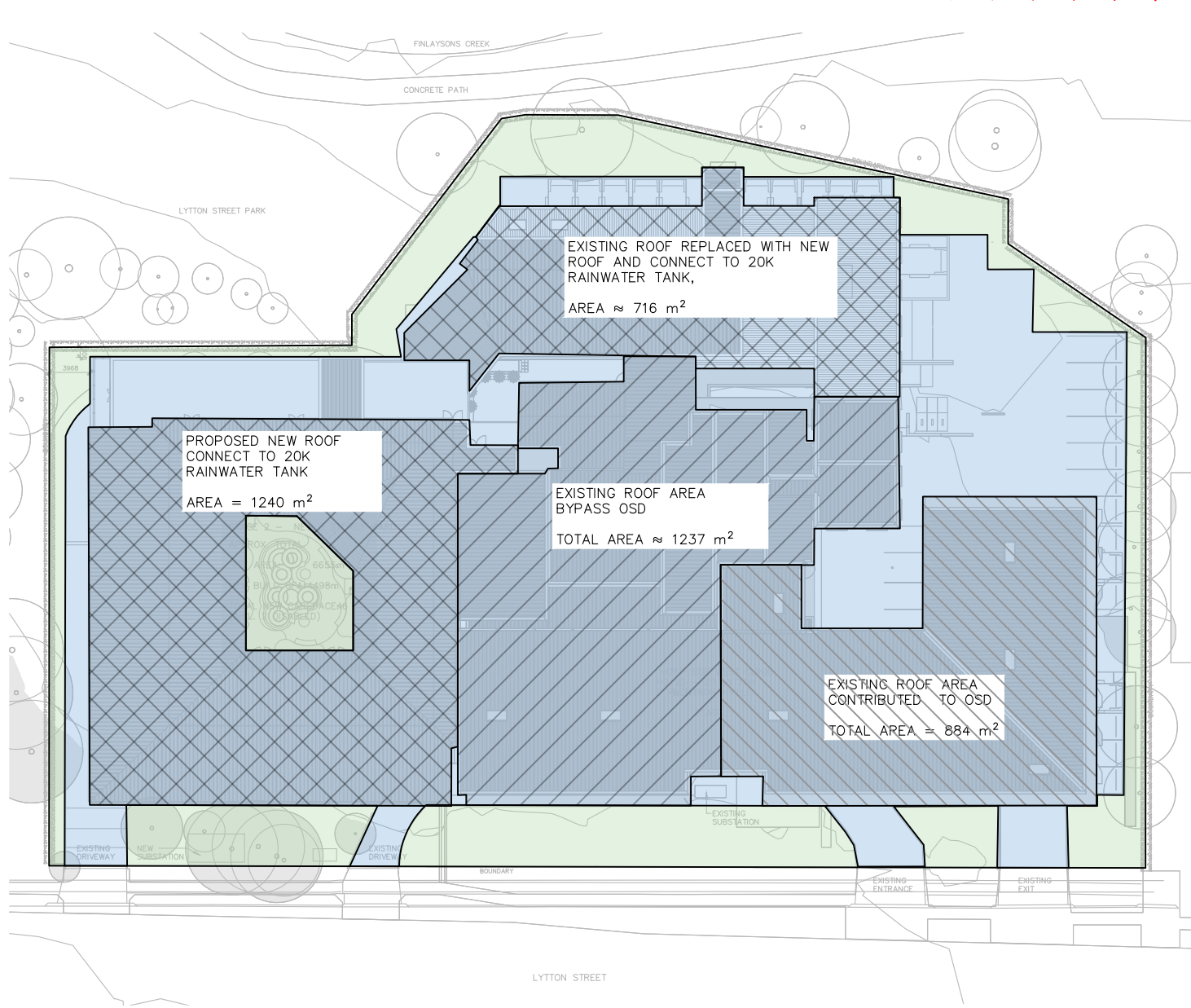
PRE-DEVELOPMENT SITE AREAS
1:600

	PERVIOUS	SITE AREA	6655	m ²
	IMPERVIOUS	PERVIOUS	1250	m ²
		IMPERVIOUS	5405	m ²

OSD ASSESSMENT

- STAGE 2 (POSE-DEVELOPMENT) PROPOSED INCREASE OF LESS THAN 50m² IN THE TOTAL IMPERVIOUS AREA COMPARED TO STAGE 1 (PRE-DEVELOPMENT).
- THE SITE IS SUBJECT TO OVERLAND FLOW, AND ACCORDING TO COUNCIL POLICY OSD SHOULD NOT APPLY FOR ANY PORTION OF THE PROPERTY USED AS DEFINED FLOODWAY.

THEREFORE, OSD DESIGN FOR STAGE 2 IS EXCLUDED.



POST-DEVELOPMENT SITE AREAS
1:600

SITE AREA	6655	m ²
PERVIOUS	1205	m ²
IMPERVIOUS	5450	m ²

1:600

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DRAWN	YYA	CHECKED	IRW
APPROVED	IRW	DATE	08.06.2022



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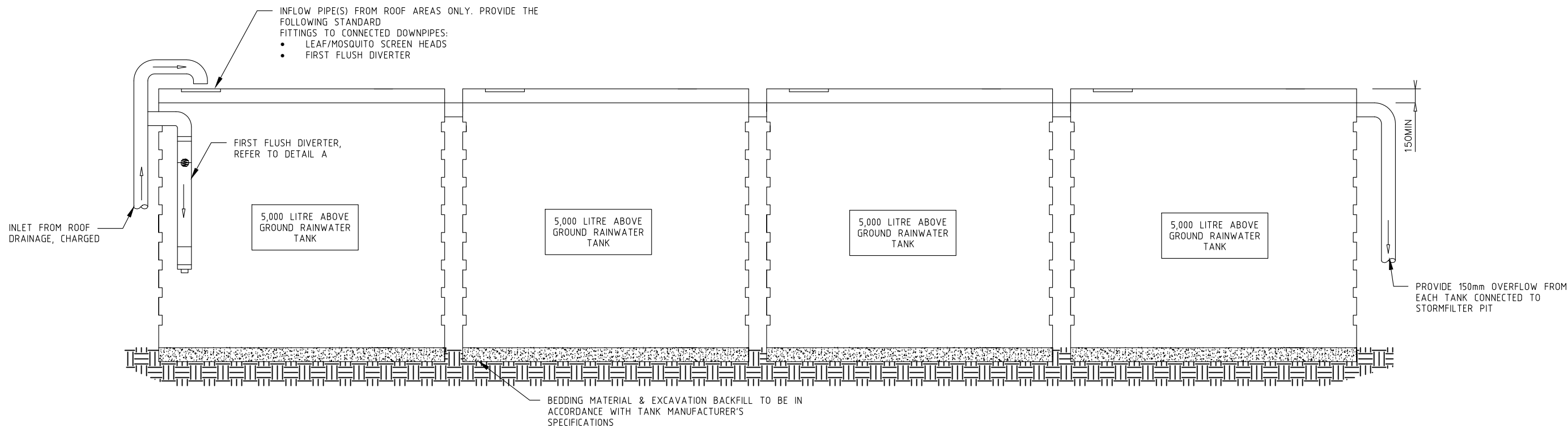
This design complies with:
AS3500.3:2021

NORTHSIDE WEST CLINIC

SITE AREAS

Size	A3	Status	APPROVED FOR SUBMISSION	Dwg No.	DR-102	Rev.	0
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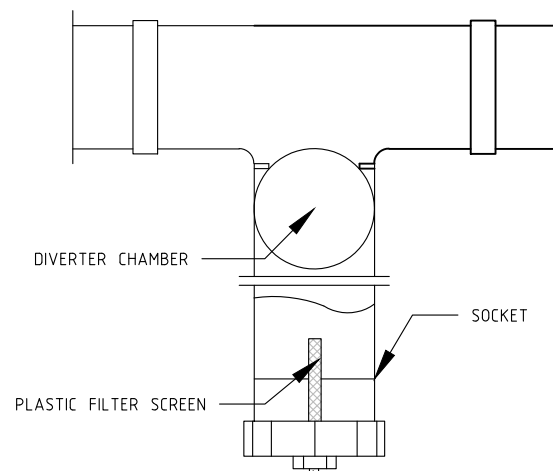
DETAIL
1

TYPICAL RAINWATER REUSE TANK ELEVATION

NOT TO SCALE

NOTES:

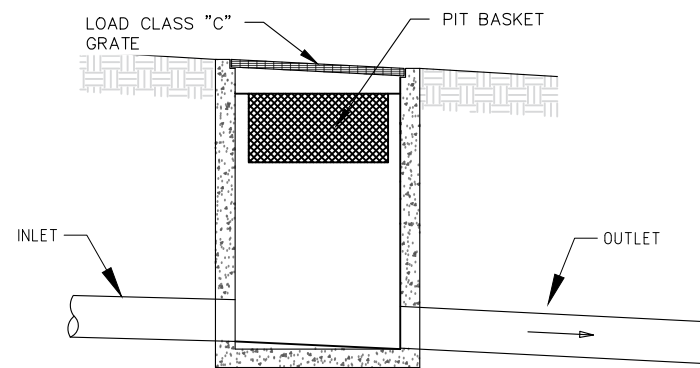
1. RAINWATER TANK MUST MEET, AND BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL APPLICABLE REGULATORY AUTHORITIES.
2. THE APPLICANT MUST CONFIGURE THE RAINWATER TANK TO COLLECT RAINWATER RUNOFF FROM ALL NEW ROOF AREAS (APPROX 2,110 m²).
3. RAINWATER TANK TO BE CONNECTED TO OUTDOOR IRRIGATION SYSTEM.



DETAIL
A

FIRST FLUSH DIVERTER

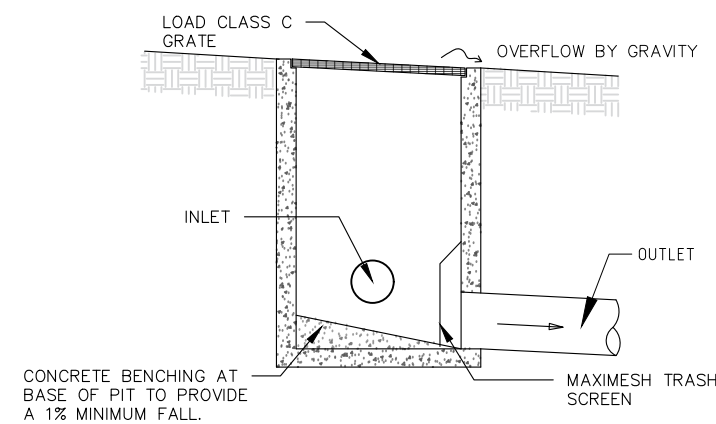
NOT TO SCALE



DETAIL
3

600 SQUARE MEDIUM DUTY PIT WITH PIT BASKET

NOT TO SCALE



DETAIL
4

600 SQUARE MEDIUM DUTY PIT WITH MAX TRASH SCREEN

NOT TO SCALE

NOTES:

1. 'LYSAGHT' MAXIMESH RH3030 (HOT DIPPED GALVANISED) OR EQUIVALENT.
2. MAXI MESH SCREENS MUST BE PLACED SUCH THAT THE LONG AXIS OF THE OVAL SHAPED HOLES ARE ORIENTATED HORIZONTALLY WITH THE PROTRUDING LIP ANGLED UPWARDS AND FACING TOWARDS THE OUTLET.

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Scale

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DRAWN	YYA	CHECKED	IRW
APPROVED	IRW	DATE	08.06.2022



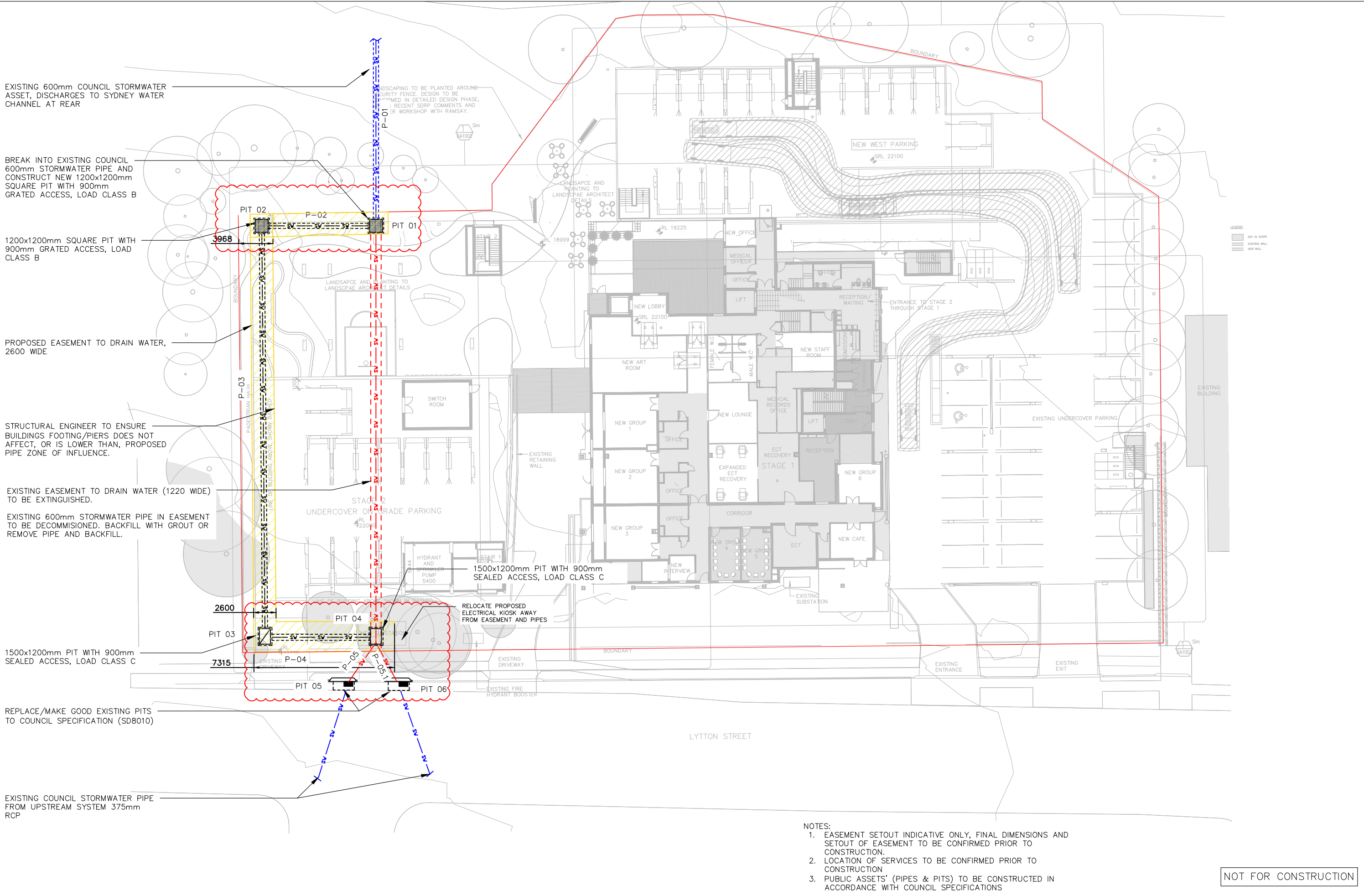
Stellen Consulting ABN 61 149 095 189

This design complies with:
AS3500.3:2021

NORTHSIDE WEST CLINIC

DETAILS

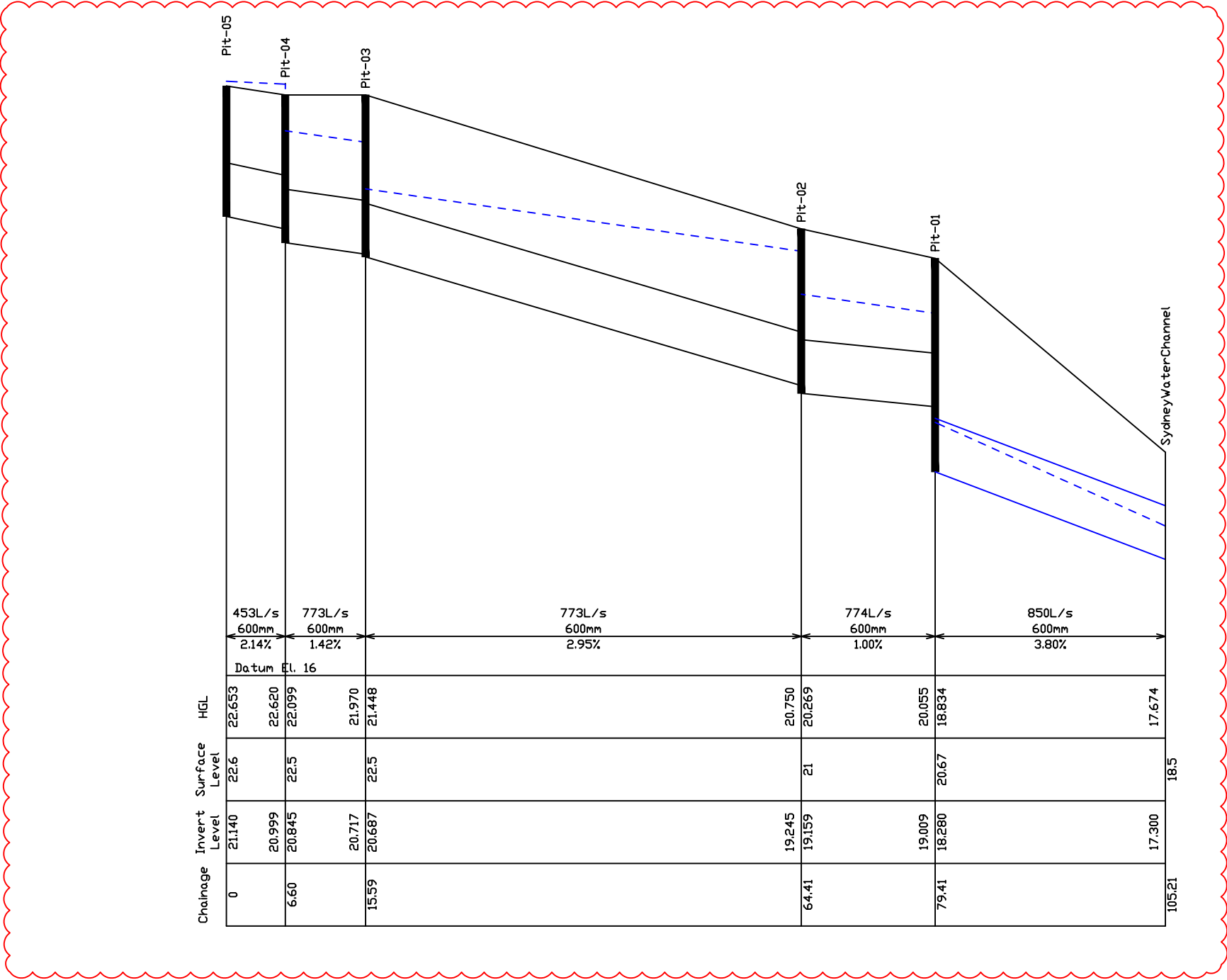
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	0	LES	01.11.2021	APPROVED FOR SUBMISSION		LES	APPROVED	IRW	DATE			08.06.2022								
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											Size	A3	Status	APPROVED FOR SUBMISSION		Drw No.	DR-200		Rev.	2

HYDRAULIC GRADE LINE (5% AEP) - - - - -

REV-03



SECTION
1

LONG SECTION 1, PIT-05 TO OUTLET

1:600
1(H):10(V)
ALL PIPEWORK TO BE CLASS 4 RCP

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REFER COUNCIL STANDARD DRAWING SD 8010

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