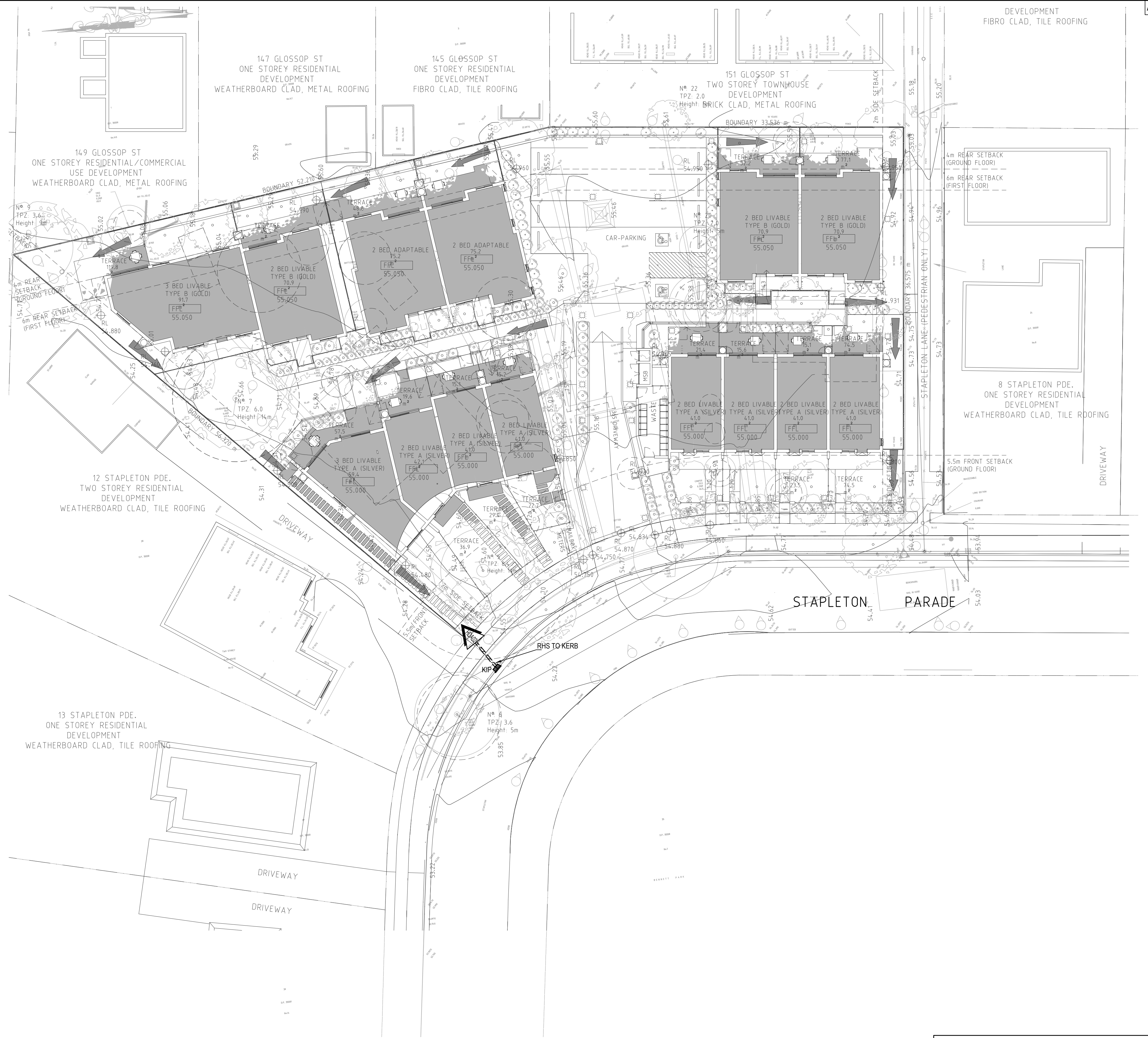
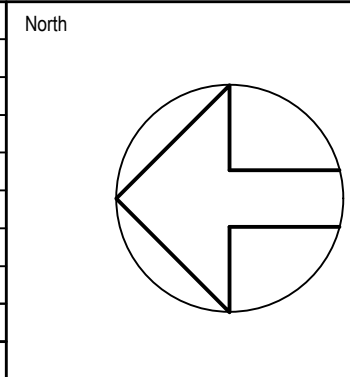


LEGEND

- SW STORMWATER
- RW RAINWATER
- SUBSOIL DRAINAGE
- S AUTHORITY SEWER MAIN
- W AUTHORITY COLD WATER MAIN
- TEMPORARY SEDIMENT FENCE
- ST 100 FLOW TO ABOVE
SERVICE TYPE
SERVICE SIZE
FLOW TO BELOW
- SWP STORMWATER GRATED PIT
- GTD GRATED TRENCH DRAIN
- PIPE PENETRATING CLEAROUT
- CO OVERLAND FLOWPATH
- CO CLEAROUT
- DP DOWNPIPE
- GTD GRATED TRENCH DRAIN
- RWH RAINWATER HEAD
- SW STORMWATER
- SWP STORMWATER PIT



P14	19.07.23	DA ISSUE
P13	07.06.23	DA ISSUE
P12	29.05.23	DA ISSUE
P11	24.02.23	DA ISSUE
P10	13.02.23	DA ISSUE
P9	06.02.23	PRELIMINARY ISSUE
P8	21.12.22	PRELIMINARY ISSUE
P7	13.12.22	PRELIMINARY ISSUE
No.	Date	Details
Amendments		



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Project

TOWNHOUSE DEVELOPMENT
9, 10 & 11 STAPLETON PARADE
ST MARYS NSW 2760

Drawing

HYDRAULIC SERVICES
SITE PLAN

ALL SIGN OFF/CERTIFICATIONS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE METHODS PRESCRIBED IN THE NCC AND AUSTRALIAN STANDARDS AND ANY OTHER RECORDS PROVIDED TO FACILITATE SIGN OFFS FOR OCCUPATION CERTIFICATE.

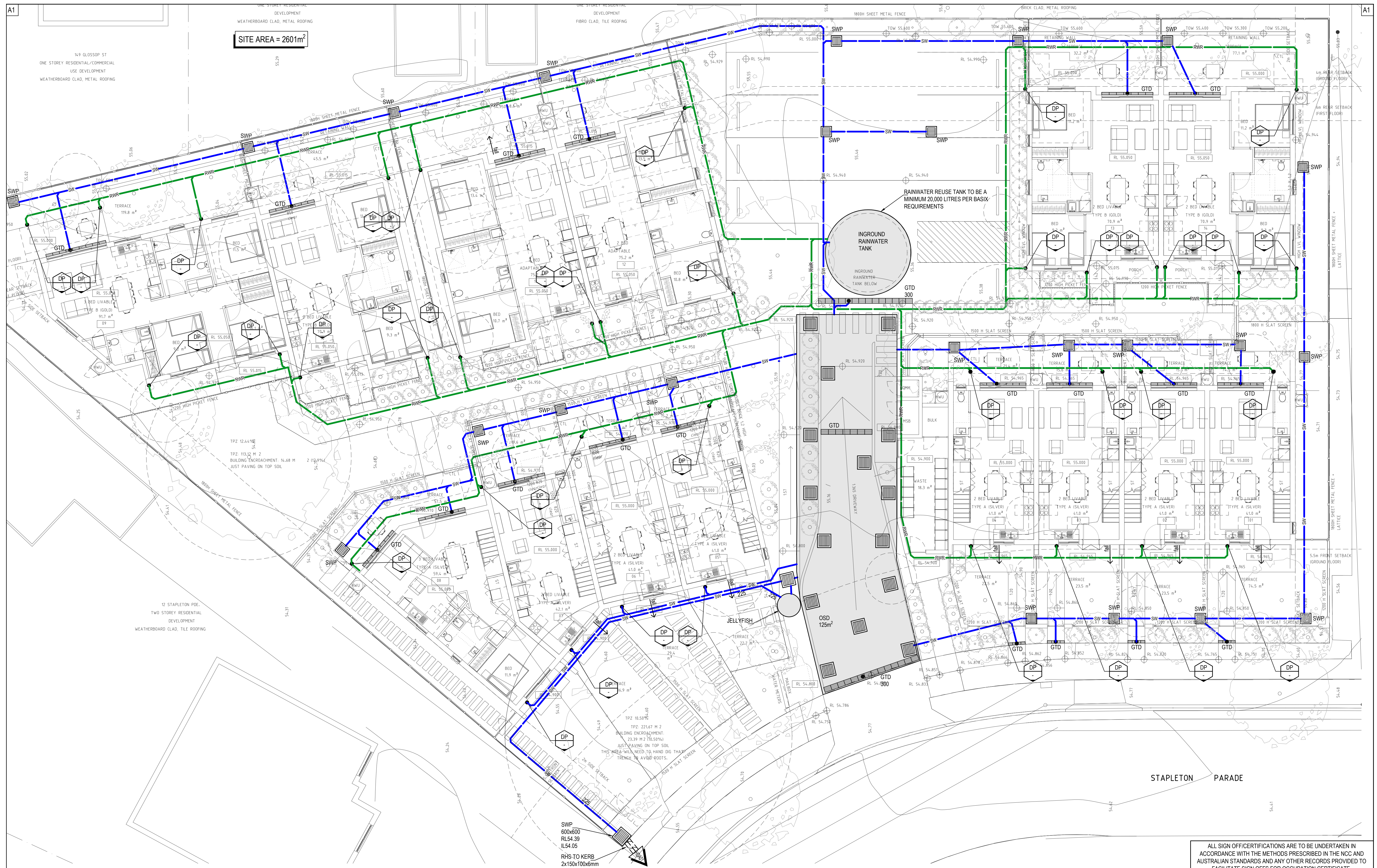
Issue

DEVELOPMENT APPLICATION ISSUE: NOT FOR CONSTRUCTION

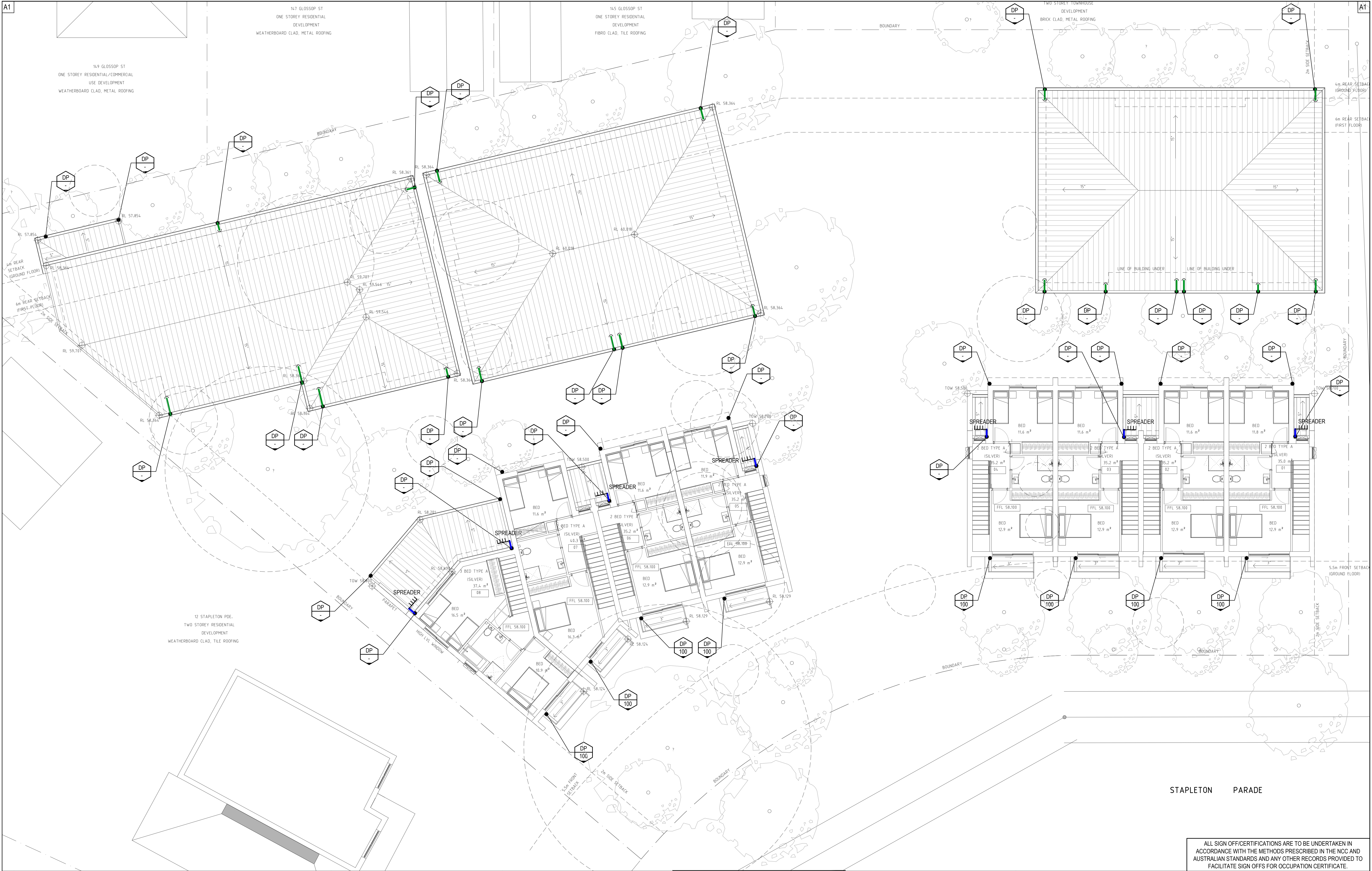
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Drawn:	POK				
Design:	PM				
No in set:	7				

Drawing No.

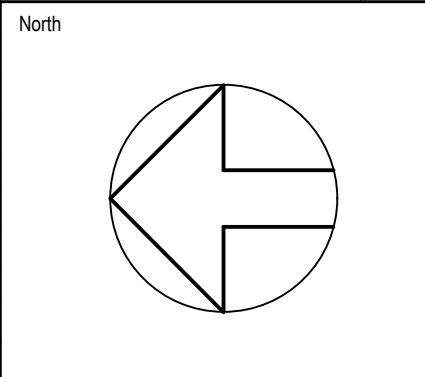
HDA01 / P14



FACILITATE SIGN OFFS FOR OCCUPATION CERTIFICATE:															
North 	P14	19.07.23	DA ISSUE												
	P13	07.06.23	DA ISSUE												
	P12	29.05.23	DA ISSUE												
	P11	24.02.23	DA ISSUE												
	P10	13.02.23	DA ISSUE												
	P9	06.02.23	PRELIMINARY ISSUE												
	P8	21.12.22	PRELIMINARY ISSUE												
	P7	13.12.22	PRELIMINARY ISSUE												
No.	Date	Details													
Amendments															
Architect		 NOMINATED ARCHITECT - P F MORSON REGISTRATION NUMBER 8100 ACN 159 480 056, ABN 41 159 480 056 www.morsongroup.com.au (02) 9380 4946 PO Box 170, Foffs Point, NSW 1335		Client				Hydraulic Consultant		Project		Drawing		Issue	
						UNIT 19, 18 WURROOK CIRCUIT, CARINGBAH NSW 2229 PO BOX 284, GYMEA NSW 2227 PHONE No (02) 9526 1923 EMAIL : paul@inlinehs.com.au www.inlinehydraulicservices.com.au		TOWNHOUSE DEVELOPMENT 9, 10 & 11 STAPLETON PARADE ST MARYS NSW 2760		HYDRAULIC SERVICES GROUND FLOOR PLAN		DEVELOPMENT APPLICATION ISSUE: NOT FOR CONSTRUCTION			
										Date: 25.07.22		Project No: 22194		LAHC Job No: BGUV3	
										Scale: 1:100					
										Drawing: POK					
										Design: PM					
										No in set: 7				Drawing No: HDA02 / P14	



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P13	07.06.23	DA ISSUE
P12	29.05.23	DA ISSUE
P11	24.02.23	DA ISSUE
P10	13.02.23	DA ISSUE
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P8	21.12.22	PRELIMINARY ISSUE
P7	13.12.22	PRELIMINARY ISSUE
No.	Date	Details
Amendments		



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Project

**TOWNHOUSE DEVELOPMENT
9, 10 & 11 STAPLETON PARADE
ST MARYS NSW 2760**

Drawing

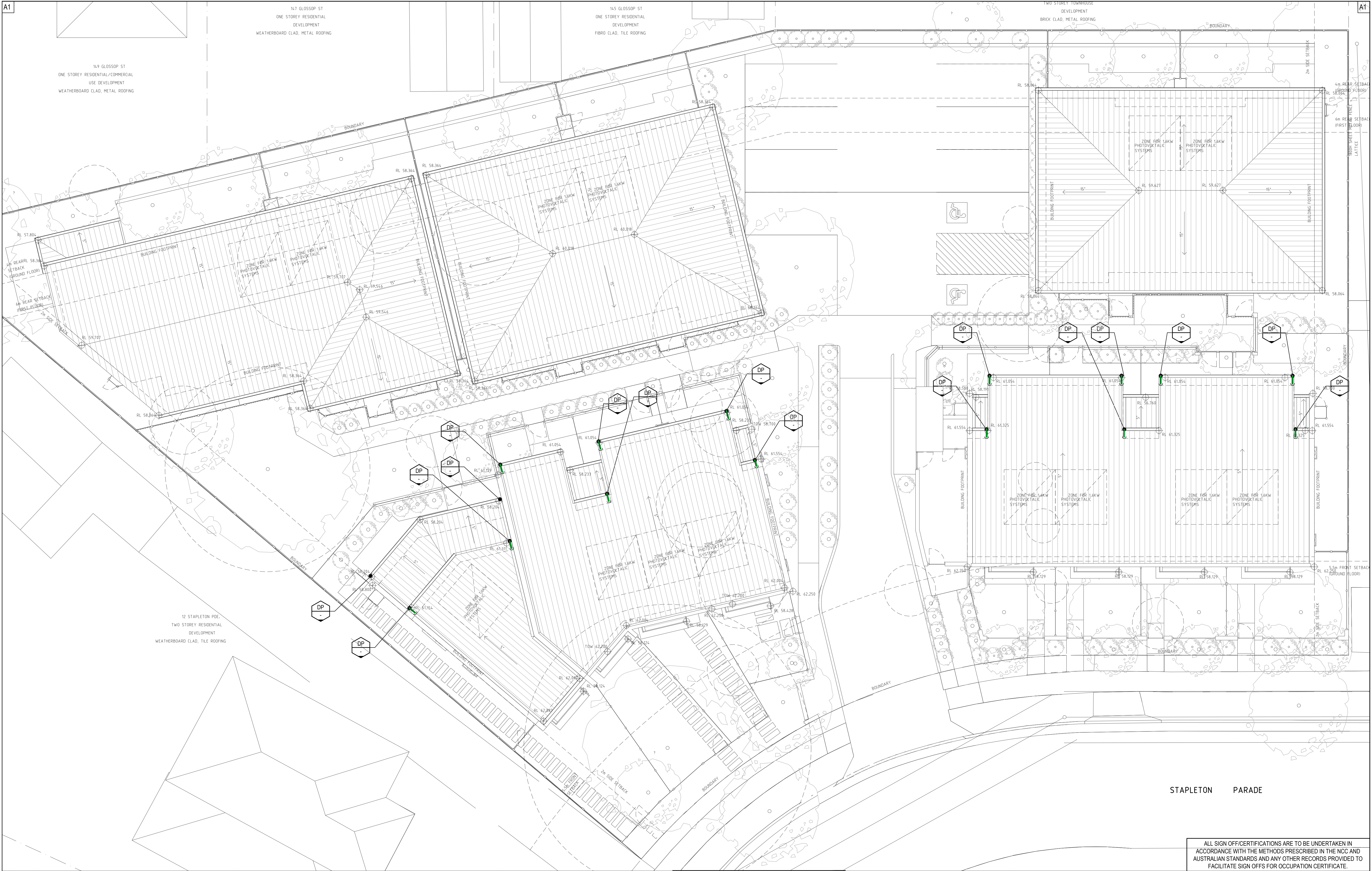
**HYDRAULIC SERVICES
FIRST FLOOR PLAN**

Issue

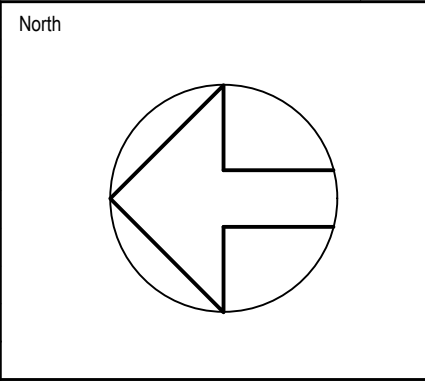
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Date:	25.07.22	Project No.	22194	LABC Job No.	BGUIV3
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Design:	PM				
No in set:	7				

HDA03 / P14



P14	19.07.23	DA ISSUE
P13	07.06.23	DA ISSUE
P12	29.05.23	DA ISSUE
P11	24.02.23	DA ISSUE
P10	13.02.23	DA ISSUE
P9	06.02.23	PRELIMINARY ISSUE
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P7	13.12.22	PRELIMINARY ISSUE
No.	Date	Details
Amendments		



Architect

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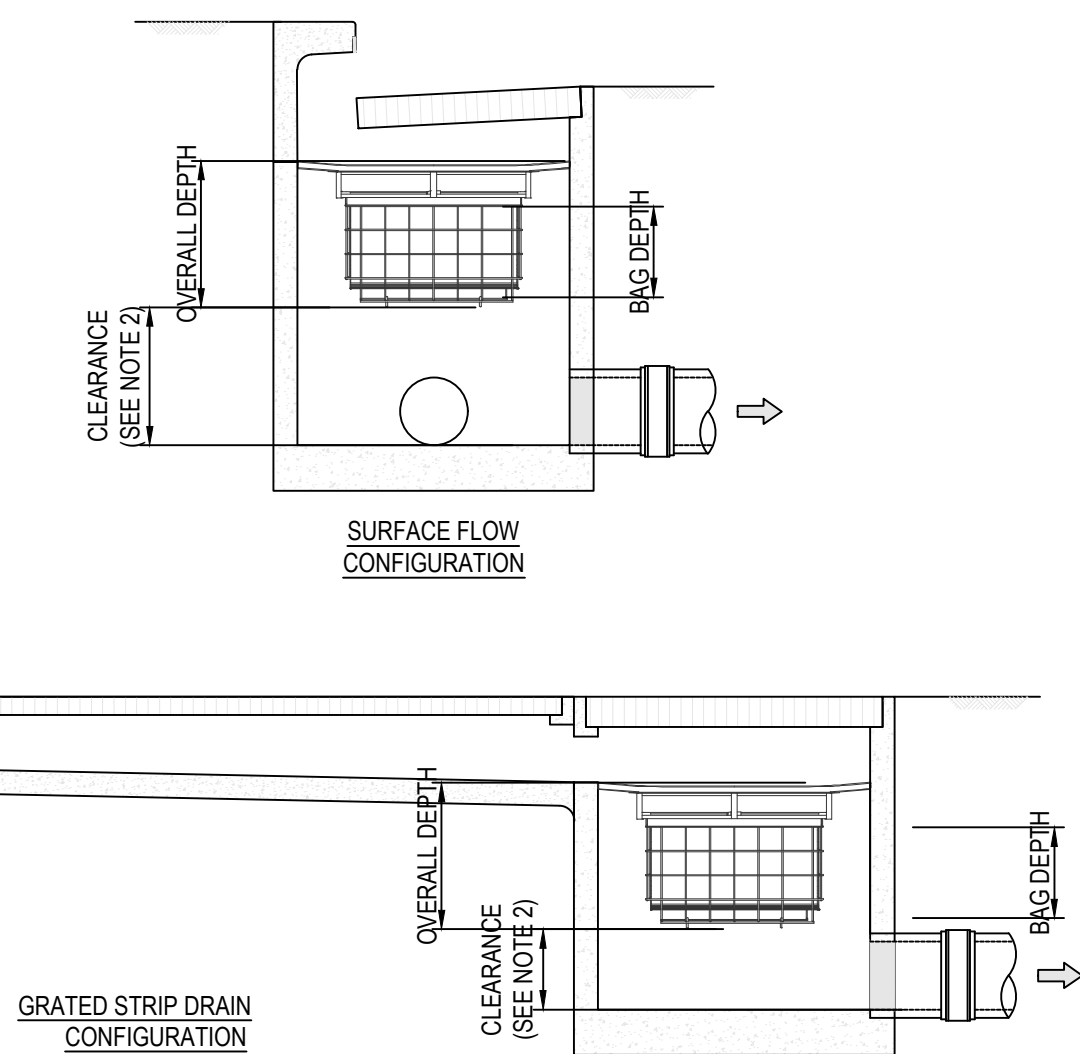
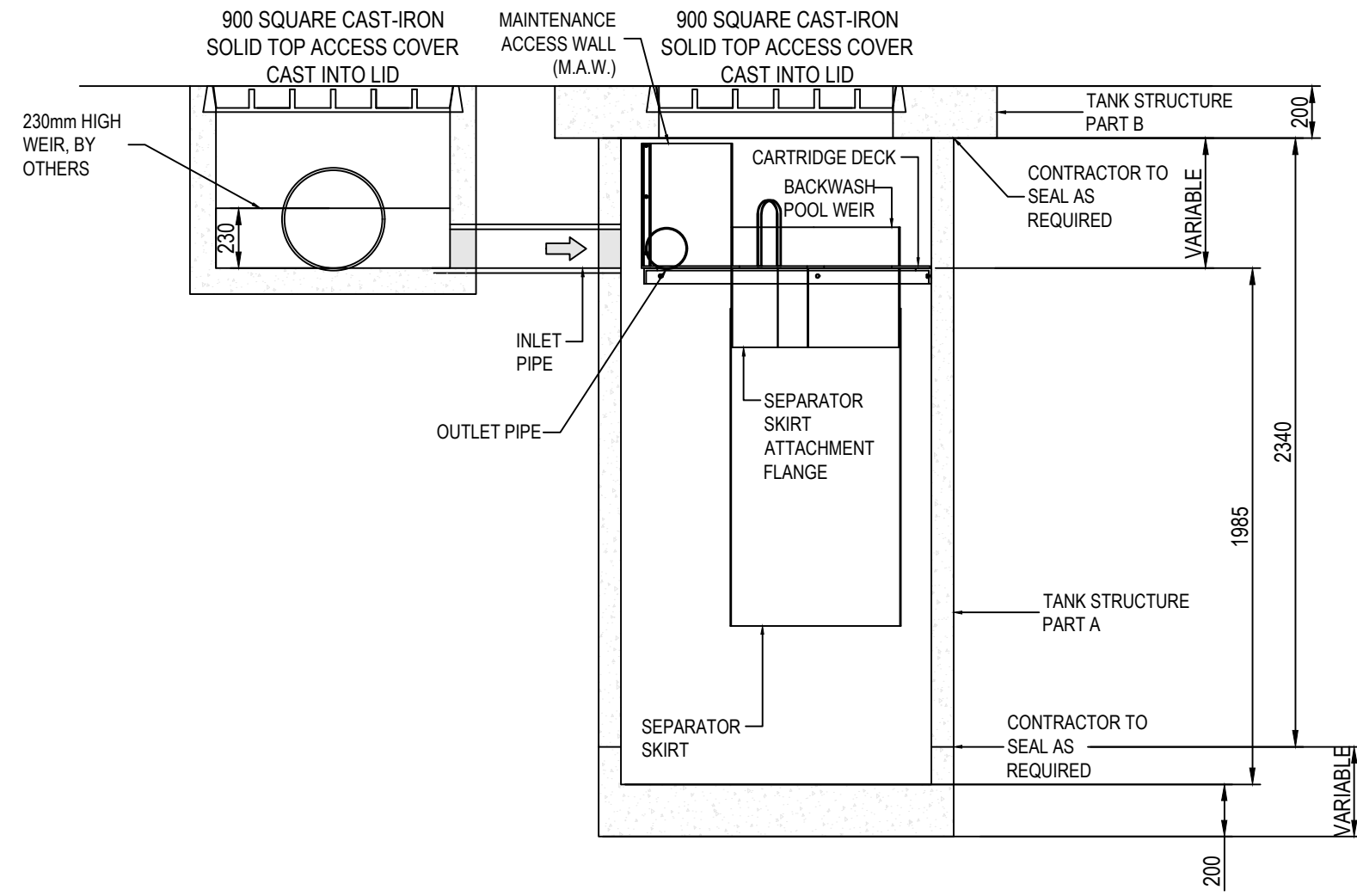
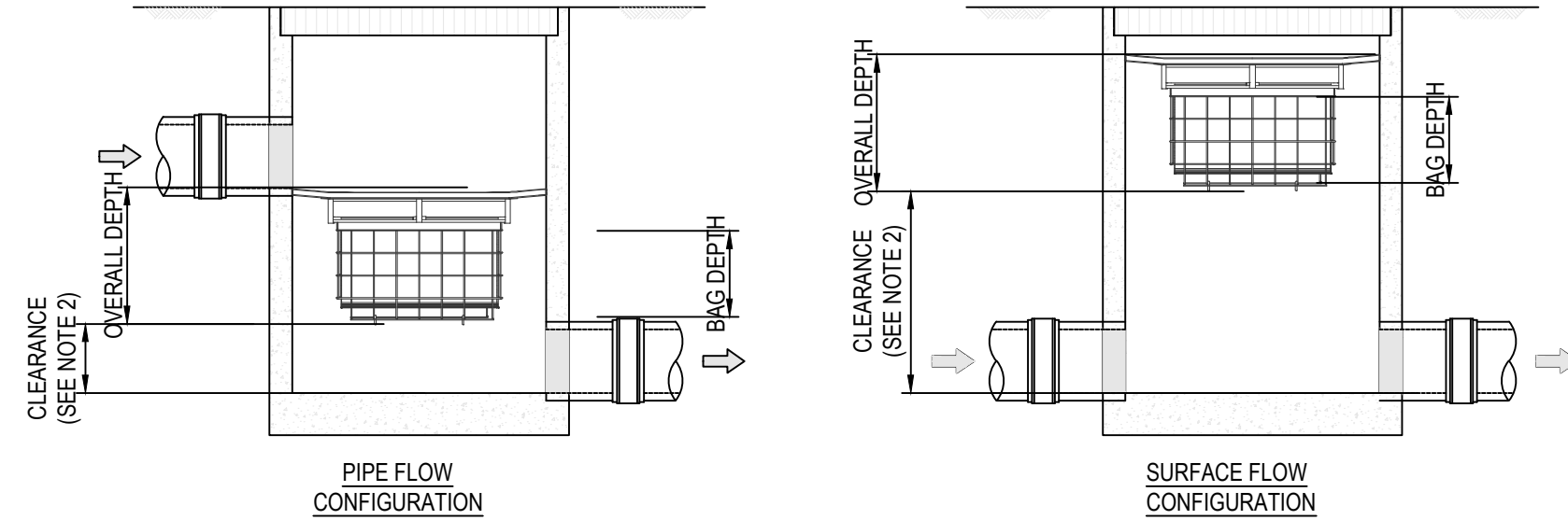
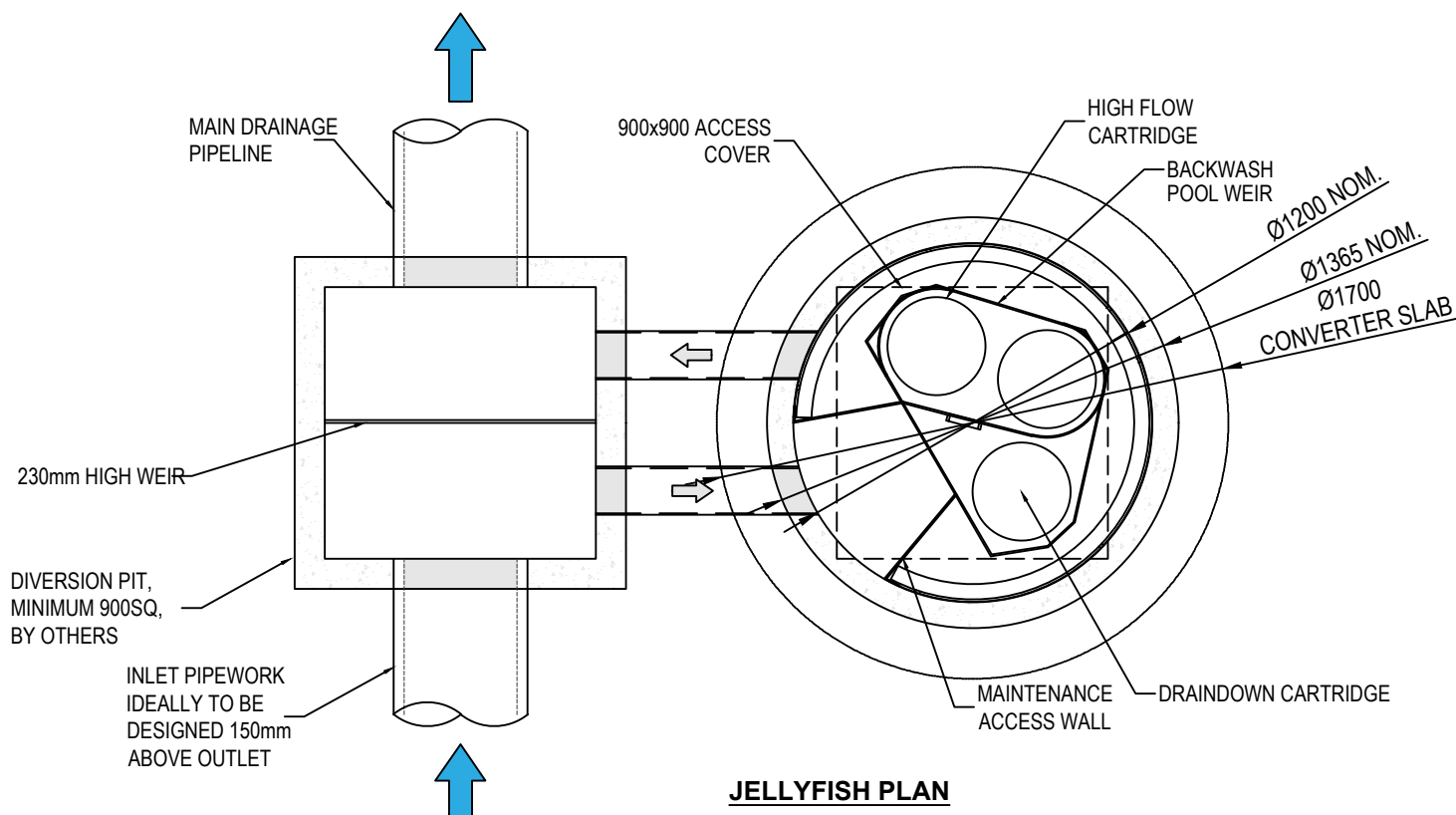
Project

**TOWNHOUSE DEVELOPMENT
9, 10 & 11 STAPLETON PARADE
ST MARYS NSW 2760**

Drawing

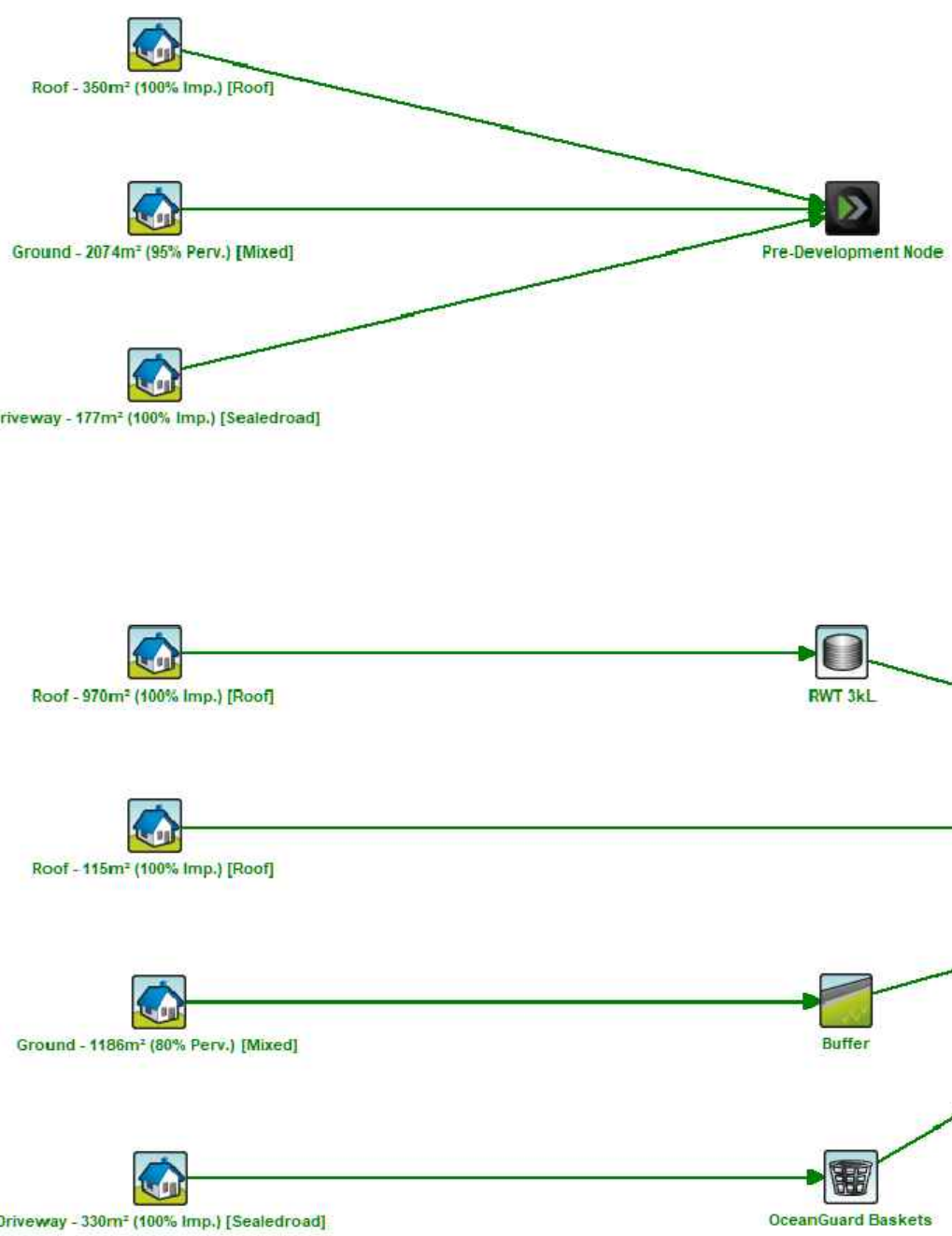
**HYDRAULIC SERVICES
ROOF PLAN**

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Issue	DEVELOPMENT APPLICATION ISSUE: NOT FOR CONSTRUCTION		
Date:	25.07.22	Project No.	22194
Scale:	1:100	LAHC Job No.	BGUV3
Drawn:	POK	Drawing No.	
Design:	PM		
No in set:	7	HDA04 / P14	



D5 JELLYFISH DETAIL
NOT TO SCALE

D6 OCEAN GUARD DETAIL
NOT TO SCALE

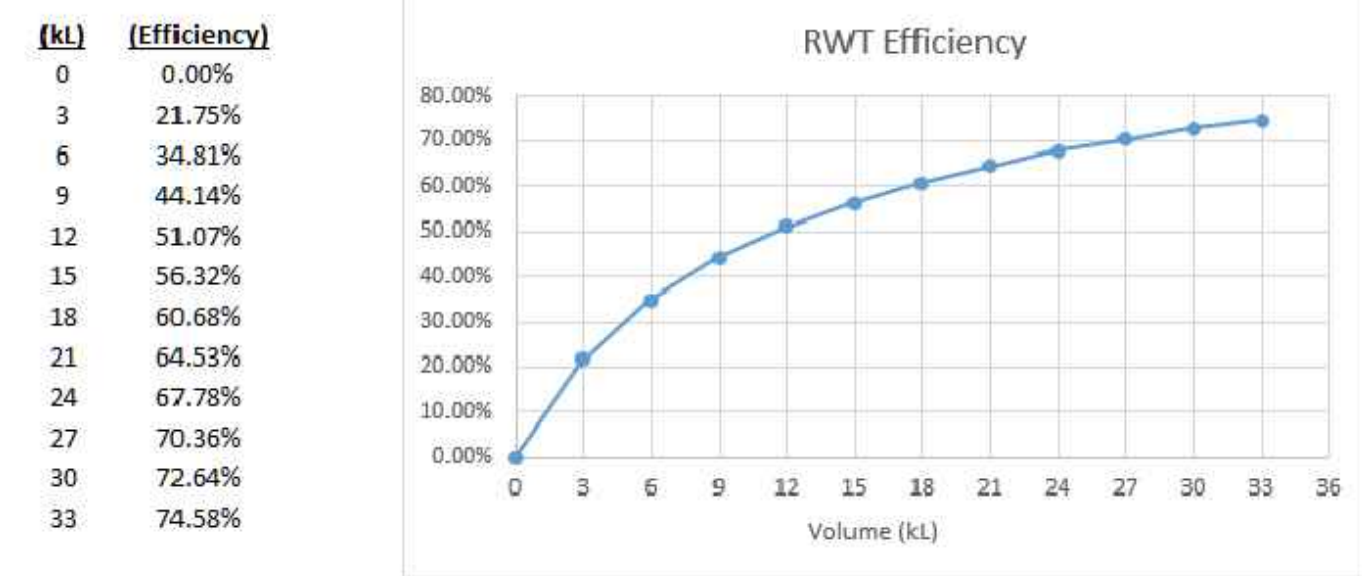


Treatment Train Effectiveness - Post-Development Node						
	Sources		Residual Load		% Reduction	
	Pre	Post	Pre	Post	Pre	Post
Flow (ML/yr)	0.567	1.07	0.567	0.987	0	7.76
Total Suspended Solids (kg/yr)	80	124	80	12	0	90.3
Total Phosphorus (kg/yr)	0.162	0.278	0.162	0.113	0	59.4
Total Nitrogen (kg/yr)	1.23	2.38	1.23	1.18	0	50.4
Gross Pollutants (kg/yr)	11.3	30.8	11.3	0.863	0	97.2

Pre-Development	Source (kg/yr)	Residual Load (kg/yr)	% Reduction	
Flow (ML/yr)	5.67E-01	5.67E-01		0
Total Suspended Solids (kg/yr)	8.00E+01	8.00E+01		0
Total Phosphorus (kg/yr)	1.62E-01	1.62E-01		0
Total Nitrogen (kg/yr)	1.23E+00	1.23E+00		0
Gross Pollutants (kg/yr)	11.3	11.3		0

Post-Development	Source (kg/yr)	Residual Load (kg/yr)	% Reduction	
Flow (ML/yr)	1.07E+00	9.87E-01		8
Total Suspended Solids (kg/yr)	1.24E+02	1.20E+01		90.3
Total Phosphorus (kg/yr)	2.78E-01	1.13E-01		59.5
Total Nitrogen (kg/yr)	2.38	1.18		50.2
Gross Pollutants (kg/yr)	3.08E+01	8.63E-01		97.2

NorBE	Pre-Development Load (kg/yr)	Post Development Load (kg/yr)	% Pre- Vs Post Reduction	
Flow (ML/yr)	0.567	0.987		-74.1%
Total Suspended Solids (kg/yr)	8.00E+01	12		85.0%
Total Phosphorus (kg/yr)	0.162	0.113		30.2%
Total Nitrogen (kg/yr)	1.23	1.18		4.1%
Gross Pollutants (kg/yr)	11.3	0.863		92.4%



MUSIC-link Report

Project Details		Company Details	
Project:	9, 10 & 11 Stapleton Pde, ST Marys (Rev1)	Company:	Inline Hydraulics
Report Export Date:	13/05/2023	Contact:	Paul McDonald
Catchment Name:	9	Address:	Unit 19B-18 Wurrook Circuit Caringbah NSW 2229
Catchment Area:	0.261ha	Phone:	02 9526 1923
Impervious Area:	63.51%	Email:	paul@inlinehs.com.au
Rainfall Station:	67113 PENRITH		
Modelling Time-step:	6 Minutes		
Modelling Period:	1/01/1999 - 31/12/2008 11:54:00 PM		
Mean Annual Rainfall:	691mm		
Evapotranspiration:	1158mm		
MUSIC Version:	6.3.0		
MUSIC-link data Version:	6.33		
Study Area:	Penrith		
Scenario:	Penrith Development		

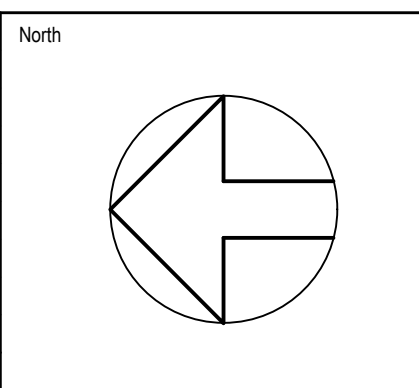
Treatment Train Effectiveness		Treatment Nodes		Source Nodes	
Node: Receiving Node	Reduction	Node Type	Number	Node Type	Number
Flow	11.2%	Rain Water Tank Node	1	Urban Source Node	4
TSS	90.9%	Buffer Node	1		
TP	60.1%	GPT Node	1		
TN	52.2%	Generic Node	1		
GP	97.3%				

Comments
Reuse Demand doesn't apply for resi application

Passing Parameters					
Node Type	Node Name	Parameter	Min	Max	Actual
GPT	OceanGuard Baskets	Hi-flow bypass rate (cumulative)	None	99	0.02
Receiving	Receiving Node	% Load Reduction	None	None	11.2
Receiving	Receiving Node	GP % Load Reduction	90	None	97.3
Receiving	Receiving Node	TN % Load Reduction	45	None	52.2
Receiving	Receiving Node	TP % Load Reduction	60	None	60.1
Receiving	Receiving Node	TSS % Load Reduction	85	None	90.9
Urban	Driveway - 330m² (100% Imp.)	Area Impervious (ha)	None	None	0.033
Urban	Driveway - 330m² (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Driveway - 330m² (100% Imp.)	Total Area (ha)	None	None	0.033
Urban	Ground - 1186m² (80% Perv.)	Area Impervious (ha)	None	None	0.023
Urban	Ground - 1186m² (80% Perv.)	Area Pervious (ha)	None	None	0.095
Urban	Ground - 1186m² (80% Perv.)	Total Area (ha)	None	None	0.119
Urban	Roof - 115m² (100% Imp.)	Area Impervious (ha)	None	None	0.012
Urban	Roof - 115m² (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Roof - 115m² (100% Imp.)	Total Area (ha)	None	None	0.012
Urban	Roof - 970m² (100% Imp.)	Area Impervious (ha)	None	None	0.097
Urban	Roof - 970m² (100% Imp.)	Area Pervious (ha)	None	None	0
Urban	Roof - 970m² (100% Imp.)	Total Area (ha)	None	None	0.097

Failing Parameters					
Node Type	Node Name	Parameter	Min	Max	Actual
Rain	RWT 5kL	% Reuse Demand Met	80	None	31.78

P14	19.07.23	DA ISSUE
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P12	29.05.23	DA ISSUE
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Project

TOWNHOUSE DEVELOPMENT
9, 10 & 11 STAPLETON PARADE
ST MARYS NSW 2760

Drawing

HYDRAULIC SERVICES
DETAIL SHEET #2

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Issue

DEVELOPMENT APPLICATION ISSUE: NOT FOR CONSTRUCTION

Date: 25.07.22
Scale: NTS
Drawn: POK
Design: PM
No in set: 7

Project No. **22194**
LAHC Job No. **BGUIV3**

Drawing No. **HDA07 / P14**