



BRIGHT PLAN CIVILS

Surface Water Drainage Design Summary and Calculations

Project name:	Land off Burndell Road, Yapton
Project number:	D1906
Client:	Driftstone Developments Ltd
Prepared by and date:	Stuart Burnett, 7 th September 2021
Site address:	Land off Burndell Road, Yapton, West Sussex BN18 0GB
Local Authority:	Arun District Council
Lead Local Flood Authority:	West Sussex County Council
Site area:	13,443m ² (1.34Ha)
Geology:	WS1 – Soft to firm CLAY up to 2.00m below ground level, becoming very silty/fine sandy with gravel of flint and chalk (below 2.30m bgl). Band of very fine sandy SILT (4.40m to 4.60m bgl). RIVER TERRACE DEPOSITS. WS2 – CLAY up to 2.00m bgl (RTD), SAND to 2.80m bgl (RTD), SILT of CHALK from 2.80m bgl to 5.00m bgl (LEWES NODULAR CHALK FORMATION). WS3 – Soft to firm CLAY up to 2.00m (RTD), SAND to 3.80m bgl (RTD) and sandy, gravelly CLAY to 4.00m bgl (RTD). WS4 – Silty, sandy CLAY to 2.00m bgl (RTD), very silty very clayey SAND to 2.50m bgl (RTD), GRAVEL to 3.10m bgl (RTD), SILT of CHALK to 4.00m bgl (LEWES NODULAR CHALK FORMATION). WS5 – Silty, sandy CLAY to 2.00m bgl (RTD), Very loose very silty very clayey SAND to 3.50m bgl (RTD), SAND to 4.00m bgl (RTD). WS6 – Silty, sandy CLAY to 2.00m bgl (RTD), Very loose very silty very clayey SAND to 3.80m bgl (RTD), SILT of CHALK to 4.00m bgl (LEWES NODULAR CHALK FORMATION).
Greenfield run-off rate (Qbar):	4.02l/s
Groundwater depth:	Investigation from November 2019 to March 2020, peaking at; WS1 - 0.50m bgl WS2 – 1.20m bgl WS3 – 0.45m bgl WS4 – 0.46m bgl WS5 – 0.29m bgl WS6 – 0.55m bgl
Soil infiltration rate:	Infiltration not deemed suitable given the presence of high groundwater.
Nearby watercourse:	Ordinary watercourse located on the north-western/western boundary, as well as to the south-east of site access
Nearby surface water sewer:	No
Proposed method of disposal and reason:	To existing watercourse due to the presence of high groundwater
Design storms considered:	1:100 year

Climate change:	40%
Urban creep:	10%
Proposed catchment area:	5,213m ² (excludes free-draining gravel area @ 845m ²)
Proposed discharge Rate:	4.00l/s
Flow control method	Induced vortex e.g. Hydrobrake
Volume of storage provided and method:	133m³ cellular tank (350m², 400mm deep, 95% voids) 228m³ permeable paving (1,585m², 450mm sub-base, 32% voids)
Offsite works:	Existing ditch downstream of proposed discharge points to be cleared to ensure both are free flowing, without obstructions. Riparian ownership responsibilities to be undertaken to ensure long-term effectiveness.

Foul Water Drainage Design Summary

Number of properties:	23 residential dwellings
Point of discharge:	Existing foul water manhole (7701) located in Burndell Road
Method of discharge:	Pumped
Rate of discharge:	3.5l/s (minimum self-cleansing velocity, subject to confirmation from pump specialist)
24hr emergency storage:	19.8m ³ (at 150l per person, per day)
Off-site works:	Connection to existing sewer in Burndell Road subject to S106 approval from Southern Water.

Flood Risk Summary

Flood zone:	Flood Zone 1 (Figure 1)
Flood risk from rivers/the sea:	'Very Low' (Figure 2)
Flood risk from surface water:	'Very Low' to 'Medium' (Figure 3)
Anticipated depths of surface water flooding:	'Medium' Risk scenario: Below 300mm (Figure 4) 'Low Risk' scenario: Below 300mm to 300-900mm (Figure 5)
Flood risk from reservoirs:	None (Figure 6)
Flood risk from groundwater;	High – peaking at 0.29m below ground level
Flood risk from sewers:	TBC
Other:	Site is located within the 'Lidsey Foul Water Treatment Catchment Area'

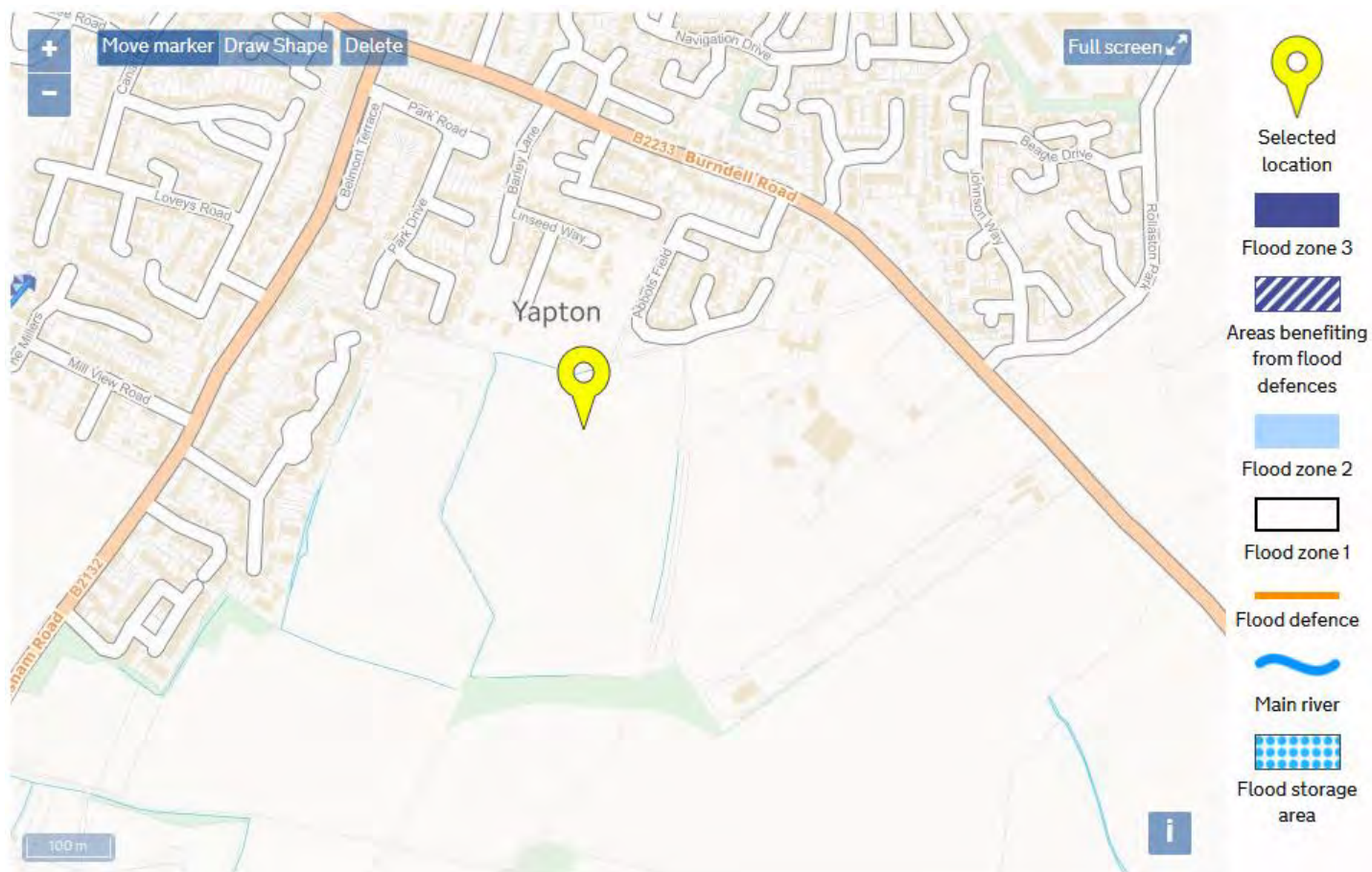


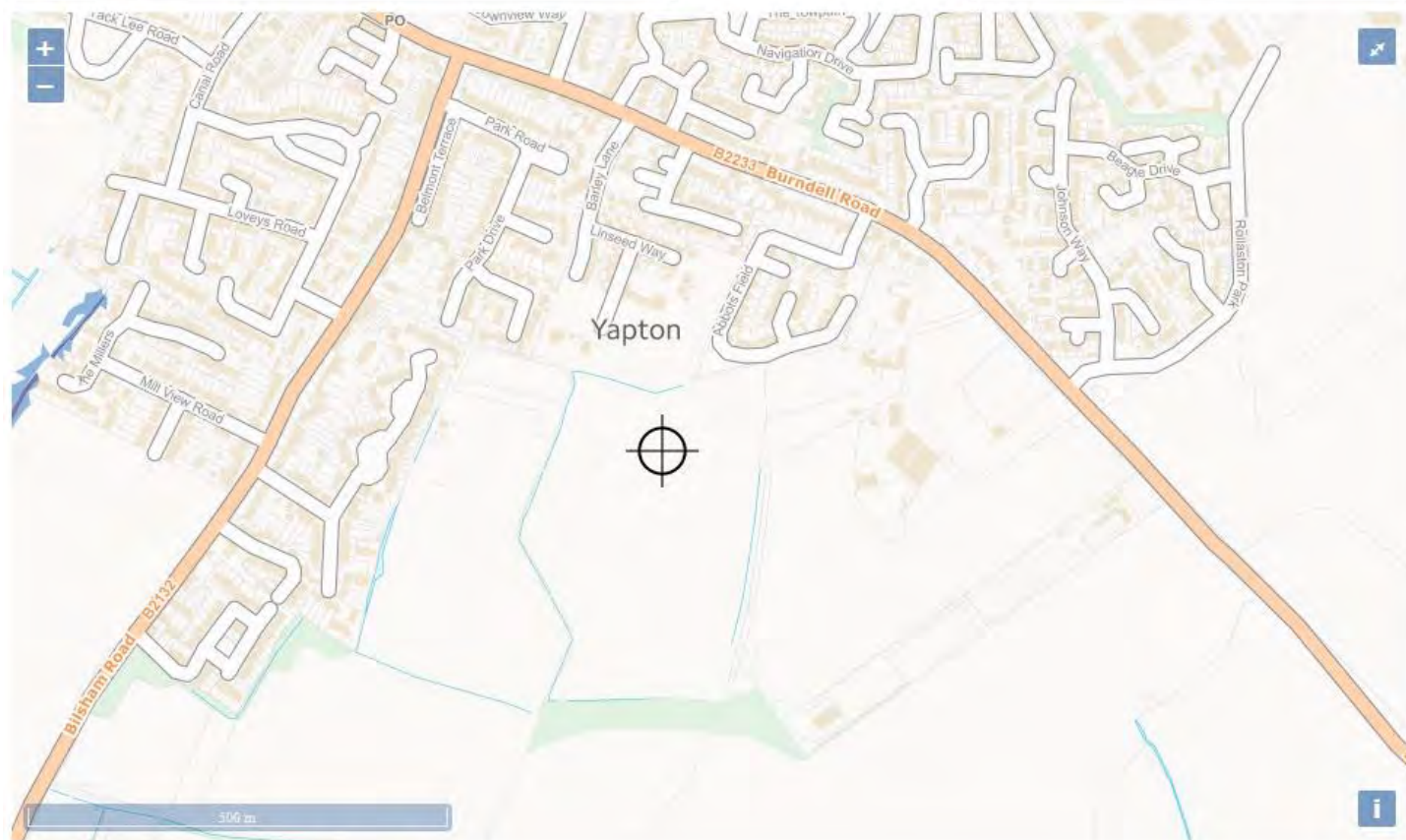
Figure 1 – Flood Maps for Planning

Flood risk

Extent of flooding

Location

Enter a place or postcode



Extent of flooding from rivers or the sea

● High
 ● Medium
 ● Low
 ● Very low
 ⊕ Location you selected

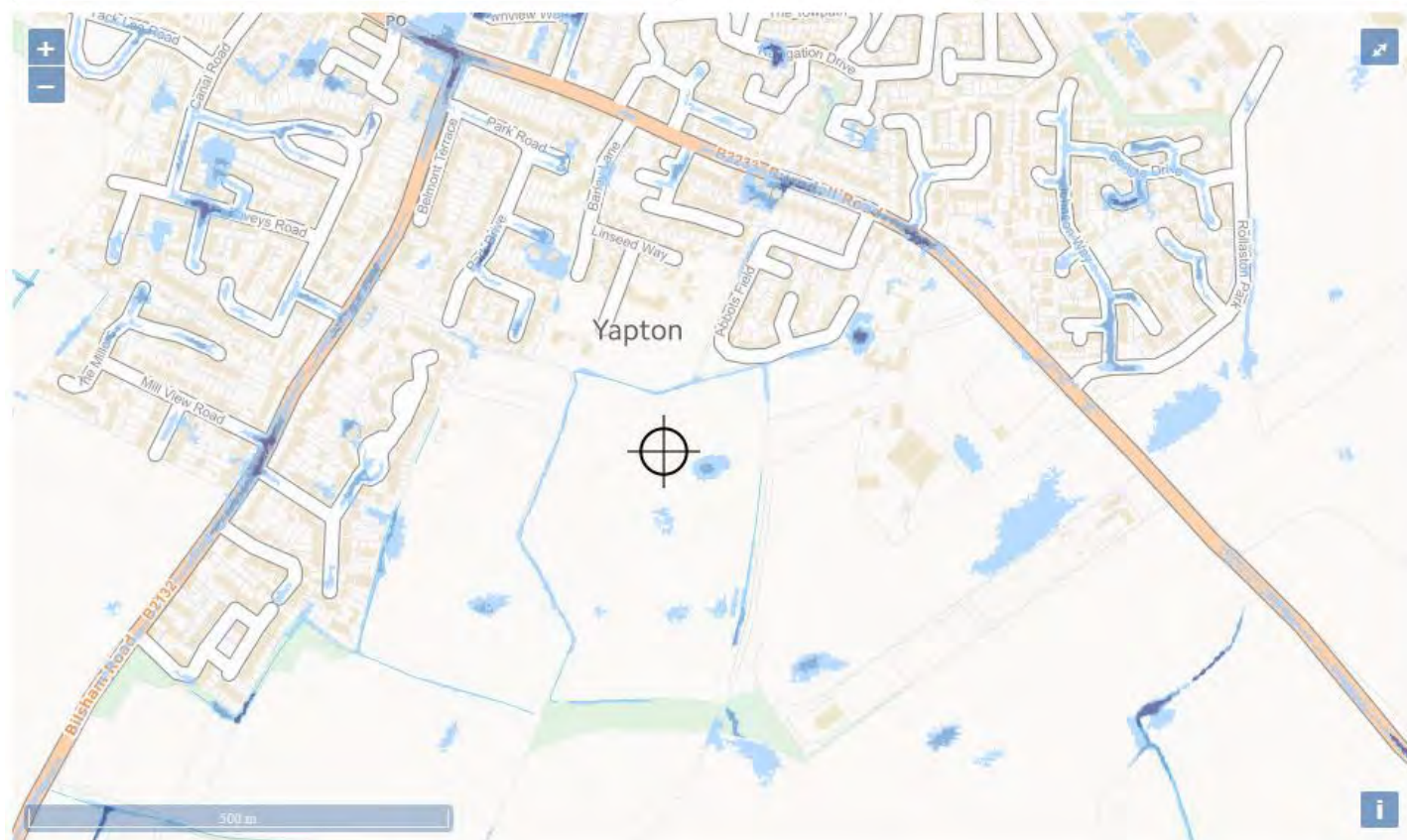
Figure 2 – Long-Term Flood Risk Map; Rivers or the Sea

Flood risk

Extent of flooding

Location

Enter a place or postcode



Extent of flooding from surface water

● High
● Medium
● Low
○ Very low
⊕ Location you selected

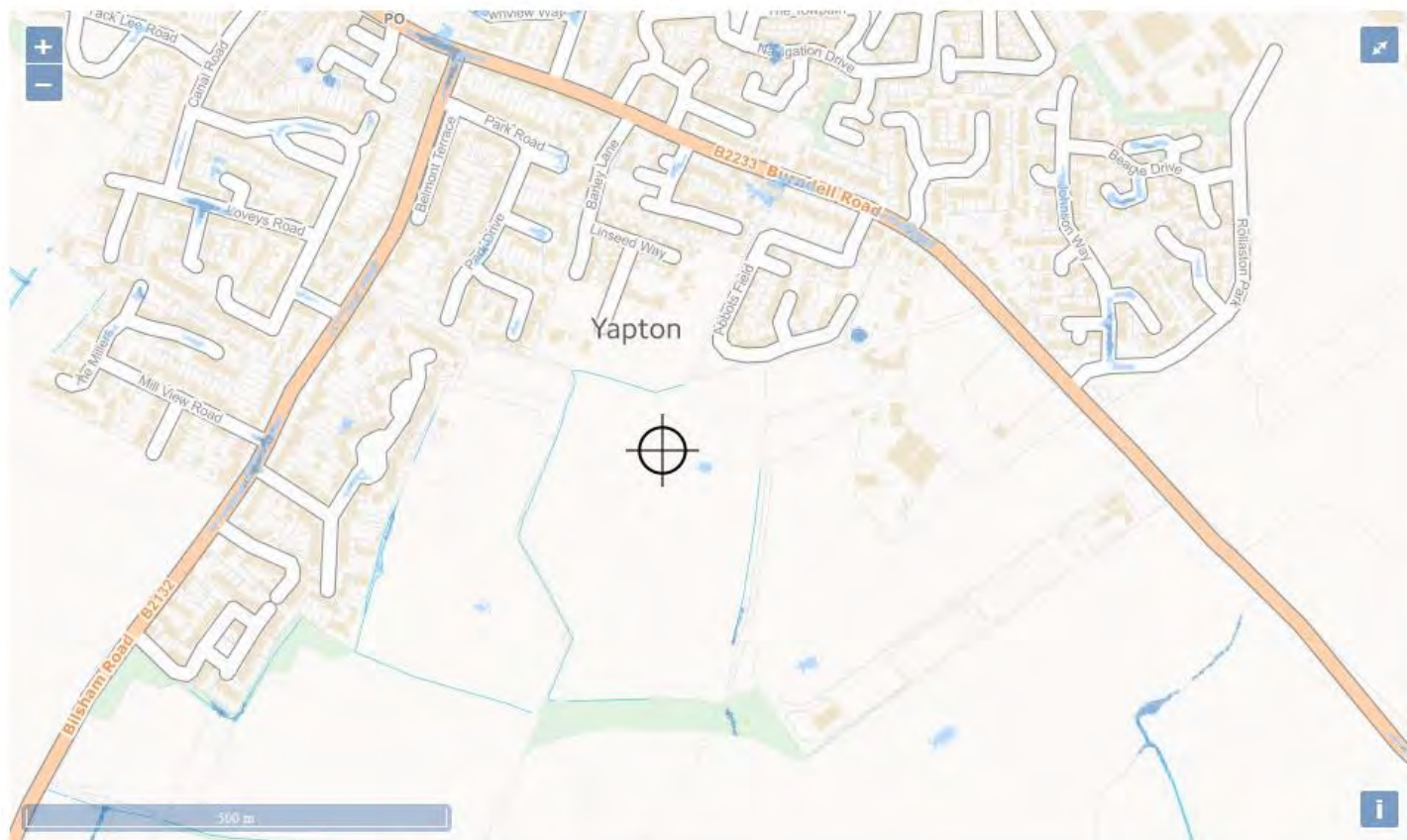
Figure 3 – Long-Term Flood Risk Map; Surface Water

Flood risk

Medium risk: depth

Location

Enter a place or postcode



Surface water flood risk: water depth in a medium risk scenario

Flood depth (millimetres)

● Over 900mm
 ● 300 to 900mm
 ● Below 300mm
 ⊕ Location you selected

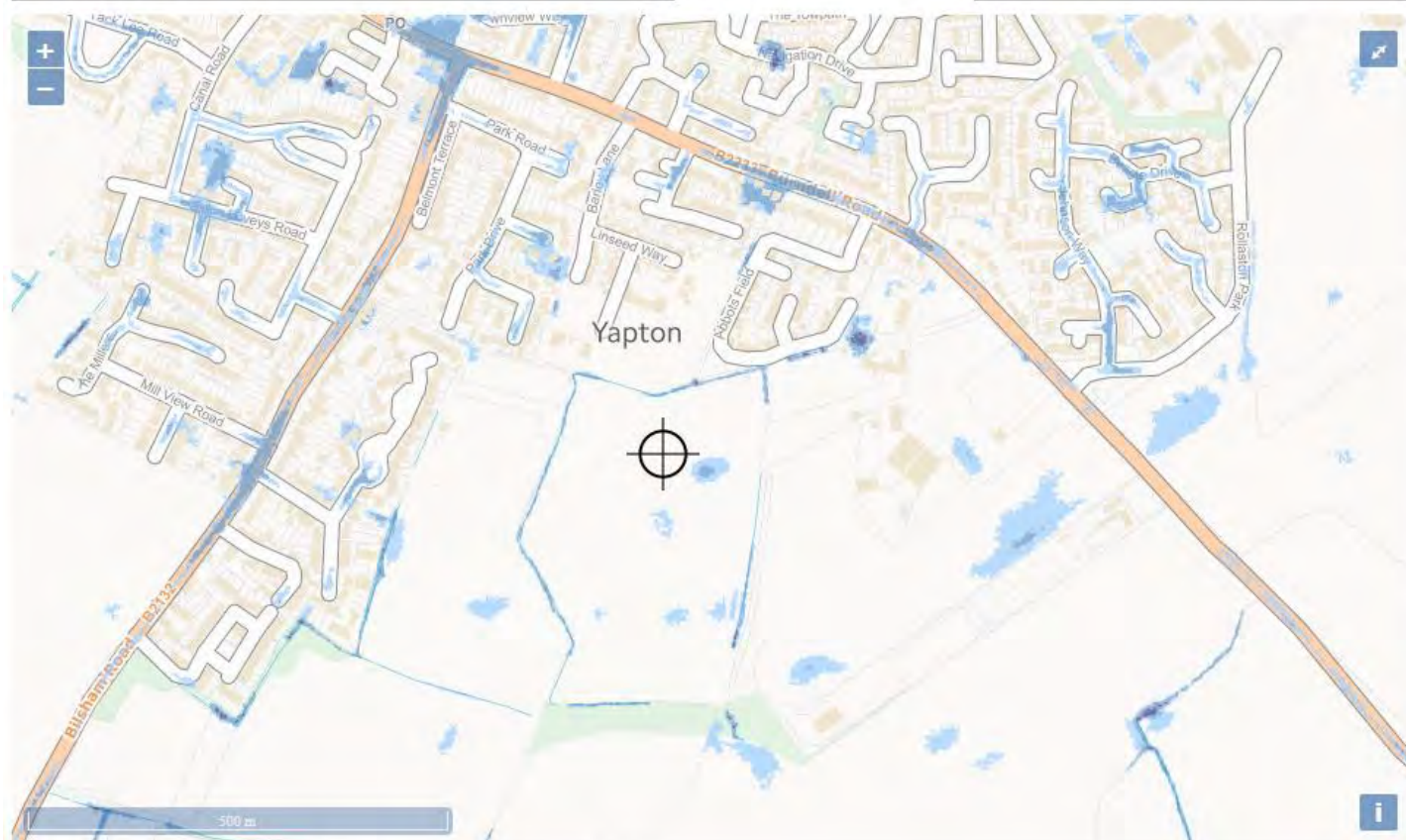
Figure 4 – Long-Term Flood Risk Map; Surface Water – Medium Risk

Flood risk

Low risk: depth

Location

Enter a place or postcode



Surface water flood risk: water depth in a low risk scenario

Flood depth (millimetres)

Over 900mm 300 to 900mm Below 300mm Location you selected

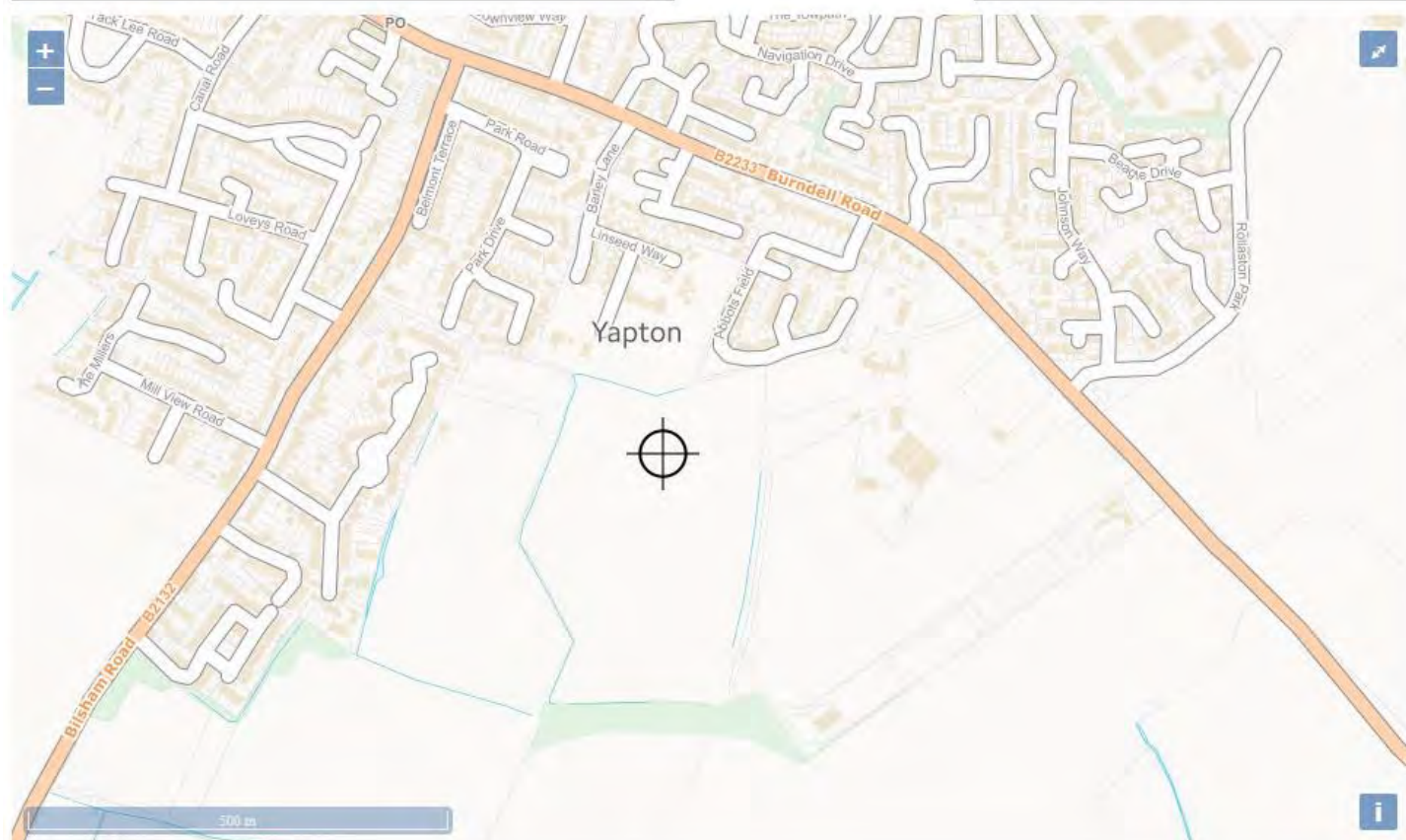
Figure 5 – Long-Term Flood Risk Map; Surface Water – Low Risk

Flood risk

Extent of flooding

Location

Enter a place or postcode



Extent of flooding from reservoirs

● Maximum extent of flooding ⊕ Location you selected

Figure 6 – Long-Term Flood Risk Map; Surface Water – Reservoirs



1. This drawing is to be read in conjunction with all other Bright Plan Civils drawings, and with all relevant Architect's and Engineer's drawings and specification. Any discrepancies found are to be reported immediately to the Engineer.
2. Bright Plan Civils accepts no responsibility for inaccuracies in data provided by third parties such as topographic surveys or Ordnance Survey mapping.
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4. Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not certain.

-SITE LOCATION LEGEND-

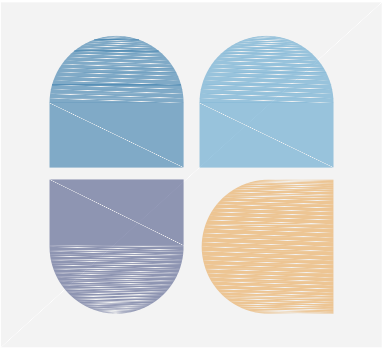
Site Boundary - 13,443 m² (1.34 Ha.)
Site Grid Reference: SU 98540 02689

PLANNING

NOT FOR CONSTRUCTION

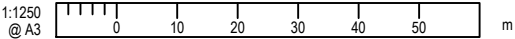
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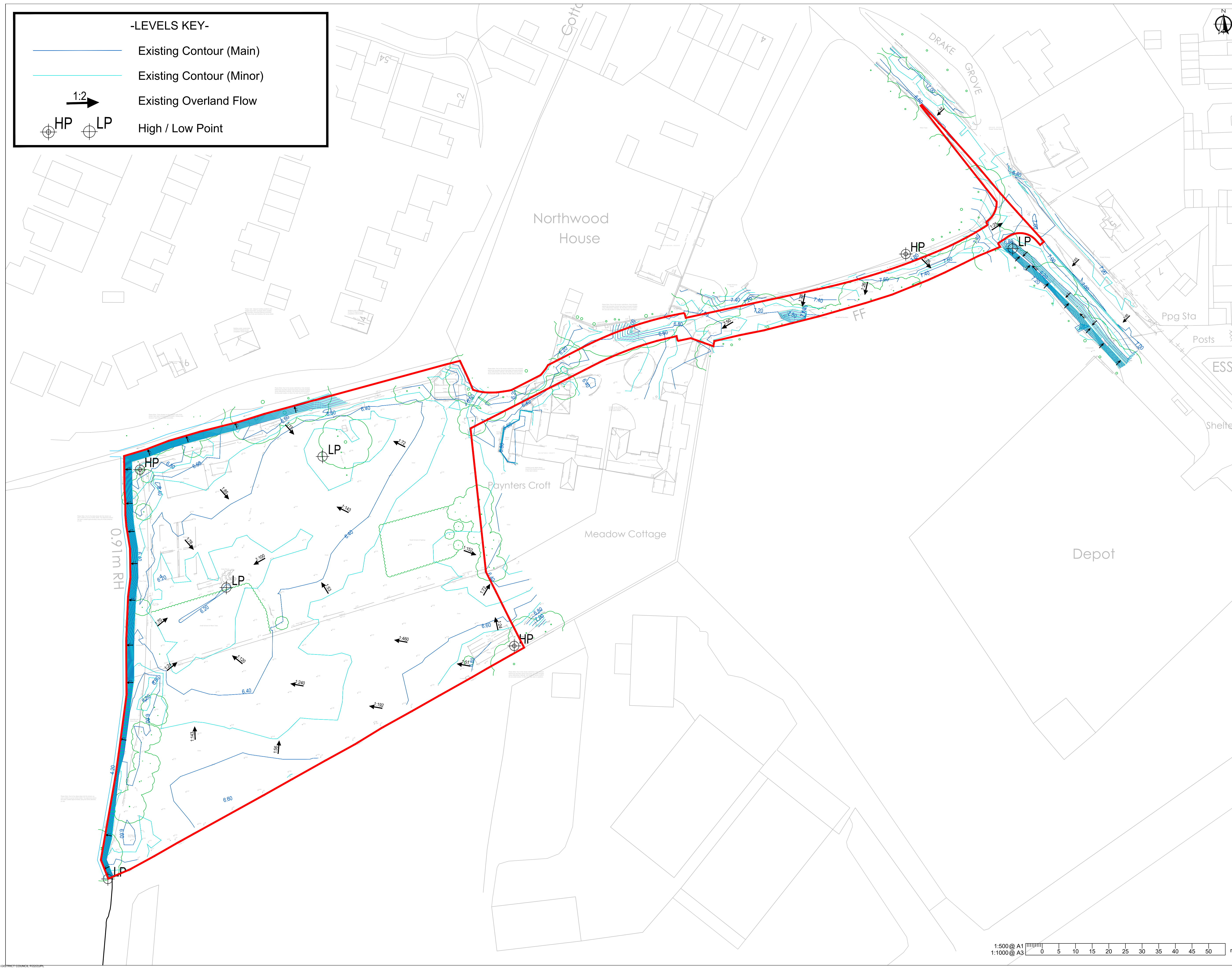
A	Red line boundary updated	07/09/2021
Rev.	Amendments	Date



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Drawing Status	PLANNING		
Client	Driftstone Developments Ltd		
Project	Site Location Plan		
Drawing Title	Land off Burndell Road, Yapton, West Sussex BN18 0GB		
Scale	1:1250	Date	Oct 2020
Drawn By	DJL	Checked By	MJA
Drawing No.	D1906-100		Rev.
		A	





-LEVELS KEY-

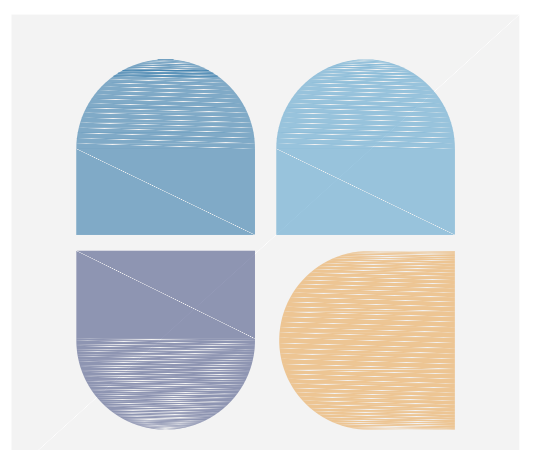
- Existing Contour (Main)
- Existing Contour (Minor)
- Existing Overland Flow
- High / Low Point

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A	Red line boundary updated	07/09/2021
Rev	Amendments	Date



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Drawing Status		PLANNING	
Client		Driftstone Developments Ltd	
Project		Land off Burndell Road Yapton, West Sussex BN18 0GB	
Drawing Title		Existing Topographical Survey & Flow Routes	
Scale	Date	Drawn By	Checked By
1:500	Oct 2020	DJL	MJA
Drawing No.		Rev.	
D1906-200		A	

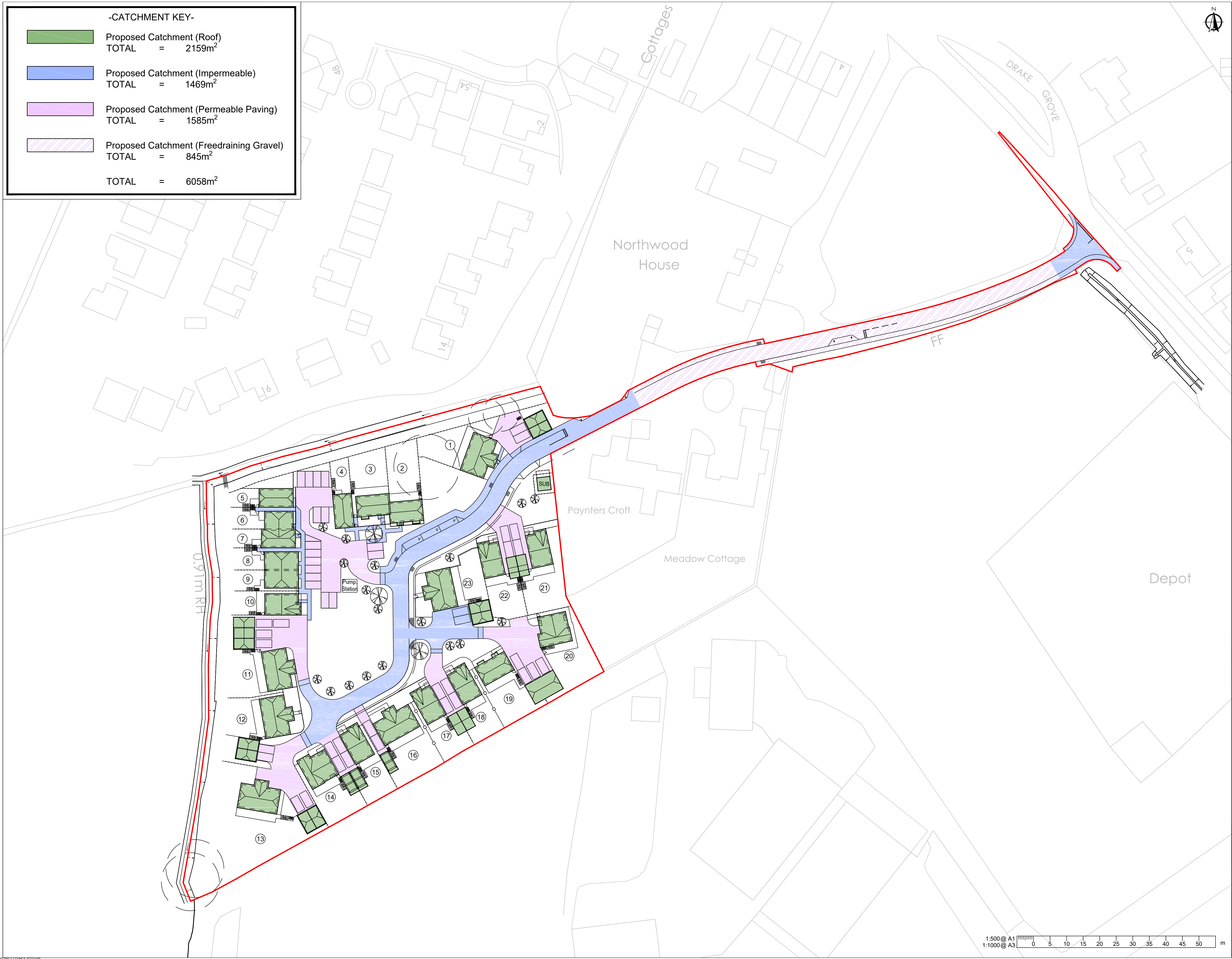
Proposed Catchment (Roof)
TOTAL = 2159m²

Proposed Catchment (Impermeable)
TOTAL = 1469m²

Proposed Catchment (Permeable Paving)
TOTAL = 1585m²

Proposed Catchment (Freedraining Gravel)
TOTAL = 845m²

TOTAL = 6058m²



- NOTES
1.

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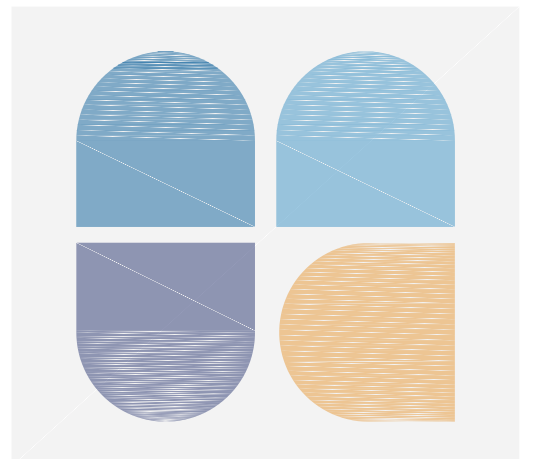
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D	Revised layout	07/09/2021
C	Revised Issue	04/03/2021
B	Revised Issue	14/01/2021
A	Revised Issue	05/11/2020
-	Original Issue	28/10/2020

Rev.	Amendments	Date
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Drawing Status **PLANNING**

Client **Driftstone Developments Ltd**

Project **Land off Burndell Road
Yapton, West Sussex BN18 0GB**

Drawing Title **Impermeable Areas**

Scale	Date	Drawn By	Checked By
1:500	Mar 2021	DJL	MJA

Drawing No.	Rev.
D1906-300	D