



## Land South of Forest Road, Warfield

### Drainage Non-Technical Note

October 2023

#### Drainage Overview

The proposed development site is designed to attenuate surface water flows generated from the development for all storm events up to and including the 100year + 40% climate change event. The development incorporates mitigation measures to reduce flood risk and ensure safety of the people and properties within the site and surrounding land.

Attenuation is provided in the form of an open pond (located within the central open space) which serves the southern section of the site, whilst permeable paving is used in the northern section.

Discharge rates are restricted to 5.6l/s from the northern area and 3.4l/s from the southern area. This represents a minimum of 70% reduction in drainage runoff flows from the site when compared to existing run of flows, which can only enhance drainage on land directly surrounding the site. In further detail the runoff is actually reduced by 72% (in the 1yr event), 89% (in the 30yr event) and 91% (in the 100yr CC event).

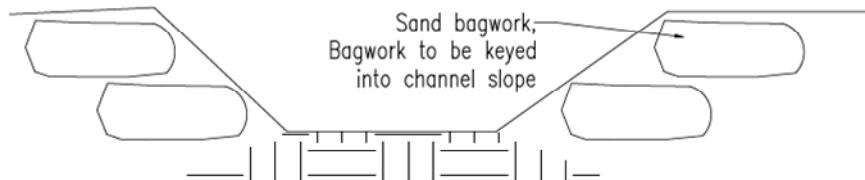
The drainage outfalls are into the existing drainage ditch which runs along the western side of the development site and discharges into the existing 225mm sewer in Forest Road. This is the same sewer into which the current site connects at an unrestricted discharge rate.

The development proposals also include the replacement of an existing culvert which is in a poor condition and the opening up of an existing ditchline in the northern region of the development. Redrow are currently in discussions with the Council to allow these works to take place at the earliest possible opportunity (prior to the implementation of the proposed development). These works create additional storage within the upstream catchment and will benefit the local catchment. Once the ditch has been cleared it will be regularly maintained as part of the wider site's landscape and SuDs maintenance regime.

Exceedance routes are indicated on drawing 7736-501 Rev L (Appendix 1) and direct exceedance flows to open space, parking areas and the existing/proposed western ditchline.

Further exceedance measures are in place to ensure overland flow from outside of the development area does not affect the development or the developments neighbouring properties. A shallow 300mm deep ditchline is provided along the sites southern boundary transferring flows to the existing ditch to the west. A second 150mm deep shallow ditchline is provided along the sites eastern boundary, this falls to the north transferring flows towards Forest Road. These ditchlines are located within the site boundary and will have no effect on neighbouring property boundary levels. They also will intercept any flow from the development gardens, falling towards the boundary. The

operation of these shallow ditchlines is not limited to extreme events and they therefore provide land drainage benefits in the area for all rainfall events if required. Detailed sections are provided for these ditchlines which can be found in Appendix 2



FLOOD ROUTE DETAIL  
WITH SANDBAG

*Example of 300m and 150mm ditchline (to be amended to suit required depths).*

In addition to the on site drainage solutions, Redrow have agreed to pay a financial contribution towards off site drainage works which will increase drainage downstream from the site. This is not a statutory requirement and has been agreed in good will, to assist with overcoming the drainage issues in the local area.

#### Drainage Maintenance

Where ditchlines are located in private gardens they will be maintained by the private households under their riparian duties. These riparian duties will be set out within the property handover details, which must be read and understood by the purchaser prior to the transfer of the home.

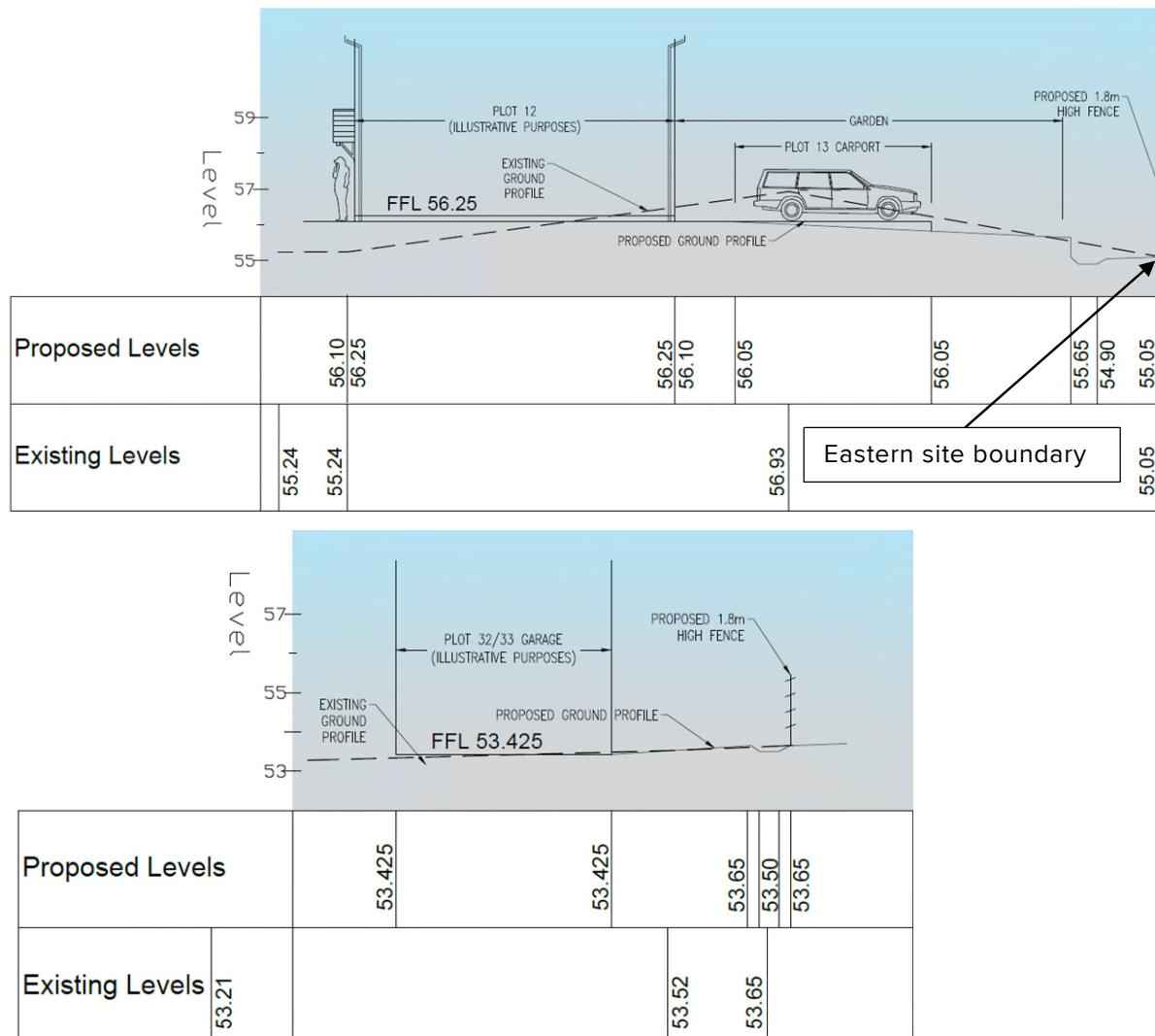
Where the ditch is in open space, the site management company will carry out any clearance work.

Where the ditch cuts through boundaries of rear gardens, close board fencing will be placed over the ditch, having no effect on the drainage flow routes. In response to concerns raised regarding the potential for residents dogs to escape under the 150mm and 300mm ditchline, metal sheep fencing can be located under the fence line. This will provide protection from animals escaping and again will have no effect on the flow routes.

All hedgehog highways will be located in appropriate locations outside of the ditchlines.

## Site Levels

All boundary levels around the site tie into existing levels as per the examples below. Detailed drawings are provided in Appendix 2.



*Extracts showing example existing and proposed ground levels tying into existing on the site boundary*

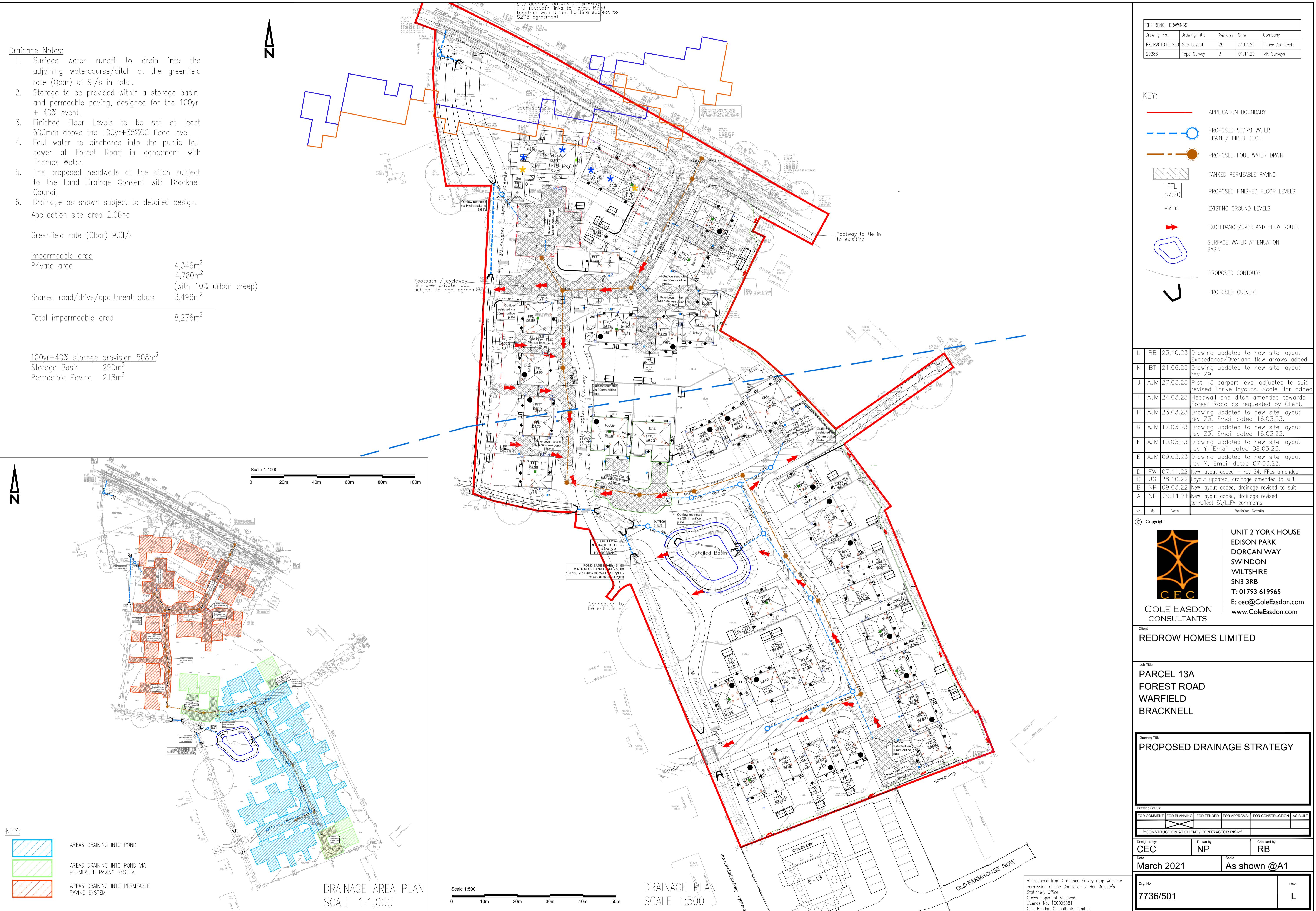
Where existing trees are located on site the existing levels will be maintained.

An earth bund is provided in the north western section of the site between the open ditch and the Spice Lounge Restaurant. This will ensure any flows from the site drainage system are directed to the existing Forest Road outfalls and The Cut watercourse.



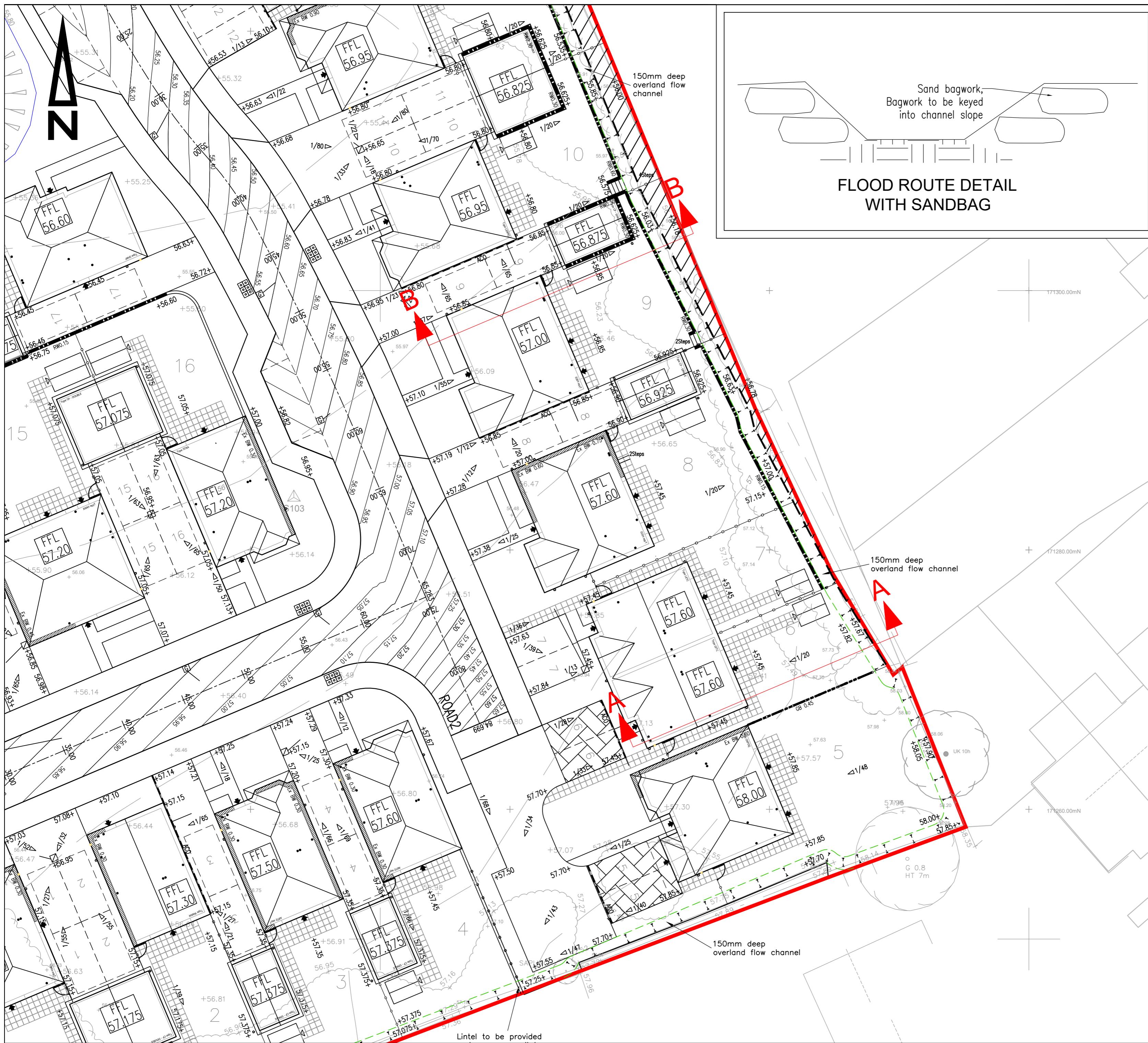
## Appendix 1

### Proposed Drainage Strategy



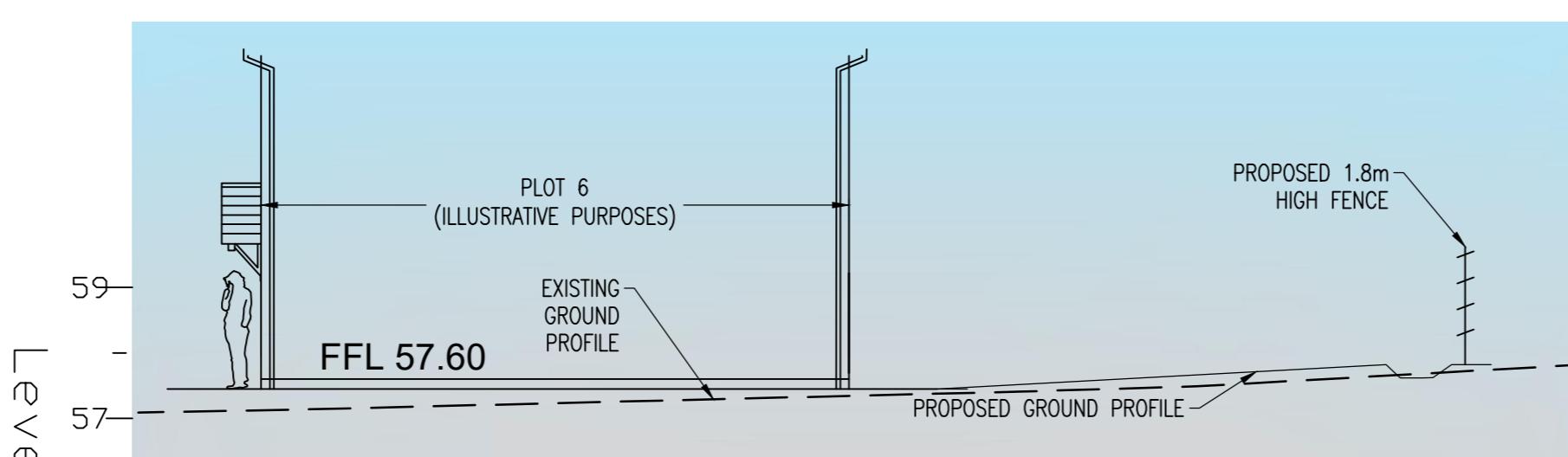


Appendix 2  
Flood Route Sections  
(Sheets 1 – 3)



REFERENCE DRAWINGS:				
Drawing No.	Drawing Title	Revision	Date	Company
SL01	Site Layout	ZB	31.05.23	Thrive Architects
29286	Topographical and PAS 128:2014 Utility Survey	3	01/11/2020	M K Surveys

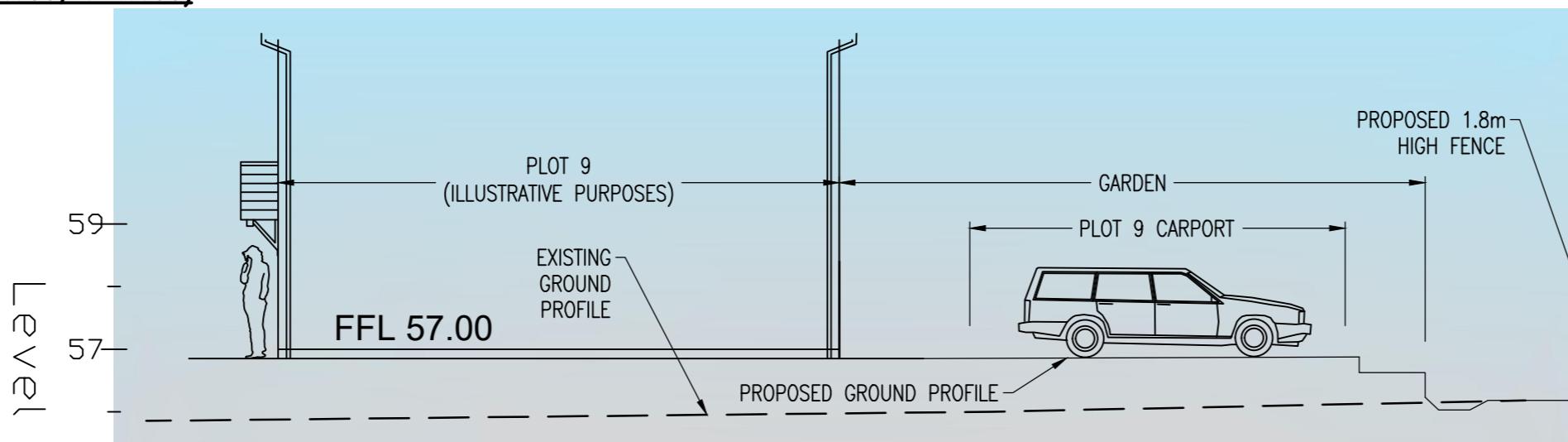
CROSS SECTIONS (SCALE H 1:100, V 1:100)



Proposed Levels	57.45	57.60	57.60	57.45	57.45	57.82	57.67	57.82	57.82
Existing Levels	57.13			57.41	57.49				57.82

SECTION A-A

CROSS SECTIONS (SCALE H 1:100, V 1:100)



Proposed Levels		57.00	56.85	56.85	56.87	56.625	56.625	56.03	56.18	56.18
Existing Levels	55.85		56.00			56.18				

SECTION B-B

© Copyright

 Cole Easdon

01793 619 965 | cec@ColeEasdon.com | www.ColeEasdon.com

Client  
Redrow Homes Ltd.

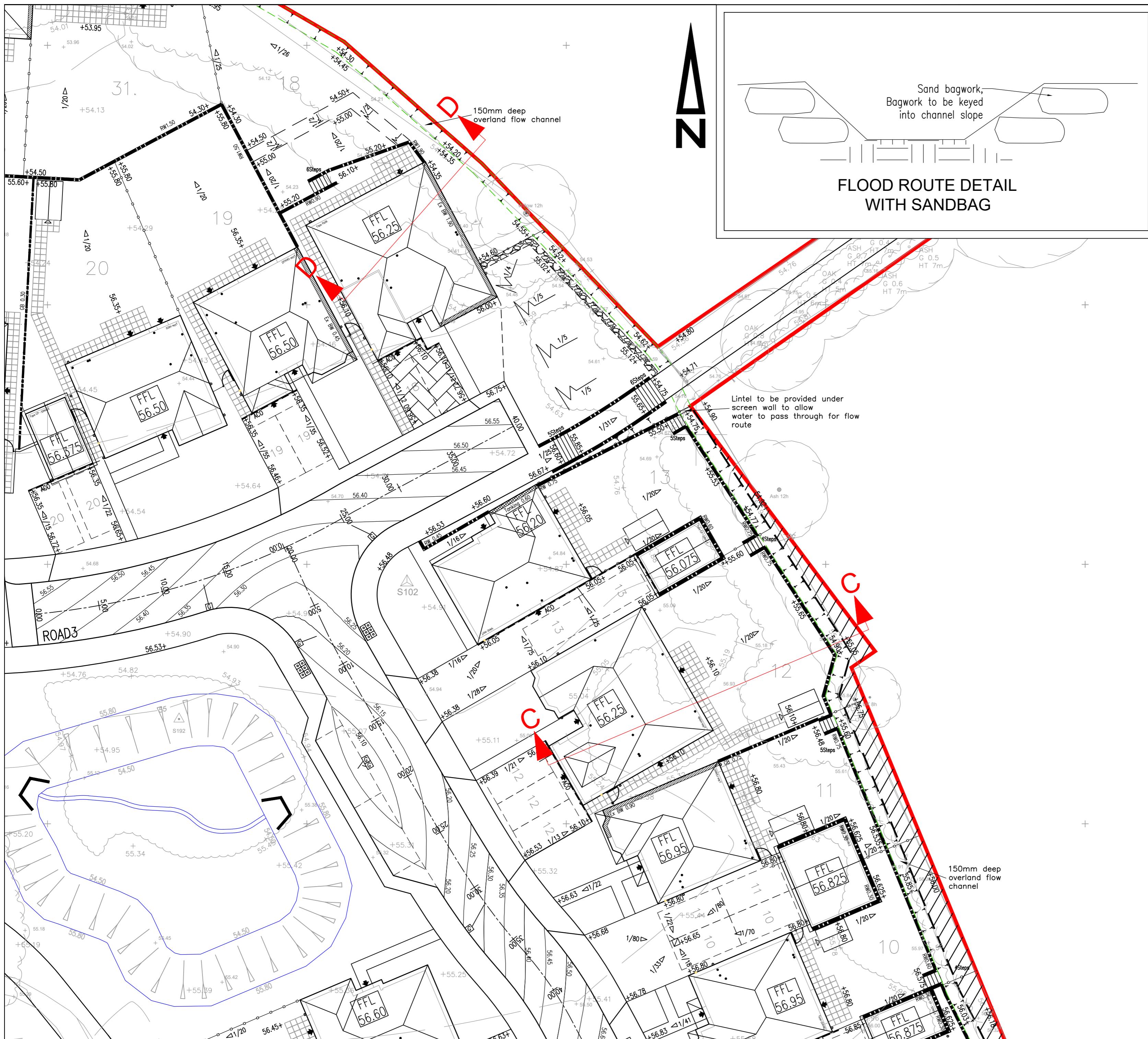
Job Title  
Parcel 13A  
Forest Road  
Warfield  
Bracknell

Drawing Title  
Flood Route Sections  
(Sheet 1 of 3)

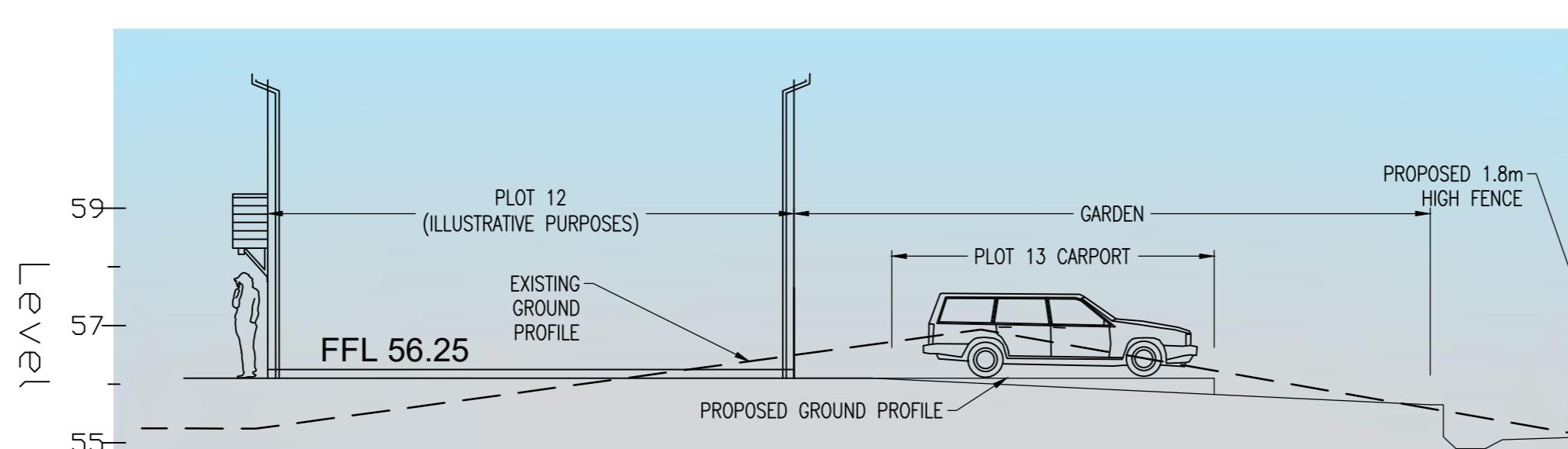
Drawing Status:					
FOR COMMENT	FOR PLANNING	FOR TENDER	FOR APPROVAL	FOR CONSTRUCTION	AS BUILT
**CONSTRUCTION AT CLIENT / CONTRACTOR RISK**					

Designed by: AJM Drawn by: AJM Checked by: RB  
Date: June 2023 Scale: 1:200 @ A1

Drg. No.: 7736/15/01 Rev. -



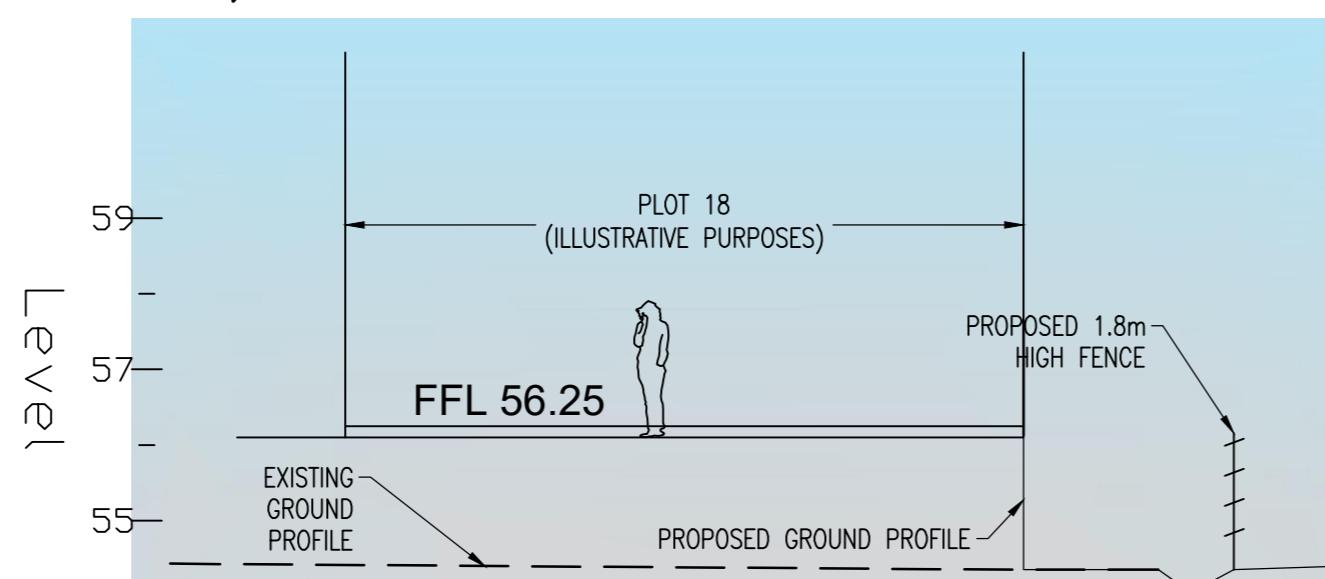
CROSS SECTIONS (SCALE H 1:100, V 1:100)



Proposed Levels	56.25	56.10	56.25	56.05	56.05	55.65	54.90	55.05
Existing Levels	55.24	55.24		56.93				55.05

### SECTION C-C

CROSS SECTIONS (SCALE H 1:100, V 1:100)

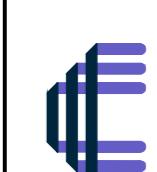


Proposed Levels	56.10	56.25	56.25	54.35	54.20	54.35
Existing Levels	54.53			54.35		

### SECTION D-D

REFERENCE DRAWINGS:				
Drawing No.	Drawing Title	Revision	Date	Company
SL01	Site Layout	ZB	31.05.23	Thrive Architects
29286	Topographical and PAS 128:2014 Utility Survey	3	01/11/2020	M K Surveys

© Copyright

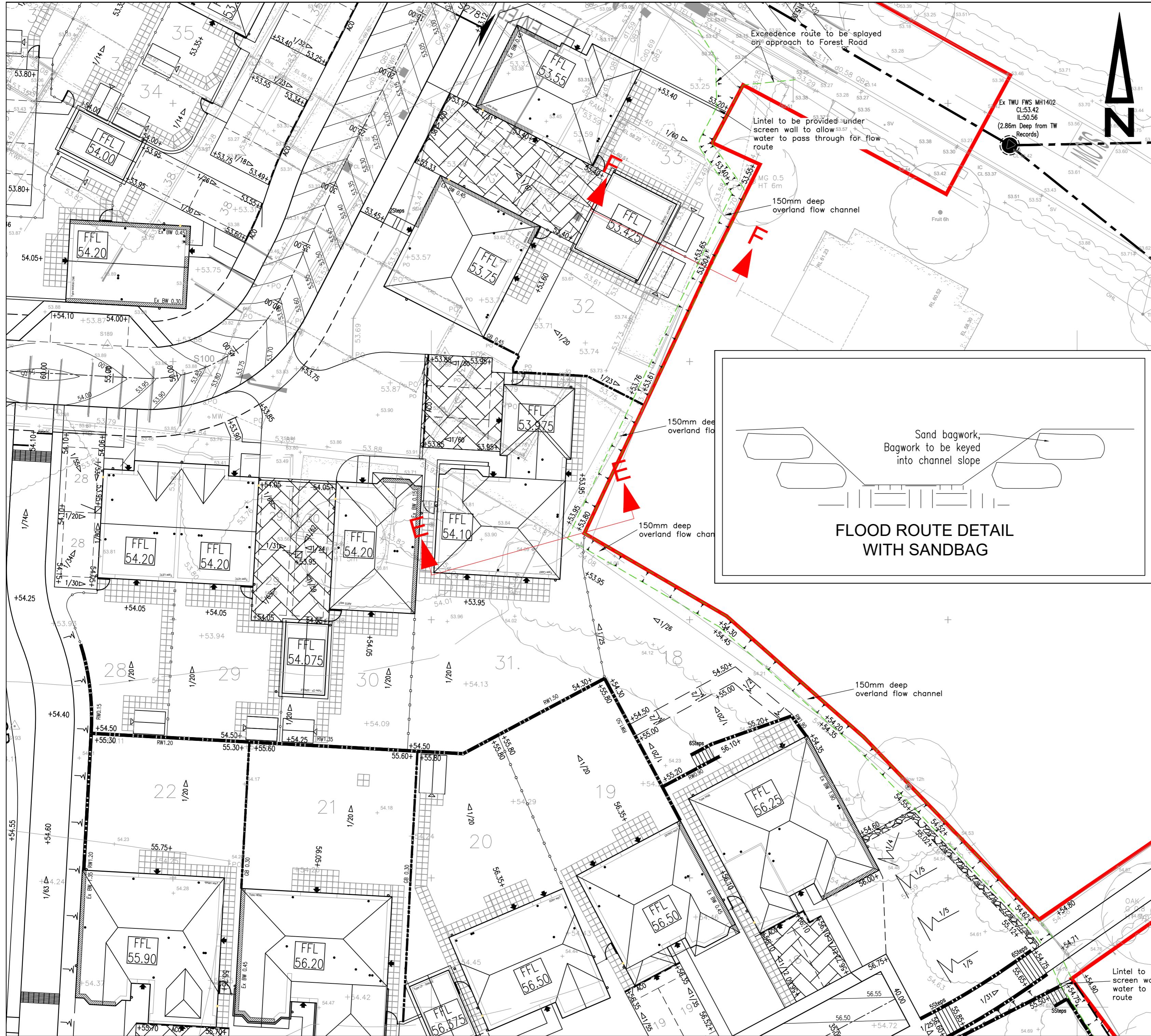
 Cole Easdon

01793 619 965 | cec@ColeEasdon.com | www.ColeEasdon.com

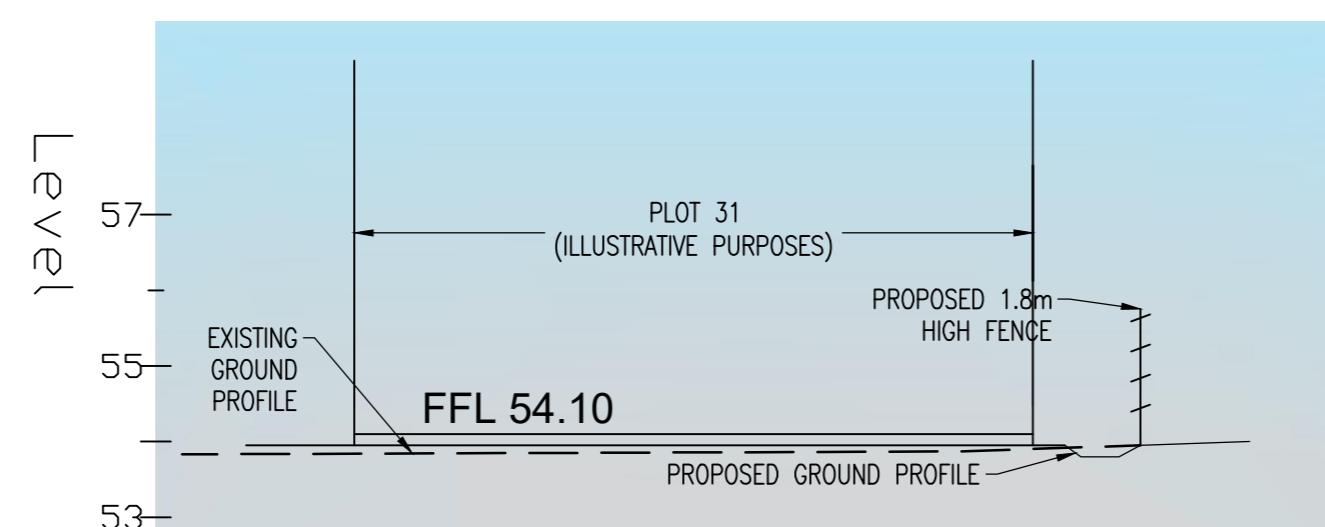
Client  
Redrow Homes Ltd.

Job Title  
Parcel 13A  
Forest Road  
Warfield  
Bracknell

Drawing Title Flood Route Sections (Sheet 2 of 3)				
Drawing Status: <input checked="" type="checkbox"/> FOR COMMENT <input type="checkbox"/> FOR PLANNING <input type="checkbox"/> FOR TENDER <input type="checkbox"/> FOR APPROVAL <input type="checkbox"/> FOR CONSTRUCTION <input type="checkbox"/> AS BUILT				
**CONSTRUCTION AT CLIENT / CONTRACTOR RISK**				
Designed by AJM	Drawn by AJM	Checked by RB		
Date June 2023	Scale 1:200 @ A1			
Drg. No. 7736/15/02			Rev. -	



CROSS SECTIONS (SCALE H 1:100, V 1:100)



Proposed Levels

53.95	54.10
-------	-------

Existing Levels

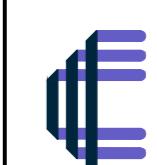
53.83	53.87	53.95	53.80	53.95
-------	-------	-------	-------	-------

SECTION E-E

REFERENCE DRAWINGS:				
Drawing No.	Drawing Title	Revision	Date	Company
SL01	Site Layout	ZB	31.05.23	Thrive Architects
29286	Topographical and PAS 128:2014 Utility Survey	3	01/11/2020	M K Surveys

A RB 03.08.23 Overland flow channel splayed at Forest Road

© Copyright

 Cole Easdon

01793 619 965 | cec@ColeEasdon.com | www.ColeEasdon.com

Client

Redrow Homes Ltd.

Job Title  
Parcel 13A  
Forest Road  
Warfield  
Bracknell

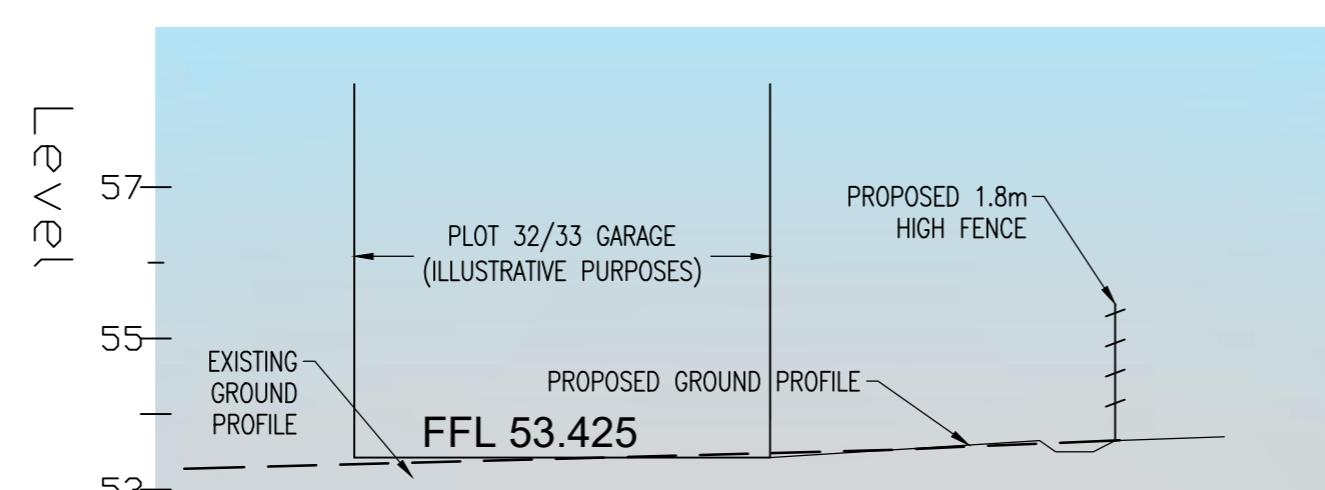
Drawing Title  
Flood Route Sections  
(Sheet 3 of 3)

Drawing Status:					
FOR COMMENT	FOR PLANNING	FOR TENDER	FOR APPROVAL	FOR CONSTRUCTION	AS BUILT
**CONSTRUCTION AT CLIENT / CONTRACTOR RISK**					

Designed by AJM Drawn by AJM Checked by RB  
Date June 2023 Scale 1:200 @ A1

Dr No. 7736/15/03 Rev. A

CROSS SECTIONS (SCALE H 1:100, V 1:100)



Proposed Levels

53.425	53.425
--------	--------

Existing Levels

53.21	53.52	53.65	53.50	53.65
-------	-------	-------	-------	-------

SECTION F-F