AP/MW/39724

June 2018

E.V. Waddington Ltd.

Drive Thru', Rockingham

Proposed Drainage Strategy

The proposed development is the construction of a Drive Thru' retail outlet, which consists of a single building and associated vehicle access/parking areas within a wider development plot, all within the applicant's ownership. A site location plan Drg. No. 39724/011A and a proposed site layout Drg. No. 39724/013A are appended.

Proposed Surface Water Drainage Strategy

As part of the works to create the new highway network around the site, Barnsley MBC have provided a 300mm dia. pipe beneath the road into the plot for the current application to accept surface water run-off from the wider development site.

The developer is to carry out off-site works to provide a connection from the existing 300mm dia. pipe to an existing 1050mm dia. private surface water drain which discharges into a pond on the opposite side of Dearne Valley Parkway. Agreement in principle for this discharge has been obtained from Barnsley MBC, as shown on the appended e-mail correspondence with Wayne Atkins, BMBC's Principle Drainage Engineer.

It is proposed that the surface water discharge rate from the whole of the development site will be restricted to the existing "green-field" run-off rates, which have been established as being 3.4 litres/second/hectare for the 1 in 1 year rainfall event, and 8.6 litres/second/hectare for the 1 in 30 year rainfall event. The impermeable area of the current development plot is approximately 2,000 m^2, which would give a permitted discharge rate of 0.68 litres/second for the 1 in 1 year rainfall event. However, it is generally accepted that it is impractical to restrict run-off to such a low rate, as the small orifice which would be necessary within a Hydrobrake flow control device would lead to the risk of frequent blockages by debris within the system.

Therefore, in order to reduce this risk of blockages, it is proposed that the discharge rate for the flow control device be determined by providing a Hydrobrake with an orifice of least 50mm in diameter. This has been determined to be a flow rate of 1.5 litres/second when a design head of 1.15m is assumed. This discharge rate may be reduced if possible as part of the detail design of the surface water system to suit the relative level of the top of storage to the flow control chamber invert.

Volumes of attenuated surface water run-off will be retained on site within proprietary below ground voided storage units, sized to suit all rainfall events up to and including the 1 in 100 year return period design condition plus an allowance of 30% for climate change.

All parking area run-off will pass through an interceptor.

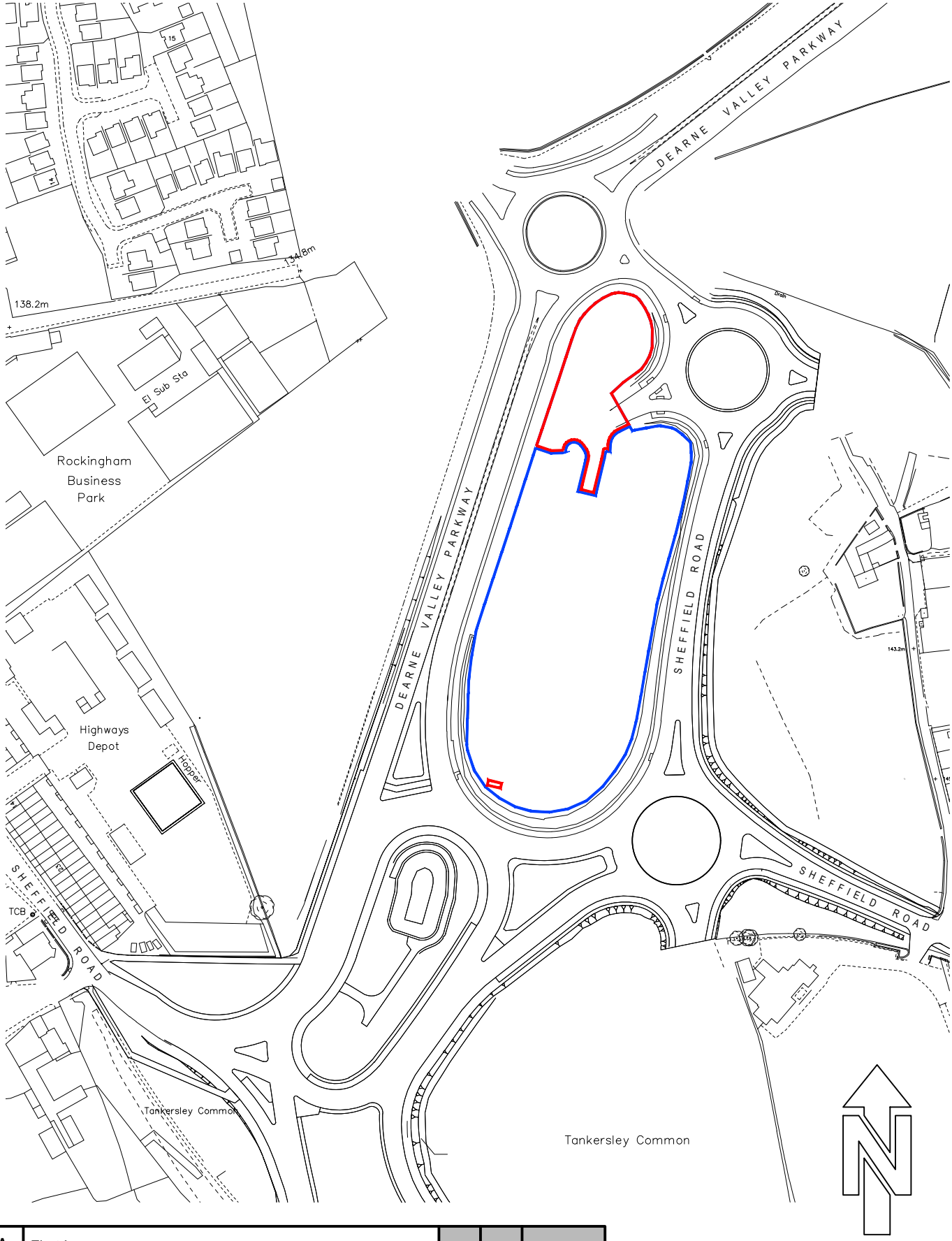
Proposed Foul Drainage Strategy

As part of the works to create the new highway network around the site, Barnsley MBC have provided a 300mm dia. pipe beneath the road into the plot for the current application to accept foul discharges from the wider development site.

The developer is to carry out off-site works to provide a connection from the existing 300mm dia. pipe to an existing manhole on a 150mm dia. adopted foul sewer on the opposite side of Dearne Valley Parkway. Agreement in principle for this discharge has been obtained from Yorkshire Water and Barnsley MBC, as shown on the appended e-mail correspondence with both Chris Roberts, YW's Sewerage Technician & Wayne Atkins, BMBC's Principle Drainage Engineer.

It is proposed that all foul discharge from the development site will be connected to the existing 300mm dia. pipe within the current application plot.

Appended to this document is Drg. No. 39724/003D, which shows the proposed off-site drainage works to convey foul and surface water discharges to the existing foul sewer and the private surface water drain.



A	First Issue.			

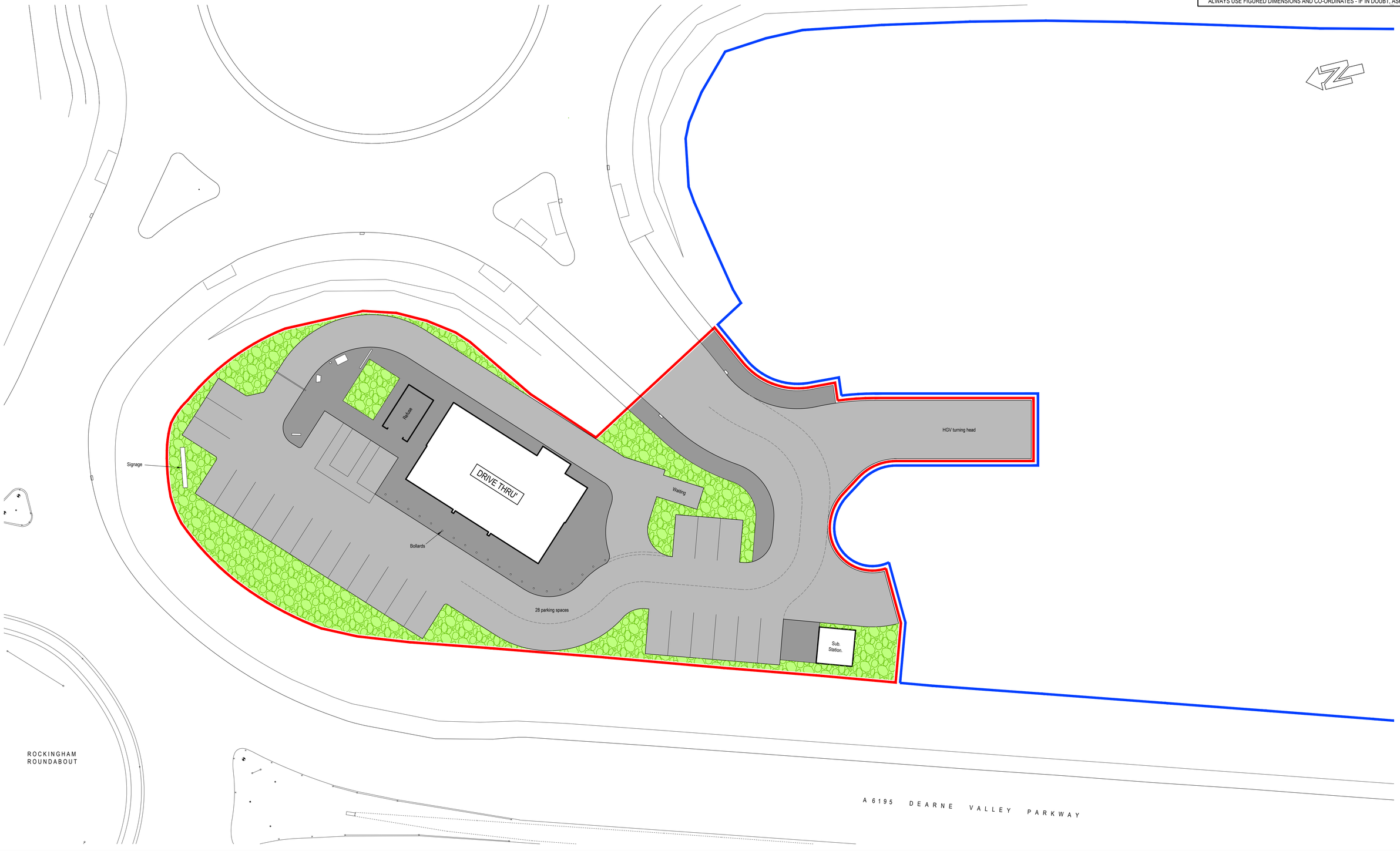
Eastwood & Partners CONSULTING ENGINEERS
E&P
St. Andrew's House
23 Kingfield Road
Sheffield. S11 9AS
Tel 0114 255 4554
Fax 0114 255 4330

DATE	SCALE AT A4
28-03-18	1:2500

E.V WADDINGTON LTD.
ROCKINGHAM
SITE LOCATION PLAN

CHECKED	DRAWING STATUS	
AP	PRELIMINARY	
DRAWN	DRAWING NUMBER	REV
MW	39724/011	A

INFORMATION WITHIN THIS DRAWING IS NOT NECESSARILY PRODUCED TO SCALE.
ALWAYS USE FIGURED DIMENSIONS AND CO-ORDINATES - IF IN DOUBT, ASK.



NOTES

Tarmac Car Park
Tarmac footway
Landscaping

REV	DESCRIPTION	SIG	CHK	DATE
A	First Issue.			

E.V WADDINGTON LTD.

ROCKINGHAM

DRIVE THRU' SITE LAYOUT

Eastwood & Partners
CONSULTING ENGINEERS
St. Andrew's House
23 Kingfield Road
Sheffield
S11 9AS
Tel 0114 255 4554
Fax 0114 255 4330
mail@eastwoodandpartners.com
www.eastwoodandpartners.com

SCALE WHEN PLOTTED AT A1	DRAWING STATUS
1:200	PRELIMINARY

DRAWN	CHECKED	DATE	DRAWING NUMBER	REV
MW	AP	05-06-18	39724/013	A

From: Atkins , Wayne [mailto:WayneAtkins@barnsley.gov.uk]
Sent: 08 May 2018 10:32
To: 'Anthony Priest'
Cc: Higginbottom , Shaun; Hartley , Timothy; Tony Waddington; Mark Wolstenholme
Subject: RE: 39724 - Development Plots, Rockingham - Surface Water Drainage [Filed 08 May 2018 12:54]

Anthony,

I would have no objection sin principal to the drainage strategy below. This will of course need to be finalised and included in any planning application.

The contact for our Structures department to discuss the underpass would be: bridgemaintenance@barnsley.gov.uk

Regards

Wayne Atkins

From: Anthony Priest [mailto:Anthony.Priest@eastwoodandpartners.com]
Sent: 03 May 2018 16:25
To: Atkins , Wayne
Cc: Higginbottom , Shaun; Hartley , Timothy; Tony Waddington; Mark Wolstenholme
Subject: 39724 - Development Plots, Rockingham - Surface Water Drainage

Wayne,

Thank you for your response to my previous email.

Please could you advise who we need to speak to in the structures dept regarding the subway? We need to see if there are any record drawings available for the subway and also obtain permission to carry out some trial hand excavations at the subway entrance to determine the depth of the concrete structure.

With reference to the proposed connection to the culverted watercourse; a copy of the proposed site layout drg 39724/006A is attached for reference. The development is speculative so the exact areas that will drain to the culverted watercourse are still to be determined. However, the proposed surface water drainage strategy is as follows:

1. The total site area is 1.57 Ha. Assuming a maximum impermeable surfacing rate of 85%, gives an impermeable area of 1.29 Ha.

2. The ground comprises essentially impermeable clay, which was placed as backfill to the former opencast workings. Infiltration drainage methods will not be viable.

3. Greenfield run-off rates for the site are 3.4 l/s/ha for 1 in 1 year; and 8.6 l/s/ha for 1 in 30 year.

4. These run-off rates equate to a flow rate of 4.4 litres/second (1.29 x 3.4) for rainfall events up to and including the 1 in 30 year return period; and a flow rate of 11.1 litres/second (1.29 x 8.6) for rainfall events between 1 in 30 year and 1 in 100 year return period.

5. Attenuation would be provided on site based on the above flow rates, with an additional allowance of 30% taken for the 1 in 100 year return period design condition.

6. The above strategy has been noted on the attached drainage drawing 39724/3C, which shows the proposed routes for the foul and surface water drains. It is expected that these drains will serve the adjacent site, through which they pass, which is currently being offered for sale by BMBC with an easement included to account for the drains and suitable maintenance access. Surface water discharge rates for the adjacent site would be subject to separate agreement with yourselves, but we would expect a similar philosophy to be adopted.

We would be grateful if you could advise whether this drainage strategy is acceptable and that a surface water connection can be made to the culverted watercourse, as shown on the proposed drainage drawing.

Regards

Anthony Priest

From: Atkins , Wayne [mailto:WayneAtkins@barnsley.gov.uk]
Sent: 26 April 2018 09:32
To: 'Anthony Priest'
Cc: Tony Waddington; Higginbottom , Shaun; Hartley , Timothy
Subject: RE: 39724 - Development Plots, Rockingham - Drainage

Anthony,

Please see comments below.

Any problems please let me know.

Regards

Wayne Atkins
Principal Engineer – Drainage

Environment & Transport

Place Directorate

Barnsley Metropolitan Borough Council

Telephone: 01226 772182
E-mail: wayneatkins@barnsley.gov.uk

From: Anthony Priest [mailto:Anthony.Priest@eastwoodandpartners.com]
Sent: 24 April 2018 08:50
To: Atkins , Wayne
Cc: Tony Waddington; Higginbottom , Shaun; Hartley , Timothy
Subject: 39724 - Development Plots, Rockingham - Drainage

Wayne

Our client, EV Waddington Ltd, has purchased a plot of land from BMBC adjacent to Rockingham Roundabout and is keen to progress the development. A pre-planning app. has recently been submitted.

Shaun Higginbottom has suggested that I contact you for assistance in moving the drainage design forward.

Attached is a copy of two emails that I sent to Tim Hartley in December 2017 and February 2018. Also attached is a copy of the drawing appended to the December email. Yorkshire Water have now agreed to allow the foul connection to their sewer at the point shown on our drawing.

The main items that we need BMBC's input on are:

1. Agreement to the method and location for crossing the Dearne Valley Parkway (DVP) with the foul drain. We favour passing the drain through the existing subway.
   I have spoken to our Structures department and an alternative would be preferred from a structures point of view, however, if no practical alternative is available then there would be no objection in principal providing all engineering details are approved by BMBC Structures and subject to a legal agreement being in place to protect all parties.

2. Whose permission do we need to make the connection to (and subsequently drain into) the 1050 mm dia. surface water pipe that connects the smaller pond on the south of the DVP to the larger pond on the north of the DVP?
   This pipe is a culverted watercourse If the developer is to make discharge flows to the watercourse he must gain the written agreement of the Land Drainage Authority to discharge flows at an agreed rate – please email me with detailed proposal when you get to that stage.

   If the developer is to carry out works within or in the proximity of any watercourse he must gain the relevant permissions from the Lead Local Flood Authority – please email me with detailed proposal when you get to that stage. The drain passes through third party land, the permission of the land owner should be sought to carry out works on the watercourse

   The developer's attention is drawn to the following:

   There should be no increase in surface water runoff from the new development. PPS25 recognises that the management of flood risk is not simply restricted to flood plains and that a catchment-wide approach should be employed.

   Any balancing facility should be designed to accommodate a 1 in 30 year flow from the site and a 1 in 100 year flow retained within the site (including an allowance of 30% for climate change), without causing any flooding to buildings.

   There are alternatives to conventional storage for the control of surface water run-off that are favoured by the authority where ground conditions are suitable. Sustainable Urban Drainage techniques (SUD's) tackle surface water run-off problems at source using features such as soakaways, permeable pavements, grassed swales, infiltration trenches, ponds and wetlands to attenuate flood peak flows, produce water quality improvements and environmental enhancements.

The authority seeks to promote the use of SUD's techniques to this site and the authority expects the developer of the site to submit detailed investigations such that the use of SUD's has been fully explored. The Authority has a policy of not adopting SUDs features unless they are specifically designed to drain adoptable Highways only. The developer should explore other avenues for adoption e.g. Yorkshire Water.

Regards

Anthony Priest

Director

Eastwood&Partners
CONSULTING ENGINEERS

From: Chris.Roberts@yorkshirewater.co.uk
[mailto:Chris.Roberts@yorkshirewater.co.uk] On Behalf Of
technical.sewerage@yorkshirewater.co.uk
Sent: 03 April 2018 15:20
To: Anthony Priest
Subject: Re: 39724 - Rockingham - YW Ref: U004390 [Filed 09 Apr 2018 14:09]

Dear Mr Priest,

Apologies.

1. I'm so used to Eastwood using there account. I can confirm you will not be invoiced.

2. I would have no objection to your proposal to connect to the 150 mm public foul sewer approximately 510 metres to the north west of the site.

Kind Regards

Chris Roberts
Sewerage Technician
Yorkshire Water

*** Please note, all correspondence must be sent to technical.sewerage@yorkshirewater.co.uk and will be responded to within 10 working days ***

From: Anthony Priest <Anthony.Priest@eastwoodandpartners.com>
To: technical.sewerage@yorkshirewater.co.uk,
Cc: Mark Wolstenholme <mark.wolstenholme@eastwoodandpartners.com>
Date: 23/03/2018 12:49
Subject: 39724 - Rockingham - YW Ref: U004390

FTAO Chris Roberts

Chris

Thank you for your pre-development enquiry response. Please could you review the following:

1. Your letter states that YW's charge will be added to our account. A cheque from the client for £183.60 was included with the submission. Please could you verify this has been received and that EP will not also be charged.

2. Foul water. Your suggested point of connection is the 300mm dia. combined sewer in the junction of Sheffield Road and Moor Lane, south-west of the site. We included a drainage layout with our submission, copy enclosed, showing our preference to connect the foul to an existing 150mm dia. foul sewer to the north of the development. A location plan is also attached for reference. Please could you advise if a connection to the 150mm dia. sewer is acceptable.

Regards
Anthony Priest

INFORMATION WITHIN THIS DRAWING IS NOT NECESSARILY PRODUCED TO SCALE.
ALWAYS USE FIGURED DIMENSIONS AND CO-ORDINATES - IF IN DOUBT, ASK.

Surface water from E.V Waddington site to discharge to existing 1050 dia. surface water drain.

New 225 dia. saddle connection onto existing 1050 dia. surface water drain.

Manhole S6 to have 2m long 225 dia. stub pipe laid at 1 in 150 for possible future connection.

MH F7
CL 129.50
IL 128.20

Ex. IL 130.70

Ex 1050 Ø

MH F8
CL 128.90
IL 127.70

MH F6
CL 130.50
IL 129.90

MH S6
CL 130.30
IL 127.70

Existing attenuation pond

Existing underpass

IMPORTANT NOTE :-
New foul drainage from F6 to the existing foul sewer is in abeyance, pending approval of the line, level and method of construction of the new crossing at Dearne Valley Parkway.

MH F9
CL 128.40
IL 127.20

Ex. SWMH
CL 130.00
IL 126.50

Ex. SWMH
CL 129.71
IL 126.05

Manhole S5 to have 2m long 150 dia. stub pipe laid at 1 in 150 for possible future connection.

Manhole F5 to have 2m long 150 dia. stub pipe laid at 1 in 150 for possible future connection.

MH S5
CL 133.00
IL 131.80

MH F5
CL 133.00
IL 131.50

MH F4
CL 133.40
IL 131.90

MH S4
CL 133.40
IL 132.20

Manholes F3, F4, S3 & S4 to have 2m long 150 dia. stub pipes laid at 1 in 150 for possible future connections.

MH F3
CL 134.20
IL 132.70

MH S3
CL 134.20
IL 133.00

MH F10
CL T.B.C
IL T.B.C

Ex 1050 Ø

Ex..... Ø (assumed route)

Ex. IL 124.75

Ex 150 Ø foul sewer

Foul from E.V Waddington site to discharge to existing manhole on existing 150 dia. foul sewer.

Approx. location
Ex. FMH
Ref. .....
CL T.B.C
IL T.B.C

Existing attenuation pond

Approx. location
Ex. FMH
Ref. .....
CL T.B.C
IL T.B.C

Approx. location
Ex. FMH
Ref. .....
CL T.B.C
IL T.B.C

Approx. location
Ex. FMH
Ref. .....
CL T.B.C
IL T.B.C

DEARNE VALLEY PARKWAY

Existing ditch

Drain

Path (Um)

Pipes to be laid inverts level at these two manholes.

MH F2
CL 134.90
IL 133.40

MH S2
CL 134.90
IL 133.70

MH S1
CL 135.50
IL 134.30

MH F1
CL 135.40
IL 133.90

Ex. FMH
CL 136.08
IL 134.64

Ex. SWMH
CL 135.96
IL 134.62

Ex. FMH
CL 136.35
IL 134.94

Ex. SWMH
CL 136.30
IL 134.93

Ex 300 Ø

E.V WADDINGTON
DEVELOPMENT SITE
1.57 Ha

Surface water discharge from E.V Waddington site to be restricted to "green field" run-off rates.

ROCKINGHAM
ROUNDABOUT

DEARNE VALLEY PARKWAY

NOTES

REV	DESCRIPTION	SIG	CHK	DATE
A	First Issue.			
B	Additional manholes incorporated to allow for possible future connections. F6 to existing sewer marked in abeyance.	MW	AP	16.04.17
C	Surface water drainage strategy notes added.	MW	AP	03.05.18
D	Existing foul & surface water drainage systems amended following receipt of additional site survey information. Foul drainage amended to run through underpass. Pipe S5 to S6 increased to 225 dia. and stub connection from S6 added.	MW	AP	06.06.18

E.V WADDINGTON LTD.

ROCKINGHAM

OFF-SITE DRAINAGE WORKS

Eastwood & Partners
CONSULTING ENGINEERS
St. Andrew's House
23 Kingfield Road
Sheffield
S11 9AS
Tel 0114 255 4554
Fax 0114 255 4330
mail@eastwoodandpartners.com
www.eastwoodandpartners.com

SCALE WHEN PLOTTED AT A1	DRAWING STATUS
1:750	PRELIMINARY

DRAWN	CHECKED	DATE	DRAWING NUMBER	REV
MW	AP	12-12-17	39724/003	D