

_planningadvice

From: Buttery, Lucy
Sent: 01 April 2020 11:12
To: _planningadvice
Subject: FW: Document issue No 9 - 19-0305 : Civil - Low Road, Crowland, Peterborough, Residential Development
Attachments: ZippedAttachments.zip

H02-1090-19

Can the below email trail and attached documents please be combined and added to the file for the above application as one PDF. Title – 'Consultants response to LLFA comments'

Thank you

Lucy Buttery BA (Hons), MA, MRTPI | Principal Planning Officer | **South Holland District Council**

DDI: 01775 764470 |

www.sholland.gov.uk



From: James Garner <james@jg-a.co.uk>
Sent: 09 January 2020 09:12
To: Buttery, Lucy <lbuttery@sholland.gov.uk>
Subject: Fwd: Document issue No 9 - 19-0305 : Civil - Low Road, Crowland, Peterborough, Residential Development

Your attachments have been security checked by Mimecast Attachment Protection. Files where no threat or malware was detected are attached.

Hi Lucy,

As per previous email, please see attached.

Kind regards,

James Garner
Director for

JAMES GARNER ARCHITECTURE

t: 07429162747
e: james@jg-a.co.uk

James Garner Architecture Limited, reg No 11609147

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Begin forwarded message:

From: "Tracey Mehew (Rolton Group (Higham Ferrers))" <tracey.mehew@rolton.com>
Subject: Document issue No 9 - 19-0305 : Civil - Low Road, Crowland, Peterborough, Residential Development
Date: 13 December 2019 at 16:35:40 GMT
To: "James Garner (James Garner Architecture)" <james@jg-a.co.uk>
Cc: "Tracey Mehew (Rolton Group (Higham Ferrers))" <tracey.mehew@rolton.com>
Reply-To: "Tracey Mehew (Rolton Group (Higham Ferrers))" <tracey.mehew@rolton.com>

19-0305 : Civil - Low Road, Crowland, Peterborough, Residential Development Issue 9

Issued by: Tracey Mehew (Rolton Group)
On: 13 Dec 2019

Sent on behalf of Shaun Pentlow
Direct Dial: 01933 414579

19-0305 Low Road, Crowland, Peterborough

Please find enclosed correspondence, drawings and calculations to satisfy the LLFA comments.

If you should have any queries or require any further information, please do not hesitate to contact Shaun.

Kind Regards

Tracey Mehew | Senior Administrator
tracey.mehew@rolton.com
Direct Dial: 01933 414549

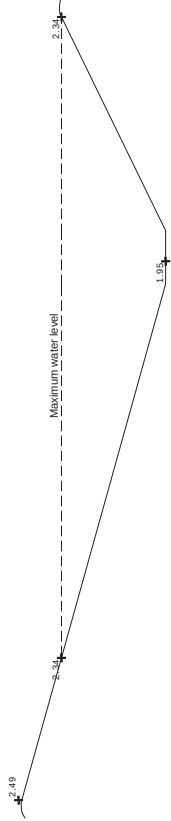
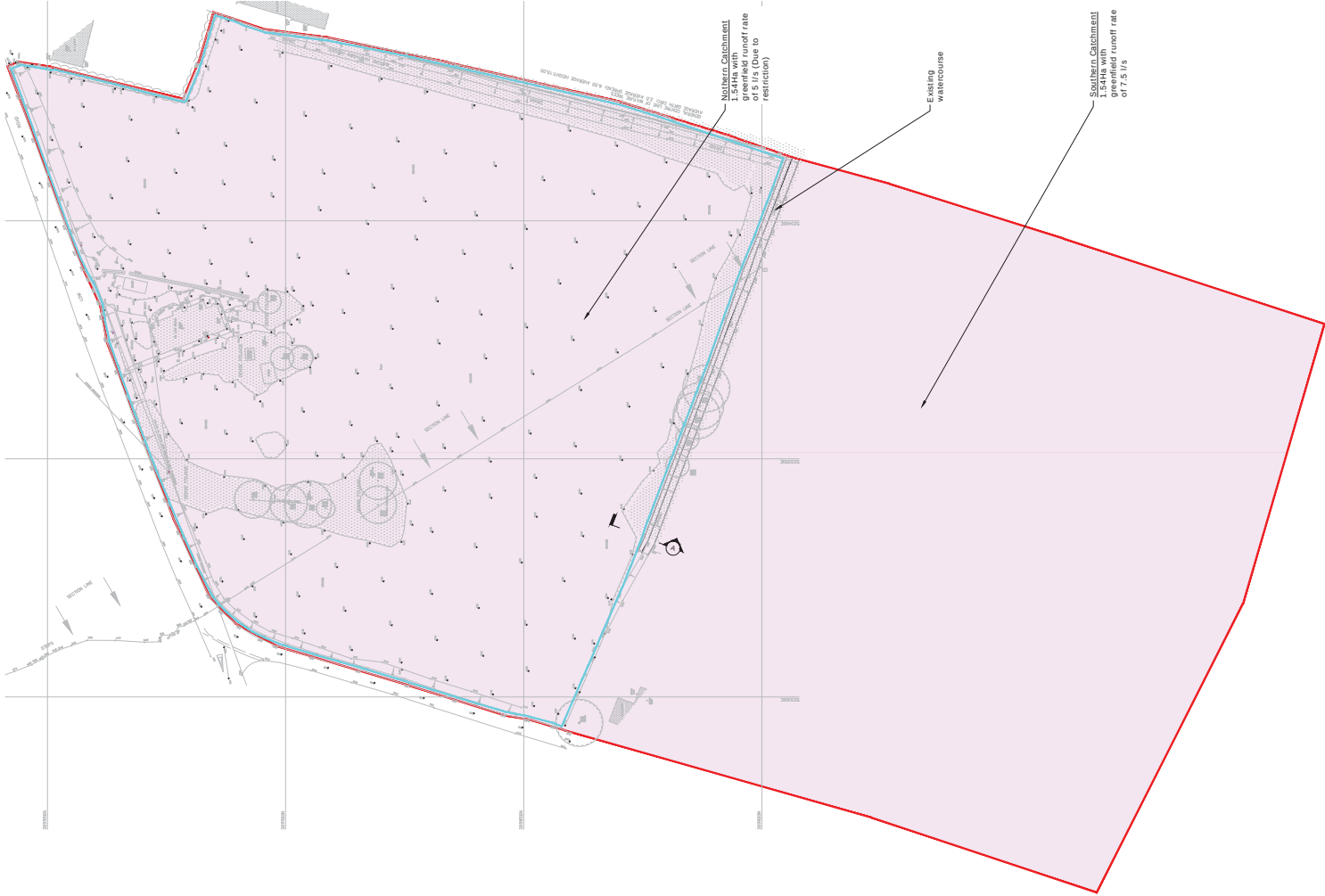
Recipients:

Shaun Pentlow (Rolton Group (Higham Ferrers))
Fiona King (CKH Developments Ltd (Peterborough))
James Garner (James Garner Architecture)
Andrew Harward (Cross Keys Homes Limited (Peterborough))

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Notes

1. This drawing is to be read in conjunction with all the relevant contact documentation.
2. All dimensions are in mm unless otherwise stated. Dimensions to be checked on site prior to construction and any discrepancies reported to the Roltan Group Engineer.
3. Drawings marked Preliminary are for guidance/ approval only, i.e. NOT for Construction.
4. Revision clouds are shown for assistance only, the whole drawing is to be checked for recommended information.
5. To be read in conjunction with specification in title block.



CROSS SECTION THROUGH WATERCOURSE

DO NOT SCALE

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Standard construction materials and a competent tradesperson should be used for the construction of any structure. Please note that this drawing is for guidance only and is not a contract document.

Groundwater

Underground Services

Status Date Description Date Eng Chd Ver

S2-P01 06.12.19

HW HA SP GP

Catchment area for watercourse

Site boundary



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ENGINEERING THE FUTURE™
www.rolton.com 01933 410909

Project

Low Road
Crowland

Drawing Title

Watercourse Capacity Check
Catchment Area

RGL Project Ref

190305

Scale @A1

Scale @A3

Specification(s)

Drawing Number

190305-RGL-ZZ-XX-DR-D-121-0001

Project Originator: John Smith (Name of Lead Design Engineer)

Sheet Purpose

INFORMATION

Sheet

S2-P01

Issued by: Rolton

Rolton Group		Page 1
The Charles Parker Building Midland Road Northants NN10 8DN	190305 Low Road, Crowland	
Date 13/12/2019 15:36 File 190305 Watercourse Gree...	Designed by Harun Adan Checked by SDP	
Micro Drainage Source Control 2018.1		

ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	Soil	0.300
Area (ha)	3.080	Urban	0.000
SAAR (mm)	550	Region Number	Region 5

Results l/s

QBAR Rural	4.2
QBAR Urban	4.2
Q1 year	3.7
Q1 year	3.7
Q30 years	10.2
Q100 years	15.1

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Rolton Group		Page 1
The Charles Parker Building Midland Road Northants NN10 8DN	190305 Low Road, Crowland Watercourse Capacity Assessmnt	
Date 06/12/2019 File 190305 WATERCOURSE CAPACITY C...	Designed by HMA Checked by SDP	
Micro Drainage	Network 2018.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	100	PIMP (%)	3
M5-60 (mm)	19.000	Add Flow / Climate Change (%)	0
Ratio R	0.421	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.000	4-8	0.190	8-12	2.464	12-16	0.426

Total Area Contributing (ha) = 3.080

Total Pipe Volume (m³) = 53.914

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	88.611	0.100	886.1	0.092	5.00	0.0	0.060	\/	-1	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	12.69	1.950	0.092	0.0	0.0	0.0	0.19	116.8	12.5

Rolton Group		Page 2
The Charles Parker Building Midland Road Northants NN10 8DN	190305 Low Road, Crowland Watercourse Capacity Assessmnt	
Date 06/12/2019 File 190305 WATERCOURSE CAPACITY C...	Designed by HMA Checked by SDP	
Micro Drainage	Network 2018.1	

Conduit Sections for Storm

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \ / open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m ²)
-1	\ /	200	390	16.0		0.803	0.608



ROLTON GROUP
ENGINEERING THE FUTURE™

Warren Peppard
Lincolnshire County Council
Place Directorate
Lancaster House
36 Orchard Street
Lincoln
LN1 1XX

Via Email: Highwayssudssupport@lincolnshire.gov.uk

13 December 2019
Our Ref-190305-RGL-ZZ-XX-CO-Z-0002

Dear Warren,

19-0305 - LOW ROAD, CROWLAND, PETERBOROUGH

Please find below our response to the LLFA queries received 27th November 2019.

1. *Can the Applicants/Agent be asked to confirm the proposals for the adoption of the surface water drainage system please.*

The drainage strategy drawing shows surface water run-off from areas outside of the highway discharging into the system - which would indicate this is a surface water sewer - which would normally be adopted by Anglian Water under a Section 104 Agreement.

However, the AW response indicates that they believe 'the surface water management does not relate to Anglian Water's operated assets'.

It is intended to offer the swales for adoption by Lincolnshire county council highways, the main drainage in the carriageway by Anglian Water and the remaining drainage will remain private or under a maintenance company.

Anglian Waters response relates to existing assets as opposed to proposed assets and there are no existing Anglian water assets in the vicinity of the site.

2. *I am unclear how the proposed surface water drainage system would work. There are what appear to be two detention ponds with the larger of the two at the top of the system rather than at the lowest point. Also, there is a piped network under the carriageway running parallel to the proposed swale system at the edge of the carriageway.*

The design of the road includes a single cross-fall towards the under-drained swale and directly discharges into it. The swale assists with both conveying and treating the flows. At the swales' low points, the flows join the piped system below the road. The storage has been designed to be accommodated by surcharged flows, such that when the system water levels increase, the volume of water will be stored within the main pond at the head of the run and temporarily (due to surcharge) in the smaller downstream pond.

3. *Can the Applicant/Agent be asked to provide evidence that the watercourse on the south side of the site, into which the site surface water drainage system is proposed to be discharged, has the capacity and a suitable hydraulic gradient to convey the surface water to the point of discharge into the IDB maintained system. I had a look at the watercourse yesterday and it looked shallow and overgrown. It runs between land that does not appear to be in the control of the Applicants so I am not sure what rights the Applicants would have to undertake any improvement work.*

The watercourse to the southern side of the site has been modelled to check its capacity, refer to enclosed drawing (190305-RGL-ZZ-XX-DR-D-121-0001) for details. The existing catchment area for the watercourse at the southern boundary of the site is approximately 3.08Ha and the existing peak greenfield runoff rate has been determined as 15 l/s for the 1 in 100 year return period event. (refer to enclosed calculations). The northern section of the catchment area that forms the development site is restricting the flow to 5 l/s maximum and the lower section (at Greenfield run-off) would be 7.5 l/s. Therefore, the peak flow would be 12.5 l/s following development.

The watercourse has been modelled for a variety of roughness coefficients to reflect lack of maintenance and to determine the percentage utilisation and therefore available capacity to accommodate the scheme. - refer to the table below for remaining capacities and enclosed calculations for the worst-case roughness value.

The table below summarises the capacity of the watercourse when subjected to varying roughness coefficients (n).

ROUGHNESS COEFFICIENT (N)	WATERCOURSE DESCRIPTION	CAPACITY (L/S)
0.025	Good condition	280.4
0.035	With stones and weeds	200.3
0.06	Very poor	116.8

Based on the above capacities the channel flow utilisation is approximately 10% of the capacity and therefore provides a large factor of safety against future maintenance and the capacity of the downstream section of watercourse prior to the outfall to the IDB drain.

Yours sincerely
for and on behalf of Rolton Group Ltd



Shaun Pentlow
Shaun.pentlow@rolton.com
01933 414579

Encs 190305-RGL-ZZ-XX-DR-D-120-0001 Revision S2-P03 Proposed Drainage Strategy
190305-RGL-ZZ-XX-DR-D-121-0001 Revision S2-P01 Watercourse Capacity Check
190305-RGL-ZZ-XX-CA-C-0001 - Watercourse Capacity Assessment Calculations
190305-RGL-ZZ-XX-CA-C-0002 - Greenfield Runoff Calculations (Watercourse)