Overground services: overhead cables crossing Stoneleigh Road at the bridge over DALEHOUSE LANE

Gas Governor Mast Cottage

LOCATION PLAN
Not to scale

Kingswood Barn Track
80.9m including the 100-year + 40% gravity discharge into Finham Brook.

Westley House Pond Tank Pond Slow Finbrook House Croyde Hoe

Pond

South

Live traffic,
Site access: off A46
Inundation: fluvial flooding from Finham Brook,
Potential for groundwater levels between 1.85m bgl near Westley Bridge and 3.0m deposits contain sandy clay and sandy silt layers with gravelly and silty sand.

Superficial deposits contain silt and sand with gravel lenses and lenses of Cenozoic sands, silts and clays, and fluvial deposits. The site is underlain by the Kenilworth Sandstone Formation. The site is underlain by

Telecom cables crossing the existing road,
Utility data shown on the drawings mentioned above.

areas plan.

Hazard Summary
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This drawing should not be used for setting out. Further work (improved drainage and civil engineering works) may need to be carried out at this stage.

Scope:
This drawing is based on drawings and documents supplied by Warwickshire County Council, outline drainage layout plan.

General Notes
9. Existing services shown as per On Centre Survey Ltd.'s survey drawing. Locations assumed to be approximate and for guidance only. The Contractor will confirm the location of any services prior to the commencement of any works.

3. This drawing is based on Warwickshire County Council’s ‘General Note to designers’ (September 2006).

4. Outline drainage design based on existing and proposed ground levels and drainage facilities assumed to be in place.

2. Do not scale from this drawing. All dimensions must be checked/verified on site.

1. All dimensions shown are in metres and levels to meters above OS datum unless otherwise indicated.

11. This drawing should be read in conjunction with drawing 2017s5573-001 Drainage areas plan.

10. The electronic model of this drawing is not to be used for setting out.

8. Live traffic, site access, inundation and pollution prevention

7. Site works affecting flood defences

6. Unidentified underground service

5. Location, size and type of SuDS features indicative only.

4. Outline drainage design based on existing and proposed ground levels and drainage facilities assumed to be in place.

3. This drawing is based on drawings and documents supplied by Warwickshire County Council, outline drainage layout plan.

2. Do not scale from this drawing. All dimensions must be checked/verified on site.

1. All dimensions shown are in metres and levels to meters above OS datum unless otherwise indicated.

This drawing shows indicative drainage layout for the proposed A46 Stoneleigh Junction works.

A46 STONELEIGH JUNCTION
OUTLINE SURFACE WATER DRAINAGE STRATEGY DRAINAGE LAYOUT PLAN

1:2000 @ A1

Volume

Sheet No.

1 of 3

Drafting Number

M. Lubiejewska-Jones 10/04/17

Approved

M. Lubiejewska-Jones 10/04/17

Designed

B. Schubert 15/03/17

Drawn

B. Schubert 15/03/17

Carbon Copy

A46 STONELEIGH JUNCTION OUTLINE SURFACE WATER DRAINAGE STRATEGY DRAINAGE LAYOUT PLAN

September 2017

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E  Scheme Layout
Footway/Cycleway Width
over new bridge: 4.0m

Footway/Cycleway Width
over existing bridge: 3.0m

Standalone
Toucan Crossing

Traffic Signal Junction
Incorporating Toucan Crossing

Verge for carriageway widening in Phase 2

New bridge

Area for Police Speed Enforcement Vehicle

Shared use footway/cycleway

Key

Verge

Traffic Signal Pole
F  Correspondence
Good morning Marta

I have had a read through, and in general, the proposals are acceptable. I do however have the following comments and queries;

- There is an open SuDS feature proposed at the location of the Stoneleigh Road roundabout. I assume that as much of the road as possible will be constructed off-line, so there will need to be measures in place to drain and attenuate the flows from the new road during construction.

- Although we are not statutory consultee on the Flood Zones, it would be useful to see proposed flood compensation areas on the plans when they come in.

- You refer to our planning advice in 3.1, for your information, this is being updated and should be on our website in the next few weeks. Although it isn’t a wholesale update, relevant sections such as brownfield sites are amended.
- Another useful best practice document practice document worth considering is the LASOO guide.

- Our guidance on brownfield sites is that the flows should be returned to greenfield rates and where this can be proven not to be possible, the maximum reduction possible with a minimum of 50% betterment.  
- If a betterment percentage is being used, this should be to lower of the calculated flows, table 3-2 should be updated so columns 5 & 6 are complete for all discharges and the lower value used before applying the maximum betterment percentage possible.

Please let me know if you would like to discuss this or any further queries in more detail.

Thanks

Jagjit Mahal
Senior Flood Risk Management Planning and Sustainable Drainage Engineer

Flood Risk Management,  
Transport and Economy,  
Warwickshire County Council,  
Shire Hall,  
Warwick,  
CV34 4SA

Tel: 01926 412104  
Mobile: 07919 695918  
Email: Jagjitmahal@warwickshire.gov.uk  
Web: www.warwickshire.gov.uk/flooding
Please ensure that all emails related to Ordinary Watercourse Land Drainage Consents are sent to FRMconsenting@warwickshire.gov.uk rather than the FRM officer to ensure that the correspondence is logged and processed promptly.

On 27 April 2017 at 13:59, Marta Lubiejewska-Jones <Marta.Lubiejewska-Jones@jbaconsulting.com> wrote:

Hello Jagjit,

Have you had a chance to look at the below yet?

Many thanks

Marta

From: Marta Lubiejewska-Jones
Sent: 12 April 2017 16:28
To: 'jagjitmahal@warwickshire.gov.uk' <jagjitmahal@warwickshire.gov.uk>
Subject: A46 Link (Stoneleigh) - Flood Modelling & Drainage (2017s5573)

Hello Jagjit,

I got your email address from Neil below. I understand that you will not be involved in the Finham Brook modelling study consultations but, as the LLFA, you will be commenting on the surface water drainage proposals for the proposed road improvement scheme. My email refers to this matter.

As you probably know from Neil the scheme proposal is still work in progress but we have had a go at the preliminary surface water drainage design for it (based on the scheme layout provided last month). Although some tweaks will be made to the road alignment the overall surface water drainage strategy and the approach we take to the design should not change significantly (especially that this is only an outline design at this stage). I attach an extract of the report we’re currently preparing and the associated drawings in relation to the surface water drainage strategy. Are you able to look through it and comment if you are happy with the approach taken for this study so we can avoid objections at a later stage on grounds of surface water drainage matters?

Please let me know if you have any questions in relation to the above otherwise I look forward to your response.
Morning Marta,

Following on from your recent enquiry, we met with Jagjit Mahal from the WCC flood risk team, last week, to assess the required level of WCC involvement and consultation in the above project, with respect to the flood modelling. Jagjit indicated that the flood risk team would be one of the consultees as part of the planning process but that he did not expect to be involved during the design process as Finham Brook is classed as a main river. However, he is happy for you to contact him as required. Jagjit's contact details are as follows:

Telephone number: 01926 412104

Email: jagjitmahal@warwickshire.gov.uk

Regards,

Neil Spencer
Senior Engineer & Team Leader | Design Services | Communities
Warwickshire County Council
Tel: (01926) 41 2406
Email: neilspencer@warwickshire.gov.uk

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Hello Marta,

Further to this information, it does seem to involve a relatively small area of road around the A46 Stoneleigh junction only, yet the area is sensitive from a protection of Controlled Waters perspective. It sits on sandstone geology, which is a Principal Aquifer and used for public water supply by Severn Trent Ltd locally (see attached). The shallow soils will also connect with the nearby Finham Brook, and thus any road runoff will likely drain either to ground or surface water too. As said, this is fine under normal conditions, but if there are any RTAs and/or spillages, this could be risky so if there are opportunities to improve this situation through SUDS etc, we would indeed welcome that.

Please keep me informed with further design details, if you can.

Kind regards,
Richard

---

Hello Richard,

Many thanks for your email.

We are at the preliminary stages of the project at the moment so no designs have been done yet. We are just undertaking the initial assessment, identifying main constraints, etc. However please find attached the preliminary layout of the new road alignment for information.

No site specific GI was undertaken yet (it will be done later in the summer) but there is quite a bit of information about the soil/historic boreholes on the BGS website. There is a potential for high groundwater level along the Finham Brook section thus infiltration would not work anyway. But there may be some infiltration potential in the higher parts of the scheme.

It’s also worth noting that this is not a new scheme but an improvement to the existing road. The existing road drains via a conventional drainage system comprising gullies which are believed to discharge to the local watercourses. The existing A46 slip roads drain via a combination of gullies and short sections of filter trenches towards the A46. Considering the conventional drainage system currently serving the existing road incorporation of any properly maintained SuDS features will lead to water quality improvement when compared against the existing scenario.

Any further thoughts on the above would be appreciated.

Many thanks
Hello Marta,

Here are my details and a copy of GP3. Please see Position Statements C4 and G13 specifically. You seem to be ok in an SPZ3 with highway drainage, but it does state that:

‘When planning proposals are brought forward for major new road, rail or airport developments the Environment Agency will require that:

Drainage is via sustainable drainage systems (SuDS) designed and maintained to current good practice standards, including the provision of suitable treatment or pollution prevention measures.

Also:
The design of infiltration SuDS schemes and of their treatment stages needs to be appropriate to the sensitivity of the location and subject to a relevant risk assessment, considering the types of pollutants likely to be discharged, design volumes and the dilution and attenuation properties of the aquifer.’

Therefore, if you could give me some details on location and design, that would be helpful.

Many thanks,
Richard

Richard Brandsma  BSc PhD CGeol FGS
Technical Specialist (Groundwater & Contaminated Land)
West Midlands Area, Environment Agency
Sentinel House, 9 Wellington Crescent
Fradley Park, Lichfield, WS13 8RR

* PLEASE NOTE NEW PHONE NUMBER *
Tel: 02030 - 253 087

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G Calculations
For the catchment draining to discharge point DP-1
For the catchment draining to discharge point DP-2.

### Variables

<table>
<thead>
<tr>
<th>Site</th>
<th>GB 432450 273950 SP 32450 73950</th>
</tr>
</thead>
<tbody>
<tr>
<td>C (1km)</td>
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</tr>
<tr>
<td>D1 (1km)</td>
<td>0.385</td>
</tr>
<tr>
<td>D2 (1km)</td>
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</tr>
<tr>
<td>CV (Summer)</td>
<td>0.760</td>
</tr>
<tr>
<td>CV (Winter)</td>
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<tr>
<td>Immeasurable Area (ha)</td>
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<td>Maximum Allowable Discharge (/s)</td>
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<td>Infiltration Coefficient (m/hr)</td>
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<tr>
<td>Safety Factor</td>
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</tr>
<tr>
<td>Climate Change (%)</td>
<td>40</td>
</tr>
</tbody>
</table>

### Results

Global Variables require approximate storage of between 431 m$^2$ and 696 m$^2$.

These values are estimates only and should not be used for design purposes.
For the catchment draining to discharge point DP-3.

Results

Global Variables require approximate storage of between 35 m$^3$ and 60 m$^3$.

These values are estimates only and should not be used for design purposes.
For the catchment draining to discharge point DP-4.

<table>
<thead>
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<th>Variables</th>
<th>Value</th>
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<tbody>
<tr>
<td>FEH Rainfall</td>
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<tr>
<td>Cv (Summer)</td>
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</tr>
<tr>
<td>Cv (Winter)</td>
<td>0.800</td>
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<tr>
<td>Impervious Area (ha)</td>
<td>0.253</td>
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<tr>
<td>Maximum Allowable Discharge (l/s)</td>
<td>17.9</td>
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<tr>
<td>Infiltration Coefficient (m/hr)</td>
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</tr>
<tr>
<td>Safety Factor</td>
<td>2.0</td>
</tr>
<tr>
<td>Climate Change (%)</td>
<td>40</td>
</tr>
</tbody>
</table>

Global Variables require approximate storage of between 68 m$^3$ and 111 m$^3$.

These values are estimates only and should not be used for design purposes.
For the catchment draining to discharge point DP-S.

**Variables**

- FEH Rainfall
- Return Period (years): 100
- Version: 1999
- Site: GB 432450 273950 SP 32450 73950
- C (1km): 0.024
- D1 (1km): 0.385
- D2 (1km): 0.322
- D3 (1km): 0.219
- E (1km): 0.294
- F (1km): 2.421
- Cv (Summer): 0.780
- Cv (Winter): 0.800
- Impervious Area (%): 0.112
- Maximum Allowable Discharge (l/s): 6.0
- Infiltration Coefficient (m/hr): 0.000000
- Safety Factor: 2.0
- Climate Change (%): 40

**Results**

Global Variables require approximate storage of between 34 m³ and 55 m³.

These values are estimates only and should not be used for design purposes.
For the catchment draining to discharge point DP-6.

Global Variables require approximate storage of between 360 m$^2$ and 547 m$^2$.

These values are estimates only and should not be used for design purposes.
For the catchment draining to discharge point DP-7.

Global Variables require approximate storage of between 40 m² and 40 m².

With Infiltration storage is reduced to between 8.7 m² and 24 m².

These values are estimates only and should not be used for design purposes.
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South Barn
Broughton Hall
SKIPTON
North Yorkshire
BD23 3AE
United Kingdom

t:+44(0)1756 799919
e:info@jbaconsulting.com

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