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From: John Hall [REDACTED]
Sent: 24 May 2022 15:20
To: Daun Johnson <Daun.Johnson@arun.gov.uk>

Subject: FW: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3, 4 and 5

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Hello Daun,

As far as I'm concerned; the last bits of detail to Conditions # 3, 4 & 5 (See the attached) were dealt with by CEP on 12th May 2022.
Please let me know if there's anything still outstanding.

Many thanks, John.

John Hall MBA MCIOrt
John Hall Consulting Ltd.
113 Limmer Lane

Felpham
West Sussex
PO22 7LR

[REDACTED]

From: Stuart Magowan [REDACTED]
Sent: 12 May 2022 09:28
To: Paul Cann <Paul.Cann@arun.gov.uk>; Anita Gardner <Anita.Gardner@arun.gov.uk>

[REDACTED]

Subject: RE: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3 and 5

Hi Paul

Updates as promised.

I have noted details below in orange for ease.

Regards

Stuart

Stuart Magowan



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From: Stuart Magowan
Sent: 05 May 2022 16:39
To: Paul Cann <Paul.Cann@arun.gov.uk>; Anita Gardner <Anita.Gardner@arun.gov.uk>

[REDACTED]

[REDACTED]
Subject: RE: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3 and 5

Hi Paul

Thanks for the comments, I'll get the final details noted and forwarded over.

The Downstream Defender will change too as they have just changed their references and we will update to those current detail.

Regards

Stuart

Stuart Magowan



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From: Paul Cann <Paul.Cann@arun.gov.uk>

Sent: 05 May 2022 15:20

To: Stuart Magowan [REDACTED] Anita Gardner <Anita.Gardner@arun.gov.uk>
[REDACTED]

Subject: RE: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3 and 5

Stuart

Comments below in red;

Regards

Paul Cann
Principal Drainage Engineer
Engineering Services

T: 01903 737819

E: paul.cann@arun.gov.uk



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From: Stuart Magowan [REDACTED]

Sent: 11 April 2022 11:58

To: Paul Cann <Paul.Cann@arun.gov.uk>; Anita Gardner <Anita.Gardner@arun.gov.uk>
[REDACTED]

Subject: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3 and 5

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Hi Paul and Anita

Further to Paul's comments dated 16 March 2022 I note our responses below in blue and attach the relevant supporting Information.

I have rounded up the whole set for ease of review:

Condition 3:

1. Ground conditions are assumed to be similar to the adjacent site, therefore infiltration has been ruled out.
Correct
2. Clearly indicate invert of outgoing pipe from reservoir ie. 3.85m. This is clearly noted on the basin details but we have added a further note to the end of the outlet pipe. See drawing 101B attached ok
Pipe lengths HB02 – S10 – S11 – S12 – Specify min. gradient 1 in 150. A gradient of 1/167 provides self-cleansing velocity in accordance with Building Regulations and British Standards for private drainage of this size. The surface water system will remain private and is not being offered for adoption. Sewers for Adoption requires a velocity of 1 m/s, however for a private system BSEN 752 and Building Regulations Part H apply and require a minimum velocity of 0.7 m/s. The velocity of the system will determine the depths of the pipework, as a higher velocity will increase a lot of the gradients, this will increase the depth of the system and subsequently increase the depth of excavation during construction needlessly. The system has been designed using a minimum velocity of 0.75 m/s which is acceptable based on policy and relevant regulations. Extract of approved Document H for your information;

3.15 75mm and 100mm rainwater drains should be laid at not less than 1:100. 150mm drains and sewers should be laid at gradients not less than 1:150 and 225mm drains should be laid at gradients not less than 1:225. For minimum gradients for larger pipes see BS EN 752-4 (see paragraph 3.36).

I am not going to make a big issue of it since flows into the pipelines are restricted and therefore capacity is not an issue, and the risk of silt accumulating in these pipelines is minimal. Noted

3. **Pipe lengths S02 – S03 – S04 – S05 – S06 – S07 – Specify min. gradient 1 in 150.** A gradient of 1/167 provides self-cleansing velocity in accordance with building regulations for private drainage of this size. The surface water system will remain private and is not being offered for adoption. Sewers for Adoption requires a velocity of 1 m/s, however for a private system BSEN 752 and Building Regulations Part H apply and require a minimum velocity of 0.7 m/s. The velocity of the system will determine the depths of the pipework, as a higher velocity will increase a lot of the gradients, this will increase the depth of the system and subsequently increase the depth of excavation during construction needlessly. The system has been designed using a minimum velocity of 0.75 m/s which is acceptable based on policy and relevant regulations See item 2 above. Noted
4. **The FRA discussed the use of an open channel conveying water to the existing ditch, as opposed to pipework. Was there a reason for discounting this in the detailed design?** To minimise loss of the farm land, the water quality improvement has been provided using the pond and voided stone and downstream defender. Noted. You may of also achieved some infiltration (although minimal) with the open channel option but I will leave it at that. Noted
5. **Provide additional topo survey data for the existing ditch ie. existing bed levels. Are there culverts immediately downstream? Levels? As much freeboard as possible needs to be achieve between the invert of your connecting pipe and ditch bed.** We have included additional levels taken within the ditch, this has been added onto the layout drawing 101 B ok
6. **Indicate flow direction of watercourse.** At the point of connection, it flows from north to south, direction has been added to drawing 101B ok
7. **Add note 'Watercourse to be cleaned out to the satisfaction of the ADC engineer'.** Note added to drawing 101B ok
8. **Collector trench for yard – alter note to refer to drg. 502 as opposed to 501. Correct the 600mm dimension (shown as 600nn).** Specify length of trench. Noted and updated on 101B ok
9. **Specify formation levels of yard structure on both the plan and construction detail.** Noted and included on plan and construction details drawing 502A copy attached ok
10. **Type C manhole – indicate PPC cover slab to suit. Clearly indicate the PCC rings and 150mm concrete surround.** The Type C manhole detail provided is the standard adoptable detail from Sewerage Sector Guidance with PCC cover slab. We are not proposing a 150mm concrete surround for these private manholes just noticed the chamber sections are 125mm thick, so greater than standard, so ok.
11. **Hydrobrake manholes – add note 'to be read in conjunction with type C manhole detail'.** Manhole schedule specifies 1350mm diameter chamber but 1500mm on construction details. The dimension tables for each chamber need to be completed. Specify hydrobrake models. Noted, 1350 chamber required as schedule, construction detail adjusted on drawing 501A, copy attached. Data sheet only supplied for one of the hydrobrake's. Also, add model numbers to drawings. Specify the cover slab details as this is not detailed on the type C manhole. We have attached both Hydrobrake Data sheets for the SHE0076-2000-0375-2000 and the SHE 0084-2600-0503-2600 and confirm the cover slab detail has been updated on the Type C manhole detail on drawing 501 B, copy attached, and notes a 1350mm diameter precast concrete cover slab with 1200 x 675 opening.
12. **Provide Defender unit construction details/model.** Defender will be PQL 1200 Downstream Defender by Hydro International, Data sheet attached. I can't see a PQL 1200 in the data sheet – please advise. Adjust model number on drg. 101 to suit. Defender will be 1.0m diameter Vortex Plus. It will be contractor choice of concrete or plastic chambers and Hydro International will supply them the final details.
13. **Outflow pipe arrangement from reservoir – if this is to be similar to that on the existing reservoir, then please include construction details.** Proposed as headwall as noted on drawing 502A ok
14. **Provide reservoir construction details.** Noted and included on drawing 502A Indicate how the butyl liner accommodates the headwall structure to achieve a sealed system. Detail updated on drawing 502B.
15. **Reservoir flood storage note for 1/100+40% event on plan – should 4.243 be 4.143 based upon the calcs?** Yes, typo adjusted ok
16. **Headwall – Show pipe cut back so not encroaching into ditch profile. Bagwork apron to be set at true bed level of ditch (to be determined/agreed). 100mm freeboard needs increasing. Construction details refer to a swale as opposed to a ditch – please adjust.** Detailed adjusted on drawing 502A Based upon the levels you have provided, there is around 600mm difference between pipe invert and existing ditch bed, if BL represents the ditch base level. Please alter the construction detail to reflect this. A note should also be added to say that the concrete bag apron to be set at TRUE bed level of the ditch. Noted and drawing 502 B updated

Condition 4:

17. Please submit a 'Land Drainage Consent' application for the connection to the watercourse to support this. OWC consent will be submitted separately but should not be used to withhold discharge of this condition. That's fine, although the sooner it is submitted the better. I can't see any issues that would arise in appraising the land drainage consent that would affect the suds scheme, in this case. Noted, we will chase the OWC submission.

Maintenance Manual (Condition 5):

18. Provide manufacturers technical data sheets for hydrobrake. Include this in the maintenance manual. Noted, currently this could change as the final manufacture will be contractor choice, this will be included in the O+M Manual for the site and not a reason to withhold discharge of this condition. We have attached the Hydrobrake design details for information Data sheet only supplied for one of the hydrobrake's as per item 11. It is important that these are included in the manual. If the contractor choses an alternative, whilst respecting the design flow/head characteristics, then the manual/drawings can be updated later. Noted and included in updated Maintenance Manual v1.3, copy attatched. Comments on any changes during construction noted and will be the Contractor's responsibility to update and produce the O+M manual.
19. Approved drawings to be included in maintenance manual. Noted and included in Drainage Maintenance Schedule v1.2, copy attached ok, will obviously need to be updated following the above amendments. Noted and included in Maintenance Manual v1.3
20. Include silt removal, etc from defender unit. Included in Drainage Maintenance Schedule v1.2 ok
21. Specifically mention silt removal from hydrobrake chambers – important. Included in Drainage Maintenance Schedule v1.2. Hydrobrake chamber should read chambers. Hydrobrake device should read devices. Noted and updated
22. Specifically mention any necessary repairs to reservoir ie. liner. Included in Drainage Maintenance Schedule v1.2 ok
23. Mention yard collector trench maintenance and repairs. Included in Drainage Maintenance Schedule v1.2 Please advise where this is specifically included. We have noted this as filter drain and filter trench
24. Corrective maintenance section 'Replace downstream'.....? Updated to include defender

I trust this will allow the conditions to be cleared but if you have any queries please do not hesitate to contact me.

Regards

Stuart

Stuart Magowan



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From: Paul Cann <Paul.Cann@arun.gov.uk>

Sent: 16 March 2022 16:22

To: Stuart Magowan [REDACTED]

Subject: RE: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3 and 5

Hi Stuart

Comments below;

Condition 3:

1. Ground conditions are assumed to be similar to the adjacent site, therefore infiltration has been ruled out.
2. Clearly indicate invert of outgoing pipe from reservoir ie. 3.85m.
3. Pipe lengths HB02 – S10 – S11 – S12 – Specify min. gradient 1 in 150.
4. Pipe lengths S02 – S03 – S04 – S05 – S06 – S07 – Specify min. gradient 1 in 150.
5. The FRA discussed the use of an open channel conveying water to the existing ditch, as opposed to pipework. Was there a reason for discounting this in the detailed design?
6. Provide additional topo survey data for the existing ditch ie. existing bed levels. Are there culverts immediately downstream? Levels? As much freeboard as possible needs to be achieved between the invert of your connecting pipe and ditch bed.
7. Indicate flow direction of watercourse.
8. Add note 'Watercourse to be cleaned out to the satisfaction of the ADC engineer'.
9. Collector trench for yard – alter note to refer to drg. 502 as opposed to 501. Correct the 600mm dimension (shown as 600nn). Specify length of trench.
10. Specify formation levels of yard structure on both the plan and construction detail.
11. Type C manhole – indicate PPC cover slab to suit. Clearly indicate the PCC rings and 150mm concrete surround.
12. Hydrobrake manholes – add note 'to be read in conjunction with type C manhole detail'. Manhole schedule specifies 1350mm diameter chamber but 1500mm on construction details. The dimension tables for each chamber need to be completed. Specify hydrobrake models.
13. Provide Defender unit construction details/model.
14. Outflow pipe arrangement from reservoir – if this is to be similar to that on the existing reservoir, then please include construction details.
15. Provide reservoir construction details.
16. Reservoir flood storage note for 1/100+40% event on plan – should 4.243 be 4.143 based upon the calcs?
17. Headwall – Show pipe cut back so not encroaching into ditch profile. Bagwork apron to be set at true bed level of ditch (to be determined/agreed). 100mm freeboard needs increasing. Construction details refer to a swale as opposed to a ditch – please adjust.

Condition 4:

18. Please submit a 'Land Drainage Consent' application for the connection to the watercourse to support this.

Maintenance Manual (Condition 5):

19. Provide manufacturers technical data sheets for hydrobrake. Include this in the maintenance manual.
20. Approved drawings to be included in maintenance manual.
21. Include silt removal, etc from defender unit.
22. Specifically mention silt removal from hydrobrake chambers – important.

23. Specifically mention any necessary repairs to reservoir ie. liner.
24. Mention yard collector trench maintenance and repairs.

Look forward to hearing from you further.

Regards

Paul Cann
Principal Drainage Engineer
Engineering Services

T: 01903 737819
E: paul.cann@arun.gov.uk



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From: Stuart Magowan [REDACTED]
Sent: 28 February 2022 17:51
To: Anita Gardner <Anita.Gardner@arun.gov.uk>; Paul Cann <Paul.Cann@arun.gov.uk>
[REDACTED]
Subject: 23482 Wick Farm East - F/7/21/PL Planning Conditions 3 and 5

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Hi Anita and Paul

We attach the Designer's Response to Planning Conditions 3 and 5 of this development together with a separate copy of the proposed Drainage Maintenance Schedule V1.1 for your approval / sign off.

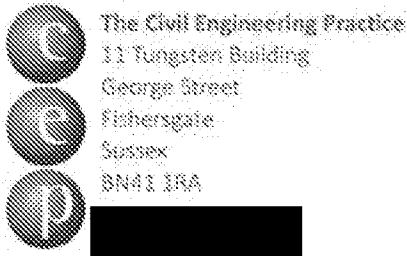
For ease of review, we have also attached separate copies of the drawings 101, 102, 501 and 502 which are attached to the Designer's Response together with a separate copy of the original FRA that accompanied the Planning Application.

I trust this meets with your approval but please do not hesitate to contact me if I can be of any assistance.

Regards

Stuart

Stuart Magowan
[REDACTED]



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