

Our ref: P680020-FRA L05
 Your ref: 21/02286/F

3rd April 2023

Cherwell District Council
 Planning & Development Services
 Bodicote House White Post Road
 Bodicote
 Banbury
 OX15 4AA

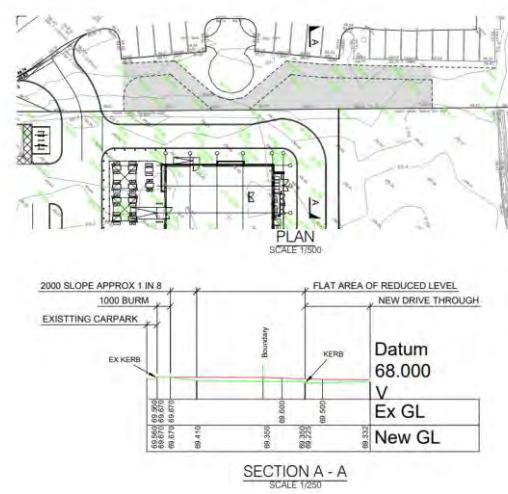
Re: Construction of a coffee unit with drive-thru facility and indoor seating with associated access, car parking, landscaping and servicing parking. Land North West of Launton Road roundabout adjoining Skimmingdish Lane, Caversfield

Please find attached below the required information requested for the above application site. This letter has been produced to reflect the consultation responses from the Environment Agency (dated 9th January 2023, Environment Agency Ref: WA/2021/129266/05-L01) and the subsequent meeting held with the Environment Agency on the 30th January 2023.

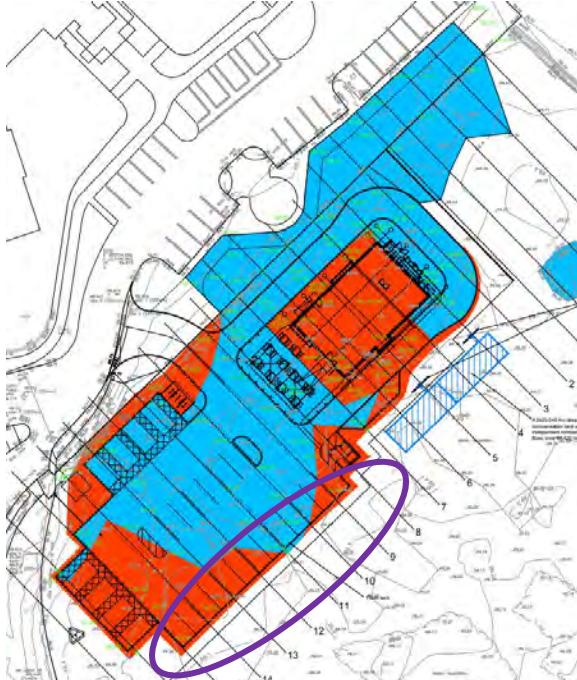
Environment Agency Comment	RSK Response													
<p>Upon reviewing the latest flood risk modelling information, we have identified that the applicants modelling does not follow recommended modelling and software manufacturers guidance in relation to timesteps. We acknowledge that we should have raised this previously and therefore offer our apologies for this oversight. In order to identify whether this is likely to be a significant matter, we completed a model simulation test following the recommended guidance and we have concluded that the maximum flood water levels are greater than currently predicted by the applicant as follows:</p> <table border="1"> <thead> <tr> <th>Model run</th><th>Flood event</th><th>Flood level</th></tr> </thead> <tbody> <tr> <td rowspan="2">Applicant provided timestep</td><td>1% AEP plus 4%CC</td><td>69.65mAOD</td></tr> <tr> <td>1% AEP plus 35%CC</td><td>69.75mAOD</td></tr> <tr> <td rowspan="2">Timestep in line with guidance</td><td>1% AEP plus 4%CC</td><td>69.79mAOD</td></tr> <tr> <td>1% AEP plus 35%CC</td><td>69.85mAOD</td></tr> </tbody> </table>	Model run	Flood event	Flood level	Applicant provided timestep	1% AEP plus 4%CC	69.65mAOD	1% AEP plus 35%CC	69.75mAOD	Timestep in line with guidance	1% AEP plus 4%CC	69.79mAOD	1% AEP plus 35%CC	69.85mAOD	<p>The application moving forward will consider the EA's re-run modelled level of 69.79mAOD for 4% climate change flood level as the basis to estimate the 6% climate change level as requested below.</p>
Model run	Flood event	Flood level												
Applicant provided timestep	1% AEP plus 4%CC	69.65mAOD												
	1% AEP plus 35%CC	69.75mAOD												
Timestep in line with guidance	1% AEP plus 4%CC	69.79mAOD												
	1% AEP plus 35%CC	69.85mAOD												

Environment Agency Comment	RSK Response
<p>The applicant may wish to revise the modelling in accordance with the published guidance, however, to assist with a speedier resolution to this problem, we would be agreeable to the applicant using the flood levels we have calculated as a basis for informing their Flood Risk Assessment.</p>	<p>As above.</p>
<p>When the application was originally submitted, government guidance on the consideration of climate change required applicants to allow for a 35% increase in river flood conditions and the flood mitigation for this development was originally designed to this level. However, climate change allowance guidance has since been revised to account for peak river flows on a catchment basis. The climate change allowance for this area, for the anticipated lifespan of this development (25 years as identified by the applicant), is 4%. However, the current guidance also identifies that peak river flows for the current epoch (2020s) is expected to be higher at 6% and we have asked the applicant to account for this within their mitigation. To identify the 6% flood level, the applicant can undertake their own revisions to the flood risk model or, we would again be satisfied in this one instance, for an estimate to be calculated based on our 4% test model flood level of 69.79m AOD.</p>	<p>The EA provided levels for the 4% and 35% flow increases due to climate change.</p> <p>4%CC level = 69.79mAOD</p> <p>35%CC level = 69.85mAOD</p> <p>Based on the EA's response which noted that the EA '<i>would again be satisfied in this one instance, for an estimate to be calculated based on our 4% test model flood level of 69.79m AOD</i>'.</p> <p>In line with the EA's comment above, an assessment has been undertaken to determine the 6% climate change uplift.</p> <p>Based on the data provided when considering the increase from the 4% to 35% climate change levels, the EA data shows a 60mm increase (69.79m AOD to 69.85mAOD) over a 31% climate change uplift (4% to 35%) which equates to a 1.9mm increase per 1% climate change uplift.</p> <p>Therefore for a 2% climate change uplift there would equate to a 3.8mm (4mm) increase in the flood level.</p> <p><u>As a result utilising the EA's provided data an estimated 6% climate change uplift flood level would be 69.794mAOD.</u></p>
<p>As we are anticipating that the 6% climate change flood level will be higher than that currently identified by the applicant, the mitigation currently proposed will not sufficiently reduce the impact of flooding created by this development.</p> <p>For example, finished floor levels are currently proposed to be set to 69.75 mAOD which is below our calculated 4% climate change level and will most</p>	<p>Based on the above and the assessment of the data provided by the EA, the FFLs for the development have followed the established principles throughout the scheme and have been set at 69.794mAOD (6% CC flood level).</p>

Environment Agency Comment	RSK Response
<p>certainly be below the 6% climate change flood level which is yet to be determined. This means the development would be at risk of flooding internally</p>	
<p>In addition, the applicant's flood mitigation scheme, which is a combination of level for level flood compensation and storage tanks, must be revised to account for the higher climate change flood level in order to ensure the proposal can replace lost flood storage on a level for level basis and that the storage tanks will operate in the correct way to reduce the flood risk impact. Also, the applicant has still not demonstrated that the level for level compensation scheme will be hydraulically connected. We previously requested a plan/s which clearly mark the extents of each compensation slice so we can visually see how they would be hydraulically connected. This has not been provided. The submitted supporting letter (reference P680020-FRA L04, dated 11 October 2022, prepared by RSK LDE) states: 'we have assessed the situation and removed the kerb from the development proposals (highlighted location in the above extract) to aid in the hydraulic connectivity between the site and the flood plain'. However, from the plans submitted it can still not be seen if each slice of the level for level compensation scheme is hydraulically connected. This is required to ensure the compensation scheme can function over a range of flood events up to and including the relevant climate change event.</p>	<p>Following discussions with the EA, revisions have been made to the compensation scheme to ensure that the flood compensation volume required within the tanks remains below the 30m³ as previously agreed as suitable for the scheme.</p> <p>A revised suite of drawings has been produced to reference the provided EA flood levels and revisions to the scheme.</p> <p>Drawing reference 220029_FV100_P9 supersedes the former P7 version shows the site and the wider area floodplain offset and gain.</p>  <p>The blue areas show where additional floodplain volume is created and the red where levels have been raised and volume is offset (note flood volume beyond the hatched limits has not been taken into account). The P8 version includes additional areas of land secured as part of the revised levels proposals.</p> <p>Drawings 220029_FV109_P2 to 220029_FV115_P2 represent the flood water movement at 100mm increments in a visual format, with drawings 220029_FV101_P11 to 220029_FV103_P11 providing the cross section drawings.</p> <p>The additional drawings have been produced and show additional levelling works on site (north east of</p>

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	<p>proposed building) and offsite (area to the north / north west of the site) which aid in securing the flood compensation level for level strategy.</p> <p>Drawing 220029_MX101_P1 provided highlights the additional area of ground lowering to the north of the site.</p>  <table border="1" data-bbox="857 920 1302 1100"> <tr> <td>69.09</td> <td>69.10</td> <td>69.11</td> <td>69.12</td> <td>69.13</td> <td>69.14</td> <td>69.15</td> <td>69.16</td> <td>69.17</td> <td>69.18</td> <td>69.19</td> <td>69.20</td> <td>69.21</td> <td>69.22</td> <td>69.23</td> <td>69.24</td> <td>69.25</td> <td>69.26</td> <td>69.27</td> <td>69.28</td> <td>69.29</td> <td>69.30</td> <td>69.31</td> </tr> <tr> <td>69.09</td> </tr> </table> <p>Agreement has been made with the land owner to the north to secure the right to regrade and lower this section of land (grey hatched area).</p> <p>It can be seen from the tabulated outputs contained in the drawing notes on drawing 220029_FV100_P9 that for each 100mm increment between 69.09m AOD and 69.59m AOD there is additional floodplain storage totalling up to 147.03m³.</p> <p>Once the flood level reaches 69.59m AOD, there is a displacement of floodplain for this 100mm increment and the 104mm increment to the top water level of 69.794m AOD by the order of 27.988m³, hence the requirement for additional attenuation at this level as previously agreed with the EA in the amount of 30m³ providing in excess of 2m³ surplus capacity.</p>	69.09	69.10	69.11	69.12	69.13	69.14	69.15	69.16	69.17	69.18	69.19	69.20	69.21	69.22	69.23	69.24	69.25	69.26	69.27	69.28	69.29	69.30	69.31	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09	69.09
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Environment Agency Comment	RSK Response																																																		
	<p style="text-align: center;">Total Displaced / Increased Flood Plain Volume</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="3">Total Volume Difference by level</th> <th colspan="2"></th> </tr> <tr> <th colspan="3">Levels</th> <th>Volume Difference (m³) Excluding Tank</th> <th>Volume Difference (m³) Including Tank</th> </tr> <tr> <th>Top (m)</th> <th>Bottom (m)</th> <th>Height (m)</th> <td></td> <td></td> </tr> </thead> <tbody> <tr> <td>69.794</td> <td>69.69</td> <td>0.104</td> <td>19.06</td> <td>-0.94 *</td> </tr> <tr> <td>69.69</td> <td>69.59</td> <td>0.1</td> <td>8.93</td> <td>-1.08 **</td> </tr> <tr> <td>69.59</td> <td>69.49</td> <td>0.1</td> <td>-7.03</td> <td>-7.03</td> </tr> <tr> <td>69.49</td> <td>69.39</td> <td>0.1</td> <td>-75.07</td> <td>-75.07</td> </tr> <tr> <td>69.39</td> <td>69.29</td> <td>0.1</td> <td>-48.20</td> <td>-48.20</td> </tr> <tr> <td>69.29</td> <td>69.19</td> <td>0.1</td> <td>-16.48</td> <td>-16.48</td> </tr> <tr> <td>69.19</td> <td>69.09</td> <td>0.1</td> <td>-0.31</td> <td>-0.31</td> </tr> </tbody> </table> <p style="text-align: center;"><i>Positive figures indicate a reduction in flood volume</i></p> <p style="text-align: center;"><i>Negative figures indicate an increase in flood volume.</i></p> <p>* tank volume at 20m³ for this band</p> <p>** tank volume at 10m³ for this band</p> <p>Drawing 220029_FV100_P9 also provides the relevant attenuation across the calculated sections.</p> <p>The level for level compensation is being provided in the underground tanks with the inlets set at the required level (69.669mAOD and 69.769mAOD) to provide the level for level compensation and allows for hydraulic connectivity to the floodplain when the flood levels reach these inlets (see above extract). It can also be seen from the cross sections that the flood levels enter the car park, so whilst there is some displaced floodplain volume in some areas, there remains a hydraulic connectivity between all sections of the site and the flood zone, therefore the plans and associated calculations show a true representation of the situation.</p> <p>It can be seen from the tabulated outputs and the associated additional attention tanks that at all flood level increments, there is an increase in floodplain volume as a result of the development and therefore a reduction in flood risk on and off site.</p>	Total Volume Difference by level					Levels			Volume Difference (m ³) Excluding Tank	Volume Difference (m ³) Including Tank	Top (m)	Bottom (m)	Height (m)			69.794	69.69	0.104	19.06	-0.94 *	69.69	69.59	0.1	8.93	-1.08 **	69.59	69.49	0.1	-7.03	-7.03	69.49	69.39	0.1	-75.07	-75.07	69.39	69.29	0.1	-48.20	-48.20	69.29	69.19	0.1	-16.48	-16.48	69.19	69.09	0.1	-0.31	-0.31
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	<p>In terms of hydraulic connectivity, the flood extent in the area encompasses the site, therefore any displaced volume in this location will retain a hydraulic connectivity to the flood plain and the watercourse either by the way of overland flow through the car park or by way of the drainage system.</p>  <p>The previous drawings submitted to support this application showed a kerb aligned along the eastern side of the car park. Following the consultation with the EA, we have assessed the situation and removed the entire kerb on the car park from the development proposals (highlighted on the plan) to aid in the hydraulic connectivity between the site and the flood plain. The boundary of the car park will now be defined by a knee rail, ensuring optimum hydraulic connectivity.</p> <p>The drive-thru area to the north east of the main building will also provide comparable hydraulic connectivity.</p> <p>No impediment to ingress of flood water – water level will rise and flow into site in between sections 9 and 13.</p>

Environment Agency Comment	RSK Response
	<p>Further to this the control device and flood compensation tank are located within the flood plain at the agreed levels (69.669mAOD and 69.769mAOD) so as to ensure hydraulic connectivity is maintained.</p> <p>The individual plans outlined below contain the relevant cross sections throughout the development. The plans and the associated spreadsheet (below) clearly illustrate the impact of the scheme with respect to the flood compensation at the site.</p> <p>Slice by slice plan have been produced and included as drawings 220029_FV101_P11 to 220029_FV103_P11 and mapped extents per depth band included in 220029_FV109_P2 to 220029_FV115_P2</p> <p>The following plans have been provided to with respect to the revised compensation plans:</p> <p>Drawing 220029/FV100_P9 FLOOD VOLUMES SECTION LAYOUT PLAN.</p> <p>Drawing 220029/FV101_P11 FLOOD VOLUMES SECTIONS</p> <p>Drawing 220029/FV102_P11 FLOOD VOLUMES SECTIONS.</p> <p>Drawing 220029/FV103_P11 FLOOD VOLUMES SECTIONS.</p> <p>Drawing 220029/FV109_P2, FLOOD WATER MOVEMENT AT 69.190</p> <p>Drawing 220029/FV110_P2, FLOOD WATER MOVEMENT AT 69.290</p> <p>Drawing 220029/FV111_P2, FLOOD WATER MOVEMENT AT 69.390</p> <p>Drawing 220029/FV112_P2, FLOOD WATER MOVEMENT AT 69.490</p> <p>Drawing 220029/FV113_P2, FLOOD WATER MOVEMENT AT 69.590</p> <p>Drawing 220029/FV114_P2, FLOOD WATER MOVEMENT AT 69.690</p>

Environment Agency Comment	RSK Response
	<p>Drawing 220029/FV115_P2, FLOOD WATER MOVEMENT AT 69.794</p> <p>Drawing 220029_MX101_P1, SITE PLAN AND SECTION OF LANDSCAPE AREA</p>
<p>Further, the tank openings appear to be set at the wrong level for the flood band they are intended to be mitigating for. The applicant should explain why the tank openings are not provided at the bottom or middle of the relevant flood level band. These levels will also need to be revised in line with agreed flood levels for the site.</p>	<p>The inlets to the flood compensation tanks have been revised for the 2no flood level bands addressed by the tanks. The inlet levels are shown on drawing 220029/FV100_P9</p>

The flood compensation proposals have progressed on the basis that there should be no further objections on the application.

Whilst the fluvial model provided as part of the FRA was approved by the EA and deemed fit for purpose by the EA on the 27th March 2020 and correspondence to confirm the same is attached in the FRA - Appendix F, however upon further review, the EA determined there were missed points in the modelling response.

As such the EA undertook a re-run of the model and provided revised flood levels which have been utilised for the application.

These proposals include the updated flood compensation details based on the rerun modelled flood levels provided by the EA. Based on the above and the enclosed revised FRA, it can be clearly seen that, when using the Environment Agency's latest climate change allowances (6% allowance) and a flood level of 69.794mAOD, the level of flood compensation required to be provided is reduced to 27.988m³ to below that previously agreed with the Environment Agency during extensive pre-app discussions. Notwithstanding this fact, the flood compensation to be offered by the scheme will include a tank with a capacity of 30m³ (this is in excess of that required), thereby offering a betterment of 2.012m³ (7.2%) in offsite flood risk on 1:100 plus 6% climate change. There is also a considerable flood storage betterment in lower return periods. This should therefore be supported by the Environment Agency as seen as an opportunity to offer wider flood risk benefits.

We have provided plans showing that the scheme is hydraulically connected at all levels appended to this response.

The proposed scheme provides POSITIVE flood storage at all 100mm incremental levels up to a flood level of 69.59mAOD.

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Only at 100 year plus climate change events is there volume displacement of 27.988m³ at which point this is accommodated for within the scheme provided attenuation of 30m³ – providing 2m³ additional capacity, being a further benefit.

All matters pertaining to the development have been cleared and planning approved by resolution, subject to final clearance of the FRA, whereby the scheme shows POSITIVE flood benefits at all levels.

On the basis of the above, I ask you to review the above which (in consultation with the EA) should address all the concerns raised by the EA in their most recent written response.

We trust this information is sufficient for your immediate needs, however please do not hesitate to contact the undersigned if you require any further information.

Yours sincerely

RSK LDE LIMITED



Kris Jackson

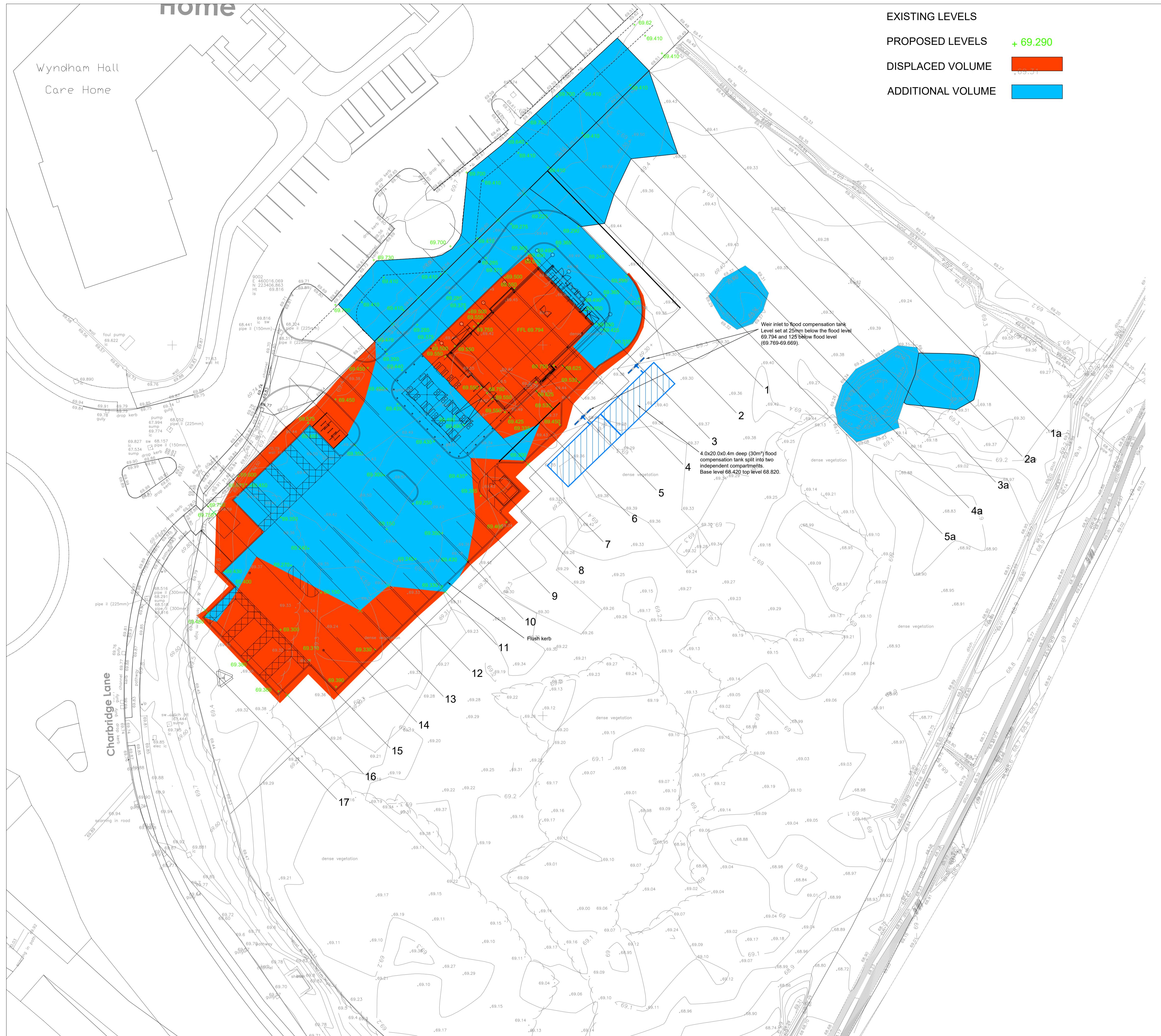
Principal Hydrologist BA (Hons) MCd MCIWEM

Enclosed:

- Drawing 220029/FV100_P9 FLOOD VOLUMES SECTION LAYOUT PLAN.
- Drawing 220029/FV101_P11 FLOOD VOLUMES SECTIONS
- Drawing 220029/FV102_P11 FLOOD VOLUMES SECTIONS.
- Drawing 220029/FV103_P11 FLOOD VOLUMES SECTIONS.
- Drawing 220029/FV109_P2, FLOOD WATER MOVEMENT AT 69.190
- Drawing 220029/FV110_P2, FLOOD WATER MOVEMENT AT 69.290
- Drawing 220029/FV111_P2, FLOOD WATER MOVEMENT AT 69.390
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- Drawing 220029/FV113_P2, FLOOD WATER MOVEMENT AT 69.590
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- Drawing 220029/FV115_P2, FLOOD WATER MOVEMENT AT 69.794
- Drawing 220029_MX101_P1, SITE PLAN AND SECTION OF LANDSCAPE AREA

HOME

Wyndham Hall
Care Home



CDM REGULATION: NO DRAWING OR OTHER DESIGN INFORMATION SHOULD BE READ WITHOUT REFERENCE TO THE HEALTH AND SAFETY PLAN.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST SUB-CONTRACTORS' DRAWINGS AND SPECIFICATIONS AND EMPLOYER'S SPECIFICATION. ANY DISCREPANCIES BETWEEN THESE DRAWINGS ARE TO BE REPORTED IMMEDIATELY.

SITE IS TO VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
THIS DRAWING IS NOT TO BE SCALED IN HARD FORMAT AND/OR ELECTRONIC FORMAT.

Volume Difference between Proposed and Existing by level Sections 1-17

Levels			
Top (m)	Bottom (m)	Height (m)	Volume Difference (m³)
69.794	69.690	0.104	+19.157
69.690	69.590	0.1	+12.785
69.590	69.490	0.1	+7.117
69.490	69.390	0.1	-49.220
69.390	69.290	0.1	-37.617
69.290	69.190	0.1	-15.457
69.190	69.090	0.1	-0.307

Positive figures indicate a reduction in flood volume.

Negative figures indicate an increase in flood volume.

Volume Difference between Proposed and Existing by level Sections 1a-5a

Levels			
Top (m)	Bottom (m)	Height (m)	Volume Difference (m³)
69.794	69.690	0.104	-0.093
69.690	69.590	0.1	-3.860
69.590	69.490	0.1	-14.150
69.490	69.390	0.1	-25.853
69.390	69.290	0.1	-10.580
69.290	69.190	0.1	-1.020
69.190	69.090	0.1	-0.000

Positive figures indicate a reduction in flood volume.

Negative figures indicate an increase in flood volume.

Total displaced/increase of flood plain volume.

Levels			
Top (m)	Bottom (m)	Height (m)	Total Difference (m³)
69.794	69.690	0.104	+19.063
69.690	69.590	0.1	+8.925
69.590	69.490	0.1	-7.033
69.490	69.390	0.1	0.000
69.390	69.290	0.1	-75.073
69.290	69.190	0.1	-48.197
69.190	69.090	0.1	-16.477
69.190	69.090	0.1	0.000

Positive figures indicate a reduction in flood volume.

Negative figures indicate an increase in flood volume.

The reduction in volume shown above is compensated for with the inclusion of 30m³ of underground storage.

P9	28/03/23	SECTIONS 1B - 13B REMOVED	GHB	TS
P8	16/02/23	FLOOD LEVEL AMENDED TO 69.794	GHB	TS
P7	06/10/22	DISPLACED/INCREASE TABLE AMENDED	GHB	TS
P6	04/10/22	FLOOD LEVEL AMENDED FLOOD LOSS/INCREASE TABLE AMENDED	GHB	TS
P5	05/05/22	FLOOD LEVEL AMENDED AND FLOOD VOLUMES RECALCULATED	GHB	TS
P4	23/12/21	FLOOD LOSS/INCREASE TABLE AMENDED	GHB	TS
P3	21/12/21	FLOOD LOSS/INCREASE TABLE ADDED	GHB	TS
P2	20/12/21	PROPOSED LEVELS COLOUR CHANGED LEGEND ADDED	GHB	TS
P1	07/10/21	PRELIMINARY ISSUE	GHB	TS

Rev Date Description Drn Chkd

Revisions

Drawing Originator

PAUL OWEN ASSOCIATES CONSULTING ENGINEERS - TECHNICAL ADVISERS
Studio D128, 62 Triton Road, West Dulwich, London SE21 8DE
t: 020 3176 7726 www.paulowen.co.uk

Drawing Status

PRELIMINARY

Project Name

BICESTER

Drawn by GHB Drawn Date 07/10/21 Checked by TS Scale 1/250

Title Original drawing sheet is A1

FLOOD VOLUMES SECTION LAYOUT PLAN

Drawing Number 220029/FV100 Revision P9

Volume Difference between Proposed and Existing by level Sections 1-17

Levels		
Top (m)	Bottom (m)	Height (m)
69.794	69.690	0.104
69.690	69.590	0.1
69.590	69.490	0.1
69.490	69.390	0.1
69.390	69.290	0.1
69.290	69.190	0.1
69.190	69.090	0.1

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

Volume Difference between Proposed and Existing by level Sections 1a-5a

Levels		
Top (m)	Bottom (m)	Height (m)
69.794	69.690	0.104
69.690	69.590	0.1
69.590	69.490	0.1
69.490	69.390	0.1
69.390	69.290	0.1
69.290	69.190	0.1
69.190	69.090	0.1

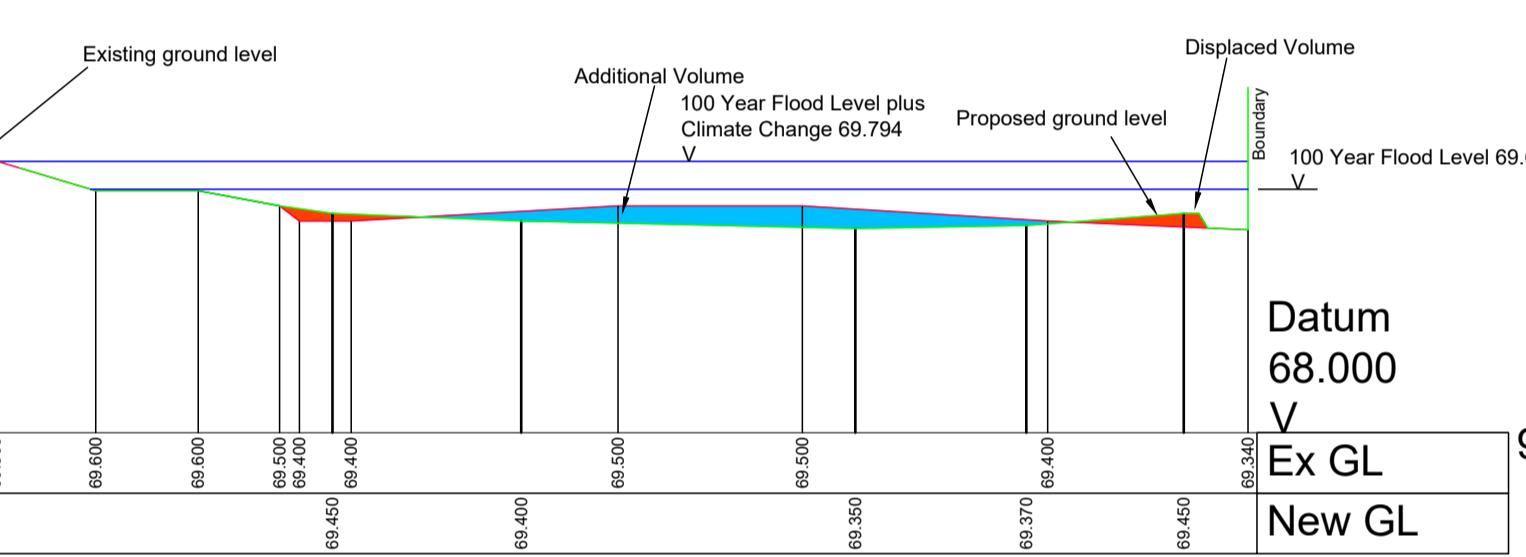
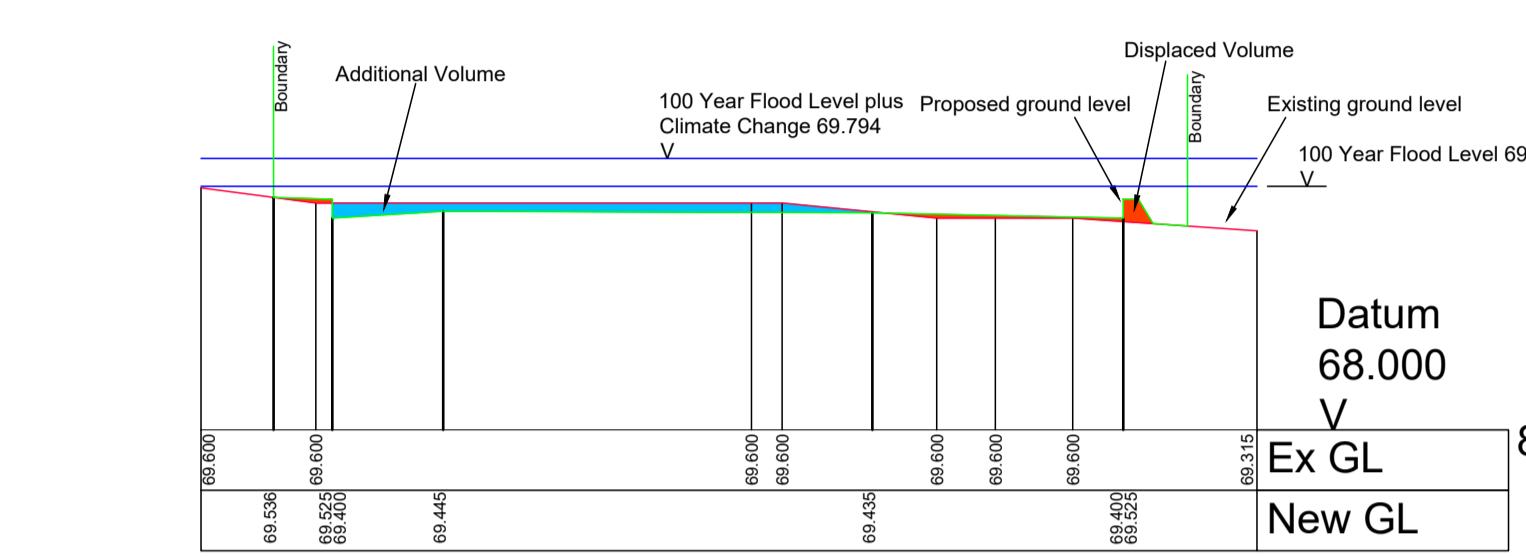
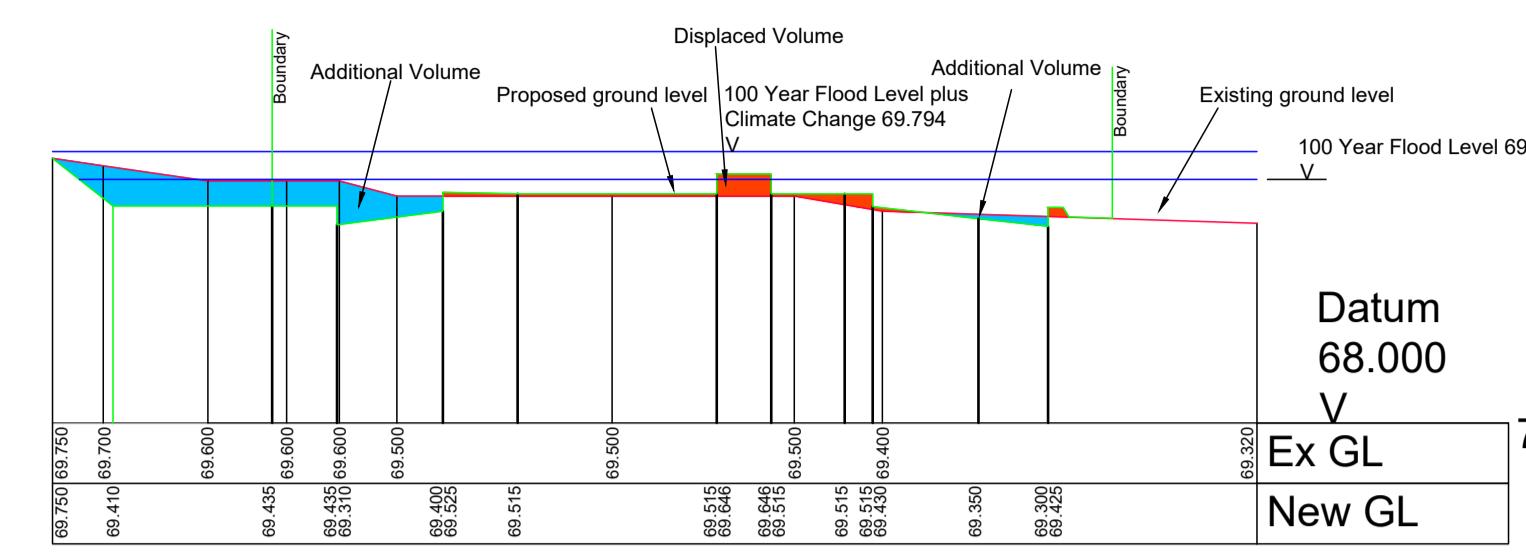
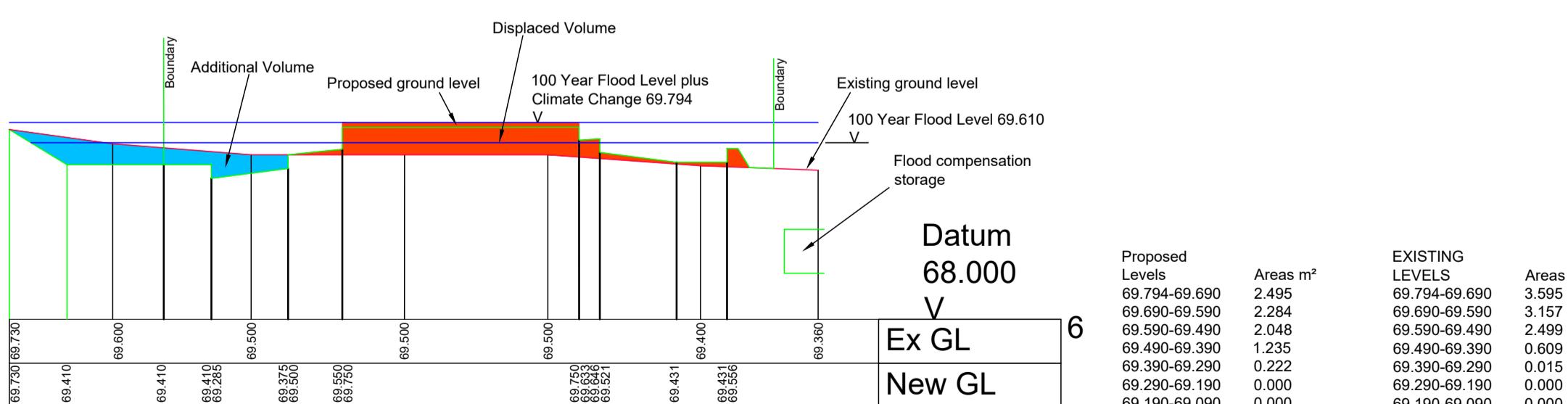
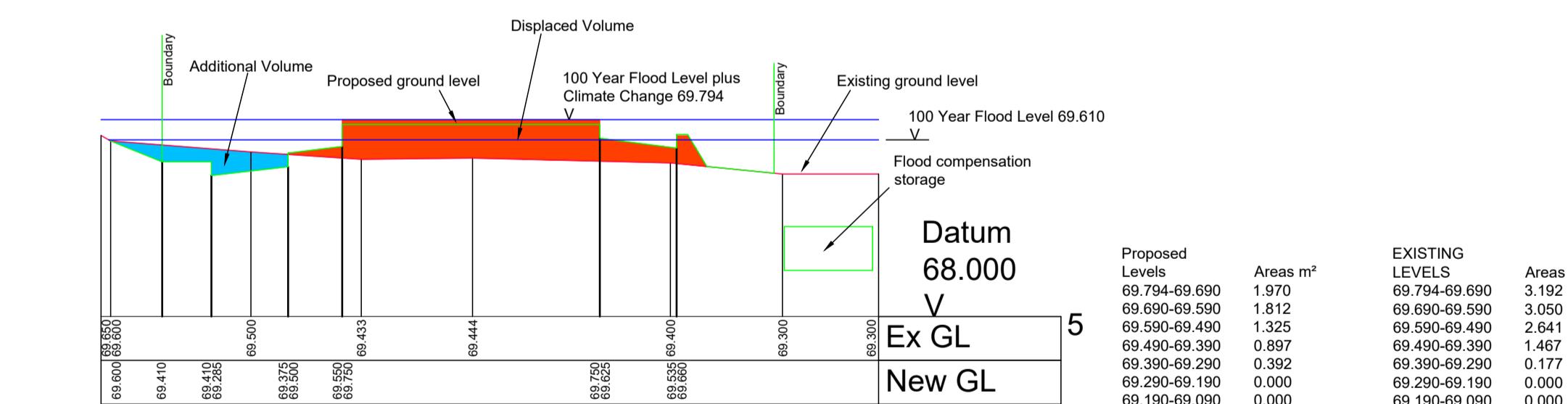
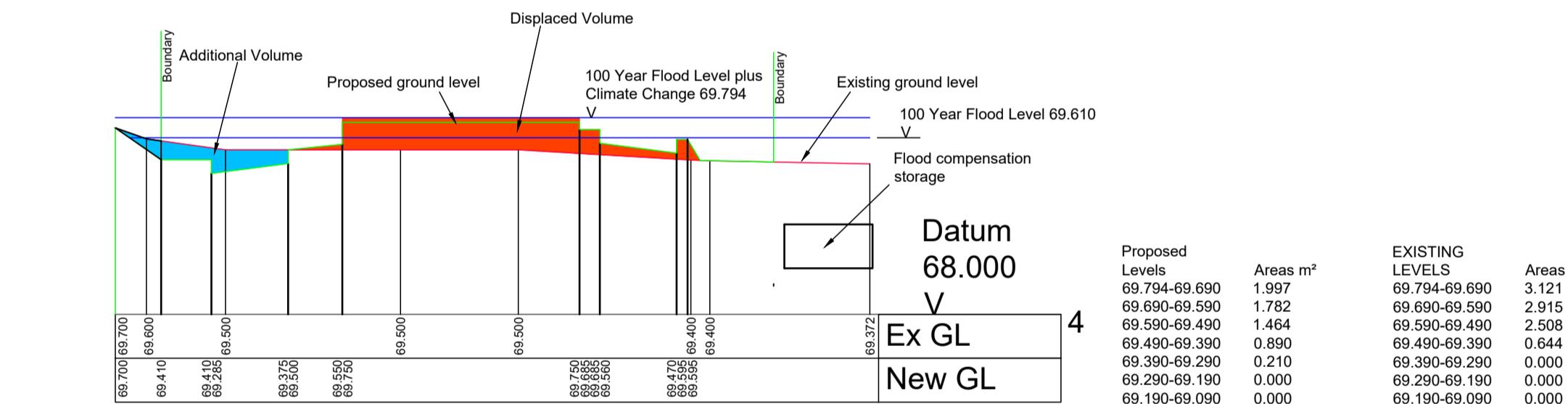
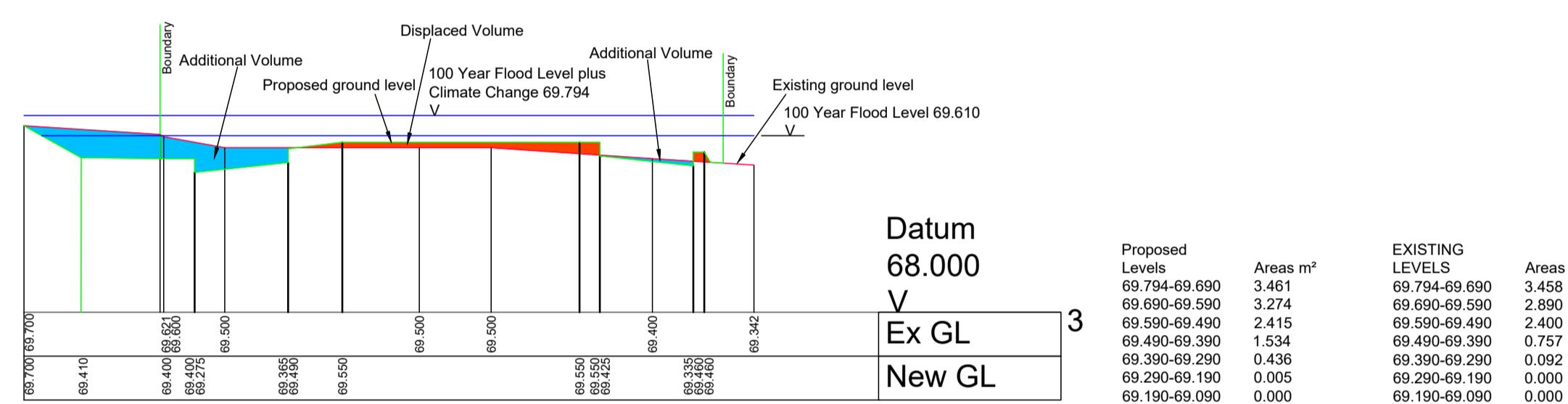
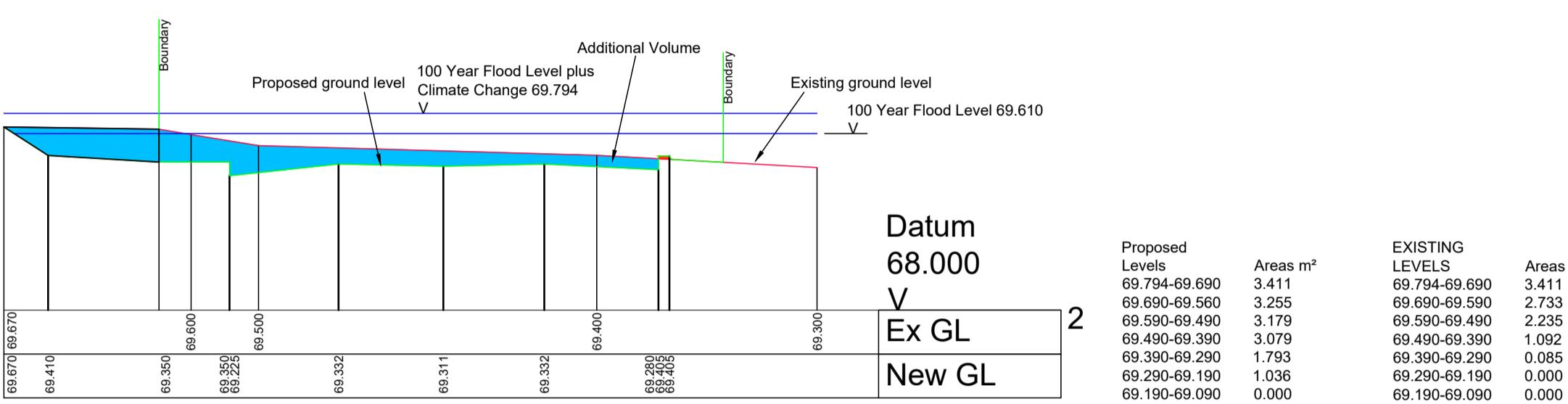
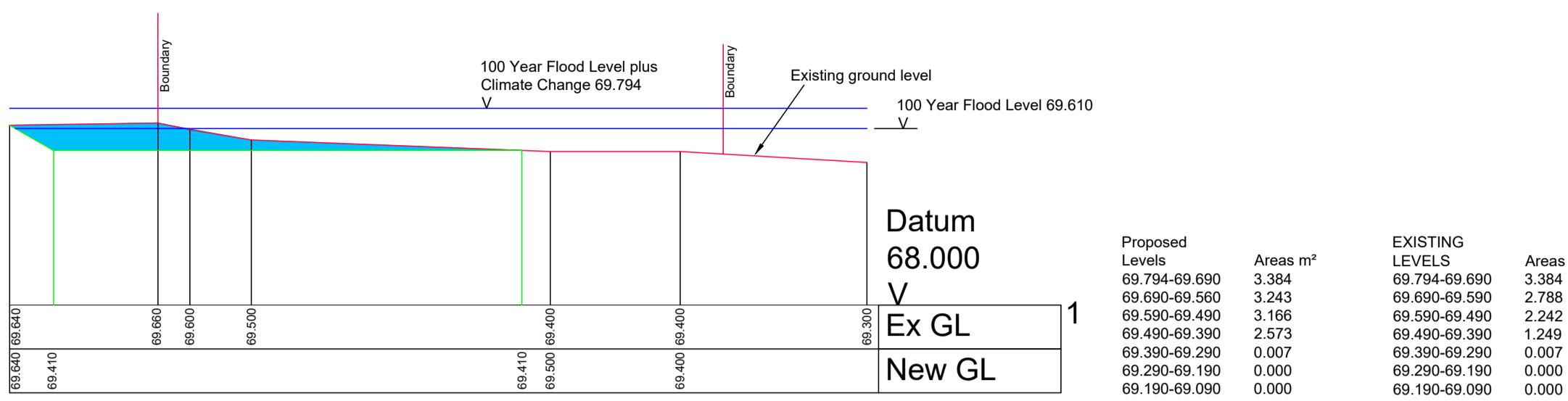
Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

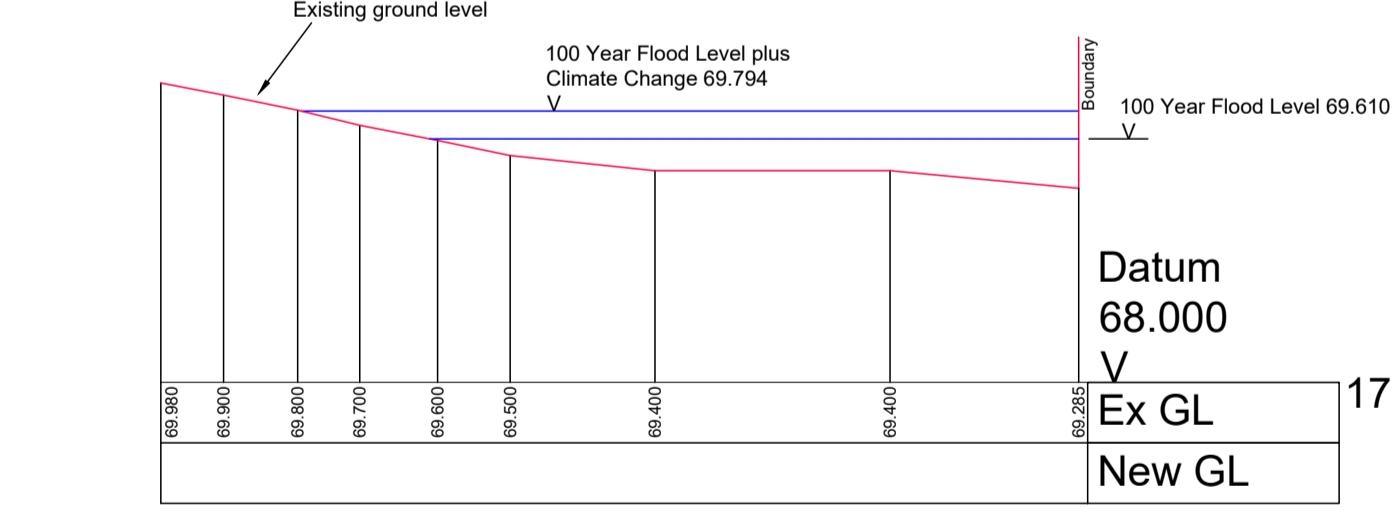
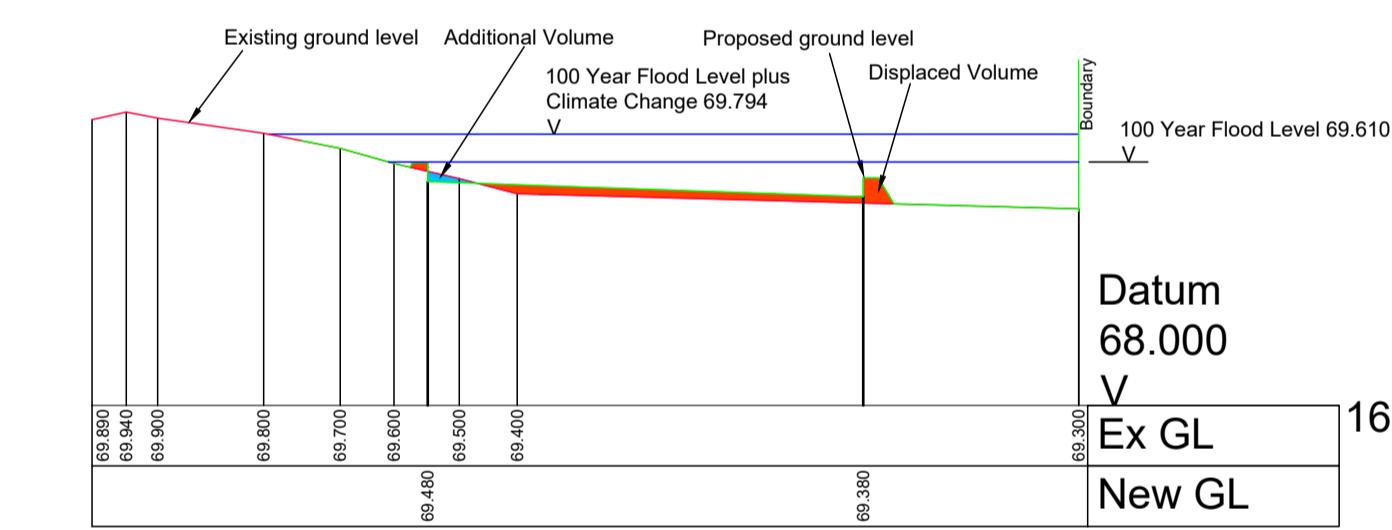
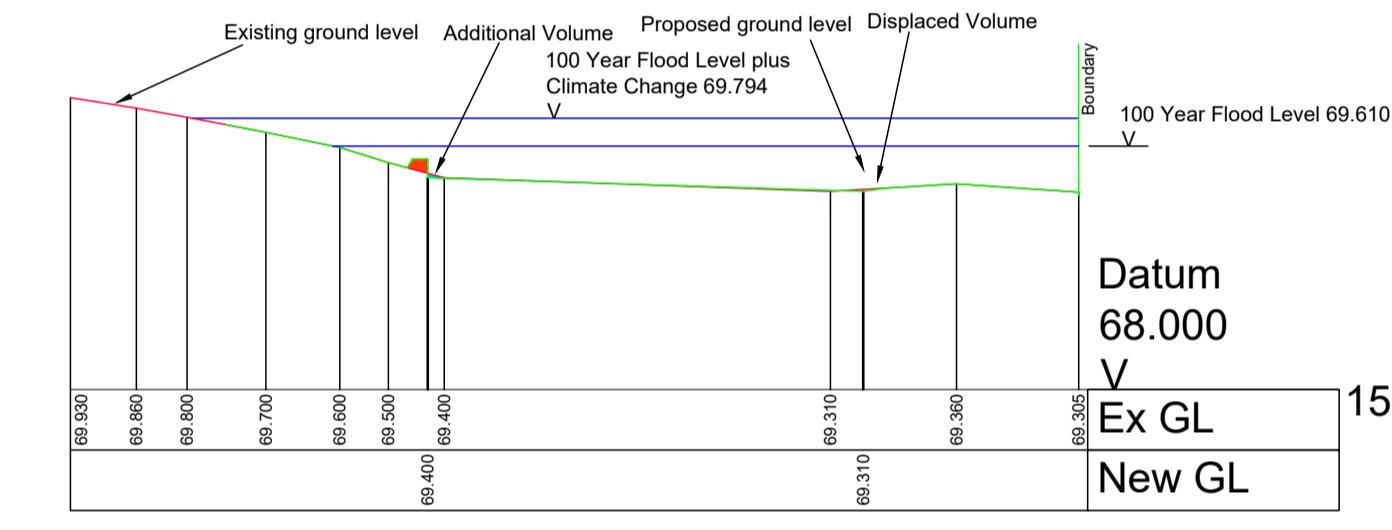
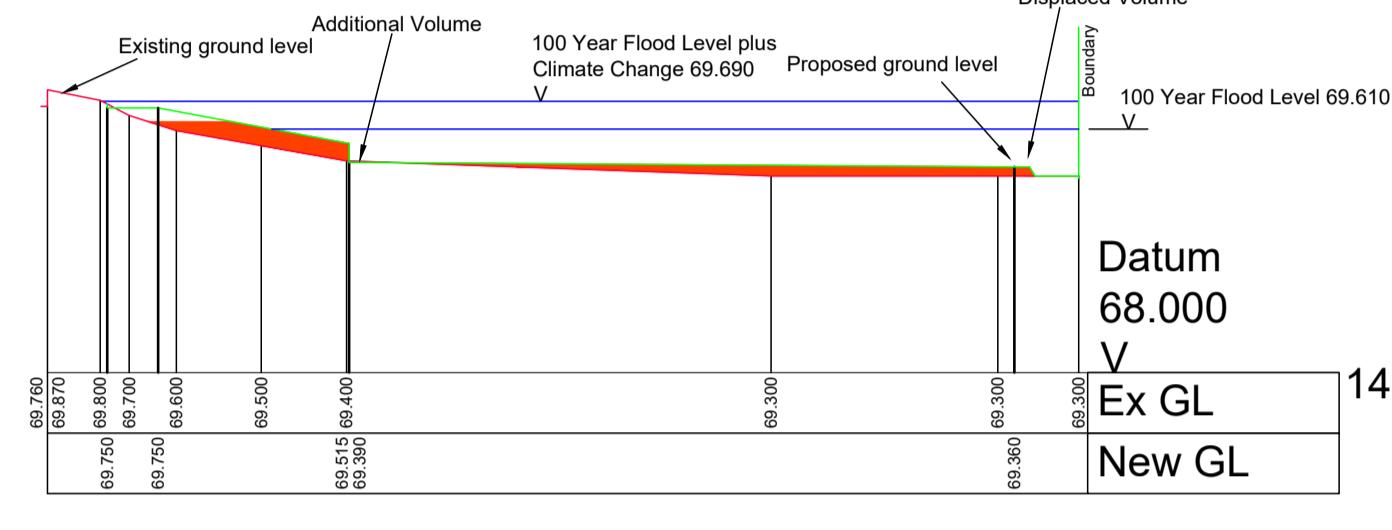
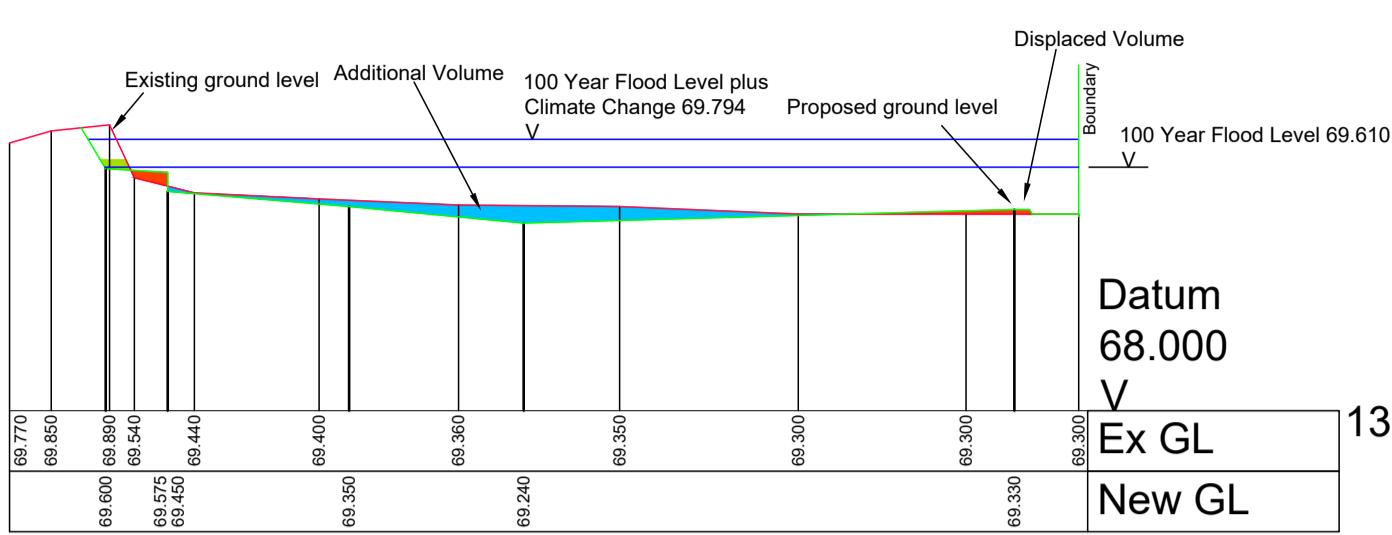
Total displaced/increase of flood plain volume.

Levels		
Top (m)	Bottom (m)	Height (m)
69.794	69.690	0.104
69.690	69.590	0.1
69.590	69.490	0.1
69.490	69.390	0.1
69.390	69.290	0.1
69.290	69.190	0.1
69.190	69.090	0.1

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

The reduction in volume shown above is compensated for with the inclusion of 30m³ of underground storage.





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Volume Difference between Proposed and Existing by level Sections 1-17

Levels			
Top (m)	Bottom (m)	Height (m)	Volume Difference (m ³)
69.794	69.690	0.104	+19.157
69.690	69.590	0.1	+12.785
69.590	69.490	0.1	+7.117
69.490	69.390	0.1	-49.220
69.390	69.290	0.1	-37.617
69.290	69.190	0.1	-15.457
69.190	69.090	0.1	-0.307

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

Volume Difference between Proposed and Existing by level Sections 1a-5a

Levels			
Top (m)	Bottom (m)	Height (m)	Volume Difference (m ³)
69.794	69.690	0.104	-0.093
69.690	69.590	0.1	-3.860
69.590	69.490	0.1	-14.150
69.490	69.390	0.1	-25.853
69.390	69.290	0.1	-10.580
69.290	69.190	0.1	-1.020
69.190	69.090	0.1	0.000

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

Total displaced/increase of flood plain volume.

Levels				
Top (m)	Bottom (m)	Height (m)	Total Difference (m ³)	Tank Volume
69.794	69.690	0.104	+19.063	-20.000
69.690	69.590	0.1	+8.925	-10.000
69.590	69.490	0.1	-7.033	0.000
69.490	69.390	0.1	-75.073	0.000
69.390	69.290	0.1	-48.197	0.000
69.290	69.190	0.1	-16.477	0.000
69.190	69.090	0.1	-0.307	0.000

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

The reduction in volume shown above is compensated for with the inclusion of 30m³ of underground storage.

P11	28/03/23	SECTIONS 1B - 13B REMOVED	GHB	TS
P10	16/02/23	FLOOD LEVEL AMENDED TO 69.794	GHB	TS
P9	08/10/22	DISPLACED/INCREASE TABLE AMENDED	GHB	TS
P8	04/10/22	FLOOD LEVEL AMENDED FLOOD LOSS/INCREASE TABLE AMENDED	GHB	TS
P7	05/05/22	FLOOD LEVEL AMENDED AND FLOOD VOLUMES RECALCULATED	GHB	TS
P6	23/12/21	FLOOD LOSS/INCREASE TABLE AMENDED	GHB	TS
P5	21/12/21	FLOOD LOSS/INCREASE TABLE ADDED	GHB	TS
P4	20/12/21	FLOOD LEVELS AMENDED	GHB	TS
P3	12/10/21	HATCHING AND NOTES ADDED	GHB	TS
P2	12/10/21	COLOUR OF SECTION AMMENDED	GHB	TS
P1	07/10/21	PRELIMINARY ISSUE	GHB	TS

Revisions
Drawing Originator

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Project Name
BICESTER

Drawn by GHB Drawn Date 07/10/21 Checked by TS Scale H 1/250
Title FLOOD VOLUMES SECTIONS 2 OF 4

Drawing Number 220029/FV102 Revision P11

Volume Difference between Proposed and Existing by level Sections 1-17

Levels			
Top (m)	Bottom (m)	Height (m)	Volume Difference (m³)
69.794	69.690	0.104	+19.157
69.690	69.590	0.1	+12.785
69.590	69.490	0.1	+7.117
69.490	69.390	0.1	-49.220
69.390	69.290	0.1	-37.617
69.290	69.190	0.1	-15.457
69.190	69.090	0.1	-0.307

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

Volume Difference between Proposed and Existing by level Sections 1a-5a

Levels			
Top (m)	Bottom (m)	Height (m)	Volume Difference (m³)
69.794	69.690	0.104	-0.093
69.690	69.590	0.1	-3.860
69.590	69.490	0.1	-14.150
69.490	69.390	0.1	-25.853
69.390	69.290	0.1	-10.580
69.290	69.190	0.1	-1.020
69.190	69.090	0.1	-0.000

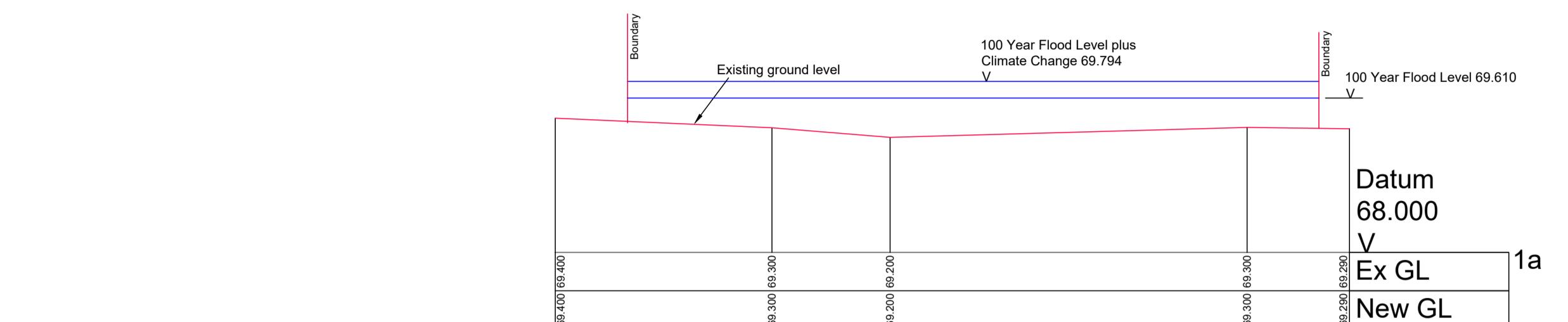
Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

Total displaced/increase of flood plain volume.

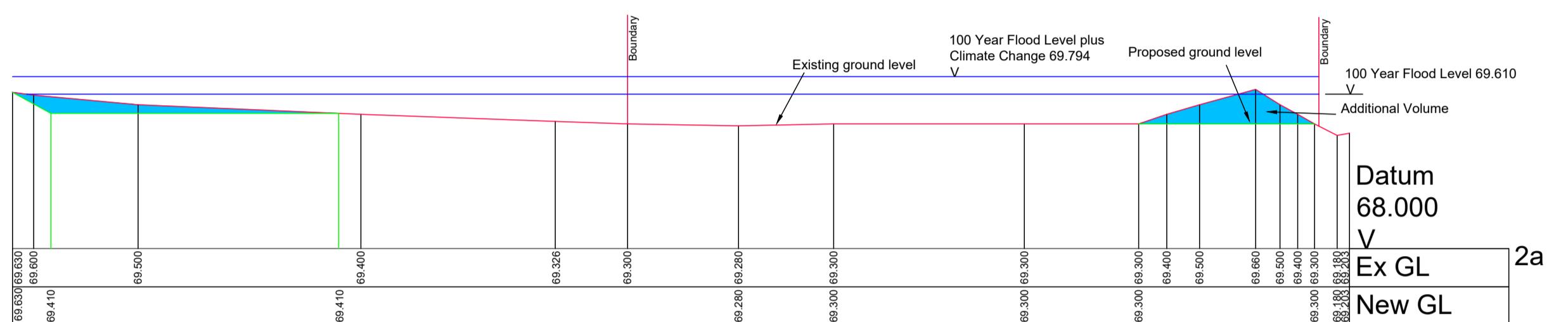
Levels			
Top (m)	Bottom (m)	Height (m)	Total Difference (m³)
69.794	69.690	0.104	+19.063
69.690	69.590	0.1	+8.925
69.590	69.490	0.1	-7.033
69.490	69.390	0.1	-75.073
69.390	69.290	0.1	-48.197
69.290	69.190	0.1	-16.477
69.190	69.090	0.1	-0.307

Positive figures indicate a reduction in flood volume.
Negative indicate an increase in flood volume.

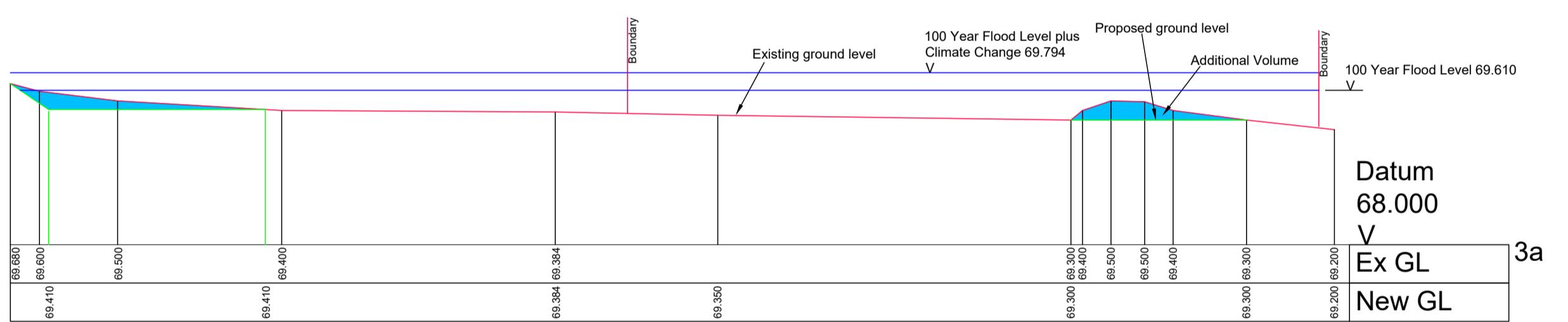
The reduction in volume shown above is compensated for with the inclusion of 30m³ of underground storage.



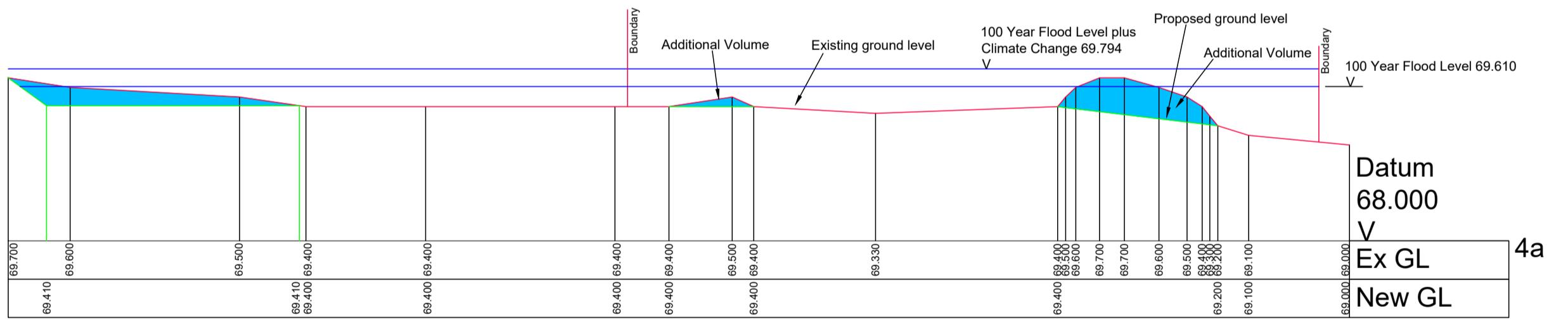
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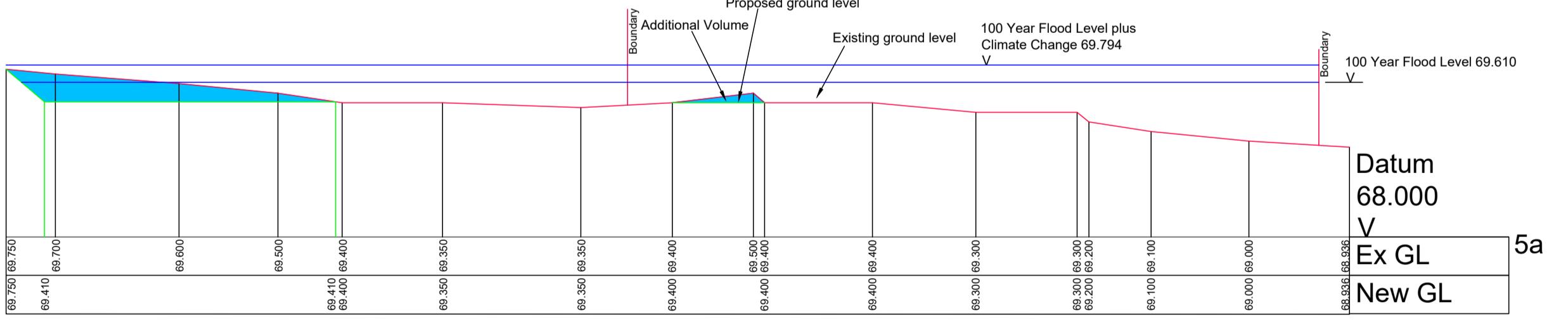
2a



3a



4a



5a

P11	28/03/23	SECTIONS 1B - 13B REMOVED	GHB	TS
P10	16/02/23	FLOOD LEVEL AMENDED TO 69.794	GHB	TS
P9	06/10/22	DISPLACED/INCREASE TABLE AMENDED	GHB	TS
P8	04/10/22	FLOOD LEVEL AMENDED FLOOD LOSS/INCREASE TABLE AMENDED	GHB	TS
P7	05/05/22	FLOOD LEVEL AMENDED AND FLOOD VOLUMES RECALCULATED	GHB	TS
P6	23/12/21	FLOOD LOSS/INCREASE TABLE AMENDED	GHB	TS
P5	21/12/21	FLOOD LOSS/INCREASE TABLE ADDED	GHB	TS
P4	20/12/21	FLOOD LEVELS AMENDED	GHB	TS
P3	12/10/21	HATCHING AND NOTES ADDED	GHB	TS
P2	12/10/21	COLOUR OF SECTION AMENDED	GHB	TS
P1	07/10/21	PRELIMINARY ISSUE	GHB	TS

Rev Date Description Drn Chkd

Revisions

Drawing Originator

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Drawing Status

Project Name

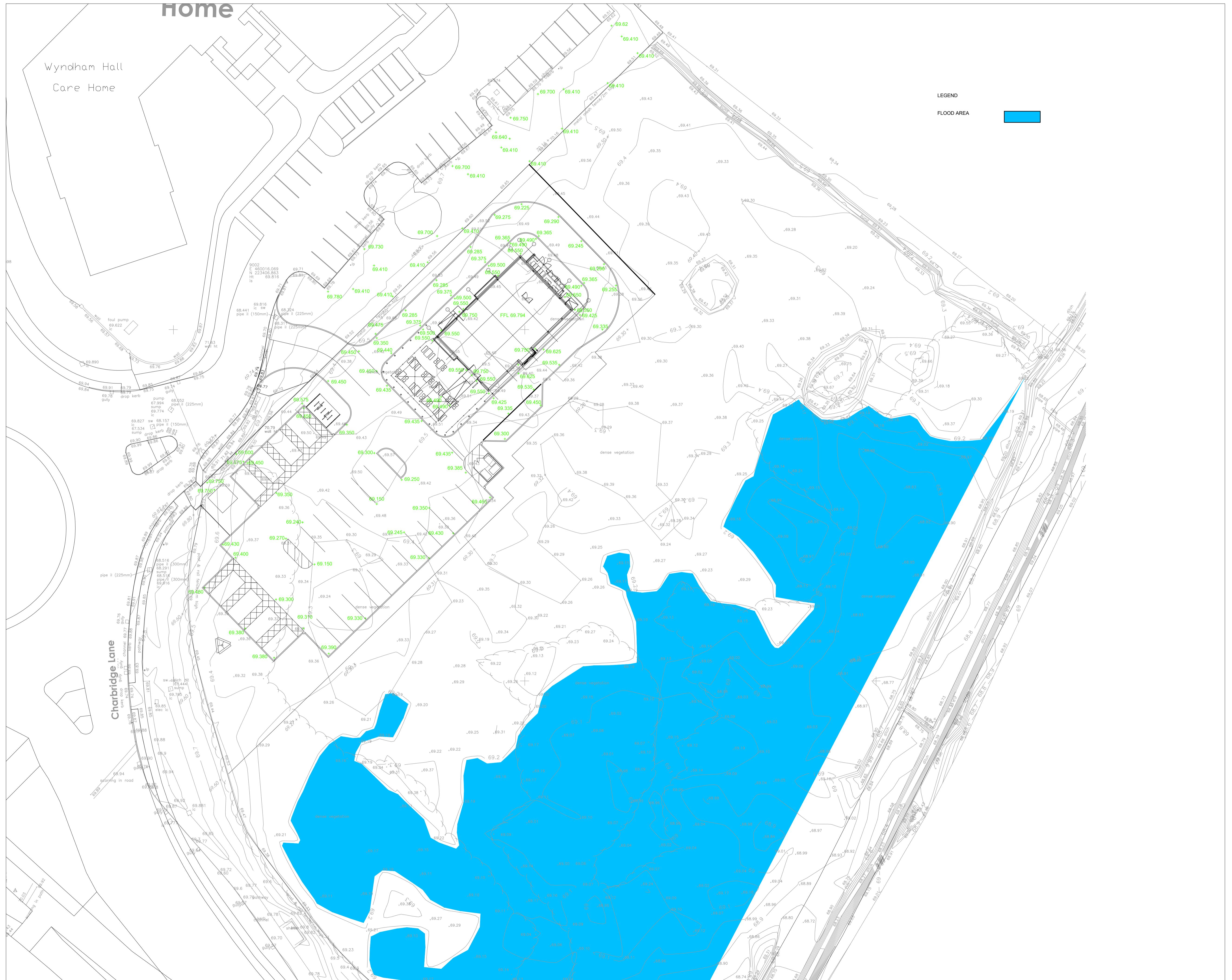
BICESTER

Drawn by GHB Drawn Date 07/10/21 Checked by TS Scale H 1/250 V 1/50

Title Original drawing sheet is A1

FLOOD VOLUMES SECTIONS 3 OF 4

Drawing Number 220029/FV103 Revision P11



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P2	21/02/23	PRELIMINARY ISSUE	GHB	TS
P1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Rev	Date	Description	Drn	Chk'd

Revisions

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Studio D128, 62 Triton Road, West Dulwich,
London SE21 8DE

ASSOCIATES

WORK IN PROGRESS

Artist Names

Drawn by GHB	Drawn Date 16/02/23	Checked by TS	Scale 1/250
Original drawing sheet is A1			Code

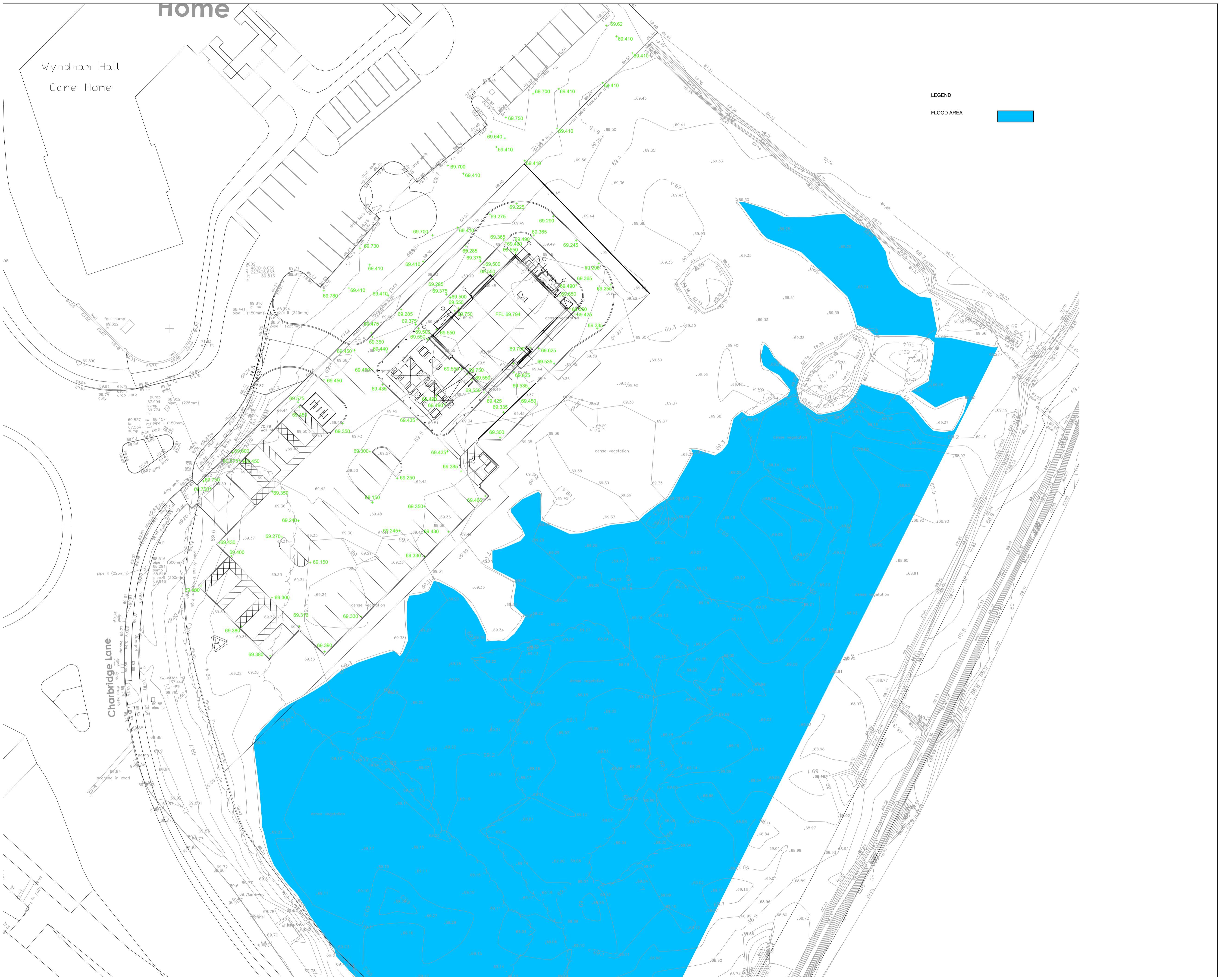
LOAD WATER MOVMENT AT 69.190

Drawing Number

Revision
B2

HOME

Wyndham Hall
Care Home



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P2	21/02/23	PRELIMINARY ISSUE	GHB	TS
P1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Rev	Date	Description	Drn	Chkd

Revisions

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Drawing Status

Project Name

BICESTER

Drawn by	GHB	Drawn Date	16/02/23	Checked by	TS	Scale	1/250
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Title

Original drawing sheet is A1

FLOOD WATER MOVEMENT AT 69.290

Drawing Number

220029/FV110

Revision

P2

Home

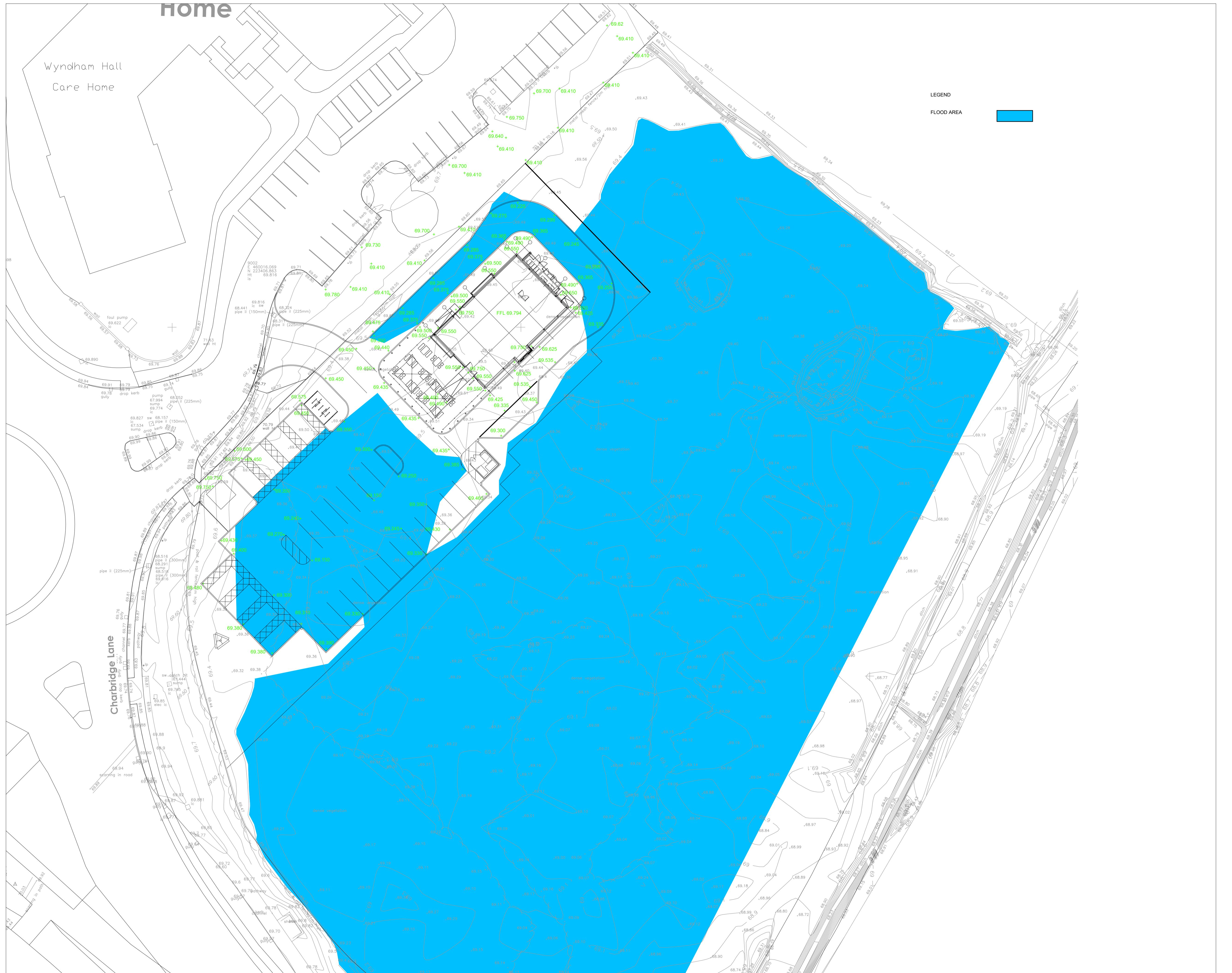
Wyndham Hall
Care Home

LEGEND
FLOOD AREA

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P2	21/02/23	PRELIMINARY ISSUE	GHB	TS
P1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Rev	Date	Description	Drn	Chkd

Revisions

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Drawing Status

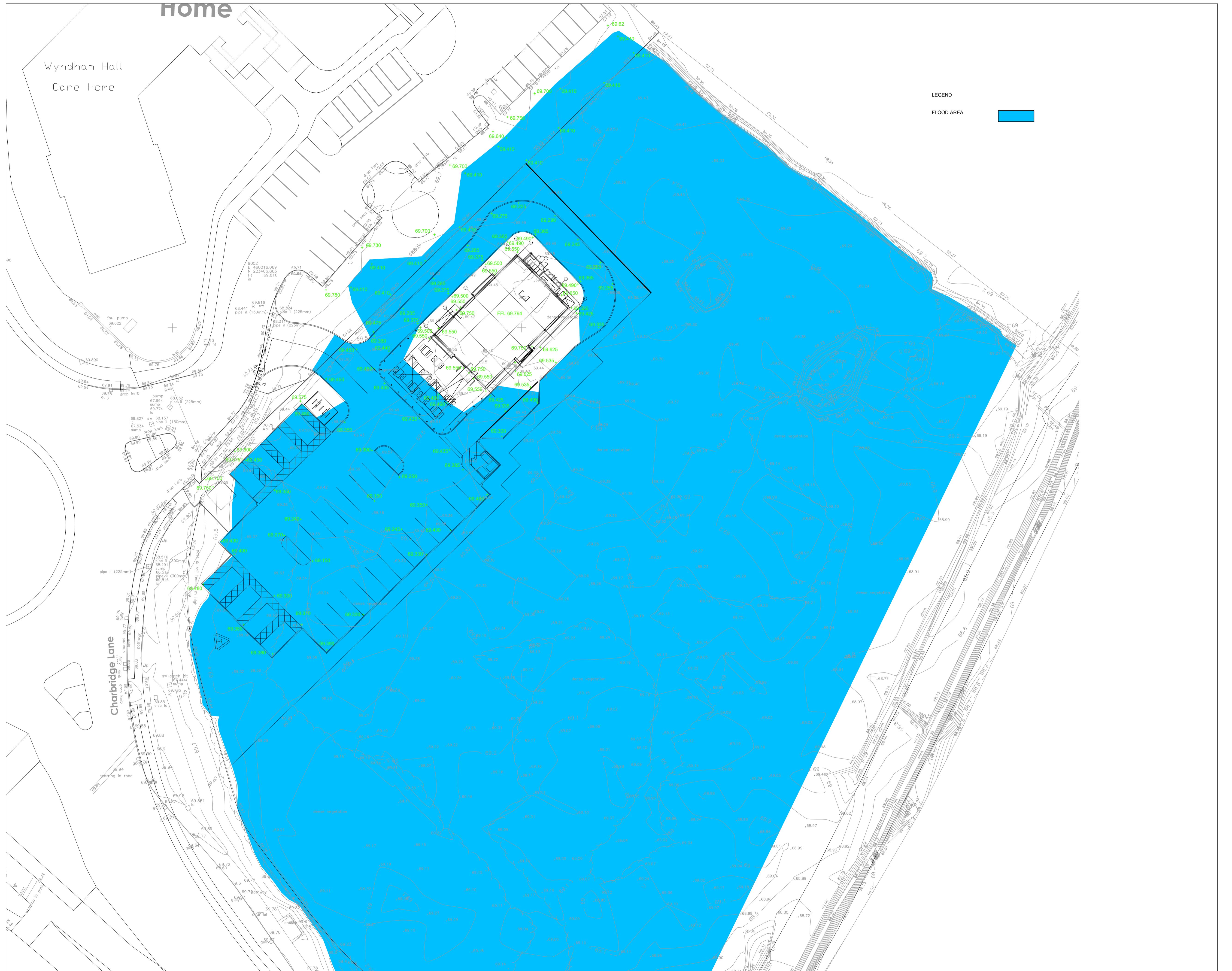
Project Name

BICESTER

Drawn by	GHB	Drawn Date	16/02/23	Checked by	TS	Scale	1/250
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Title
Original drawing sheet is A1
FLOOD WATER MOVEMENT AT 69.390

Drawing Number
220029/FV111
Revision
P2



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Rev	Date	Description	Drn	Chkd'
2	21/02/23	PRELIMINARY ISSUE	GHB	TS
1	16/02/23	PRELIMINARY ISSUE	GHB	TS

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Brewing Status

WORK IN PROGRESS

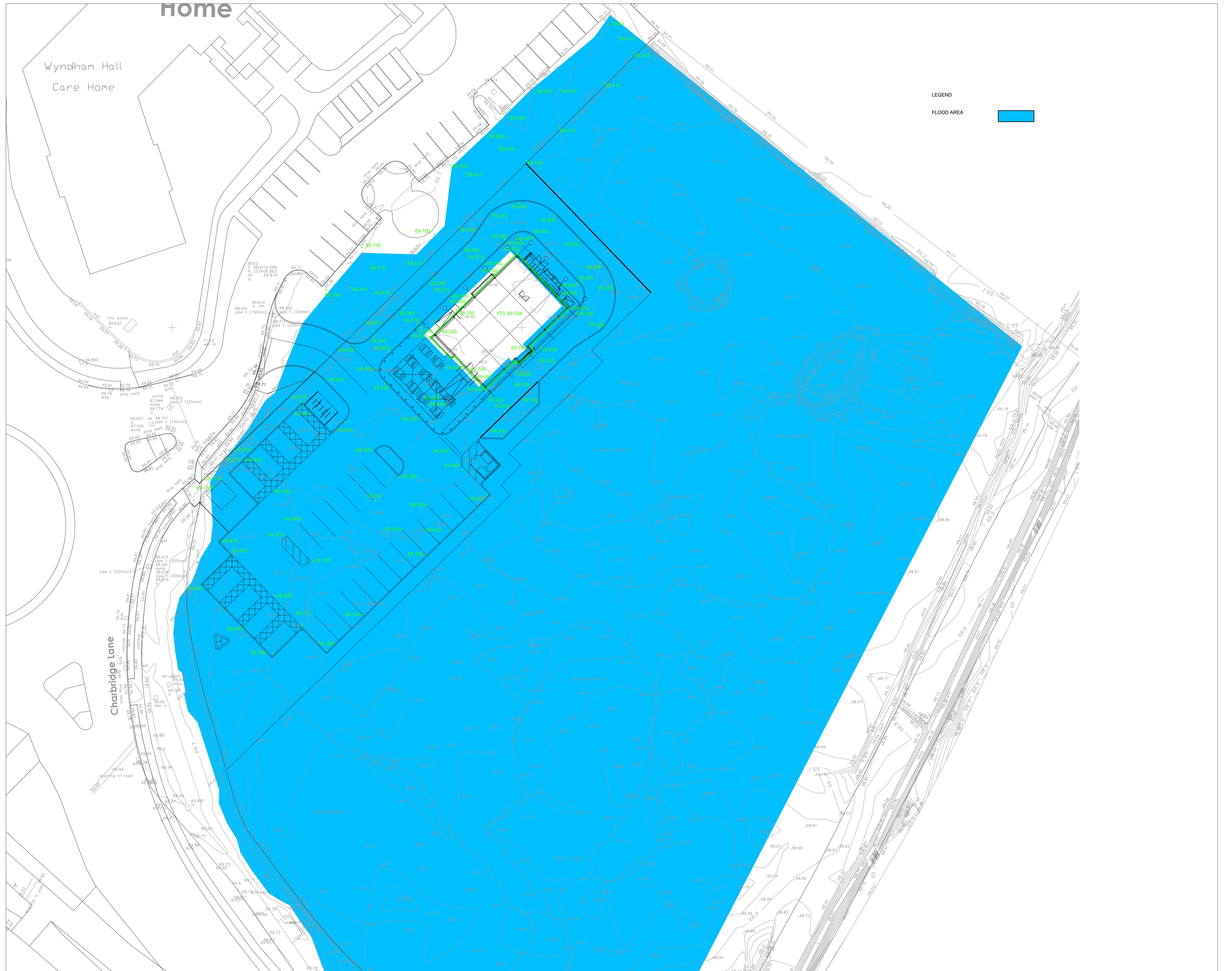
Project Name

Drawn by GHB	Drawn Date 16/02/23	Checked by TS	Scale 1/250
Original drawing sheet is A1			Sheet No. _____

LOOD WATER MOVMENT AT 69.490

Drawing Number 000000 / EV14.6

Revision



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2	21/02/23	PRELIMINARY ISSUE	GHB	TS
1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Drn	Date	Description	Drn	Chk'd

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London SE21 8DE

Reviewing Status

WORK IN PROG

Project Name

Drawn by GHB	Drawn Date 16/02/23	Checked by TS	Scale 1/250
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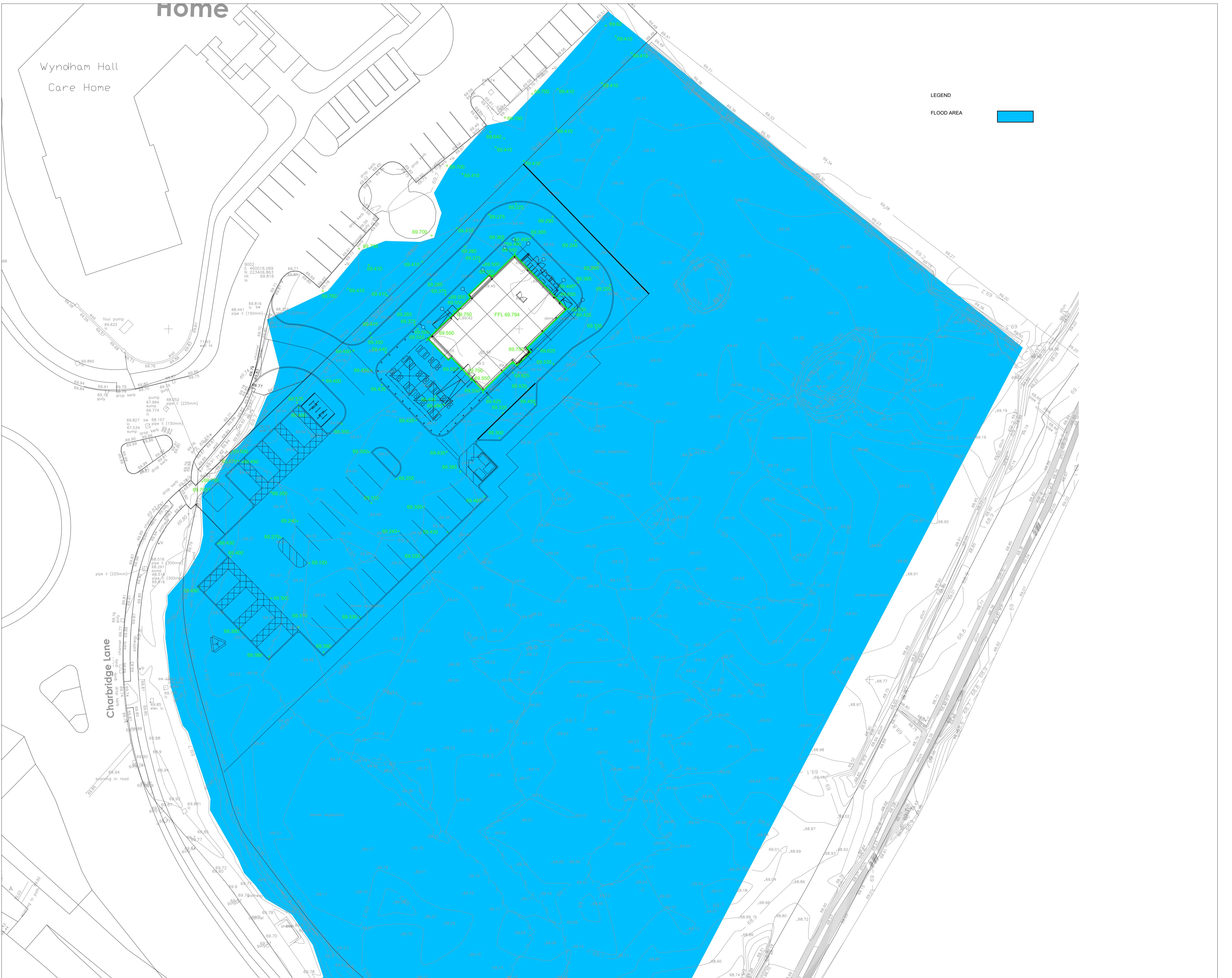
OOD WATER MOVMENT AT 69 590

Drawing Number

Revision

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P2	21/02/23	PRELIMINARY ISSUE	GHB	TS
P1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Rev	Date	Description	Drn	Chkd

Revisions

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Drawing Status

Project Name

BICESTER

Drawn by	GHB	Drawn Date	16/02/23	Checked by	TS	Scale	1/250
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Title

Original drawing sheet is A1

FLOOD WATER MOVEMENT AT 69.690

Drawing Number

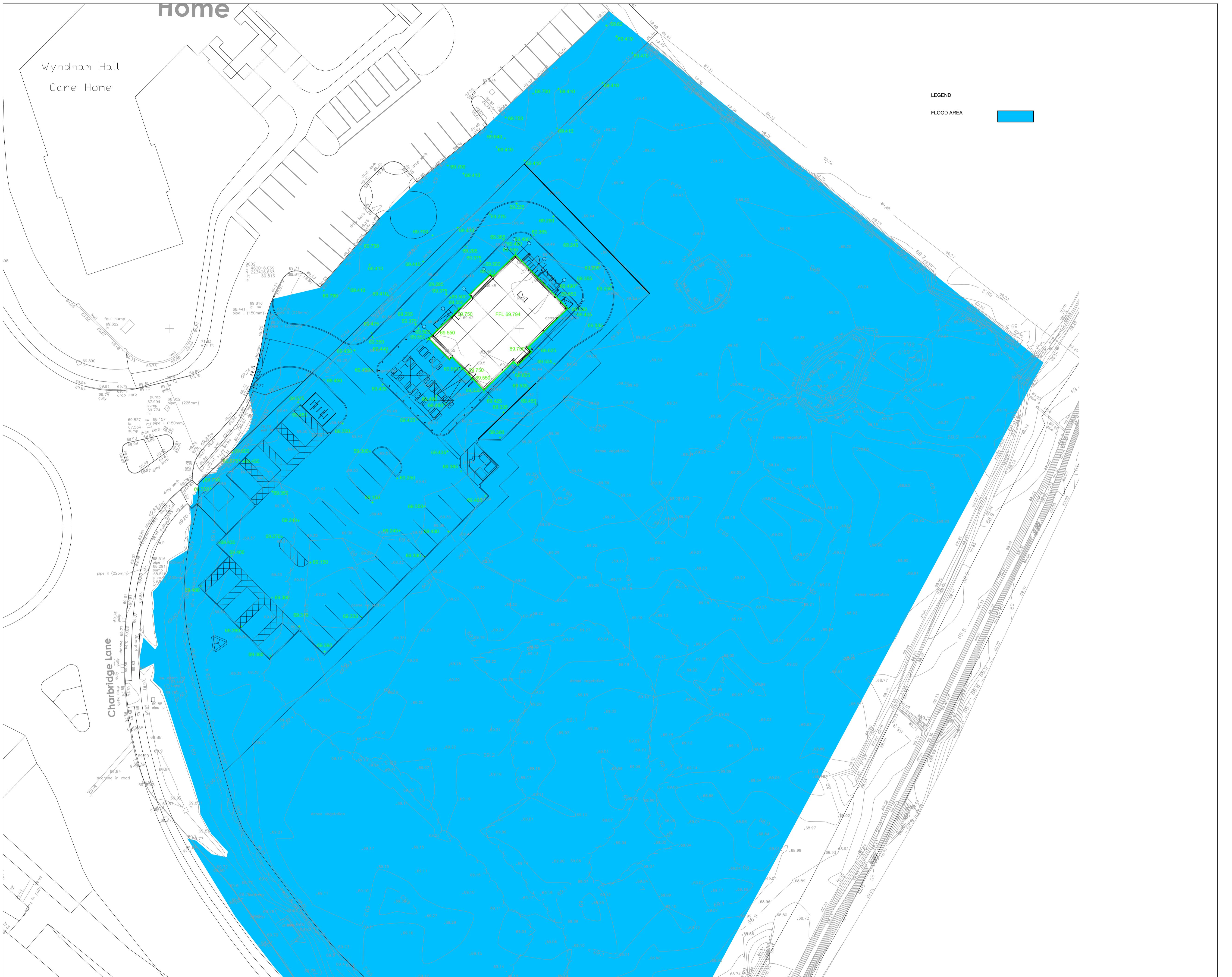
220029/FV114

Revision

P2

HOME

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P2	21/02/23	PRELIMINARY ISSUE	GHB	TS
P1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Rev	Date	Description	Drn	Chkd

Revisions

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Drawing Status

Project Name

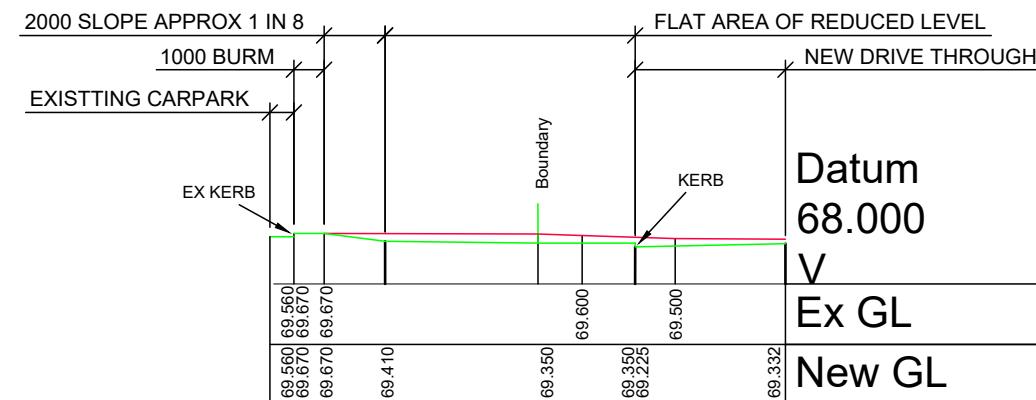
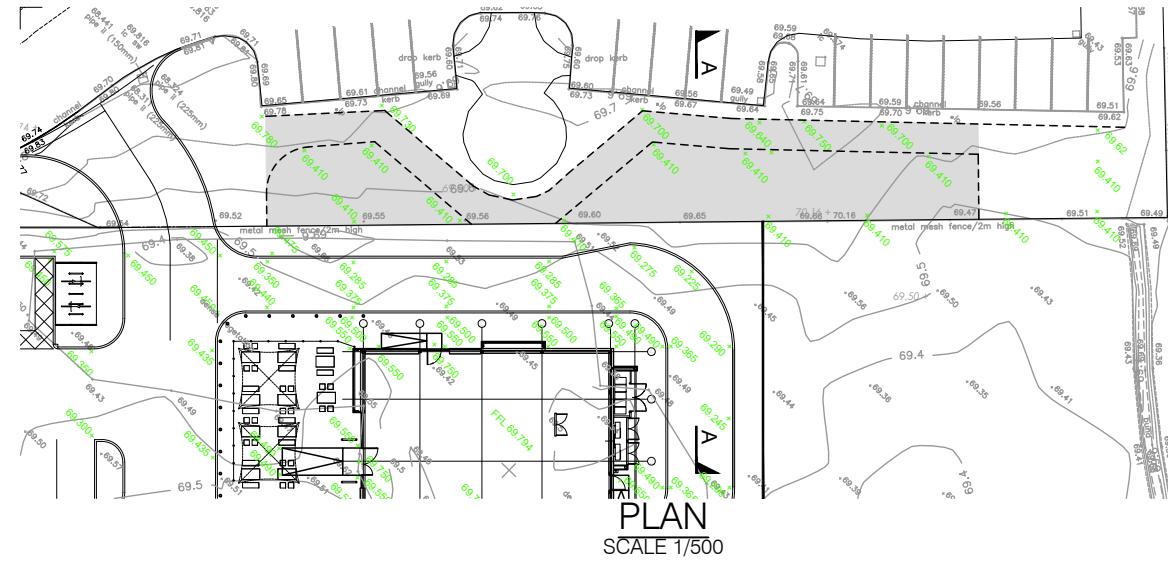
BICESTER

Drawn by	GHB	Drawn Date	16/02/23	Checked by	TS	Scale	1/250
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Title
FLOOD WATER MOVEMENT AT 69.794

Drawing Number
220029/FV115

Revision
P2



SECTION A - A

P1	16/02/23	PRELIMINARY ISSUE	GHB	TS
Rev	Date	Description	Dm	Chkd

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ASSOCIATE

N CONSULTING ENGINEERS - TECHNICAL ADVISERS
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London SE21 8DE
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Project Name

Title

SITE PLAN AND SECTION OF LANDSCAPE AREA

Original drawing sheet is A3	Drawn by GHB	Drawn Date Feb 23	Checked by TS	Scale NTS	
Drawing Number	220029/MX101			Revision P1	