

Flood Consequences Assessment Addendum



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Project	Five Fords, Wrexham, Wales
Project Number	23380

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1 Non Technical Summary

- 1.1 This Addendum has been undertaken in support of the Flood Consequences Assessment Version 1.2 dated 13 July 2020 on behalf of Low Carbon Farming 2 Ltd in support of a Planning Application for the construction of two glasshouses, four irrigation reservoirs, a packing and welfare building, energy centre building, heat store tanks and water silos together with access road, concreted service yard, and HGV loading bays and parking areas at Five Fords, Wrexham.
- 1.2 This Addendum follows the confirmation that areas of the site provide habitat for great crested newts.

2 Layout alterations

- 2.1 As a result of the identification of great crested newt habitat on the site the proposed location of the irrigation reservoirs has been altered so as to provide enhance habitat for the newts and also provide the required irrigation and storm water storage volumes on a like for like basis to the planning submission proposals.
- 2.2 The submitted plans include four reservoirs as follows:

- | | | | |
|---------------|-------------------------|--------------|----------------------|
| • Reservoir 1 | East of Glasshouse | Surface Area | 5,304m ² |
| • Reservoir 2 | East of Glasshouse | Surface Area | 10,046m ² |
| • Reservoir 3 | South of Glasshouse | Surface Area | 11,737m ² |
| • Reservoir 4 | Northwest of Glasshouse | Surface Area | 15,311m ² |

42,398 m²

- 2.3 The total impermeable area of the site including the reservoirs was 23.1ha



2.4 The revised plans include two reservoirs as follows:

• Reservoir 1	South of Glasshouse	Surface Area	4,986m ²
• Reservoir 2	Northwest of Glasshouse	Surface Area	15,311m ²
			20,297m²

2.5 The total impermeable area of the site including the reservoirs now proposed is 20.9ha, 90.5% of the previous proposals.

2.6 The surface area of the reservoirs now proposed is 48% of the previous proposals.

2.7 Layout drawings are attached at the rear of this Addendum.

3 Hydraulic Calculations

3.1 The Flood Consequences Assessment Version 1.2 includes detailed design calculations to establish the storage volumes located above the irrigation water to accommodate a 1:100 year +40% pluvial event and to confirm that a suitable drainage solution was achievable for the site.

3.2 The detailed design calculations located in Appendix 7 of the Flood Consequences Assessment confirmed that with a restricted discharge of 42l/s to the River Clywedog a total storage volume of 28,100m³ is required.

3.3 With 1:3 side slopes this equates to the top 850mm of Reservoirs 1, 2 and 3, and the top 450mm of Reservoir 4 being used for storm water storage.

3.4 On a pro rata basis the average depth across the reservoirs required for storm water storage is 705mm

4 Revised Storage Proposals

4.1 Due to the reduction of reservoir surface area the storm storage volume of 28,100m³ will decrease to 25,430m³

4.2 A comparison of the require storage volume in relation to the surface area of the reservoirs confirms that for the revised proposals the depth of storage required above the operational irrigation water levels is approximately 1.33m.

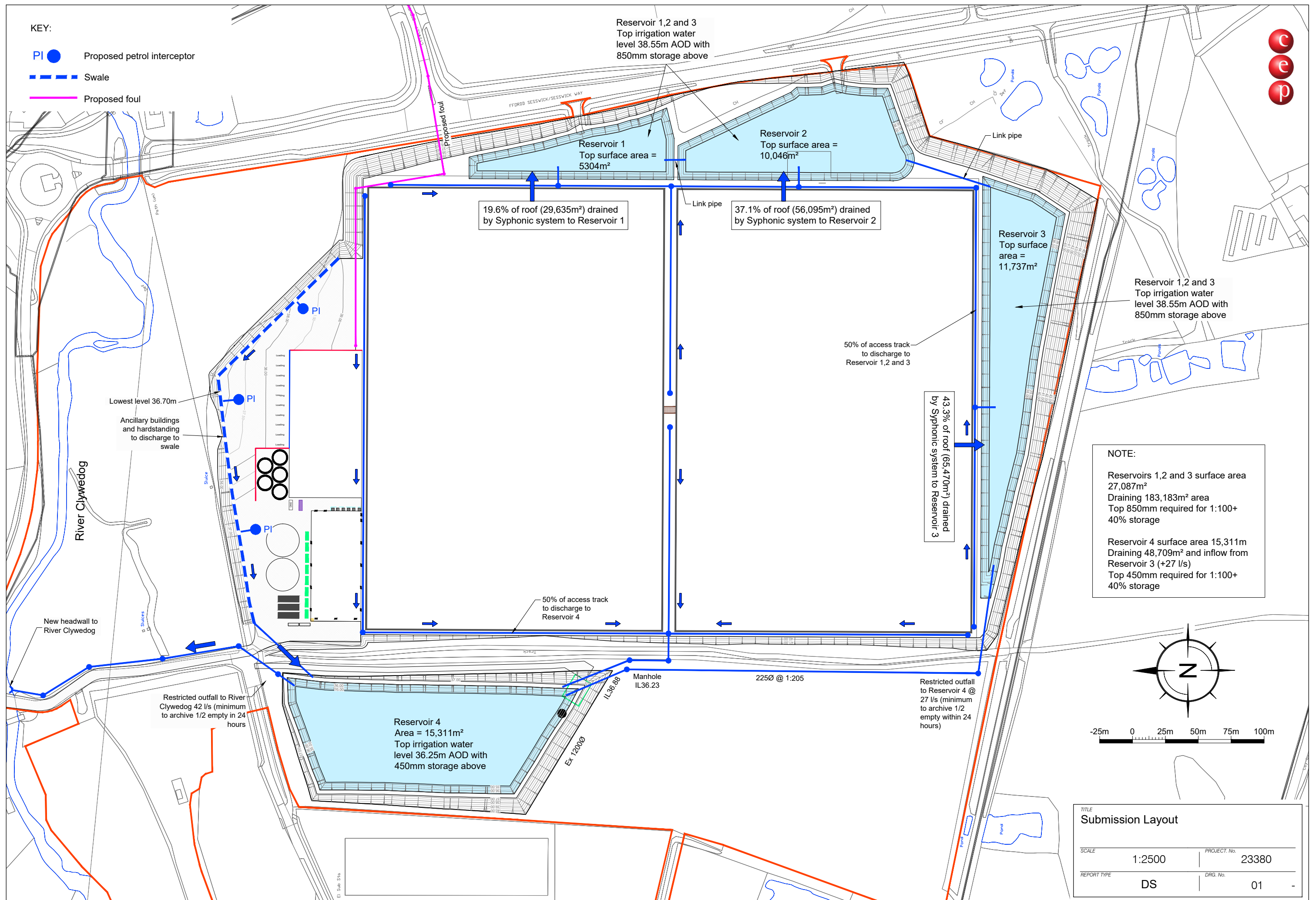
4.3 The bed level of the reservoirs can be altered accordingly to provide the irrigation requirement,

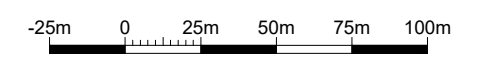
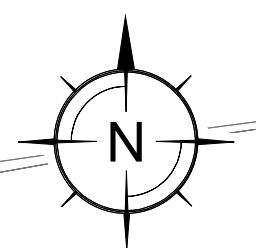
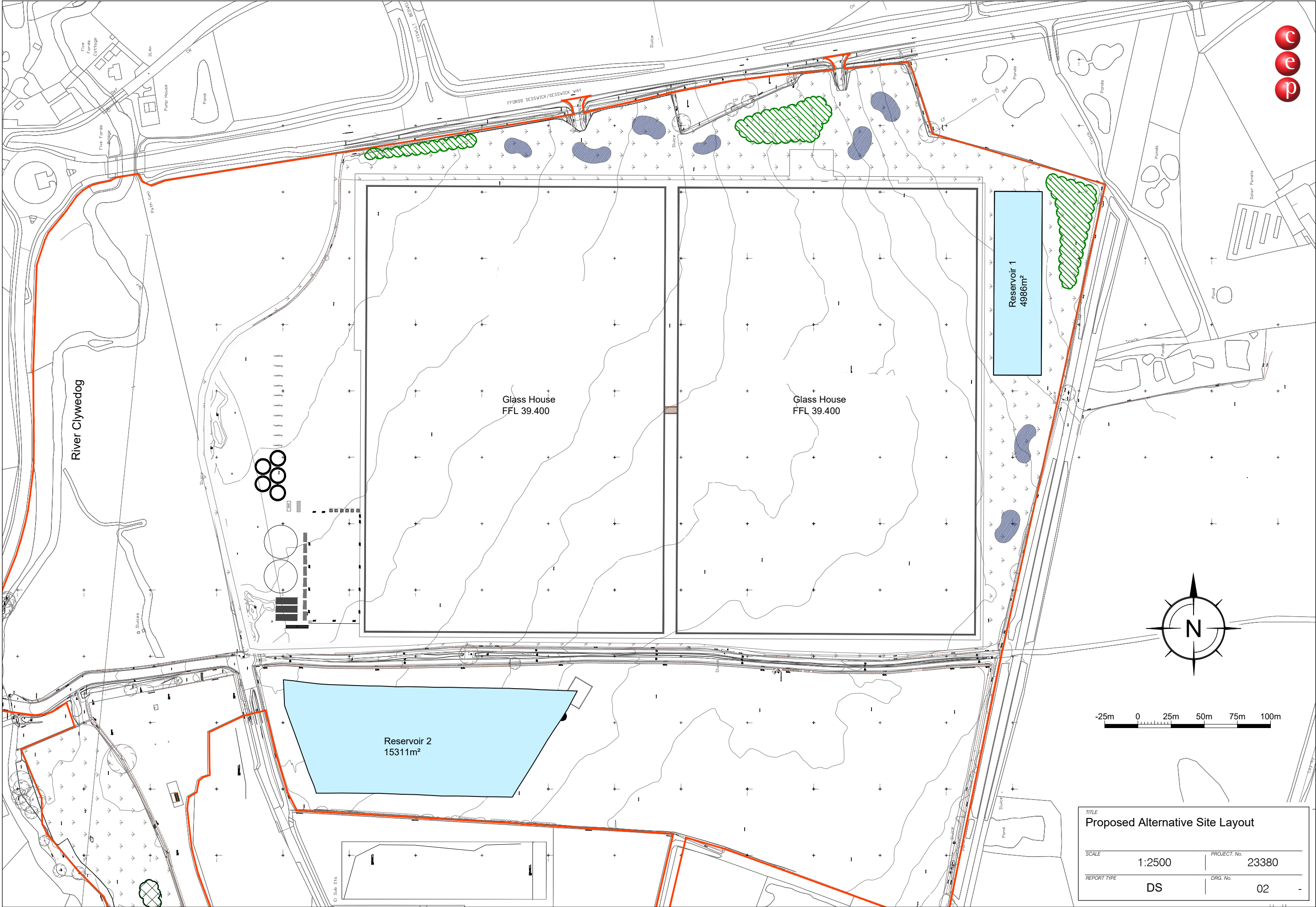
5 Conclusion

- 5.1 Detailed design calculations submitted with the Flood Consequence Report confirm that sufficient storage can be provided on this site.
- 5.2 This Addendum confirms that the revised reservoirs are similarly able to accommodate the required storage volume.

KEY:

- PI ● Proposed petrol interceptor
--- Swale
--- Proposed foul





TITLE Proposed Alternative Site Layout			
SCALE 1:2500		PROJECT No. 23380	
REPORT TYPE DS		DRG. No. 02	