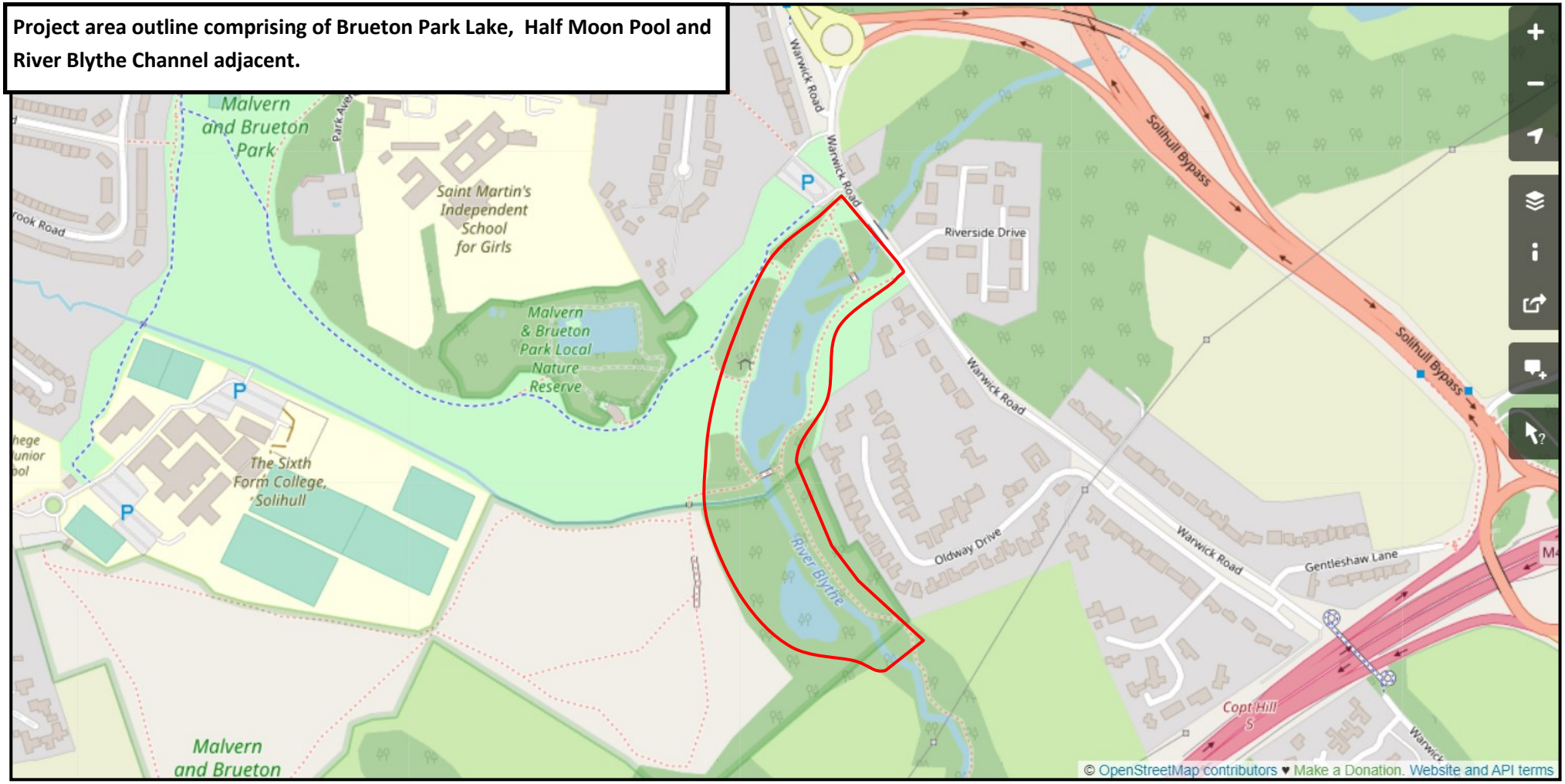
River Blythe SSSI Enhancements Overview 07.2021

Brueton Park, Solihull—SP159787

Project area outline comprising of Brueton Park Lake, Half Moon Pool and River Blythe Channel adjacent.



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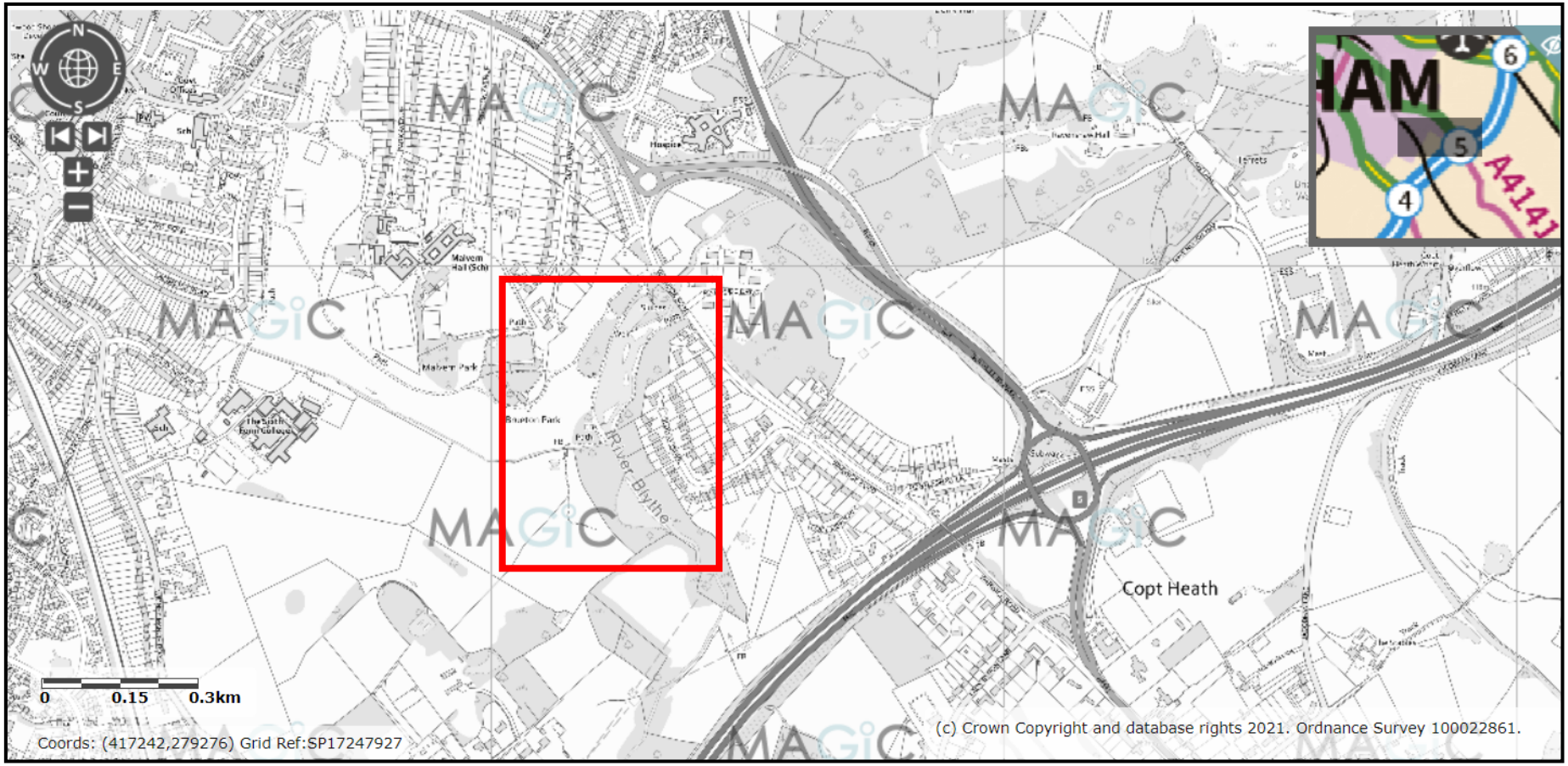


Habitat creation proposals

In December 2020 Warwickshire Wildlife Trust commissioned Aecom to undertake a feasibility study for habitat enhancements at Brueton Park Lake and River Blythe within the Solihull Metropolitan Borough Council owned recreational park land.

Aecom delivered a series of proposals alongside flood modelling, habitat assessments and base line surveys. Below is the list of priority proposals developed with stakeholders including EA and Natural England.

1. Lake de-silting & marginal creation

Brueton Park Lake to be de-silted and silt used to create soft marginal habitat around hard edging. Brushwood bundles and stakes to be installed alongside retaining toe structures i.e coir rolls to provide areas for silt to be sculpted.

Estimate of silt load in Brueton Lake taken from Aecom's feasibility study—topographical survey.

Total soft silt est. 0.5m(average) x 6800m^2 = **3400m^3**

Minimum surface area of marginal vegetation to be created = 300m2 (see concept design on page 5 for visualisation)

Half Moon Pond de-silting and marginal creation

On-line pool upstream of Brueton Park Lake to be de-silted and silt used to create soft marginal habitat around hard edging. Brushwood bundles and stakes to be installed alongside retaining toe structures i.e coir rolls to provide areas for silt to be sculpted.

Extensive coppicing and pollarding of surrounding trees in combination with the marginal creation will allow more regrowth of the newly created marginal banks.

Estimated total soft silt 0.7m x 3000m^2 = 2100m^3

Habitat creation proposals

2. Channel modification works—(washed gravel installation)

Upstream of Brueton Park Lake inlet the river is overwide and would benefit from adding washed gravels to raise the height of river bed. This would ensure that the predominant flow is down the main river Blythe channel

Estimated quantities of gravel

54t washed gravel 15% rejects (>40mm) 25% 40mm, 35% 20mm, 25% 10mm (Sediment Survey undertaken by Five Rivers)

3. Backwater creation

Upstream of the Lake there is opportunity to create some open water in the form of online backwater pools. Woodland cover will be thinned around 2 pools to aid marginal vegetation establishment.

Estimated spoil quantities

Backwater Pool 1—8m x 5m x 1.5m = est. 25m³

Backwater Pool 2—8m x 5m x 1.5m = est. 25m³

4. Large woody debris installation

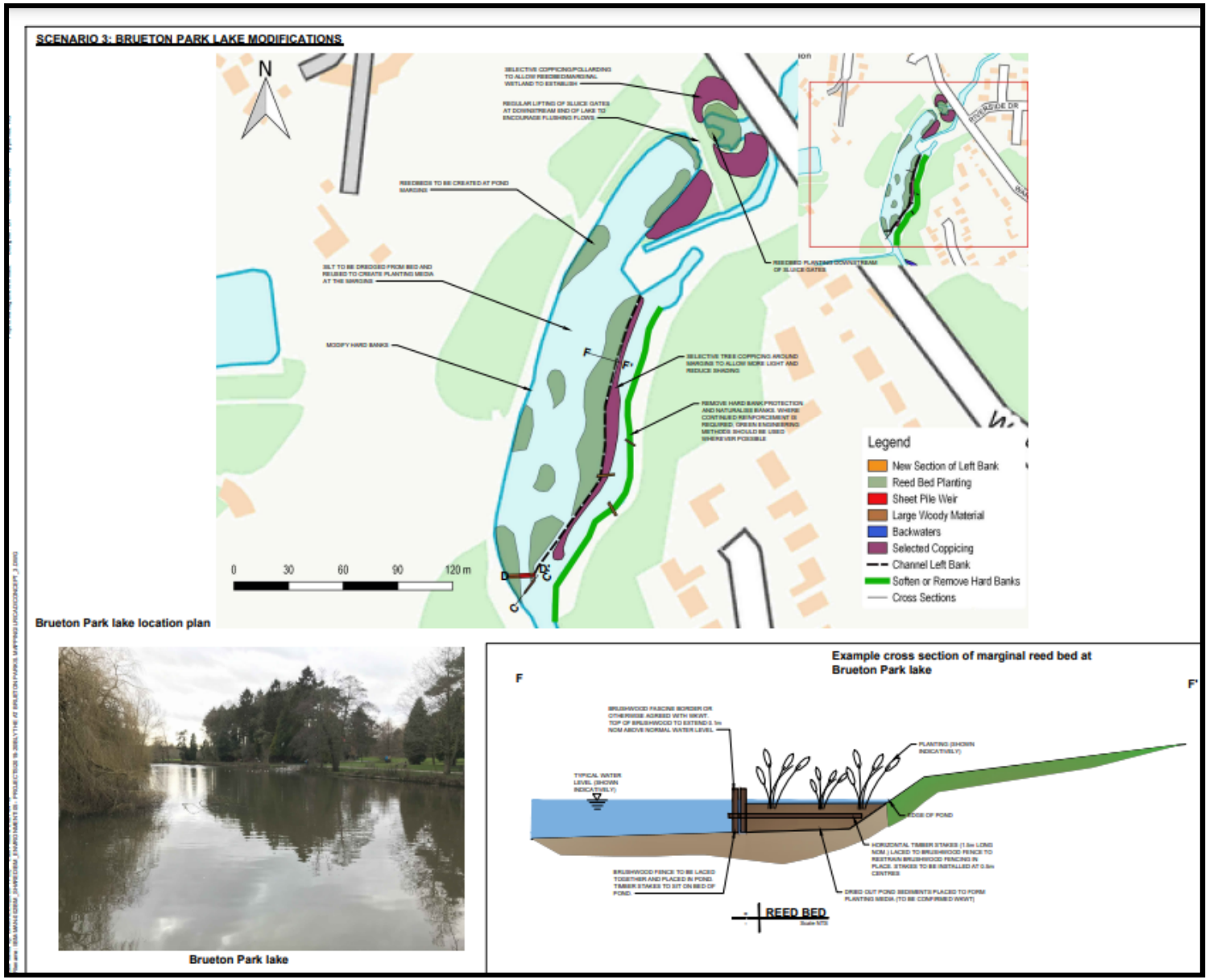
Locally sourced tree trunks secured in channel to provide flow deflection and increase variation in the channel. Brash ledges to be installed to provide refuge and cover for fry and juvenile fish.

5 'deflectors' - trees to be hinged if possible or pinned in place with 75mm x 1800mm chestnut stakes

5 'brash ledges' - brash to be sourced from coppiced and pollarded trees on site as part of ongoing tree management.

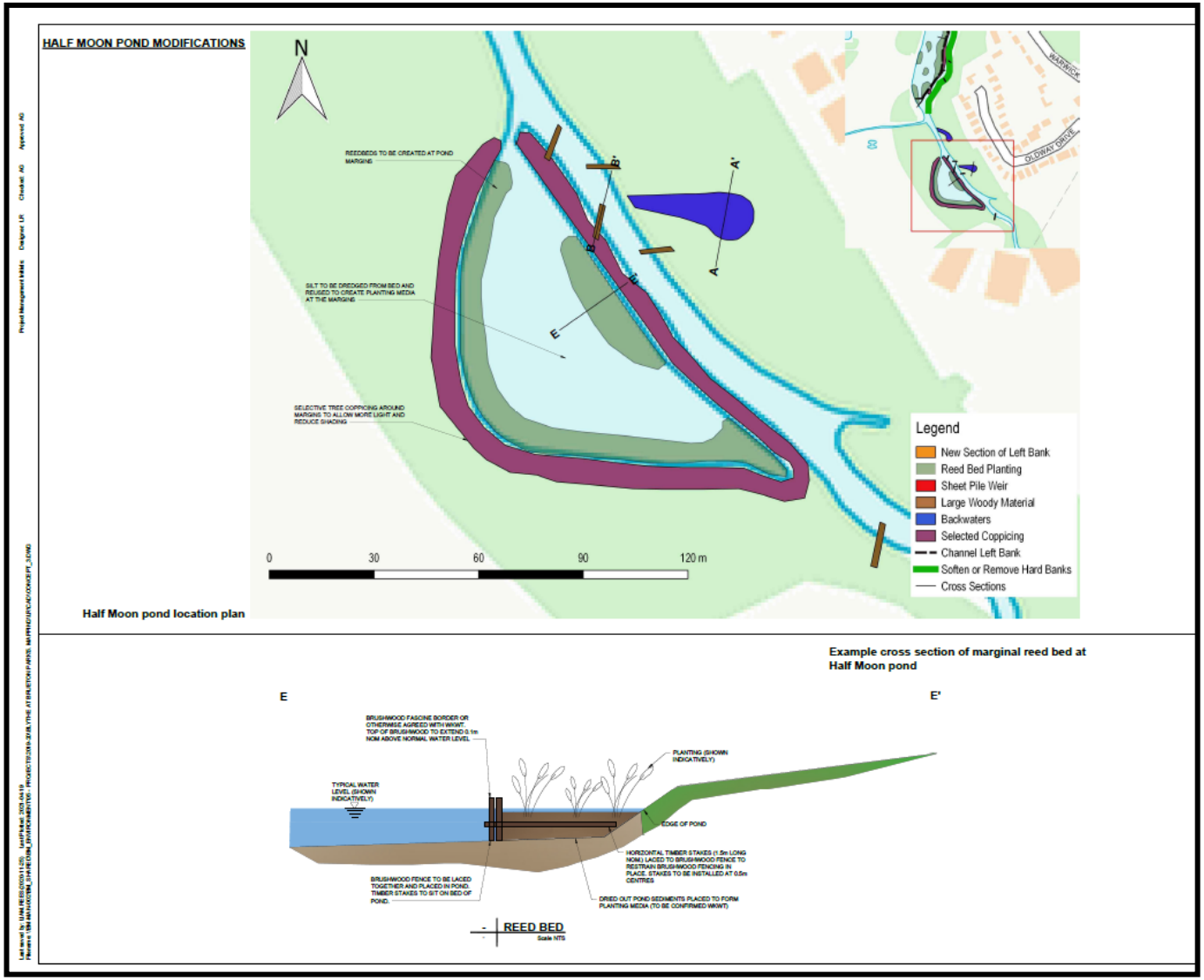
Outline proposals for Lake and Pond de-silting and soft bank establishment—Concept drawing

SP 16257879



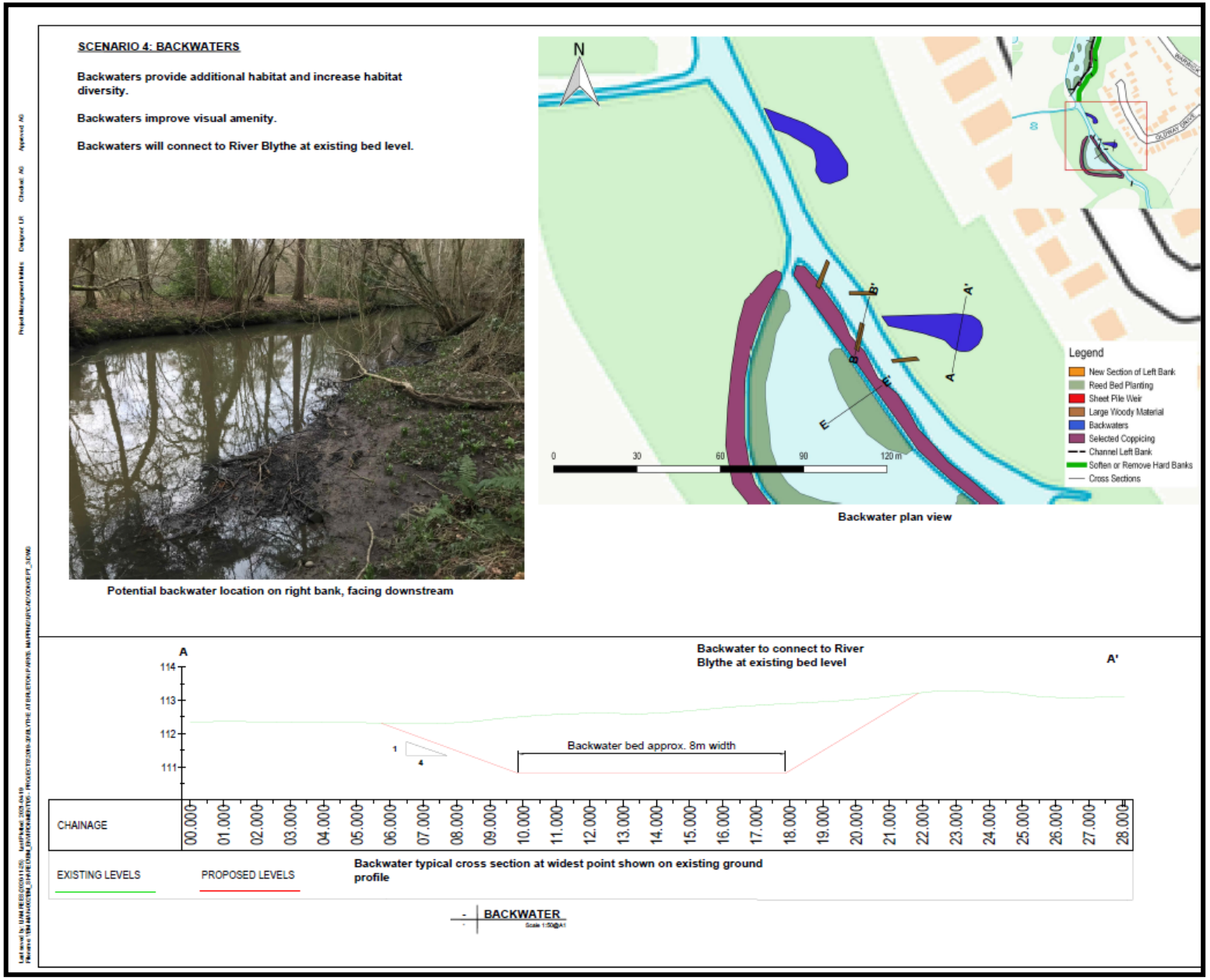
Half moon pond - de-silting and soft marginal bank creation concept drawing

SP16277852

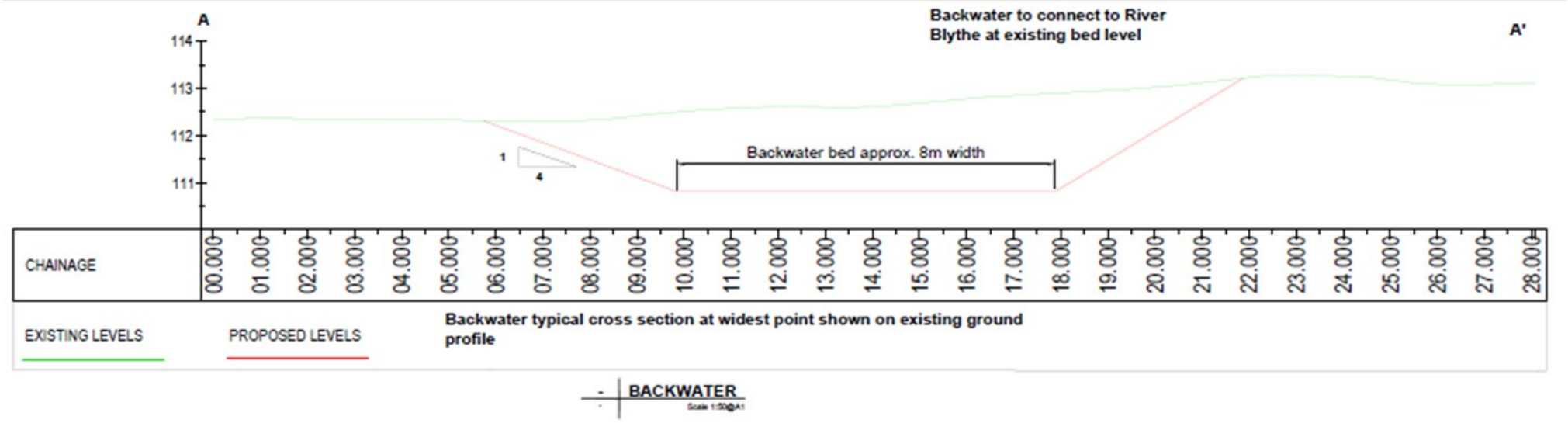


Backwater Creation—refugia for fish and invertebrates

SP16297858



Backwater pool cross section



Outline proposals for channel modifications—

Concept drawing

SP 16257879

MODIFY EXISTING CHANNEL GEOMETRY

Raising the bed level at the entrance to Brueton Park lake would ensure that the predominant flow is down the main River Blythe channel.

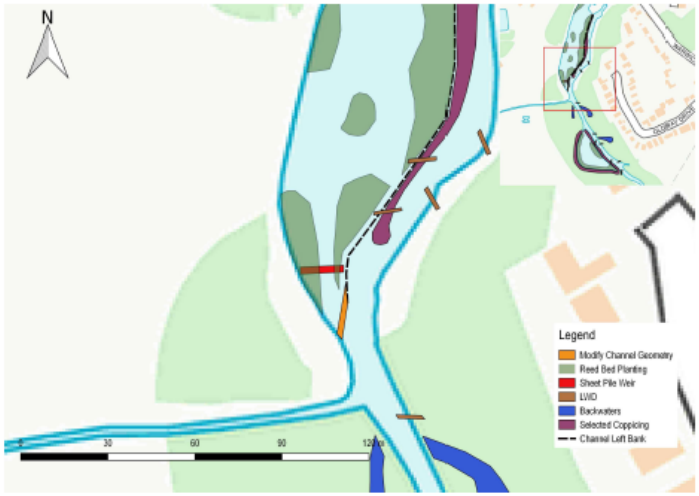
There would no longer be a wide open area for deposition.

Bed raising would be at an angle to fit with existing river planform.

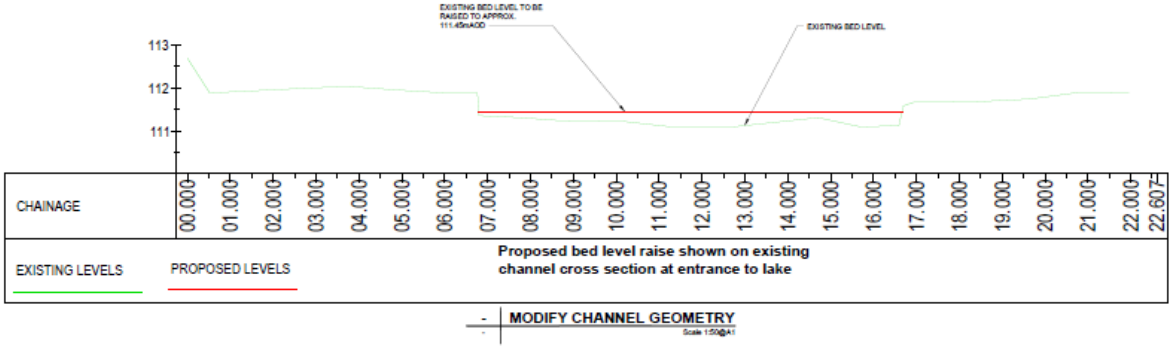
Bed would be raised to approx. 111.45mAOD.

Raised level is between the baseline modelled Q10 water level and 50%AEP flood water level- would ensure that the raised level is overtopped during the 50%AEP flood event.

Existing wide open entrance to lake



Channel modification location plan

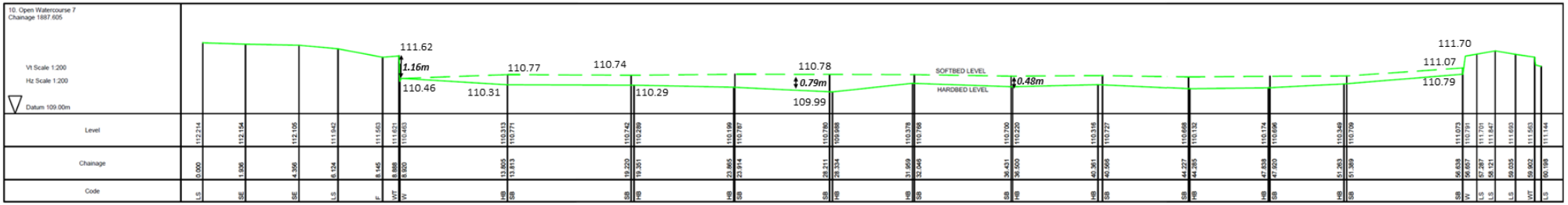


Proposed bed level raise shown on existing channel cross section at entrance to lake

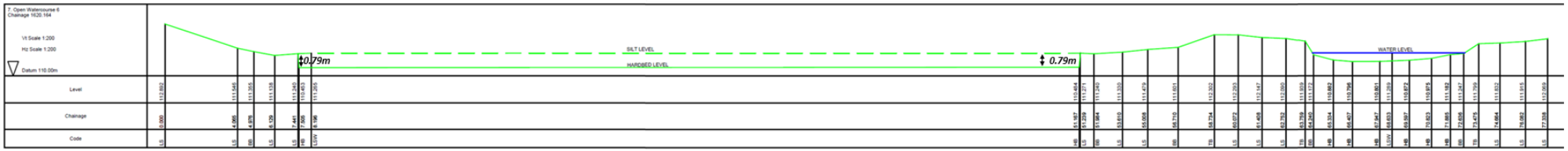
MODIFY CHANNEL GEOMETRY

Transects showing hard bed and softbed level of Lake and Half Moon Pool

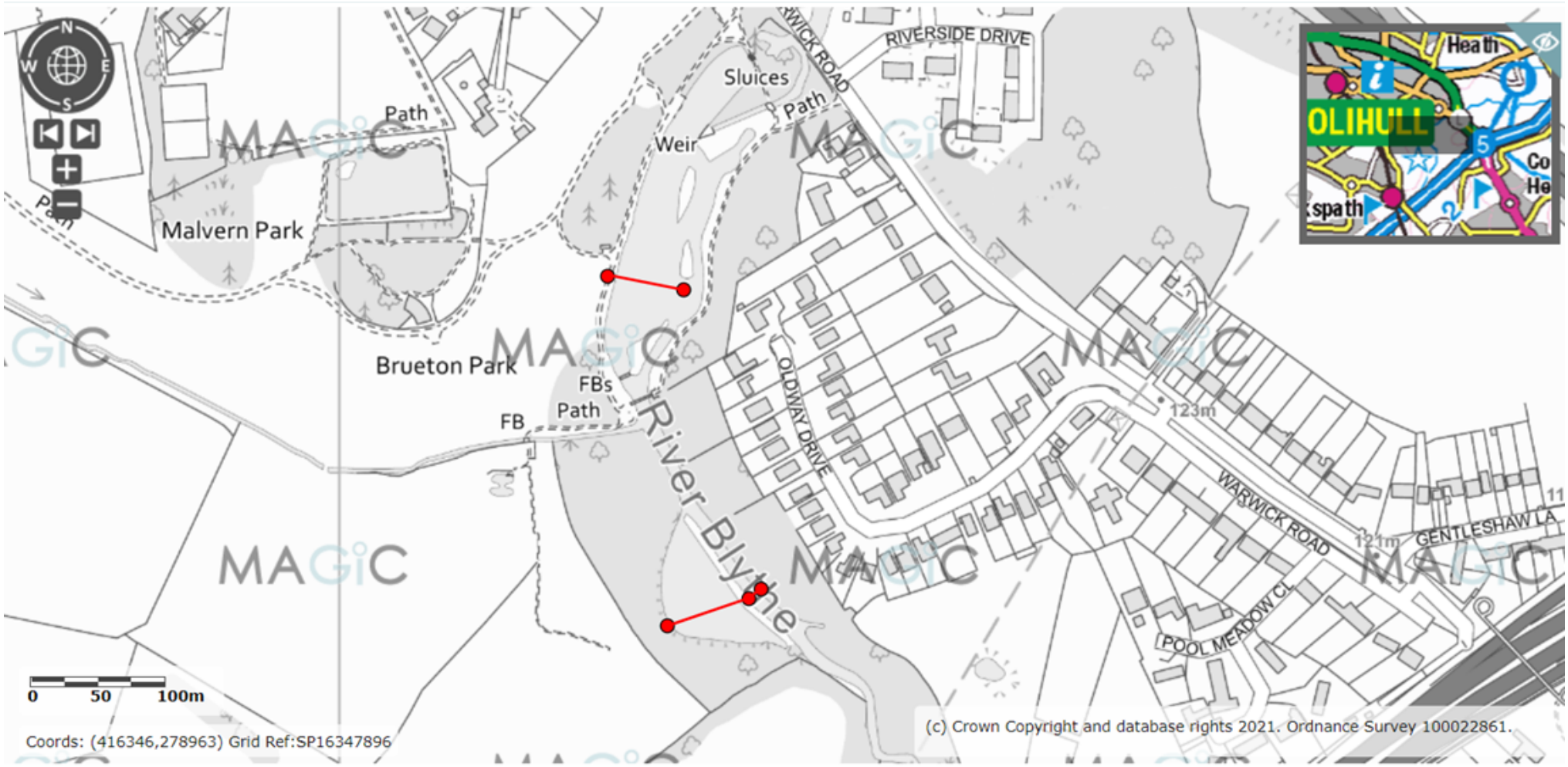
Brueton Park Lake



Half Moon Pool



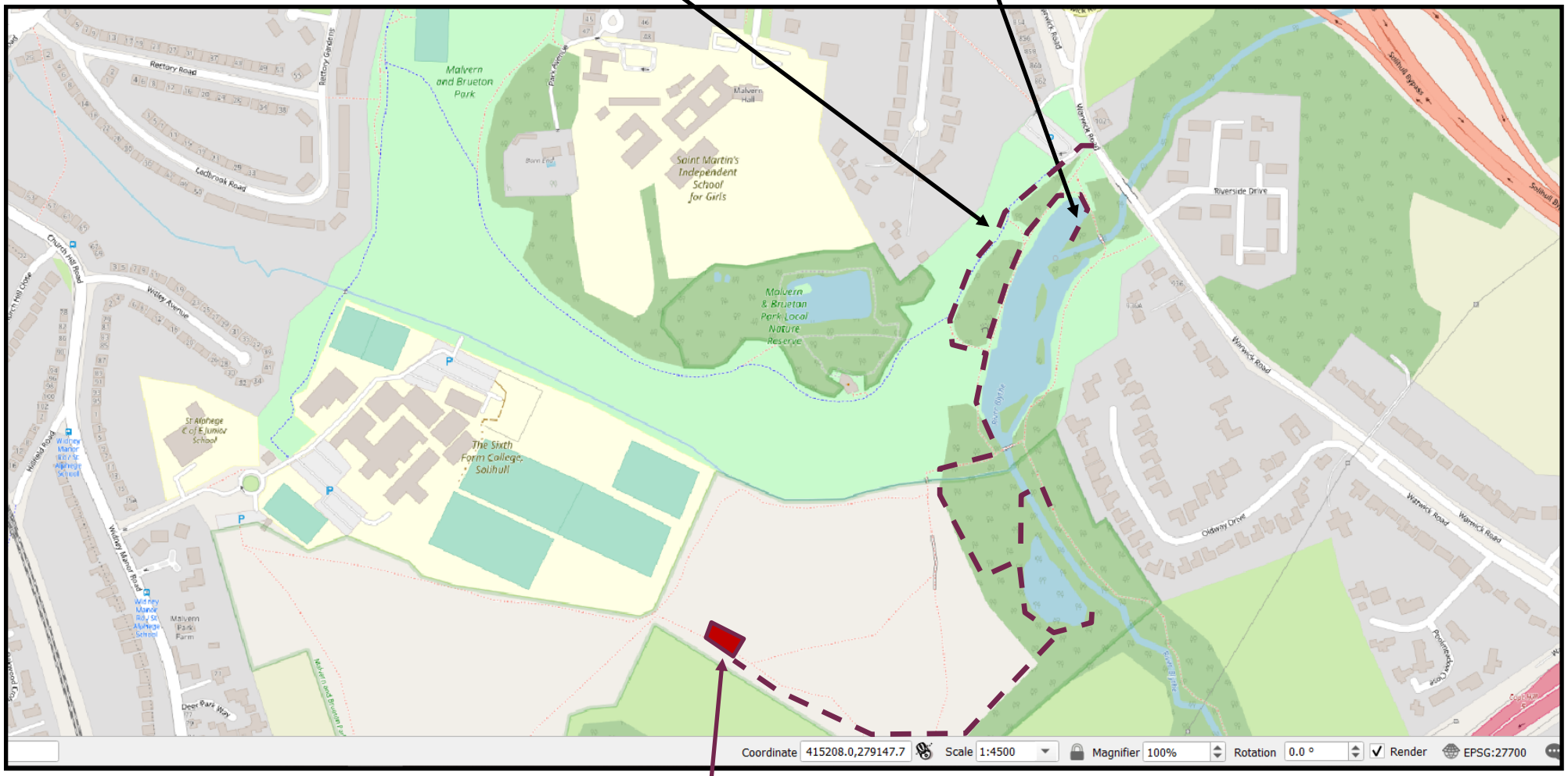
Rough transect line locations



Access Map WEG Brueton
Park Lake 15.07.21

Potential machinery access and tracking routes

Brueton Pool de silting and soft marginal bank creation works.



Spoil heap location in low value grassland area. Est 30m³

Overview of ST services locations—please see full utilities report for more detail on depths