

## **1EW03 - Enabling Works Central**

# **AWHi - Survey Report for Construction Integrated Recording at Moorhall Road, Colne Valley North Embankment, Buckinghamshire Site code: 1C21CVVAM**

Document no.: 1EW03-FUS\_MHI-EV-REP-CS01\_CL01-000038

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# 1 Summary of Works

- 1.1.1 This report details the survey methodology for surveying the Construction Integrated Recording (CIR) at Moorhall Road, Colne Valley North Embankment, Buckinghamshire, which was carried out under the site code 1C21CVVAM.
- 1.1.2 The work was part of the scheme of work outlined in the AWHi Project Plan Report for Archaeological Monitoring and Construction Integrated Recording – Central area-route wide, (Document No: 1EW03-FUS-EV-REP-C000-009812) and carried out in line with the Fieldwork Change Control Form FCCFA007 (Document No: 1EW03-FUS-EV-REP-CS01\_CL01-000025).
- 1.1.3 The scope of this project was to undertake CIR of works that impacted an area of archaeological potential (C10050) during construction of the proposed Colne Valley viaduct where it crossed Moorhall Road near Denham, Buckinghamshire.
- 1.1.4 The Site lies within Community Forum Area CFA7 Colne Valley and within Archaeological Character Area 3 which is the west side of the Colne Valley.
- 1.1.5 An overall Site plan at an appropriate scale and relative to the National Grid was compiled by GPS. The Site was tied accurately to the Ordnance Survey National Grid and Newlyn Datum (OD) by the MHI Geomatics Team. GIS deliverables will be supplied in an Esri format and adhere to standards set out in the Employer's Cultural Heritage GIS Standard (HS2-HS2-GI-SPE-000-000004).

# 2 Survey methodology

## 2.1 Set out and Survey

- 2.1.1 The spatial surveys were carried out using network RTK (real time kinetic) dGNSS (differential global navigation satellite system) equipment. Three permanent ground markers were set out across site, surface heights were recorded using RTK dGNSS or referenced to the PGMs.

| Marker | Easting    | Northing   | Height OD |
|--------|------------|------------|-----------|
| PGM01  | 504673.309 | 188443.380 | 37.222    |
| PGM02  | 504683.791 | 188461.482 | 36.833    |
| PGM03  | 504694.094 | 188469.587 | 37.070    |

Table 1 Permanent Ground Markers

- 2.1.2 Coordinate files for the interventions were created from data supplied by the Contractor and uploaded to the survey equipment in CSV and DXF format.
- 2.1.3 The areas were set out using Leica RTK dGNSS equipment, specifically GS07 or GS16 antennae and CS20 controllers, receiving real time corrections via Leica Smartnet. Three permanent ground markers were established on site.

2.1.4 All survey was carried out by trained and competent MHI staff. All survey data is related to the Ordnance Survey National Grid (OSGB36/15) with heights given above in meters above Ordnance Survey Datum Newlyn (ODN).

2.1.5 All survey equipment has been correctly calibrated and serviced by Leica trained technicians and checked prior to use on site by members of the survey team.

| Equipment   | Service dates | Margins of error using RTK Smartnet               |
|-------------|---------------|---|
| GS07 / CS20 | 15/12/2020    | Horizontal 10mm + 0.5ppm / Vertical 20mm + 0.5ppm |
| GS07 / CS20 | 17/02/2021    | Horizontal 10mm + 0.5ppm / Vertical 20mm + 0.5ppm |
| GS16 / CS20 | 31/03/2021    | Horizontal 8mm + 0.5ppm / Vertical 15mm + 0.5ppm  |

Table 2 Survey equipment calibration record

## 2.2 Standards and Guidance

2.2.1 All survey work has been carried out in accordance with Technical Standard - Specification for historic environment investigations (Document no.: HS2-HS2-EV-STD-000-000035), specifically with relation to sections 4.1 and 4.17.

2.2.2 All drawings are composed of closed polygons, polylines or points in accordance with the requirements of GIS construction and MHI Geomatics protocols. In all instances, GIS work has, and will, follow the guidelines set out in the Employer's GIS Standards (HS2-HS2-GI-SPE- 000-000004).

2.2.3 The GIS drawing (Figure 1) contains all information relevant to the set out and survey works for the site; other metadata will be delivered ESRI File Geodatabase (.gdb) format (see 2.3).

## 2.3 Archive Deposition

2.3.1 The survey was carried out in accordance with Historic Environment Physical Archiving Strategy (Document No. HS2-HS2-EV-STR-000-000018) and Historic Environment Digital Data Management and Archiving Strategy (Document No. HS2-HS2-EV-STR-000-000019).

2.3.2 All spatial data was recorded by Leica RTK GNSS or Leica TSo6 and transferred to the MHI office in London. Survey data was exported in dxf format, transferred daily via Leica Exchange, and processed in AutoCAD before being collated and stored in gdb format. The File Geodatabase provided scaled digital data of all required elements of the project and located them within the Ordnance Survey grid with heights given above Ordnance Survey Datum

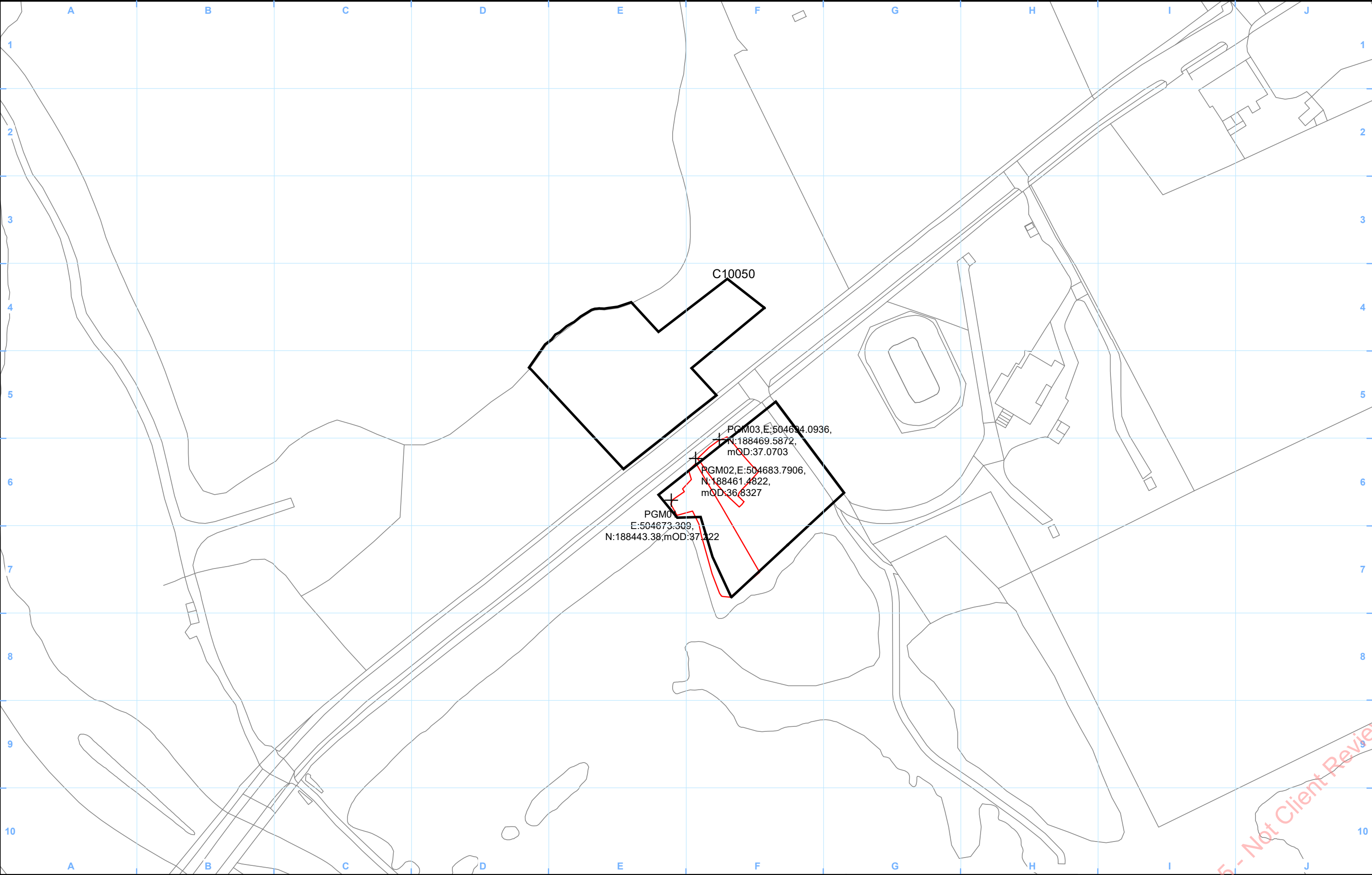
Newlyn (ODN). The ArcGIS geodatabase files are provided to Fusion JV at the end of each fieldwork project through ProjectWise.

- 2.3.3 Data on the server is backed up on tape at daily, weekly, and monthly intervals. This data will be provided to High Speed Two Ltd in due course for long-term archival deposition.

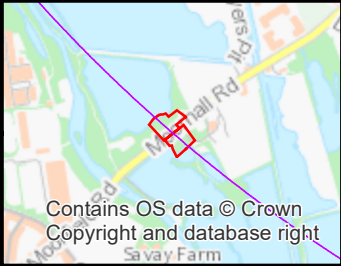
### 3 References

| Title   | Reference                             |
|---|---------------------------------------|
| AWHi Project Plan Report for Archaeological Monitoring and Construction Integrated Recording – Central area-route wide      | 1EW03-FUS-EV-REP-C000-009812          |
| Method Statement – Archaeological Monitoring at Moorhall Road C10050  | 1EW03-FUS_MHI-EV-MST-CS01_CL01-000001 |
| Fieldwork Change Control Form for Archaeological Monitoring and Construction Integrated Recording at Moorhall Road FCCFA007 | 1EW03-FUS-EV-REP-CS01_CL01-000025     |
| HS2 Cultural Heritage GIS Standard  | HS2-HS2-GI-SPE-000-000004             |
| HS2 Technical Standard - Specification for historic environment investigations  | HS2-HS2-EV-STD-000-000035             |
| Historic Environment Physical Archiving Strategy  | HS2-HS2-EV-STR-000-000018             |
| Historic Environment Digital Data Management and Archiving Strategy   | HS2-HS2-EV-STR-000-000019             |


## 4 Figures




- Legend**
- Boundary of work area C10050
  - Extent of CIR
  - Permanent ground marker




|   |
|---|
| Map Number<br>1EW03-FUS_MHI-GI-MAP-CS01_CL01-000042     |
| Map Name<br>Survey information for CIR at Moorhall Road |
| Community Forum Area 07:<br>Colne Valley                |



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Scale at A3: 1:1,500



Metres

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