



SOFIA **OFFSHORE** **WIND FARM**

ARCHAEOLOGICAL ASSESSMENT

**FOR OFTO UXO INVESTIGATIONS AND
CLEARANCE, AND POTENTIAL ARCHAEOLOGY
INVESTIGATIONS: CAMPAIGN 2**

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Abbreviations / Acronyms

Acronym	Definition
DCO	Development Consent Order
ES	Environmental Statement
KP	Kilometre Point
Mag.	Magnetometer
MBES	Multibeam Echosounder
OCP	Offshore Converter Platform
PAD	Protocol for Archaeological Discoveries
ROV	Remotely Operated Vehicle
SBP	Sub-bottom Profiler
SSS	Side Scan Sonar
SOFW	Sofia Offshore Wind Farm
SOWFL	Sofia Offshore Wind Farm Limited
UKHO	United Kingdom Hydrographic Office
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
WGS	World Geodetic System
WSI	Written Scheme of Investigations

Summary

Wessex Archaeology Ltd was commissioned by RWE Renewables UK, under the subsidiary Sofia Offshore Wind Farm Limited (SOWFL), to undertake an archaeological assessment of Remotely Operated Vehicle (ROV) survey data gathered along the transmission assets (OFTO) and wind farm array (non-OFTO) ahead of construction of the proposed development.

The preferred mitigation is avoidance, and therefore only targets that could not readily be micro-sited around were assessed. Overall, the ROV campaign assessed 221 targets, 16 of which were recommended as *potential Archaeology* (pARCH) targets, and the remaining being potential Unexploded Ordnance (UXO). These 16 pARCH targets were selected from the list of anomalies of possible archaeological potential classified during the archaeological assessment of geophysical survey data from data collected in 2020.

All 221 targets were archaeologically assessed. Following the ROV campaign the 221 targets can be classified as:

- ✦ Two targets of archaeological interest, one lifted and the other moved to wet storage;
- ✦ Two UXO, for these targets, UXO requirements take precedence, and no further archaeological investigation is recommended;
- ✦ 56 targets of modern material, of no archaeological interest;
- ✦ 142 natural features of no archaeological interest;
- ✦ 19 targets where nothing was found.

During the survey, 49 targets were moved. Of the remaining 172 *in situ* targets, these were either modern, natural, of no archaeological interest or where nothing was found, for which no further work is recommended.

1. INTRODUCTION

- 1.1.1 Sofia Offshore Wind Farm (“SOWF”) was developed and consented by the Forewind Limited Consortium and previously known as Dogger Bank Teesside B (“Teesside B”). The Dogger Bank Teesside A and B Offshore Wind Farm Development Consent Order 2015 (“the DCO”) was granted on 4 August 2015 and came into force on 26th August 2015. The Forewind Limited consortium disbanded and since August 2017, Innogy Renewables UK Limited, now RWE Renewables UK, has held 100% ownership of SOWF under a new subsidiary, Sofia Offshore Wind Farm Limited (“SOWFL”).
- 1.1.2 The SOWF site is located approximately 165 km offshore on the shallow central area of the North Sea known as the Dogger Bank with the export cable landfall in an area between Redcar and Marske-by-the-Sea.

1.2 PREVIOUS ARCHAEOLOGICAL WORK

- 1.2.1 Wessex Archaeology Ltd (SOWFL’s Retained Archaeologist) has previously carried out two assessments of geophysical survey data within the SOWF area (formerly Teesside B) as part of the Dogger Bank Round 3 Zone assessment, as well as an assessment of the archaeological baseline and potential impacts of the possible development presented in Chapter 18 of the Environmental Statement (ES) for Dogger Bank Teesside A & B (Wessex Archaeology 2013; 2014; Forewind 2014).
- 1.2.2 Wessex Archaeology has also carried out archaeological assessments of geophysical data within preliminary search areas identified for the Sofia Offshore Converter Platform (OCP) area and the array layout perimeter area (Wessex Archaeology 2019a; 2019b; 2019c) on behalf of SOWFL in 2018 and 2019.
- 1.2.3 Wessex Archaeology has undertaken an archaeological assessment of updated geophysical and geotechnical data collected in 2020 for both the transmission (export cable and OCP) and generation assets (wind farm array area) (Wessex Archaeology 2020a; 2020b; 2020c; 2021c, Document references: 003797748-02, 003848720-02, 003815261-03 and 003820093-01). This included side scan sonar (SSS), multibeam echosounder (MBES), sub-bottom profiler (SBP) and magnetometer (Mag.) datasets. As a result of the assessments, an ROV investigation was undertaken in April 2021 on an identified geophysical anomaly (7266) at turbine location T15 located within the array area (Wessex Archaeology 2021f, Document reference: 003888927). The result of the investigation revealed the anomaly to be the wreck of an unidentified wooden ship built in the 19th or early 20th century (Wessex Archaeology 2021g, Document reference: 004002469).
- 1.2.4 The results of these previous assessments were reviewed and collated for the purposes of the updated WSI (Wessex Archaeology 2021a; 2021b, Document reference: 003034372-08) to inform all future archaeological advice and mitigation strategies going forward.

1.3 SCOPE OF DOCUMENT

- 1.3.1 This archaeological assessment has been undertaken as part of the Retained Archaeological Services and prepared in line with the approved Offshore Archaeological Written Scheme of Investigation (WSI) (Document reference: 003034372-08) and detailed in the related Method

Statement (Wessex Archaeology 2021e, Document reference: 003552692-02) approved by the project Archaeological Curator (Historic England) prior to the commencement of works.

- 1.3.2 This archaeological assessment applies to the second campaign (Campaign 2), covering the transmission and generation assets. Campaign 2 includes the export cable route from Kilometre Point (KP) 10 to the offshore converter platform and the wind farm array area.
- 1.3.3 The results of Campaign 1 were presented in a separate document (Document reference: 004161636-02)
- 1.3.4 In addition to investigating UXO, pARCH were also investigated in line with the commitment in Paragraph 5.6.28 of the WSI to *“maximise the potential benefits of any proposed ROV surveys undertaken primarily for engineering, ecological or other non-archaeological purposes, archaeological input at the planning stage of any such works will be sought and so that archaeological considerations can be taken into account, with an ambition of assessing 10% of all archaeological contacts, including those where impacts are likely and a proportion of those considered to be of low potential.”*
- 1.3.5 In summary, the overall aim of the assessment is to mitigate the effects of the proposed development upon potential archaeological features identified within SOWF site.
- 1.3.6 The objectives were as follows:
- ✦ To detail the scope of works for the archaeological assessment as part of the visual inspection survey of pUXO targets;
 - ✦ To identify anomalies of pARCH interest from the UXO survey data; and
 - ✦ To fulfil mitigation requirements as set out in the archaeological WSI.

COORDINATE SYSTEM

- 1.3.7 Positions are presented in Universal Transverse Mercator (UTM) Zone 31 North projected from a World Geodetic System (WGS) 1984 datum.

2. METHODOLOGY

2.1 ROV SURVEY

- 2.1.1 The ROV inspection survey was undertaken by James Fisher Renewables between 02 July 2022 and 31 July 2022. The survey was undertaken onboard the vessel *Go Electra*. Subsequently the vessel undertook targeted inspections for UXO detonations on selected anomalies between 16th August and 24th August 2022.
- 2.1.2 Based on the results of the UXO geophysical survey, targets were classified as ‘potential UXO’ or ‘non-potential UXO’. Targets that required further investigation by ROV were selected, some of which corresponded with the geophysical anomalies of potential archaeological interest. As the mitigation measures in the WSI (Document reference: 003034372-08) recommended avoidance, the priority was to microsite around targets that could be readily avoided. Only targets that were at risk of impact were assessed by ROV. Anomalies on the seabed were investigated *in situ*, while buried anomalies were investigated using an ROV-mounted dredge pump/airlift to remove sediment so that the target could be visually inspected. Anomalies were inspected visually with the ROV camera and sonar imaging.
- 2.1.3 Video data were logged and processed, and Target Investigation Reports (TIRs) were completed, including video stills and description of objects.
- 2.1.4 During the survey, 49 targets were moved to clear the area for UXO ALARP (as low as reasonably practicable), or to move them beyond the impact area of the proposed cable route. The as-found and as-left locations for material were both recorded. Of the 49 moved targets, one was of archaeological interest (7831; a ship’s anchor).
- 2.1.5 Prior to work being undertaken, vessel staff received Awareness Training to support the Protocol for Archaeological Discoveries (PAD) via toolbox talks and facilitate effective reporting of discoveries of archaeological potential to the Retained Archaeologist.

2.2 ARCHAEOLOGICAL ASSESSMENT OF ROV DATA

- 2.2.1 The UXO ROV survey investigated targets defined as pUXO along the proposed cable route and wind farm array. Summary data in the form of TIRs was reviewed by a suitably qualified archaeologist and if required, recommendations for further investigation were made.
- 2.2.2 The data were assessed for the presence or absence of objects of potential anthropogenic origin and of potential archaeological interest. The form, size and/or extents of objects were used as initial guides as to their potential. A single small but prominent object could be part of a more extensive feature that is largely buried, and similarly, a scatter of small objects could define the edges of a buried but intact feature, or be all that remains of past impacts, for example from dredging or fishing.
- 2.2.3 The archaeological assessment of ROV data commenced with a review of the TIRs (for description, measurements, and video stills) for all targets. For targets of potential archaeological interest, or where video stills were either unclear or unavailable, video data was requested and reviewed.

- 2.2.4 The assessment was captured in a project spreadsheet, with detailed information about the ID, location, description, and archaeological assessment and recommendations.
- 2.2.5 For each target, the anomaly was identified, where possible, and assessed with regard to the following categories:
- ☞ A – Archaeological interest;
 - ☞ P – Possible archaeological interest;
 - ☞ P/M – Possible archaeological interest or modern debris;
 - ☞ M – Modern / non-archaeological;
 - ☞ N – Natural;
 - ☞ U - Uncertain
- 2.2.6 Each target was also assessed for archaeological interest. An interest rating from none to high was assigned to each identified anomaly based upon professional judgement and in accordance with the definitions below.

Table 2-1 Definitions of Archaeological interest

INTEREST	DEFINITION
H - High	Above average example and/or high potential to contribute to knowledge and understanding and/or outreach. Receptors with a demonstrable international or national dimension to their interest are likely to fall within this category.
M - Medium	Average example and/or moderate potential to contribute to knowledge and understanding and/or outreach.
L - Low	Below average example and/or low potential to contribute to knowledge and understanding and/or outreach.
N - None	Anomaly identified as being non-archaeological.
U - Uncertain	Insufficient data to assess archaeological interest.

- 2.2.7 A confidence rating from low to high was also assigned to each anomaly based upon the quality of the data provided and professional judgement. The confidence rating takes into account both the quality of the images and the nature of the description provided by the UXO survey contractor or other survey vessel and was drawn upon professional judgement in assessing the certainty of the interpretation.
- 2.2.8 The results of the assessment are presented in a gazetteer in **Appendix B** and are illustrated in **Figure 1a–m**. The locations in **Appendix B** include the ‘expected’ location and ‘as moved’ location, to illustrate the final location of the objects. Only objects that were moved include the ‘as moved’ location.

2.2.9 For objects determined to be of high archaeological interest, there was potential for the requirement for archaeological intervention, in consultation with the curatorial authorities, for the purposes of mitigation.

3. RESULTS

3.1 INTRODUCTION

3.1.1 A total of 221 targets were assessed during Campaign 2 (**Appendix B**) from KP10 to the wind farm array during the ROV survey. 16 of these targets were recommended for investigation as pARCH features (**Table 3-1** and **Table 3-2**).

Table 3-1 pARCH target list for OFTO area from KP10 to the offshore converter platform

WESSEX ID	EASTING AND NORTHING	PRE-INVESTIGATION DESCRIPTION	DIMENSIONS AND MAGNETIC AMPLITUDE	SECTION
7355	252442, 6058931	A tall, steep sided mound with a slightly flattened top, identified within the MBES data. Located in an area of bedrock outcrop and surrounded by scattered rocks but is much larger than surrounding features. Associated with a large, distinct, positive magnetic monopole. Possible ferrous debris. A_MAG_01142	2 x 1.8 x 1.3 m 215 nT	Block A
7530	327993, 6071990	Newly identified as an indistinct dark reflector without a shadow. Associated with a linear dark reflector which is slightly indistinct and also does not cast a shadow. No corresponding MBES or Mag. contact. Possible debris, perhaps an anchor and rope; however, this cannot be confirmed without visual inspection.	24.4 x 4.6 x 0 m	Block D
7593	268828, 6061205	Distinct large magnetic dipole identified on one survey line, no associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression. ECR_UXO_MAG_00977	167 nT	Block B

WESSEX ID	EASTING AND NORTHING	PRE-INVESTIGATION DESCRIPTION	DIMENSIONS AND MAGNETIC AMPLITUDE	SECTION
7622	260054, 6060206	Distinct, short linear dark reflector with distinct shadow, located in an area of small boulders and mobile bedforms. On a slightly different alignment to natural features in the area. No corresponding MBES or Mag. contact. May represent possible non-ferrous linear debris or could be an exposed section of cable.	9.6 x 0.2 x 0.172 m	Block B
7646	444736, 6089358	Curvilinear bright reflector, potentially a scar, with a dark reflector with shadow at one end. Visible in the MBES data as a shallow curvilinear depression. No associated Mag. anomaly. Possible partially buried non-ferrous debris.	13.8 x 0.8 x 0.3 m	Block G
7831	308900, 6067715	Large, distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Located along the edge of a distinct sand wave and may be related. However, amplitude suggests potential ferrous debris buried on the edge of the sand wave. Retained as a precaution.	109 nT	Block C
7837	269176, 6061549	A large, distinct magnetic dipole identified on more than one survey line and on overlapping data sets. No associated SSS or MBES contacts. Possible part of a magnetic alignment, but potentially indicates ferrous debris that is either buried or without surface expression and retained as a precaution.	188 nT	Block B
7879	264478, 6059994	Large, distinct magnetic dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. ECR_UXO_MAG_00965	102 nT	Block B

Table 3-2 pARCH target list for non-OFTO array

WESSEX ID	EASTING AND NORTHING	DESCRIPTION	DIMENSIONS AND MAGNETIC AMPLITUDE	SECTION
7004	450594, 6092271	Straight, elongated linear dark reflector with no discernible height, identified during the OCP assessment of previous data. Feature is not particularly well-defined, but is similar to debris items 7005-7007, which are located approximately 110 m to the south-west. No associated Mag. anomaly. Possible non-ferrous debris. Not identified within the 2020 geophysical data, and may be buried at present.	17.2 x 1.7 x 0 m	Block M, L07
7047	452949, 6094544	Elongate area of seabed disturbance comprising numerous small dark reflectors, some with small shadows, and two distinct, parallel, linear ridges. Identified in the MBES data as an east-west trending shallow depression, with two NNW-SSE trending linear features at its eastern end. No associated mag. anomaly. Located in an area of similar natural depressions and may be a natural feature, but the linear features may indicate possible debris.	17.7 x 9.9 x 0.2 m	Block N, OCP
7104	450591, 6088174	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	163 nT	Block K, N05

WESSEX ID	EASTING AND NORTHING	DESCRIPTION	DIMENSIONS AND MAGNETIC AMPLITUDE	SECTION
7153	446347, 6100666	A very large positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression. Situated at a proposed WTG location and may be a result of geotechnical testing at this position, but retained as a precaution.	651 nT	Block N, E09, E09-C09, G09-E09
7201	452784, 6102560	Identified in the Mag. data as a large, sharp dipole with peak and trough on one survey line. It is in a noisy area but appears sharp and distinct. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression. Q_MAG_00111	209 nT	Block Q, G13-J13
7246	460953, 6098860	Identified in the Mag. data as a large dipole with peak and trough on two survey lines, identified on a number of lines and may represent a short, linear feature. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	151 nT	Block R, N15
7268	466111, 6093495	Identified in the Mag. data as a large positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression. R_MAG_00071	267 nT	Block R, T15, U15-T15

WESSEX ID	EASTING AND NORTHING	DESCRIPTION	DIMENSIONS AND MAGNETIC AMPLITUDE	SECTION
7333	449453, 6082950	Large, negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. J_MAG_00008	394 nT	S01-N03

- 3.1.2 **Appendix B** comprises all 221 targets. **Figure 1a–m** illustrates the ‘as found’ location of the targets encountered, however locations where nothing was found are illustrated by their ‘expected location’.
- 3.1.3 Following a review of all TIRs provided by the Client, the archaeological discrimination was updated based on the results from the survey. Definitions of these are presented in **Appendix A**.

TARGETS OF ARCHAEOLOGICAL INTEREST

- 3.1.4 Two targets have been identified as being of archaeological interest.
- 3.1.5 Target 7268 (R_MAG_00071) was reported via the PAD and described as consisting of a mixture of wood and metal with a small length of steel wire rope. Due to its proximity to Anomaly 7266 (wreck of an unidentified wooden ship) target 7268 was recommended by the Retained Archaeologist as requiring further investigation. The target was initially left *in-situ*, however, following agreement with Historic England, has since been recovered, reported to the Receiver of Wreck and is being wet stored at the Wessex Archaeology’s Salisbury office for further assessment (Wessex Archaeology 2022).
- 3.1.6 Target 7831 (ECR_FABM_SSS_166879) was reported via the PAD and described as being metallic and / or wooden debris, possibly with associated rigging. The imagery in the TIR confirmed that the target was a single apparently isolated iron ship’s anchor, of Admiralty pattern. The full shank and both flukes appear to be present. The material from this target was moved to wet store, and therefore, assuming that it is beyond the area of impact from the development, no further work is recommended. However, if the material could be impacted, it should be reviewed. In addition, any further work in this area should be undertaken with due care and any further discoveries should be reported through the Protocol for Archaeological Discoveries.

UXO

- 3.1.7 There were initially three targets classed as UXO. However, upon re-investigation of target M_MAG_00023 this was confirmed to be non-UXO. The two UXO are summarized in the table below, and more detail can be found in **Appendix B**.

Table 3-3 Confirmed UXO

TARGET ID	DESCRIPTION
7334 / J_MAG_00011	British MK 14 Buoyant mine
7326 / J_MAG_00014	Airdropped weapon (bomb)

- 3.1.8 One UXO, J_MAG00011, was detonated *in situ* in its as found location, whilst J_MAG_00014 was relocated to an area of deeper sediment before detonation.
- 3.1.9 The British MK 14 Buoyant mine which is part of the MK 17 series of mines from the Second World War (J_MAG_00011) was discovered within the wind farm array area. The mine was in a significantly corroded state and therefore, the methodology on this ordnance was to conduct a high order (HO) detonation on the mine *in situ*.
- 3.1.10 J_MAG_00014 was initially identified as a German SC 500 kg Bomb. However, this was later confirmed to be a British 10000lb Medium Capacity Bomb. The as found position was within the wind farm array area, however the bomb required relocation to an area of deeper sediment to reduce impacts on Dogger Bank Special Area of Conservation. Detonation was conducted via two unsuccessful Low Order deflagrations and a third HO detonation, which was successful.

MODERN / NON-ARCHAEOLOGICAL MATERIAL

- 3.1.11 There were 56 targets classified as primarily modern material, but more detail can be found in **Appendix B**.

Table 3-4 Modern / Non-Archaeological material

TARGET ID	TYPE OF MATERIAL
M_MAG_00014 / 7147	Chain
M_MAG_00023 / 7348	Metal cylinder – possible marine filter
ECR_UXO_MAG_00896 7104 N_MAG_00003A_B / 7178 C_MAG_00235 / 7574 ECR_UXO_MAG_00893 / 7768 ECR_UXO_MAG_00813 / 7760 ECR_UXO_MAG_00975 / 70685 ECR_UXO_MAG_00856 / 7724 ECR_UXO_MAG_00891 / 7938 ECR_UXO_MAG_00968 / 7934	Metal debris

TARGET ID	TYPE OF MATERIAL
ECR_UXO_MAG_00976A_B / 7837 ECR_UXO_MAG_00977 / 7593 ECR_UXO_MAG_00832 / 7901 ECR_UXO_MAG_00898 / 7890 ECR_UXO_MAG_00965 / 7879 ECR_FABM_SSS_113038 ECR_FABM_SSS_104104 ECR_FABM_SSS_104043 ECR_FABM_SSS_104763B ECR_FABM_SSS_112284 ECR_FABM_SSS_104200 ECR_FABM_SSS_104259 ECR_FBAM_SSS_109908 ECR_FBAM_SSS_105345B B_SSS_02417 B_SSS_01284A ECR_FABM_SSS_044507A ECR_FABM_SSS_044507B ECR_FABM_SSS_043596 A_MAG_01109 R_MAG_00075 / 7265 7333 / J_MAG_00008 7622	
M_MAG_00011 / 7144 7246 R_MAG_00050 R_MAG_00006 / 7244 P_MAG_00015 / 7188 N_MAG_00062 / 7044 N_MAG_00177 / 7648 M_MAG_00019A / 7352 P_MAG_00007 / 7184 Q_MAG_00111 / 7201 S_MAG_00029 / 7278 F_MAG_00501 / 7674 E_MAG_00007 / 7514 7530	Steel wire rope

TARGET ID	TYPE OF MATERIAL
ECR_FABM_SSS_168757 C_MAG_00337 ECR_UXO_MAG_00915 / 7931	
E_MAG_00004 ECR_FABM_SSS_145086	Wood and metal debris

3.1.12 This material has been assessed as being of no archaeological interest. No further work is recommended.

NATURAL FEATURES

3.1.13 There were 142 targets identified as natural. The boulders came in a number of sizes, more detail can be found in **Appendix B**. These were all left *in situ*, except for one (M_MAG_00019B).

3.1.14 The natural features are of no archaeological interest, and no further work is recommended.

TARGETS WHERE NOTHING WAS FOUND

3.1.15 There were 19 targets where nothing was found. No further work is recommended at these locations.

Table 3-5 Targets where nothing was found

TARGET ID
7004
R_MAG_00073 / 7264
R_MAG_00048
7047
P_MAG_00003B
Q_MAG_00112
R_MAG_00054
7153

TARGET ID
S_MAG_00042 / 7272
H_MAG_00016 / 7050
7646
ECR_FABM_SSS_176301
ECR_FABM_SSS_177017
C_SSS_01734
ECR_UXO_MAG_00921
ECR_FABM_SSS_114733
ECR_FABM_SSS_114848
ECR_FABM_SSS_102681
ECR_FABM_SSS_103350

3.2 CONCLUSION

SUMMARY

- 3.2.1 The archaeological assessment of ROV survey data assessed all 16 pARCH targets investigated during Campaign 2. These consisted of:
- ✦ Two targets reported via the PAD (7268 and 7831);
 - ✦ Eight consisting of modern material or material of no archaeological interest; three wire rope (7201, 7246 and 7530), two of metallic debris (7622, 7333) and three metal bars (7104, 7593 and 7879); four of which have been relocated outside of impact area;
 - ✦ Two natural features (7355 and 7837), consisting of boulders, left *in situ*;
 - ✦ Four targets (7004, 7047, 7153 and 7646) where nothing was found.

REPORTING TO THE RECEIVER OF WRECK

- 3.2.2 The *Merchant Shipping Act 1995 Part IX Salvage and Wreck* states that *‘if any person finds or takes possession of any wreck in the United Kingdom waters [...] he shall – if he is not the owner of it, give notice to the receiver that he had found or taken possession of it and, as directed by the receiver, either hold it to the receiver’s order or deliver it to the receiver.*
- 3.2.3 Therefore, the Receiver of Wreck has been provided with a spreadsheet including the ‘expected location’, the ‘as found’ coordinates, and the ‘as moved’ locations of all Modern/Possible finds, along with detailed descriptions of the finds and thumbnail images (similar to Appendix B).

FURTHER RECOMMENDATIONS

- 3.2.4 It is recommended by the Retained Archaeologist that any site preparation work and cable laying contractors are made aware of the PAD, should any unexpected material be encountered during further works. SOWFL’s offshore contractors are contractually bound to adhere to the requirements of the WSI and any future Archaeological Method Statements.

4. REFERENCES

- Forewind 2014 *Dogger Bank Teesside A & B: Environmental Statement Chapter 18 Marine and Coastal Archaeology*. Report prepared by Wessex Archaeology.
- Innogy 2020 *Sofia Offshore Wind Farm: Offshore Archaeological Written Scheme of Investigation*. Document number 003034372-06. Report prepared by Wessex Archaeology, Wessex Archaeology Ref. 211050.03
- Wessex Archaeology 2013 *Chapter 18: Dogger Bank Tranche A (Creyke Beck) Environmental Impact Assessment, Archaeology and Cultural History Technical Report*. Salisbury, unpubl report, ref: 78040.05
- Wessex Archaeology 2014 *Dogger Bank Teesside A & B Marine and Coastal Archaeology, Environmental Impact Assessment, Archaeology and Cultural History Technical Report*. Salisbury, unpubl report, ref: 78041.04
- Wessex Archaeology 2019a *Sofia Offshore Wind Farm (OCP Area) - Archaeological assessment of geophysical data*. Salisbury, unpubl report, ref: 211050.01
- Wessex Archaeology 2019b *Sofia Offshore Wind Farm (Perimeter Area) - Archaeological assessment of geophysical data*. Salisbury, unpubl report, ref: 211050.02
- Wessex Archaeology 2019c *Sofia Offshore Wind Farm (Updated OCP Area) - Archaeological assessment of geophysical data*. Salisbury, unpubl report, ref: 211050.04
- Wessex Archaeology 2020a *Sofia OWF – Archaeological Assessment of Geophysical Data, Interim Statement for OFTO*. Salisbury. unpubl interim statement, ref DW/211054/22.05.20
- Wessex Archaeology 2020b *Sofia OWF – Archaeological Assessment of Geophysical Data, Interim Statement for OCP*. Salisbury. unpubl interim statement, ref. DW/211053/18.06.20
- Wessex Archaeology 2020c *Sofia Offshore Wind Farm – OFTO: Stage 1 & 2 geoarchaeological assessment of geotechnical data*. Salisbury, unpubl report, ref: 211054.02. Document ref. 003797748
- Wessex Archaeology 2021a *Sofia Offshore Wind Farm Marine Archaeological Technical Report; OFTO*. Salisbury, unpubl report, ref: 211051.01. Document ref. 003815261
- Wessex Archaeology 2021b *Sofia Offshore Wind Farm Marine Archaeological Technical Report; Non-OFTO*. Salisbury, unpubl report, ref: 211051.02. Document ref. 003820093
- Wessex Archaeology 2021c *Sofia Offshore Wind Farm – Non-OFTO: Stage 1 & 2 geoarchaeological assessment of geotechnical data*. Salisbury, unpubl report, ref: 211054.03.
- Wessex Archaeology 2021d *Sofia Offshore Wind Farm - Pre-Construction Plans and Documentation: Offshore Archaeological Written Scheme of Investigation*. Salisbury, unpubl report ref: 211050.03. Document ref. 003034372-07

Wessex Archaeology 2021e *Sofia Offshore Wind Farm – Archaeological Method Statement: For OFTO and Non-OFTO UXO Investigations and Clearance, and Potential Archaeology Investigations*. Salisbury, unpubl report ref: 211050.04. Document ref. 003552692

Wessex Archaeology 2021f *Sofia Offshore Wind Farm – Archaeological Method Statement: Investigation of Anomaly 7266 at Turbine Location T15*. Salisbury, unpubl report ref: 211051.05. Document ref. 003888927

Wessex Archaeology 2021g *Sofia Offshore Wind Farm – Archaeological Report: Investigation of Anomaly 7266 at Turbine Location T15*. Salisbury, unpubl report ref: 211051.06. Document ref. 004002469

Wessex Archaeology 2022 *Sofia Offshore Wind Farm – Retained Archaeology Services: Heritage Method Statement: Recovery of pARCH 7268*. Salisbury, unpubl report ref: 211057.02

APPENDIX A. DEFINITIONS OF ARCHAEOLOGICAL DISCRIMINATION

OVERVIEW CLASSIFICATION	DISCRIMINATION	CRITERIA	WORKING EXAMPLE
Archaeological	A1	Anthropogenic origin of archaeological interest	Feature that is clearly interesting e.g. wreck, large magnetic anomaly (e.g. over 500 nT)
Archaeological	A2	Uncertain origin of possible archaeological interest	Feature that is still uncertain, but may prove to be of interest e.g. debris, dark reflector, seabed disturbance.
Archaeological	A3	Historic record of possible archaeological interest with no corresponding geophysical anomaly	Recorded reference (e.g. UKHO) to previously identified feature (such as wreck or obstruction) that now shows no trace on seabed, but physical evidence has been recorded at some point.
Archaeological	A4	Position of geophysical anomaly at which no anthropogenic features were identified, either visually or on sensors, during subsequent ROV/diver survey	Geophysical anomaly identified, and position surveyed by diver or ROV. Visual inspection proves inconclusive, and potential remains for feature to be present either buried at the location or nearby.
Non-archaeological	U1	Not of anthropogenic origin	Anomaly clearly identified as natural feature from the data.
Non-archaeological	U2	Known non-archaeological feature / Feature of non-archaeological interest	Anomaly appears modern anthropogenic, such as pipeline, cable, pier or a previously investigated object found to be modern in origin.
Non-archaeological	U3	Recorded loss	Position of a recorded loss at which no physical wreck remains have ever been identified. Not taken through to Phase III but may be discussed in report.

OVERVIEW CLASSIFICATION	DISCRIMINATION	CRITERIA	WORKING EXAMPLE
Non-impact	O1	Outside horizontal footprint of study area	Feature identified in data but located outside study area.
Non-impact	O2	Outside vertical footprint of proposed impact	Only applicable to certain projects where SBP is also used.
Non-impact	O3	Area subsequently cleared after data acquired, anomaly/object recovered	Where post-construction ROV or UKHO clearance has taken place, and an anomaly relates to a feature recorded as moved (ORPAD report, UXO record).
Non-Impact	O4	Anomaly/feature identified during previous assessments but since likely to have been disturbed or moved by natural seabed processes. Unlikely to be at original location. New location unknown.	SBP anomaly identified 2.5 m below seabed in a previous survey, but subsequent bathymetry survey indicates 3 m of erosion has occurred at this location. Therefore, originally identified anomaly is unlikely to be present at the original location.
Non-impact	D	Anomaly/feature subsequently confirmed as UXO and detonated <i>in situ</i> .	Anomaly identified as possible debris, found to be UXO and recorded as detonated.

APPENDIX B. GAZETTEER BASED ON ARCHAEOLOGICAL ASSESSMENT OF UXO SURVEY

TARGET ID	WA ID	EASTING G	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
A_MAG_01109		251314.3 2	6058590.28	251326.56	6058580.18	Metal debris; 1.2m x 1.2m at 0.5 m depth	Modern / non-arch.	No Action	
A_MAG_01142	7355	252447	6058935			Boulder	Natural	No Action	
B_SSS_00318		261469.9 6	6060098.74			Boulders	Natural	No Action	
B_SSS_00637		254425.9 8	6059551.25			Boulder	Natural	No Action	
B_SSS_00743		255637.5 3	6059897.53			Boulder	Natural	No Action	
B_SSS_00890		258537.5 4	6060091.86			Boulder	Natural	No Action	
B_SSS_00912		261043.7	6060171.14			Boulder	Natural	No Action	
B_SSS_01284A		257290.5 7	6060022.14	257289.58	6060027.87	Metal debris	Modern / non-arch.	No Action	
B_SSS_01284B		257289.4 8	6060015.65			Geological with ferrous content	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
B_SSS_01434		258602.53	6060103.67			Boulder	Natural	No Action	
B_SSS_01520		259605.14	6060179.84			Pile of rocks	Natural	No Action	
B_SSS_01955		263505.64	6059996.72			Boulder	Natural	No Action	
B_SSS_02381		261408.6	6060108.44			Boulder	Natural	No Action	
B_SSS_02386		261249.07	6060117.73			Boulders	Natural	No Action	
B_SSS_02417		258583.4	6060069.1	258593.02	6060060.91	Metal debris	Modern / non-arch.	No Action	
B_SSS_02465		256685.51	6059940.21			Boulder	Natural	No Action	
B_SSS_02468		256431.23	6059915.82			Boulder	Natural	No Action	
B_SSS_02476		255134.53	6059735.01			Boulder	Natural	No Action	
B_SSS_02579		256950.61	6059981.79			Boulder	Natural	No Action	
B_SSS_02580		256967.65	6059983.92			Boulder	Natural	No Action	
B_SSS_02898		258520.66	6060060.75			Boulder	Natural	No Action	
B_SSS_02939		257561.88	6059997.41			Boulder	Natural	No Action	
B_SSS_03159		257735.3	6060046.67			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
B_SSS_03172		258023.93	6060013.88			Rock outcrop	Natural	No Action	
B_SSS_03180		258282.2	6060084.75			Boulder	Natural	No Action	
B_SSS_03218		260588.51	6060217.33			Boulder	Natural	No Action	
B_SSS_03231		261422.72	6060105.27			Boulders	Natural	No Action	
B_SSS_03233		261512.21	6060095.38			Boulders	Natural	No Action	
C_MAG_00235	7574	279727.89	6064604.55	279722.28	6064621.77	Metal debris; metal bar	Modern / non-arch.	No Action	
C_MAG_00337		296465.23	6067498.48	296450.29	6067486.56	Wire rope coil 1m diameter	Modern / non-arch.	No Action	
C_SSS_00654		304654.42	6067682.42			Boulder	Natural	No Action	
C_SSS_00695		305204.03	6067643.02			Boulder	Natural	No Action	
C_SSS_01382		305017.91	6067639.86			Boulder	Natural	No Action	
C_SSS_01587		299140.58	6067807.12			Boulder	Natural	No Action	
C_SSS_01734		292579.27	6065982.18			Nothing Found	Nothing Found	No Action	
C_SSS_01769		280147.3	6064640.99			Boulder	Natural	No Action	
C_SSS_01777		279973.28	6064649.35			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
C_SSS_02418		297353.16	6067661.03			Boulder	Natural	No Action	
C_SSS_02425		300775.32	6067755.31			Boulder	Natural	No Action	
C_SSS_02441		298995.69	6067793.55			Boulder	Natural	No Action	
D_SSS_00129		312136.13	6068353.92			Boulder	Natural	No Action	
D_SSS_00187		317285.28	6069120.82			Rock outcrop	Natural	No Action	
D_SSS_00197		317182.35	6069090.27			Boulder	Natural	No Action	
D_SSS_00375		316161.4	6068944.08			Rock outcrop	Natural	No Action	
D_SSS_00421		315496.06	6068826.2			Boulder	Natural	No Action	
D_SSS_00424		315220.73	6068789.12			Boulder	Natural	No Action	
E_MAG_00004	7505	388833.5	6082010.3			Metal debris	Modern / non-arch.	No Action	
E_MAG_00007	7514	363026.9	6078446.3	363038.59	6078426.68	Steel wire rope c. 1 inch diameter, undetermined length, 0.2 m depth of burial	Modern / non-arch.	No Action	
ECR_FABM_SSS_037609		252597.7697	6059010.991			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_042760		250259.6 765	6058385.31			Boulder	Natural	No Action	
ECR_FABM_SS S_043596		253047.7 8	6059092.15	253033.2	6059087.74	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_044507A		253379.9	6059231.05	253362.63	6059245.34	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_044507B		253380.6 6	6059233.54	253362.63	6059245.34	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_044526		253146.1 506	6059144.891			Boulder	Natural	No Action	
ECR_FABM_SS S_044807		252259.3 075	6058877.175			Boulder	Natural	No Action	
ECR_FABM_SS S_046280A		252623.6 477	6058996.696			Boulder	Natural	No Action	
ECR_FABM_SS S_046280B		252623.6 477	6058996.696			Boulder	Natural	No Action	
ECR_FABM_SS S_098987		262173.1 294	6060055.65			Slab; geological with ferrous content	Natural	No Action	
ECR_FABM_SS S_101313		262517.7 15	6060049.775			Boulder	Natural	No Action	
ECR_FABM_SS S_101372		263531.6 667	6059996.59			Boulder	Natural	No Action	
ECR_FABM_SS S_101491		263483.0 094	6059996.897			Boulder	Natural	No Action	
ECR_FABM_SS S_101598		263620.6 933	6059995.643			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_102100		263314.7	6059990.444			Boulder	Natural	No Action	
ECR_FABM_SS S_102104		263560.4767	6059985.187			Boulder	Natural	No Action	
ECR_FABM_SS S_102228		259596.1667	6060180.233			Boulder	Natural	No Action	
ECR_FABM_SS S_102619		261148.0882	6060173.138			Pile of rocks	Natural	No Action	
ECR_FABM_SS S_102630		260126.0775	6060218.283			Boulder	Natural	No Action	
ECR_FABM_SS S_102664	7623	260020.6036	6060207.896			Boulder	Natural	No Action	
ECR_FABM_SS S_102666		261292.6375	6060119.038			Boulder	Natural	No Action	
ECR_FABM_SS S_102681		260936.625	6060193.056			Nothing Found	Nothing Found	No Action	
ECR_FABM_SS S_102692		259616.02	6060182.337			Boulder	Natural	No Action	
ECR_FABM_SS S_103057		261796.3095	6060112.783			Pile of rocks	Natural	No Action	
ECR_FABM_SS S_103350		259299.2781	6060155.022			Nothing Found	Nothing Found	No Action	
ECR_FABM_SS S_103449		259327.475	6060155.125			Boulder	Natural	No Action	
ECR_FABM_SS S_103533		260171.0088	6060208.741			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_103870		259878.7437	6060193.556			Boulder	Natural	No Action	
ECR_FABM_SS S_104043		261693.31	6060121.05	261697.75	6060123.88	Metal debris; ferrous fitting	Modern / non-arch.	No Action	
ECR_FABM_SS S_104104		261710.08	6060115.77	261711.59	6060144.92	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_104144		260087.9691	6060200.667			Boulder	Natural	No Action	
ECR_FABM_SS S_104200		259249.74	6060156.73	259258.3	6060158.01	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_104259		259190.3262	6060142.724			Metal object	Modern / non-arch.	No Action	
ECR_FABM_SS S_104543		259685.3222	6060185.472			Boulder	Natural	No Action	
ECR_FABM_SS S_104596		261266.8375	6060161.869			Boulders	Natural	No Action	
ECR_FABM_SS S_104637		262102.4105	6060087.534			Boulder	Natural	No Action	
ECR_FABM_SS S_104692		259982.2167	6060193.24			Pile of rocks	Natural	No Action	
ECR_FABM_SS S_104763A		261180.6167	6060169.44			Boulder	Natural	No Action	
ECR_FABM_SS S_104763B		261183.76	6060165.47	261163.7	6060181.07	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_104768		259632.4	6060175.414			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_105465		258229.5 175	6060076.588			Boulder	Natural	No Action	
ECR_FABM_SS S_105707		258234.3 139	6060070.392			Boulder	Natural	No Action	
ECR_FABM_SS S_105843		257272.1 5	6060014.082			Boulder	Natural	No Action	
ECR_FABM_SS S_105854		257643.7 316	6060046.603			Boulder	Natural	No Action	
ECR_FABM_SS S_106275		258580.4 867	6060096.123			Boulder	Natural	No Action	
ECR_FABM_SS S_106552		258358.9 5	6060087.653			Boulder	Natural	No Action	
ECR_FABM_SS S_107244		257021.9 545	6059990.691			Boulder	Natural	No Action	
ECR_FABM_SS S_107272		258320.8 132	6060085.353			Boulder	Natural	No Action	
ECR_FABM_SS S_108254		255401.7 192	6059804.369			Boulder	Natural	No Action	
ECR_FABM_SS S_108381		255174.0 529	6059736.191			Boulder	Natural	No Action	
ECR_FABM_SS S_108385		255510.1 357	6059831			Boulder	Natural	No Action	
ECR_FABM_SS S_109544		257722.1 55	6060008.895			Boulder	Natural	No Action	
ECR_FABM_SS S_109698		258465.9 969	6060062.697			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_110279		258158.7 024	6060030.962			Boulder	Natural	No Action	
ECR_FABM_SS S_110316		258195.4 906	6060036.322			Boulder	Natural	No Action	
ECR_FABM_SS S_110390		258564.6 667	6060069.85			Boulder	Natural	No Action	
ECR_FABM_SS S_110597		258470.7 395	6060054.6			Boulder	Natural	No Action	
ECR_FABM_SS S_110649		257815.1 95	6060011.125			Boulder	Natural	No Action	
ECR_FABM_SS S_110825		259489.7 079	6060129.753			Boulder	Natural	No Action	
ECR_FABM_SS S_111711		260374.7 575	6060195.058			Boulder	Natural	No Action	
ECR_FABM_SS S_111745		258091.4 475	6060026.068			Boulder	Natural	No Action	
ECR_FABM_SS S_111867		258200.2 875	6060043.713			Boulder	Natural	No Action	
ECR_FABM_SS S_112048		258537.4 937	6060060.219			Boulder	Natural	No Action	
ECR_FABM_SS S_112284		259561.1 1	6060135.81	259552.73	6060123.64	Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_112858		261592.0 281	6060094.728			Boulders	Natural	No Action	
ECR_FABM_SS S_112918		260868.1 688	6060159.165			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_112984		262286.7 79	6060034.429			Boulder	Natural	No Action	
ECR_FABM_SS S_113032		263169.0 929	6059960.107			Boulder	Natural	No Action	
ECR_FABM_SS S_113038		263684.5 265	6059953.629			Metal debris	Modern / non-arch.	No Action	
ECR_FABM_SS S_113172		261562.0 5	6060089.95			Boulders	Natural	No Action	
ECR_FABM_SS S_113576		261941.4 75	6060073.175			Pile of rocks	Natural	No Action	
ECR_FABM_SS S_113628		260726.7 972	6060164.675			Boulders	Natural	No Action	
ECR_FABM_SS S_114531		262345.6 9	6060028.533			Boulder	Natural	No Action	
ECR_FABM_SS S_114733		262084.4 912	6060047.753			Nothing Found	Nothing Found	No Action	
ECR_FABM_SS S_114848		261344.0 762	6060123.374			Nothing Found	Nothing Found	No Action	
ECR_FABM_SS S_144121		279996.4 9	6064622.085			Boulder	Natural	No Action	
ECR_FABM_SS S_144556		299129.9 706	6067764.627			Boulder	Natural	No Action	
ECR_FABM_SS S_144794		300025.1 647	6067747.891			Boulder	Natural	No Action	
ECR_FABM_SS S_145086		299068.8	6067769.8	299088.53	6067759.67	Wood and metal debris	Modern / non-arch.	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_146623	7804	306473.8 615	6067582.327			Boulder	Natural	No Action	
ECR_FABM_SS S_151705		296676.2 412	6067568.803			Boulder	Natural	No Action	
ECR_FABM_SS S_152189		299845.6 425	6067793.128			Boulder	Natural	No Action	
ECR_FABM_SS S_152322		298283.7 778	6067795.544			Boulder	Natural	No Action	
ECR_FABM_SS S_152424		300703.2 5	6067783.844			Boulder	Natural	No Action	
ECR_FABM_SS S_152647		304271.7 393	6067703.761			Boulder	Natural	No Action	
ECR_FABM_SS S_152739		305050.4 286	6067684.779			Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_166879 / (pARCH)	7831	308898.5 5	6067712.87	308910.11	6067700.74	Wooden and metal debris - anchor/ admiralty	Archaeology	Reported via PAD	  
ECR_FABM_SS S_168104		309400.6 923	6067878.842			Rock outcrop	Natural	No Action	
ECR_FABM_SS S_168757		310891.2 619	6068164.717			Boulder and rope	Modern / non-arch.	No Action	
ECR_FABM_SS S_169817		317850.8 275	6069188.628			Boulders	Natural	No Action	
ECR_FABM_SS S_175934		402713.8 95	6080898.72			Boulder	Natural	No Action	

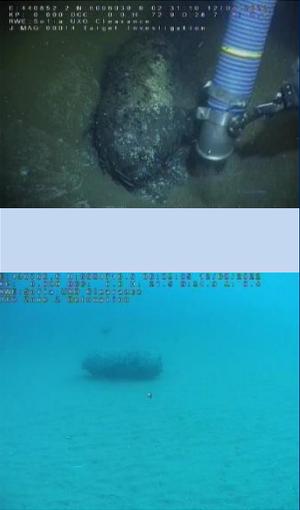
TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FABM_SS S_176282		415994.0 575	6080023.773			Boulder	Natural	No Action	
ECR_FABM_SS S_176301		415997.3 094	6080031.916			Nothing Found	Nothing Found	No Action	
ECR_FABM_SS S_176387		416858.8 967	6079952.76			Boulder	Natural	No Action	
ECR_FABM_SS S_176407		417102.1 722	6079943.872			Boulder	Natural	No Action	
ECR_FABM_SS S_176492		416213.7 036	6080004.604			Boulder	Natural	No Action	
ECR_FABM_SS S_176666		402489.8 405	6080863.895			Boulder	Natural	No Action	
ECR_FABM_SS S_176669		402523.8 456	6080876.396			Boulder	Natural	No Action	
ECR_FABM_SS S_176871		402225.1 5	6080872.706			Boulder	Natural	No Action	
ECR_FABM_SS S_177017		397111.5 375	6081477.133			Nothing Found	Nothing Found	No Action	
ECR_FBAM_SS S_103287		259005.4 033	6060138.147			Boulder	Natural	No Action	
ECR_FBAM_SS S_103683		258986.7 062	6060131.306			Boulder	Natural	No Action	
ECR_FBAM_SS S_105345A		258621.5 647	6060094.897			Boulder	Natural	No Action	
ECR_FBAM_SS S_105345B		258621.5 647	6060094.897			Metal debris	Modern / non-arch.	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_FBAM_SS S_105425		258635.2 1	6060098.453			Boulder	Natural	No Action	
ECR_FBAM_SS S_106463		258847.0 438	6060125.338			Boulder	Natural	No Action	
ECR_FBAM_SS S_107692		258655.8 682	6060109.736			Boulder	Natural	No Action	
ECR_FBAM_SS S_109908		258851.8	6060087.82	258864.21	6060077.36	Metal debris	Modern / non-arch.	No Action	
ECR_FBAM_SS S_110805		258626.0 961	6060073.654			Boulder	Natural	No Action	
ECR_FBAM_SS S_110912		258694.6 594	6060071.066			Boulder	Natural	No Action	
ECR_UXO_MAG _00813	7760	277551.3 4	6064323.09	277560.91	6064310.76	Metal debris	Modern / non-arch.	No Action	
ECR_UXO_MAG _00832	7901	267481.3 5	6060464.56	265813.65	6060019.2	Metal debris	Modern / non-arch.	No Action	
ECR_UXO_MAG _00856	7724	271375.6	6063524.1	271374.68	6063537.63	Metal debris	Modern / non-arch.	No Action	
ECR_UXO_MAG _00891	7938	270102.4 3	6062535.82	270092.66	6062545.66	Metal debris; metal bar	Modern / non-arch.	No Action	
ECR_UXO_MAG _00893	7768	278730.5 4	6064457.87	278732.27	6064440.4	Metal debris; metal bar	Modern / non-arch.	No Action	
ECR_UXO_MAG _00896	7912	268328	6060712	268320	6060721	Metal object	Modern / non-arch.	No Action	
ECR_UXO_MAG _00898	7890	265809.7	6060032.5	265813.65	6060019.2	Metal debris	Modern / non-arch.	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
ECR_UXO_MAG_00915	7931	269594.89	6061996.04	269571.73	6062008.15	Wire rope	Modern / non-arch.	No Action	
ECR_UXO_MAG_00921	7733	272031.5	6063611.5			Nothing Found	Nothing Found	No Action	
ECR_UXO_MAG_00940	7839	268451.5	6060699			Boulder	Natural	No Action	
ECR_UXO_MAG_00965 / (pARCH)	7879	264478.2	6059991.1	264478.08	6060004.83	Metal debris; metal bar	Modern / non-arch.	No Action	
ECR_UXO_MAG_00968	7934	269818.07	6062253.32	269828.33	6062263.89	Metal debris	Modern / non-arch.	No Action	
ECR_UXO_MAG_00975	70685	271674.12	6063525.46	271688.86	6063516.92	Metal debris	Modern / non-arch.	No Action	
ECR_UXO_MAG_00976A		269167.25	6061548.15	269160.22	6061541.08	Metal plate	Modern / non-arch.	No Action	
ECR_UXO_MAG_00976B		269162.98	6061547.29	269158.66	6061524.17	Metal debris	Modern / non-arch.	No Action	
ECR_UXO_MAG_00977 / (pARCH)	7593	268831.77	6061204.45	268815.42	6061218.99	Metal debris; metal bar	Modern / non-arch.	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
F_MAG_00501	7674	422781.91	6079519.4	422782.76	6079545.52	Wire rope 0.3 m diameter	Modern / non-arch.	No Action	
F_SSS_00190		402637.38	6080899.5			Boulder	Natural	No Action	
F_SSS_00257		412858.05	6080258.42			Boulder	Natural	No Action	
ECR_FABM_SSS_175906		403090.1204	6080866.402			Boulder	Natural	No Action	
H_MAG_00016	7050	434646.8	6095360.7			Nothing Found	Nothing Found	No Action	
J_MAG_00008 / (pARCH)	7333	449453	6082950			Steel metal frame like structure L 1.02 x W 0.5 H 150mm. Metal object	Modern / non-arch.	Recommend avoiding as may present navigational hazard	

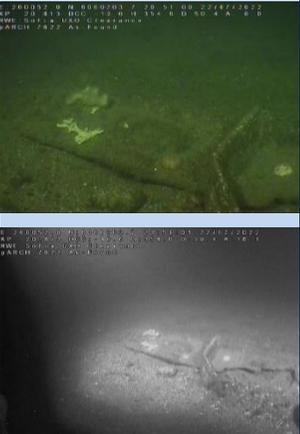
TARGET ID	WA ID	EASTING G	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
J_MAG_00011	7334	449206	6083743			Buoyant Mine WWII	UXO	UXO requirements take precedence. No further action is required	 

TARGET ID	WA ID	EASTING G	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
J_MAG_00014	7326	440855	6096030			German airdropped weapon (bomb) dating to WWII	UXO	UXO requirements take precedence. No further action is required	
M_MAG_00011	7144	452606	6090121	452643	6090110	Steel wire rope	Modern / non-arch.	No Action	
M_MAG_00014	7147	454587	6088226	452643	6090110	Cable / anchor chain, burial depth 1.6m, 2.5 x 2.5 - Steel wire rope	Modern / non-arch.	No Action	
M_MAG_00019A	7352	450511.8	6095526.8	450514.61	6095521.19	Wire rope coils	Modern / non-arch.	No Action	
M_MAG_00019B	7352	450511.8	6095524.3	450512	6095526.6	Boulder	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
M_MAG_00023	7348	447024	6097244	447052.8	6097300.5	Suspected depth charge dating to 1940-1950 weight 90kg. Upon re-investigation target was confirmed as Non-UXO. Consists of a small cylinder within a larger cylinder - possible marine filter.	Modern / non-arch.	No Action	 
N_MAG_00003A	7178	458985	6088362	459034	6088407	Metal debris	Modern / non-arch.	No Action	
N_MAG_00003B	7178	458988	6088367	458987	6088361	Metal debris	Modern / non-arch.	No Action	
N_MAG_00062	7044	452667	6094412	452668	6094450	Wire rope	Modern / non-arch.	No Action	
N_MAG_00177	7648	452585	6094565	452597	6094587	Wire rope	Modern / non-arch.	No Action	
P_MAG_00003A	7185	452727	6098511			Geological object with ferrous material	Natural	No Action	
P_MAG_00003B	7185	452727	6098511			Nothing Found	Nothing Found	No Action	
P_MAG_00007	7184	452476.46	6098718.51	452468.08	6098707.1	Wire rope	Modern / non-arch.	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
P_MAG_00015	7188	456583	6094741	456560	6094440	Wire rope	Modern / non-arch.	No Action	
(pARCH)	7104	450591	6088174			Metal object	Modern / non-arch.	No Action	 
(pARCH)	7004	450594	6092271			Nothing Found	Nothing Found	No Action	
(pARCH)	7246	460953	6098860			Wire rope	Modern / non-arch.	No Action	
(pARCH)	7047	452949	6094544			Nothing Found	Nothing Found	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
(pARCH)	7153	446347	6100666			Nothing Found/borehole location	Nothing Found	No Action	
(pARCH)	7646	444736	6089358			Nothing Found	Nothing Found	No Action	
(pARCH)	7530	327993	6071990	327992	6071978	Rope coil	Modern / non-arch.	No Action	
(pARCH)	7837	269175.7	6061547.67			Boulders	Natural	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
(pARCH)	7622A-D	260054	6060206			Metal debris	Modern / non-arch.	Recommend avoiding as may present navigational hazard	
(pARCH)	7355	252442	6058931			Boulder	Natural	No Action	
Q_MAG_00111 / (pARCH)	7201	452784	6102559	452799	6102553	Steel wire rope	Modern / non-arch.	No Action	
Q_MAG_00112		452784	6102560			Nothing Found	Nothing Found	No Action	
Q_SSS_00286		458786.401	6096705.339			Boulder	Natural	No Action	
R_MAG_00006	7244	460722	6098768	460634	6098835	Steel wire rope - metal debris	Modern / non-arch.	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
R_MAG_00048						Nothing Found	Nothing Found	No Action	
R_MAG_00050		460949	6098879	460975	6098866	Wire rope	Modern / non-arch.	No Action	
R_MAG_00054		460958	6098834			Nothing Found	Nothing Found	No Action	
R_MAG_00071 / (pARCH)	7268	466111	6093495			Target identified as wood/metallic mixture with small length of steel wire rope, depth burial - 1.0m. Target dimension 4.5 x 0.4 m. Possibly ships mast made of wood and steel components.	Archaeology	Reported via PAD	
R_MAG_00073	7264; 7267	466027.3	6093511.6			Nothing Found	Nothing Found	No Action	

TARGET ID	WA ID	EASTING	NORTHING	EASTING (AS MOVED)	NORTHING (AS MOVED)	DESCRIPTION	REPORT	ACTION	IMAGE
R_MAG_00075	7265	465993	6093547	465987.5	6093543.86	Metal debris 2 x 2.5 m, 0.50 m depth of burial	Modern / non-arch.	No Action	
R_SSS_00005	7384	451233.2 244	6108202.461			Boulder	Natural	No Action	
S_MAG_00029	7278	436725.0 6	6099656.69	436701.34	6099666.51	Steel wire rope, 3 m length, 0.5 m depth of burial	Modern / non-arch.	No Action	
S_MAG_00042	7272/7 273	436280	6098601.6			Nothing Found	Nothing Found	No Action	
T_MAG_00032	7323	463664.9	6089300.4			Large black rock mass - ferrous material	Natural	No Action	

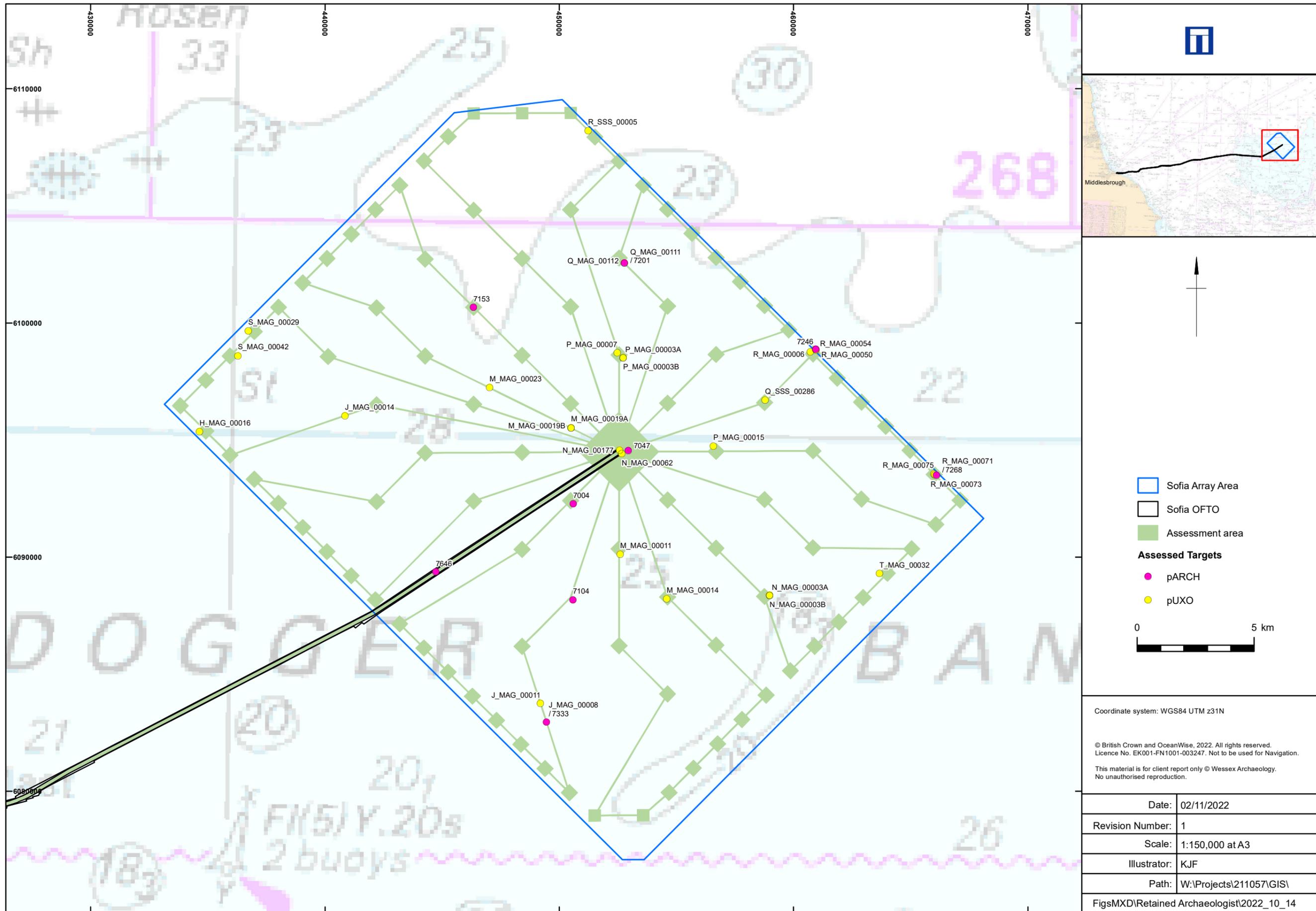


Figure 1a Archaeologically assessed targets 'as found' location

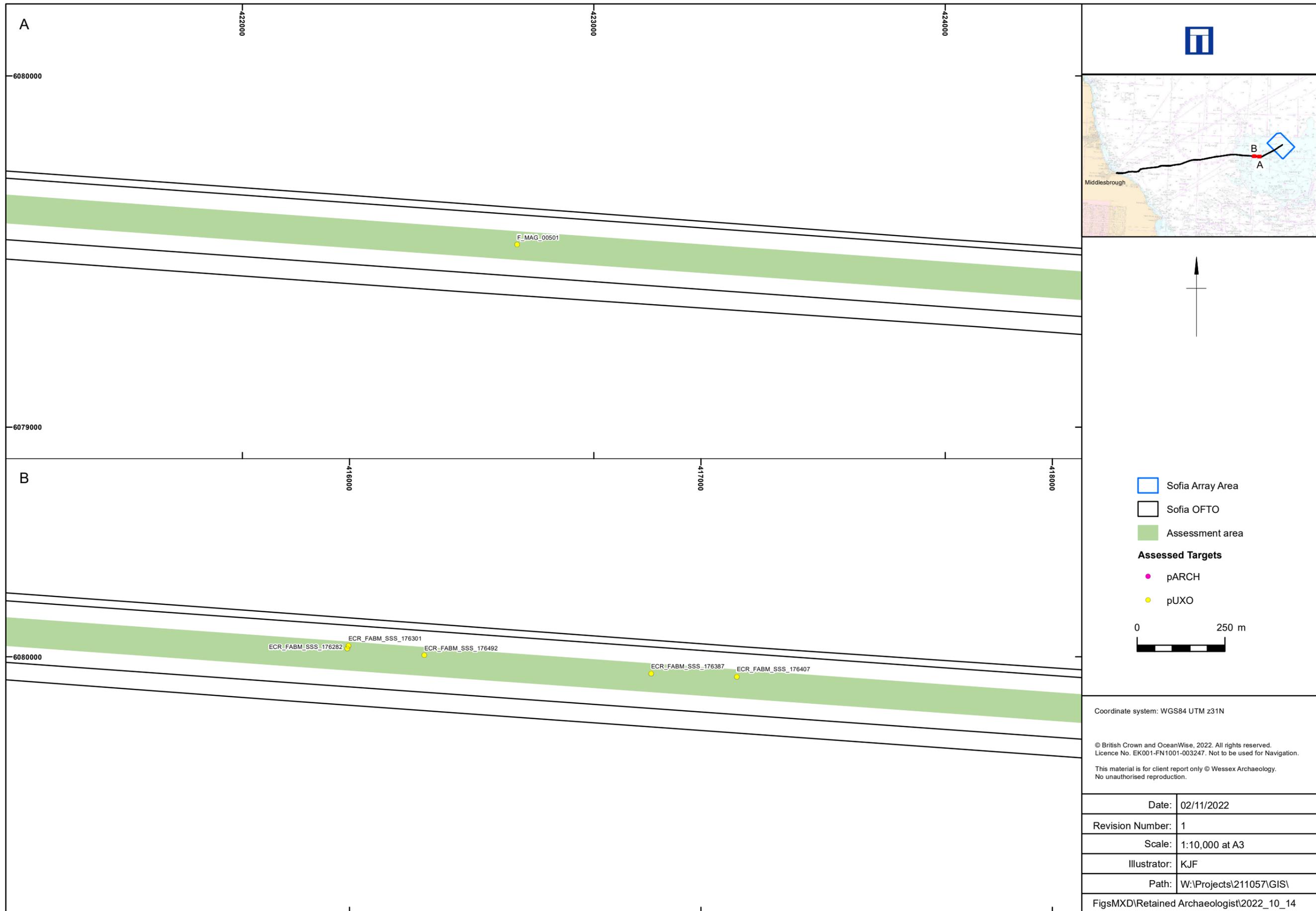


Figure 1b Archaeologically assessed targets 'as found' location

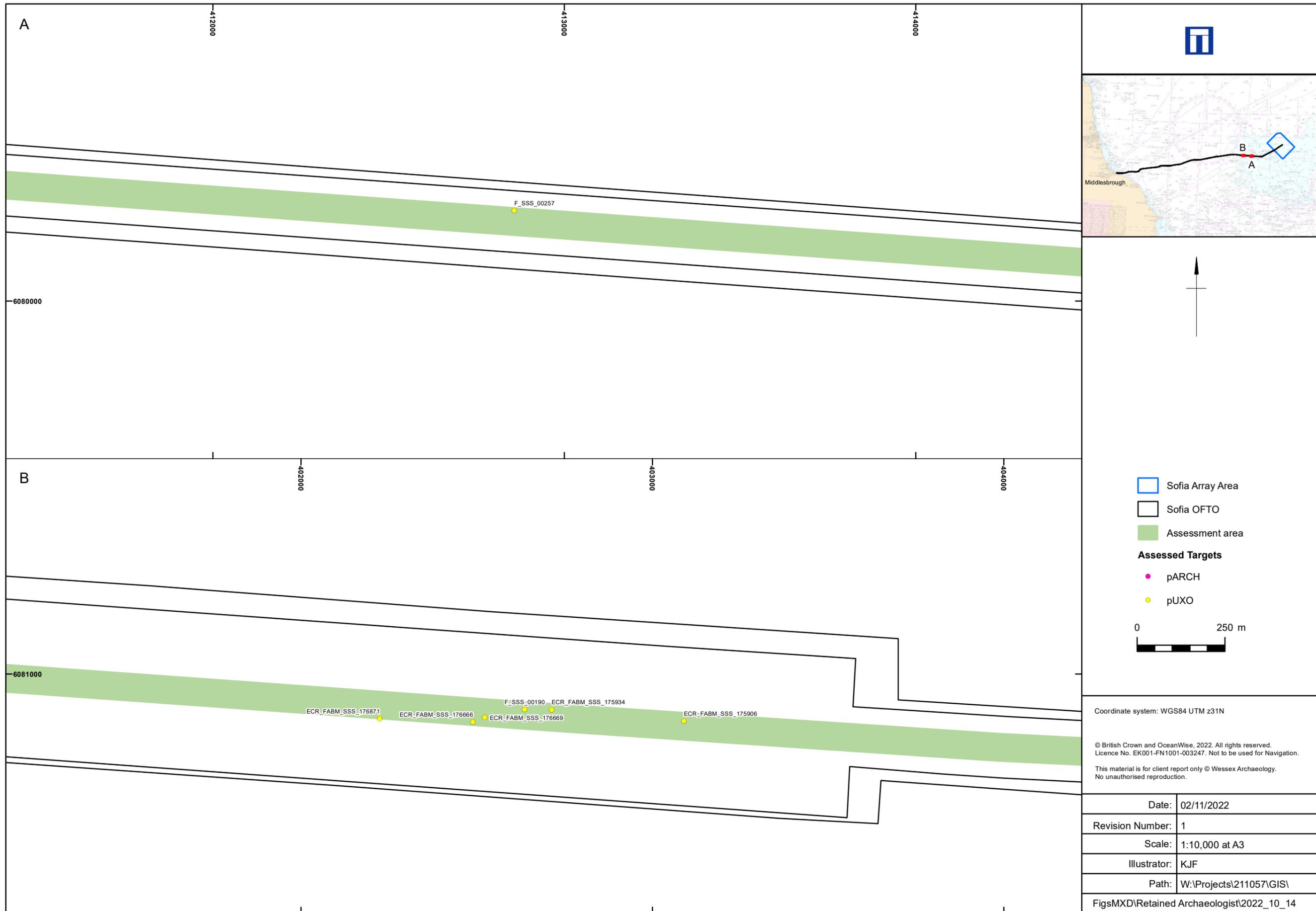


Figure 1c Archaeologically assessed targets 'as found' location

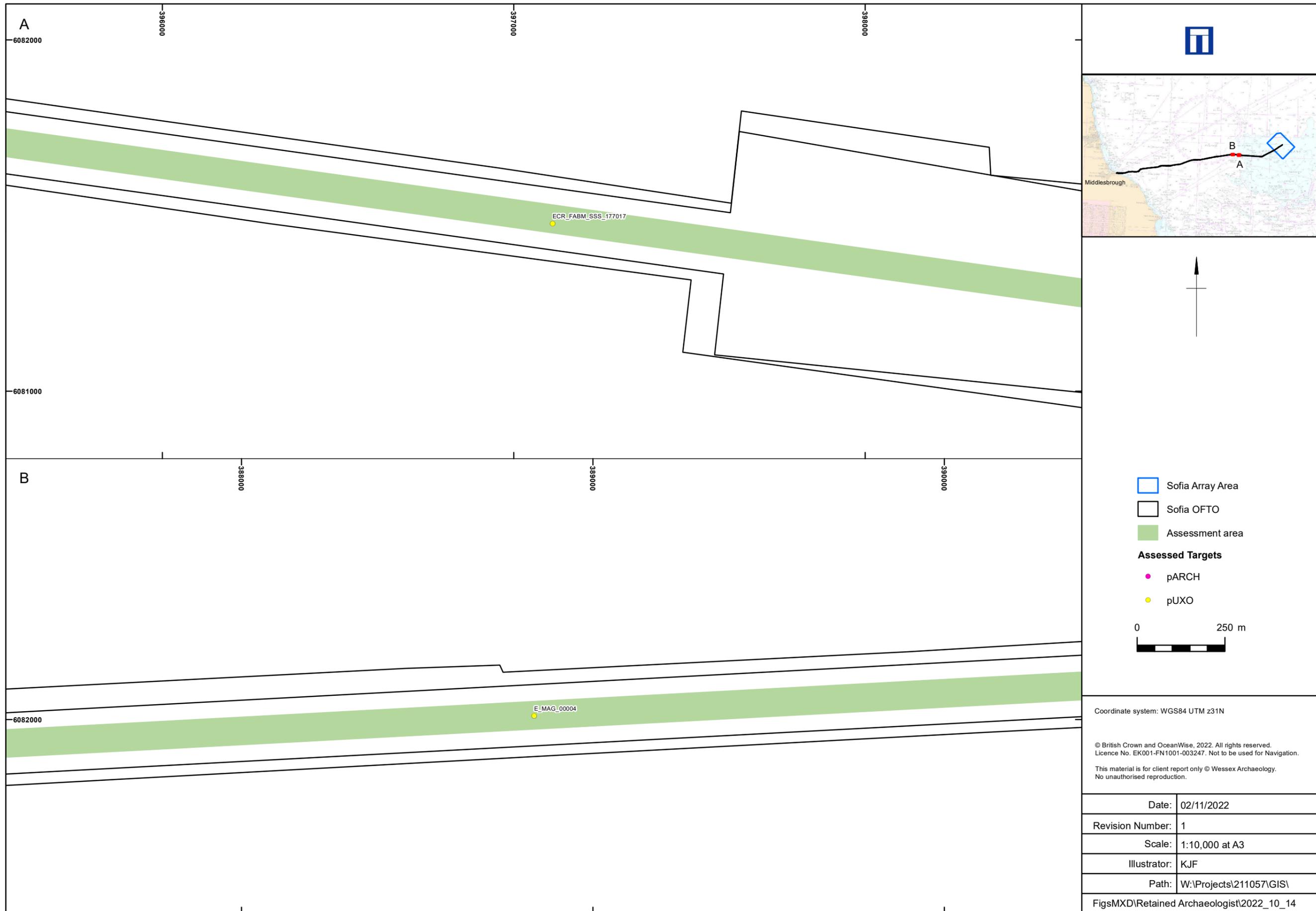


Figure 1d Archaeologically assessed targets 'as found' location

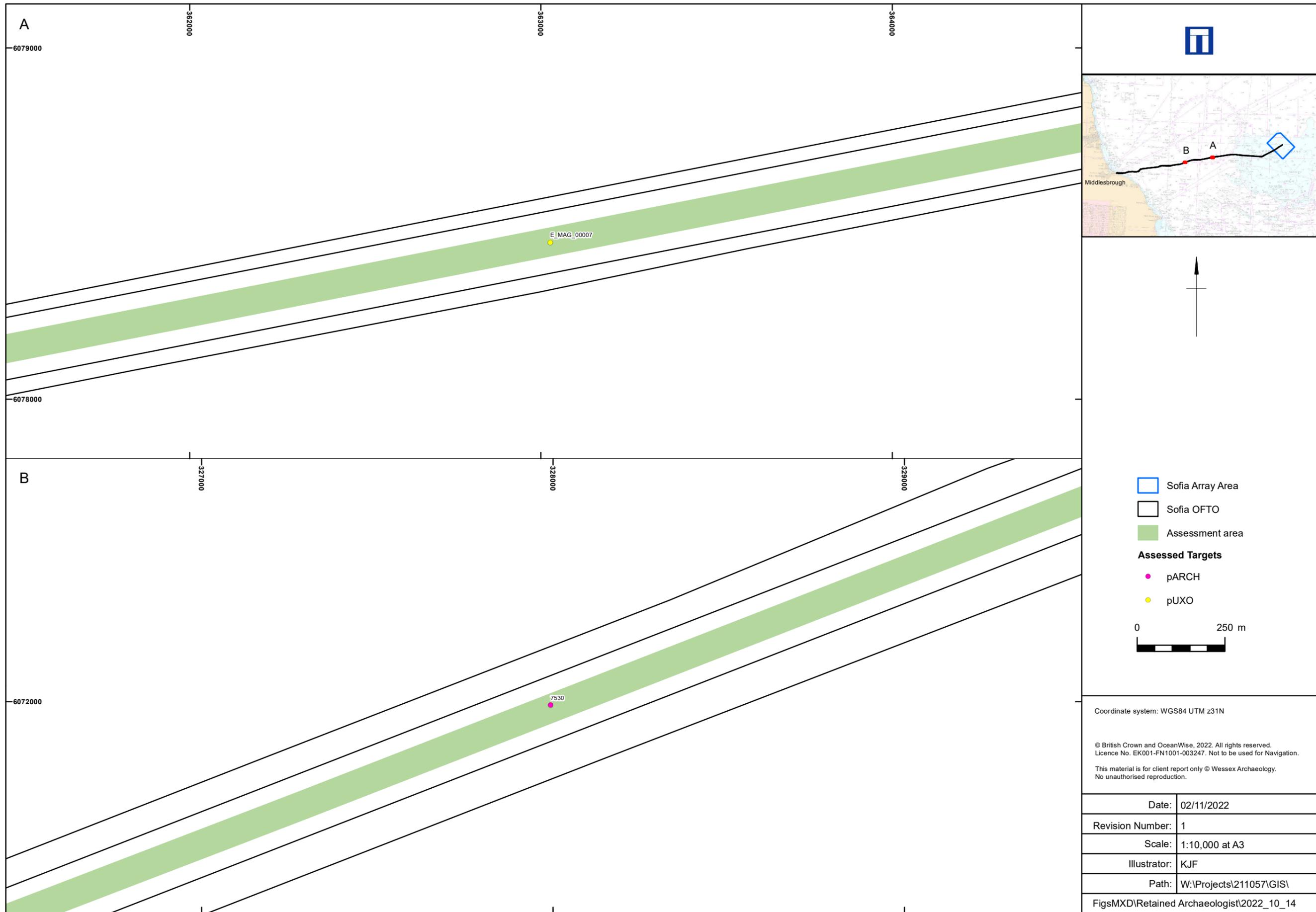


Figure 1e Archaeologically assessed targets 'as found' location

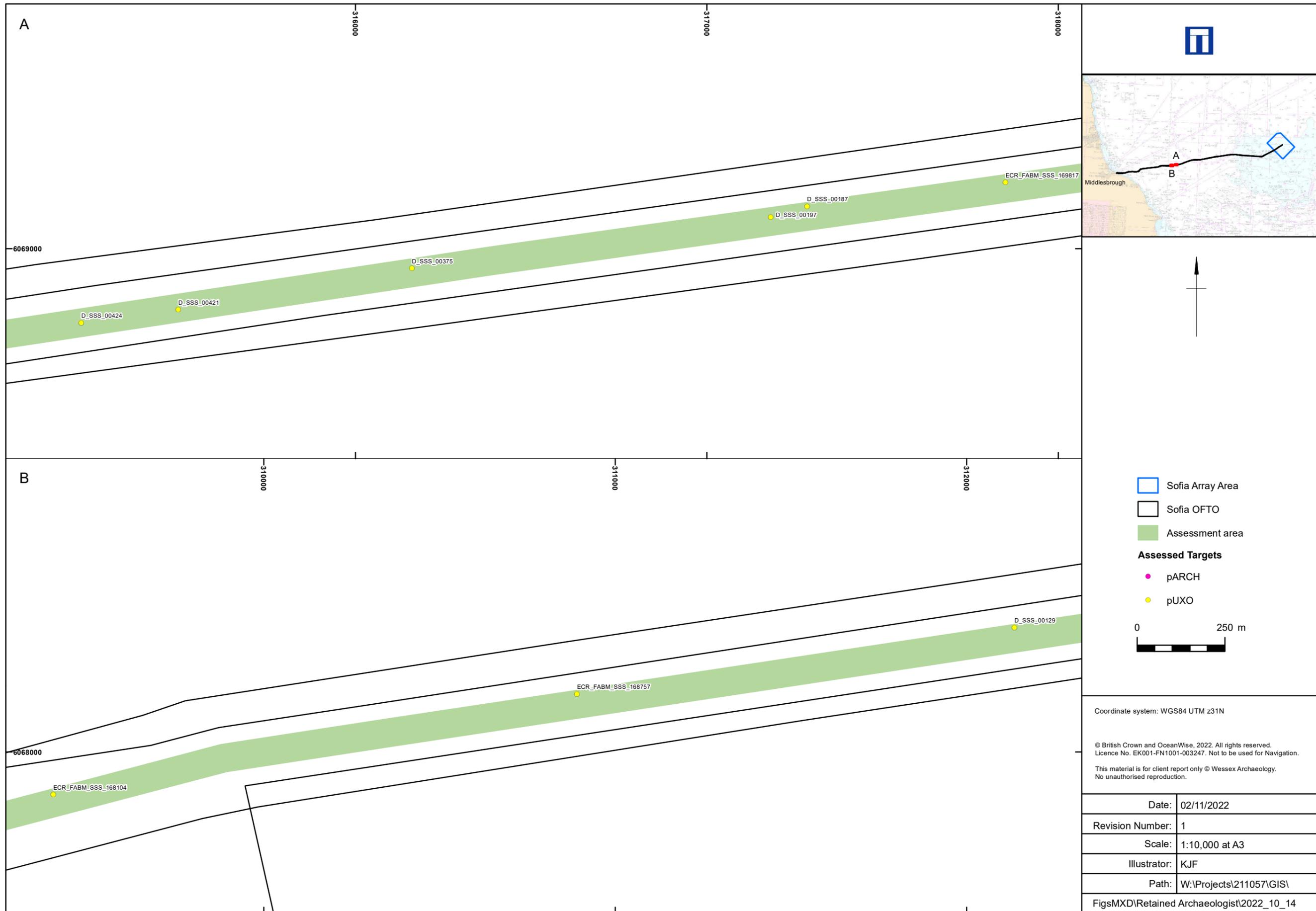


Figure 1f Archaeologically assessed targets 'as found' location

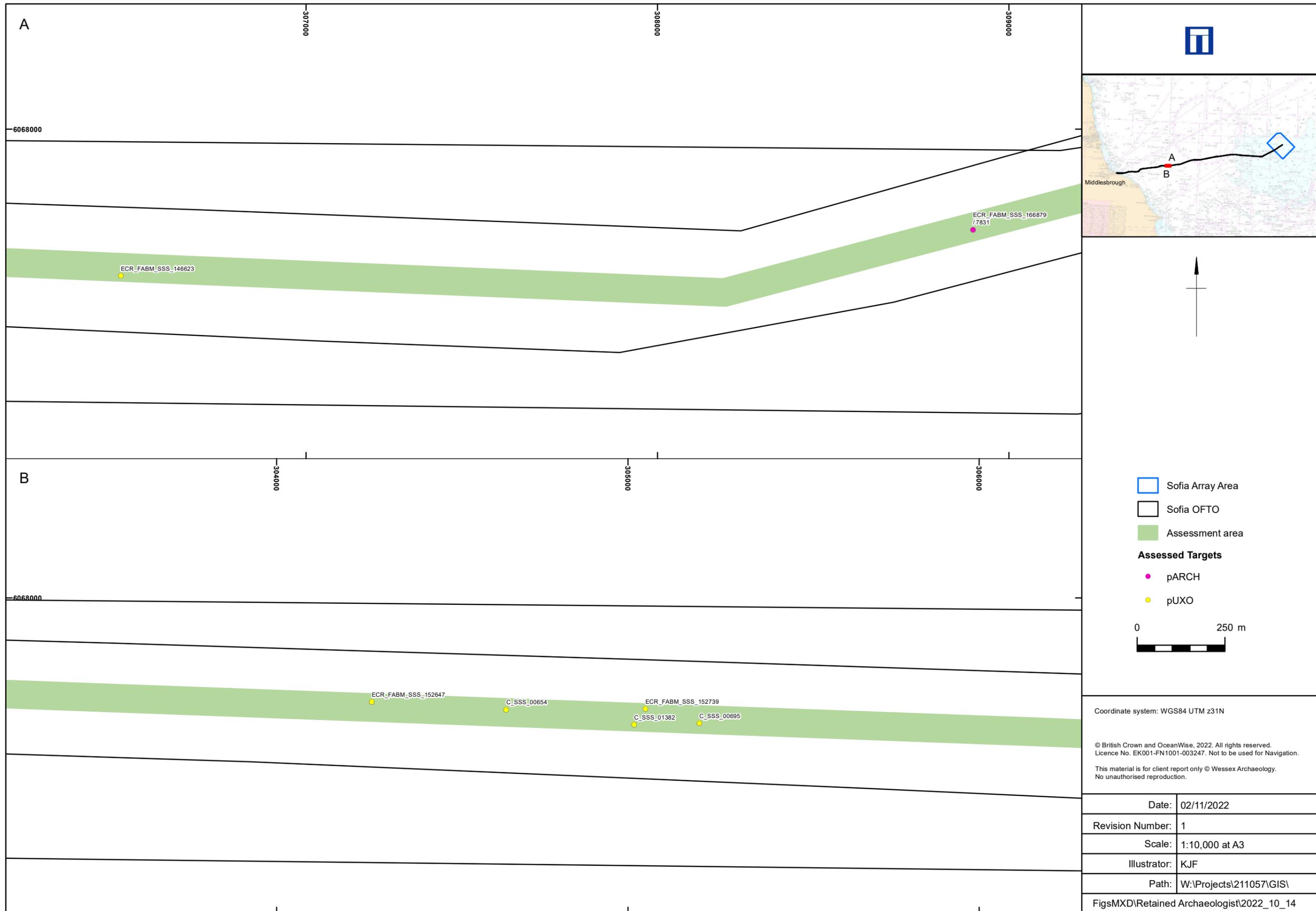


Figure 1g Archaeologically assessed targets 'as found' location

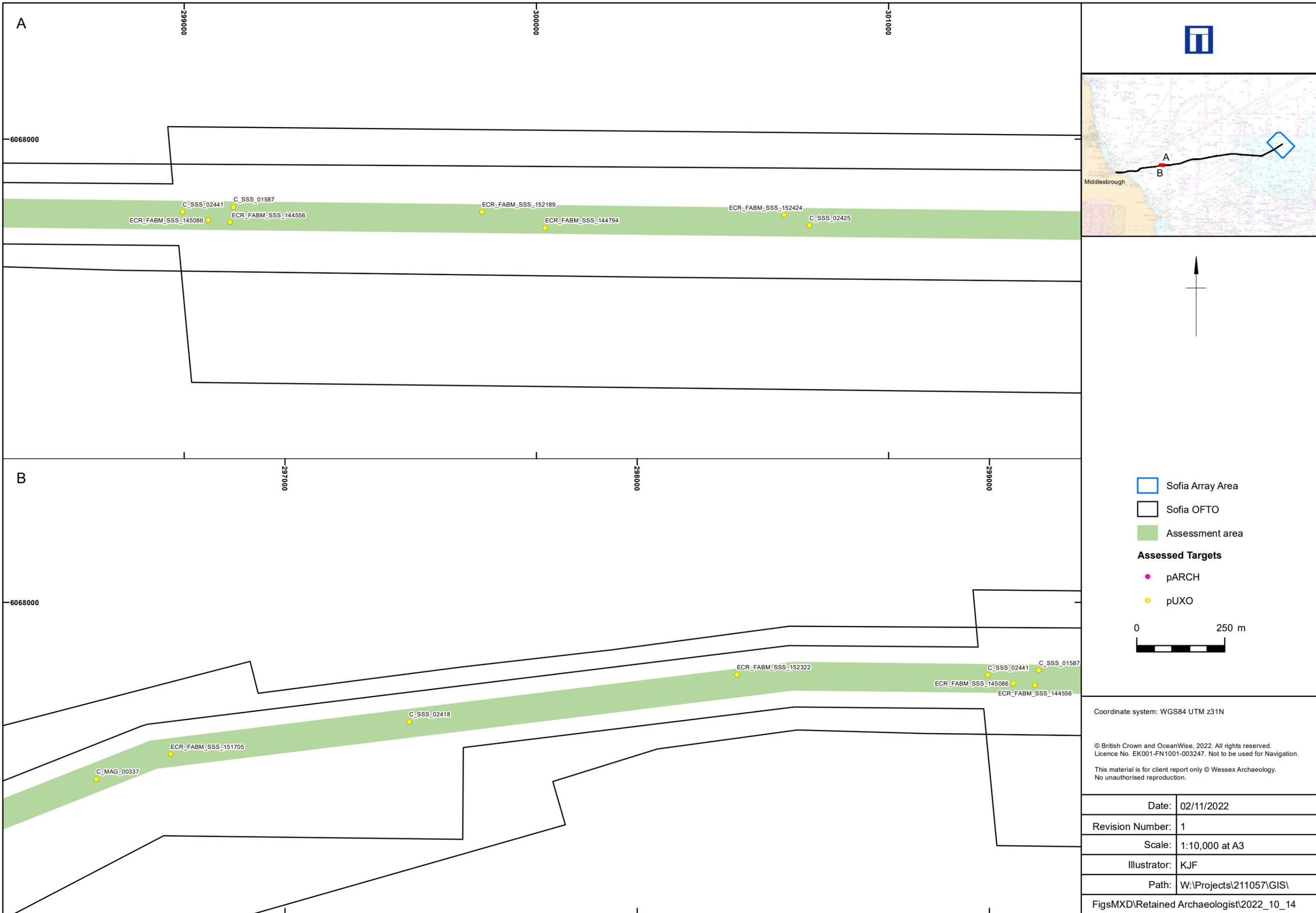


Figure 1h Archaeologically assessed targets 'as found' location

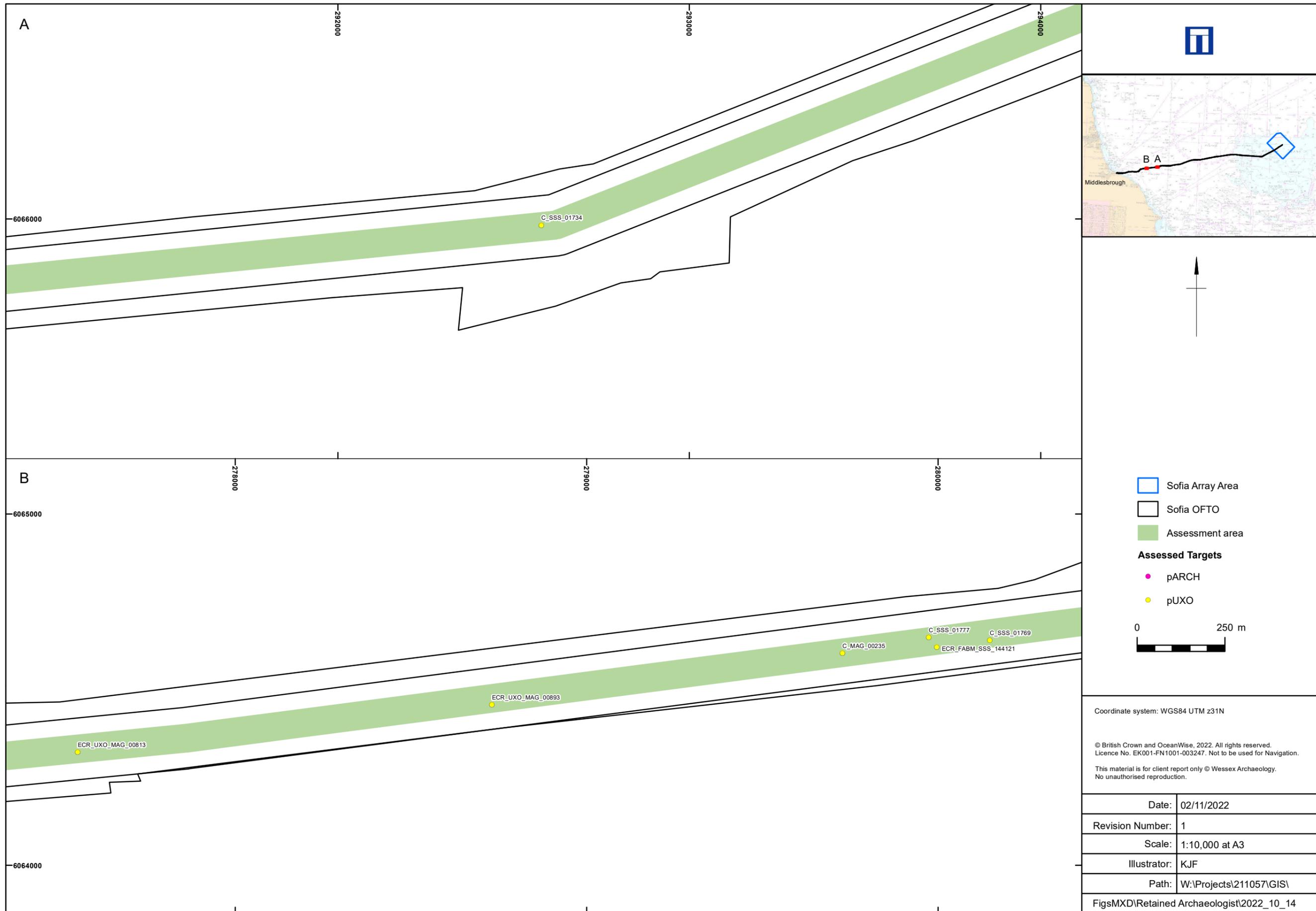


Figure 1i Archaeologically assessed targets 'as found' location

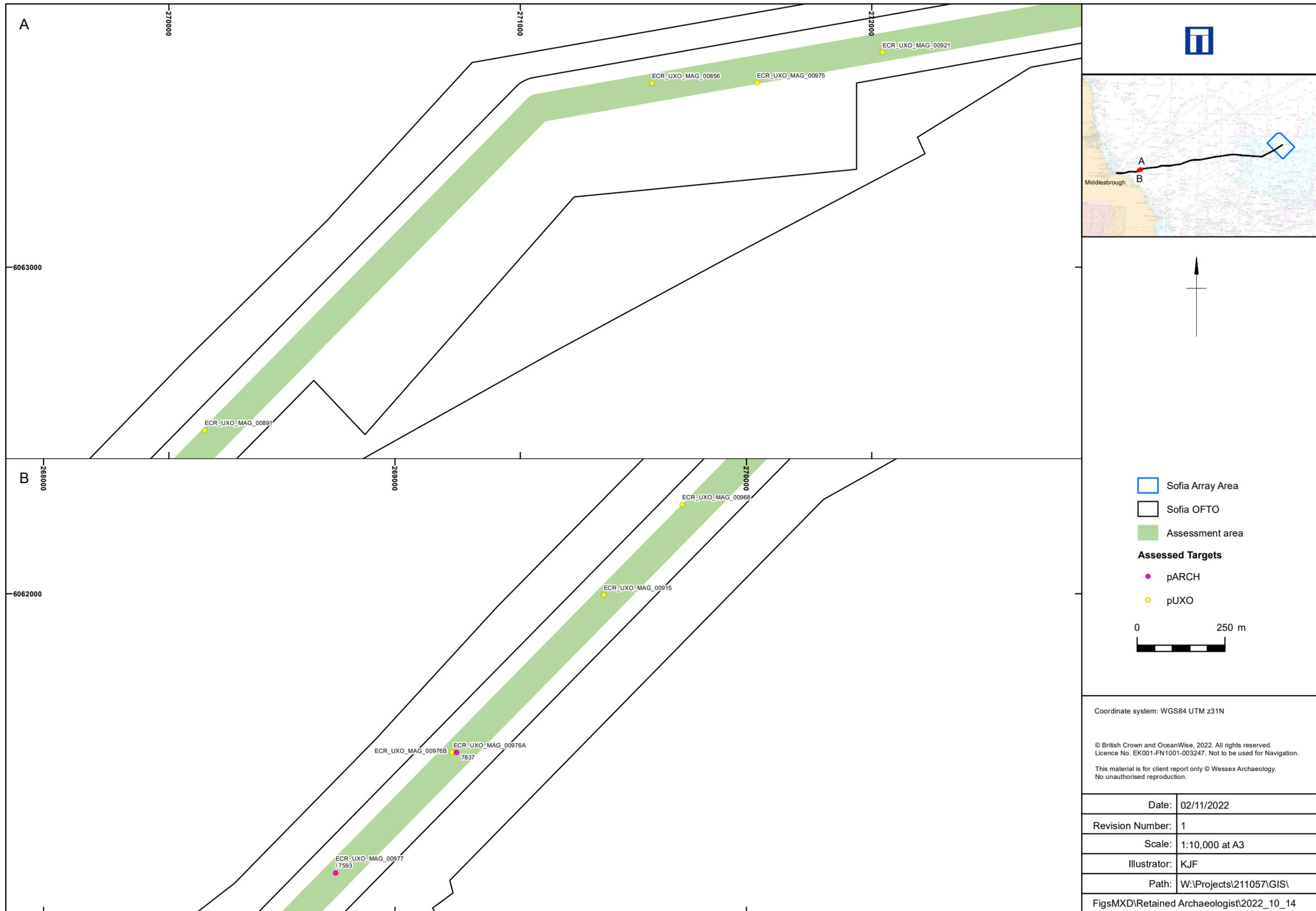


Figure 1j Archaeologically assessed targets 'as found' location

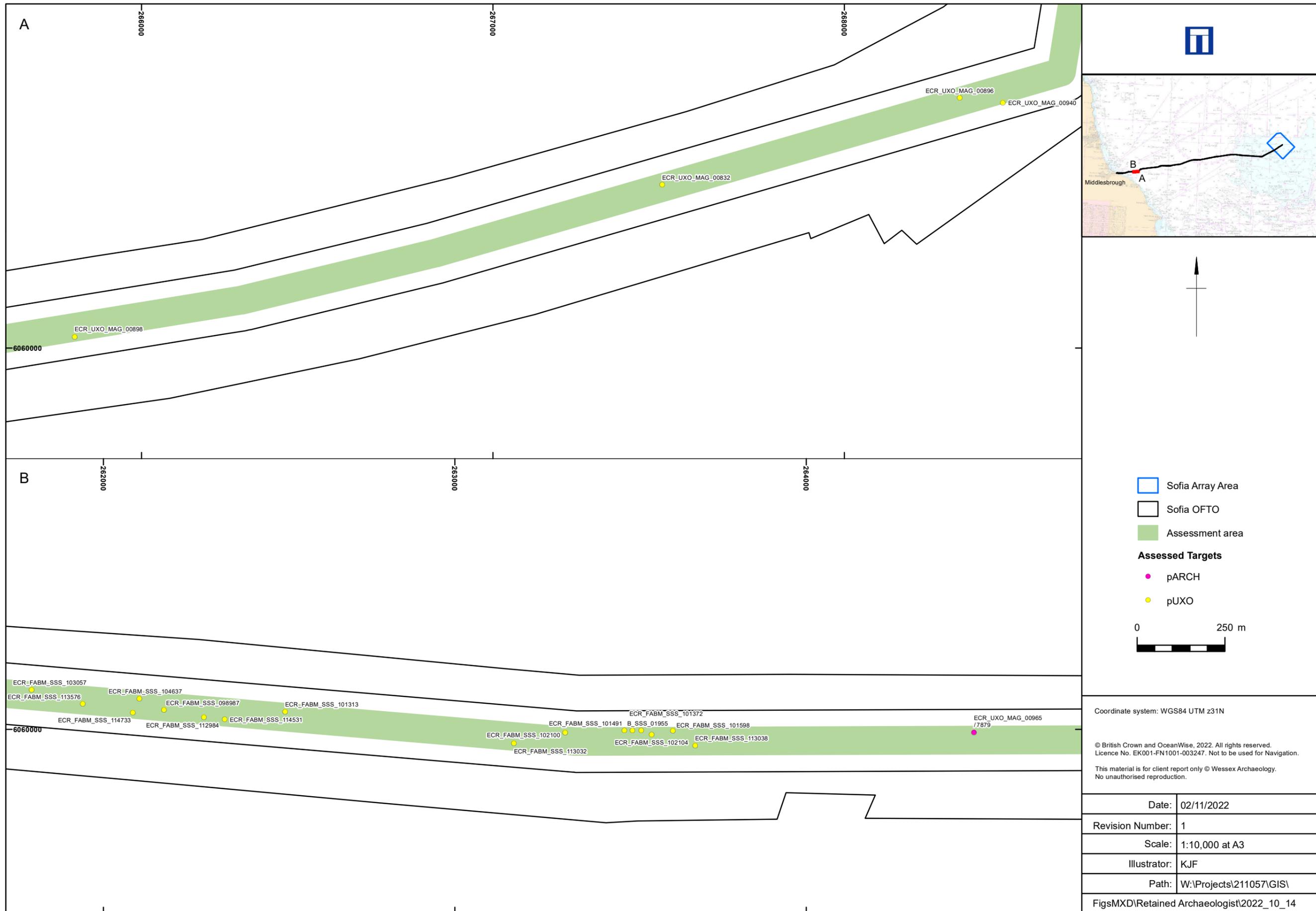


Figure 1k Archaeologically assessed targets 'as found' location

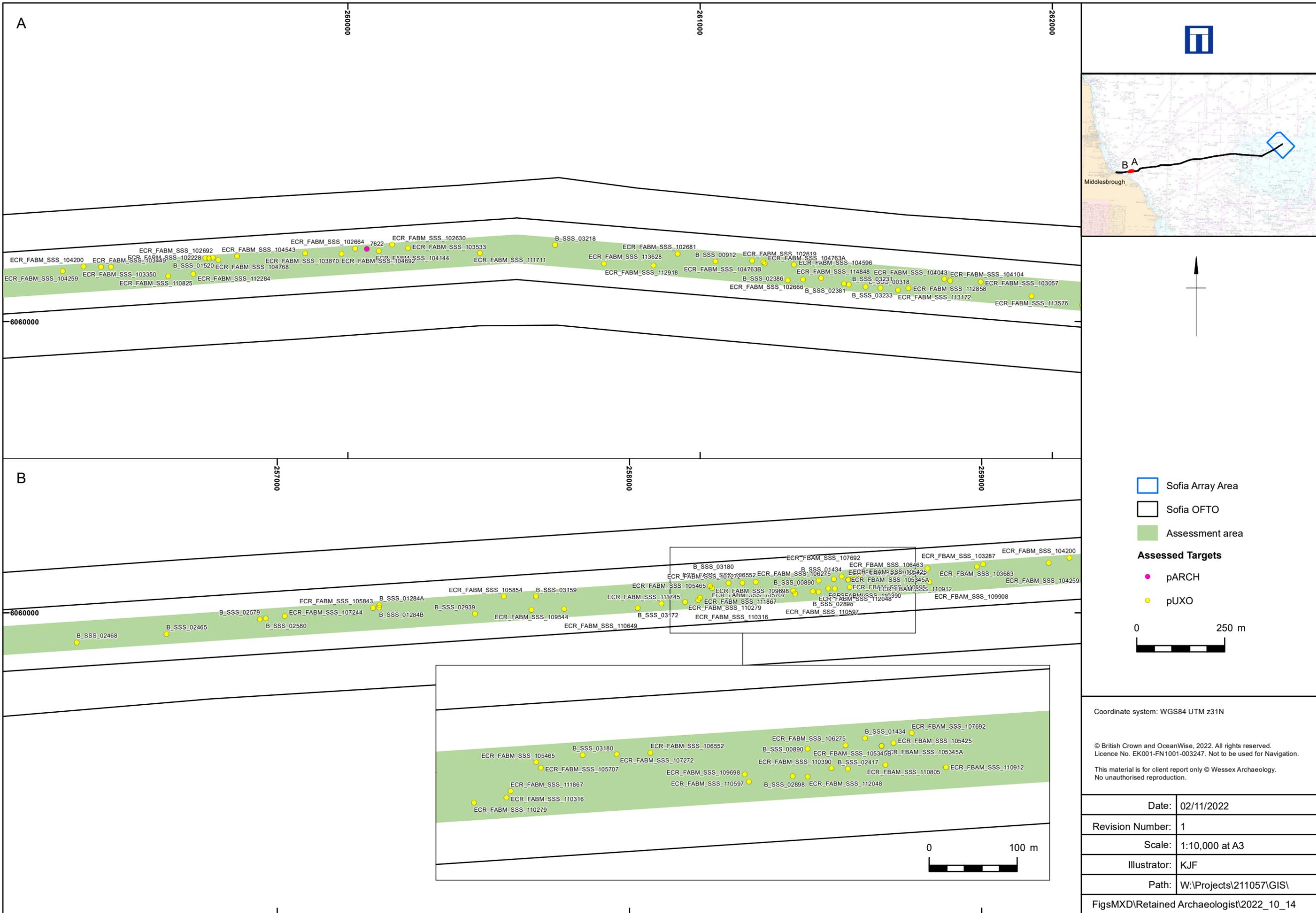


Figure 11 Archaeologically assessed targets 'as found' location

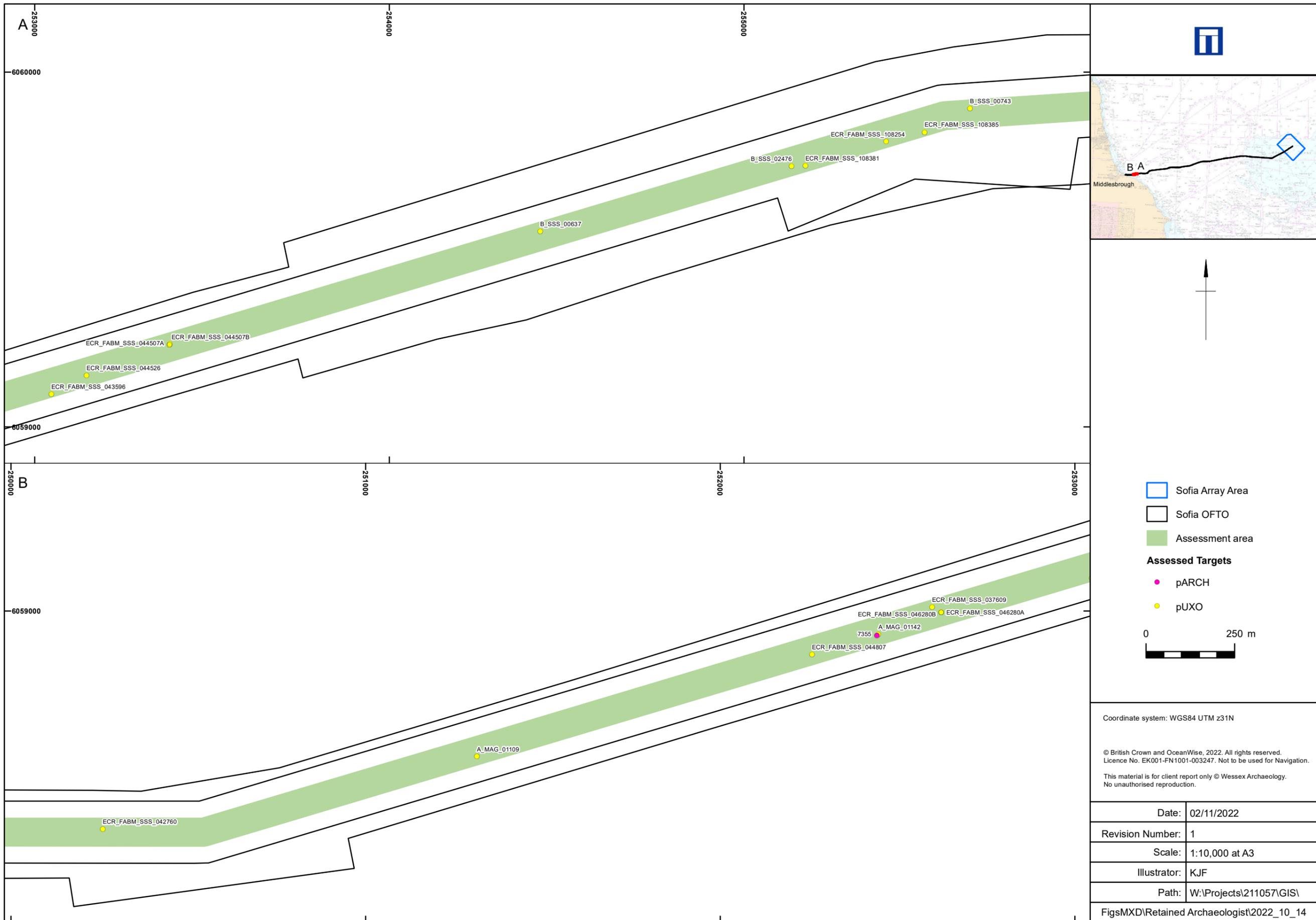


Figure 1m Archaeologically assessed targets 'as found' location