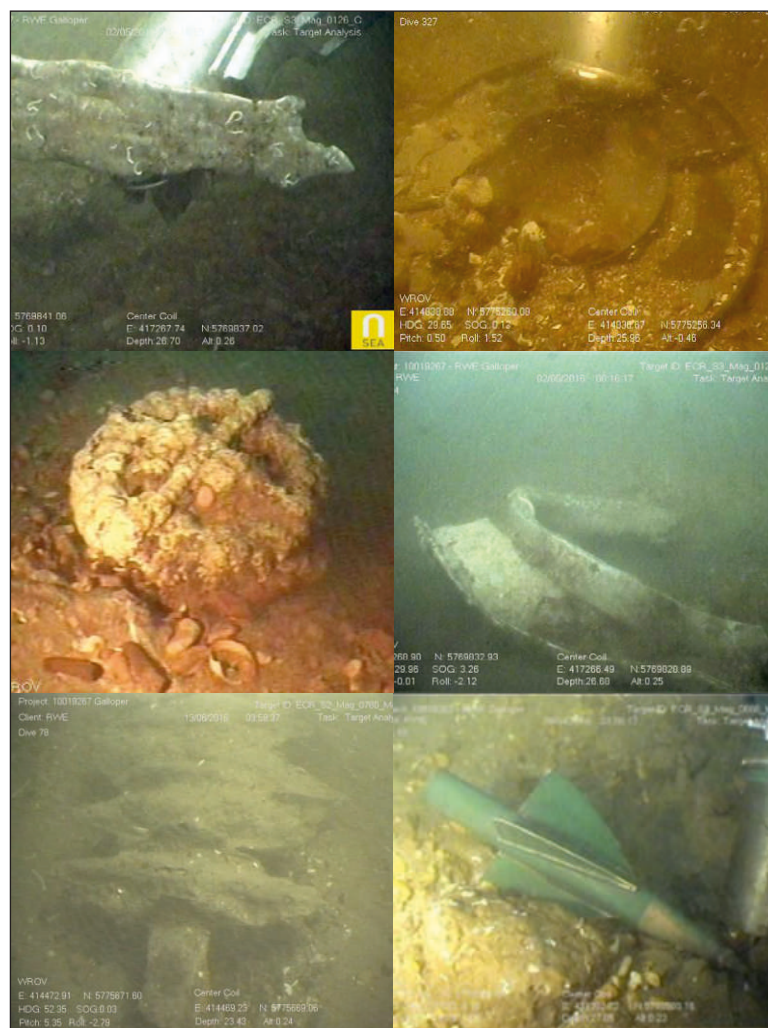




# Gallopier Offshore Wind Farm

Review of Archaeological Material identified during Pre-construction  
and Construction Surveys (OFTO Assets)

Archaeological Assessment of Unexploded Ordnance Survey Results



Ref: 106223.04  
August 2018



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Portway House  
Old Sarum Park  
Salisbury  
Wiltshire  
SP4 6EB

[www.wessexarch.co.uk](http://www.wessexarch.co.uk)

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# **Galloper Offshore Wind Farm**

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Construction Surveys (OFTO Assets)**

**Archaeological Assessment of Unexploded Ordnance Survey Results**

**Prepared for:**  
**Galloper Wind Farm Ltd.**  
Windmill Hill Business Park  
Whitehill Way  
Swindon  
Wiltshire  
SN5 6PB

**Prepared by:**  
**Wessex Archaeology**  
Portway House  
Old Sarum Park  
Salisbury  
Wiltshire  
SP4 6EB

[www.wessexarch.co.uk](http://www.wessexarch.co.uk)

**August 2018**



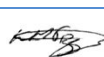

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**GWFL Ecodoc Ref: 002561072-02**



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# Gallopier Offshore Wind Farm

## Review of Archaeological Material identified during Pre-construction and Construction Surveys (OFTO Assets)

### Archaeological Assessment of Unexploded Ordnance Survey Results

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# Gallopier Offshore Wind Farm

## Review of Archaeological Material identified during Pre-construction and Construction Surveys (OFTO Assets)

### Archaeological Assessment of Unexploded Ordnance Survey Results

#### Summary

Wessex Archaeology has been commissioned by Innogy UK Ltd on behalf of Gallopier Wind Farm Limited (GWFL) to undertake an archaeological assessment of the Unexploded Ordnance (UXO) Clearance and Disposal survey data attained for the offshore transmission areas (OFTO), comprising the Export Cable Route (ECR) and Offshore Substation Platform (OSP), undertaken as part of the Gallopier Offshore Wind Farm (GWF) project. This document has been prepared to detail the results of this assessment. This archaeological assessment has been undertaken as part of the Offshore Archaeological Advice Service (OAAS). A separate document has been prepared detailing the results of the archaeological assessment of UXO survey data for the Offshore Wind Farm (OWF) area, which includes the array cables, wind turbine foundations and the OSP.

The archaeological assessment began with a review of the Target Investigation Reports prepared by N-Sea during the UXO survey and the Inspection Reports from James Fisher Subsea. These included 'as found' co-ordinates for the targets, a brief description of the material, and video stills and sonar data. The archaeological assessment categorised targets based on archaeological interest, archaeological value and confidence of assessment. Where it was determined that further data were required to inform the archaeological assessment, the ROV video and sonar data were requested for further review. In addition, where applicable, existing geophysical survey data was archaeologically re-assessed.

In the ECR UXO Heritage Method Statement (Wessex Archaeology 2016b), 10 A1 geophysical anomalies (of anthropogenic origin of archaeological interest) were identified and recommended for Remotely Operated Vehicle (ROV) investigation during the UXO survey works. Of these, four were identified as Priority Targets due to the potential for impact from the development and were subject to investigation by ROV (7346, 70351, 71278 and 71444).

Additionally, within the OSP study area a further feature of archaeological importance was identified as having potential impact from the development, and was observed in both the geophysical data and the ROV data (the assessments of which were undertaken concurrently). This related to aircraft debris (70161).

A total of 340 ROV targets were reviewed for the archaeological assessment; 312 within the ECR, 34 within the OSP, and six that lie within both the ECR and OSP areas. The majority of these targets were specifically selected as UXO targets for ROV survey, however in a small number of cases, additional ROV targets were added by Wessex Archaeology during the assessment of data, to provide additional positions of features or additional material visible within a site. Of the 340 ROV targets, 240 corresponded with geophysical anomalies identified by Wessex Archaeology, and of the 340, 10 related to the four Priority Targets. The ROV assessment revealed that of the 340 ROV targets, 259 related to material encountered on the seabed, which were classified as follows:



- 78 targets are of archaeological interest (including seven relating to Priority Target 7346 and two relating to Priority Target 70351);
- 110 targets are of possible archaeological interest;
- five targets are of unknown archaeological interest that were excavated through the ROV dredge pump before they could be archaeologically assessed;
- 66 targets relate to modern debris of no archaeological interest, such as rebar and wire (including one target relating to Priority Target 71278); and
- none of the targets proved to be natural features.

Mitigation measures have been recommended for each individual target or site, based on professional opinion and past experience. Mitigation measures include:

- four sites have been recommended for Archaeological Exclusion Zones (AEZs): 7346, 70161, 70351 and 70539. However, based on the nature of the development and the locations of 7346 and 70351, avoidance will not be entirely possible. At these locations, it has been agreed with Historic England that cable laying works can intrude into the AEZ in areas where the specific archaeological material has been assessed as of low archaeological interest. Any unexpected material discovered during development works will be reported through the Offshore Renewables Protocol for Archaeological Discoveries (ORPAD);
- the bell of the steamship Carica Milica was raised, based on recommendations in the Heritage Method Statement Addendum (Wessex Archaeology 2016d);
- 17 targets where nothing was found, but that have magnetic values of >50 nT and therefore are still considered to have archaeological potential within the vicinity and should be avoided where possible;
- 19 targets identified as UXO require no further investigation as UXO requirements take precedence over archaeological assessment;
- one target of possible aircraft material that should be avoided (71444);
- two areas of heightened sensitivity have been identified, and at these locations, ORPAD should be closely adhered to:
  - a modern wreck (S1\_Mag\_0579 - S1\_Mag\_0579D); and
  - possible aircraft material (S3\_Mag\_0126 - S3\_Mag\_0126\_E).
- 121 targets are recommended for review if reinvestigated or recovered; and
- 131 targets require no further action.

Detailed Data Sheets were created for each target of archaeological interest or possible archaeological interest. The Data Sheets include a location, a description of the material on the seabed and images illustrating the targets.





# **Gallopier Offshore Wind Farm**

## **Review of Archaeological Material identified during Pre-construction and Construction Surveys (OFTO Assets)**

### **Archaeological Assessment of Unexploded Ordnance Survey Results**

#### **Acknowledgements**

This document was commissioned by Innogy UK Ltd on behalf of Gallopier Wind Farm Limited (GWFL) and Wessex Archaeology would like to acknowledge the assistance provided by Colin McAllister of Innogy UK Ltd. In addition, Wessex Archaeology would like to acknowledge Arnold Kuilman and David Murray of N-Sea, who provided data. Wessex Archaeology would also like to acknowledge James Fisher Subsea for additional survey data.

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This Archaeological Assessment was written by Diana Donohue and Andrea Hamel with contributions made by Madeline Fowler. The archaeological assessment of geophysical data was undertaken by David Howell and Laura Andrews. The project was managed for Wessex Archaeology by Louise Tizzard, and figures were prepared by Kitty Foster.



# Galloper Offshore Wind Farm

## Review of Archaeological Material identified during Pre-Construction and Construction Surveys (OFTO Assets)

### Archaeological Assessment of Unexploded Ordnance Survey Results

#### 1 INTRODUCTION

- 1.1.1 Wessex Archaeology has been commissioned by Innogy UK Ltd on behalf of Galloper Wind Farm Limited (GWFL) to undertake an archaeological assessment of the Unexploded Ordnance (UXO) Clearance and Disposal survey data attained for the offshore transmission (OFTO) areas, comprising the Export Cable Route (ECR) and the Offshore Substation Platform (OSP), undertaken as part of the Galloper Offshore Wind Farm (GWF) project. This document has been prepared to detail the results of that assessment.
- 1.1.2 This archaeological assessment has been undertaken as part of the Offshore Archaeological Advice Service (OAAS) (Wessex Archaeology 2014). A separate document has been prepared detailing the results of the archaeological assessment of UXO survey data for the Offshore Wind Farm (OWF) area, which includes the array cables, wind turbine foundations (WTGs), and also a duplicate of the information presented here for the OSP (Wessex Archaeology 2018a).
- 1.1.3 This document was prepared after the submission of the associated Heritage Method Statement (Wessex Archaeology 2016a) and Advisory Note (Wessex Archaeology 2018b) to the client and prior to the construction phase, hence the grammatical tense used. GWFL were advised throughout the process of the recommended mitigation, as discussed in this report.

#### 1.2 Project Background

- 1.2.1 This archaeological assessment was prepared and executed in line with recommendations made in an offshore archaeological Written Scheme of Investigation (WSI), prepared by Wessex Archaeology in 2016 (Wessex Archaeology 2016b). This assessment, alongside the other schemes of archaeological investigations proposed in the WSI, is based on archaeological best practice and guidance for offshore development, as outlined in Section 7 of the WSI (Wessex Archaeology 2016b).
- 1.2.2 The WSI prepared for the GWF project (Wessex Archaeology 2016b) was compiled based on the results of the following preceding reports:
- *Galloper Wind Farm Project: Desk-based Archaeological Assessment Final Report (Wessex Archaeology 2010);*
  - *Galloper Wind Farm Project Environmental Statement – Chapter 19: Archaeology and Cultural Heritage (Galloper Wind Farm Limited 2011);*
  - *Galloper Wind Farm Project: Environmental Statement Technical Report: Archaeology and Cultural Heritage (Wessex Archaeology 2011);*

- *Galloper Offshore Wind: Written Scheme of Investigation – Offshore (Wessex Archaeology 2012a);*
- *Galloper Offshore Wind Farm: Geophysical Review (Turbine Locations) (Wessex Archaeology 2012b);*
- *Galloper Offshore Wind Farm: Updated Written Scheme of Investigation Offshore (Wessex Archaeology 2015a);*
- *Galloper Offshore Wind Farm Archaeological Assessment of Geophysical Data and Stage 1 Geoarchaeological Assessment of Geotechnical Logs (Wessex Archaeology 2015b);*
- *Galloper Offshore Wind Farm: Archaeological Assessment of 2015/2016 Geophysical Data, Export Cable Route (Wessex Archaeology 2018c); and*
- *Galloper Offshore Wind Farm: Archaeological Assessment of 2016 Geophysical Data, Array Cables, OSP and Additional Areas (Wessex Archaeology 2018d).*

1.2.3 In line with the WSI, a *Heritage Method Statement for the Review of Archaeological Material during Unexploded Ordnance Survey (Export Cable Route)* (Wessex Archaeology 2016a) was produced to outline the specific requirements for achieving archaeological objectives during the UXO clearance and disposal survey of the OFTO Assets areas.

1.2.4 Since the submission of the WSI in 2016, additional geophysical survey data has been acquired for inshore and anchor areas within the ECR (Wessex Archaeology 2017a) and also covering the OSP area (Wessex Archaeology 2018d).

1.2.5 The results of the archaeological assessment of UXO data for the OWF, including the WTGs, OSP and array cables has been produced (Wessex Archaeology 2018a).

## **2 METHODOLOGY**

### **2.1 Study Areas**

2.1.1 The Study Areas (Figure 1) discussed in this report are as follows:

- *the Export Cable Route (ECR) survey area; and*
- *the Offshore Substation Platform (OSP) study area.*

2.1.2 The ECR survey area represents the area of geophysical survey coverage based on multibeam, magnetometer and sidescan sonar data as acquired in 2015-16 that have been archaeologically assessed (Wessex Archaeology 2018c). For the convenience of the archaeological acquisition of geophysical data, the ECR Survey Area was subdivided into seven sections (S1-S7). These sections were provided to N-Sea for the UXO Remotely Operated Vehicle (ROV) inspection, and are reflected in the ROV UXO target ID numbers.

2.1.3 The Development Consent Order (DCO) allows the export cables to be laid anywhere within the export cable corridor defined under the DCO however in reality the cables were laid within 50 m either side of the initial Route Position List (RPL), the proposed mid-point location of the two export cables. This 100 m corridor underwent high resolution geophysical and magnetometer survey to ascertain whether potential Unexploded Ordnance (pUXO) were present. The as planned routes for the two export cables were then designed to avoid pUXO or further survey by ROV inspection was carried out where avoidance was not practicable.

2.1.4 The OSP study area comprises a 750 m x 750 m square box centred on the location of the Offshore Substation Foundation. In some instances, the ECR and OSP study areas defined above overlap, and as a result, six targets are located within both areas. For the purposes of this report, the six targets will be mentioned in both the ECR section and OSP section.

## **2.2 Aims and Objectives**

2.2.1 The aims and objectives of this archaeological assessment are in line with those detailed in the *Review of Archaeological Material during Unexploded Ordnance Survey (Export Cable Route): Heritage Method Statement* (Wessex Archaeology 2016a) and in the *Review of Archaeological Material identified during Unexploded Ordnance Survey (Offshore Wind Farm): Advisory Note to Client* (Wessex Archaeology 2018b). In summary, the overall aim of the assessment is to mitigate the effects of the proposed development upon archaeological targets identified within the ECR and OSP areas, as defined above. This aim will be met by means of the following objectives:

- *to identify the presence of targets of potential archaeological interest from the ROV survey data;*
- *to interpret sites or finds and to provide an assessment of archaeological interest where possible;*
- *where archaeologically significant sites or finds are encountered, to characterise the find location/site and to develop conclusions on the extent, state of preservation, period and form of material of archaeological interest;*
- *to verify/falsify the archaeological character of anomalies identified by Wessex Archaeology in the archaeological assessment of geophysical survey data (Wessex Archaeology 2018c), where possible;*
- *to make recommendations regarding the mitigation of archaeologically significant sites or finds that may be subject to impact as a result of the proposed development; and*
- *to fulfil requirements as set out in the archaeological WSI (Wessex Archaeology 2016b).*

## **2.3 ECR ROV Target Selection Process**

2.3.1 ROV targets within the ECR area were selected based on the geophysical data interpretation that was undertaken prior to the ROV survey and comprised anomalies selected for investigation on the basis of either their archaeological or UXO potential.

### *Archaeological Targets*

2.3.2 In the ECR UXO Heritage Method Statement (Wessex Archaeology 2016a), a number of A1 anomalies (anthropogenic origin of archaeological interest, see Table 6 for definitions) were recommended for ROV investigation during the UXO survey works. Recommendations were made on the notion that A1 anomalies will be protected by Archaeological Exclusion Zones (AEZs). However, should the avoidance of the site's AEZ through micrositing of the scheme design not be possible, then further investigation would be required in order to enhance the understanding of the archaeological nature of the anomalies in question, thus enabling appropriate mitigation measures to be explored. The anomalies recommended for ROV investigation are detailed in Table 1 below. The AEZs are illustrated in Figure 2, and the anomaly not recommended for AEZ is illustrated in Figure 3b. Where relevant, their UXO target ID is detailed, although the co-ordinates shown are based on the Wessex Archaeology dataset.

2.3.3 Further details regarding the selection process for these anomalies can be found in the ECR UXO Heritage Method Statement (Wessex Archaeology 2016a).

**Table 1:** ECR A1 anomalies recommended for ROV work as Priority Targets

WA ID	Code	Description	UTM31N Easting	UTM 31N Northing	AEZ Parameter	UXO Target ID
7346	A1	Wreck	406033	5784890	30 m	S1_Mag_0009 S1_Mag_0009_A S1_Mag_0009_B S1_Mag_0009_C S1_Wreck_NEP_1_anchor S1_Wreck_NEP_1_debris S1_Wreck_NEP_1_debris_2
70203	A1	Debris Field	408586	5785098	Immediate boundary of anomaly	N/A
70351	A1	Debris Field	408910	5785065	Immediate boundary of anomaly	S1_MagMask_03_B S1_MagMask_03_B_A
70373	A1	Magnetic	409171	5784928	No AEZ	N/A
71278	A1	Magnetic	413077	5777737	No AEZ	S2_Mag_0557
71299	A1	Debris	412277	5779525	20 m	N/A
71305	A1	Magnetic	412032	5779999	No AEZ	N/A
71337	A1	Seafloor disturbance	408608	5785147	Immediate boundary of anomaly	N/A
71444	A1	Magnetic	414139	5776411	Avoid	S2_Mag_0727
71485	A1	Magnetic	427380	5761530	No AEZ	N/A

2.3.4 Of the anomalies listed in Table 1, four were considered to be vulnerable to the proposed development and were subject to investigation by ROV (7346, 70351, 71278, and 71444). This comprised the investigation of 11 individual targets which relate to the four Wessex Archaeology anomalies in question. The vulnerability of these anomalies was based on their location or their AEZ's location within the potential area of impact (12.5 m of the subsequent updated RPL s for the two export cable routes - dated 17 June 2016) (70351, 71278 and 71444), where avoidance of an AEZ was not possible (7346).

2.3.5 The remaining six Priority Targets were located beyond the potential area of impact and/or with no encroachment upon their respective AEZs being anticipated. On the basis that these anomalies were being avoided, investigation by ROV was not considered necessary.

*UXO Targets*

2.3.6 The remaining anomalies targeted for ROV inspection were those considered to have UXO potential. The ECR was theoretically subdivided for the UXO survey into seven sections so that investigation could take place in a methodological manner (Figures 2-7), with Section 1 being the closest to the shore and Section 7 the furthest offshore. Table 2 summarises the number of anomalies targeted in each Section, including anomalies associated with the Priority Targets discussed above. A gazetteer of the targets can be found in Appendix 1. This gazetteer is referred to as the 'ROV Survey Gazetteer'.

**Table 2:** ECR ROV UXO Targets summarised by section

Section	Anomaly Encountered	Nothing Found	Total Targets Investigated	Target with Corresponding WA ID
1	17	30	47	19
2	81	21	102	75
3	81	14	95	71
4	23	9	32	24
5	1	0	1	1
6	9	0	9	8
7	19	7	26	14
<b>Total</b>	<b>231</b>	<b>81</b>	<b>312</b>	<b>212</b>

2.3.7 The majority of the 312 targets are those identified during the ROV UXO survey, and most of these indicate single targets on the seabed. However, in some cases a target will have been subdivided to reflect the nature of the material encountered on the seabed. For example, at the expected location of S2\_Mag\_0304, two areas of debris were encountered: S2\_Mag\_0304 and S2\_Mag\_0304\_A, and the total counts each of these as separate targets. In addition, 10 targets have been added by Wessex Archaeology during the archaeological assessment of the ROV survey data, in order to provide additional positional information about material on the seabed.

2.3.8 Of the targets investigated for UXO potential, 212 are thought to correspond to Wessex Archaeology geophysical anomalies. However, irrespective of the association with Wessex Archaeology geophysical anomalies, all 231 ROV targets where material was encountered on the seabed were archaeologically assessed. Therefore, these targets promote a greater understanding of the archaeological character and potential of the anomalies within the proposed development footprint.

## 2.4 OSP ROV Target Selection Process

2.4.1 ROV targets comprised anomalies selected for investigation on the basis of either their archaeological potential or their UXO potential.

### *Archaeological Targets*

2.4.2 The archaeological assessment of the 2015-2016 geophysical data was undertaken concurrently with the acquisition and archaeological assessment of the ROV data. The ongoing results of both assessments were cross-referenced throughout the process to ensure that archaeological requirements were met.

2.4.3 The archaeological anomalies were categorised as A1 or A2 anomalies during the archaeological assessment of geophysical survey data. A1 anomalies are of anthropogenic origin of archaeological interest, while A2 anomalies are of uncertain origin and possible archaeological interest (see Table 6 for definitions).

2.4.4 Within the OSP study area, Wessex Archaeology identified a total of 35 geophysical anomalies; one A1 anomaly and 34 A2 anomalies (Wessex Archaeology 2018c and d). However, not all of these were targeted for ROV survey.

2.4.5 Of the targets considered to be of UXO potential and investigated by ROV, eight correlated to four Wessex Archaeology anomalies, one A1 anomaly (70161) and three A2 anomalies

(72869, 72885 and 72895), as in two cases there are multiple ROV targets on individual anomalies. This indicates that just under 12% of all anomalies within the OSP study area were investigated by ROV.

- 2.4.6 All A1 anomalies are subject to Archaeological Exclusion Zones (AEZs), as avoidance is the preferred mitigation for archaeological receptors (Wessex Archaeology 2016a and 2018e). Avoidance of the AEZs identified through the archaeological assessment of geophysical survey data should be possible, and no A1 anomalies were identified as warranting additional survey by ROV.
- 2.4.7 Alongside the A2 anomalies considered to represent targets of UXO potential, and therefore investigated as part of the UXO survey, additional A2 anomalies could be recommended by Wessex Archaeology for further ROV investigation. As the location of OSP is set at this stage of development, anomalies within the OSP foundation footprint were considered as potentially vulnerable to impact as a result of foundation. However, no anomalies were observed by Wessex Archaeology within the OSP foundation footprint, and as such, no recommendations for further survey were made in this area.

#### UXO Targets

- 2.4.1 The selection process for ROV targets is outlined in the *Galloper Offshore Wind Farm UXO Clearance and Disposal Application Supporting Information* (Royal HaskoningDHV 2015). The targets identified for UXO assessment were specifically selected on their UXO potential, but also covered a number of geophysical anomalies identified by Wessex Archaeology during the archaeological assessment of geophysical survey data (as detailed above).
- 2.4.2 Table 3 below summarises the number of anomalies targeted in the OSP study area, including anomalies where material was encountered or where nothing was found, and with corresponding WA IDs as discussed above. A gazetteer of the targets can be found in Appendix 1, which is referred to as the 'ROV Survey Gazetteer', and are illustrated in Figure 8.

**Table 3:** Summary of ROV UXO Targets within the OSP study area

Section	Anomaly Encountered	Nothing Found	Total Targets Investigated	Targets with Corresponding WA ID
OSP	33	1	34	28

- 2.4.3 Several of the 34 targets investigated are those identified during the UXO ROV survey, and in two cases these indicate single targets on the seabed. However, in some cases a target will have been subdivided to reflect the nature of the material encountered on the seabed. For example, at the expected location of M\_Mag\_0114, two objects were encountered: M\_Mag\_0114 (main) and M\_Mag\_0114\_A, and the total counts each of these as separate targets.
- 2.4.4 Of the targets investigated for UXO potential, 28 are thought to correspond to Wessex Archaeology geophysical anomalies. It should be noted that some Wessex Archaeology anomalies relate to two or more ROV targets. However, irrespective of the association with Wessex Archaeology geophysical anomalies, all 33 ROV targets where material was encountered on the seabed were archaeologically assessed. Therefore, these targets promote a greater understanding of the archaeological character and potential of the anomalies within the OSP study area.



## 2.5 UXO Survey Methodology

- 2.5.1 The following summary is based on information provided in the *Galloper Offshore Wind Farm UXO Clearance and Disposal Application: Supporting Information* document (Royal Haskoning DHV 2015).
- 2.5.2 The initial inspection of UXO targets took place by N-Sea using an ROV with reconnaissance undertaken by means of video and sonar recording equipment. A positive identification was attempted at this stage. If the target was found to be buried, a magnetometer sweep was conducted to ascertain whether or not the anomaly's magnetic signature was in range for a UXO. Excavation by the ROV using a hydraulic jetter or air-lifting was used if the anomaly was within range. Where practicable to do so, divers were deployed in inshore areas where water levels prohibited the use of an ROV. Depending on the type of target and its location, the UXO may have been detonated *in situ* or relocated (e.g. due to its proximity to a sensitive asset).
- 2.5.3 N-Sea compiled the survey data results into a Target Investigation Report for each target investigated, detailing the 'as found' location of the material on the seabed and details of the object(s) encountered (e.g. material type, identification where possible and dimensions). The Target Investigation Reports also included stills from the ROV footage. In the event that objects were relocated during the assessment, the new position was detailed on the report.
- 2.5.4 An additional nine targets were assessed by James Fisher Subsea using an ROV with reconnaissance undertaken by means of video and sonar recording equipment. The results were compiled into an Inspection Report for each target investigated, detailing the 'as found' location of the material on the seabed and details of the object(s) encountered. The Inspection Reports also included stills from the ROV footage, blue view sonar and chart positions. For any objects that were relocated during the assessment, the new position was detailed on the report.

## 2.6 Archaeological Assessment of UXO Survey Results Methodology

- 2.6.1 The Target Investigation Report or Inspection Report for each target investigated during the UXO surveys was provided to Wessex Archaeology for archaeological assessment. The object(s) were interpreted based on the description, dimensions and ROV stills provided and an ROV Survey Gazetteer was compiled based on the Potential UXO List, developed by N-Sea and provided by GWFL (Appendix 1). The ROV Survey Gazetteer (Appendix 1) was populated by means of interrogating the Target Investigation Reports and Inspection Reports, and associated spreadsheets.
- 2.6.2 For each target, the material was identified, where possible, and archaeologically assessed with regard to the categories outlined in Table 4 below.

**Table 4:** Categories of Targets

Category	Description
A	Archaeological Interest
P	Possible Archaeological Interest
M	Modern debris/Non-archaeological
N	Natural
NA	Non-Archaeological (nothing found)
U	Uncertain



- 2.6.3 Targets were also assessed for their archaeological value. A value rating from high to uncertain was assigned to each identified target based upon professional judgement and in accordance with the definitions in Table 5 below.

**Table 5:** Assessment of Target Value

Value	Definition
<b>H – High</b>	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 value are likely to fall within this category.
<b>M – Medium</b>	Average example and/or moderate potential to contribute to knowledge and understanding and/or outreach.
<b>L – Low</b>	Below average example and/or low potential to contribute to knowledge and understanding and/or outreach.
<b>N – None</b>	Anomaly identified as being non-archaeological.
<b>U – Uncertain</b>	Insufficient data to assess archaeological value.

- 2.6.4 A confidence rating from **Low** to **High** has also been assigned to each target. The confidence rating takes into account: the quality of the images; the nature of the description provided by the UXO survey contractor; and draws upon professional judgement in assessing the certainty of the interpretation.
- 2.6.5 This process enabled non-archaeological targets to be identified and noted as not requiring further assessment in the ROV Survey Gazetteer. All targets were then plotted in the project GIS using their 'as found' coordinates. In instances where no material was encountered, these were also mapped on the project GIS at their 'expected position'.
- 2.6.6 For each target categorised as being of archaeological interest or possible archaeological interest, a Data Sheet was compiled in order to provide a detailed overview of the target (Appendix 2). Where information provided in the Target Investigation Report or Inspection Report indicated material of potential archaeological interest and/or where clarification regarding the nature of the material was required, Wessex Archaeology requested further data for assessment, such as the ROV video footage, ROV sonar data and Ordtek UXO reports. Where required, further specialist advice was requested to identify material. Further assessment of possible aircraft material has been carried out by an external aircraft specialist, Ewen Cameron, Curator of the Royal Air Force Museum Stafford. ROV video stills of the possible aircraft material were forwarded for assessment, without the text and position overlays. The results of the archaeological assessment have been compiled in the relevant Data Sheet.
- 2.6.7 No Data Sheets were created for targets that were not found or for targets that were categorised as of no archaeological interest, including: modern debris, unidentified objects excavated through the ROV dredge pump before archaeological assessment and natural features. However, these targets are included in the ROV Survey Gazetteer in Appendix 1.
- 2.6.8 Where targets were considered to be of potentially high archaeological value, archaeological intervention was considered necessary and a temporary AEZ implemented until consultation could take place with the Client and the curatorial authorities for the purposes of mitigation. An Addendum report was compiled for each potentially high value site and submitted to Historic England via GWFL. The addendum reports outlined the potential mitigation options available so that further discussions could take place and

mitigation measures be appropriately implemented to safeguard such sites from the effects of the proposed development.

2.6.9 In this report, targets are referred to by their ROV target ID, although the WA ID is included where relevant in order to maximise compatibility of reporting.

2.6.10 As a final stage of data handling, a Master Gazetteer was generated. This was based on Wessex Archaeology's Phase III gazetteer, which resulted from the process of anomaly grouping and discrimination based on all available and archaeologically assessed geophysical datasets. The Master Gazetteer was updated with information gained from the ROV survey where relevant. In the Master Gazetteer, anomalies identified by Wessex Archaeology were given an external reference column containing a target ID for anomalies in which targets from each dataset could be correlated. In addition, targets identified as part of the UXO data assessment but with no correlating anomaly identified by Wessex Archaeology were included in the Master Gazetteer, retaining their original target ID in the primary ID field to facilitate cross-referencing. All features were reviewed and assigned an archaeological discrimination taking into account the findings of the ROV survey. The criteria for discriminating the archaeological importance of features is provided in Table 6.

**Table 6:** Criteria for discriminating archaeological importance of features

<b>Non-archaeological</b>	U1	Not of anthropogenic origin
	U2	Known non-archaeological feature
	U3	Non-archaeological hazard
<b>Archaeological</b>	A1	Anthropogenic origin of archaeological interest
	A2	Uncertain origin of possible archaeological interest
	A3	Historic record of possible archaeological interest with no corresponding geophysical anomaly
<b>Other</b>	D	Detonated

2.6.11 An additional column was included in the Master Gazetteer summarising the mitigation measures adopted with respect to each anomaly or target in a user friendly manner so that the information could be easily used by sub-contractors during the various phases of work. Mitigation measures were sub-divided into three principle terms: 'Avoid (low priority)', 'Avoid (high priority)' and 'AEZ'. The use of these terms is outlined in Table 6 below.

**Table 7:** Criteria for mitigation

Mitigation	Meaning	Application
<b>None</b>	No anomaly/target specific mitigation is recommended	Targets where nothing was found during the ROV survey and where there is no correlating Wessex Archaeology anomaly (assigned as U1)
		Non-archaeological anomalies (assigned variously as U1, U2 and U3)
		Features identified as UXOs and detonated.
<b>Avoid (low priority)</b>	Features should be avoided wherever possible, where not ORPAD is implemented	Anomalies represented in the Wessex Archaeology dataset and assigned as being of low archaeological potential (<50 nT or < 3 m in size) (Assigned as A2)
		Targets with no corresponding Wessex Archaeology anomaly where debris was encountered during the ROV survey but was assigned low value (assigned as A2)

Mitigation	Meaning	Application
<b>Avoid (high priority)</b>	Features should be avoided wherever possible	Anomalies represented in the Wessex Archaeology dataset and assigned as being of high archaeological potential (>50 nT or > 3 m in size) (Assigned as A2)
		Targets where nothing was found during ROV survey but where a corresponding Wessex Archaeology magnetic anomaly of >50 nT was previously identified suggesting the presence of possible buried material (assigned as A2), that could still be of archaeological potential within the vicinity.
		Targets where debris was encountered during the ROV survey and whereby the area of the seafloor in which such features were present was highlighted as an area of heightened sensitivity
<b>AEZ</b>	Recommendations for an AEZ have been made on a site-by-site basis	Anomalies considered to be of archaeological interest (assigned A1 or A3)

- 2.6.12 The Master Gazetteer includes a column in which a feature can be assigned as one of low archaeological potential (i.e. less than 50 nT and/or 3 m in size). This column was not populated for ROV Survey only targets as due to the varying data handling techniques, it was not felt that the exercise would provide a comparable figure.
- 2.6.13 With regards to anomalies that were described as A2s of higher archaeological potential (i.e. greater than 50 nT and/or 3 m in size), the ROV Survey Gazetteer was then updated so that UXO targets where nothing was found, but where the Master Gazetteer mitigation recommended avoidance, were labelled 'avoid' as they are still considered to have archaeological potential. This ensures the compatibility of the two gazetteers.

### 3 RESULTS

#### 3.1 Introduction

- 3.1.1 A total of 340 targets were investigated during the UXO survey of the ECR and OSP, at 259 of which material was encountered. Table 2 above provides a summary of the number of targets encountered in each section as well as targets assessed where nothing was found, and a summary of the number of Wessex Archaeology targets that were assessed.
- 3.1.2 The results are discussed by Section number, below. The six targets that are present within both section 7 of the ECR and the OSP will be included within both sections of this report.
- 3.1.3 Table 8 provides a summary of the archaeological assessment by Section. Additionally, the ROV Survey Gazetteer, which covers each Section can be found in Appendix 1, and detailed Data Sheets, including images of each target of archaeological or possible archaeological interest, can be found in Appendix 2. The locations of the targets encountered are illustrated in Figures 2-8.

**Table 8:** Archaeological Assessment of Targets summarised by Section

Section	Total Anomalies Encountered	Archaeological		Unknown <sup>3</sup>	Non-Archaeological	
		Targets of Archaeological Interest <sup>1</sup>	Targets of Possible Archaeological Interest <sup>2</sup>		Modern debris	Natural
1	17	9	7	-	1	-
2	81	17	35	2	27	-
3	81	19	36	-	26	-
4	23	1	13	-	9	-
5	1	-	-	-	1	-
6	9	1	6	-	2	-
7	19	6	10	3	-	-
OSP	33	25	2	3	-	-
<b>Total</b>	<b>259</b>	<b>78</b>	<b>107</b>	<b>5</b>	<b>66</b>	<b>0</b>

Note – the totals for section 7 and the OSP area contain an overlap of six targets (five where the anomaly was encountered and one where nothing was found). The six targets are included in the individual totals for both sections, however, the overall total for ‘anomalies encountered’, ‘targets of possible archaeological interest’, ‘unknown’ have been updated to remove the overlap. The total for ‘targets of archaeological interest’ is not affected by the overlap.

3.1.4 In addition, the archaeological assessment of geophysical survey data indicated that of the 81 targets where nothing was found, 17 magnetic anomalies have magnetic values of more than 50 nT, and therefore are still considered to be targets of archaeological potential. These are summarised in Table 9 below, and discussed in the following sections.

**Table 9:** Summary of ‘Nothing Found’ targets with WA magnetometer values of >50 nT

Section	Number of ‘Nothing Found’ targets with WA mag value of > 50 nT
1	7
2	7
3	2
4	1
5	-
6	-
7	-
OSP	-
<b>TOTAL</b>	<b>17</b>

<sup>1</sup> Targets comprise identified archaeological material, for instance wreck sites, wreck related debris, anchors, and UXO.

<sup>2</sup> Targets that could not be confirmed as identified maritime/aviation/UXO material nor could be discounted as modern in date.

<sup>3</sup> Unidentified objects that were excavated through the ROV dredge pump before they could be archaeologically assessed.

## 3.2 ECR Archaeological Priority Targets

### *Introduction*

- 3.2.1 Four Priority Targets identified within the ECR by Wessex Archaeology were covered by the ROV UXO survey. Two Priority Targets (7346 and 70351) are located in Section 1, and two Priority Targets (71278 and 71444) are located in Section 2. The following paragraphs describe each of the Priority Targets.

### *Anomaly 7346*

- 3.2.2 In the nearshore area of the ECR, anomaly 7346 was identified as an A1 geophysical anomaly for ROV work as a Priority Target (Wessex Archaeology 2016a) (Figure 2). In an early archaeological assessment of geophysical survey data (Wessex Archaeology 2015), anomaly 7346 was identified as a single section of upstanding wreck material measuring 20.3 x 8.3 x 0.4 m. The recent archaeological assessment of geophysical survey data (Wessex Archaeology 2018c) revealed a wreck site with two visible parts: one mound that measures 22.6 x 6.1 x 0.9 m and another mound, approximately 10 m to the south-west that measures 11.1 x 9 x 0.3 m and appears to have been recently uncovered by mobile seabed sediments. It is possible that the site comprises a single area of wreck, with the middle section still buried, or a broken wreck in two parts. The identity of the wreck is not known, although previous assessments have suggested that this could be the wreck of the *Ocean Pride* (UKHO record 10324), as the UKHO records the loss location approximately 545 m to the north-east. The *Ocean Pride* was a 20th century fishing vessel that was lost on approaching the beach off Sizewell on 10 April 1972. The crew were recovered by the Aldeburgh lifeboat and the vessel was a total wreck. The wreck was not identified at its loss location during a 1983 UKHO survey, and was assumed that it may lie inshore of the area of recorded loss.
- 3.2.3 In order to assess the site for archaeological interest and importance, two surveys were conducted by N-Sea.
- 3.2.4 On 25 June 2016, a diver survey inspected a circular area around ROV target S1\_Mag\_0009, a target that potentially corresponded with Priority Target 7346, located 9.4 m to the ENE. The diver survey began with a 5 m radius, and the search extended by 1 m until a 10 m wide circle was completed. The diver reported extremely poor visibility in the area (0 - 0.2 m), and therefore no photographs were available for archaeological assessment, however the diver was able to draw the material encountered on the seabed. The material comprised four areas of metal debris: a metal bar protruding 0.6 m from the seabed (S1\_Mag\_0009) an angular piece measuring 1.6 m in length by 0.75 m in width (S1\_Mag\_0009\_A) a cylindrical object 0.5 m in length (S1\_Mag\_0009\_B) and three pieces of metal debris, including a cylindrical tube 1.8 m in length and two metal bars that form an L-shape. S1\_Mag\_0009\_C).
- 3.2.5 On 28 and 29 July 2016, an ROV survey was undertaken on the site, and data were recorded as S1\_WRECK\_NEP\_1. The visibility during the ROV survey was extremely poor, and therefore the video data were not suitable for archaeological assessment, however, an archaeological assessment of the ROV sonar data was possible. The sonar data revealed three discreet areas, which were labelled by Wessex Archaeology as S1\_WRECK\_NEP\_1\_anchor, S1\_WRECK\_NEP\_1\_debris, and S1\_WRECK\_NEP\_1\_debris\_2. The anchor comprises a very corroded, heavily built anchor measuring approximately 2-3 m in length. From the sonar data, it was not possible to confirm the dimensions, character or type of anchor, although two possibilities are that it could be a late 19th century or modern stockless anchor or it could be a Danforth anchor. These types of anchor would likely be too large to come from a fishing vessel such as the *Ocean Pride*, however it is possible that the anchor could have been lost from a barge working in the

area, or, if it is a Danforth anchor, it may have a naval association. The anchor lies between the two areas of debris. The area of debris that lies 16.55 m to the NW (S1\_Wreck\_NEP\_1\_derbris) comprises a number of pieces of possibly metal debris that cover an area approximately 15 m in length by approximately 15 m in width. The pieces have no distinguishing features. The second area of debris (S1\_WRECK\_NEP\_1\_debris\_2) lies approximately 20 m to the SW of the anchor and comprises three pieces of bent, linear debris that cover an area of approximately 7.5 x 7.5 m. This material is likely the same as the material encountered during the dive survey (S1\_Mag\_0009, S1\_Mag\_0009\_A, S1\_Mag\_0009\_B, S1\_Mag\_0009\_C). It was not possible to provide further identification of the material from the sonar data.

- 3.2.6 The archaeological assessments of geophysical data (Wessex Archaeology 2015 and Wessex Archaeology 2018c) and the archaeological assessment of diver reports and ROV sonar data, have not been able to prove or disprove categorically that the material is related to the *Ocean Pride*, however based on the existing record of loss and the relatively intact nature of the wreck, on the balance of probabilities, the material could be related. As the *Ocean Pride* was a modern, diesel motor vessel lost in 1972, the material would be of low archaeological value. The anchor may or may not be associated with the site, but it could have been lost in a separate event, and as it appears to be late 19th or 20th century, it is likely to be of archaeological interest but of low archaeological value.
- 3.2.7 Initially, a 50 m buffer was recommended around 7346, but based on an updated geophysical assessment the recommended AEZ was reduced to a 30 m buffer around the current visible extent of the feature (Figure 2) (Wessex Archaeology 2018c). However, due to development constraints it will not be possible to avoid the site, and, following discussions with Historic England it has been agreed (correspondence with Philippa Naylor, 4 May 2016) that the cable laying works can intrude into the AEZ, because the site is considered to be of low archaeological value. Should any unexpected material come to light during the cable laying operations that is of archaeological interest, any such material should be reported through the Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) as required by the Deemed Marine Licence within the Development Consent Order.

#### *Anomaly 70351*

- 3.2.8 A second geophysical anomaly recommended for ROV work as a Priority Target is 70351 (Figure 2). Anomaly 70351 is a debris field with a long linear arrangement of intermittent straight dark reflectors with some height, and measuring approximately 32 x 23 x 0.3 m with a smaller cluster to the north-west that measures approximately 9.8 x 4.7 m. The site was recommended for an AEZ that comprises the immediate boundary of the anomaly as visible in the geophysical data (Wessex Archaeology 2016b), and the southern-most tip of the AEZ is situated within 10 m of the current proposed RPL (dated 17 June 2016). A diver assessment of the southern part of the AEZ was undertaken on 28, 30 and 31 July 2016, and comprised a thorough search of two circular search areas of 7.5 m radius. The search revealed two pieces of metal debris (S1\_MagMask\_03\_B and S1\_MagMask\_03\_B\_A). S1\_MagMask\_03\_B is a section of metal plate approximately 0.9 m in length, 0.2 m in width and 0.9 m in height; and S1\_MagMask\_03\_B\_A is a section of chain approximately 2 m in length by 0.15 m in width. No other material was encountered in the area. The metal debris is considered to be of archaeological interest due to its proximity to the debris field, but the material itself is considered to be of low archaeological value. However, if the debris field is later determined to be an unknown wreck site, the material could possibly have a slightly higher value.

*Anomaly 71278*

3.2.9 Anomaly 71278, in Section 2, was described as a large magnetic anomaly (1239 nT) identified on multiple survey lines, and which could indicate buried ferrous material (Wessex Archaeology 2018c) (Figure 3b). ROV survey of the area revealed a metal pole (S2\_Mag\_0557). The metal pole has eyes at each end and appears to be an isolated find. The target is considered to be modern debris of no archaeological interest. Therefore, no further archaeological work was recommended.

*Anomaly 71444*

3.2.10 Anomaly 71444, in Section 2, was described as a large magnetic anomaly identified over two lines within an area of high magnetic response, which could indicate buried ferrous material (Wessex Archaeology 2018c) (Figure 3b). The ROV survey of the area revealed aluminium debris (S2\_Mag\_0727), described in the Inspection Report as possible aircraft material. The video data for the site is limited, however small pieces of aluminium debris are visible on the seabed. Images of the site were forwarded to Ewen Cameron, Curator of the Royal Air Force Museum in Stafford, for further assessment. He indicated that it was not possible to determine whether the material is aircraft related or not. The site should be avoided, as its character has not been confirmed, and as there is still a possibility that the material could be aircraft related.

**3.3 Section 1**

*Introduction*

3.3.1 As summarised in Table 2 above, of the 47 ROV targets assessed in Section 1, 19 were associated with geophysical anomalies identified by Wessex Archaeology. Of the total targets investigated, material was encountered at 17 of the locations. For the remaining 30 targets, no material was observed.

3.3.2 This section provides an overview of the targets that were reviewed as part of the archaeological assessment of ROV data, and they are summarised in Table 10. The targets are illustrated in Figure 2. The ROV Survey Gazetteer can be found in Appendix 1, and Data Sheets providing a detailed review of each target of archaeological and possible archaeological interest can be found in Appendix 2.

**Table 10:** Summary of targets in Section 1

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	7	2	-	-	-
Possible aircraft material	-	-	-	-	-
UXO	-	-	-	-	-
Anchor	-	-	-	-	-
Metal debris	2	3	-	1	-
Unidentified objects	-	2	-	-	-
Fishing gear	-	-	-	-	-
<b>TOTALS</b>	<b>9</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>-</b>

#### *Targets of archaeological interest*

- 3.3.3 The seven targets of archaeological interest (S1\_Mag\_0009, S1\_Mag\_0009\_A, S1\_Mag\_0009\_B and S1\_Mag\_0009\_C, S1\_Wreck\_NEP\_1\_anchor, S1\_Wreck\_NEP\_1\_debris and S1\_Wreck\_NEP\_1\_debris\_2) that have been identified as wreck-related material are related to the Priority Target 7346 identified by Wessex Archaeology. They are discussed in detail in the Priority Target section above.
- 3.3.4 The two targets of archaeological interest (S1\_MagMask\_03\_B and S1\_MagMask\_03\_B\_A) that have been identified as metal debris are related to the Priority Target 70351 identified by Wessex Archaeology, and they are discussed in detail in the Priority Target section above.

#### *Targets of possible archaeological interest*

##### Modern wreck

- 3.3.5 Of the seven targets of possible archaeological interest, five are associated with a modern wreck (S1\_Mag\_0579, S1\_Mag\_0579\_A, S1\_Mag\_0579\_B, S1\_Mag\_0579\_C, and S1\_Mag\_0579\_D). These targets comprise the wreck itself (S1\_Mag\_0579\_C), a possible ladder in the wreck remains (S1\_Mag\_0579\_D), and three sections of steel chain (S1\_Mag\_0579, S1\_Mag\_0579\_A and S1\_Mag\_0579\_B). The wreck was discovered during the ROV survey on 12 and 13 July 2016, and this was followed up by a diver investigation on 22 July 2016. The ROV video was not suitable for archaeological assessment due to very poor visibility, however the sonar data illustrates a wreck approximately 12 m long, with the bow relatively intact. However, as the stern is not visible and may be damaged or missing, it is possible that the vessel could have originally been longer. The material of the hull is unconfirmed. Divers indicated that there were no planks or visible features that would indicate a wooden hull. This, alongside the lack of magnetic signature, suggests that the hull could be made of fibreglass. An object identified as a possible ladder was observed in the wreckage near the stern, and again, the lack of magnetic signature suggests that it could be lightly built aluminium. The wreck is likely associated with the sections of steel chain, which were described by the divers as 3 or 4-inch chain. Based on the information available to date, the wreck is considered to be a small modern vessel and therefore of only possible archaeological interest and of low to no archaeological value (Wessex Archaeology 2016c). If impacted by the grapnel run, the strike should be reported. Additionally, if any material is recovered, it should be recorded and reported to Wessex Archaeology through ORPAD.

##### Metal debris

- 3.3.6 The remaining two targets of possible archaeological interest (S1\_Mag\_0074 and S1\_Mag\_0076) are unidentified metal debris. No images of the targets were available for archaeological assessment, and therefore the archaeological value of these targets is uncertain. The locations of the targets suggest that they are isolated pieces of debris. The recommendation is that these should be reviewed if reinvestigated or recovered.

#### *Targets of no or unknown archaeological interest*

- 3.3.7 In Section 1 there is one piece of modern metal debris of no archaeological interest, and this comprises a piece of rebar (S1\_Mag\_0072). No further action is required.

#### *Targets where nothing was found, with WA magnetic values of > 50 nT*

- 3.3.8 In Section 1 there are seven UXO targets where nothing was found, but that have a WA magnetic value of > 50 nT. These are summarised in Table 11 below. These targets should be avoided as they still have archaeological potential within the vicinity.



**Table 11:** Summary of ‘nothing found’ targets that are still considered to have archaeological potential

UXO Target	WA ID	Magnetic Value (nT)
S1_Mag_0228	71353	175
S1_Mag_0385	71342	104
S1_Mag_0385_ADD	71342	104
S1_Mag_0779	71325	110
S1_Mag_0977	71467	97
S1_Mag_0988	71366	177
S1_TITAN_Mag_5	70363	95

### 3.4 Section 2

#### *Introduction*

- 3.4.1 As summarised in Table 2 above, of the 102 ROV targets assessed in Section 2, 75 were associated with geophysical anomalies identified by Wessex Archaeology. Of the total targets investigated, at 81 locations, material was encountered on the seabed. At the remaining 21 targets, no material was observed.
- 3.4.2 This section provides an overview of the targets that were reviewed as part of the archaeological assessment of ROV data, and these are summarised in Table 12. The targets are illustrated in Figures 3a-c. The ROV Survey Gazetteer, which includes targets in Section 2 can be found in Appendix 1, and Data Sheets providing a detailed review of each target of archaeological and possible archaeological interest can be found in Appendix 2.

**Table 12:** Summary of targets in Section 2

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	5	-	-	-	-
Possible aircraft material	1	-	-	-	-
UXO	6	-	-	-	-
Possible ordnance	1				
Anchor	3	-	-	-	-
Metal debris	1	35	-	27	-
Unidentified objects	-	-	2	-	-
Fishing Gear	-	-	-	-	-
<b>TOTALS</b>	<b>17</b>	<b>35</b>	<b>2</b>	<b>27</b>	<b>0</b>

#### *Targets of archaeological interest*

- 3.4.3 The 17 targets of archaeological interest relate to 13 individual sites, 12 of which are discussed in detail below. Target S2\_Mag\_0727 (associated with priority target 71444) has already been discussed above and will not be discussed again here.

Wreck related material

- 3.4.4 Five targets comprise possible wreck related debris (S2\_Mag\_0760, S2\_Mag\_0760\_A, S2\_Mag\_0760\_B, and S2\_Mag\_0763) including a ship's bell (S2\_Mag\_0763\_A) (Figure 3b). The targets are located in an area approximately 35 x 12 m (c. 420 m<sup>2</sup>). The area is crossed by the current proposed location of the RPL (dated 17 June 2016), and therefore, a detailed Heritage Method Statement Addendum (Wessex Archaeology 2016d) was prepared to confirm the location of these targets and to identify their archaeological nature in order to provide an overview of potential mitigation options available.
- 3.4.5 The debris includes structural elements such as frames and planking, and there is ferrous material present, including possible machinery components, a beam or frame, fixtures, bars, a metal pipe with a flange and other unidentified material (S2\_Mag\_0760). S2\_Mag\_0760\_A comprises two copper alloy tubes or pipes, one of which has a flange. S2\_Mag\_0760\_B and S2\_Mag\_0763 are very similar, and both could comprise sections of copper-alloy deck railing. If the wooden and ferrous material is contemporary, the evidence is consistent with a vessel dating to the 19th century or possibly later, as iron fixtures continued to be used even as steel became more common.
- 3.4.6 The ship's bell (S2\_Mag\_0763\_A) is engraved with the name *Carica Milica*, the year '1928' and the word 'Dubrovnik'. The steamship *Carica Milica* was a cargo vessel that was built in 1928 and sunk by a mine in 1939. Built by W. Doxford & Sons Ltd. Sunderland, the vessel measured 129.5 m in length by 17.1 m beam, with a draught of 8.9 m and a gross tonnage of 6371. The vessel had a triple expansion engine of 569 HP, single shaft and three boilers. At the time of loss, the owner of the vessel was Jugoslavenski Lloyd Ackionarsko Drustvo, from Yugoslavia, and the vessel was carrying a cargo of coal. The UKHO has charted the wreck of the *Carica Milica* some 5.9 km to the south-west of the discovery location of the ship's bell.
- 3.4.7 The Heritage Method Statement (Wessex Archaeology 2016d) provides a detailed assessment of archaeological value. The wreck related material is considered to be of medium archaeological value, whether it is associated with the wreck of the *Carica Milica* and thus able to provide further information about the wreckage process, or whether it derives from an unknown vessel of probable 19th century date and thus has been assessed as of heightened value based on the precautionary principle. The bell is assessed as being of low to medium archaeological value.
- 3.4.8 A number of mitigation options were explored in the Heritage Method Statement (Wessex Archaeology 2016d), and the option least likely to cause adverse effects on the wreck debris was selected. An AEZ has been recommended for the site, however due to development constraints, the RPL is anticipated to remain in the location currently proposed and therefore the RPL will pass through the AEZ and between the two concentrations of debris (S2\_Mag\_0760 and S2\_Mag\_0763). The existing RPL was moved slightly on the request of Historic England in order to minimise any direct impact on the material. The AEZ will be left in place to protect the remaining wreck debris, and ORPAD will be implemented within the area of the AEZ so that all crew members are extremely vigilant for any potential archaeological discoveries during both pre-construction and construction phases.
- 3.4.9 In addition, the Heritage Method Statement (Wessex Archaeology 2016d) recommended that the bell of the *Carica Milica* could be raised to ensure that no impact or damage would occur to it as a result of the development. This was accomplished on 17 August 2016 and a number of photographs of the bell were taken, illustrating its condition, character, and visible markings (James Fisher Subsea 2016). The bell has been transported to Wessex Archaeology's Salisbury Office for further assessment and storage, and the bell was

reported to the Receiver of Wreck on 23 August 2016 (droit number 224/16). A further report on the bell will be forthcoming, detailing conservation and storage.

#### UXO

- 3.4.10 There are six UXO in Section 2 (S2\_Mag\_0296, S2\_Mag\_0351, S2\_Mag\_0590, S2\_Mag\_0777, S2\_Mag\_0798 and S2\_Mag\_1184). UXO are of archaeological interest because they can provide information about naval and aerial warfare and they indicate the types of weapons deployed in past conflicts. For example, S2\_Mag\_0296 is thought to be a First World War German E series submarine-laid buoyant mine, whereas S2\_Mag\_0590 is thought to be a Second World War 500 lb Allied air dropped bomb. These six UXO are all considered to be of medium archaeological value. For the UXO targets, UXO requirements take precedence and no further archaeological action is required. The targets were detonated *in situ* and any remaining UXO debris was recovered to the vessel.

#### Possible ordnance

- 3.4.11 One target (S2\_Mag\_0714) comprises three objects, two of which are possibly ordnance related, and an old tyre. The first item of possible ordnance appears to comprise a barrel, either from a two pounder pom pom or the water-cooled barrel of a Vickers machine gun, while the second item appears to be a base fused artillery shell with part of the outside corroded away, revealing the poured explosive filling. The objects were removed to a debris wet store area, but should be reviewed if reinvestigated or recovered.

#### Anchors

- 3.4.12 Three anchors were located in Section 2 (S2\_Mag\_0343, S2\_Mag\_0746 and S2\_Mag\_1117), and all three appear to be isolated finds. S2\_Mag\_0343 comprises a partially buried iron anchor that appears to be in the Admiralty pattern, which occurs from the mid-19th century. It appears to be isolated and is considered to be of low archaeological value. S2\_Mag\_0746 is a broken anchor, however the video is limited and further assessment was not possible. S2\_Mag\_1117 comprises a metal stocked-anchor which appears to be associated with a length of rope. Although identification of the anchor type and date is inconclusive, it may be a Small Palmed Anchor, a type patented by Lt. William Rodger in 1833, or alternatively it could represent an anchor designed in the Admiralty pattern, and date from the mid-19th century onwards. The anchor is considered to be of low to medium archaeological value. It is recommended that the assessment should be reviewed if either anchor is reinvestigated or recovered.

#### Metal debris

- 3.4.13 The one target of metal debris of archaeological interest comprises an isolated fly-wheel (S2\_Mag\_0957). Fly-wheels are used in many locations on ships, such as on bilge pumps, engines and winches. The debris should be reviewed if reinvestigated or recovered.

#### *Targets of possible archaeological interest*

- 3.4.14 The 35 targets of metal debris of possible archaeological interest comprise a number of different types of material.
- 3.4.15 Two of the targets are considered to be of medium archaeological value. These comprise a metal pipe and flange (S2\_Mag\_0758) and a metal pipe with a possible flange (S2\_Mag\_0764). These two targets could be related to the wreck related debris discussed above (S2\_Mag\_0760 and S2\_Mag\_0763), and therefore are included within the recommended AEZ for the wider site.
- 3.4.16 One target is considered to be of low to medium archaeological value: several pieces of long thin metal debris (S2\_Mag\_0427). This material should be reviewed if reinvestigated or recovered.

3.4.17 The remaining 29 targets are considered to be of low archaeological value, and they should be reviewed if reinvestigated or recovered. The targets are summarised in Table 13 below.

**Table 13:** Targets of possible archaeological interest but low archaeological value in Section 2

Type of Target	Target ID
Angle bar	S2_Mag_0870
Chain link	S2_Mag_0854
Circular metal object	S2_Mag_0835
Concreted metal object	S2_Mag_0575_A
Cordage and a metal shackle	S2_Mag_0420
Metal bar with possible fabric or sealife	S2_Mag_0696
Metal block	S2_Mag_0502
Metal netting	S2_Mag_0257
Metal plates	S2_Mag_0821 S2_Mag_1009 S2_Mag_1098
Metal rims	S2_Mag_0965 S2_Mag_1005
Metal ring	S2_Mag_0767
Possible gauge or repeater with exposed wires	S2_Mag_0715
Possible metal bar	S2_Mag_0304
Possible metal pipe	S2_Mag_0780
Sinker weight	S2_Mag_1132
Unidentified metal objects	S2_Mag_0304_A S2_Mag_0504 S2_Mag_0962 S2_Mag_0711 S2_Mag_0767_A S2_Mag_0771 S2_Mag_0772 S2_Mag_0776 S2_Mag_0786 S2_Mag_0786_A S2_Mag_0865 S2_Mag_0865_A S2_Mag_0919 S2_Mag_1132_A

*Targets of no or unknown archaeological interest*

3.4.18 There are 27 targets comprising modern debris of no archaeological interest and two targets of unknown archaeological interest. No mitigation is recommended for this material.

3.4.19 The targets comprising modern debris are detailed in Table 14 below. One of the targets of no archaeological interest (S2\_Mag\_0557) was discovered at the location of a Priority Target (71278) identified for further assessment by Wessex Archaeology. It is discussed in more detail in the Priority Target Section above.

**Table 14:** Targets of no archaeological interest in Section 2

Type of Target	Target ID
Iron bar	S2_Mag_0492
Metal bars	S2_Mag_0695 S2_Mag_0934 S2_Mag_1103_A S2_Mag_1141 S2_Mag_1177
Metal beam	S2_Mag_0575
Metal pipes	S2_Mag_0694 S2_Mag_1079 S2_Mag_1103 S2_Mag_1153
Metal poles	S2_Mag_0557 S2_Mag_0830
Metal rod	S2_Mag_0861
Possible metal beam	S2_Mag_0864
Possible metal plate	S2_Mag_0740
Possible metal tubes	S2_Mag_0886 S2_Mag_1162 S2_Mag_1192
Possible wire	S2_Mag_0857
Steel wire rope coil	S2_Mag_0976
Unidentified metal debris	S2_Mag_0987
Wire	S2_Mag_0373 S2_Mag_0378 S2_Mag_0428 S2_Mag_0506 S2_Mag_0848

3.4.20 In Section 2 there are two targets of unknown archaeological value. There was one target that was excavated through the dredge pump before it could be archaeologically assessed (S2\_Mag\_0785) and one that was moved during dredging operations before assessment (S2\_Mag\_1038).

*Targets where nothing was found, with WA magnetic values of > 50 nT*

3.4.21 In Section 2 there are seven UXO targets where nothing was found, but that have a WA magnetic value of  $\geq 50$  nT. These are summarised in Table 15 below. It is recommended that these targets should be avoided as they are still considered to have archaeological potential within the vicinity.

**Table 15:** Summary of 'nothing found' targets that are still considered to have archaeological potential

UXO Target	WA ID	Magnetic Value (nT)
S2_Mag_0230	71314	83
S2_Mag_0232	71314	83
S2_Mag_0339	71302	77
S2_Mag_0349	70432	289

UXO Target	WA ID	Magnetic Value (nT)
S2_Mag_0374	71292	50
S2_Mag_0911	7262	884
S2_Mag_0986	71218	73

### 3.5 Section 3

#### *Introduction*

3.5.1 As summarised in Table 2 above, of the 95 ROV targets assessed in Section 3, 71 were associated with geophysical anomalies identified by Wessex Archaeology. Of the total targets investigated, at 81 locations, material was encountered on the seabed. For the remaining 14 targets, no material was observed.

3.5.2 This section provides an overview of the targets that were reviewed as part of the archaeological assessment of ROV data, and these are summarised in Table 16. The targets are illustrated in Figure 4a-c. The ROV Survey Gazetteer, that includes targets in Section 3 can be found in Appendix 1, and Data Sheets providing a detailed review of each target of archaeological and possible archaeological interest can be found in Appendix 2.

**Table 16:** Summary of targets in Section 3

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	-	-	-	-	-
Possible aircraft material	6	-	-	-	-
UXO	11	-	-	-	-
Anchor	-	-	-	-	-
Metal debris	2	30	-	26	-
Fishing gear		6	-	-	-
<b>TOTALS</b>	<b>19</b>	<b>36</b>	<b>0</b>	<b>26</b>	<b>0</b>

#### *Targets of archaeological interest*

3.5.3 The 19 targets of archaeological interest comprise 14 sites, and are discussed in detail below by type of target.

#### Possible aircraft material / fragmentary aluminium debris

3.5.4 At one location, there are six targets of small, unidentified lightweight debris, of unknown origin (S3\_Mag\_0126, S3\_Mag\_0126\_A, S3\_Mag\_0126\_B, S3\_Mag\_0126\_C, S3\_Mag\_0126\_D, and S3\_Mag\_0126\_E). The fragmentary material is sparsely distributed over an area approximately 10 m x 8 m. It comprises fragments of aluminium, the largest of which are a long, thin sheet of aluminium approximately 0.35 m in length by 0.04 m in width (S3\_mag\_0126) and a semi-circular aluminium object that could comprise part of a circular object or could have been bent into this shape, it measures approximately 0.5 m in length by 0.15 m in width.

3.5.5 Due to the presence of aluminium and therefore the possibility that the material could be aircraft related, images of the material were forwarded to Ewen Cameron, Curator of the Royal Air Force Museum Stafford for further assessment. He indicated that although there

was a possibility that the material could be aircraft related, there was nothing definitive in the images to confirm this. Therefore, it is also possible that the material could have a nautical origin or could have been dumped in the area. The material is small and lightweight, and it is possible that the debris could have been moved on the seabed from a previous location either due to natural forces (such as wave and tide regimes) or through man-made forces (such as fishing or trawling). It should be noted that the archaeological assessment of geophysical survey data (Wessex Archaeology 2018c) did not indicate anything visible on the seabed in the vicinity, and the site comprised such a small magnetic anomaly that it was not initially given a WA\_ID number. Therefore, it is unlikely that any large pieces of identifiable material are present in the vicinity, and there is no evidence, from either the geophysical surveys or the ROV survey, of any further material that could be potentially aircraft related in the wider area.

- 3.5.6 No AEZ has been recommended at this time, due to the ambiguous nature of the small pieces of debris. However, the area is considered to be of heightened sensitivity, and any material recovered from the area during the course of development should be reported through ORPAD. This group of targets is considered to be of low archaeological value, however, should additional material be discovered in the wider area it could be of archaeological interest.
- 3.5.7 This material will be crossed by the current proposed location of the RPL (dated 17 June 2016), and therefore will be impacted by cable laying activities. The client has been advised to inform staff to implement ORPAD with due vigilance in this area due to the potential for further discoveries.

#### UXO

- 3.5.8 UXO are of archaeological interest because they can provide information about naval and aerial warfare and they indicate the types of weapons deployed in past conflicts. Of the 11 UXO in Section 3, 10 are considered to be of archaeological interest and of medium archaeological value (S3\_Mag\_0018, S3\_Mag\_0018\_A, S3\_Mag\_0018\_B, S3\_Mag\_0276\_A, S3\_Mag\_0459, S3\_Mag\_0532, S3\_Mag\_0611, S3\_Mag\_0615, S3\_Mag\_0911, S3\_SSS\_002). For the UXO targets, UXO requirements take precedence and no further action is required. Targets S3\_Mag\_0459, S3\_Mag\_0532 and S3\_SSS\_002 were detonated *in situ*. Targets S3\_Mag\_0018, S3\_Mag\_0018\_A, S3\_Mag\_0018\_B, S3\_Mag\_0276\_A, S3\_Mag\_0611 and S3\_Mag\_0615 were detonated *in situ* and any remaining UXO debris was recovered to the vessel. At S3\_Mag\_0911, the material will be left *in situ* on the seabed, and avoided by a 15 m exclusion zone.
- 3.5.9 One UXO fragment (S3\_Mag\_0459\_A) is considered to be of archaeological interest but of low archaeological value. It should be reviewed if reinvestigated or recovered.

#### Metal debris

- 3.5.10 One of the pieces of metal debris is also associated with the deployment of UXO and has been identified as a mine chair and winch apparatus (S3\_Mag\_0412). It is considered to be of archaeological interest and low to medium archaeological value, and should be reviewed if reinvestigated or recovered.
- 3.5.11 The other piece of metal debris of archaeological interest has been identified as a ship's speed log propeller (S3\_Mag\_0666). The words 'T. Walker & Son Ltd, Birmingham England' are clearly stamped on one blade. The company began producing ship's speed log propellers in 1861, and therefore this artefact likely dates to the mid-to late 19th or early 20th century. It is considered to be of medium archaeological value due to its association with a known company. This material should be reviewed if reinvestigated or recovered.

*Targets of possible archaeological interest*

3.5.12 The 30 pieces of metal debris that were assessed as of possible archaeological interest and of possibly low to medium archaeological interest are summarised in Table 17 below.

**Table 17:** Targets of possible archaeological interest in Section 3

Type of Target	Target ID
Chain	S3_Mag_0117_A
Curved metal sheets, metal debris possibly part of a dredger bucket or grabber	S3_Mag_0352
Float	S3_Mag_0158
Metal box-shaped object	S3_Mag_0253
Metal pipes or tubes	S3_Mag_0337
Metal sheets and plates	S3_Mag_0055_A S3_Mag_0276 S3_Mag_0395 S3_Mag_0506_A S3_Mag_0691
Pipe and flange	S3_Mag_0483
Possible iron storage container or machinery casing	S3_Mag_0233
Possible metal bars	S3_Mag_0103 S3_Mag_0659
Possible metal wheel or cog	S3_Mag_0242
Possible piston or section of metal pipe	S3_Mag_0866
Possible tube	S3_Mag_0055
Unidentified metal objects	S3_Mag_0015 S3_Mag_0046 S3_Mag_0057 S3_Mag_0107 S3_Mag_0250 S3_Mag_0255 S3_Mag_0255_A S3_Mag_0286 S3_Mag_0338 S3_Mag_0612 S3_Mag_0659_A S3_Mag_0908

3.5.13 Six targets of possible archaeological interest have been interpreted as fishing gear (S3\_Mag\_0070, S3\_Mag\_0117, S3\_Mag\_0229\_A, S3\_Mag\_0245, S3\_Mag\_0444, and S3\_Mag\_0448). Although the fishing gear itself is modern and not of archaeological interest, the targets have been identified as of possible archaeological interest as the fishing gear could obscure archaeological material present on the seabed. Fishing gear is known to snag on existing material on the seabed, and it is possible that the material could be archaeological. A number of these targets have been recommended for removal, and should any archaeological material be discovered during the removal operation, it should be reported through ORPAD.



*Targets of no or unknown archaeological interest*

3.5.14 The 26 targets identified as modern debris and therefore are of no archaeological interest and no archaeological value are summarised in Table 18 below. No further actions are recommended for this material.

**Table 18:** Targets of no archaeological interest in Section 3

Type of Target	Target ID
Angle iron	S3_Mag_0262
Metal bars	S3_Mag_0056 S3_Mag_0931 S3_Mag_0936
Metal cable	S3_Mag_0125 S3_Mag_0293 S3_Mag_0386 S3_Mag_0506 S3_Mag_0641 S3_Mag_0643 S3_Mag_0665 S3_Mag_0666_A S3_Mag_0674
Metal pipes	S3_Mag_0054 S3_Mag_0119
Metal pole	S3_Mag_0561
Metal rod	S3_Mag_0147
Possible tubes or pipes	S3_Mag_0223 S3_Mag_0229 S3_Mag_0250_A S3_Mag_0304 S3_Mag_0381 S3_Mag_0599 S3_Mag_0696
Wire	S3_Mag_0258 S3_Mag_0297 S3_Mag_0663

*Targets where nothing was found, with WA magnetic values of > 50 nT*

3.5.15 In Section 3 there are two UXO targets where nothing was found, but that have a WA magnetic value of > 50 nT. They are: S3\_Mag\_0672 (71102) and S3\_Mag\_0904 (71086), both with a magnetic value of 63 nT. They should be avoided as they are still considered to have archaeological potential.

**3.6 Section 4**

*Introduction*

3.6.1 As summarised in Table 2 above, of the 32 ROV targets assessed in Section 4, 32 were associated with geophysical anomalies identified by Wessex Archaeology. Of the total targets investigated, at 23 locations, material was encountered on the seabed. At the remaining 9 locations, no material was observed.

3.6.2 This section provides an overview of the targets that were reviewed as part of the archaeological assessment of ROV data, and these are summarised in Table 19. The targets are illustrated in Figures 5a-c. The ROV Survey Gazetteer, that includes targets in

Section 4 can be found in Appendix 1, and Data Sheets providing a detailed review of each target of archaeological and possible archaeological interest can be found in Appendix 2.

**Table 19:** Summary of targets in Section 4

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	-	-			
Possible aircraft material	-	-			
UXO	1	-			
Anchor	-	-			
Metal debris	-	12		9	
Fishing gear	-	1			
<b>TOTALS</b>	<b>1</b>	<b>13</b>	<b>0</b>	<b>9</b>	<b>0</b>

*Targets of archaeological interest*

UXO

- 3.6.3 The one target considered to be of archaeological interest in Section 4 is a suspected UXO (S4\_Mag\_0219) measuring 2 m in length by 0.35 m in diameter. It is considered to be of medium archaeological value. UXO are of archaeological interest because they can provide information about naval and aerial warfare and they indicate the types of weapons deployed in past conflicts. For this target, UXO requirements take precedence and no further action is required. The target was detonated *in situ*.

*Targets of possible archaeological interest*

- 3.6.4 The 11 targets of metal debris of possible archaeological interest are all of probably low archaeological value. They are summarised in Table 20 below. Material from these targets should be reviewed if reinvestigated or recovered.

**Table 20:** Targets of possible archaeological interest in Section 4

Type of Target	Target ID
Angle Iron	S4_Mag_0006
Chain	S4_Mag_0150
Metal ring	S4_Mag_0236
Possible brass flag pole pinnacle or fire stoker	S4_Mag_0041
Possible tyre with metal material concreted in the centre	S4_Mag_0163
Unidentified metal objects	S4_Mag_0029_A S4_Mag_0029_B S4_Mag_0047 S4_Mag_0051_A S4_Mag_0152 S4_Mag_0180
Y-shaped metal object	S4_Mag_0041_A

- 3.6.5 A target identified as metal debris and fishing gear (S4\_Mag\_0035) comprises modern debris, and therefore is not intrinsically of archaeological interest. However, the target is

considered to be of possible archaeological interest, as the nature of the metal debris has not been confirmed, although it may be associated with the fishing net covering the site. It is likely of low archaeological value. This target should be reviewed if reinvestigated or recovered.

*Targets of no or unknown archaeological interest*

3.6.6 In Section 4, nine targets were identified as modern, non-archaeological material. They are summarised in Table 21 below. No action is identified for this material.

**Table 21:** Targets of no archaeological interest in Section 4

Type of Target	Target ID
Metal cable	S4_Mag_0091 S4_Mag_0091_A S4_Mag_0188 S4_Mag_0257
Metal pad eyes	S4_Mag_0035_A
Metal pipes	S4_Mag_0257
Metal tube	S4_Mag_0360
Plastic coated metal pipe	S4_Mag_0210
Wire	S4_Mag_0335
Wire rope	S4_Mag_0029

*Targets where nothing was found, with WA magnetic values of > 50 nT*

3.6.7 In Section 4 there is one UXO target where nothing was found, but that has a WA magnetic value of > 50 nT. S4\_Mag\_0385 (71039) has a magnetic value of 68 nT and should be avoided as it is still considered to have archaeological potential.

**3.7 Section 5**

*Introduction*

3.7.1 As summarised in Table 2 above, only one target was investigated in Section 5, and it was associated with a geophysical anomaly identified by Wessex Archaeology.

*Targets of archaeological interest*

3.7.2 There were no targets of archaeological interest identified in Section 5.

*Targets of potential archaeological interest*

3.7.3 There were no targets of potential archaeological interest identified in Section 5.

*Targets of no or unknown archaeological interest*

3.7.4 The only target that was identified on the seabed in Section 5 was confirmed to be a modern cable. The object has been assessed as modern debris of no archaeological interest. No further action is recommended for this material. The target is illustrated in Figure 5c. The ROV Survey Gazetteer provides the location of the target in Section 5, and can be found in Appendix 1. There are no Data Sheets associated with Section 5.

### 3.8 Section 6

#### *Introduction*

- 3.8.1 As summarised in Table 2 above, of the nine ROV targets assessed in Section 6, eight were associated with geophysical anomalies identified by Wessex Archaeology. Of the nine targets investigated, all were associated with material that was encountered on the seabed.
- 3.8.2 This section provides an overview of the targets that were reviewed as part of the archaeological assessment of ROV data, and these are summarised in Table 22. The targets are illustrated in Figure 6. The ROV Survey Gazetteer, that includes targets in Section 6 can be found in Appendix 1, and Data Sheets providing a detailed review of each target can be found in Appendix 2.

**Table 22:** Summary of targets in Section 6

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	-	-	-	-	-
Possible aircraft material	-	-	-	-	-
UXO	-	-	-	-	-
Anchor	1	-	-	-	-
Metal debris	-	6	-	2	-
Fishing gear	-	-	-	-	-
<b>TOTALS</b>	<b>1</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>0</b>

#### *Targets of archaeological interest*

- 3.8.3 Only one target of archaeological interest was identified in Section 6. The anchor (S6\_Mag\_0009) is broken and heavily concreted, and therefore although of archaeological interest, it is considered to be of low archaeological value. The anchor appears to be an isolated find, and should be reviewed if reinvestigated or recovered.

#### *Targets of potential archaeological interest*

- 3.8.4 Six targets were assessed as being of potential archaeological interest, and these ranged in archaeological value from low to medium. The only target of possibly medium archaeological value comprised a metal frame (S6\_Mag\_0065). The five targets of low archaeological value comprised a lead sheet (S6\_Mag\_0048) and four pieces of unidentified ferrous debris (S6\_Mag\_0065\_A, S6\_Mag\_0098, S6\_Mag\_0098\_A and S6\_Mag\_0098\_B). These targets should be reviewed if reinvestigated or recovered.

#### *Targets of no or unknown archaeological interest*

- 3.8.5 In Section 6, there were two targets that were confirmed to be modern debris of no archaeological interest. These comprised a twisted metal bar (S6\_Mag\_0020) and a gas cylinder (S6\_Mag\_0075). No action is recommended for this material.

### 3.9 Section 7

#### *Introduction*

- 3.9.1 As summarised in Table 2 above, of the 26 ROV targets assessed in Section 7, 14 were associated with geophysical anomalies identified by Wessex Archaeology. Of the total

targets investigated, at 19 locations, material was encountered on the seabed. For the remaining seven targets, no material was observed. It should be noted that five of the 19 targets where material was encountered and one of the seven targets where no material was observed are also located within the OSP study area.

3.9.2 This section provides an overview of the targets that were reviewed as part of the archaeological assessment of ROV data, and these are summarised in Table 23. The targets are illustrated in Figure 7. The ROV Survey Gazetteer, that includes targets in Section 7 can be found in Appendix 1 and Data Sheets providing a detailed review of each target of archaeological and possible archaeological interest can be found in Appendix 2.

**Table 23:** Summary of targets in Section 7

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	-	-	-	-	-
Possible aircraft material	-	-	-	-	-
UXO	5	-	-	-	-
Anchor	1	-	-	-	-
Metal debris	-	9	-	-	-
Unidentified objects	-	-	3	-	-
Fishing gear	-	1	-	-	-
<b>TOTALS</b>	<b>6</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>0</b>

*Targets of archaeological interest*

UXO

3.9.3 Of the five targets described as UXO, one comprised a British buoyant mine, possibly an MkXIV (S7\_Mag\_0014), and based on its location, the mine is thought to be associated with the British minefield RG V, which was laid in November 1939. For this UXO target, UXO requirements take precedence and no further action is required. The target was detonated *in situ* and any remaining UXO material was recovered to the ship.

3.9.4 The remaining four UXO targets comprised two UXO fragments (S7\_Mag\_0013 and S7\_Mag\_0013\_A) and two pieces of UXO wire cable (S7\_Mag\_0013\_B and S7\_Mag\_0013\_C). These targets should be reviewed if reinvestigated or recovered.

Anchor

3.9.5 The anchor (S7\_Mag\_0023) is broken and heavily concreted and could not be identified further. In addition, it appears to be an isolated object, and therefore although it is of archaeological interest, it is considered to be of low archaeological value. It should be reviewed if reinvestigated or recovered.

*Targets of possible archaeological interest*

3.9.6 Ten targets of possible archaeological interest were identified in Section 7 (two of which are also in the OSP study area), and these are summarised in Table 24 below. These targets should be reviewed if reinvestigated or recovered.

**Table 24:** Targets of possible archaeological interest in Section 7

Type of Target	Target ID
Concreted object, possible spike or bolt	S7_Mag_0072_B
Curved ferrous band	S7_Mag_0067
Cylindrical drum	S7_Mag_0016
Possible linked chain	S7_Mag_0015
Unidentified ferrous concretion	S7_Mag_0072 S7_Mag_0072_A
Unidentified ferrous object	S7_Mag_0016_A S7_MagMask01_A S7_MagMask01_C
Unidentified metal object covered in rope fishing gear	S7_Mag_0017

*Targets of no or unknown archaeological interest*

3.9.7 Three unidentified objects were excavated through the dredge pump before they could be archaeologically assessed (S7\_Mag\_Mask\_01\_B, S7\_Mag\_Mask\_01\_E, S7\_Mag\_Mask\_01\_F), all of which are also located within the OSP study area. No further action is recommended for this material.

3.9.8 There were no targets assessed as modern and of no archaeological interest.

**3.10 OSP study area**

3.10.1 This section provides an overview of the anomalies in the OSP study area that were reviewed as part of the archaeological assessment of ROV data, and the targets are illustrated on Figure 8. A gazetteer of all the anomalies can be found in Appendix 1, and Data Sheets providing a detailed review of each target of archaeological or possible archaeological interest can be found in Appendix 2.

3.10.2 Table 25 below provides a summary of the targets in the OSP study area. The following paragraphs discuss the targets in more detail.

**Table 25:** Summary of targets in OSP study area

Type of Target	Targets of Archaeological Interest	Targets of Possible Archaeological Interest	Unknown	Modern Debris	Natural
Wreck related material	-	-	-	-	-
Aircraft material	24	-	-	-	-
UXO	1	-	-	-	-
Anchor	-	-	-	-	-
Metal debris	-	5	-	-	-
Unidentified objects	-	-	3	-	-
Fishing gear	-	-	-	-	-
<b>TOTALS</b>	<b>25</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>

3.10.3 The total number of targets in the OSP study area is 33 (six of which are also present within section 7 of the ECR). This total includes 13 targets assessed by N-Sea during the UXO

ROV survey, and a further 20 that were identified by Wessex Archaeology during an in-depth assessment of aircraft material at AB\_OSP\_0145 (discussed in detail in a separate report: Wessex Archaeology 2017b). The 13 targets assessed by N-Sea include five targets that were initially assessed for the ECR and are also included in that report (Wessex Archaeology 2018a).

- 3.10.4 Overall, 24 targets relate to aircraft material and Table 26 summarises the material visible on the site. Based on the ROV data, an AEZ was recommended around the extent of the aircraft crash site (Wessex Archaeology 2017b). Following its discovery, the site was later mapped and material was recovered in January 2017. The remains were interpreted as being part of the tail and upper fuselage of a B-17F or G aircraft, and further details can be found in the *Recovery of AB\_OSP\_Mag\_145: Aircraft Material - Post-excavation Assessment Report* (Wessex Archaeology 2017d).
- 3.10.5 In prior agreement with Historic England, two array cables have since been laid that truncate the aircraft crash site AEZ, and consequently the AEZ has been amended to ensure it is applicable for future impacts. The limit of the amended AEZ has been reduced to the extent of the construction avoidance area (Figure 8), whereby all development works are prohibited within this area without prior consent from Historic England. It should be noted that the area surrounding the aircraft crash site, including beyond the extent of the AEZ, is considered as being of heightened archaeological sensitivity whereby material associated with the aircraft may still be encountered.

**Table 26:** AB\_OSP\_Mag\_0145 aircraft material

Description	Target IDs
Aluminium material	AB_OSP_Mag_0145_A_2
Fabric and metal debris	AB_OSP_Mag_0145_2
Fabric straps	AB_OSP_Mag_0145_A_4
Fabric with black coating	AB_OSP_Mag_0145_B_5
Metal debris	AB_OSP_Mag_0145 AB_OSP_Mag_0145_A AB_OSP_Mag_0145_B AB_OSP_Mag_0145_B_2 AB_OSP_Mag_0145_B_3 AB_OSP_Mag_0145_B_6 AB_OSP_Mag_0145_C AB_OSP_Mag_0145_C_2 AB_OSP_Mag_0145_C_3 AB_OSP_Mag_0145_C_6
Metal debris and wire	AB_OSP_Mag_0145_1
Metal debris – wing or spar fitting	AB_OSP_Mag_0145_B_4
Metal sheet	AB_OSP_Mag_0145_C_1
Possible netting or other debris covering metal debris	AB_OSP_Mag_0145_A_1
Probable parachute material	AB_OSP_Mag_0145_C_4 AB_OSP_Mag_0145_C_5
Probable parachute material and a concentrated accumulation of debris slightly raised off the seabed	AB_OSP_Mag_0145_C_7
Shell casing	AB_OSP_Mag_0145_B_1
Wire	AB_OSP_Mag_0145_A_3



- 3.10.6 The remaining targets in the OSP study area include an area of debris (AB\_OSP\_Mag\_0153) that comprises significant quantities of small arms ammunition, possible ammunition containers and other items of metallic debris. The site has been assessed as a possible Second World War ammunition dump, however, as it is situated approximately 67 m to the NNE of AB\_OSP\_Mag\_0145, it is possible the two sites are related. The UXO requirements for this site indicate that the surveyed target co-ordinate should be avoided by 15 m. UXO requirements take precedence for this site, and no further action is required.
- 3.10.7 Three targets in the OSP study area are of possible archaeological interest, and should be reviewed if reinvestigated or recovered. One comprises a switching board (M\_Mag\_0114). It is approximately 120 m to the SSE of the area of Second World War aircraft material (AB\_OSP\_Mag\_0145), and it is possible that the two sites are related. Another target comprises a metal bar or pipe (M\_Mag\_0110), and the third comprises a metal pipe (M\_Mag\_0114\_A).
- 3.10.8 Six targets identified during the ECR UXO ROV survey (Wessex Archaeology 2018a) are also situated within the OSP study area, and material was encountered at five of these targets. The material comprises two unidentified metal objects (S7\_MagMask01\_A and S7\_MagMask01\_C) that are of possible archaeological interest and should be reviewed if reinvestigated or recovered. Three small unidentified objects (S7\_MagMask01\_B, S7\_MagMask01\_E and S7\_MagMask01\_F) were excavated through the ROV dredge pump before they could be archaeologically assessed. This material is unknown, and, as it is no longer on the seabed at this location, no action is recommended. No material was encountered at S7\_MagMask01\_D.



## 4 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

- 4.1.1 A total of 340 targets were investigated by ROV inside the ECR and OSP study areas during the UXO assessment, of which 240 related to geophysical anomalies identified by Wessex Archaeology. At 259 of the 340 targets, material was identified on the seabed, whereas at the remaining 81, nothing was found by the ROV. The sections above, and summarised in the ROV Survey Gazetteer in Appendix 1, provide details about the archaeological assessment of each identified target and the recommended action. For each target assessed as of archaeological interest or of potential archaeological interest, a Data Sheet was prepared, and these can be found in Appendix 2.
- 4.1.2 This section provides a summary of the recommended mitigation, and the results are compiled in Table 27 below.

**Table 27:** Summary of recommended mitigation

Section	Number of targets recommended for AEZ (AEZs <sup>4</sup> )	UXO	Areas of heightened potential / Avoid	Avoid (nothing found mag anomaly >50 nT)	Review if reinvestigated or recovered	No action	Total
1	9 (2)	-	5	7	2	24	47
2	6 (1)	6	1	7	40	41	102
3	-	10	6	2	39	38	95
4	-	1	-	1	15	15	32
5	-	-	-	-	-	1	1
6	-	-	-	-	7	2	9
7	-	1	-	-	15	10	26
OSP	24 (1)	1	-	-	5	4	34
<b>TOTAL</b>	<b>39 (4)</b>	<b>19</b>	<b>12</b>	<b>17</b>	<b>121</b>	<b>131</b>	<b>340</b>

Note – the totals for section 7 and the OSP area contain an overlap of six targets, which are included in the individual totals for both sections. However, the totals for targets to be ‘reviewed if reinvestigated or recovered’, ‘no action’ and the overall ‘total’ have been updated to remove the overlap. The remaining totals are not affected by the overlap.

### 4.2 Archaeological Exclusion Zones (AEZs)

#### *Introduction*

- 4.2.1 AEZs are recommended for four sites: three in the ECR study area and one in the OSP study area. These sites are discussed in more detail below.

#### *ECR Anomaly 7346*

- 4.2.2 Site 7346 was identified as a Priority Target by Wessex Archaeology. Based on the recent geophysical data a 30 m AEZ around the extents of the wreck was recommended. The planned northern cable RPL could not avoid the AEZ, although will not directly impact the wreck. As the site has been assessed as of low archaeological value, it has been agreed with Historic England (correspondence with Historic England, 4 May 2016) that the cable laying works can intrude into the AEZ, subject to clarification by ROV.
- 4.2.3 Seven ROV targets related to the site were assessed during the archaeological assessment of ROV survey data (S1\_Mag\_0009, S1\_Mag\_0009\_A, S1\_Mag\_0009\_B and S1\_Mag\_0009\_C; S1\_WRECK\_NEP\_1\_anchor, S1\_WRECK\_NEP\_1\_debris, and S1\_WRECK\_NEP\_1\_debris\_2) (Figure 2). Although the assessment was not able to conclusively confirm whether the material on the seabed is related to the *Ocean Pride*, a

<sup>4</sup> Note that each AEZ may cover a number of targets

fishing vessel that was lost in 1972 in the general area, the material has been assessed as of low archaeological value.

- 4.2.4 Should any unexpected material come to light during the cable laying operations that is of archaeological interest, any such material should be reported through ORPAD as required by the Deemed Marine Licence within the Development Consent Order.

*ECR Anomaly 70351*

- 4.2.5 Site 70351 was also recommended as a Priority Target. The site consists of a debris field that was recommended for an AEZ that comprises the immediate boundary of the anomaly as visible in the geophysical data (Wessex Archaeology 2016b). Two ROV targets (S1\_MagMask\_03\_B and S1\_MagMask\_03\_B\_A), located at the southern end of the AEZ, were identified through diver survey and the results were archaeologically assessed (Figure 2). The targets comprise a section of metal plate and a section of metal chain. The metal debris is considered to be of archaeological interest due to its proximity to the debris field, however it is of intrinsically low archaeological value. The diver survey revealed no further material to the south of the targets. The RPL (dated 17 June 2016) is located 10 m to the south of the southern-most tip of the AEZ, and 24 m south of the targets. Therefore, with the implementation of the AEZ, the material is unlikely to be impacted by cable laying activities.

- 4.2.6 However, should any further material be encountered during the cable laying activities within the vicinity, it should be reported through ORPAD.

*ECR Anomaly 70539*

- 4.2.7 Site 70539 consists of six targets of possible wreck related debris (S2\_Mag\_0758, S2\_Mag\_0760, S2\_Mag\_0760\_A, S2\_Mag\_0760\_B, S2\_Mag\_0763, S2\_Mag\_0764) (Figure 3b). Along with the debris, the bell of the *Carica Milica* (S2\_Mag\_0763\_A) was discovered, and will be discussed below in more detail.

- 4.2.8 The possible wreck related debris has been assessed as of medium archaeological value, based on either its association with wreck of the *Carica Milica* or the possibility that it derives from an unknown vessel of probably 18th century date.

- 4.2.9 An AEZ has been recommended for the site, comprising a 5 m buffer around the positions of the ROV targets (Figure 3b). However, the area is crossed by the current proposed location of the RPL (dated 17 June 2016) and therefore, a detailed Heritage Method Statement Addendum (Wessex Archaeology 2016d) was prepared to provide an overview of potential mitigation options. Discussions with Historic England resulted in moving of the RPL slightly to minimise the potential direct impact on any material.

- 4.2.10 The AEZ will be left in place to protect the remaining wreck debris, and ORPAD will be implemented within the area of the AEZ so that all crew members are extremely vigilant for any potential archaeological discoveries during both pre-construction and construction phases.

*OSP Anomaly 70161*

- 4.2.11 One anomaly was located within the OSP that warranted an AEZ. Site 70161 related to an aircraft crash site and was located approximately 35 m north-east of the OSP location, directly impacting array cables OSP-F4E, OSP-F5F and OSP-F6G. A 15 m temporary archaeological exclusion zone (AEZ) was recommended for this site around the boundaries of the 13 m x 5 m main central area, which further impacts array cables OSP-F3C, OSP-G3D, OSP-E2H and OSP-D1J. Further information regarding the mitigation recommended

for the site is presented in the *Heritage Method Statement: Addendum (AB\_OSP\_Mag\_145: Aircraft Material) - Review of Archaeological Material identified during Unexploded Ordnance Survey (Offshore Wind Farm)* report (Wessex Archaeology 2017b).

- 4.2.12 The cables have now been laid within the OSP, however it is recommended that the AEZ be retained to highlight an area of heightened archaeological sensitivity whereby material associated with the aircraft crash site may still be encountered inside and in proximity to the AEZ. Should any further material be encountered during the cable laying activities within the vicinity, it should be reported through ORPAD.

*Additional AEZs identified through archaeological assessment of geophysical survey data*

- 4.2.13 All other recommended AEZs, such as those identified in the archaeological assessment of geophysical survey data (Wessex Archaeology 2018c and d) should be maintained, and they are illustrated in Figures 2-7 for further reference. In particular, sites with potential for impact, such as 71299, which is situated between the two RPLs (Figure 3a) should be avoided.

### **4.3 Recovered material**

*Bell of the Carica Milica*

- 4.3.1 The bell of the steamship *Carica Milica* (S2\_Mag\_0763\_A) (Figure 3b) was discovered along with wreck related debris (S2\_Mag\_0758, S2\_Mag\_0760, S2\_Mag\_0760\_A, S2\_Mag\_0760\_B, S2\_Mag\_0763, S2\_Mag\_0764) discussed above. Following its discovery, a Heritage Method Statement Addendum was produced (Wessex Archaeology 2016d) to assess the material on the site and to detail mitigation measures for the site.

- 4.3.2 The bell is assessed as being of low to medium archaeological value, due to its association with a known vessel. The Heritage Method Statement Addendum recommended that the bell could be raised to ensure that no impact or damage would occur to it as a result of cable laying activities (Wessex Archaeology 2016d). The bell was raised on 17 August 2016 and was transported to Wessex Archaeology's Salisbury office for further assessment, and a report detailing recommendations for conservation and storage will be produced in due course.

*Remains of B-17F or G aircraft*

- 4.3.3 Following its discovery during the ROV survey, a Heritage Method Statement was prepared (Wessex Archaeology 2017b) to assess the material on the site and to detail the mitigation measures recommended for the site. A Heritage Method Statement was later produced to detail the proposed mapping and recovery of the aircraft remains (Wessex Archaeology 2017c).

- 4.3.4 The partial remains of a B-17 F or G aircraft, a US bomber, were recovered in January 2017 from the target AB\_OSP\_Mag\_0145 (Wessex Archaeology 2017d).

### **4.4 Avoid**

- 4.4.1 There are 17 magnetic anomalies of greater than 50 nT that were identified as greater than 50 nT during the archaeological assessment of geophysical survey data and that were not found during the UXO ROV survey. These 15 magnetic anomalies should be avoided, as they are still considered to be of archaeological potential.

### **4.5 UXO**

- 4.5.1 For 19 targets identified as UXO, UXO requirements take precedence and no further action is required.

4.5.2 Information from N-Sea's Target Investigation Reports and Ordtek's UXO reports provide insight into naval and aerial warfare of the First and Second World War and the inclusion of this data in the archaeological assessment will enhance local and national datasets regarding these international conflicts.

#### **4.6 Review if reinvestigated or recovered**

##### *Areas of heightened sensitivity / Avoid*

##### Modern wreck and chain

4.6.1 Material from a modern wreck and associated chain (S1\_Mag\_0579; S1\_Mag\_0579\_A, S1\_Mag\_0579\_B, S1\_Mag\_0579\_C, S1\_Mag\_0579\_D) (Figure 2) will likely be moved as part of the pre-lay grapnel run. The modern wreck has been assessed as of low to no archaeological value, however, when the wreckage is moved, the new location of the material should be reported through ORPAD. In addition, if any material is recovered, it should be reported through ORPAD for further assessment to confirm the initial categorisation.

##### Possible aircraft material / fragmentary aluminium debris

4.6.2 One target (S2\_Mag\_0727) comprises aluminium material and was reported as possible aircraft material. Archaeological assessment of the available data is inconclusive. No AEZ has been recommended for the site, however it should be avoided, if possible.

4.6.3 A group of six targets (S3\_Mag\_0126, S3\_Mag\_0126\_A, S3\_Mag\_0126\_B, S3\_Mag\_0126\_C, S3\_Mag\_0126\_D, and S3\_Mag\_0126\_E) comprise small pieces of aluminium material. The debris is fragmentary and ambiguous, and although there is a possibility that it could be aircraft related, it could instead have a nautical association or have been dumped in the area. No AEZ has been recommended for the site, however, if material from the site is reinvestigated or recovered, it should be reported through ORPAD. This is considered to be an area of heightened sensitivity, and the client has been advised to inform staff to implement ORPAD with due diligence.

##### *Remaining sites to review if reinvestigated or recovered*

4.6.4 There are 121 targets that are recommended for review if reinvestigated or recovered. Should these targets be moved during cable laying activities, their new positions should be reported to ORPAD. Should material from these targets be recovered during cable laying activities, the material should be photographed and reported through ORPAD.

#### **4.7 Offshore Renewables Protocol for Archaeological Discoveries (ORPAD)**

4.7.1 Each of the targets of archaeological interest or potential archaeological interest will be assigned a unique ID within ORPAD, with the prefix GWFL. In addition, the WA IDs and ROV survey target IDs will be incorporated in the ORPAD record to facilitate cross-referencing.

4.7.2 As mentioned above, any material moved or recovered during cable laying operations should be reported through ORPAD, and the reports and new locations will be used to update the ORPAD records.

4.7.3 Once confirmation has been received from the client that the information can be released, the ORPAD records will be forwarded to the National Record for the Historic Environment (NRHE), the Suffolk Historic Environment Record (HER) (for sites near shore), the Crown Estate, Historic England and the Ministry of Defence (if applicable), for their databases.



4.7.4 In addition, should any unexpected material be discovered during cable laying operations, it should be reported through ORPAD.

**4.8 No action**

4.8.1 The 131 targets identified for no further action can be subdivided into two categories. No action is recommended for any of the targets that comprise modern, non-archaeological debris, such as rebar and wire. Additionally, no action is recommended for the targets that were investigated and where nothing was detected visually or on the sensor data, and that had magnetic anomalies of less than 50 nT.

## 5 REFERENCES

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## 6 APPENDICES

### 6.1 Appendix 1: ROV Survey Gazetteer

Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_Mag_0007	ECR	406018	5784856	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_Mag_0009	ECR	406022	5784886	Anomaly encountered	7346	Metal debris	Wreck-related debris	A	L	H	AEZ recommended and ORPAD implemented where AEZ cannot be avoided.
S1_Mag_0009_A	ECR	406024	5784887	Anomaly encountered	7346	Metal debris	Wreck-related debris	A	L	H	AEZ recommended and ORPAD implemented where AEZ cannot be avoided.
S1_Mag_0009_B	ECR	406024	5784887	Anomaly encountered	7346	Metal debris	Wreck-related debris	A	L	H	AEZ recommended and ORPAD implemented where AEZ cannot be avoided.
S1_Mag_0009_C	ECR	406024	5784881	Anomaly encountered	7346	Metal debris	Wreck-related debris	A	L	H	AEZ recommended and ORPAD implemented where AEZ cannot be avoided.
S1_Mag_0013	ECR	405922	5784841	Nothing found		Nothing detected	Nothing detected visually. Also referred to as S1E_M00013.	NA	NA	M - H	No action
S1_Mag_0041	ECR	406103	5784857	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_Mag_0072	ECR	406202	5784910	Anomaly encountered	70337	Metal debris	Rebar	M	N	H	No action
S1_Mag_0074	ECR	406216	5784826	Anomaly encountered		Metal debris	Unidentified metal object	P	U	L	Review if reinvestigated or recovered
S1_Mag_0076	ECR	406225	5784841	Anomaly encountered	71363	Metal debris	Unidentified metal object	P	U	L	Review if reinvestigated or recovered
S1_Mag_0127	ECR	406357	5784937	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_Mag_0132	ECR	406363	5784917	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action





Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_Mag_0228	ECR	406710	5785007	Nothing found	71353	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S1_Mag_0385	ECR	408006	5785189	Nothing found	71342	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S1_Mag_0385_A DD	ECR	408006	5785189	Nothing found	71342	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S1_Mag_0414	ECR	408320	5785091	Nothing found	70371	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_Mag_0440	ECR	408418	5785043	Nothing found		Nothing detected	Nothing detected visually or on sonar data	NA	NA	M - H	No action
S1_Mag_0440_C HK	ECR	408419	5785043	Nothing found		Nothing detected	Nothing detected visually or on sonar data	NA	NA	M - H	No action
S1_Mag_0579	ECR	408702	5784974	Anomaly encountered		Metal debris	Steel Chain	P	L - N	M	Material from this site will likely be moved as part of the pre-lay grapnel run. The new location of the material should be recorded and the co-ordinates submitted to Wessex Archaeology either directly or through ORPAD. If any material is recovered, it should be recorded and reported to Wessex Archaeology either directly or through ORPAD.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_Mag_0579_A	ECR	408704	5784976	Anomaly encountered		Metal debris	Steel Chain	P	L - N	M	Material from this site will likely be moved as part of the pre-lay grapnel run. The new location of the material should be recorded and the co-ordinates submitted to Wessex Archaeology either directly or through ORPAD. If any material is recovered, it should be recorded and reported to Wessex Archaeology either directly or through ORPAD.
S1_Mag_0579_B	ECR	408705	5784979	Anomaly encountered		Metal debris	Steel Chain	P	L - N	M	Material from this site will likely be moved as part of the pre-lay grapnel run. The new location of the material should be recorded and the co-ordinates submitted to Wessex Archaeology either directly or through ORPAD. If any material is recovered, it should be recorded and reported to Wessex Archaeology either directly or through ORPAD.
S1_Mag_0579_C	ECR	408706	5784984	Anomaly encountered		Unknown	Possible wreck remains	P	L - N	M	Material from this site will likely be moved as part of the pre-lay grapnel run. The new location of the material should be recorded and the co-ordinates submitted to Wessex Archaeology either directly or through ORPAD. If any material is recovered, it should be recorded and reported to Wessex Archaeology either directly or through ORPAD.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_Mag_0579_D	ECR	408702	5784984	Anomaly encountered		Metal debris	Possible ladder in wreck remains	P	L - N	M	Material from this site will likely be moved as part of the pre-lay grapnel run. The new location of the material should be recorded and the co-ordinates submitted to Wessex Archaeology either directly or through ORPAD. If any material is recovered, it should be recorded and reported to Wessex Archaeology either directly or through ORPAD.
S1_Mag_0586	ECR	408705	5785003	Nothing found		Nothing detected	Nothing detected visually or on sonar data	NA	NA	M - H	No action
S1_Mag_0779	ECR	409171	5784890	Nothing found	71325	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S1_Mag_0784	ECR	409175	5784879	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_Mag_0805	ECR	409278	5784796	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_Mag_0977	ECR	410110	5784537	Nothing found	71467	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S1_Mag_0988	ECR	410182	5784580	Nothing found	71366	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S1_Mag_0988_E XT4_WEST	ECR	410182	5784580	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	H	No action
S1_MagMask_03_B	ECR	408893	5784972	Anomaly encountered	70351	Metal debris	Metal plate	A	L	M	Possibly related to 70351 debris field. Located within an area already protected by AEZ.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_MagMask_03_B_A	ECR	408890	5784975	Anomaly encountered	70351	Metal debris	Chain	A	L	M	Possibly related to 70351 debris field. Located within an area already protected by AEZ.
S1_TITAN_Mag_1	ECR	406719	5784999	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1_TITAN_Mag_2	ECR	406355	5784846	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1_TITAN_Mag_4	ECR	408383	5785056	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_TITAN_Mag_5	ECR	408407	5785040	Nothing found	70363	Nothing detected	Nothing detected visually	NA	NA	M - H	Avoid based on mag value >50 nT
S1_TITAN_Mag_6	ECR	408404	5785060	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S1_TITAN_Mag_7	ECR	408498	5785040	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1_TITAN_Mag_8	ECR	408488	5785071	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_WRECK_NEP_1_anchor	ECR	406047	5784897	Anomaly encountered	7346	Metal debris	Anchor	A	L	H	This site is within an Archaeological Exclusion Zone. However, it has been agreed with Historic England (correspondence with Philippa Naylor, 4 May 2016) that the cable laying works can intrude into the AEZ, because the site is considered to be of low archaeological value. Should any unexpected material come to light during the cable laying operations that is of archaeological interest, any such material should be reported through ORPAD as required by the Deemed Marine Licence within the Development Consent Order.
S1_WRECK_NEP_1_debris	ECR	406037	5784913	Anomaly encountered	7346	Metal debris	Metal debris	A	L	M	This site is within an Archaeological Exclusion Zone. However, it has been agreed with Historic England (correspondence with Philippa Naylor, 4 May 2016) that the cable laying works can intrude into the AEZ, because the site is considered to be of low archaeological value. Should any unexpected material come to light during the cable laying operations that is of archaeological interest, any such material should be reported through ORPAD as required by the Deemed Marine Licence within the Development Consent Order.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S1_WRECK_NEP_1_debris_2	ECR	406033	5784885	Anomaly encountered	7346	Metal debris	Three pieces of metal debris, each roughly 2.5 m in length	A	L	M	This site is within an Archaeological Exclusion Zone. However, it has been agreed with Historic England (correspondence with Philippa Naylor, 4 May 2016) that the cable laying works can intrude into the AEZ, because the site is considered to be of low archaeological value. Should any unexpected material come to light during the cable laying operations that is of archaeological interest, any such material should be reported through ORPAD as required by the Deemed Marine Licence within the Development Consent Order.
S1E_M0033	ECR	405949	5784818	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1E_M0045	ECR	405964	5784842	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1E_M0047	ECR	405964	5784819	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1E_M0056	ECR	405975	5784863	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S1E_M0058	ECR	405976	5784822	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S2_Mag_0215	ECR	411644	5781240	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S2_Mag_0230	ECR	411709	5780967	Nothing found	71314	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S2_Mag_0232	ECR	411722	5780969	Nothing found	71314	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0257	ECR	411877	5780506	Anomaly encountered	71312	Metal debris	Metal netting	P	L	M	Review if reinvestigated or recovered
S2_Mag_0263	ECR	411890	5780513	Nothing found	71312	Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S2_Mag_0296	ECR	412014	5780223	Anomaly encountered	71307	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated <i>in situ</i> and any remaining UXO debris was recovered to the vessel.
S2_Mag_0304	ECR	412035	5780045	Anomaly encountered	7287	Metal debris	Possible metal bar	P	L	M	Review if reinvestigated or recovered
S2_Mag_0304_A	ECR	412031	5780040	Anomaly encountered	7287	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0339	ECR	412205	5779832	Nothing found	71302	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S2_Mag_0343	ECR	412220	5779588	Anomaly encountered	71300	Metal debris	Iron anchor	A	L	H	Review if reinvestigated or recovered
S2_Mag_0349	ECR	412294	5779550	Nothing found	70432	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S2_Mag_0350	ECR	412298	5779415	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S2_Mag_0351	ECR	412300	5779311	Anomaly encountered	71297	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated <i>in situ</i> and any remaining UXO debris was recovered to the vessel.
S2_Mag_0373	ECR	412462	5779125	Anomaly encountered	70433	Wire		M	N	H	No action
S2_Mag_0374	ECR	412460	5778959	Nothing found	71292	Nothing found	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S2_Mag_0378	ECR	412469	5779162	Anomaly encountered	71294	Wire		M	N	H	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0381	ECR	412468	5779133	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S2_Mag_0388	ECR	412478	5779164	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S2_Mag_0391	ECR	412489	5779112	Nothing found	71293	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No Action
S2_Mag_0420	ECR	412592	5778676	Anomaly encountered	71290	Debris	Cordage & metal shackle	P	L	M	Review if reinvestigated or recovered
S2_Mag_0427	ECR	412610	5778649	Anomaly encountered	71289	Metal debris	Several pieces of long thin metal debris	P	L-M	M	Review if reinvestigated or recovered
S2_Mag_0428	ECR	412616	5778551	Anomaly encountered	71287	Wire		M	N	H	No action
S2_Mag_0492	ECR	412829	5778099	Anomaly encountered	71284	Metal debris	Iron bar	M	N	M	No action
S2_Mag_0502	ECR	412866	5778071	Anomaly encountered		Metal debris	Roughly square metal block	P	L	M	Review if reinvestigated or recovered
S2_Mag_0504	ECR	412870	5778054	Anomaly encountered	71283	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0506	ECR	412886	5778171	Anomaly encountered	71285	Wire		M	N	H	No action
S2_Mag_0557	ECR	413076	5777736	Anomaly encountered	71278	Metal debris	Metal pole	M	N	M	No action
S2_Mag_0575	ECR	413141	5777628	Anomaly encountered		Metal debris	Metal beam	M	N	M	No action
S2_Mag_0575_A	ECR	413136	5777624	Anomaly encountered		Metal debris	Concreted metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0586	ECR	413182	5777654	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action





Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0590	ECR	413185	5777656	Anomaly encountered		UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S2_Mag_0599	ECR	413206	5777512	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S2_Mag_0694	ECR	413883	5776550	Anomaly encountered	71272	Metal debris	Metal pipe	M	N	H	No action
S2_Mag_0695	ECR	413914	5776638	Anomaly encountered	71273	Metal debris	Metal bar	M	NA	NA	No action
S2_Mag_0696	ECR	413911	5776692	Anomaly encountered	71274	Metal debris	Angular metal bar with sea life or fabric attached at one end	P	L	M	Review if reinvestigated or recovered
S2_Mag_0711	ECR	414060	5776348	Anomaly encountered	71267	Metal debris	One unidentified ferrous object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0714	ECR	414079	5776461	Anomaly encountered	71270	Debris	Three objects. Two metal objects that are possibly ordnance related, and an old tyre. The objects were relocated to 10 m outside lane to a debris wet store.	A	L-M	L-M	Review if reinvestigated or recovered
S2_Mag_0715	ECR	414082	5776470	Anomaly encountered		Debris	Debris. Wire covered with rubber, possibly a gauge or repeater with exposed wires.	P	L	L	Review if reinvestigated or recovered
S2_Mag_0721	ECR	414107	5776222	Nothing found	71263	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No Action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0727	ECR	414143	5776411	Anomaly encountered	71444	Debris / Arch	Aluminium debris. Possible aircraft material	A	M-H	L	Avoid if possible. Area of heightened interest as material has not been identified.
S2_Mag_0740	ECR	414302	5775966	Anomaly encountered		Metal debris	Possible section of metal plate	M	N	M	No action
S2_Mag_0746	ECR	414347	5776058	Anomaly encountered	71261	Anchor	Anchor	A	L-M	H	Review if reinvestigated or recovered. Object has been moved to a wet store.
S2_Mag_0758	ECR	414462	5775671	Anomaly encountered	70539	Metal debris	Metal pipe and flange, associated with other material on the seabed.	P	M	H	Recommended for AEZ.
S2_Mag_0760	ECR	414476	5775672	Anomaly encountered	70539	Metal debris	Wreck-related debris?	A	M	M	Recommended for AEZ.
S2_Mag_0760_A	ECR	414468	5775670	Anomaly encountered	70539	Metal debris	Metal tube	A	M	M	Recommended for AEZ.
S2_Mag_0760_B	ECR	414473	5775666	Anomaly encountered	70539	Metal debris	Possible deck rail	A	M	M	Recommended for AEZ.
S2_Mag_0763	ECR	414483	5775689	Anomaly encountered	70539	Metal debris	Possible wheel pipe or deck stanchion	A	M	H	Recommended for AEZ.
S2_Mag_0763_A	ECR	414489	5775692	Anomaly encountered	70539	Metal debris	Ship's Bell	A	M	H	Bell recovered from seabed 17/08/2016
S2_Mag_0764	ECR	414485	5775676	Anomaly encountered	70539	Metal debris	Metal pipe	P	M	M	Recommended for AEZ.
S2_Mag_0767	ECR	414512	5775656	Anomaly encountered	71251	Metal debris	Metal ring or metal tube	P	L	M	Review if reinvestigated or recovered
S2_Mag_0767_A	ECR	414504	5775655	Anomaly encountered	71251	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0771	ECR	414521	5775752	Anomaly encountered	71258	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0772	ECR	414540	5775695	Anomaly encountered	71253	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0776	ECR	414541	5775548	Anomaly encountered	71247	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0777	ECR	414542	5775657	Anomaly encountered	71250	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S2_Mag_0780	ECR	414551	5775739	Anomaly encountered	71257	Metal debris	Possible metal pipe or tube	P	L	M	Review if reinvestigated or recovered
S2_Mag_0785	ECR	414586	5775609	Anomaly encountered	70553	Metal debris	Unknown - excavated with dredge pump	U	U	L	Review if reinvestigated or recovered
S2_Mag_0786	ECR	414590	5775643	Anomaly encountered		Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0786_A	ECR	414593	5775646	Anomaly encountered		Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0798	ECR	414652	5775427	Anomaly encountered	71246	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S2_Mag_0805	ECR	414773	5775264	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S2_Mag_0821	ECR	414812	5775152	Anomaly encountered	71238	Metal debris	Metal plate	P	L	L	Review if reinvestigated or recovered
S2_Mag_0830	ECR	414829	5775257	Anomaly encountered	71241	Metal debris	Metal Pole	M	N	H	No action
S2_Mag_0835	ECR	414828	5775268	Anomaly encountered	71241	Metal debris	Circular metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0848	ECR	414863	5775274	Anomaly encountered	71242	Wire		M	N	H	No action
S2_Mag_0854	ECR	414888	5775245	Anomaly encountered	71239	Metal debris	Chain link	P	L	M	Review if reinvestigated or recovered
S2_Mag_0854_A	ECR	414888	5775240	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S2_Mag_0857	ECR	414952	5775158	Anomaly encountered	70540	Metal debris	2.5 m x 5 cm length of metal, possibly wire.	M	N	M	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0861	ECR	414952	5775156	Anomaly encountered	70540	Metal debris	Metal rod	M	N	M	No action
S2_Mag_0863	ECR	414965	5775162	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S2_Mag_0864	ECR	414971	5775117	Anomaly encountered	71233	Metal debris	Possible metal beam	M	N	M	No action
S2_Mag_0865	ECR	414967	5775173	Anomaly encountered	70540	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0865_A	ECR	414965	5775179	Anomaly encountered	70540	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0868	ECR	414977	5775145	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S2_Mag_0870	ECR	414981	5775154	Anomaly encountered	71235	Metal debris	Angle bar	P	L	M	Review if reinvestigated or recovered
S2_Mag_0886	ECR	415069	5774905	Anomaly encountered	71229	Metal debris	Metal tube/pipe	M	N	M	No action
S2_Mag_0911	ECR	415150	5774871	Nothing found	7262	Stones/rock	Ferrous contamination	NA	NA	M - H	Avoid based on mag value >50 nT
S2_Mag_0912	ECR	415158	5774674	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S2_Mag_0919	ECR	415192	5774781	Anomaly encountered	71227	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_0934	ECR	415292	5774660	Anomaly encountered	71226	Metal debris	Metal bar	M	N	H	No action
S2_Mag_0957	ECR	415491	5774344	Anomaly encountered	71223	Metal debris	Fly-wheel	A	L	H	Review if reinvestigated or recovered
S2_Mag_0962	ECR	415500	5774371	Anomaly encountered	71433	Metal debris	Metal debris. Semi-circular piece of unidentified metal debris. Possible half of a wheel mechanism for a steam windlass, or possibly the end of a cable drum.	P	L	M	Review if reinvestigated or recovered.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_0965	ECR	415504	5774388	Anomaly encountered	71224	Metal debris	Metal rim	P	L	M	Review if reinvestigated or recovered
S2_Mag_0976	ECR	415539	5774150	Anomaly encountered	71219	Metal debris	Steel wire rope coil	M	N	M	No action
S2_Mag_0986	ECR	415575	5774092	Nothing found	71218	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S2_Mag_0987	ECR	415575	5774096	Anomaly encountered		Metal debris	Very small (150 mm x 100 mm x 10 mm) unidentified metal debris	M	N	H	No action
S2_Mag_1005	ECR	415638	5774186	Anomaly encountered	71220	Metal debris	Metal rim	P	L	M	Review if reinvestigated or recovered
S2_Mag_1009	ECR	415661	5774001	Anomaly encountered		Metal debris	Possible lead metal plate	P	L	M	Review if reinvestigated or recovered
S2_Mag_1038	ECR	415806	5773802	Anomaly encountered	71215	Metal debris	Unknown Magnetic anomaly - moved during dredging operations	U	U	L	Review if reinvestigated or recovered
S2_Mag_1079	ECR	416022	5773516	Anomaly encountered	71212	Metal debris	Metal pipe	M	N	M	No action
S2_Mag_1098	ECR	416192	5773163	Anomaly encountered	71208	Metal debris	Metal plate	P	L	M	Review if reinvestigated or recovered
S2_Mag_1103	ECR	416247	5773148	Anomaly encountered		Metal debris	Metal pipe	M	N	M	No action
S2_Mag_1103_A	ECR	416251	5773151	Anomaly encountered		Metal debris	Metal bar	M	N	M	No action
S2_Mag_1117	ECR	416364	5772905	Anomaly encountered	71206	Metal debris	Anchor	A	L-M	H	Review if reinvestigated or recovered
S2_Mag_1132	ECR	416478	5772919	Anomaly encountered		Metal debris	Sinker weight	P	L	M	Review if reinvestigated or recovered
S2_Mag_1132_A	ECR	416476	5772919	Anomaly encountered		Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S2_Mag_1141	ECR	416589	5772644	Anomaly encountered		Metal debris	Metal bar	M	N	M	No action
S2_Mag_1153	ECR	416750	5772398	Anomaly encountered		Metal debris	Metal pipe	M	N	M	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S2_Mag_1162	ECR	416792	5772406	Anomaly encountered	71202	Metal debris	Possible metal tube	M	N	M	No action
S2_Mag_1177	ECR	416912	5772238	Anomaly encountered	71198	Metal debris	Metal bar	M	N	H	No action
S2_Mag_1184	ECR	416950	5772111	Anomaly encountered	70268	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S2_Mag_1192	ECR	416993	5771834	Anomaly encountered	71193	Metal debris	Possible metal tube or pipe	M	N	M	No action
S3_Mag_0015	ECR	417047	5771437	Anomaly encountered		Metal debris	Concreted ferrous object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0018	ECR	417055	5771572	Anomaly encountered	71187	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S3_Mag_0018_A	ECR	417057	5771570	Anomaly encountered	71187	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S3_Mag_0018_B	ECR	417062	5771573	Anomaly encountered	71187	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S3_Mag_0046	ECR	417109	5770884	Anomaly encountered	71507	Metal debris	Concreted ferrous object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0054	ECR	417123	5770683	Anomaly encountered	70565	Metal debris	Metal pipe	M	N	M	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0055	ECR	417132	5771196	Anomaly encountered	71183	Metal debris	Unidentified metal object, possibly a large tube	P	L	M	Review if reinvestigated or recovered
S3_Mag_0055_A	ECR	417135	5771196	Anomaly encountered	71183	Metal debris	Sheet metal	P	L	M	Review if reinvestigated or recovered
S3_Mag_0056	ECR	417127	5771584	Anomaly encountered	71186	Metal debris	Metal bar	M	N	M	No action
S3_Mag_0057	ECR	417134	5771175	Anomaly encountered	71182	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0070	ECR	417156	5770845	Anomaly encountered	71179	Metal debris	Fishing gear	P	L	M	Review if reinvestigated or recovered. The N-SEA Target Investigation Report 0124 indicates that this material will be moved to a designated wet store clear of the proposed Export Cable Route Corridor. An ROV or vessel equipped with grab will be used for the operation. Should any material of archaeological interest be discovered during this operation, it should be reported through ORPAD.
S3_Mag_0103	ECR	417214	5770547	Anomaly encountered	70473	Metal debris	One metal object, possibly a fragment of metal bar	P	L	M	Review if reinvestigated or recovered
S3_Mag_0107	ECR	417232	5770548	Anomaly encountered	70473	Metal debris	One unidentified metal object	P	L	M	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0117	ECR	417251	5770012	Anomaly encountered	71171	Debris	Fishing gear	P	L	M	Review if reinvestigated or recovered. The N-SEA Target Investigation Report 0102 indicates that this material will be moved to a designated wet store clear of the proposed Export Cable Route Corridor. An ROV or vessel equipped with grab will be used for the operation. Should any material of archaeological interest be discovered during this operation, it should be reported through ORPAD.
S3_Mag_0117_A	ECR	417250	5770009	Anomaly encountered	71171	Metal debris	Metal chain	P	L	M	Review if reinvestigated or recovered
S3_Mag_0119	ECR	417253	5770128	Anomaly encountered	71172	Metal debris	Metal pipe	M	N	M	No action
S3_Mag_0125	ECR	417259	5769865	Anomaly encountered	71170	Metal debris	Metal cable	M	N	M	No action
S3_Mag_0126	ECR	417265	5769842	Anomaly encountered		Metal debris	One unidentified metal object	A	L	M	Area of heightened sensitivity. Review if reinvestigated or recovered.
S3_Mag_0126_A	ECR	417262	5769839	Anomaly encountered		Metal debris	Long, thin aluminium sheet	A	L	M	Area of heightened sensitivity. Review if reinvestigated or recovered.
S3_Mag_0126_B	ECR	417270	5769832	Anomaly encountered		Metal debris	Metal object	A	L	M	Area of heightened sensitivity. Review if reinvestigated or recovered.
S3_Mag_0126_C	ECR	417270	5769841	Anomaly encountered		Metal debris	Circular aluminium object	A	L	M	Area of heightened sensitivity. Review if reinvestigated or recovered.
S3_Mag_0126_D	ECR	417263	5769833	Anomaly encountered		Metal debris	Metal object	A	L	M	Area of heightened sensitivity. Review if reinvestigated or recovered.
S3_Mag_0126_E	ECR	417266	5769836	Anomaly encountered		Metal debris	Metal object	A	L	M	Area of heightened sensitivity. Review if reinvestigated or recovered.





Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0136	ECR	417295	5770175	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0147	ECR	417307	5769607	Anomaly encountered	71166	Metal debris	Metal rod	M	N	H	No action
S3_Mag_0158	ECR	417335	5769895	Anomaly encountered	7247	Metal debris	Float	P	L	M	Review if reinvestigated or recovered
S3_Mag_0223	ECR	417660	5769248	Anomaly encountered	71159	Metal debris	Possible tube/pipe	M	N	M	No action
S3_Mag_0229	ECR	417686	5769212	Anomaly encountered	71157	Metal debris	Possible tube/pipe	M	N	M	No action
S3_Mag_0229_A	ECR	417678	5769208	Anomaly encountered	71157	Debris	Fishing gear with metal weight.	P	L	M	Review if reinvestigated or recovered
S3_Mag_0232	ECR	417734	5769089	Nothing found	71153	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0233	ECR	417740	5769095	Anomaly encountered	71153	Metal debris	Possible iron storage container or machinery casing	P	L	M	Review if reinvestigated or recovered
S3_Mag_0242	ECR	417771	5769119	Anomaly encountered	71154	Metal debris	Unidentified metal debris, possible metal wheel or cog	P	L	M	Review if reinvestigated or recovered
S3_Mag_0245	ECR	417781	5769078	Anomaly encountered	71152	Debris	Fishing gear	P	L	M	Review if reinvestigated or recovered. The N-SEA Target Investigation Report 0056 indicates that this material will be moved to a designated wet store clear of the proposed Export Cable Route Corridor. An ROV or vessel equipped with grab will be used for the operation. Should any material of archaeological interest be discovered during this operation, it should be reported through ORPAD.
S3_Mag_0250	ECR	417831	5769028	Anomaly encountered	70486	Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0250_A	ECR	417831	5769028	Anomaly encountered	70486	Metal debris	Possible tube/pipe	M	N	M	No action
S3_Mag_0253	ECR	417857	5768925	Anomaly encountered	71506	Metal debris	Metal box shaped object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0255	ECR	417871	5769014	Anomaly encountered	71151	Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0255_A	ECR	417869	5769007	Anomaly encountered	71151	Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0258	ECR	417902	5768965	Anomaly encountered	71149	Wire		M	N	H	No action
S3_Mag_0262	ECR	417900	5768918	Anomaly encountered	71148	Metal debris	Angle iron	M	N	H	No action
S3_Mag_0270	ECR	418035	5768717	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0276	ECR	418085	5768697	Anomaly encountered		Metal debris	Metal plates	P	L	M	Review if reinvestigated or recovered
S3_Mag_0276_A	ECR	418082	5768699	Anomaly encountered		UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S3_Mag_0286	ECR	418122	5768730	Anomaly encountered		Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0293	ECR	418155	5768602	Anomaly encountered	71144	Metal debris	Metal cable	M	N	H	No action
S3_Mag_0297	ECR	418228	5768595	Anomaly encountered	71143	Wire		M	N	H	No action
S3_Mag_0304	ECR	418279	5768394	Anomaly encountered	71141	Metal debris	Possible tube/pipe	M	N	M	No action
S3_Mag_0315	ECR	418319	5768419	Nothing found	71140	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0337	ECR	418416	5768168	Anomaly encountered	71136	Metal debris	Unidentified objects, possible two metal pipes or tubes	P	L	M	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0338	ECR	418433	5768054	Anomaly encountered	71134	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0352	ECR	418456	5768014	Anomaly encountered	71133	Metal debris	Curved metal sheets, metal debris - possibly part of a dredger bucket or grabber.	P	M	M	Review if reinvestigated or recovered.
S3_Mag_0381	ECR	418536	5768032	Anomaly encountered	71130	Metal debris	Possible pipe or tube	M	N	M	No action
S3_Mag_0386	ECR	418537	5767988	Anomaly encountered	71128	Metal debris	Metal cable	M	N	H	No action
S3_Mag_0395	ECR	418564	5767924	Anomaly encountered	71125	Metal debris	Possible fragment of metal plate or sheet	P	L	M	Review if reinvestigated or recovered
S3_Mag_0412	ECR	418598	5767809	Anomaly encountered	70489	Metal debris	Mine chair & winch apparatus	A	L-M	M	Review if reinvestigated or recovered
S3_Mag_0444	ECR	418656	5767780	Anomaly encountered	71121	Debris	Fishing gear	P	L	M	Review if reinvestigated or recovered. The N-SEA Target Investigation Report 0071 indicates that this material will be moved to a designated wet store clear of the proposed Export Cable Route Corridor. An ROV or vessel equipped with grab will be used for the operation. Should any material of archaeological interest be discovered during this operation, it should be reported through ORPAD.
S3_Mag_0448	ECR	418662	5767697	Anomaly encountered	71503	Debris	Fishing gear	P	L	M	Review if reinvestigated or recovered
S3_Mag_0459	ECR	418683	5767646	Anomaly encountered		UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated <i>in situ</i> .
S3_Mag_0459_A	ECR	418684	5767646	Anomaly encountered		UXO	UXO fragment	A	L	M	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0483	ECR	418755	5767664	Anomaly encountered	71119	Metal debris	Pipe & flange	P	L	M	Review if reinvestigated or recovered
S3_Mag_0506	ECR	418994	5767441	Anomaly encountered	71116	Metal debris	Metal cable	M	N	H	No action
S3_Mag_0506_A	ECR	418987	5767440	Anomaly encountered	71116	Metal debris	Metal plate	P	L	M	Review if reinvestigated or recovered
S3_Mag_0532	ECR	419258	5767357	Anomaly encountered	70485	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated <i>in situ</i> .
S3_Mag_0561	ECR	419876	5767169	Anomaly encountered	71110	Metal debris	Metal pole	M	N	M	No action
S3_Mag_0599	ECR	420628	5766971	Anomaly encountered	71502	Metal debris	Possible tube/pipe	M	N	H	No action
S3_Mag_0601	ECR	420663	5766846	Nothing found	71109	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0611	ECR	420926	5766864	Anomaly encountered	71107	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S3_Mag_0612	ECR	420930	5766824	Anomaly encountered	71501	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0615	ECR	420943	5766880	Anomaly encountered	71108	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S3_Mag_0635	ECR	421048	5766803	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0641	ECR	421131	5766645	Anomaly encountered		Metal debris	Metal cable	M	N	H	No action
S3_Mag_0643	ECR	421139	5766721	Anomaly encountered	70511	Metal debris	Metal cable	M	N	H	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0659	ECR	421352	5766695	Anomaly encountered	71103	Metal debris	Metal bar	P	L	M	Review if reinvestigated or recovered
S3_Mag_0659_A	ECR	421350	5766698	Anomaly encountered	71103	Metal debris	Unidentified circular metal object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0663	ECR	421380	5766474	Anomaly encountered	70516	Wire		M	N	H	No action
S3_Mag_0665	ECR	421383	5766533	Anomaly encountered		Metal debris	Metal cable	M	N	H	No action
S3_Mag_0666	ECR	421393	5766585	Anomaly encountered	71100	Metal debris	Ship log propeller	A	M	H	Review if reinvestigated or recovered
S3_Mag_0666_A	ECR	421391	5766582	Anomaly encountered	71100	Metal debris	Metal cable	M	N	H	No action
S3_Mag_0672	ECR	421418	5766663	Nothing found	71102	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S3_Mag_0674	ECR	421428	5766499	Anomaly encountered	71098	Metal debris	Metal cable	M	N	H	No action
S3_Mag_0687	ECR	421471	5766510	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_Mag_0691	ECR	421489	5766425	Anomaly encountered	71095	Metal debris	Fragment of metal sheet	P	L	M	Review if reinvestigated or recovered
S3_Mag_0696	ECR	421534	5766425	Anomaly encountered	71094	Metal debris	Circular metal object, possible ring or section of tube/pipe	P	L	M	Review if reinvestigated or recovered
S3_Mag_0706	ECR	421566	5766346	Nothing found	71093	Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S3_Mag_0866	ECR	422042	5765805	Anomaly encountered		Metal debris	Possible piston or section of metal pipe	P	L	M	Review if reinvestigated or recovered
S3_Mag_0904	ECR	422127	5765641	Nothing found	71086	Nothing found	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S3_Mag_0905	ECR	422133	5765519	Nothing found	71082	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S3_Mag_0908	ECR	422136	5765368	Anomaly encountered		Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S3_Mag_0911	ECR	422136	5765522	Anomaly encountered	71082	UXO		A	M	H	UXO requirements take precedence. No further action is required. The items are to be left <i>in situ</i> and avoided by a 15 m exclusion zone.
S3_Mag_0931	ECR	422237	5765252	Anomaly encountered		Metal debris	Metal bar	M	N	H	No action
S3_Mag_0936	ECR	422286	5765299	Anomaly encountered	71078	Metal debris	Metal bar	M	N	H	No action
S3_SSS_001	ECR	417612	5769225	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_SSS_002	ECR	418679	5767695	Anomaly encountered	70250	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated <i>in situ</i> .
S3_SSS_004	ECR	421857	5766094	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S3_SSS_006	ECR	421870	5766068	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S4_Mag_0006	ECR	422282	5765247	Anomaly encountered	71074	Metal debris	Angle iron	P	L	M	Review if reinvestigated or recovered
S4_Mag_0008	ECR	422316	5765216	Nothing found	71073	Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S4_Mag_0029	ECR	422957	5764720	Anomaly encountered	71070	Wire	Wire rope	M	N	H	No action
S4_Mag_0029_A	ECR	422956	5764719	Anomaly encountered	71070	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S4_Mag_0029_B	ECR	422956	5764719	Anomaly encountered	71070	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S4_Mag_0035	ECR	422994	5764687	Anomaly encountered	71069	Debris	Metal debris and fishing gear	P	L	M	Review if reinvestigated or recovered
S4_Mag_0035_A	ECR	422987	5764686	Anomaly encountered	71069	Metal debris	Two metal pad eyes	M	N	H	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S4_Mag_0041	ECR	423006	5764662	Anomaly encountered		Metal debris	Possible brass flag pole pinnacle or fire stoker	P	L	M	Review if reinvestigated or recovered
S4_Mag_0041_A	ECR	423013	5764666	Anomaly encountered		Metal debris	Y-shaped object	P	L	M	Review if reinvestigated or recovered
S4_Mag_0046	ECR	423074	5764647	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S4_Mag_0047	ECR	423078	5764664	Anomaly encountered	71068	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S4_Mag_0050	ECR	423079	5764674	Nothing found	71068	Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S4_Mag_0051	ECR	423084	5764649	Nothing found	71068	Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S4_Mag_0051_A	ECR	423080	5764650	Anomaly encountered	71068	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S4_Mag_0051_B	ECR	423089.00	5764647.00	Nothing found		Nothing detected	Nothing detected visually	NA	NA	M - H	No action
S4_Mag_0091	ECR	423360	5764398	Anomaly encountered		Metal debris	Fragment of metal cable	M	N	H	No action
S4_Mag_0091_A	ECR	423355	5764391	Anomaly encountered		Metal debris	Possible fragment of metal cable	M	N	M	No action
S4_Mag_0096	ECR	423358	5764499	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S4_Mag_0150	ECR	423834	5764108	Anomaly encountered	71065	Metal debris	Metal Chain	P	L	H	Review if reinvestigated or recovered
S4_Mag_0152	ECR	423852	5764172	Anomaly encountered	70546	Metal debris	Unidentified metal debris	P	L	M	Review if reinvestigated or recovered
S4_Mag_0156	ECR	424021	5764007	Nothing found	71064	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S4_Mag_0163	ECR	424248	5763897	Anomaly encountered	70452	Metal debris	Circular object, possibly a tyre with metal wheel rim now concreted.	P	L	M	Review if reinvestigated or recovered
S4_Mag_0180	ECR	424500	5763624	Anomaly encountered	70453	Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S4_Mag_0188	ECR	424689	5763462	Anomaly encountered	71062	Metal debris	Wire cable	M	N	H	No action
S4_Mag_0210	ECR	424918	5763373	Anomaly encountered	71059	Metal debris	Plastic-coated metal pipe	M	N	H	No action
S4_Mag_0219	ECR	425027	5763341	Anomaly encountered	71058	UXO		A	M	M	UXO requirements take precedence. No further action is required. The target was detonated <i>in situ</i> .
S4_Mag_0236	ECR	425525	5762933	Anomaly encountered	71057	Metal debris	Metal ring	P	L	H	Review if reinvestigated or recovered
S4_Mag_0237	ECR	425527	5762926	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S4_Mag_0257	ECR	426094	5762536	Anomaly encountered	71051	Metal debris	Metal pipe	M	N	H	No action
S4_Mag_0335	ECR	427479	5761619	Anomaly encountered	71042	Wire	Wire	M	N	H	No action
S4_Mag_0360	ECR	427744	5761406	Anomaly encountered	71041	Metal debris	Metal tube	M	N	H	Review if reinvestigated or recovered
S4_Mag_0385	ECR	427862	5761308	Nothing found	71039	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	Avoid based on mag value >50 nT
S5_Mag_0020	ECR	428584	5760785	Anomaly encountered	71032	Metal debris	Metal cable	M	N	H	No action
S6_Mag_0009	ECR	429265	5759821	Anomaly encountered	71383	Metal debris	Broken anchor	A	L	M	Review if reinvestigated or recovered
S6_Mag_0020	ECR	429661	5759892	Anomaly encountered	71026	Metal debris	Twisted metal bar	M	N	M	No action
S6_Mag_0048	ECR	430149	5759838	Anomaly encountered		Metal debris	Lead sheet	P	L	M	Review if reinvestigated or recovered
S6_Mag_0065	ECR	430312	5759708	Anomaly encountered	71381	Metal debris	Metal frame	P	M	M	Review if reinvestigated or recovered
S6_Mag_0065_A	ECR	430317	5759709	Anomaly encountered	71381	Metal debris	Unidentified ferrous debris	P	L	M	Review if reinvestigated or recovered
S6_Mag_0075	ECR	430613	5759795	Anomaly encountered	71022	Metal debris	Gas cylinder	M	N	M	No action
S6_Mag_0098	ECR	431429	5759508	Anomaly encountered	71019	Metal debris	Unidentified ferrous debris	P	L	M	Review if reinvestigated or recovered





Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S6_Mag_0098_A	ECR	431426	5759508	Anomaly encountered	71019	Metal debris	Unidentified ferrous debris	P	L	M	Review if reinvestigated or recovered
S6_Mag_0098_B	ECR	431429	5759503	Anomaly encountered	71019	Metal debris	Unidentified ferrous debris	P	L	M	Review if reinvestigated or recovered
S7_Mag_0010	ECR	431677	5758905	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S7_Mag_0012	ECR	431683	5758883	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S7_Mag_0013	ECR	431688	5758855	Anomaly encountered	71013	Metal debris	UXO fragment	A	M	H	Review if reinvestigated or recovered
S7_Mag_0013_A	ECR	431692	5758853	Anomaly encountered	71013	Metal debris	UXO fragment	A	M	H	Review if reinvestigated or recovered
S7_Mag_0013_B	ECR	431688	5758848	Anomaly encountered	71013	Metal debris	UXO wire cable	A	L	H	Review if reinvestigated or recovered
S7_Mag_0013_C	ECR	431689	5758847	Anomaly encountered	71013	Metal debris	UXO wire cable	A	L	H	Review if reinvestigated or recovered
S7_Mag_0014	ECR	431688	5758886	Anomaly encountered	71014	UXO		A	M	H	UXO requirements take precedence. No further action is required. The target was detonated in situ and any remaining UXO debris was recovered to the vessel.
S7_Mag_0015	ECR	431696	5758893	Anomaly encountered		Metal debris	Possible linked chain	P	L	M	Review if reinvestigated or recovered
S7_Mag_0016	ECR	431702	5758888	Anomaly encountered	71016	Metal debris	Cylindrical drum	P	L	M	Review if reinvestigated or recovered
S7_Mag_0016_A	ECR	431705	5758886	Anomaly encountered	71016	Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered
S7_Mag_0017	ECR	431701	5758904	Anomaly encountered	71017	Metal debris	Metal covered in rope fishing gear	P	L	M	Review if reinvestigated or recovered
S7_Mag_0023	ECR	431727	5758790	Anomaly encountered	71017	Metal debris	Anchor	A	L	H	Review if reinvestigated or recovered
S7_Mag_0028	ECR	431737	5758684	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
S7_Mag_0067	ECR	431894	5758026	Anomaly encountered	71006	Metal debris	Curved ferrous metal band	P	L	M	Review if reinvestigated or recovered
S7_Mag_0072	ECR	431902	5758079	Anomaly encountered	71007	Metal debris	Unidentified ferrous concretion	P	L	M	Review if reinvestigated or recovered
S7_Mag_0072_A	ECR	431902	5758084	Anomaly encountered	71007	Metal debris	Unidentified ferrous concretion	P	L	M	Review if reinvestigated or recovered
S7_Mag_0072_B	ECR	431902	5758087	Anomaly encountered	71007	Metal debris	Concreted object, possible spike or bolt	P	L	M	Review if reinvestigated or recovered
S7_Mag_0110	ECR	432008	5757647	Nothing found	71005	Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S7_MagMask01_A	ECR & OSP	432479	5756427	Anomaly encountered	N/A	Metal debris	Unidentified metal object	P	L	M	Review if reinvestigated or recovered
S7_MagMask01_B	ECR & OSP	432460	5756419	Anomaly encountered		Metal debris	Unidentified object excavated through the dredge pump	U	U	M - H	No action
S7_MagMask01_C	ECR & OSP	432500	5756430	Anomaly encountered		Metal debris	Unidentified ferrous object	P	L	M	Review if reinvestigated or recovered
S7_MagMask01_D	ECR & OSP	432475	5756432	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S7_MagMask01_E	ECR & OSP	432493	5756428	Anomaly encountered		Metal debris	Unidentified object excavated through the dredge pump	U	U	M - H	No action
S7_MagMask01_F	ECR & OSP	432481	5756434	Anomaly encountered		Metal debris	Unidentified object excavated through the dredge pump	U	U	M - H	No action
S7_SSS_001	ECR	431830	5758506	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
S7_SSS_002	ECR	431831	5758456	Nothing found		Nothing detected	Nothing detected visually or on sensor data	NA	NA	M - H	No action
AB_OSP_Mag_01_45	OSP	432692	5756146	Anomaly encountered	70161	Metal (aluminium)	Metal debris possible aircraft remains	A	M	H	Recommended for AEZ.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
AB_OSP_Mag_01_45_1	OSP	432695	5756148	Anomaly encountered	70161	Metal	Metal debris and wire	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_2	OSP	432691	5756147	Anomaly encountered	70161	Fabric and Metal	Fabric and metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_A	OSP	432697	5756145	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_A_1	OSP	432696	5756145	Anomaly encountered	70161	Metal and netting	Possible netting or other debris covering metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_A_2	OSP	432695	5756146	Anomaly encountered	70161	Metal	Aluminium material	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_A_3	OSP	432696	5756145	Anomaly encountered	70161	Metal	Wire	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_A_4	OSP	432695	5756145	Anomaly encountered	70161	Fabric	Fabric straps	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B	OSP	432694	5756155	Anomaly encountered	70161	Metal (aluminium)	Metal debris, possible aircraft remains and live or spent small arms ammunition	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_1	OSP	432695	5756152	Anomaly encountered	70161	Metal	Shell chasing	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_2	OSP	432695	5756153	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_3	OSP	432695	5756153	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_3	OSP	432695	5756153	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_4	OSP	432694	5756153	Anomaly encountered	70161	Metal	Metal debris – wing or spar fitting	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_5	OSP	432695	5756153	Anomaly encountered	70161	Fabric	Fabric with black coating	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_B_6	OSP	432694	5756153	Anomaly encountered	70161	Metal	Metal object	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C	OSP	432697	5756143	Anomaly encountered	70161	Metal (aluminium)	Metal debris, possible aircraft remains	A	M	H	Recommended for AEZ. Bullet disposed of onshore by Ordtek.



Target ID	OFTO Asset Area	Easting (As Found)	Northing (As Found)	Result Summary	Associated WA ID	Material	Description	Cat	Val	Conf	Actions
AB_OSP_Mag_01_45_C_1	OSP	432697	5756146	Anomaly encountered	70161	Metal	Metal sheet	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C_2	OSP	432698	5756143	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C_3	OSP	432697	5756143	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C_4	OSP	432697	5756143	Anomaly encountered	70161	Fabric	Probable parachute material (close up)	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C_5	OSP	432697	5756143	Anomaly encountered	70161	Fabric	Probable parachute material	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C_6	OSP	432697	5756143	Anomaly encountered	70161	Metal	Metal debris	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_45_C_7	OSP	432697	5756144	Anomaly encountered	70161	Fabric	Probable parachute material associated with a concentrated accumulation of debris slightly raised off the seabed	A	M	H	Recommended for AEZ.
AB_OSP_Mag_01_53	OSP	432712	5756220	Anomaly encountered	72885	Metal	Significant quantities of small arms ammunition (live) and numerous corroded ammunition boxes	A	M	H	UXO requirements take precedence. No further action is required. Items left in situ - 15 m EZ
M_Mag_0110	OSP	432585	5755774	Anomaly encountered	72895	Metal	Metal bar or pipe	P	L	M	Review if reinvestigated or recovered
M_Mag_0114	OSP	432725	5756025	Anomaly encountered	72869	Metal	Switching board	P	L	M	Review if reinvestigated or recovered
M_Mag_0114_A	OSP	432729	5756019	Anomaly encountered	72869	Metal	Metal pipe	P	L	M	Review if reinvestigated or recovered

**Notes:**

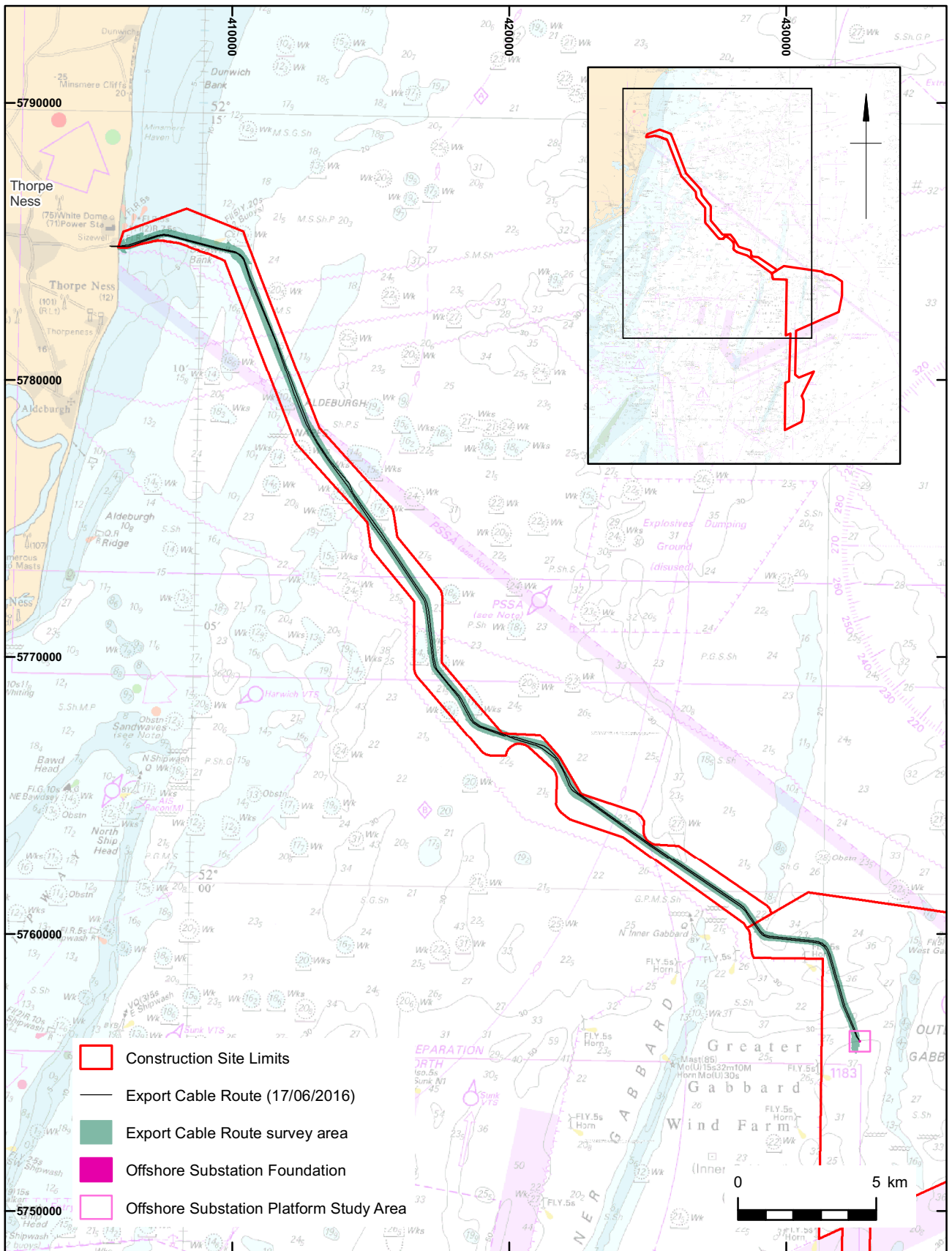
Cat: Category

Val: Value

Conf: Confidence



## **6.2 Appendix 2: Data Sheets**



- Construction Site Limits
- Export Cable Route (17/06/2016)
- Export Cable Route survey area
- Offshore Substation Foundation
- Offshore Substation Platform Study Area

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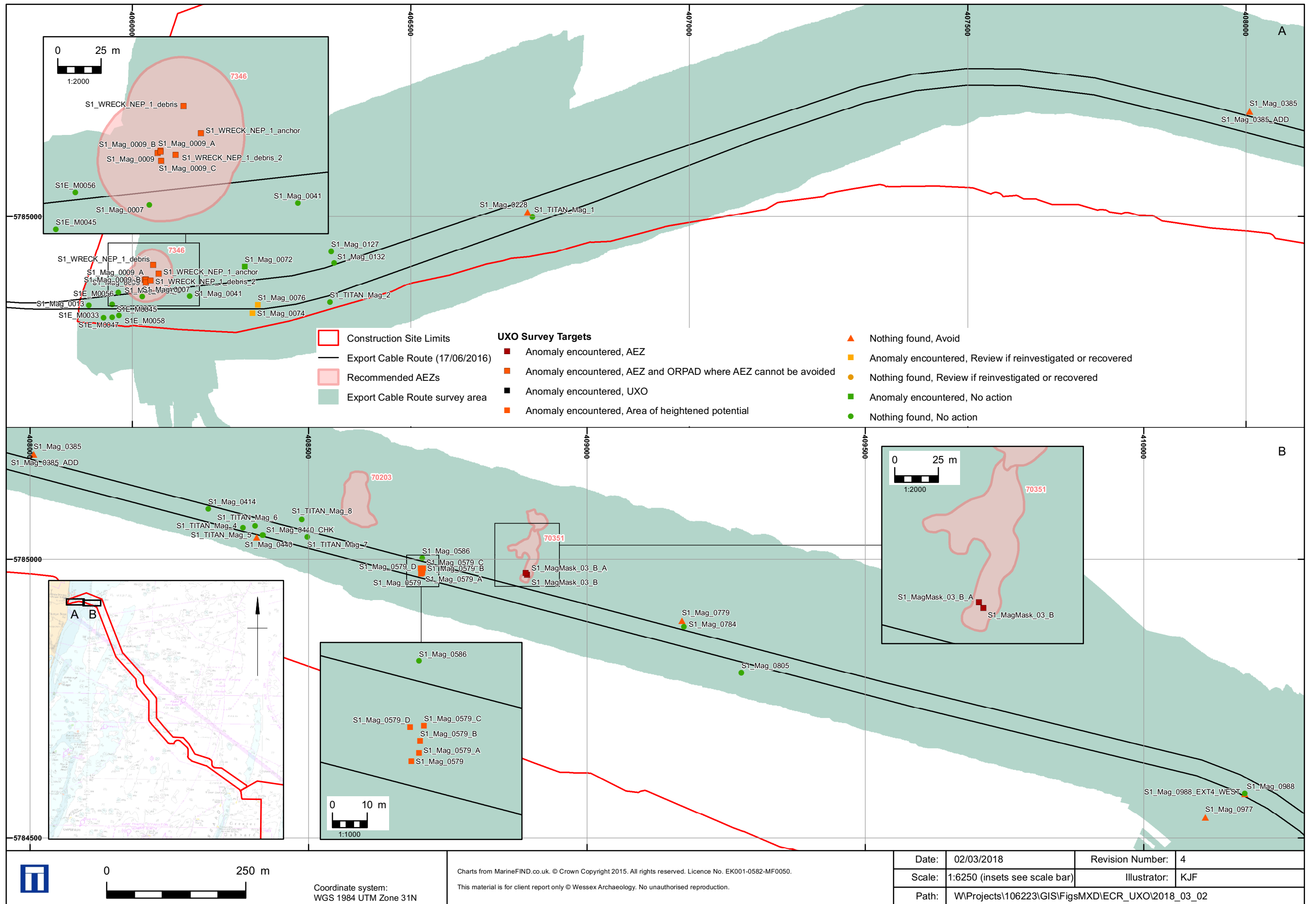
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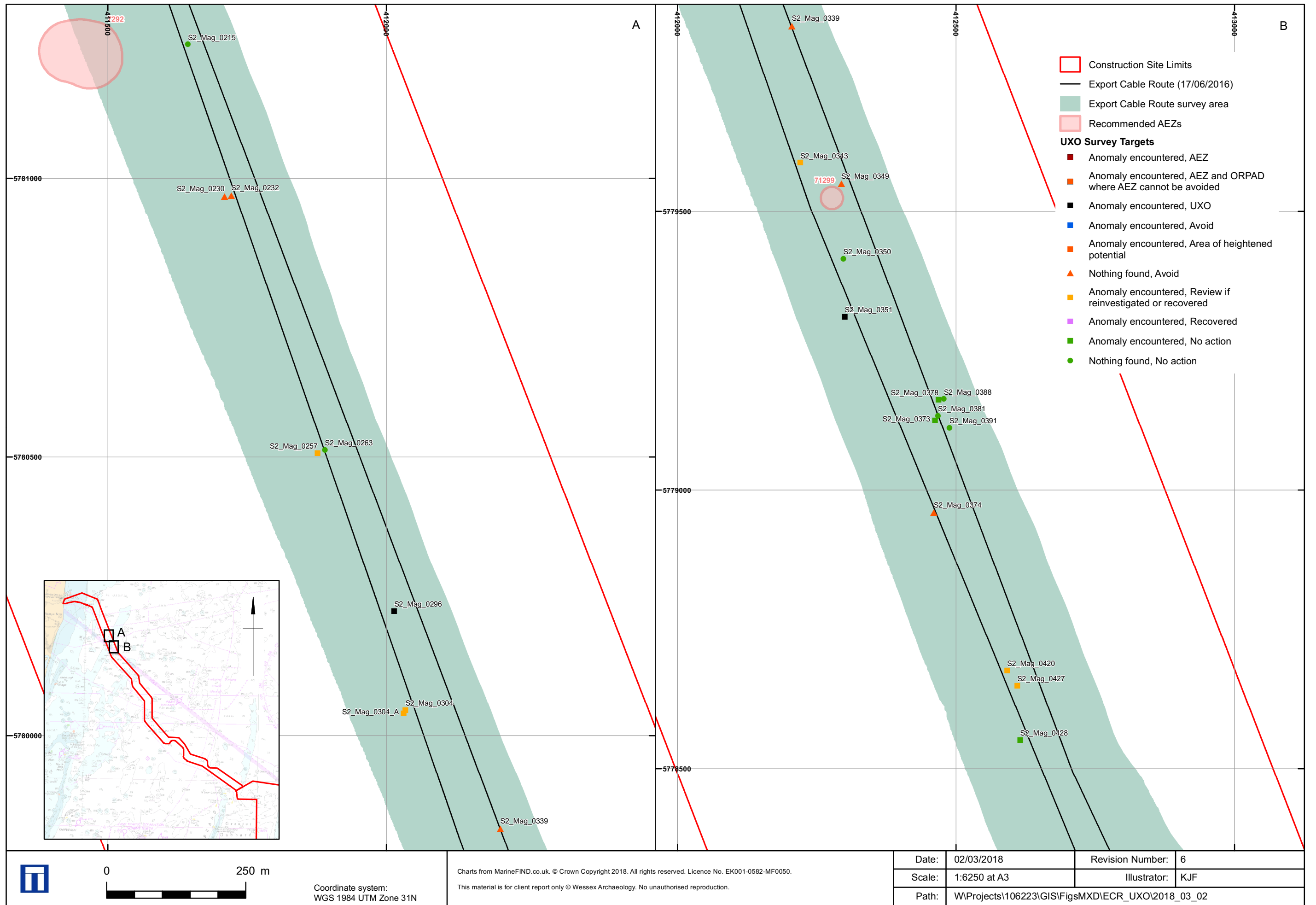
ECR Survey Area and OSP Study Area

Figure 1



Export Cable Route Section 1

Figure 2



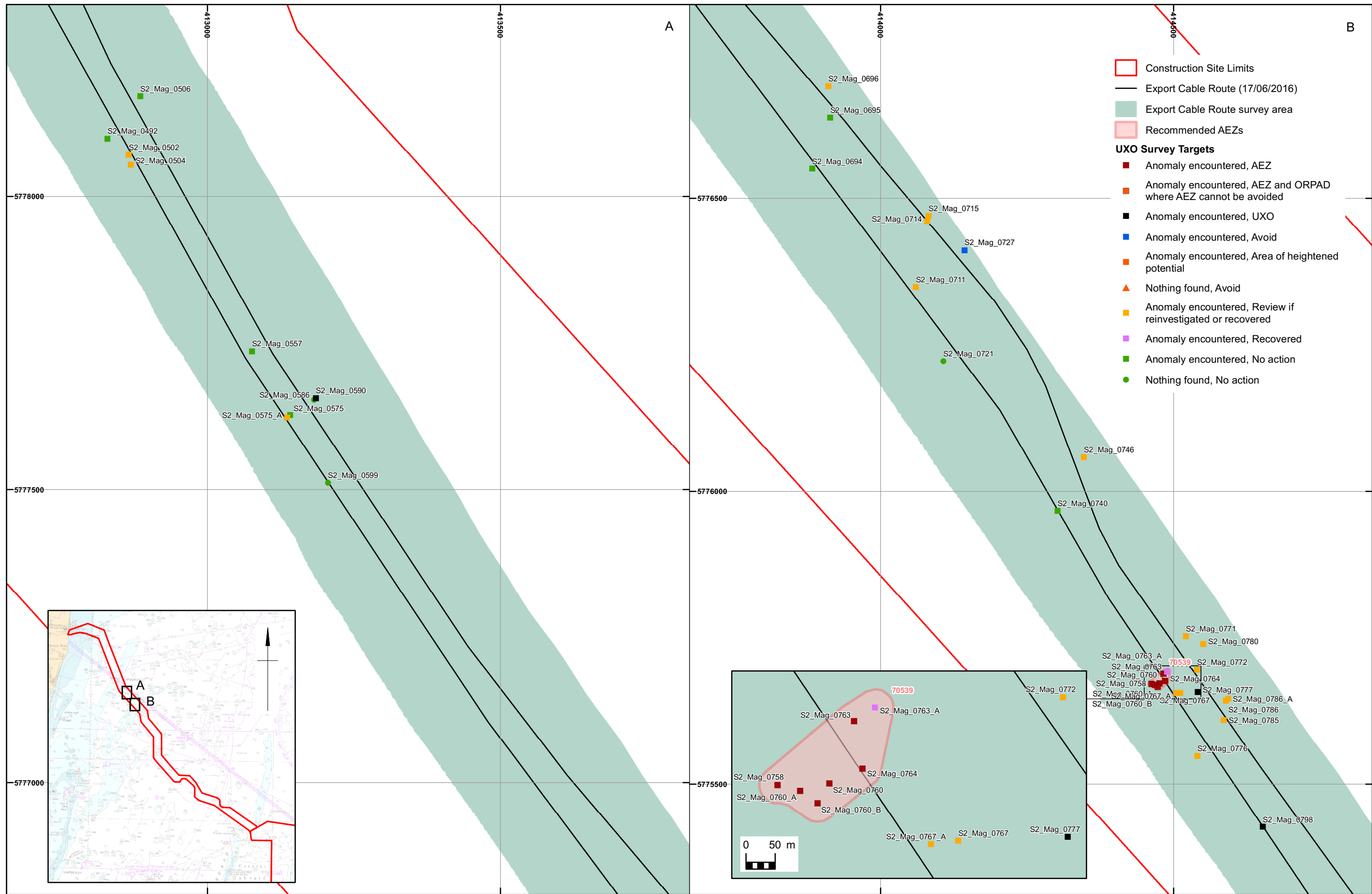
Export Cable Route Section 2

Figure 3a

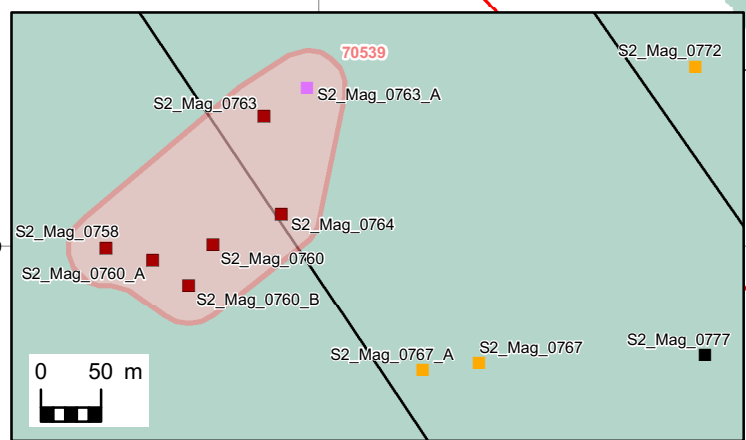
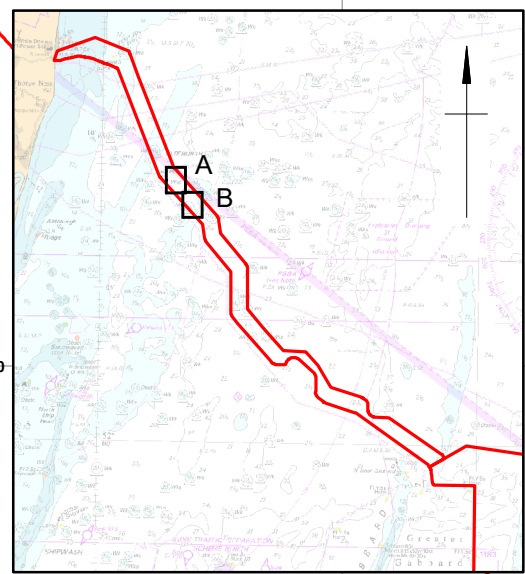
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- Construction Site Limits
  - Export Cable Route (17/06/2016)
  - Export Cable Route survey area
  - Recommended AEZs
- UXO Survey Targets**
- Anomaly encountered, AEZ
  - Anomaly encountered, AEZ and ORPAD where AEZ cannot be avoided
  - Anomaly encountered, UXO
  - Anomaly encountered, Avoid
  - Anomaly encountered, Area of heightened potential
  - ▲ Nothing found, Avoid
  - Anomaly encountered, Review if reinvestigated or recovered
  - Anomaly encountered, Recovered
  - Anomaly encountered, No action
  - Nothing found, No action



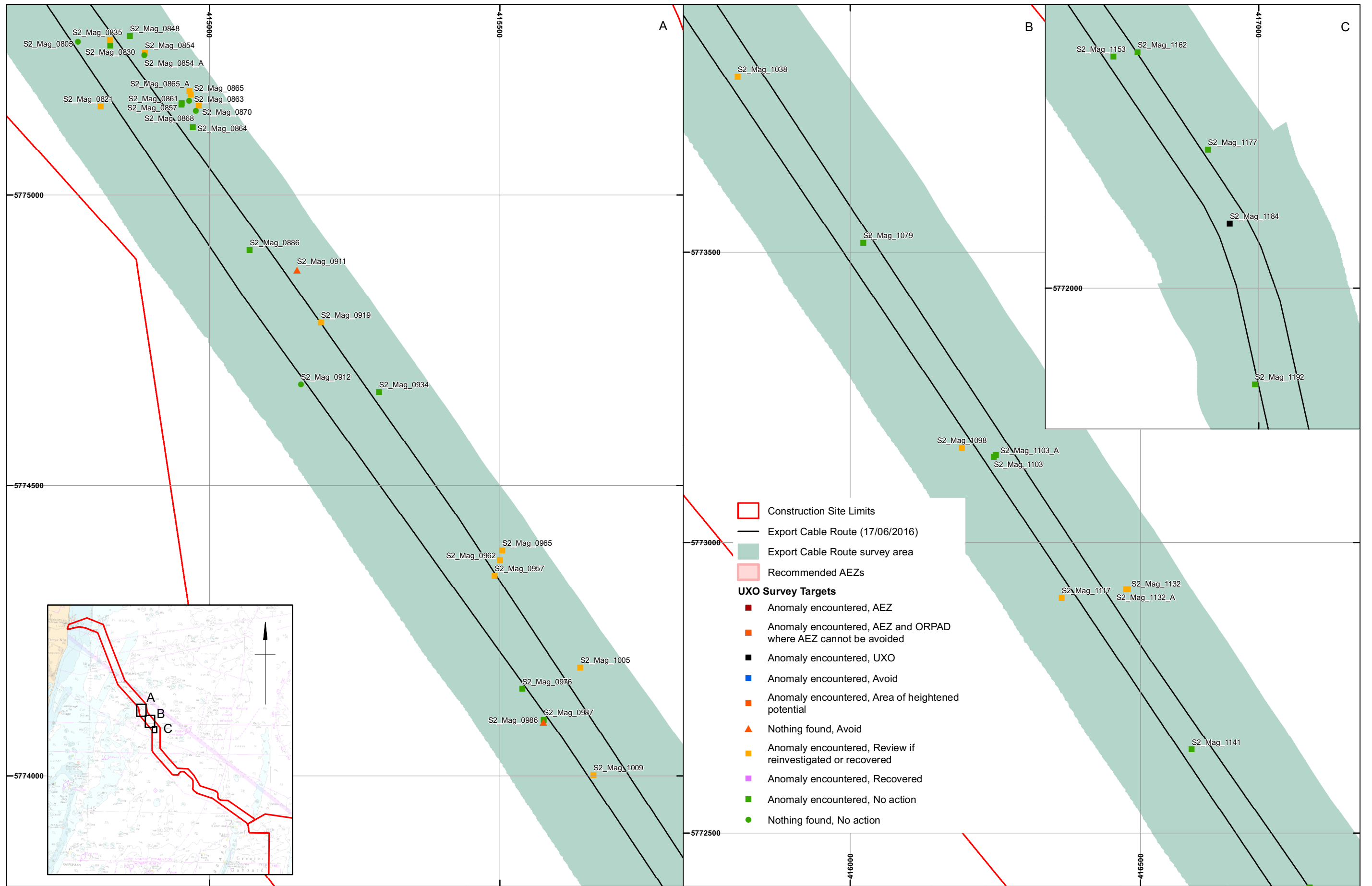
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Export Cable Route Section 2

Figure 3b



Date:	02/03/2018	Revision Number:	5
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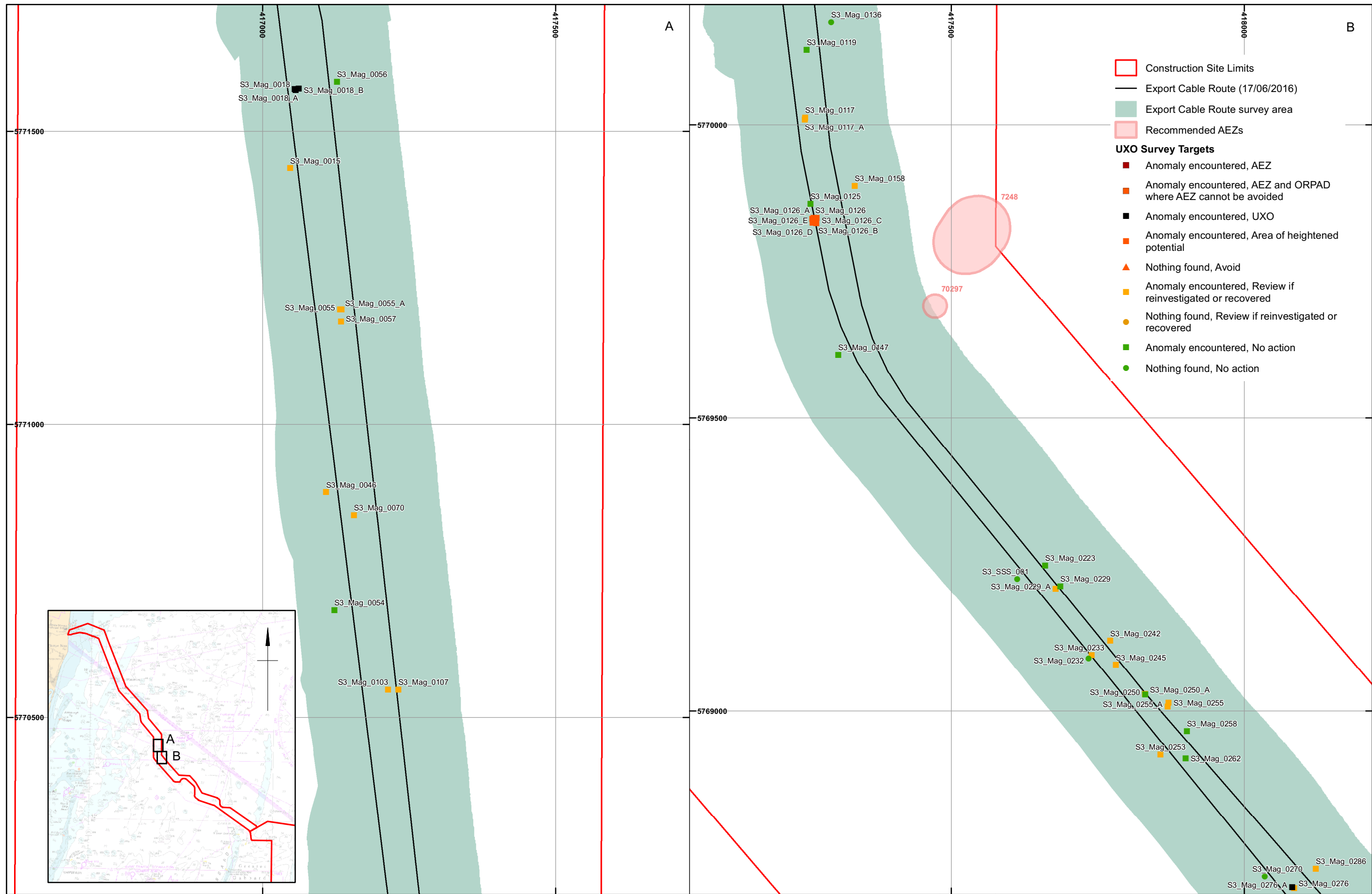


Coordinate system:  
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Export Cable Route Section 2

Figure 3c

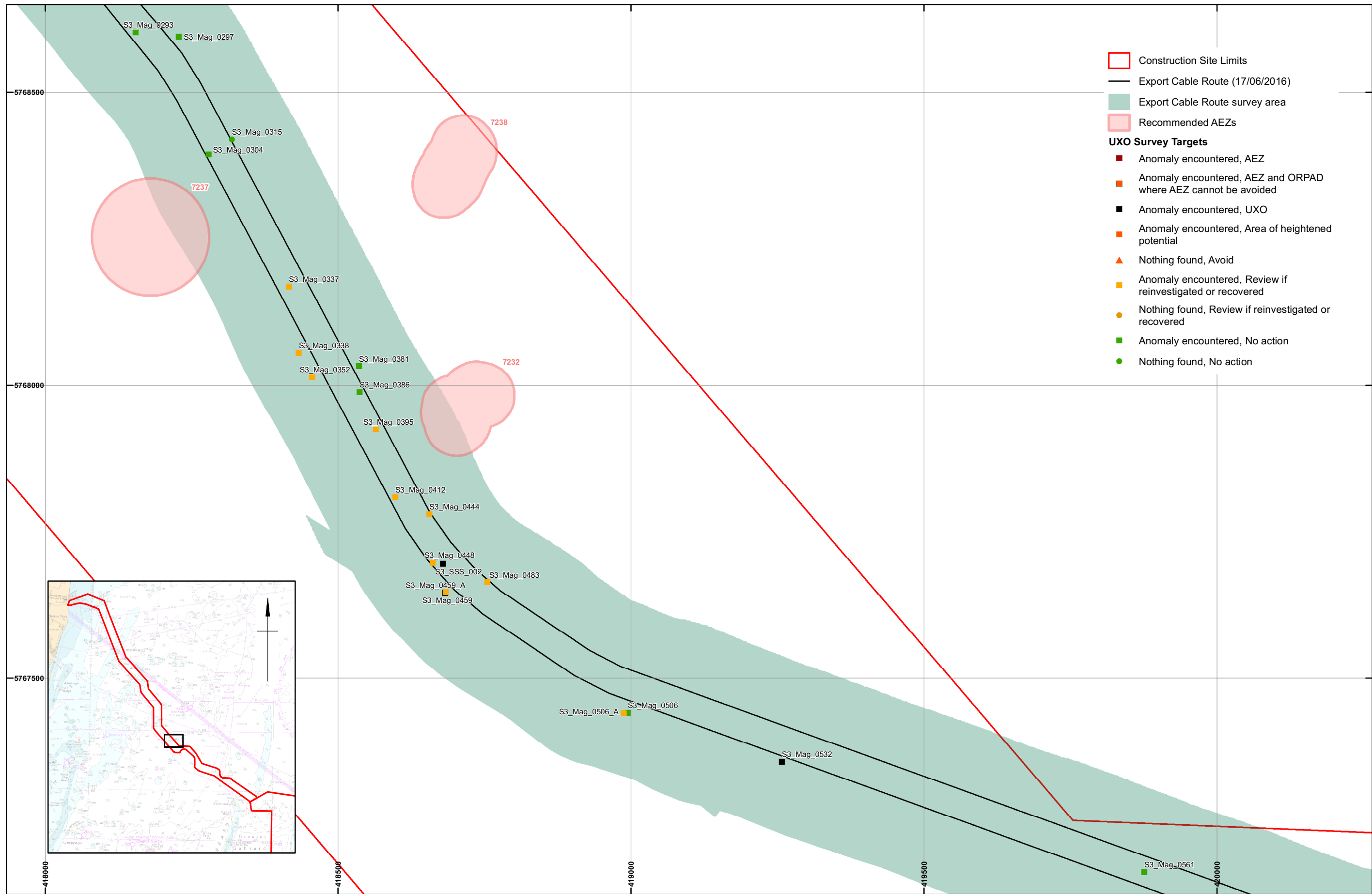


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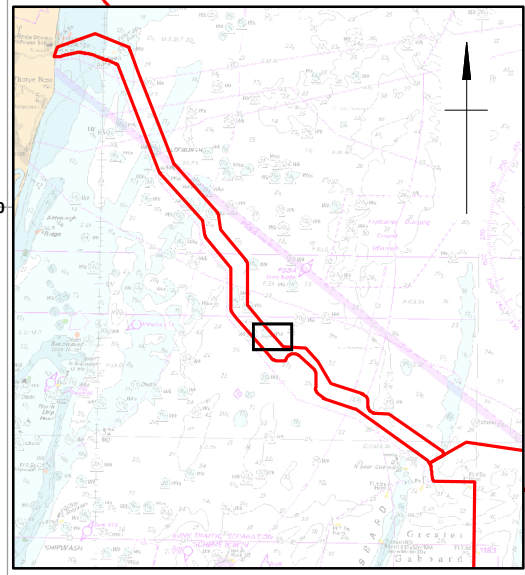
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Export Cable Route Section 3

Figure 4a



- Construction Site Limits
  - Export Cable Route (17/06/2016)
  - Export Cable Route survey area
  - Recommended AEZs
- UXO Survey Targets**
- Anomaly encountered, AEZ
  - Anomaly encountered, AEZ and ORPAD where AEZ cannot be avoided
  - Anomaly encountered, UXO
  - Anomaly encountered, Area of heightened potential
  - ▲ Nothing found, Avoid
  - Anomaly encountered, Review if reinvestigated or recovered
  - Nothing found, Review if reinvestigated or recovered
  - Anomaly encountered, No action
  - Nothing found, No action



0 250 m

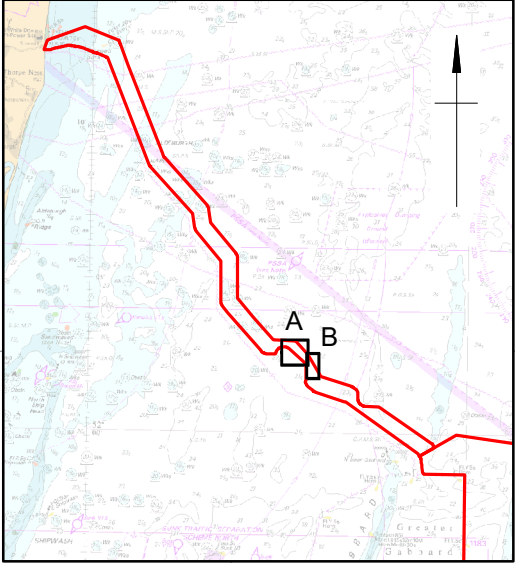
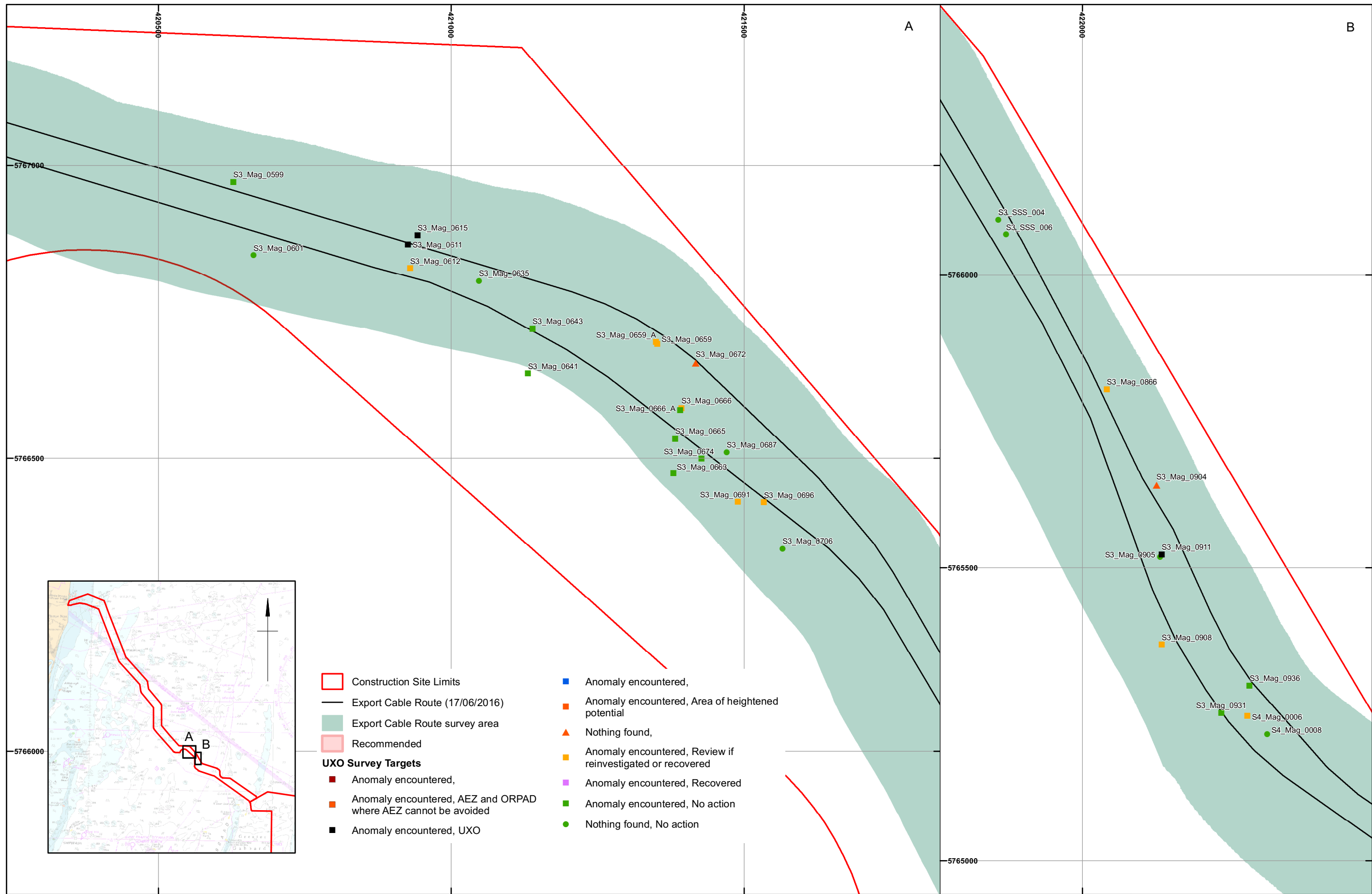
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Export Cable Route Section 3

Figure 4b



- Construction Site Limits
  - Export Cable Route (17/06/2016)
  - Export Cable Route survey area
  - Recommended
- UXO Survey Targets**
- Anomaly encountered,
  - Anomaly encountered, AEZ and ORPAD where AEZ cannot be avoided
  - Anomaly encountered, UXO
  - Anomaly encountered,
  - Anomaly encountered, Area of heightened potential
  - ▲ Nothing found,
  - Anomaly encountered, Review if reinvestigated or recovered
  - Anomaly encountered, Recovered
  - Anomaly encountered, No action
  - Nothing found, No action



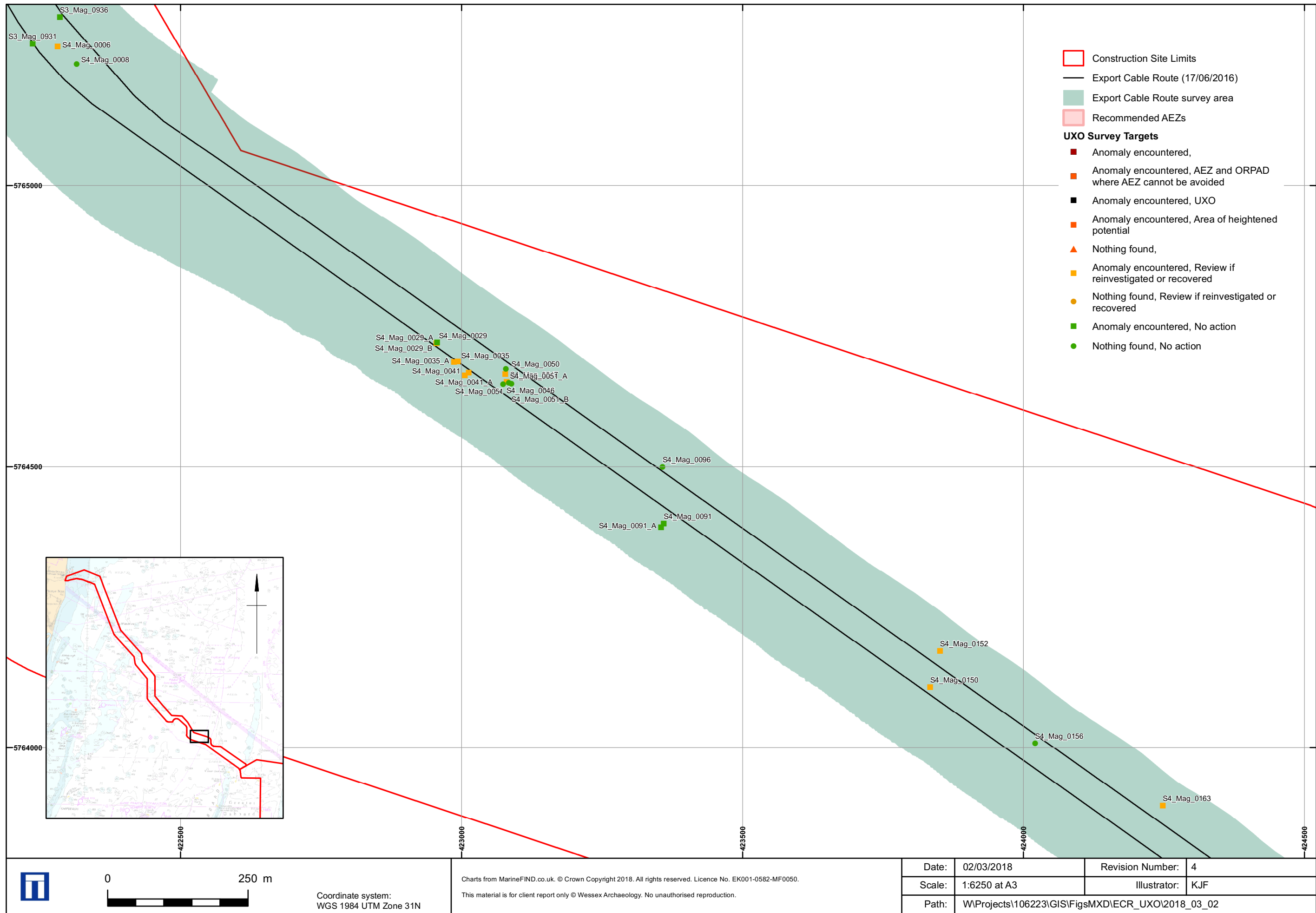
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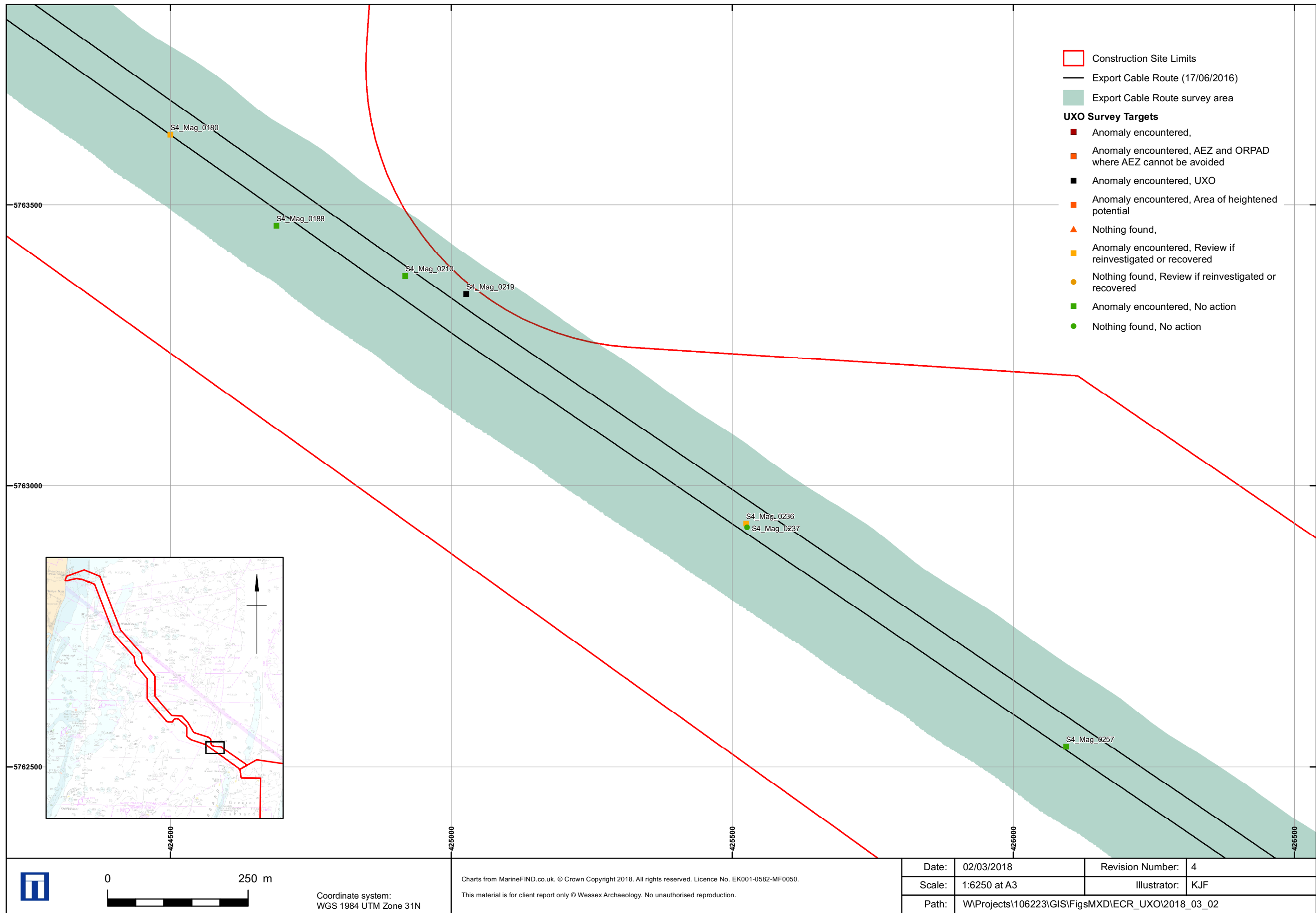
Export Cable Route Section 3

Figure 4c



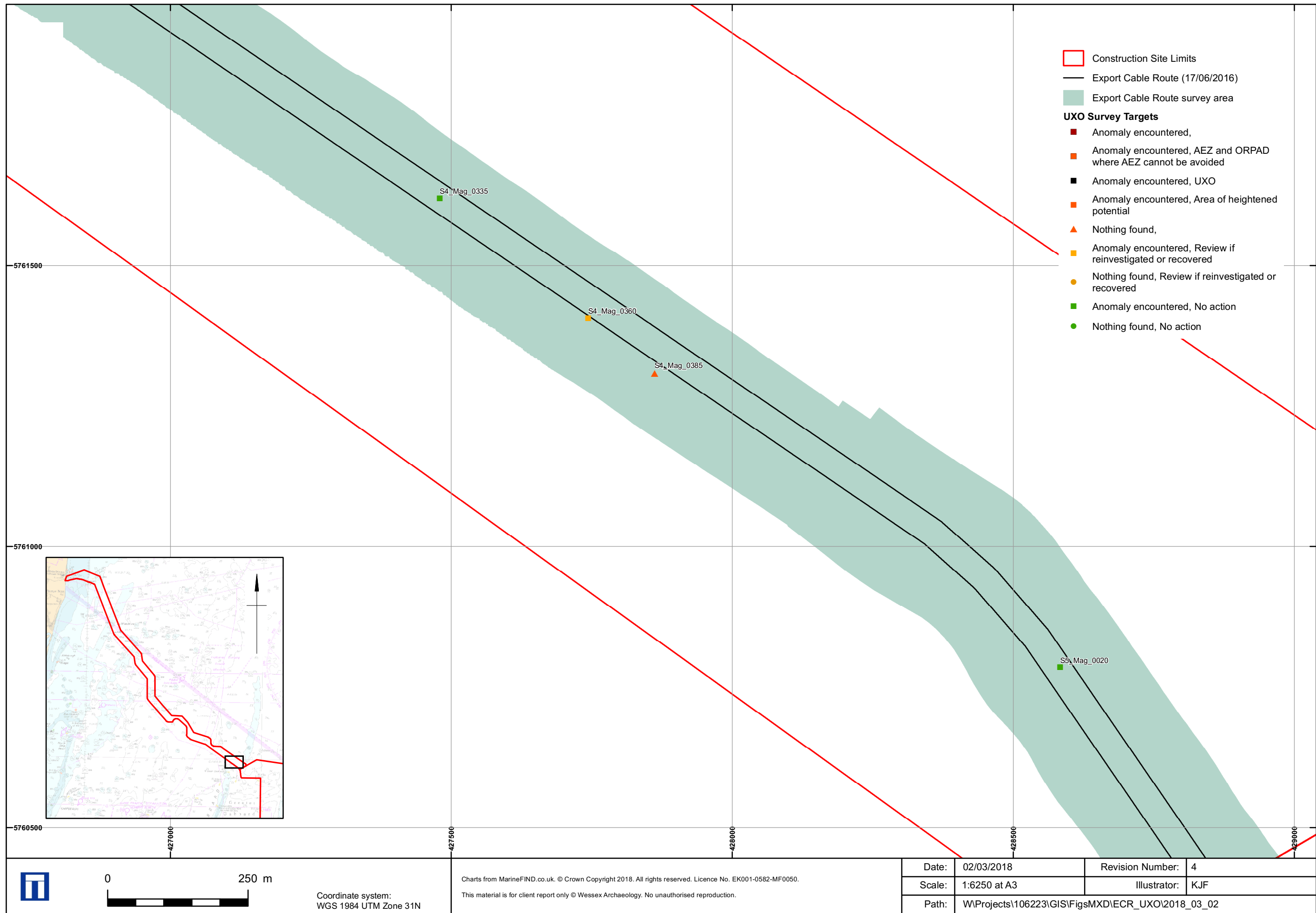
Export Cable Route Section 4 and 5

Figure 5a



Export Cable Route Section 4 and 5

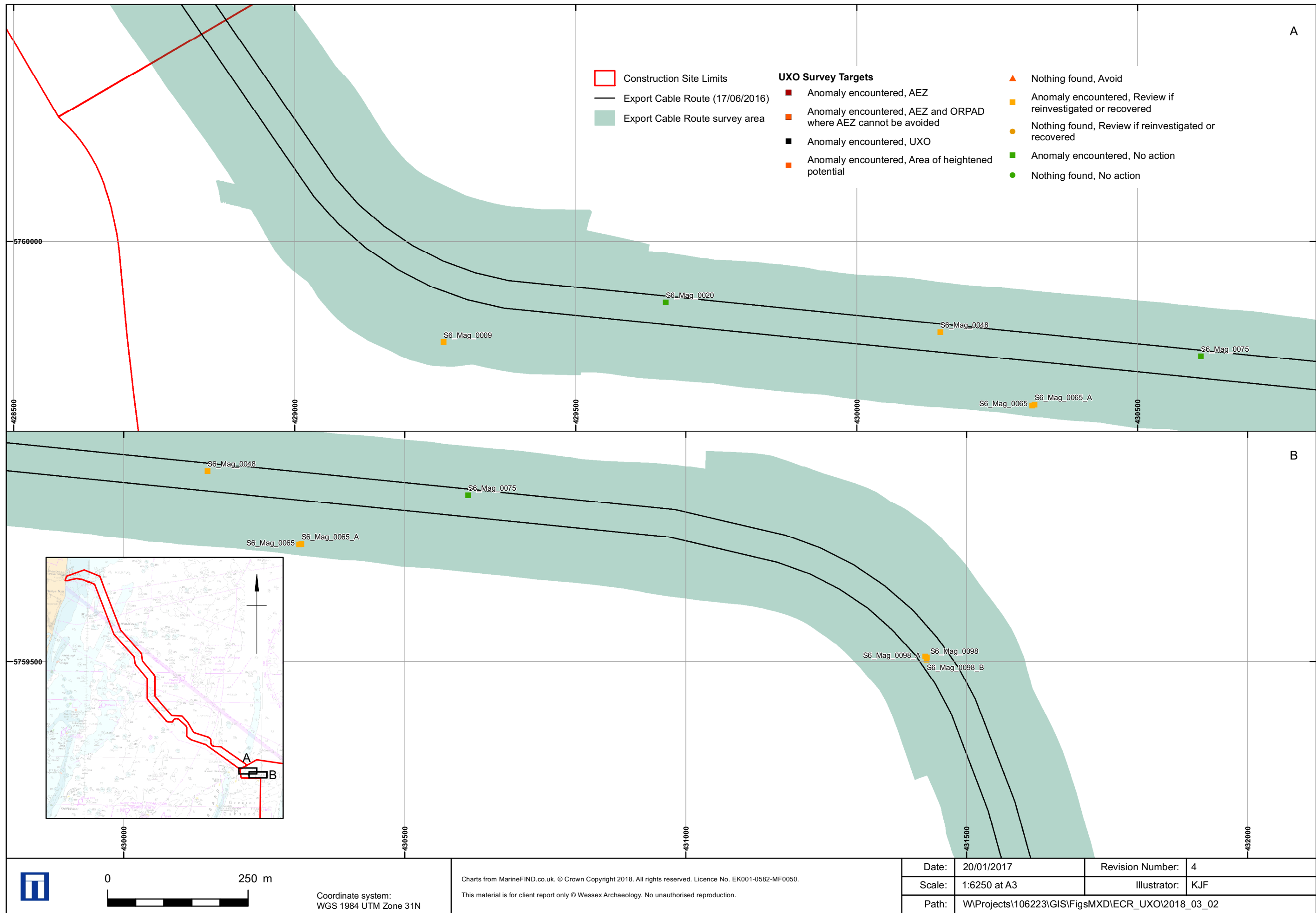
Figure 5b



Export Cable Route Section 4 and 5

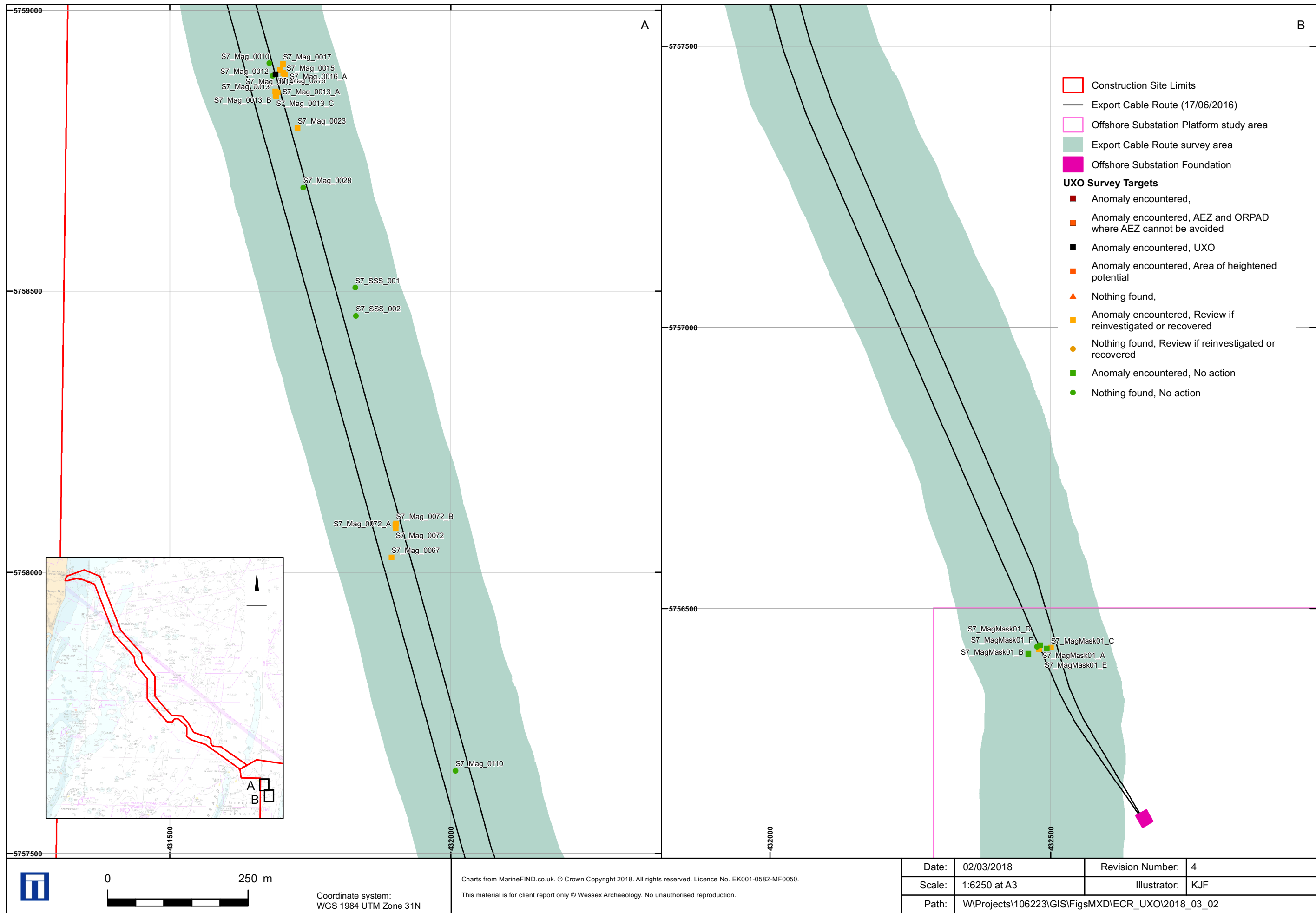
Figure 5c





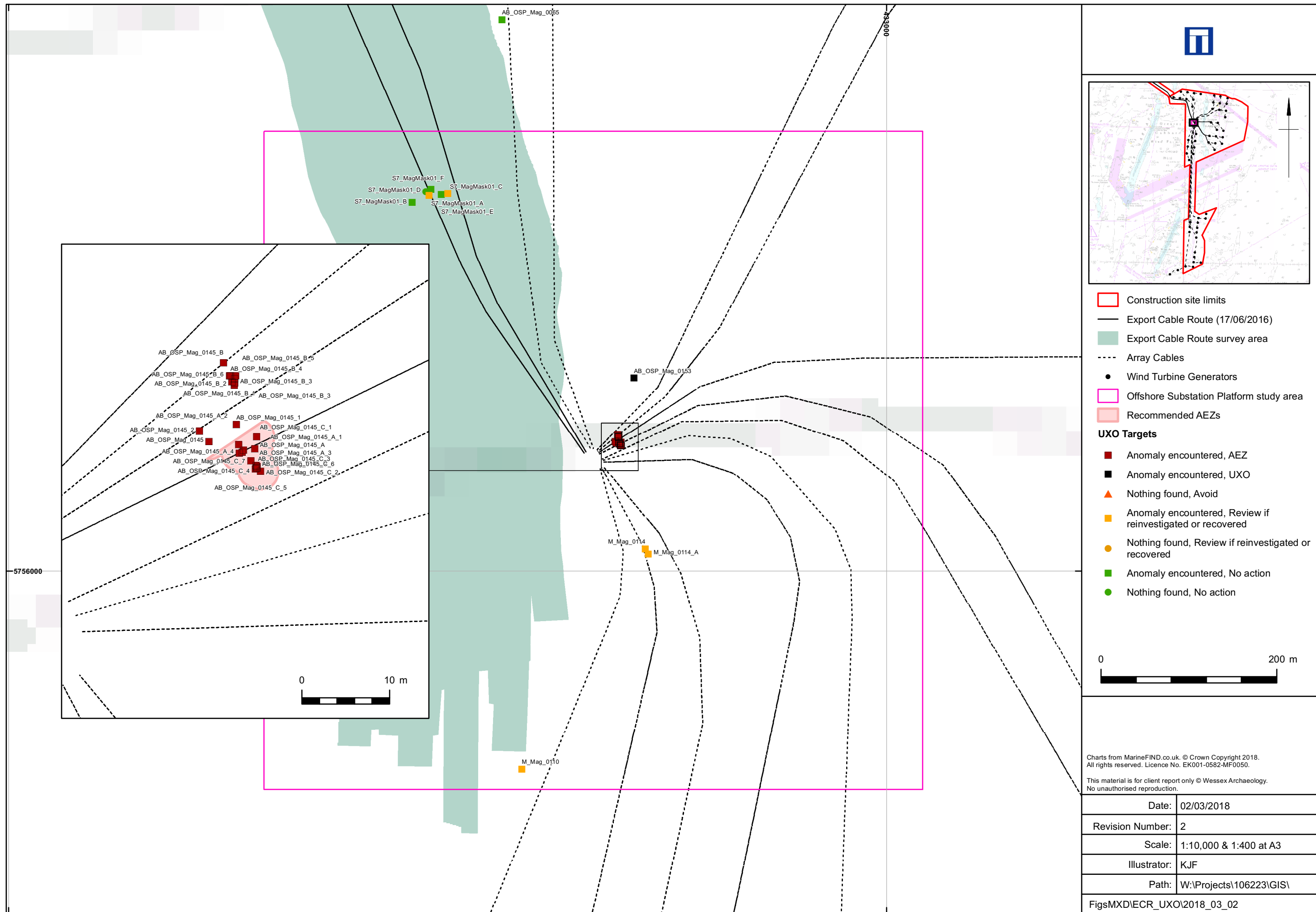
Export Cable Route Section 6

Figure 6



Export Cable Route Section 7

Figure 7



Offshore Substation Platform Study Area

Figure 8



Wessex Archaeology Ltd registered office Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB  
Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk www.wessexarch.co.uk

