

Head of TWA Orders Unit
General Counsel's Office
Department for Transport
Zone 1/18
Great Minster House
33 Horseferry Road
London
SW1P 4DR

7 May 2013

FAO Mr Robert Fox

Dear Sir

Able Humber Ports Ltd - Able Marine Energy Park - Proposal to build a quay and associated development on the south bank of the River Humber
Planning Inspectorate Reference: TR030001

I refer to my previous letter of 19 April 2013, and your response of the same requesting any further updates as they arise.

I am pleased to inform you that the Environment Agency has concluded a further agreement with Able Humber Ports Limited. This covers marine monitoring and I attach the form of the agreement which has now been executed by the Environment Agency. It should be executed by the applicant shortly and the completed version will be forwarded to you as soon as possible. On completion of the agreement the Environment Agency will withdraw its objections in relation to water quality and erosion monitoring issues.

This leaves two agreements still not finally agreed which cover construction and long term maintenance of flood defences in relation to the main AMEP site and to the compensatory habitat on the north bank. However, we still hope to resolve the outstanding issues on these very soon and will contact you again shortly to let you know whether or not we have been able to do so.

Yours faithfully

Annette Hewitson
Principal Planning Advisor

Waterside House, Waterside North, Lincoln, LN2 5HA
Customer services line: 03708 506 506
Email: PlannL.Lincoln2.AN@environment-agency.gov.uk
www.environment-agency.gov.uk

Calls to 03 numbers cost no more than national rate calls to 01 or 02 numbers and count towards any inclusive minutes in the same way. This applies to calls from any type of line including mobile.



Awarded to the Planning and Corporate Services
Department of Anglian Region, Northern Area

Appendix

**Copy of the Monitoring Agreement between
Able Humber Ports Ltd
and the Environment Agency**

DATED

2013

(1) ABLE HUMBER PORTS LIMITED

and

(2) ENVIRONMENT AGENCY

MONITORING AGREEMENT
in relation to the Able Marine Energy Park

a b c

Bircham Dyson Bell LLP
50 Broadway
London
SW1H 0BL

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DX 2317 Victoria
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THIS DEED is made on the

2013

By

- (1) **ABLE HUMBER PORTS LIMITED** (Company registration no.107029) whose registered office is at Ogier House, The Esplanade, St Helier, Jersey, JE4 9WG ("**ABLE**"); and
- (2) **ENVIRONMENT AGENCY** whose principal office is at Horizon House, Deanery Street, Bristol, BS1 5AH and whose address for service is Waterside House, Waterside North, Lincoln NL2 5HA ("**EA**"); and

Collectively known as "**the Parties**"

WHEREAS:

- (A) Able is the registered proprietor under title number HS287158, HS319024, HS36151, HS365130, HS282282, HS362150 of AMEP
- (B) The EA made a relevant representation in respect of the application for the Development which was received by the Planning Inspectorate on 2 April 2012 ("**the Relevant Representation**")
- (C) The EA made detailed written representations in respect of the application for the Development in a document dated 29 June 2012 ("**the Written Representation**", know together with the Relevant Representation as "**the Objections**")
- (D) The EA has requested, and ABLE has agreed to provide, the Monitoring in order to assess any impacts of the Development
- (E) This Agreement is made under the Anglian Water Authority Act 1977
- (F) The Parties have agreed to enter into this Agreement to address the EA's concerns in relation to the effects of the Development on the marine environment and to act reasonably in the discharge of their obligations under the Agreement.

NOW THIS DEED IS AGREED as follows:

1 Definitions and Interpretation

1.1 In this Agreement, the following terms have the following meanings–

Agreement	this Deed
Alternative Dispute Resolution	any process which allows for the resolution of a dispute without recourse to litigation and includes but is not limited to conciliation, executive tribunal, and mediation
AMEP	the land shown edged red on the Plan

Development	the development described in the application by Able to the Planning Inspectorate for a development consent order dated 19 December 2011 as amended in the course of examination of the application
Development Consent	any development consent order granted by the Secretary of State for Transport authorising the Development
Marine Monitoring Regime	the marine monitoring regime set out in Schedule 1 to this Agreement
Plan	plan no AME-02027H

- 1.2 The headings in this Agreement are for ease of reference only, and shall not affect its construction and reference to any 'Clause', 'Schedule' or 'Appendix' shall be references to clauses schedules or appendices of this Agreement unless expressly stated to the contrary.
- 1.3 Words importing the singular shall include the plural and vice versa, words importing any gender include every gender and words importing persons include firms, companies and corporations and vice versa.
- 1.4 Any reference to an enactment includes a reference to it as amended (whether before or after the date of this Agreement) and to any other enactments which may, after the date of this Agreement, directly or indirectly replace it, with or without amendment.
- 1.5 Any acceptance, communication, consent, estimation, expression of satisfaction, notice, notification, provision, requirement, or similar expression by the EA or ABLE in connection with this Agreement will not be unreasonably withheld conditioned or delayed and shall be given in writing.

2 Legal Basis

This Agreement is conditional upon the grant of Development Consent.

3 Monitoring

- 3.1 Able shall comply with the Marine Monitoring Regime including any obligations therein and for the avoidance of doubt the construction of the Development shall not commence until the Monitoring has begun.
- 3.2 If ABLE shall fail to comply with any of its monitoring obligations under the Marine Monitoring Regime the EA may serve a notice specifying the element of monitoring which has not been carried out ('the Default Notice') and if after the expiry of fourteen days from service of the Default Notice ABLE has not carried out the element of monitoring specified in the Default Notice the EA may carry out such element of monitoring and reclaim from ABLE the reasonable cost of doing so.

4 Withdrawal of Representation

In consideration of the provisions of this Agreement the Environment Agency will forthwith withdraw those parts of the Objections that relate to the subject matter of this Agreement and refrain from all related opposition to the Project or to its implementation.

5 Assignment

Neither of the Parties shall assign its obligations under this Agreement to a third party without the written approval of the other which shall not be unreasonably withheld or delayed.

6 Dispute Resolution

6.1 The parties hereby undertake to act reasonably at all times in implementation of their respective duties and obligations under this Agreement.

6.2 Without prejudice to any other provision of this Agreement, the Parties must attempt to resolve any lack of agreement, dispute or difference between them by discussion and agreement.

6.3 Any dispute or difference arising between the Parties as to their respective rights, duties and obligations under this Agreement or as to any matter arising out of or in connection with the subject matter of this Agreement which is not capable of resolution pursuant to clause 6.2 is, in the first instance, to be referred to a representative of each Party, each of whom holding a senior management position. Those representatives are to meet as soon as possible and endeavour in good faith to resolve any dispute or difference amicably.

6.4 Any dispute or difference arising between the Parties as to their respective rights, duties and obligations under this Agreement or as to any other matters arising out of or in connection with the subject matter of this Agreement (other than a difference as to meaning or construction) which cannot be resolved under clause 6.3 is to be referred to and settled by arbitration in the manner provided by article 59 (Arbitration) of the draft Order.

7 Notices

7.1 Any approval, communication, consent, demand, estimation, expression of satisfaction, notice, notification, provision, requirement, withholding of approval or similar expression must be in writing and may be given by hand or sent by first class pre-paid recorded delivery post and shall be deemed to have been duly served:

7.1.1 If delivered by hand, when left at the proper address for service;

7.1.2 If given or made by prepaid recorded delivery first class post, 48 hours after being posted (excluding Saturdays, Sundays and public holidays);

Provided that, where in the case of delivery by hand, such delivery occurs either after 4.00 p.m. on a Business Day, or on a day other than a Business Day, service shall be deemed to occur at 9.00 a.m. on the next following Business Day (such times being local time at the address of the recipient).

7.2 Any approval, communication, consent, demand, estimation, expression of satisfaction, notice, notification, provision, requirement, withholding of approval or similar expression shall be addressed to:

7.2.1 In the case of the EA the EA's Area Manager at Waterside House, Waterside North, Lincoln LN2 5HA (or such other person and/or address as the EA shall notify to ABLE in writing)

7.2.2 In the case of ABLE at the address stated at the head of this Agreement (with a copy to Able UK Ltd. Able House, Billingham, TS23 1PX) or such other address or addresses as may be notified to the EA in writing from time to time.

8 Entire Agreement

Each Party acknowledges that in entering into this Agreement it has not relied on and shall have no right or remedy in respect of any statement, representation, assurance, or warranty (whether made negligently or innocently) other than as expressly set out in this Agreement. Nothing in this clause shall limit or exclude any liability for fraud.

9 Contracts (Rights of Third Parties) Act 1999

The Parties do not intend that any of the terms of this Agreement will be enforceable by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person not a party to it.

10 Variation and Amendment

No variation or amendment of this Agreement shall bind either Party unless made in writing and agreed to in writing by duly authorised officers of the Parties.

11 Force Majeure

If the performance of this Agreement is rendered not reasonably practicable by any cause of event beyond the reasonable control of any of the Parties further performance of the Agreement shall be suspended until such time as the cause or event rendering performance not reasonably practicable shall no longer be present or shall have been remedied and thereupon this Agreement shall again take full effect.

12 Headings

The headings in this Agreement are for reference purposes only and shall not be deemed to be any indication of the meaning of clauses to which they relate.

13 Governing Law

The formation, construction, performance, validity and all aspects whatsoever of this Agreement shall be governed by the English Law and the Parties hereby agree to submit to the exclusive jurisdiction of the English Courts.

This document has been executed as a deed and is delivered and takes effect on the date stated at the beginning of it.

SCHEDULE 1 – MARINE MONITORING REGIME

SCHEDULE ONE

Monitoring for Able Marine Energy Park (AMEP) Capital Dredging and Disposal Activities

A. Bathymetric Monitoring

Able shall undertake bathymetric surveys (as defined in Section E of this Schedule) at the following locations (identified with orange diagonal lines on drawing AME – 06114 rev C and drawing AME – 06115 rev B) and for at least 500 metres up and down the estuary, at not greater than 50 metre line spacing:-

- 1) AMEP berth pocket dredge (bounded by co-ordinates (517488.989E, 419460.856N), (517454.211W, 419439.954N), (517435.893E, 419475.602N), (517531.037E, 419519.186N), (518378.171E, 418490.982N) and (518328.443E, 418441.438N));
- 2) AMEP approach channel dredge (bounded by co-ordinates (517531.037E, 419519.186N), (517698.908E, 419600.314N), (518741.000E, 418726.000N), (518446.000E, 418462.000N) and (518378.171E, 418490.982N));
- 3) AMEP turning area dredge (bounded by co-ordinates (518069.000E, 419289.000N), (518475.000E, 419314.000N), (518779.000E, 418761.000N) and (518741.000E, 418726.000N));
- 4) HU080 Disposal site down estuary (bounded by co-ordinates (53° 36.5520 N, 00° 00.4320 E), (53° 36.3000 N 00° 00.6180 W), (53° 36.4680 N, 00° 02.3220 W), (53°36.9481 N, 00° 03.4680 W) and (53° 36.5520 N, 00° 00.4320)) ;
- 5) HU082 Disposal down estuary (bounded by co-ordinates (53° 37.5000 N, 00° 02.2698 W), (53° 37.2480 N, 00° 00.7980 W), (53° 36.9702 N, 00° 00.8100 W), (53° 37.1220 N, 00° 02.2920 W) and (53° 37.5000 N, 00° 02.2698 W))

The first surveys shall be undertaken and completed within the month prior to the commencement of any marine construction, dredge or disposal works. Surveys shall thereafter be repeated no less than once a fortnight unless otherwise agreed, during the capital dredge programme (as defined in the dredge and disposal strategy, clause 32 (1) Schedule 8 of the draft Development Consent Order dated 23 November 2012). Upon completion of the capital dredge programme, surveying shall continue at the agreed frequency for one month.

Within 2 weeks of the completion of each survey, Able shall:-

- Supply the results of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

Able shall notify the EA of the commencement of monitoring and produce a report collating and analysing the monitoring undertaken to date:-

- Every 6 months from the commencement of monitoring; and
- Supply a copy of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

Note:

- The first surveys shall provide the baseline for determining the impacts of dredge and disposal works, and should allow natural variability to be accounted for in any assessment.
- The subsequent surveys shall provide the information needed to either validate the boundaries of the deposit grounds, or trigger the need for them to be amended. It shall also allow ongoing management of the dredge and disposal.
- Surveys shall be undertaken on similar tidal ranges and state of tide wherever possible. This shall allow volumetric differences to be roughly compared; meaning the approximate portion of sediment retained and dispersed may be deducted.

B. LiDAR Monitoring Upstream and Downstream of AMEP

Able shall undertake LiDAR surveys (as defined in Section E) at the following locations, at not greater than 50 metre line spacing:-

- 6) Between the top of the flood defence wall and MLWN or -2m ODN (whichever is the greater) upstream of AMEP, from quay wall to CPK (as defined in drawing AME-06114 revC);
- 7) Between the top of the flood defence wall and MLWN or -2m ODN (whichever is the greater) downstream of AMEP, from quay wall to HIT (as defined in drawing AME-06114 revC);

Able shall survey locations 6 and 7 as defined above and identified with green diagonal lines in drawing AME-06 114 rev C in the month prior to the commencement of any marine construction, dredge or disposal works under the Development Consent and thereafter one month from completion of the quay construction. These surveys shall be repeated at six month intervals unless otherwise agreed, for a period of 10 years in order to record the level of sedimentation taking place upstream and downstream of the quay.

Within 2 weeks of the completion of each survey, Able shall:-

- Supply the results of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

Able shall produce a report collating and analysing the monitoring undertaken to date:-

- Every 12 months from the commencement of monitoring; and
- Within 6 weeks of each six month survey; and
- Compare the results to the modelling results presented in Chapter 8 of the ES and all technical appendices and subsequent supplementary information submitted with the application; and
- Supply a copy of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

If sedimentation differs to that predicted in the ES, in location 6 or 7, and such change, if it continues over 2 consecutive surveys, and is likely to impede any existing surface water outfall or increase the risk of overtopping, Able shall increase the frequency of monitoring to every 12 weeks until such time that a pattern of stabilisation can be detected. In that event, the monitoring may return to the 6 monthly frequency identified above.

If monitoring results indicate that sedimentation arising from the construction or operation of AMEP has adversely affected any surface water outfalls within locations 6 and 7, Able shall undertake any remedial action that the EA considers reasonably necessary.

If monitoring results indicate that there is significant erosion of sediment arising from the construction or operation of AMEP (which shall be defined as a level change of more than 500mm from the baseline survey recorded in the month prior to the commencement of marine works) or sedimentation differs in either location 6 or 7 and the EA reasonably considers that there is a risk of the Flood Defences being overtopped, Able shall:

Increase the frequency of monitoring to every 12 weeks until such time that either:

- there is no further evidence of erosion and a pattern of stabilisation can be detected; at which point the monitoring may return to the 6 monthly frequency identified above; OR
- there are two confirmed surveys indicating continuation of the process, in which event Able shall carry out within 14 days of the later survey a Standard of Protection Review (as defined in Section E of this Schedule), at Able's cost, which shall be completed as soon as reasonably practicable for all flood defences identified in the monitoring results showing a change in sedimentation patterns. The Standard of Protection (as defined in Section E of this Schedule) that is provided by the current defence line against flooding from the sea shall be reviewed at Able's cost using those parameters in use by the EA and which have been notified to Able in writing by the EA. If the results show a reduction in the Standard of Protection, Able shall, at its own cost, undertake improvement works to restore the affected lengths of defence to the Standard of Protection. The Standard of Protection Review shall extend over the entire area of locations 6 and 7 as defined above. Prior to any improvement works being undertaken by Able, the methodology shall be agreed in writing with the EA.

If there is any indication of significant erosion of the estuary bed at the toe of the flood defences attributable to AMEP (which shall be defined as a level change of more than 300mm from the baseline survey recorded in the month prior to the commencement of

marine works) in either location (6 or 7) and the EA reasonably considers there is a risk of the Flood Defences being undermined, Able shall, at its own cost:

- Prepare a design for improvement works to protect the toes of the flood defences from scour.
- Obtain EA approval for the scheme.
- Undertake the improvement works to restore the affected lengths of defence.

C. Longer term Monitoring of Impacts of AMEP within the Wider Estuary on Standard of Protection of EA Defences

Able shall undertake the following surveys:-

Bathymetric surveys (as defined in Section E) at not greater than 500 metre line spacing:-

- In the area upstream and adjacent to AMEP as highlighted yellow and defined in drawing AME-06114 revC, across the width of the estuary up to MLWN; and
- In the area upstream and downstream of the disposal grounds as highlighted yellow and defined in drawing AME-06115 revB, across the estuary from MLWN at the north bank to the northern edge of the Sunken Dredged Channel

LiDAR surveys (as defined in Section E in this Schedule) at not greater than 50 metre line spacing:-

- In the areas upstream and opposite to AMEP as highlighted with red lines and defined in drawing AME-06114 revC, between the top of the flood defence wall and MLWN or -2m ODN (whichever is the greater) at both the north and south river banks; and
- In the area upstream and downstream of the disposal grounds as highlighted with red lines and defined in drawing AME-06115 revB, , between the top of the flood defence wall and MLWN or -2m ODN (whichever is the greater) at the north river bank

These surveys shall be undertaken on a 12 monthly basis for 10 years, commencing one month after completion of the marine and capital dredging works under the Development Consent. At the end of the 10 year period the EA shall review the results; which may include a Standard of Protection review (as defined in Section B in this Schedule) at Able's cost if there is a significant change in the surveyed levels (which shall be defined as a level change of more than 500mm from the baseline survey recorded) which demonstrates that erosion is occurring that the EA reasonably considers will impact upon the flood defences and monitoring results indicate that such erosion arises from the construction or operation of AMEP. If the EA shall so request, Able shall carry out monitoring for a further 10 years if the EA considers this to be reasonably necessary and justifiable following the Standard of Protection review.

Within 2 weeks of the completion of each survey, Able shall:-

- Supply the results of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

Able shall produce a report collating and analysing the monitoring undertaken so far:-

- Every 12 months from the commencement of monitoring; and
- Within 6 weeks of the each annual survey; and
- Compare the results to the modelling results presented in Chapter 8 of the ES and all technical appendices and supplementary information submitted with the application; and
- Supply a copy of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

If sedimentation differs to that predicted in the ES, and such sedimentation, if it continues, is likely to impede any existing surface water outfall, Able shall increase the frequency of monitoring to every 12 weeks until such time that there is no further evidence of sedimentation or a pattern of stabilisation can be detected. In that event, the monitoring may return to the 6 monthly frequency identified above.

If sedimentation that is attributable to AMEP interferes with any surface water outfalls within locations 6 and 7 or within the areas marked pink on drawings AME – 06114 revC and AME – 06115 revB, Able shall reinstate the effective discharge of water into the estuary

If there is any indication of significant erosion of the estuary bed at the toe of the flood defences (which shall be defined as a level change of more than 300mm from the baseline survey recorded in the month prior to the commencement of marine works) in either location (6 or 7, or the areas marked pink on drawings AME -06114 revC or AME – 06115 revB) and the EA reasonably considers that this arises from the construction or operation of AMEP and that there is a risk of the Flood Defences being undermined or the erosion protection in front of the flood defences being impacted, Able shall, at its own cost:

- Prepare a design for improvement works to protect the toes of the flood defences from scour.
- Obtain EA approval for the scheme.
- Undertake the improvement works to restore the affected lengths of defence.

D. Benthic Invertebrates

Prior to the commencement of any marine disposal activities, a scheme for the protection and enhancement of benthic invertebrates through the monitoring and management of disposal activities within, and immediately surrounding, the disposal sites of the Lower Humber water body (“the BI Scheme”), shall be submitted to and agreed in writing with the EA. The BI Scheme shall include the following:-

- i. A timetable for when monitoring shall be undertaken, including monitoring before, during and after marine disposal activities are undertaken;
- ii. A detailed methodology for the monitoring;
- iii. An evaluation of the contribution the marine disposal activities make to the overall ecological potential of the Humber Lower water body as assessed by the biological elements, supporting elements, supporting conditions and ecological potential assessment as set out in Annex B of the Humber River Basin Management Plan;

If the evaluation of i)-iii) shows that marine disposal activities contribute to, or are likely to contribute to, a failure of the water body in achieving its Water Framework Directive objectives, Able shall submit a Remedial Action Plan to the EA that details measures to ensure marine disposal activities are amended such that, as far as is reasonably practicable, they do not contribute towards a deterioration of the Humber Lower water body status (including deterioration within existing status class), should such arise. The Remedial Action Plan may include variations to marine disposal activities to reduce their impact and/or specific measures to protect and enhance benthic invertebrates.

Within 2 weeks of the completion of each piece of monitoring, Able shall:-

- Supply the results of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

Able shall notify the EA of the commencement of monitoring and shall produce a report collating and analysing the monitoring undertaken to date:-

- Every 6 months from the commencement of monitoring; and
- Within 6 weeks of each annual survey; and
- Supply a copy of each report to the EA via email to humber.strategy@environment-agency.gov.uk, unless otherwise advised in writing by the EA.

Should a Remedial Action Plan be deemed necessary as a result of the BI Scheme, Able shall:-

- As soon as reasonably practicable, submit a Remedial Action Plan to the EA for approval,
- As soon as reasonably practicable following the approval of the Remedial Action Plan, implement any actions agreed in it together with any other remedial actions which the EA shall reasonably require

E. Definitions

MHWS- Mean High Water Springs

MHWN- Mean High Water Neaps

MLWS- Mean Low Water Springs

MLWN – Mean Low Water Neaps

Bathymetric Survey

All survey work shall be undertaken in accordance with the EA survey specification v3.1, relating directly to Section VII (Hydrographic Surveys of River channels and other Water Areas using Swathe Bathymetry), or shall be provided in accordance with an agreed alternative method.

A multibeam echo sounder should be used. The system measures water depths across a wide swathe perpendicular to the vessel track, thus giving greater coverage of bed features along the line than traditional single beam. The additional horizontal coverage shall vary depending upon the water depths, but should approximate between 3 to 8 times the water depth, and produce wide channels of data capture, and ultimately complete coverage of the river channel.

The results need to include the methodology used to collect the data; the equipment deployed, including but not limited to Echo Sounder, Motion Sensor, Sound Velocimeter; position fixing equipment and processing. The software used to collect and process the data and the software used to produce charts and digital x,y,z outputs.

All surveys are to be referenced to UK National Grid, and any vertical datum shall be referenced to Ordnance Datum Newlyn.

The following data shall be supplied.

- i) ASCII raster format *.asc 1m gridded data set supplied per OS Grid Square
- ii) XYZ data *.txt 1m gridded data set per study reach
- iii) Survey report.

Following the initial baseline survey, all subsequent data shall be compared to the baseline for the identification of river bed and bank movement.

Flood Defences

The EA's flood defences shown on AME -06114 revC or AME – 06115 revB attached to this Agreement

Standard of Protection

0.5% annual probability of sea flooding and allowing an overtopping rate not exceeding 2 litres per second per metre of structure length (this rate of overtopping during annual storm conditions as calculated using the Eurotop Design Manual “Wave Overtopping of Sea Defences and Related Structures: Assessment Manual” by Pullen T., Allsop, N.W.H., Bruce T., Kortenhaus A., Schutttrumpf H. & van der Meer, J. W. (2007) (or such other manual as the EA may reasonably substitute from time to time) taking into account Climate Change and using those parameters in use by the EA and which have been notified to ABLE in writing at ABLE’s request

Standard of Protection Review

A Standard of Protection Review shall provide:

Should the EA reasonably believe that one or more material deteriorations has occurred to the condition of the Flood Defences defined in Section B and C of this Schedule such that the Standard of Protection is no longer being provided, they may require Able to instruct a suitably experienced chartered civil engineer to carry out a Standard of Protection Review (the cost of such survey to be borne by Able). A statement as to the standard of compliance of the Flood Defences defined in Section B and C of this Schedule with the Standard of Protection shall be provided by Able to the EA as soon as reasonably practicable following completion of the Standard of Protection Review. The standard of protection that is provided by the current defence line (as defined in AME -06114 revC or AME – 06115 revB) against flooding from the sea will be reviewed using those parameters in use by the EA and which have been notified to ABLE in writing by the EA at Able’s request.

LiDAR Survey

A LIDAR Digital Surface Model (DSM) and Digital Terrain Model (DTM) in ArcView ASCII Grid file in 0.25m x 0.25m and 0.5m x 0.5m file sizes for each polygon defined. Also supplied shall be last return XYZI point cloud data in LAS format and DSM XYZ ASCII TXT. Data shall be collected during tidal windows in the order of 1 hour either side of Low Water, or suitable agreed time period.

The error specification for LIDAR surveys shall be an RMSE of +/- 15cm.

Ground truth surveys for the checking of LIDAR height accuracy shall be carried out within each polygon.

A full quality control report shall be supplied to the EA on completion of each survey. This shall include at least the following:

- A plot of all data indicating polygon coverage and aircraft navigation lines.
- A copy of the flight log for all polygons.
- Data processing procedures.
- A report on the comparison of these data with available ground truth data.

Executed as a deed by affixing the)
common seal of ABLE HUMBER PORTS)
LIMITED in presence of)

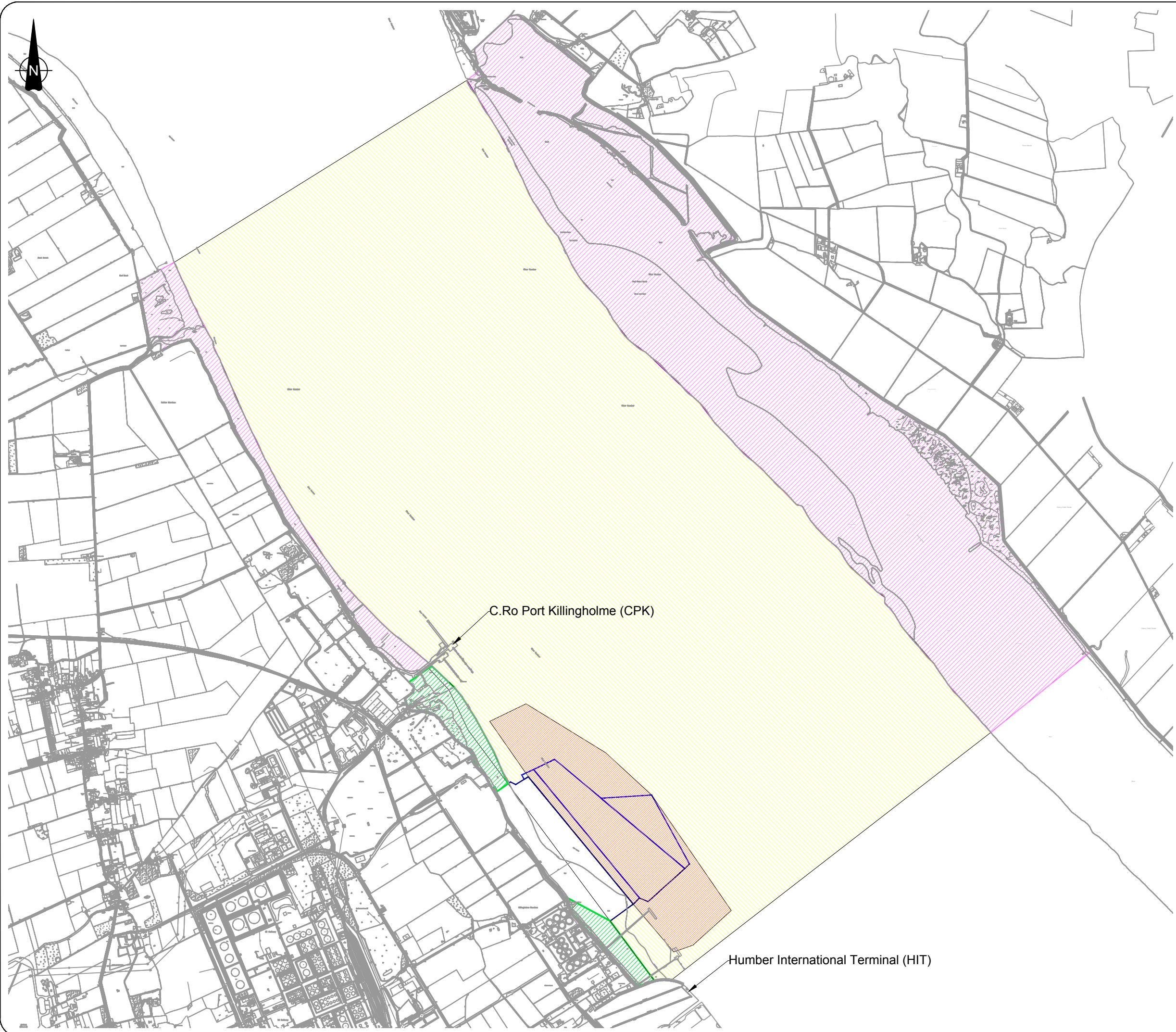
.....
Director

.....
[Director or Secretary]

Signed as a Deed and Delivered on)
behalf of the ENVIRONMENT AGENCY)
by SARAH WARD acting pursuant to)
a Power of Attorney dated 23 May) Environment Agency
2012 in the presence of:) by its Attorney

.....
Witness Signature

.....
Witness Name



KEY

- AMEP Quay & Capital Dredging Extent
- Bathymetric Survey
Start - One month prior to marine works
Interval - Fortnightly during capital dredging until one month after works
- LiDAR Survey 38.1ha
Start - One month prior to marine works
Interval - One month after completion of marine works and every 6 months (or rate to be agreed) for 10 years
- Bathymetric Survey
Start - One month after completion of marine works
Interval - Every 12 months for 10 years after completion of marine works
- LiDAR Survey 762.1ha
Start - One month after completion of marine works
Interval - Every 12 months for 10 years after completion of marine works

C	08/04/13	LiDAR Areas Added	FM		
B	20/11/12	Surveys areas updated	IW	RC	PMS
A	09/11/12	Preliminary Issue	IW	RC	RC
Rev	Date	Comments	Drw	Chk	App

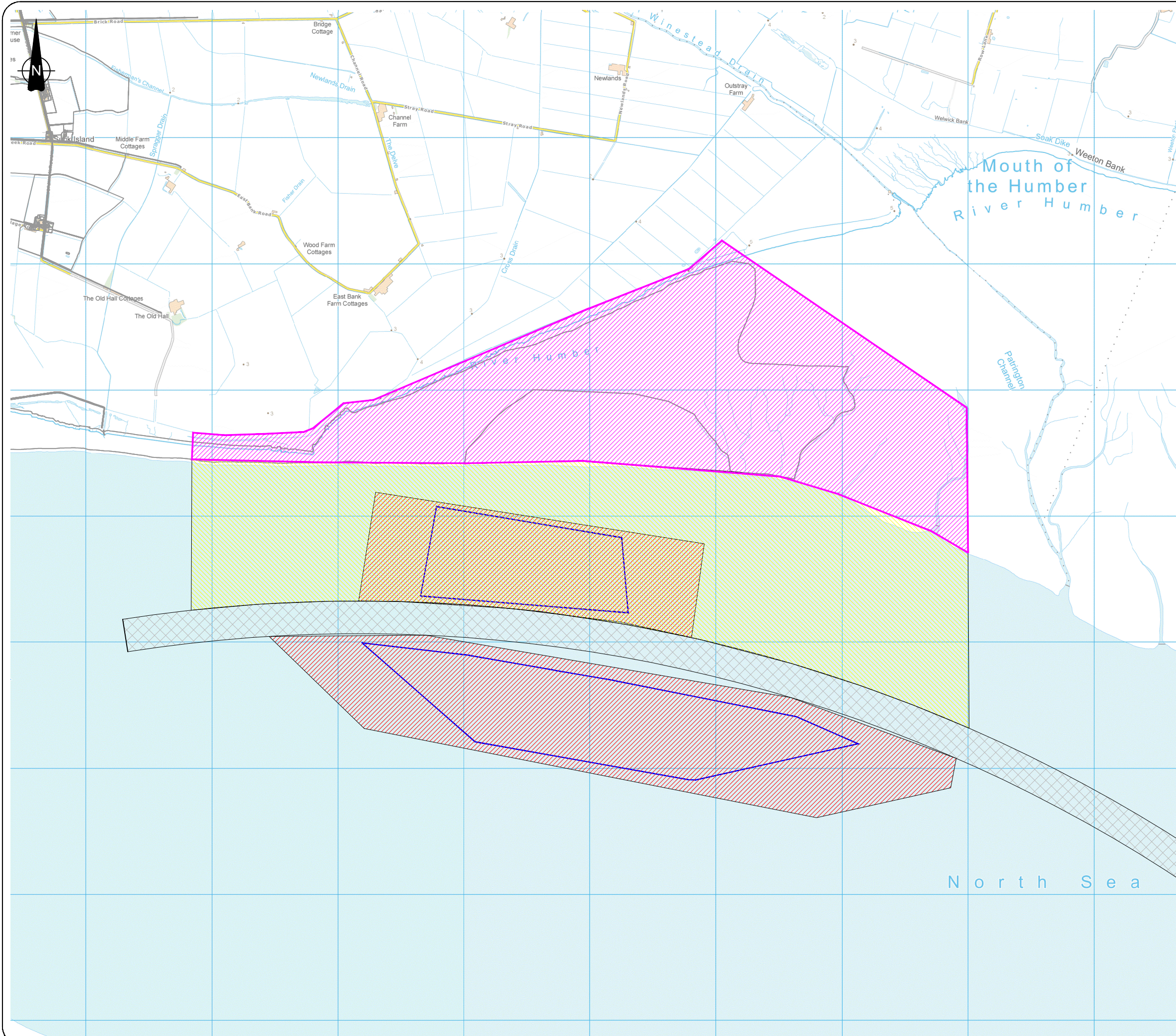


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Project:	Able Marine Energy Park
Client:	Able UK Ltd
Title:	AMEP Marine & Capital Dredging Monitoring - Sheet 1

PRELIMINARY			
Scale:	Drawn	Checked	Approved
	NTS	IW	R Cram
		R Cram	R Cram
Date	09/11/2012	09/11/2012	09/11/2012
Drawing No.	AME - 06114		Revision: C



KEY

- Disposal rounds
- Sunken Dredged Channel
- Bathymetric Survey
Start - One month prior to marine works
Interval - Fortnightly during capital dredging until one month after works
- Bathymetric Survey
Start - One month after completion of marine works
Interval - Every 12 months for 10 years after completion of marine works
- LiDAR Survey
Start - One month after completion of marine works
Interval - Every 12 months for 10 years after completion of marine works

B	20/11/12	Monitoring Area updated	IW	RC	PMS
A	09/11/12	Preliminary Issue	IW	RC	RC
Rev	Date	Comments	Drw	Chk	App

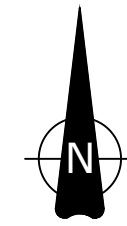
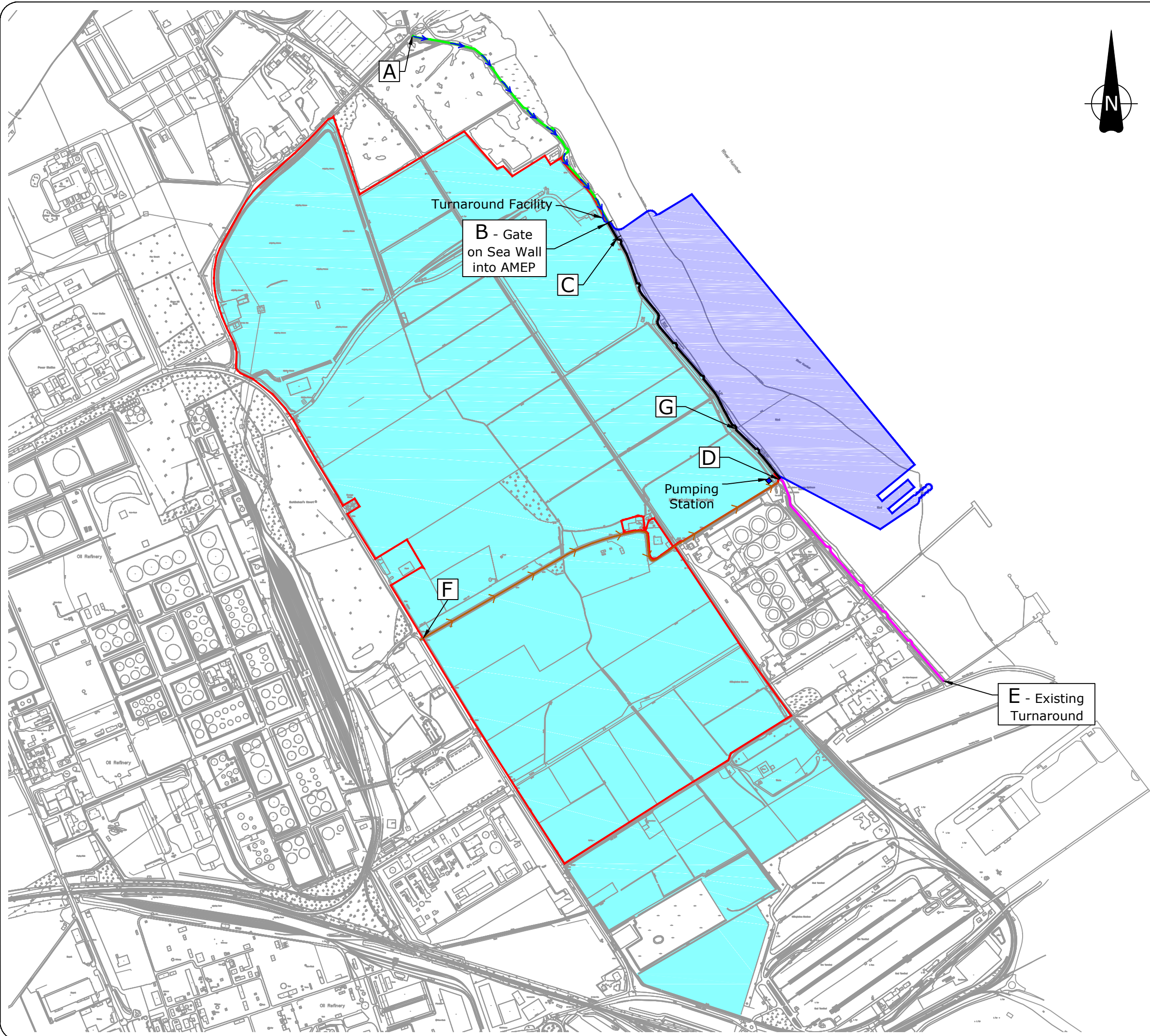


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Project:	Able Marine Energy Park
Client:	Able UK Ltd
Title:	AMEP Marine & Capital Dredging Monitoring - Sheet 2

PRELIMINARY			
Scale:	Drawn	Checked	Approved
	NTS	IW	R Cram
	Date	09/11/2012	09/11/2012
Drawing No.	AME - 06115		Revision: B



KEY			
■	AMEP Quay		
□	Operational Development Landward		
A to B	Existing Access Route to Northern		
→	Sea Defence		
B to C	60m Improvement Works		
C to D	Strategic Flood Defence		
D to E	Sea Defence		
F to D	Access Route to Southern Sea Defence		
→			
G	Surface Water Drainage Outfall		
■	Killingholme Marshes Catchment Area		

Rev	Date	Comments	Drw	Chk	App
H	12/04/13	Drainage Outfall Located	FM		
G	06/02/13	Turnaround Facil. Amended	JH	PMS	PMS
F	04/02/13	Accesses Amended	JH	PMS	PMS
E	19/11/12	Updated to EA comments	FM	RC	RC
D	09/11/12	Surface Outfall Added	RK	PMS	PMS
C	23/10/12	Pumping Station Added	JH	PMS	PMS
B	26/09/12	Access Added	JH	PMS	PMS
A	24/09/12	Preliminary Issue	RK	PMS	PMS

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Project:	ABLE Marine Energy Park
Client:	Environment Agency
Title:	AMEP Flood Risk Agreement

PRELIMINARY			
Scale:	Drawn	Checked	Approved
1:12,500@A3	F Maddison	R Cram	R Cram
Date	24/09/2012	24/09/2012	24/09/2012
Drawing No.	AME - 02027		Revision: H