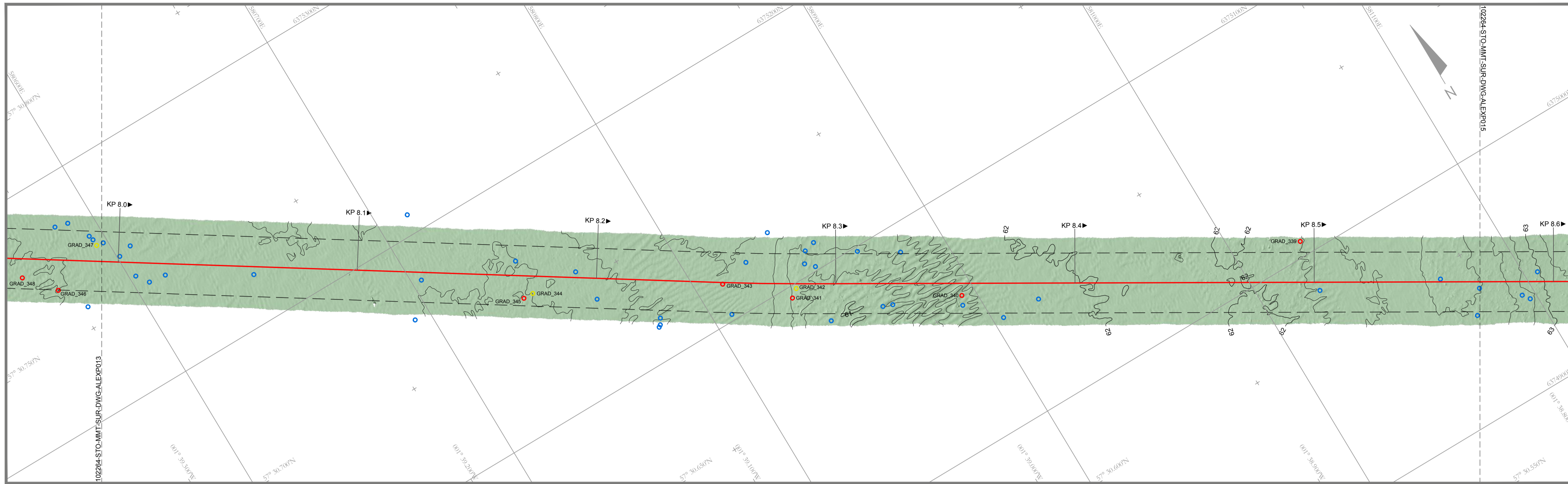
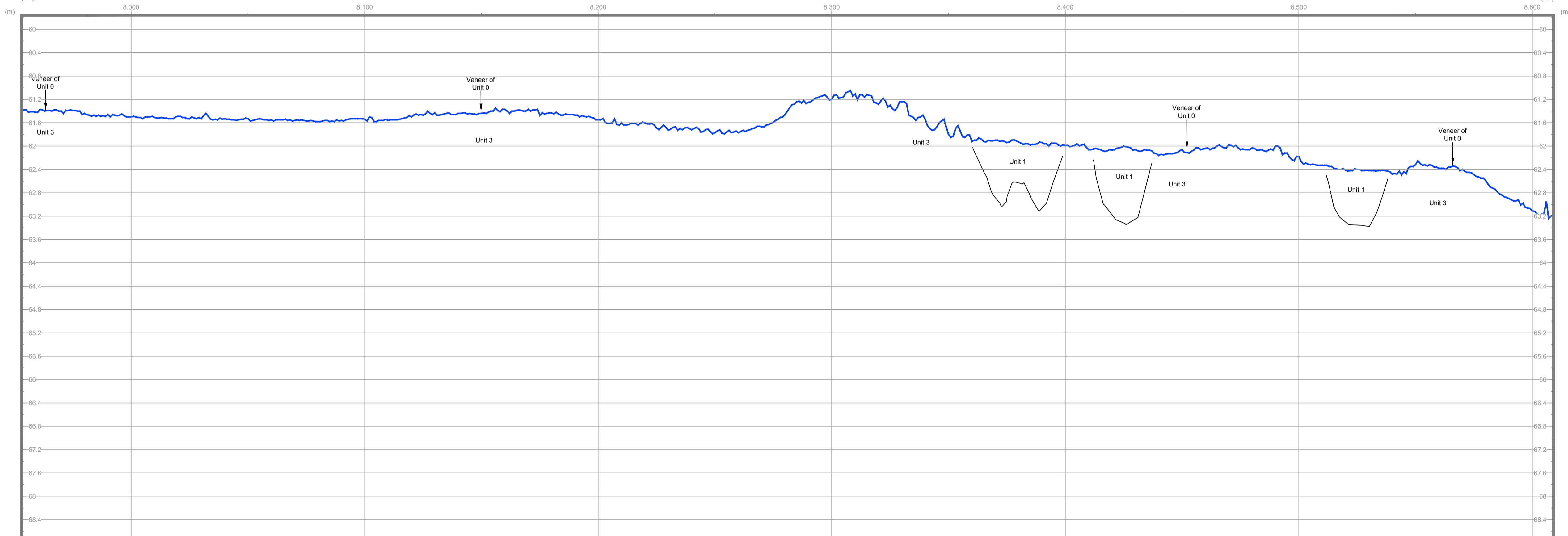


BATHYMETRY - Horizontal Scale 1:1000



LONGITUDINAL PROFILE WITH SHALLOW GEOLOGY - Vertical Scale 1:40



ENGINEERING DATA

Revision	Revision Description	Drawn	Checked	Approved	Date
A	Issued For Use	JH	HA	KG	20160712
O2	For Client Review	JH	HA	KG	20160614

Contractor: **MMT**  
 MMT  
 Sven Kallifelts Gata 11  
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 Sweden info@mmt.se

Survey date: April - May 2016 Project: 2016  
 Horizontal Scale: 1:1000 Hywind UXO Survey  
 Profile Vertical Scale: 1:40 UK EAST COAST

Chart size: ISO A1 - 841 x 594 mm

Title: Alignment Chart  
 KP 7.953 - KP 8.609  
 Export Cable H55 - Peterhead

Report No. ST16826  
 Drawing No. 102264-STO-MMT-SUR-DWG-ALEXP014  
 C178-MMT-G-YA-00015-01 A  
 Client Drawing No. Revision

SURVEY NOTES

Horizontal Datum : WGS84, Grid north displayed in charts  
 Projection : UTM Zone 30 N  
 Chart Latitude and Longitude are given in format DMM mmm  
 Central Scale Factor : 0.9996  
 False Easting : 500 000 m  
 False Northing : 0 m  
 Latitude Origin : 0°  
 Central Meridian : 3° 00' 00"W  
 Dimensions : In metres unless otherwise stated  
 Vertical Reference : LAT  
 Height Model : DTU10  
 Reference Document : ST16826 Hywind Scotland UXO Survey Report: C178-MMT-G-RA-00005  
 Coastline : From background database (for guidance only)  
 Survey Date : April - May 2016

Offshore vessel : MV Edda Fonn  
 Positioning : Seapath with Fugro Starpack XP  
 Secondary Positioning : Fugro Starpack XP  
 USBL Positioning : Kongsberg HHPAP 500  
 ROV : Kystdesign Supporter  
 INS Primary UW Positioning : IXSEA ROVINS  
 INS Secondary UW Positioning : IXSEA Octans 3000  
 Multibeam Echo Sounder : Dual F2500i 2024 (200-400 kHz)  
 Side Scan Sonar : Edgetech 4200 (300/600 kHz)  
 Gradiometer : Innovatum Gradiometer Array (12 sensor)

LEGEND

- Surveyed Cable Route with KP
- Adjacent Surveyed Cable Route
- Geophysical Survey Corridor
- Territorial Border
- Matchline to neighbouring chart
- Detected Cables Survey 2013
- Planned Anchor Lines (client supplied)
- Wind Turbine Generator (client supplied)

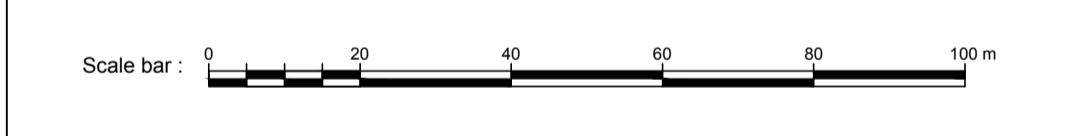
BATHYMETRY

- Water Depth Contour (interval 0.2 m) with labels
  - Water Depth Contour (interval 1 m) with labels
  - ⊕ BOR-001 Borehole Location with ID \*
  - ⚠ CPT-001 CPT Location with ID \*
  - GRAD\_001 Potential UXO (<10kg)
  - ⊙ GRAD\_001 Potential UXO (>10kg)
  - △ G-001 ROV Inspected Target with ID \*\*
  - Gradiometer Anomaly
- Notes:  
 \* Borehole and CPT locations taken from Statoil Doc. No.: C178-GGI-G-RA-00002\_02  
 \*\* ROV Inspected position refers to As-Found or Re-located target position
- Depths are given in metres and refer to LAT

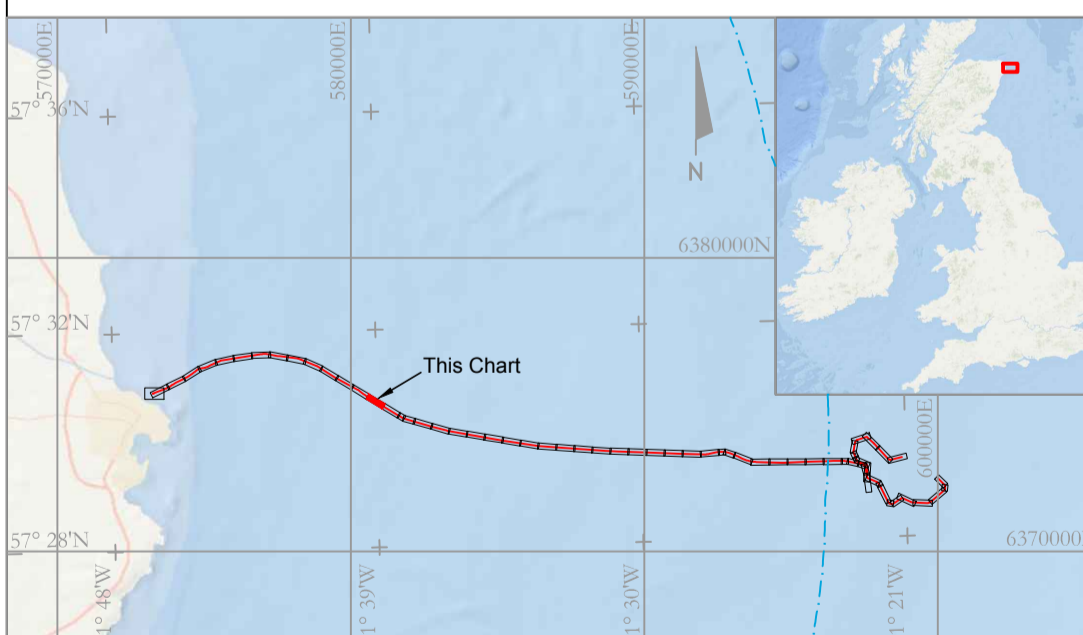
LONGITUDINAL PROFILE WITH SHALLOW GEOLOGY

- Seabed Profile
- Internal Reflector
- Reflector
- C-034 Sampling Location with ID

Unit	Acoustic Characteristics	Geological interpretation
0	Good acoustic penetration. Medium to high reflectivity. Limited to rare internal structure.	Holocene deposits, typically consisting of gravelly silty fine to medium SAND along the cable route and slightly silty fine to medium SAND in proximity to the wind farm area.
1	Good acoustic penetration. Medium to high reflectivity. Limited to rare internal structure.	Forth Formation, slightly silty to silty, very gravelly, fine to coarse SAND.
2a	Varying degrees of penetration. Low to high reflectivity. Low to high amplitude internal reflectors alternating with transparent sections, occasionally with parallel to sub parallel internal reflectors	Witch Ground Formation - Witch member, very soft to firm, slightly silty, slightly sandy to sandy, slightly gravelly CLAY.
2b	Varying degrees of penetration. Low to high reflectivity. Low to high amplitude internal reflectors alternating with transparent sections, occasionally with parallel to sub parallel internal reflectors	Witch Ground Formation - Fladen member, soft to firm slightly sandy slightly gravelly CLAY.
3a	No acoustic penetration. Top of unit characterised by irregular high amplitude reflector. Associated with mounded numerous boulder areas where outcropping. (Usually indistinguishable from Unit 2 where buried).	Wee Bankie Formation, stiff to hard, slightly sandy gravelly CLAY.
3b	Varying degrees of penetration. Low to high reflectivity. Low to high amplitude near chaotic internal reflectors	Wee Bankie Formation, silty to very silty SAND.
4	No acoustic penetration. Top of unit characterised by irregular reflector of high amplitude.	BEDROCK



INDEX CHART



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