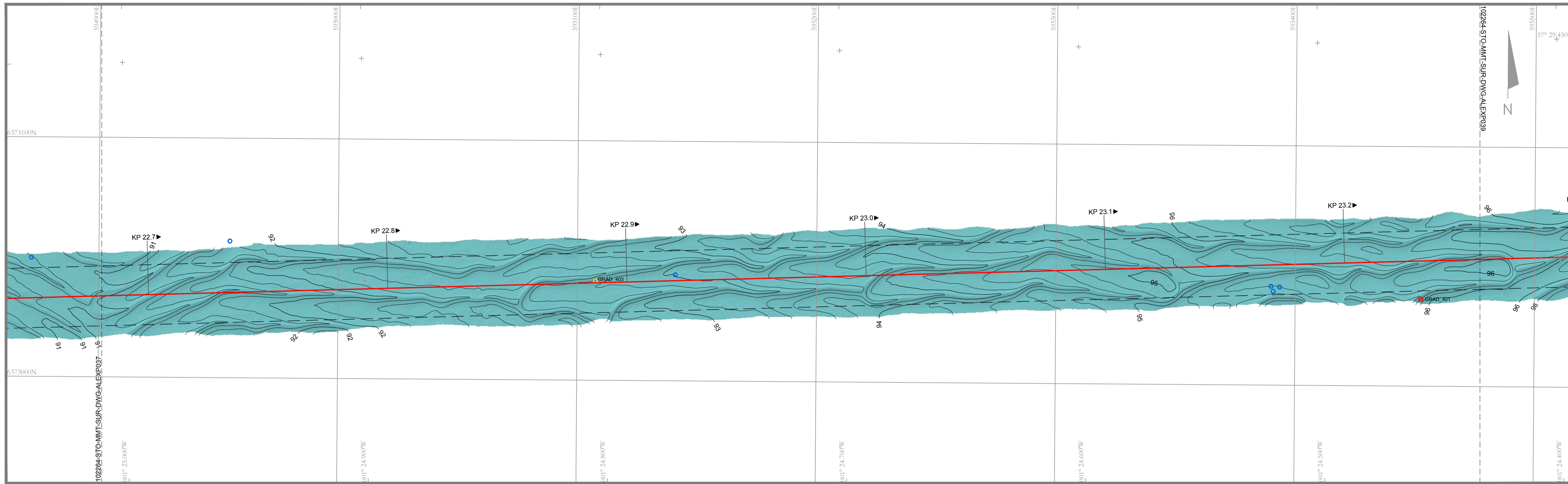


BATHYMETRY - Horizontal Scale 1:1000



### 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 HPAP 500
ROV	: Kystdesign Supporter
INS Primary UW Positioning	: IXSEA ROVINS
INS Secondary UW Positioning	: IXSEA Octans 3000
Multibeam Echo Sounder	: Dual F2500 2024 (200-400 kHz)
Side Scan Sonar	: Edgetech 4200 (300/600 kHz)
Gradiometer	: Innovatum Gradiometer Array (12 sensor)

### LEGEND

— KP 12.5	— Surveyed Cable Route with KP	--- Matchline to neighbouring chart
—	— Adjacent Surveyed Cable Route	— Detected Cables Survey 2013
—	— Geophysical Survey Corridor	— Planned Anchor Lines (client supplied)
—	— Territorial Border	— Wind Turbine Generator (client supplied)

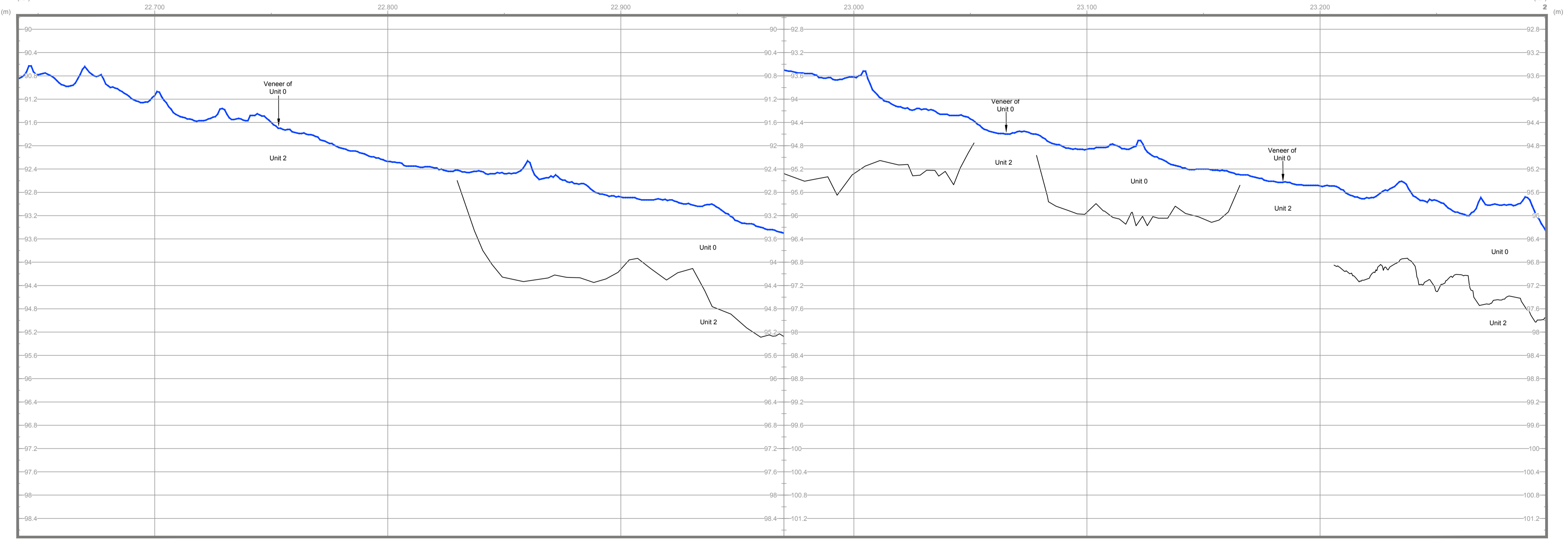
### BATHYMETRY

—	Water Depth Contour (interval 0.2 m) with labels	● GRAD_001	Potential UXO (5-10kg)
—	Water Depth Contour (interval 1 m) with labels	● GRAD_001	Potential UXO (>10kg)
●	BOR-001 Borehole Location with ID *	▲ G-001	ROV Inspected Target with ID **
▲	CPT-001 CPT Location 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

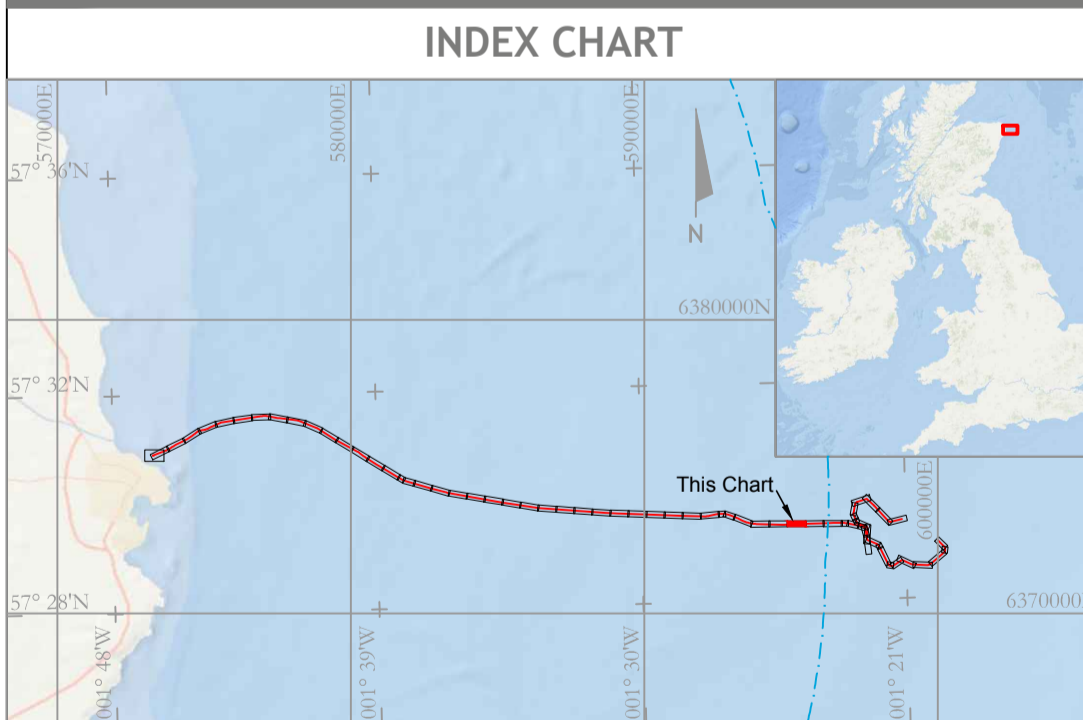
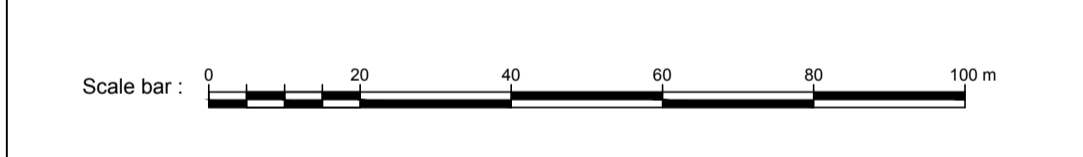
LONGITUDINAL PROFILE WITH SHALLOW GEOLOGY - Vertical Scale 1:40



### 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



ENGINEERING DATA

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

Contractor:  
 MMT  
 Sven Kallifelts Gata 11  
 SE-426 71 Västra Frölunda Tel: +46 31 762 03 00  
 Sweden info@mmt.se

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

Chart size: ISO A1 - 841 x 594 mm

Title:  
 Alignment Chart  
 KP 22.641 - KP 23.297  
 Export Cable H55 - Peterhead

Report No.	ST16826
Drawing No.	102264-STO-MMT-SUR-DWG-ALEXP038
C178-MMT-G-YA-00039-01	A
Client Drawing No.	Revision

