Method Statement – Cable Protection for the Shefa-2 Expansion Project

Pioneer Consulting / Global Marine / Shefa

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SUBSEA CONNECTIVITY EXPERTS

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DOCUMENT HISTORY

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1. INTRODUCTION

1.1 PROJECT OVERVIEW

This Method Statement has been prepared in support of the Marine Licence Application (MLA) process to Marine Directorate – Licensing Operations Team (MD-LOT) and relates to the proposed installation of a UBAS Basket at the terminal end of a new Fibre Optic Cable (FOC). The UBAS or Seabed Basket is a temporary deposit that provides protection to the cable end.

The Project is part of a planned subsea FOC system (hereafter referred to as the 'Shefa-2 Expansion Project'). The total estimated length of 10 kilometres (km) of cable terminates into a UBAS Basket (Figure 1). The Shefa-2 Expansion Project will connect a Floating Production Storage and Offloading (FPSO) to the Shefa-2 cable (which connects Faroe Islands to Shetland and was installed in 2007.). The Shefa-2 Expansion Project is vital since it will make it possible for the FPSO to be connected to onshore via FOC directly to Tórshavn, Faroe Islands and Maywick, Shetland. These two connections will be critical to oil and gas production and safety and will be a prerequisite for "first oil and gas".

The Shefa-2 Expansion Project has to be delivered to Equinor no later than 15th May 2026 and from then stand ready for Equinor to retrieve the wet connector from the parking in the UBAS Basket to the umbilical after the umbilical has been installed.

Global Marine Systems Limited (GM) has been contracted by P/F Shefa to undertake the marine installation for the Shefa-2 Expansion Project.

P/F Shefa have contracted SeaGard and Pioneer Consulting to obtain the necessary permits for the installation of the Shefa-2 Expansion Project in UK waters.

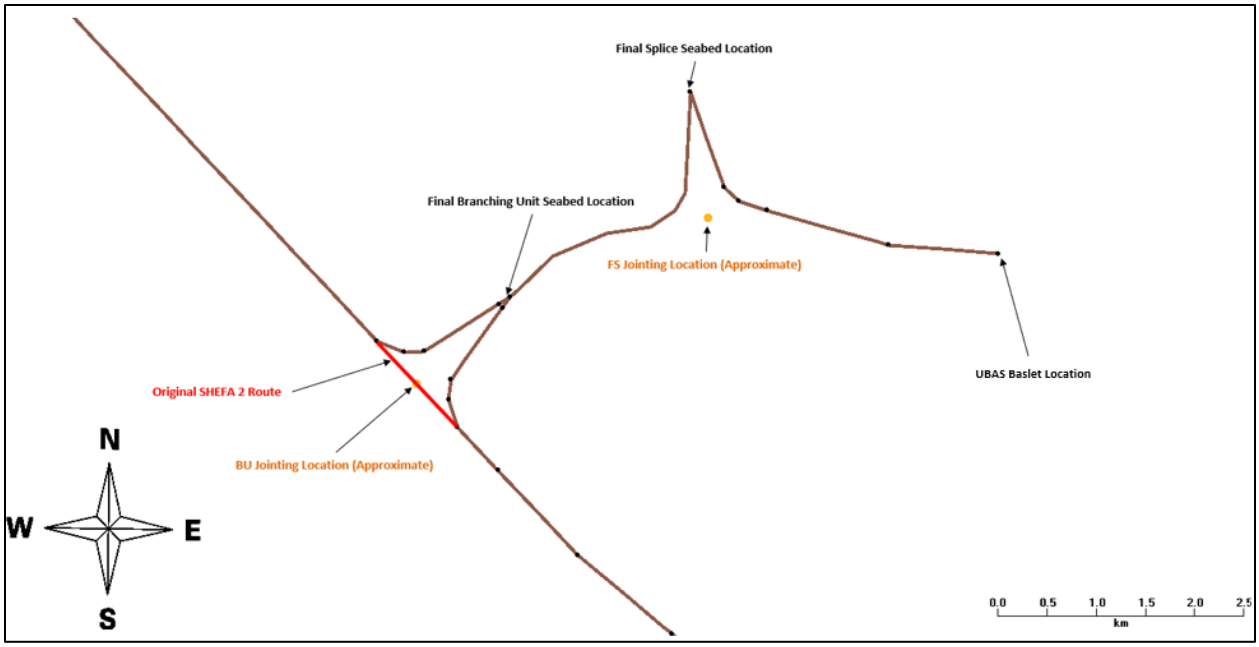


Figure 1: Proposed Shefa-2 Expansion Project with UBAS Basket Location.

1.2 Document Structure

The remainder of this report is structured as follows:

- Section 2: Legislative Context and Regulatory Requirements
- Section 3: Project Description

The following appendices are also included as part of this Method Statement:

- Appendix A – Marine Protected Areas and Fishing
- Appendix B – Chart of Project Location
- Appendix C – CS Sovereign Technical Specification
- Appendix D – Glomar Supporter Technical Specification
- Appendix E – Wet Mate Connector Technical Drawing
- Appendix F – UBAS Basket Technical Drawing
- Appendix G – Plan of Work

2. LEGISLATIVE CONTEXT AND REGULATORY REQUIREMENTS

2.1 MARINE LICENCE

2.1.1. Marine and Coastal Access Act 2009

Part 4 of the MaCAA 2009 details licensable marine activities and sets out the requirements for marine licences in the area between the 12 nautical miles (nm) limit and the UK's EEZ (200 nm).

Part 4, Section 66 defines the licensable marine activities which require a marine licence to be authorised by the relevant authority. Licensable activities are defined under Part 4, Chapter 1, Section 66, Paragraph 1: To deposit any substance or object within the UK marine licensing area, either in the sea or on or under the sea bed, from (a) any vehicle, vessel, aircraft or marine structure'. For the Scottish EEZ, marine licence applications are submitted to MD-LOT and are considered by Scottish Ministers.

2.1.2. Marine (Scotland) Act 2010

Under Part 4 of the Marine (Scotland) Act 2010 (MSA), a MLA is required for the permanent deposit of substances below Mean High Water Springs (MHWS) in the Scottish TS (i.e. within 12 nm). The installation of submarine cables located within the UK marine licensing area (between the 12 nautical miles (nm) limit and the UK's EEZ (200 nm) are exempt from requiring a Marine Licence pursuant to Section 37 of the MSA.

2.1.3. The Scottish National Marine Plan

The Scottish National Marine Plan (NMP) (Marine Scotland, 2015) establishes policies and objectives to enable the sustainable development and management of Scotland's marine resources, in both Scottish TS (out to 12 nm) and UK EEZ (12 to 200 nm). The NMP details 21 general policies that are applicable to all future developments and uses within Scottish waters. These general policies are supplemented by sector-specific policies, enabling policies, and objectives to be targeted at particular industries. The Submarine Cables chapter of the NMP details four marine planning policies that should be considered when considering cable developments.

Of the four cable policies, CABLE 2 is most relevant to the installation of the UBAS Basket activities associated with the Shefa-2 Expansion Project. Compliance with two sub-policies can be demonstrated as follows:

- "New cables should implement methods to minimise impacts on the environment, seabed and other users, where operationally possible and in accordance with relevant industry practice." *The UBAS is not capable of affecting (other than insignificantly) a protected feature in a NCMPA or any ecological or geomorphological process on which the conservation of any protected feature in any relevant NCMPA relies. The closest designated area is the Shetland Faroe Sponge Belt MPA and this is located 21km from the UBAS, as shown in Appendix A. The UBAS is not capable of affecting fishing, also showin in Appendix A.*
- "Where burial is demonstrated not to be feasible, cables may be suitably protected through recognised and approved measures (such as rock or mattress placement or cable armouring) where practicable and cost-effective and as risk assessments direct." *The terminal end of the proposed cable is being protected by the UBAS deposit.*

3. PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The proposed UBAS Basket is located at coordinate position: **61 ° 00.1065 'N; 3 ° 47.2728 'W**, which is the terminal point (at the FPSO end) for the new branch connecting to the Shefa-2 cable. Shefa-2 connects Faroe Islands to Shetland and the distance along the cable at which the new cable will start is 187km from the Maywick landing point on Shetland, as shown in Figure 2, with a better resolution of the UBAS Basket location in Appendix B.

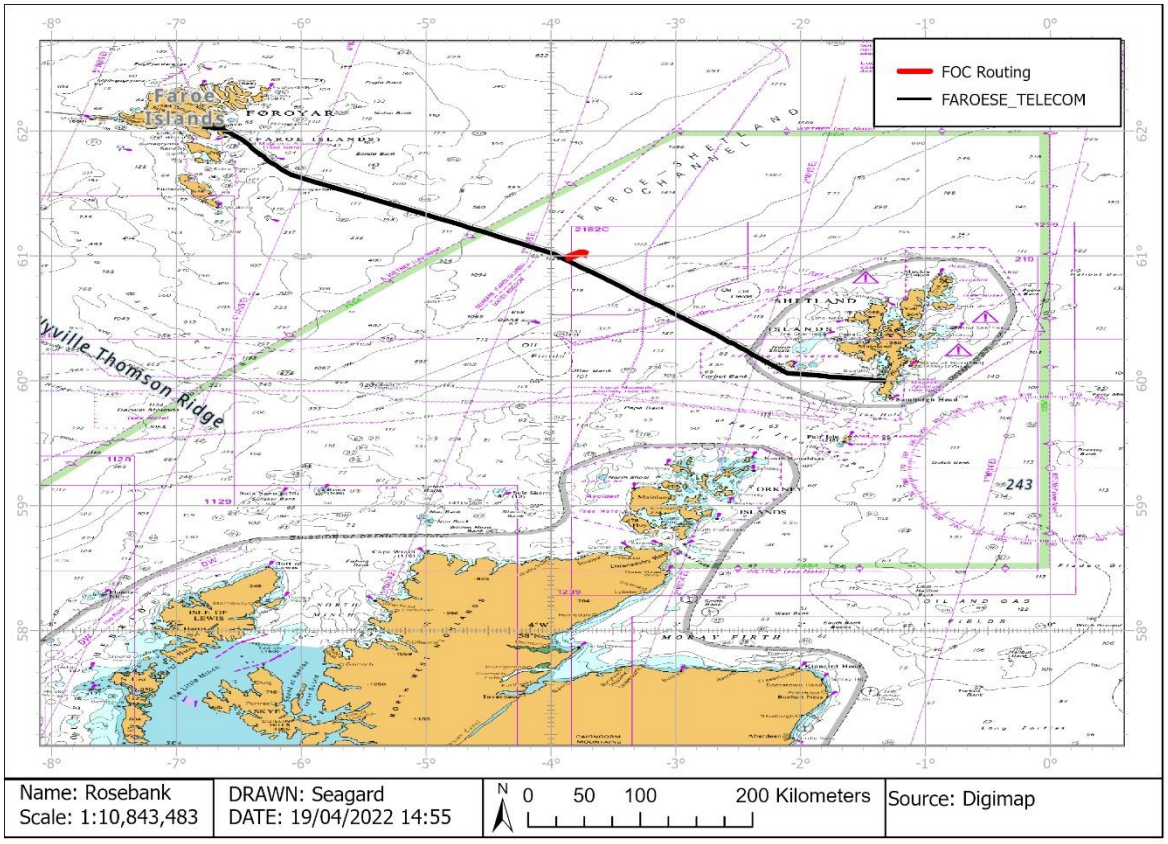


Figure 2: Proposed location of the Shefa-2 Expansion Project.

3.2 COMPONENTS FOR INSTALLATION ACTIVITIES

The cable and plant installation will be completed by the CS Sovereign (Appendix C). During the installation an offshore construction/survey type vessel will provide ROV support (see Appendix D for Glomar Supporter).

This MLA is for a seabed deposit and a removal:

1. The deposits consist of the following:
    - 1 x Subsea Umbilical Termination Assembly (SUTA) complete with 1 x 50m optical flying lead (OFL) and 1 x wet mate connector – Appendix E
    - 1 x subsea "basket" housing the SUTA – Appendix F. The outer dimensions of the basket are 2,100cm (Length) x 2,350cm (Depth) x 900cm (Height).
2. The removal consists of:
    - 1 x subsea "basket" (leaving the SUTA in place)

The basket is a temporary deposit and will be recovered by Equinor during follow-on operations to connect to the FPSO, via the umbilical.

3.3 INSTALLATION ACTIVITIES

3.3.1. New Fibre Optic Cable – An Exempt Activity

The Shefa-2 Expansion Project entails installation of a fibre optic cable which is within the UK marine licensing area (between the 12 nautical miles (nm) limit and the UK's EEZ (200 nm) and is therefore an exempt activity under Section 37 of the MSA. It is nevertheless described briefly here.

The cable has an outer diameter of 23mm and designed around a very tough and rigid seam-welded central copper tube which contains the required number of fibers and is filled with a hydrogen absorbing thixotropic filling compound. Preformed high tensile strength steel wires cover the copper tube to maintain mechanical protection against typical installation stress. A diagram of the cable is shown in Figure 3.

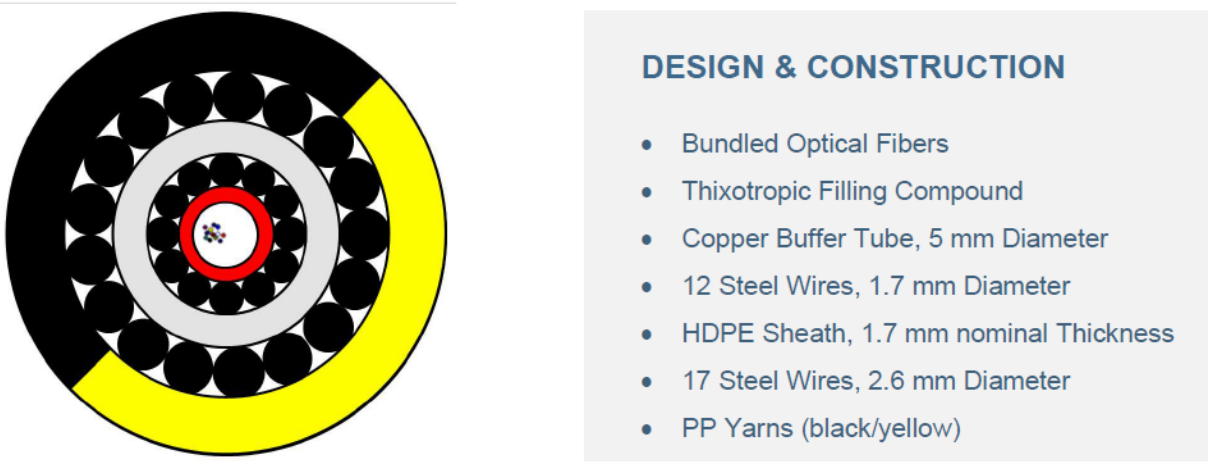


Figure 3: Proposed Fibre Optic Cable Branch to the UBAS.

The Shefa-2 cable will be cut and the new cable attached using a branching unit as shown in Figure 4.

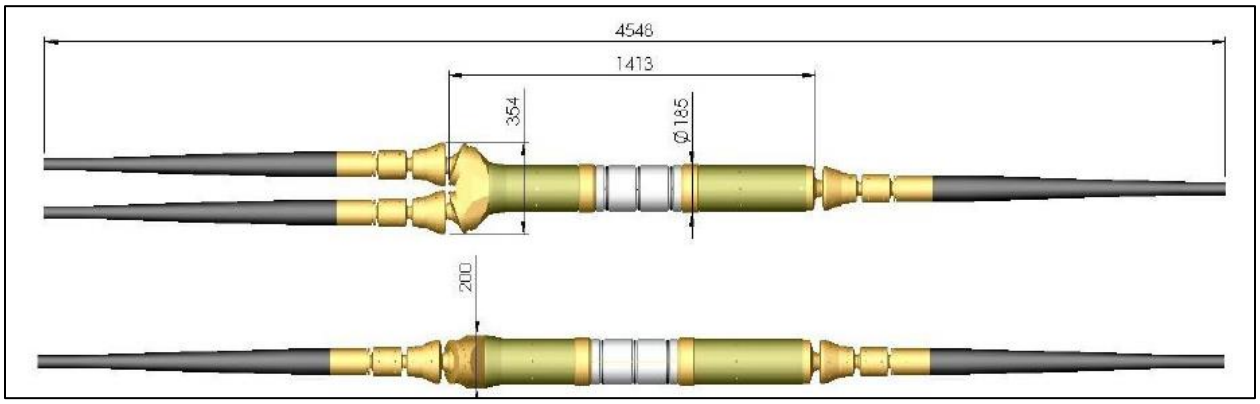


Figure 4: Technical drawing of a Branching Unit and Cable Joint.

The installation of the cable involves the following steps:

- Locating by means of ROV and traditional Grapnel operations the Shefa-2 Segment 7 (existing cable) location.
- Cut into the Shefa-2 system and install FOC extension to the Branching Unit location.
- Installation of branching unit in existing Shefa 2 Cable, with the BU trunk installed towards the Rosebank Field / planned location of the FPSO.
- In total approx. 10km of fibre optic cable will be installed and is planned to be surface laid.
- Surface lay over one (1) in-service telecommunication cable. No separation or crossing protection is planned to be installed.

- The end of the fibre optic cable will be connected to a Subsea Umbilical Termination Assembly (SUTA) complete with 1 x 50m optical flying lead (OFL) and 1 x wet mate connector

3.3.2. Steel Basket – The Licensable Activity

The licensable activity (temporary deposit and removal) involves the following steps:

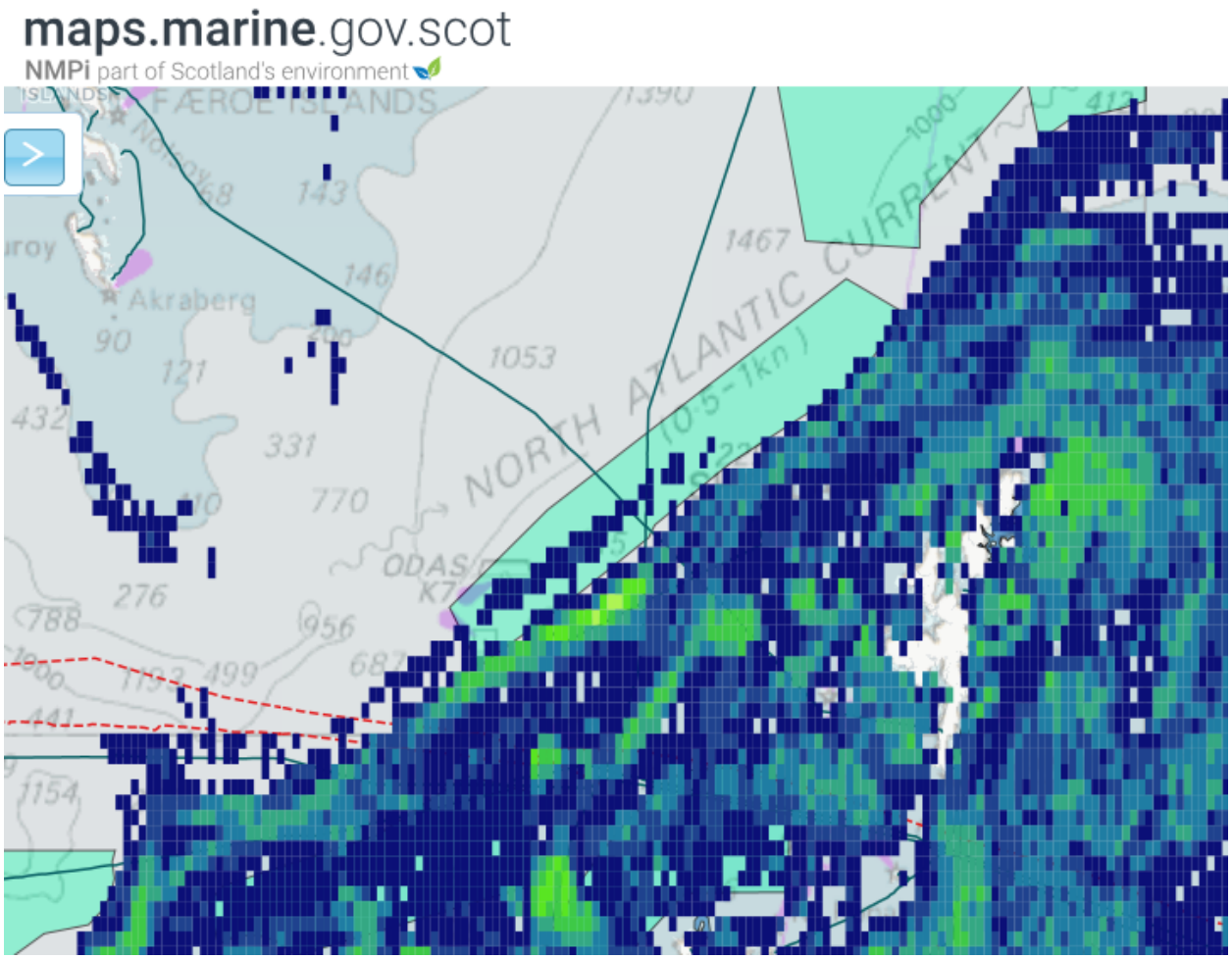
- The SUTA is housed within subsea steel basket. The deployment of the subsea steel basket will be complete by CS Sovereign supported by the Glomar.
- The basket will be recovered by Equinor on completion of connectivity operations. The Wet Mate connector will be plugged into the Rosebank Umbilical that will be installed by Equinor under the Rosebank construction license.

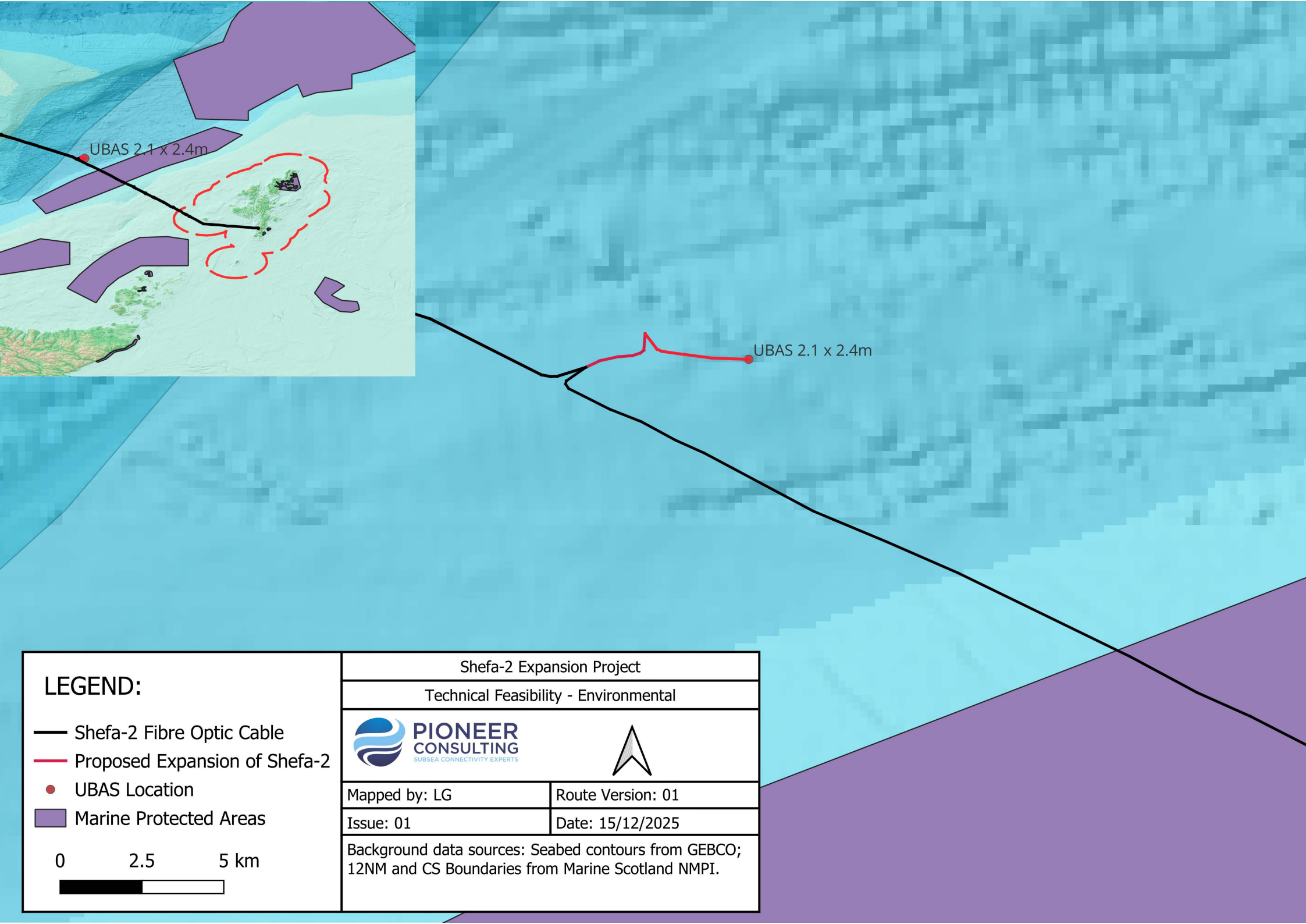
3.4 INDICATIVE SCHEDULE

The installation of the UBAS Basket within the UK EEZ is expected to commence in Q1 2026. Estimated total duration is 9 days. A full Plan of Work is included in Appendix G.

APPENDIX A MARINE PROTECTED AREAS AND FISHING

VMS – Total Hours Fished by UK Vessels > 15m – all gears (2020) (MMO VMS):





LEGEND:

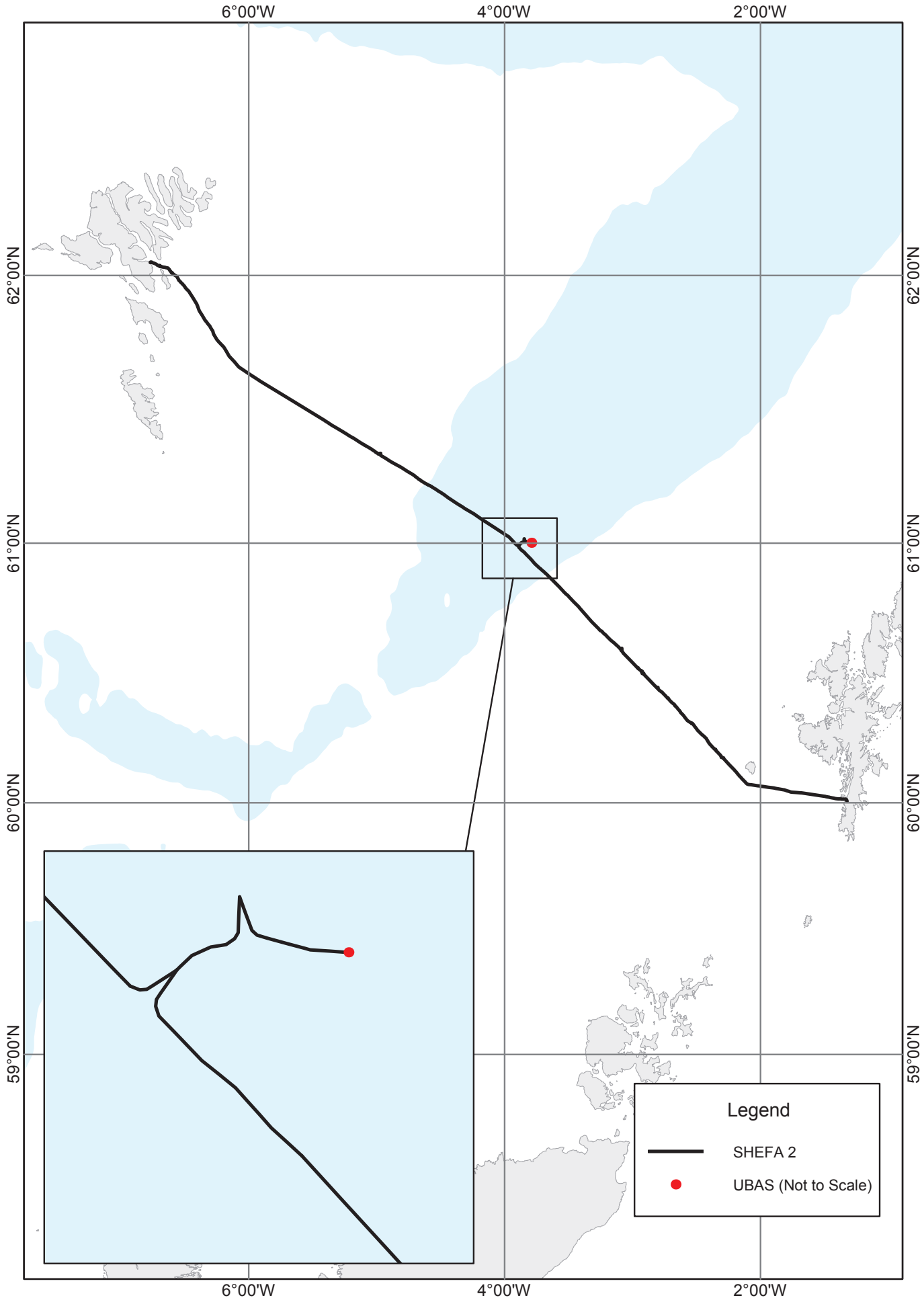
- Shefa-2 Fibre Optic Cable
- Proposed Expansion of Shefa-2
- UBAS Location
- Marine Protected Areas

0 2.5 5 km

Shefa-2 Expansion Project	
Technical Feasibility - Environmental	
PIONEER CONSULTING SUBSEA CONNECTIVITY EXPERTS	
Mapped by: LG	Route Version: 01
Issue: 01	Date: 15/12/2025
Background data sources: Seabed contours from GEBCO; 12NM and CS Boundaries from Marine Scotland NMPI.	

APPENDIX B CHART WITH PROJECT LOCATION

SHEFA 2 Overview Chart



December 2025

APPENDIX C CS SOVEREIGN TECHNICAL SPECIFICATION

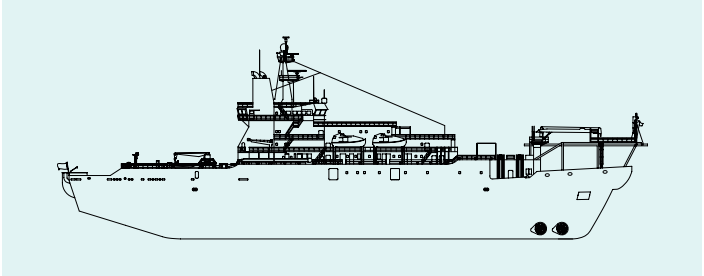
Global Marine

DATA SHEET

C.S. SOVEREIGN

OVERVIEW

C.S. Sovereign is a DPS-2 Class vessel capable of undertaking subsea cable maintenance, repair and installation projects. The vessel is certified as a Special Purpose Ship (SPS) that can carry up to 50 special personnel. C.S. Sovereign is primarily committed to serving ACMA, the Atlantic Cable Maintenance Agreement, and is based in Portland, UK.



VESSEL

Builders	Van Der Giessen, Netherlands
Date built	1991
Flag	UK
Class	ABS. A1, Ice Class 1C, AMS, ACCU DPS-2
Length overall	130.70m
Breadth moulded	21.00m
Designed draft	7.014m
Gross tonnage	11,242t
Maximum speed	13.5kts
Main engines	3
Bow thruster	2
Stern thruster	2
DP system	DPS-2 Duplex C-Series
Berths	78
Bollard pull	80t

COMMUNICATIONS

1 x VSAT SEATEL 4006. MTN Service Contract on KU Band.
2 x Satcom B

CABLE TANKS

Main cable tanks	2 x 2,300t powered turntables installed in C/Tks 1 & 3. Basket height 5.50m
Outer diameter	15.20m
Cone external diameter	6.00m
Maximum load per tank	2,200t
Wing tanks	2
Internal diameter	6.60m
Cone outer diameter	2.45m
Maximum load per tank	432t

FUEL

Fuel capacity	1,108t MGO

GM002 v3

APPENDIX D GLOMAR SUPPORTER TECHNICAL SPECIFICATION

DEEPOCEAN

GLOMAR SUPPORTER

VESSEL SPECIFICATION SHEET

MULTIPURPOSE SURVEY VESSEL

The Glomar Supporter is a modern, DP2 Multipurpose Survey Vessel with a proven track record of Geophysical, Geotechnical, ROV and Environmental surveys. The vessel is equipped with a WROV and hull mounted MBES and SBP systems. This combined with the large 45 T aft A-Frame, 9.5 T side A-Frame and the option to install an Obs ROV, makes the vessel an extremely versatile survey and inspection platform.

The vessel was rebuilt in 2021 where the accommodation was increased and renovated.

KEY VESSEL FEATURES

- MULTIPURPOSE SURVEY AND INSPECTION VESSEL
- DP2
- 45 T AFT A-FRAME
- 9.5 T SIDE A-FRAME
- ACCOMMODATION FOR 54 PERSONNEL
- HULL MOUNTED MBES AND SBP
- 377M2 MAIN DECK & 120M2 MEZZANINE DECK
- 1 WORK CLASS ROV
- 1 OBSERVATION CLASS ROV (OPTIONAL)
- LARS HANDLING SYSTEM FOR WROV AND OBS ROV

CLASSIFICATION

	Rina
DYNAMIC POSITIONING	Kongsberg Kpos 21
REFERENCE SYSTEMS	2x Novatel PwrPak7 Sonardyne Ranger 2 USBL System Fanbeam 4.2 MDL Kongsberg/Bandak - LTW MK14 Taut Wire
HEADING REF. SYSTEMS	3x Anschultz Gyro Compass 22NX
MOTION REF. SYSTEMS	2x SG-Brown TSS

DECK EQUIPMENT

DECK AIR SUPPLY	7,5 Bar
DECK POWER SUPPLY	2 x 400kW - 440V
DECK CRANE	1 x GHE Crane 1 x AHA-2T11M-HBT-00
SAFE WORKING LOAD GHE	6 T at 12 m
SAFE WORKING LOAD AHA	3 T at 2,5-4 m / 2 T at 11 m
PEDESTAL (OPTIONAL)	For 24T Crane
FIFI	Class 1
STERN A-FRAME	45 T
STARBOARD A-FRAME	9,5 T

FRC AND LIFEBOATS

LIFERAFTS	6x 20 persons Type: Survitec ESR TO
RESCUE/MOB BOAT - NOREQ	FRB 650 (Diesel Waterjet)

ROV

WROV/SURVEY	1 x Kystdesign Supporter WROV
OBSROV	Option for 1x OBSROV

TANK CAPACITIES

FRESH WATER	434,7 m^3
BALLAST WATER	187,3 m^3
FUEL TANK	643 m^3

ACCOMMODATION

	4 Single cabins 25 Double cabins 1 Conference room 1 client office 2 offices

DIMENSIONS

LENGTH	60,0 m
BREADTH	15,6 m
DRAFT (MIN/MAX)	3,5 m / 5,0 m
DEPTH	6,0 m
GROSS TONNAGE	2082 T
NET TONNAGE	591 T
DEADWEIGHT	1413 T

DECK CAPACITIES

DECK AREA	377 m^2 @ 5 T / m^2
MEZZANINE DECK	120 m^2 @ 5 T / m^2
DECK CARGO	300 T @ 0,9 m above deck
ANTIHEELING	226 m^3 - 150 m^3 / h

PROPULSION

MAIN ENGINES	2 x ABC 6MDZC-1000-150-A 1400 kW
AZIMUTH THRUSTER	2 x Schottel SRP 1012 CP R/R 1,200 kW
BOW THRUSTER	3 x HRP 4009 TT CP 400 kW
MAIN GENERATORS	4 x Leroy Somer LSAM 47,2 VS2 C 6/4 320 kW - 440V
AUXILIARY GENERATORS	2 x Stamford HCH 634 Y2 625 kW 440V (Shaft Generator)
EMERGENCY GENERATOR	1 x Leroy Somer LSA M 43,2L65 C6/4 60 kW - 440V

SURVEY CAPABILITY

MBES	Hull Mounted Dual Head R2Sonic 2026
SBP	Hull Mounted Innomar Medium 100
SV & DRAUGHT	2 x Valeport MiniSVS-P
PRIMARY GNSS & INS	Applanix POS MV Oceanmaster w/ Fugro Marinestar
SECONDARY GNSS	Trimble R750 w/ Fugro Marinestar
PRIMARY HEADING/MOTION	Applanix POS MV Oceanmaster
SECONDARY HEADING/MOTION	Exail Octans V AHRS
USBL SYSTEM	Sonardyne Ranger 2

DEEPOCEAN

SUPPORTER

SPECIFICATION SHEET

WORK CLASS ROV - SUPPORTER

KEY FEATURES

THE SUPPORTER CAN ACCOMMODATE

- UP TO 24 ADDITIONAL TOOLING HYDRAULIC FUNCTIONS, OF WHICH 4 ARE HIGH FLOW (75L/M)
- UP TO 20 ADDITIONAL SURVEY SENSORS
- UP TO 8 CAMERAS
- ALL HYDRAULIC FUNCTIONS ARE PROPORTIONALLY CONTROLLED
- GROUND FAULT MONITORING ON ALL CHANNELS IN THE ELECTRONICS SYSTEM.
- A VARIETY OF AUTO-FUNCTIONS
- STATION KEEPING CAPABILITIES

GENERAL

DEPTH RATING	2000M (3000M option)
POWER	125 Hp
THRUSTERS HORIZONTAL	4 x Sub Atlantic SA-300
THRUSTERS VERTICAL	3 x Sub Atlantic SA-300
WEIGHT & LOAD	
NET	2450 Kg
INCL. SKID MANIPS & PAYLOAD	3050 Kg
PAYLOAD	200 Kg + Skid & Manips
THROUGH FRAME LIFT	**3000 KG**
DIMENSIONS	

PERFORMANCE

SURFACE PERFORMANCE	
FORWARD	3,0kn
LATERAL	2,0kn
VERTICAL	2,0kn
BOLLARD PULL	
FORE/AFT	525 Kg
LATERAL	480 Kg
VERTICAL, UP	340 Kg

STANDARD EQUIPMENT

(1) Low Light Camera	
(1) North seeking Gyro	
(2) Colour Zoom Camera	
(1) 5 Function Grabber	
(2) Colour mini Camera	
(1) Emergency beacon	
(1) Obstacle Avoidance Sonar	
(1) Wire Cutter 38mm	
(2) Hydraulic Pan & Tilt	
(1) Hydraulic Tilt unit	
(10) 250W Lights, variable intensity	
Tool Drawer: Mounted as standard in skid	
ISOLATED HPU	
PRESSURE	210 Bar max, adjustable from pilot chairs
FLOW	78 lpm
LOW FLOW VALVES	20 x 8 lpm, (9 spare) Proportional flow control
HIGH FLOW VALVES	4 x 75 lpm Proportional flow and pressure control
FILTERS	Pressure, Return & Water absorbing

ERGONOMIC AND FUNCTIONAL PILOT INTERFACE

INTERFACE	Touch screen Joysticks & Computer controled from pilot chairs One or two pilot chairs (customers choice) Realtime overview system

TELEMETRY AND SENSORS CAPACITY

SERIAL CONNECTIONS	32 channels, 115kbps
ETHERNET	Optional
VIDEO	Interface for 8 cameras Interface for digital photo camera
HDV (OPTIONAL)	
GYRO	FOG is standard / INS is optional
ALTIMETER	Standard
DEPTH SENSOR	Standard
OTHER SENSORS	17 spare connections
SPARE OPTICAL FIBERS	5
LIGHTING CAPACITY	10 x 250W dimmable lamps

CONTROL CONTAINER

6 x 2,5 m, A60 Safe area Container, housing power distribution, control consoles and video suites.

WORKSHOP CONTAINER

6 x 2,5 m, A60 Safe area Container, housing extensive spares, consumables, tools, manuals and test equipment.

TECHNICAL INFO MOBIC TMS

ENVELOP DIMENSIONS	
LENGTH / WIDTH	Ø 2.200mm (Lower frame)
HEIGHT	2.130mm incl. latching unit.
DEPTH RATING	3.000m
WEIGHT (IN AIR)	2.800kg
THROUGH FRAME LIFT (LATCH LOAD)	10.000kg
LIFTING POINT CAPACITY	12.800kg
TETHER / DRUM CAPACITY (Ø X L)	ø35mm x 400meter
POWER SUPPLY	3kV/3ph/60Hz
TOTAL POWER, HPU MOTOR	15kW

Revision Date 30.04.2012

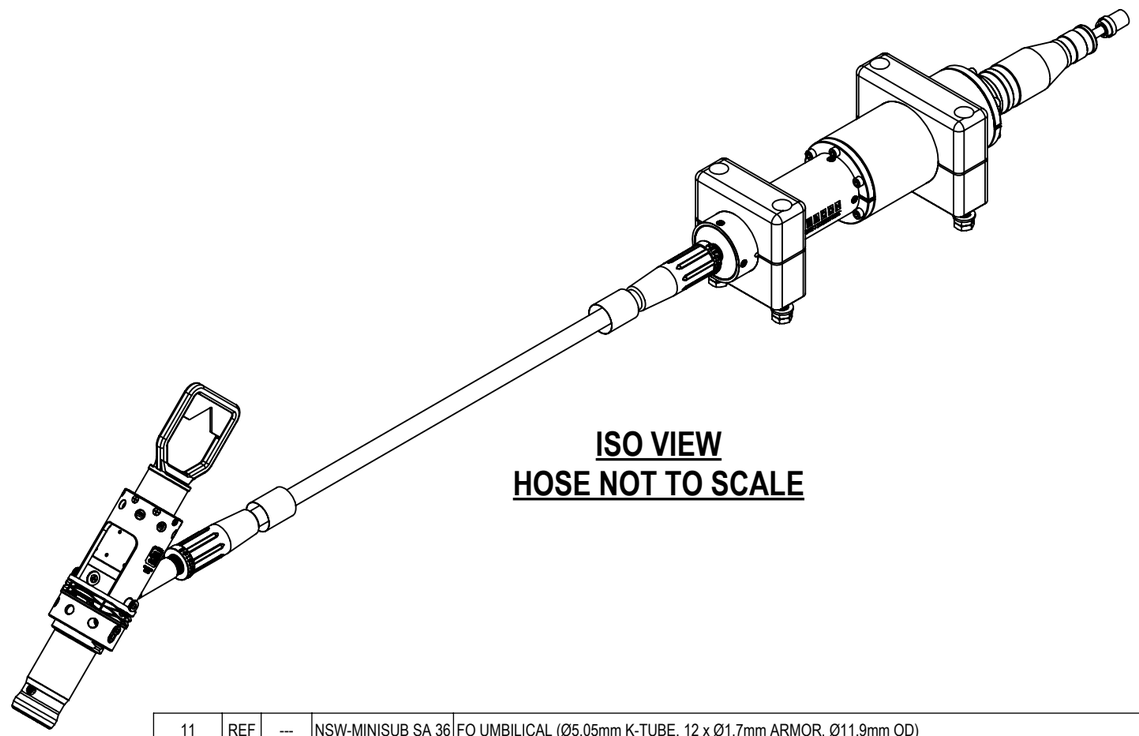
APPENDIX E WET MATE CONNECTOR TECHNICAL DRAWING

NOTES:

1. REFER TO SAPL-ENG-1173 FOR DESIGN PARAMETERS.
2. REFER TO DWG A208-101 FOR CONNECTOR DETAILS.
3. USE SPANNER ADAPTER A120-122 TO TORQUE 13mm HOSE FITTINGS TO 55.0 ± 5.0 LB-FT [68-81 Nm].
4. ETCH TE PART NUMBER (DRAWING NUMBER), SERIAL NUMBER AND CUSTOMER PART NUMBER (IF APPLICABLE) USING 10 PT HIGH CHARACTERS, WHERE SHOWN. NUMBERS SHALL BE LABELED AS FOLLOWS:
   (PART NUMBER & REVISION LEVEL) P/N SEA-XXXX-XXX-XXXX REV X
   (SALES ORDER-LINE ITEM-SEQUENTIAL NUMBER): S/N XXXXXXX-XX-XXX
5. FOR HOSE LENGTHS & WEIGHTS, SEE CONFIGURATION TABLE.
6. CAN BE SUBSTITUTED WITH WACKER AK350 SILICONE FLUID.
7. GENERAL NOTE: CONNECTORS USE TI GR 5 EXTERNAL COMPONENTS.
8. GENERAL NOTE: SUBSEA UMBILICAL TERMINATION ASSEMBLY USES TI GR 2 EXTERNAL COMPONENTS.
9. INSTALL PROTECTIVE CAP FOR SHIPPING & TOPSIDE STORAGE.
10. MOUNTING INTERFACE CLAMP SEPARATION 12.8 [324] TYP, 8.4[214] MIN. INSTALLTION OF TERMINATION ASSEMBLY WITHIN CLAMPS NOT TO EXCEED AXIAL SHELL SURFACE.
11. REFER TO A100-103 FOR oSUTA MOUNTING INTERFACE DIMENSIONS.
12. REFER TO TORQUE TABLE IN DRAWING A265-151 FOR PROPER TORQUE VALUES AT FIELD INSTALLATION.
13. HOSE:
    PRE CHARGE PRESSURE: 102 PSI [7bar]
    MINIMUM BEND RADIUS (INT.) 5 IN [125mm]
14. PLACE TWO (2) PIECES OF LOOSE HEAT SHRINK TUBING ON EACH HOSE, 12 INCHES FOR CUSTOMER USE.
15. REFER TO DWG A313-141 FOR DIMENSIONS FOR TRIMMING UN-USED ELEMENTS OF UMBILICAL

CONFIGURATION TABLE 4 5

TCPN	L1 (MAX)	L1 (NOM)	EST. WEIGHT IN AIR	EST. WEIGHT IN WATER
SEA-A313-101-0001	51.3m	50m	129 LB [58.3 KG]	86 LB [38.8 KG]



ISO VIEW
HOSE NOT TO SCALE

ITEM NO.	QTY.	CAGE	PART NUMBER	DESCRIPTION	MATERIAL	MATERIAL SPEC	NOTE
11	REF	---	NSW-MINISUB SA 36	FO UMBILICAL (Ø5.05mm K-TUBE, 12 x Ø1.7mm ARMOR, Ø11.9mm OD)	---	---	
10	456	---	RC300114	A309342 ROCHESTER FIBER 8.2/125/242µm SM (NOT SHOWN)	---	---	
9	2	5K441	SEA01000911	SUMITUBE ∅2" CLEAR HEATSHRINK (NOT SHOWN)	POLYOLEFIN	---	
8	298	2K588	SEA-00367	DOW CORNING COMPENSATION FLUID 100 CST (NOT SHOWN)	SILICONE	---	6
7	1	4EAN5	SEA-A313-141-0001	CABLE TERMINATION (5.05mm K-TUBE, 18 x 1.00mm ARMOR, 10.9mm OUTER SHEATH)	---	---	8
6	1	4EAN5	SEA-A294-140-0003	oSUTA, 1IN-1OUT, 8FO	(TI GR 2)	---	8,11
5	1	4EAN5	SEA-A265-151-0004	SADDLE BLOCK ASSY., Ø121mm, A4-80 THRU	---	---	11
4	1	4EAN5	SEA-A265-151-0002	SADDLE BLOCK ASSY., Ø89mm, A4-80 THRU	---	---	11
3	1	4EAN5	SEA-A208-101-0001	TOP ASSEMBLY, HYDRALIGHT, FLYING LEAD, 8FOSM APC, 45° HOSE EXIT, PADDLE HANDLE, VERTICAL	---	---	2,7
2	1	4EAN5	SEA-A140-111-0500	PBOF HOSE ASSY 13MKII Ti Gr2_50m	---	---	3,13
1	1	4EAN5	7871-104	TOP ASSEMBLY, HYDRALIGHT, BULKHEAD, TOPSIDE PROTECTIVE CAP (NOT SHOWN)	CHERRY RED/HDPE (MARLEX 9006)	ASTM D4976-PE 233	9

MATERIAL INFORMATION

MATERIAL: --- | MATERIAL SPEC: ---

PROCESS SPECS:

- ASSEMBLE IAW ASY-11043.
- FACTORY ACCEPTANCE TESTING IAW SAPL-FAT-1126.
- FIELD ASSEMBLY IAW SAPL-MPS-1181.
- FIELD ACCEPTANCE TESTING IAW SAPL-FAT-1160.
- CONNECTOR OPERATION AND MAINTENANCE IAW SAPL-OMM-1006.

SOLIDWORKS

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

JURISDICTION: EXPORT ADMINISTRATION REGULATIONS (EAR)

TECHNOLOGY ECCN #	DATE OF MARKING
EAR99	07 JAN 2025

THIS DOCUMENT CONTAINS CONTROLLED TECHNICAL DATA SUBJECT TO THE EXPORT ADMINISTRATION REGULATION (EAR). VIOLATIONS OF THESE EXPORT LAWS AND REGULATIONS ARE SUBJECT TO CIVIL AND CRIMINAL PENALTIES.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES [mm] TOLERANCES ARE:
FRACTIONS 1/16" | DECIMALS .X ±.05, .XX ±.01, .XXX ±.005, .XXXX ±.0005 | ANGLES ±1°, .X ±.1°
BREAK EDGES & CORNERS R.005 [.127mm]. ALL DIA. CONCENTRIC TO .004 [.10mm] TIR. FINISH 63 [Ra1.6]

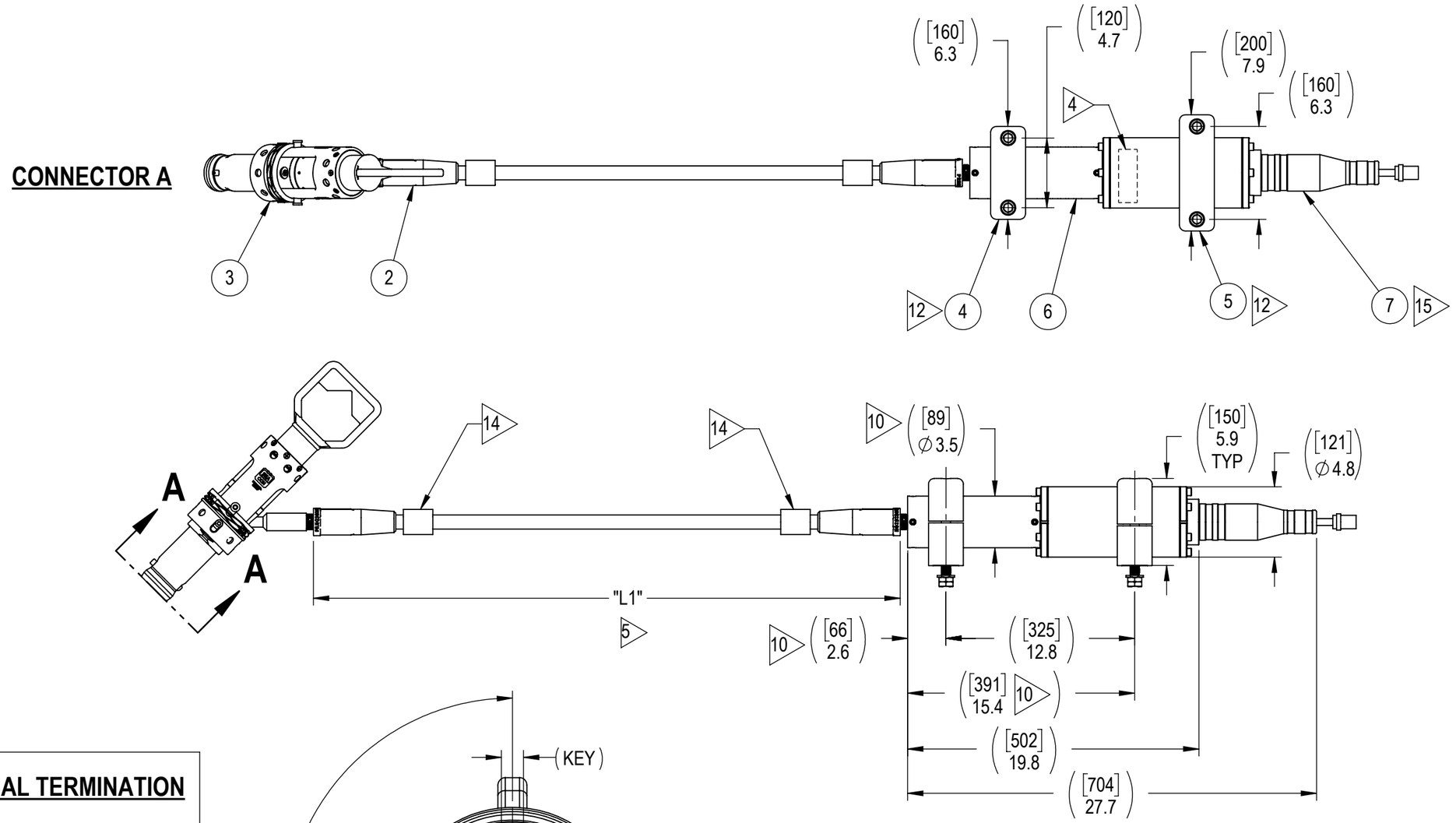
BRANTNER & ASSOCIATES, INC.
1039 Schlipf Rd, Katy TX 77493

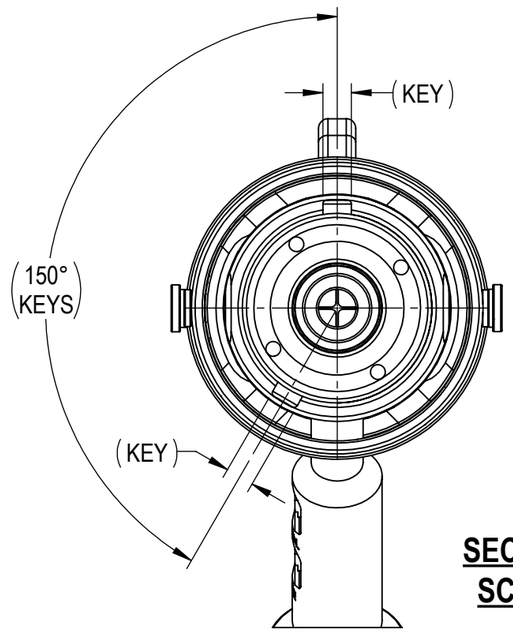
DESCRIPTION:

TOP ASSEMBLY, oSUTA, 1IN-1OUT TO HYDRALIGHT OPTICAL FLYING LEAD, 8FOSM-APC, 45 DEG HOSE EXIT, VERTICAL PADDLE

SIZE	TCPN:	DWG NO.	REV
B	SEA-A313-101-0001	A313-101	A
	JOB NO: 0040226		
	NEXT ASSY: TOP ASSEMBLY	FOR REVISION DETAILS SEE PDMLINK DOCUMENT RECORD	

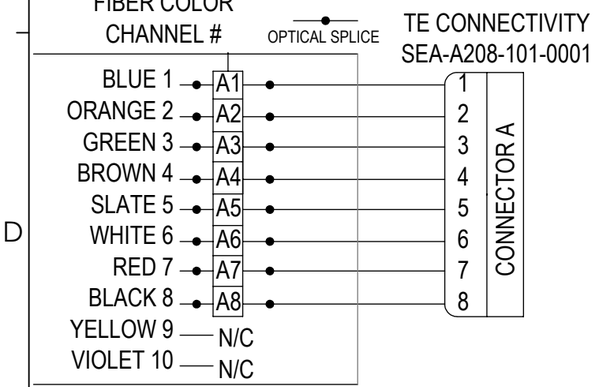
WEIGHT: 5 | SCALE: 1:8 | DRN: SEH | DSND BY: JAK | REL DATE: 2/4/2025 | SHEET 1 OF 2





SECTION A-A
SCALE 1 : 2

OPTICAL TERMINATION



SEA-A294-140-0003/SEA-A313-141-0001

BRANTNER & ASSOCIATES, INC.
1039 Schlipf Rd, Katy TX 77493

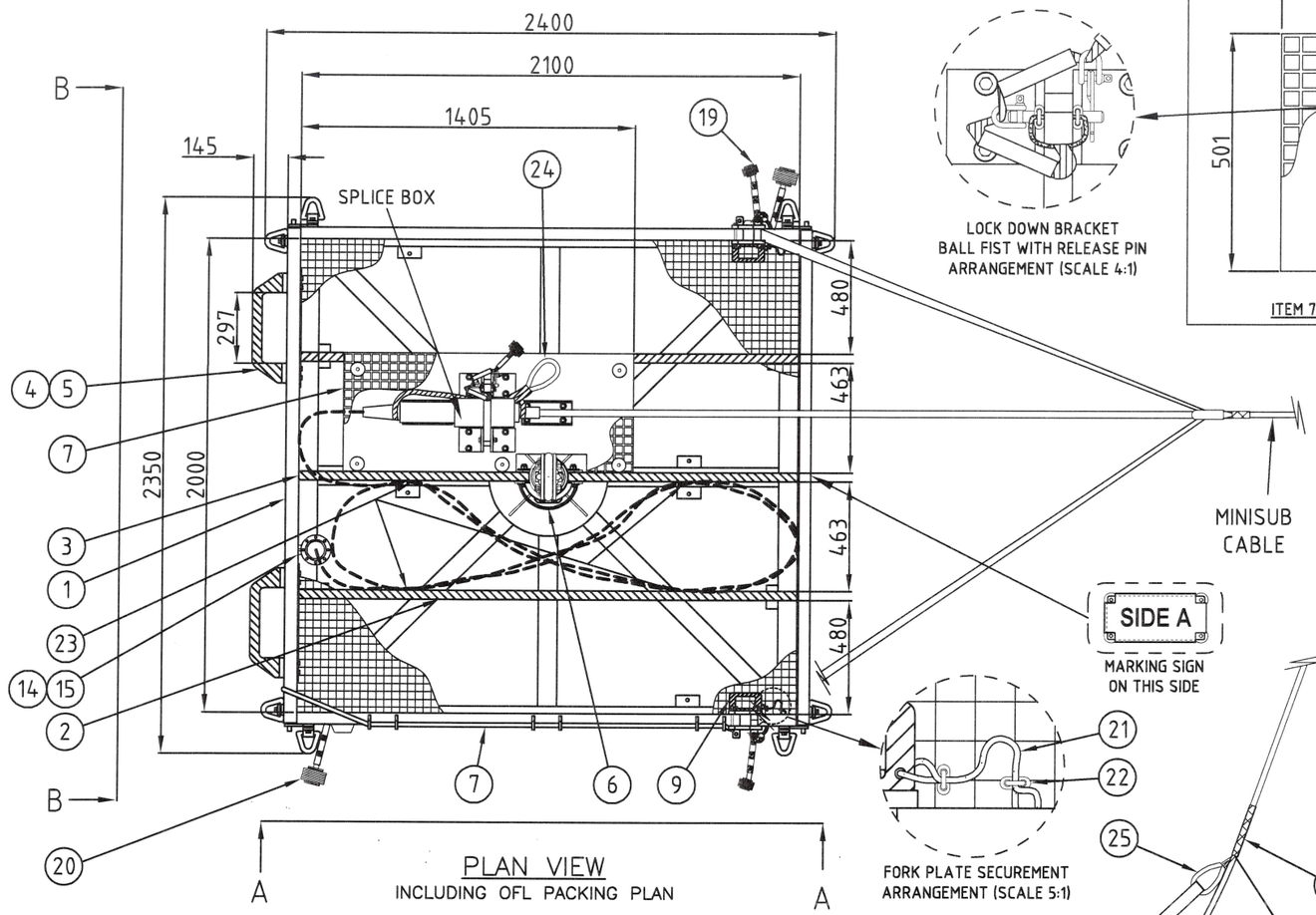
DESCRIPTION:
TOP ASSEMBLY, oSUTA, 1IN-1OUT TO HYDRALIGHT OPTICAL FLYING LEAD, 8FOSM-APC, 45 DEG HOSE EXIT, VERTICAL PADDLE

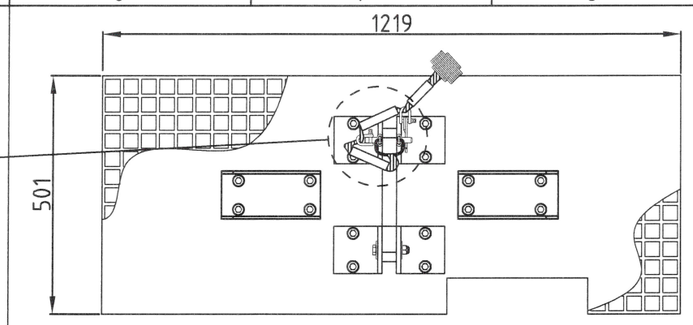
SIZE	TCPN:	DWG NO.	REV
B	SEA-A313-101-0001	A313-101	A
	JOB NO: 0040226		
	NEXT ASSY: TOP ASSEMBLY	FOR REVISION DETAILS SEE PDMLINK DOCUMENT RECORD	
WEIGHT: 5	SCALE: 1:8	DRN: SEH / DSND BY: JAK / REL DATE: 2/4/2025	SHEET 2 OF 2

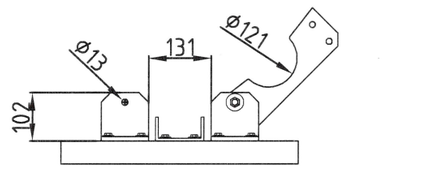
ADM_TITLE-BLOCK_D: SHEET 2 OF 2

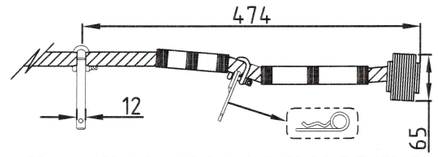
oSUTA HL OFL 8FO APC 45HE VPDL 1TO1

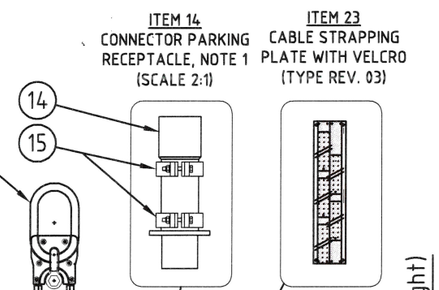
APPENDIX F CABLE END MODULE TECHNICAL DRAWING

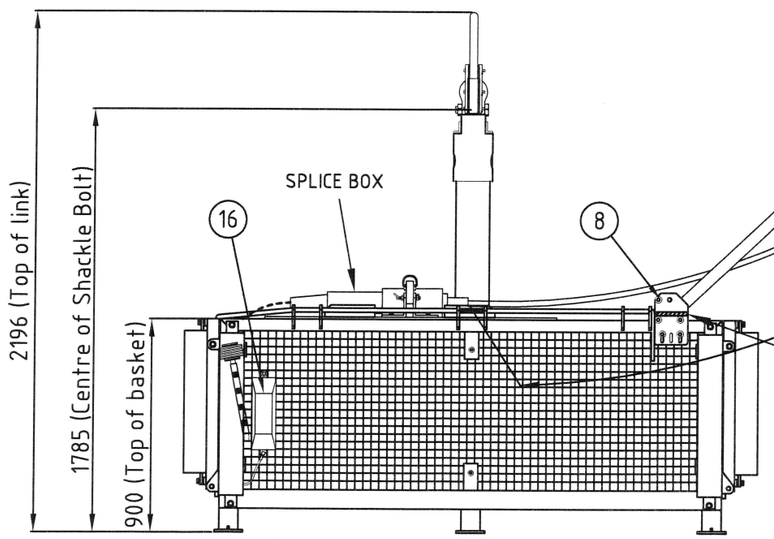












DO NOT SCALE | IF IN DOUBT ASK

NOTES;

1. LONG TERM PARKING RECEPTACLE FOR SEACON CONNECTOR - COMPANY PROVIDED ITEM. LOCATED IN BOTTOM OF BASKET.
2. BASKET STANDARD MARKING PLATES ARE NOT SHOWN.
3. HOLDBACK BRIDLE INCLUDES LEAD SMALL WEIGHTS EVERY 1.0M (FIVE IN TOTAL).

ITEM	QTY.	DESCRIPTION	MATERIAL / DRAWING NO.
26	16	GRATING FASTENING PLATE (M8, A4–80 FASTENERS)	DWG. IN–UDE–256–DR–293
25	1	UFIST RING FIST, STANDARD TYPE	–
24	1	UFIST RING FIST, BRIDLE TYPE	–
23	4	STRAPPING PLATE (M8–A4 FASTENERS)	DWG. IN–UDE–256–DR–241
22	2	WIRE CLAMP, 5MM, DIN 714	AISI 316
21	2	WIRE, 5MM DIA. 50CM LONG	AISI 316
20	2	UFIST BALL FIST (100MM DIA.)	PP & PE
19	2	USTRAP REL. STRAP TYPE C (PIN)	DWG. IN–UDE–719–DR–215
18	1	CHINESE FINGER, WITH 2 EYES FOR 20–30MM CABLE	KEVLAR
17	1	HOLDBACK BRIDLE – 50MM WIDE WEBBING – MBL 4T	DWG. IN–UDE–256–DR–466
16	2	ANODE, CORAL A–25, 2.5KG (& EARTH STRAPS, Ø16 SQ. MM)	–
15	1	GRATING MOUNTING BRACKET DWG. ITEMS 1, 5, 8, 9, 10 & 11)	DWG. IN–UDE–256–DR–244
14	1	CONNECTOR PARKING RECEPTACLE	CPI EQUIPMENT
13	8	SPACER PLATE (PEHD MATERIAL)	DWG. IN–UDE–256–DR–293
12	2	TAG MARK, UTAG TYPE D2 (ORANGE)	DWG. IN–UDE–256–DR–292
11	2	BOLT–ON BASKET MARKING PLATE	DWG. IN–UDE–258–DR–228
10	1	SHACKLE & MASTER LINK POSITIONER	DWG. IN–UDE–256–DR–291
9	2	FORK LOCK PLATE	DWG. IN–UDE–256–DR–282
8	2	BOLT–ON ASSEMBLY FOR LOCK FORK PLATE & LOCK GATE PLATE	DWG. IN–UDE–256–DR–384
7	1	DEFLECTOR HOSE & WIRE	DWG. IN–UDE–256–DR–242
6	1	CENTRE POLE DEFLECTOR	DWG. IN–UDE–256–DR–242
5	4	MOUNTING PLATE FOR ROV GRABBER	DWG. IN–UDE–256–DR–344
4	2	BOLT ON ROV GRABBER (4 X M10, A4–80 FASTENERS)	DWG. IN–UDE–256–DR–344
3	2	COMPARTMENT WALL (0.6Mx0.9M)	DWG. IN–UDE–256–DR–218
2	2	COMPARTMENT WALL (0.6Mx2.1M)	GRP GRATING 38x38x38MM
1	1	UBAS B ROV BASKET	DWG. IN–UDE–256–DR–218

ITEM LIST

Rev	Date	Revision	Rev By	Chk'd Engr.	App Project
1	08.11.25	ISSUED FOR INFORMATION	HAS		

Name of client

Underwater Design & Equipment Company

UDECO AS

Udeco Engineering			Udeco Approval		
Draughtsman	Checker	Originator/Engineer	Lead Engineer	Project Manager	
H. Askeland					
Date	Date	Date	Date	Date	
08.11.25	12/11-25			12/11-25	

UNLESS OTHERWISE SPECIFIED: (HVIS IKKE ANNET ER OPPGITT)	Dim. Tol.: ± 3mm, ± 1°	Broken Edges: (Kanter er brukket) (R alt 45°) 0.1 – 0.5	
Thread Tol.: (Gjenge Tol.) 6g/6h (NS 1874–ISO 9651)	Roughn: (Ruhet) Ra µm:	Tolerancing: ISO 8015 Toleranse Setting: NS–ISO 8015	
Sheet Size A1	Drawing Scale. 1:12.5	Page 1 OF 1	

Project: UBAS ROV BASKET SYSTEM

Title: ROSEBANK FIELD – ROV BASKET TYPE UBAS B, RECONFIGURED WITH FOUR COMPARTMENTS FOR MINISUB CABLE AND OPTICAL FLYING LEAD INSTALLATION

Drawing No. IN–UDE–256–DR–463 | Rev. 1

AutoCAD Produced Drawing – Do Not Change Manually

APPENDIX G PLAN OF WORK

SHEFA

SHEFA FOC Expansion Project

Global Marine

ID	Task Name	Duration	Start	Finish	Predecess	Resou Name:	Text1	Text2
0	**4139-GM-C-PW-04.1 SHEFA FOC Expansion Project**	**591.2 d**	**Fri 15/11/24**	**Mon 29/06/26**				
1	**Contract Signature**	**0 d**	**Fri 15/11/24**	**Fri 15/11/24**				
2	**Pre-operation preparation**	**0 d**	**Wed 23/07/25**	**Wed 23/07/25**				
3	Project Management & Reporting	0 d	Wed 23/07/25	Wed 23/07/25	1FS+250	MLV		
4	**Permits**	**13 d**	**Wed 01/04/26**	**Tue 14/04/26**				
5	Marine Licence Approval	0 d	Tue 14/04/26	Tue 14/04/26				
6	Operational permit available	0 d	Wed 01/04/26	Wed 01/04/26	1FS+489			
7	**Marine Scope of Work**	**22.91 d**	**Thu 09/04/26**	**Sat 02/05/26**				
8	**Mobilisation and Transit**	**4 d**	**Thu 09/04/26**	**Mon 13/04/26**				
9	Mobilize vessel and TDM ROV in UK	4 d	Thu 09/04/26	Mon 13/04/26	11SF	MLV	Mob/dem	
10	**Cable Loading**	**1 d**	**Mon 13/04/26**	**Tue 14/04/26**				
11	Rig for loading	0.2 d	Mon 13/04/26	Mon 13/04/26	12SF	MLV	Loading	
12	Load UBAS ROV Basket	0.1 d	Mon 13/04/26	Mon 13/04/26	13SF	MLV	Loading	
13	Load 1 BU and jointing kits	0.1 d	Mon 13/04/26	Mon 13/04/26	14SF	MLV	Loading	
14	Load approx. 11km of DA/SA cable	0.4 d	Mon 13/04/26	Tue 14/04/26	15SF	MLV	Loading	
15	De-rig and test	0.2 d	Tue 14/04/26	Tue 14/04/26	17SF	MLV	Loading	
16	**Transit to Site**	**3.71 d**	**Tue 14/04/26**	**Sat 18/04/26**				
17	Clear out UK and transit to landing site	3.21 d	Tue 14/04/26	Fri 17/04/26	18SF	MLV	Transit	
18	Allowance for DP tials, lay trials, callibration, etc.	0.5 d	Fri 17/04/26	Sat 18/04/26	20SF	MLV	Lay	
19	**Cable Lay**	**9.2 d**	**Sat 18/04/26**	**Mon 27/04/26**				
20	Set up DP	0.2 d	Sat 18/04/26	Sat 18/04/26	5FS+4 d	MLV	Lay	
21	Shefa 2 cable recovery & cut	1 d	Sat 18/04/26	Sun 19/04/26	20	MLV	Lay	
22	BU Leg 1 joint and lay	1.25 d	Sun 19/04/26	Mon 20/04/26	21	MLV	Lay	
23	Deploy UBAS ROV Basket	0.75 d	Mon 20/04/26	Tue 21/04/26	22	MLV	Lay	
24	FL Lay down	0.25 d	Tue 21/04/26	Tue 21/04/26	23	MLV	Lay	
25	BU Leg 2 lay down	0.5 d	Tue 21/04/26	Tue 21/04/26	24	MLV	Lay	
26	BU Operations	3 d	Tue 21/04/26	Fri 24/04/26	25	MLV	Lay	
27	BU Leg 3 lay down	0.25 d	Fri 24/04/26	Sat 25/04/26	26	MLV	Lay	
28	Final Splice and deployment	1 d	Sat 25/04/26	Sun 26/04/26	27	MLV	Lay	
29	System testing and acceptance	1 d	Sun 26/04/26	Mon 27/04/26	28	MLV	Lay	
30	**Transit and Spares Offloading**	**5 d**	**Mon 27/04/26**	**Sat 02/05/26**				
31	Transit back to Portland, UK	3 d	Mon 27/04/26	Thu 30/04/26	29	MLV	Transit	
32	Demobilise Vessel & Offloading	2 d	Thu 30/04/26	Sat 02/05/26	31	MLV	Mob/dem	
33	**Project Close out and reporting**	**58 d**	**Sat 02/05/26**	**Mon 29/06/26**				
34	Produce Provisional Reports	30 d	Sat 02/05/26	Mon 01/06/26	32			
35	Customer review	14 d	Mon 01/06/26	Mon 15/06/26	34			
36	Final Report	14 d	Mon 15/06/26	Mon 29/06/26	35			