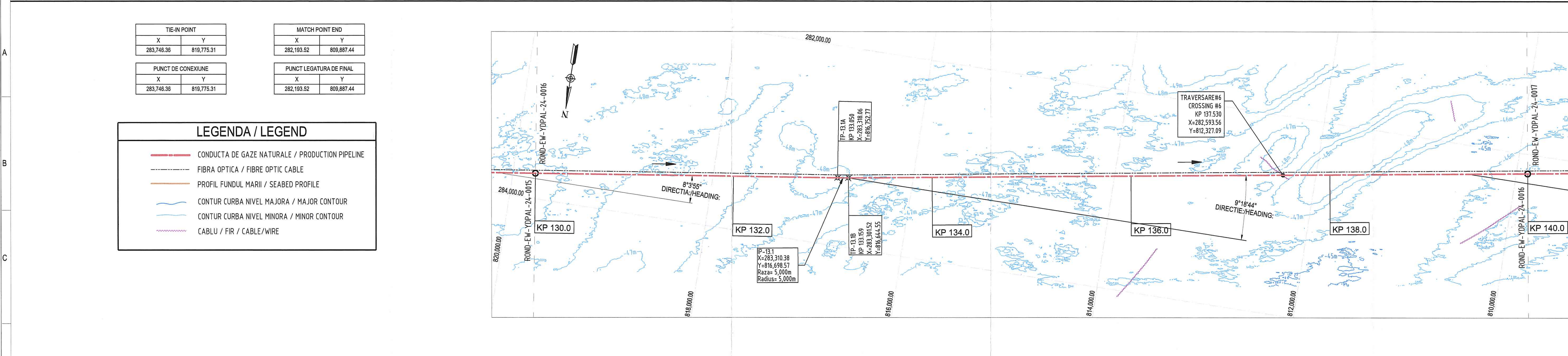
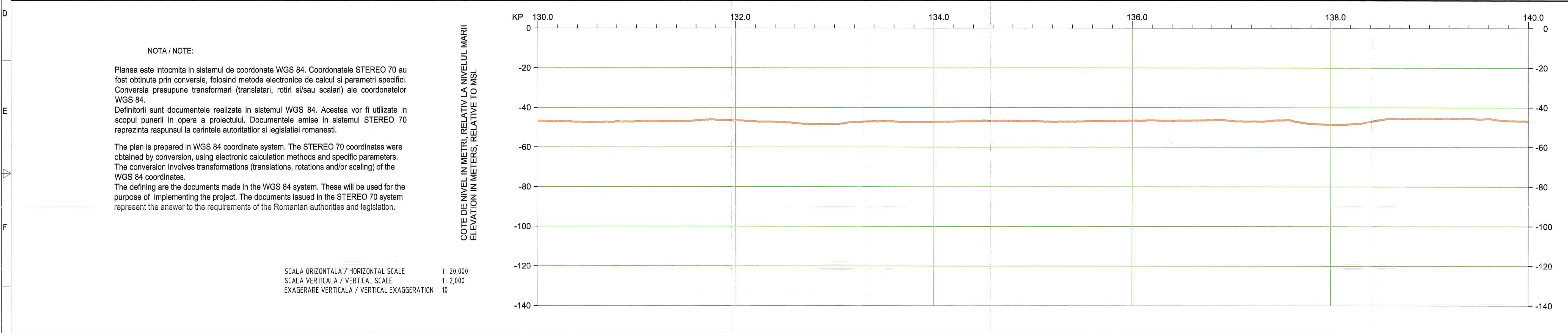


PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:20,000)



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



DATE TEHNICE / ENGINEERING DATA

		KP 130.000		KP 131.469		KP 132.472		KP 133.050 KP 133.530 KP 133.159		KP 137.430 KP 137.530 KP 137.630		KP 140.000		
ELEMENTE TRASEU	ORIENTARE (°N) / RAZA CURBURI (m)		ROUTE ITEMS	STRAIGHT HEADING (°N) / BEND RADIUS (m)		8° 3' 55"		9° 18' 44"						
	TRAVERSARE CONDUCTA / CABLU			CABLE / PIPELINE CROSSING		5,000		TRAVERSARE CABLU #6 (NOTA 13) / CABLE CROSSING #6 (NOTE 13)						
DATE CONDUCTA	TIP SOL LA SUPRAFATA FUNDULUI MARI		SURFACE SEABED SOIL		ZONA 4 - NSIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)				ZONA 5 - ARGILA (NOTA 9) / ZONE 5 - CLAY (NOTE 9)					
	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)		STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)		DNV SAWL 450 FDU / 762 / 17.5				DNV SAWL 450 FDU / 762 / 30.0					
	GROS.PERETE DISP. ANTIDEFORMARE (mm) / INTERVAL (m)		BUCKLE ARRESTOR W.T. (mm) / SPACING (m)						NU EXISTA / NONE					
	STRAT ANTI-COROZIV/GROS.(mm)/DENSITATE(kg/m³)		ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)						FBE / 0.38 - 0.815 / 1,350					
	STRAT INT. PROT. / GROSIME (µm) / DENSITATE (kg/m³)		INTERNAL COAT. / THICK (µm) / DENSITY (kg/m³)				ACOPERIRE LA INTERIOR (NOTA 10) / ACOPERIREA / 50 / 1,500 / INTERNAL FLOW COAT (NOTE 10) COATING / 50 / 1,500							
	STRAT BETON: GROSIME (mm) / DENSITATE (kg/m³)		CONCRETE COATING THICK (mm) / DENSITY (kg/m³)		100 / 3,050				110 / 3,050					
	TIP SUDURA / TIP UMPLUTURA / DENSITATE (kg/m³)		FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)						FBE + POLIURETAN 128 - 224 / FBE + POLYURETHANE / 128 - 224					
	TIP ANOD / MASA (Kg) / INTERVAL MONTAJ (segmente)		ANODE BRACELETS TYPE / MASS (kg) / SPACING (joints)		Al (50x775) / 198 / 1 EVERY 10 JOINTS				ALUMINIU (80x700) / 298 / 1 LA 10 SEGMENTE / Al (80x700) / 298 / 1 EVERY 10 JOINTS					
	GREUTATE CONDUCTA (kN/m)		PIPELINE WEIGHT (kN/m)		11.274				13.349					
	IN AER (USCATA) (kN/m)		IN AIR (DRY) (kN/m)		4.039 / 156				6.811 / 190					
GOALA (kN/m) / SG		EMPTY (kN/m) / SG		8.165 / 2.13				10.657 / 2.41						
IN APA		SUBMERGED		6.172 / 158				6.933 / 1.92						
INUNDATA (kN/m) / SG		FLOODED (kN/m) / SG												
IN FUNCTIUNE (kN/m) / SG		OPERATION (kN/m) / SG												
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)		PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)				NU EXISTA / NONE						
	SUPORTI / SALTELE BETON			SLEEPERS / MATTRESSES				TRAVERSARE CABLU #6 (NOTA 15) / CABLE CROSSING #6 (NOTE 15)						
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)		POST-LAY INT. WORKS	TRENCHING DEPTH (m)				NU EXISTA / NONE						
	TIP UMPLUTURA / STRAT ACOPERITOR (m)			BACKFILLING TYPE / COVER TOP (m)				NU EXISTA / NONE						
	STRAT PIETRIS			GRAVEL DUMPING				NU EXISTA / NONE						
LUNGIME TRONSON ADMISA	INSTALARE (m)		ALLOWABLE	INSTALLATION (m)		57.4		66.1		65.0				
	HIDRO-TEST (m)			HYDROTEST (m)		39.0		44.0		39.0				
	FUNCTIONARE (m)		LENGTH	OPERATION (m)		40.0		35.0		35.0				
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)		SPECIFIC REQUIREM.	LAY TOLERANCE (m)		±10				±2		±10		
	ALTELE			OTHER										

NOTE		NOTES	
1. DACA NU SE PRECIZEAZA ALT FEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.		1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.	
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARI.		2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.	
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTENICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.		3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.	
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.		4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.	
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.		5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.	
6. PENTRU DETALII PRIVIND MODUL DE CONECTARE LA LOCATIA PLATFORMEI SE VA CONSULTA PLANSA ROND-EW-YDPAL-22-0011 - ARANJAMENT CONDUCTA DE ADUCTIUNE SI CONDUCTA DE GAZE NATURALE LA PLATFORMA (SWP).		6. FOR DETAILS OF TIE-INS AT PLATFORM LOCATION REFER TO DRAWING : ROND-EW-YDPAL-22-0011 - FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT.	
7. STERS.		7. DELETED.	
8. PENTRU DETALII PRIVIND ANOZI CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.		8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.	
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).		9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).	
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.		10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.	
11. TRAVERSARE CABLU DIN BAZA DE DATE GLOBALA MARINA. CONSTRUCTORUL VA DETERMINA LOCATIA EXACTA.		11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.	
12. POSIBILE TRAVERSARI PENTRU HDCC ROMANIA TURCIA. CONSTRUCTORUL VA VERIFICA CU PROPRIETARUL CABLULUI DATA CONSTRUCTIEI.		12. POTENTIAL CROSSING FOR FUTURE HDCC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.	
13. TRAVERSARE CABLU CONFORM BAZEI DE DATE GIS FURNIZATA DE FUGRO.		13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.	
14. STERS.		14. DELETED.	
15. TRAVERSARE CABLU CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.		15. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.	
16. A SE NOTA CA GROSIMEA ANOZILOR SI DISTANTA ADMISA DINTRE EI VOR FI RE-EVALUATE IN DETALIILE DE EXECUTIE, IN BAZA GROSIMII ACTUALE A STRATULUI DE BETON.		16. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.	

DOCUMENTE DE REFERINTA		REFERENCE DOCUMENTS	
NUMAR PLANSA	DENUMIRE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOD CONDUCTA DE GAZE NATURALE	ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS

SCALA		SCALE BAR	
0 200 1,000 2,000 METRI		0 200 1,000 2,000 METERS	
SCALA ORIZONTALA 1:20,000 (FORMAT "A1")		HORIZONTAL SCALE 1:20,000 (A1 "A1" SIZE)	

PARAMETRII GEODEZIE SI PROIECTIE		GEODETIC & PROJECTION PARAMETERS	
DATE GEODEZICE	STEREO 70	GEODETIC DATUM	STEREO 70
PROIECTIE	Dublu Stereografica	PROJECTION	Double Stereographic
Meridianul central (MC)	25.0	Central meridian (CM)	25.0
Latitudine Origine	46.0	Latitude of Origin	46.0
Falsa origine estica	500,000.0	False Easting at origin	500,000.0
Falsa origine nordica	500,000.0	False Northing at origin	500,000.0
Factor de scala la MC	0.99975	Scale factor at CM	0.99975
DATE VERTICALE	MSL (NIVELUL MARI)	VERTICAL DATUM	MSL

PLAN DE REFERINTA / KEY PLAN

Map showing the location of the project relative to the Black Sea and the Romanian coast. The map includes a coordinate grid (X, Y) and a scale of 1:20,000. Key features include the production pipeline (CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE), fiber optic cable (FIBRA OPTICA / FIBRE OPTIC CABLE), seabed profile (PROFIL FUNDUL MARI / SEABED PROFILE), major contours (CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR), minor contours (CONTUR CURBA NIVEL MINORA / MINOR CONTOUR), and cable/wire (CABLU / FIR / CABLE/WIRE). The map also shows the location of the project relative to the Black Sea and the Romanian coast.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

2 15DEC17 RE-ISSUED FOR IFD FK EP SS JG

1 26SEP17 RE-ISSUED FOR IFD FK EP SS JG

0 04AUG17 ISSUE FOR IFD RO EP SS JG

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT ALIGNMENT SHEET

FISA NR. 014 DIN 016 SHEET 014 OF 016

1 : 20,000 ROND-EW-YDPAL-24-0016-C DTAC 2-D

NR. PLANSA / DWS. NO. FAZA / PHASE REV. / REV.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalilor.

Dimensiunile in sistem US au fost definite astfel: Simbolul virgula a fost folosit pentru separarea cifrelor din interiorul numerelor care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi citite din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation, the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.