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

TIE-IN POINT	
X	Y
286,555.29	839,598.07

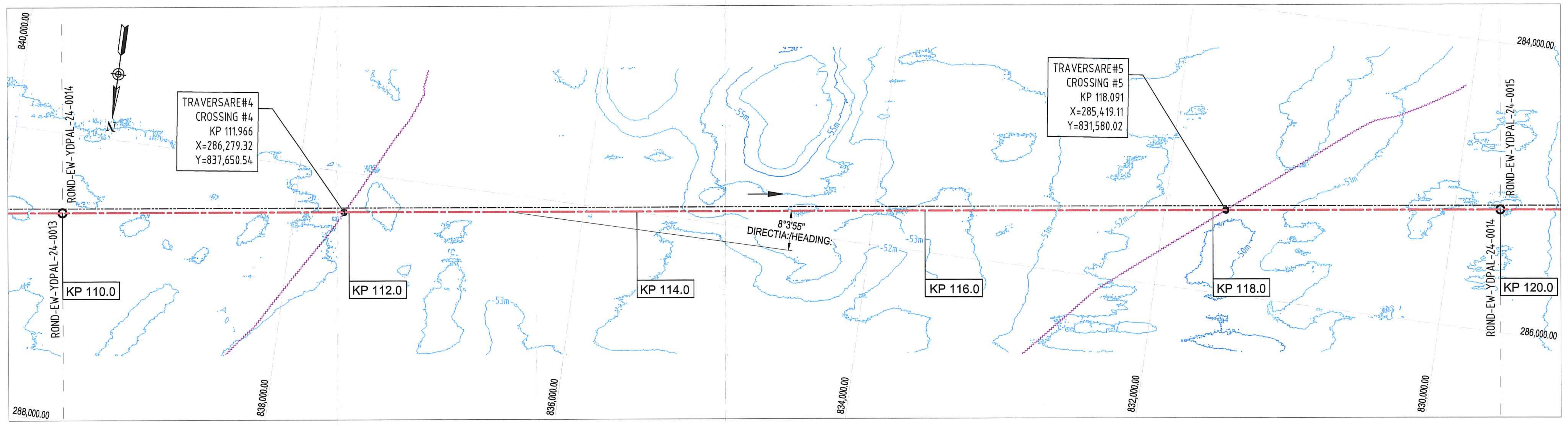
PUNCT DE CONEXIUNE	
X	Y
286,555.29	839,598.07

MATCH POINT END	
X	Y
285,150.79	829,686.43

PUNCT LEGATURA DE FINAL	
X	Y
285,150.79	829,686.43

LEGENDA / LEGEND

- CONDUCTA DE GAZE NATURALE / PRODUCTION PIPELINE
- FIBRA OPTICA / FIBRE OPTIC CABLE
- PROFIL FUNDUL MARII / SEABED PROFILE
- CONTUR CURBA NIVEL MAJORA / MAJOR CONTOUR
- CONTUR CURBA NIVEL MINORA / MINOR CONTOUR
- CABLU / FIR / CABLE/WIRE

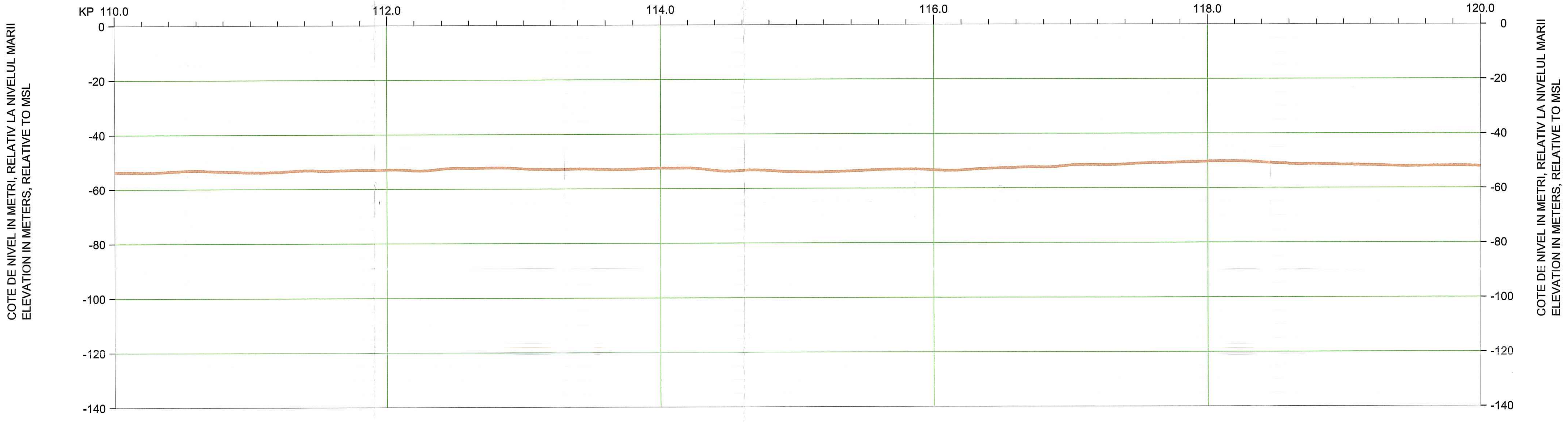


PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE

NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.



SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 20,000
SCALA VERTICALA / VERTICAL SCALE	1 : 2,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	10

DATE TEHNICE / ENGINEERING DATA

KP 110.000 — KP 111.866 — KP 111.966 — KP 112.066 — KP 112.260 — KP 117.991 — KP 118.091 — KP 118.191 — KP 120.000

ELEMENT (RO)		GROUP	ITEM (EN)	VALUE
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA CURBURI (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	8° 3' 55"
	TRAVERSARE CONDUCTA / CABLU		CABLE / PIPELINE CROSSING	TRAVERSARE CABLU #4 (NOTA 13) / CABLE CROSSING #4 (NOTE 13); NU EXISTA / NONE; TRAVERSARE CABLU #5 (NOTA 13) / CABLE CROSSING #5 (NOTE 13)
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ZONA 4 - NISIP (NOTA 9) / ZONE 4 - SAND (NOTE 9)
DATE CONDUCTA	TIP OTEL / DIAM. EXT. (mm) / GROSIME PERETE (mm)	PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 FDU / 762 / 17.5
	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)	STRAT INTERIOR PROTECTIE (NOTA 10) / 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
	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)	ALUMINIU (50x775) / 198 / 1 LA 10 SEGMENTE / Al (50x775) / 198 / 1 EVERY 10 JOINTS
	GREUTATE CONDUCTA (kN/m): IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m): IN AIR (DRY) (kN/m)	11.274
	GREUTATE CONDUCTA (kN/m): IN APA – GOALA (kN/m) / SG		PIPELINE WEIGHT (kN/m): SUBMERGED – EMPTY (kN/m) / SG	4.039 / 1.56
	GREUTATE CONDUCTA (kN/m): IN APA – INUNDATA (kN/m) / SG		PIPELINE WEIGHT (kN/m): SUBMERGED – FLOODED (kN/m) / SG	8.165 / 2.13
	GREUTATE CONDUCTA (kN/m): IN APA – IN FUNCTIUNE (kN/m) / SG		PIPELINE WEIGHT (kN/m): SUBMERGED – OPERATION (kN/m) / SG	4.172 / 1.58
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 #4(NOTA 15)/CABLE CROSSING #4(NOTE 15); NU EXISTA / NONE; TRAVERSARE CABLU #5 (NOTA 15) / CABLE CROSSING #5 (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 SPAN LENGTH	INSTALLATION (m)	62.2; 50.8
	HIDRO-TEST (m)		HYDROTEST (m)	39.0; 35.0
	FUNCTIONARE (m)		OPERATION (m)	40.0; 35.0
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (m)	SPECIFIC REQUIREM.	LAY TOLERANCE (m)	±10; ±2; ±10; ±2; ±10
	ALTELE		OTHER	

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATA IN 2014, DOCUMENT FUGRO J31135-R-001(03) ACTUALIZAT PENTRU PROIECTUL NEPTUN DEEP.
4. DATELE DE SOL PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP ROND-EW-GRRPT-00-0015-001 A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002.
5. DIRECTIILE SUNT INDICATE IN RAPORT CU NORDUL STEREO 70.
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).
7. STERS.
8. PENTRU DETALII PRIVIND ANOZII CONSULTATI PLANSA ROND-EW-YDCPD-24-0002 SI DOCUMENTUL ROND-EW-YRSTY-24-0002.
9. CARACTERIZAREA SOLULUI ESTE BAZATA PE NOTA TEHNICA 408009-00349-TN-003 (A SE VEDEA SI NOTA 4).
10. STRAT INTERIOR CONDUCTA CONFORM SPECIFICATIEI STRAT EPOXIDIC INTERN ROND-EW-YSPDS-20-0039.
11. PUNCT TRAVERSARE CABLU CONFORM BAZEI DE DATE MARINE GLOBALE. CONSTRUCTORUL VA DETERMINA LOCATIA EXACTA.
12. POSIBILA TRAVERSARE VIITOR CABLU HCDC ROMANIA - TURCIA. CONSTRUCTORUL VA VERIFICA DATA CONSTRUCTIEI CU DETINATORUL CABLULUI
13. TRAVERSARE CABLU CONFORM BAZEI DE DATE GIS FURNIZATA DE FUGRO.
14. STERS.
15. TRAVERSARE CABLU CONFORM PLANSA ROND-EW-YDPLX-24-0002 SOLUTIE TIPICA TRAVERSARE CABLU.
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.

NOTES

1. ALL DIMENSIONS ARE IN METERS, UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT.
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT ROND-EW-GRRPT-00-0015-001, SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
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. DELETED.
8. FOR ANODE DETAILS REFER TO DRAWING ROND-EW-YDCPD-24-0002 & DOCUMENT ROND-EW-YRSTY-24-0002.
9. SOIL CHARACTERIZATION BASED ON TECHNICAL NOTE 408009-00349-TN-003 (SEE ALSO NOTE 4).
10. INTERNAL FLOW COAT AS PER INTERNAL EPOXY COATING SPECIFICATION ROND-EW-YSPDS-20-0039.
11. CABLE CROSSING FROM GLOBAL MARINE DATABASE. CONTRACTOR TO DETERMINE EXACT LOCATION.
12. POTENTIAL CROSSING FOR FUTURE HCDC ROMANIA TURKEY. CONTRACTOR TO CHECK WITH THE CABLE OWNER FOR THE CONSTRUCTION DATE.
13. CABLE CROSSING FROM GIS DATABASE PROVIDED BY FUGRO.
14. DELETED.
15. CABLE CROSSING AS PER DRAWING ROND-EW-YDPLX-24-0002 TYPICAL CABLE CROSSING G.A.
16. NOTE THAT ALLOWABLE SPANS AND ANODE THICKNESSES ARE TO BE RE-ASSESSED IN DETAILED DESIGN BASED UPON ACTUAL CONCRETE COATING THICKNESSES.

DOCUMENTE REFERINTA

NUMAR PLANSA	DESCRIERE
ROND-EW-YDCPD-24-0002	DETALII TIPICE ANOD CONDUCTA DE GAZE NATURALE
ROND-EW-YDPLX-24-0002	SOLUTIE TIPICA TRAVERSARE CABLU

REFERENCE DOCUMENTS

DRAWING NUMBER	DESCRIPTION
ROND-EW-YDCPD-24-0002	PRODUCTION PIPELINE TYPICAL ANODE DETAILS
ROND-EW-YDPLX-24-0002	TYPICAL CABLE CROSSING GENERAL ARRANGEMENT

SCALA

METRI: 0 200 1,000 2,000

SCALA ORIZONTALA 1:20,000 (IN FORMAT "A1")

SCALE BAR

METERS: 0 200 1,000 2,000

HORIZONTAL SCALE 1:20,000 (AT "A1" SIZE)

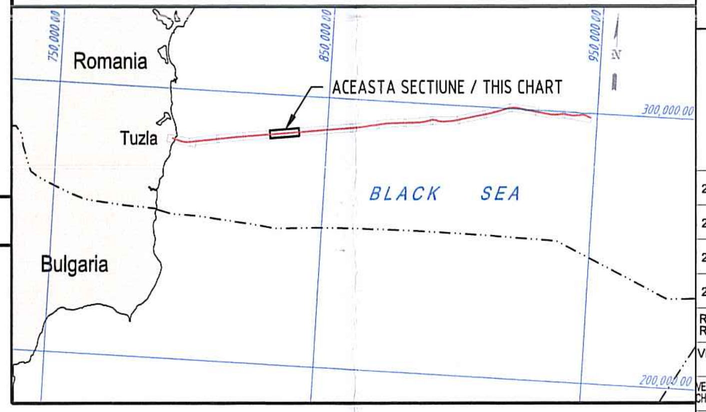
PARAMETRI GEODEZIE SI PROIECTIE

DATE GEODEZICE	STEREO 70
PROIECTIE	Dublu Stereografica
Meridianul central (MC)	25.0
Latitudine Origine	46.0
Falsa origine estica	500,000.0
Falsa origine nordica	500,000.0
Factor de scala la MC	0.99975
DATE VERTICALE	MSL (NIVELUL MARII)

GEODETIC & PROJECTION PARAMETERS

GEODETIC DATUM	STEREO 70
PROJECTION	Double Stereographic
Central meridian (CM)	25.0
Latitude of Origin	46.0
False Easting at origin	500,000.0
False Northing at origin	500,000.0
Scale factor at CM	0.99975
VERTICAL DATUM	MSL

PLAN DE REFERINTA / KEY PLAN



ACRONIME

TP - PUNCT SCHIMBARE DIRECTIE

KP - POZITIE KILOMETRICA (CONDUCTA)

IP - PUNCT INFLEXIUNE

ACRONYMS

TP - TURN POINT

KP - KILOMETRIC POINT

IP - INFLEXION POINT

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

Dimensiunile in sistem US au fost definite asfel: 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 cifrele 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.

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
2-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-C	10.02.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
2-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
2-A	04.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA

	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES
VERIFICATOR / CHECKER	I. BUTNARIU		ANRE
VERIFICATOR/EXPERT CHECKER/EXPERT — REFERAT NR. / EXPERTIZA NR. / DATA — CHECKER REPORT / EXPERTISE NO. / DATE			

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
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

ExxonMobil Exploration and Production Romania Limited

CONDUCTA DE GAZE NATURALE 30" 30-INCH PRODUCTION PIPELINE

FISA ALINIAMENT
ALIGNMENT SHEET

FISA NR. 012 DIN 016
SHEET 012 OF 016

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 20,000	ROND-EW-YDPAL-24-0014-C	DTAC	2-D

A1+ (1092x594)