

CARTOGRAPHIC SYMBOLS

	Post Survey Route with kilometre post and reverse kilometre post		Telecommunications cable position, in Service/Out of Service/Planned (As found in magenta)
	Beach Mark/Alter Course		Pipeline position, in Service/Out of Service/Planned (As found in magenta)
	Survey Route		Power cable position, in Service/Out of Service (As found in magenta)
	Coastline (from Admiralty Charts)		Chart Matchline
	Territorial Sea / EEZ limit		Approximate limit of swath bathymetry coverage (shown only in areas of fair seabed)

BATHYMETRY

Bathymetric contours in metres. Contour interval may be reduced to aid in clarity. All bathymetry reduced to Lowest Astronomical Tide (LAT)

Downslope gradient in degrees (°) as measured over the shortest significant distance

SEABED FEATURES AND SHALLOW GEOLOGY

	Coral		Isolated sonar contact with reference number (length x width x height in metres where measurable; n/nh = no measurable height)
	Gas seepage area with predominant sediment classification		Linear sonar contact, dished where partially buried
	Boulders with predominant sediment classification		Unidentified magnetic anomaly with reference number and amplitude
	Fine sediment (predominantly CLAY/SILT)		Cable/Pipeline position, as determined by magnetometer
	Coarse sediment (SAND and GRAVEL)		Seabed sample location with reference number
	Very coarse sediment (COBBLES and BOULDERS)		OC (Piston Core)
	Subsiding ROCK with predominant sediment classification (sediment thickness + target burial depth)		OS (Grab Sample)
	ROCK outcrop		DP (Diver Probing)
	HARDGROUND (Very dense/consolidated sediment)		Mn/CPT (CP) Location with reference number
	Sediment or feature boundary		Small outcrop of rock with height in metres if discernible
	Inferred Sediment or Feature Boundary		Seabed DEPRESSION or ROCKMARK with diameter (d) and depth (D) in metres, where discernible
	Approximate limit of side scan sonar coverage and survey swath		Orientation of SANDWAVE crest (with wavelength and height in metres)
	Seabed scar (trail or anchor)		Orientation of MEGARIPPLE crest (with wavelength and height in metres)
	Charted or reported wreck		Orientation of sediment ribbon
	Dumping ground database position		Fault with depth below seafloor (fractures on down side)
	Well / Platform		Isobath Contours shown at 1m interval with labels every 1m
	Oil Concession Block		Located wreck with reference no. (length x width x height in metres where measurable)
			Anchorage Area / Fishing Area (Admiralty chart position)
			Anchorage / Fishing Prohibited (Admiralty chart position)

CHART COMMENT:

GENERAL NOTES:

SURVEY VESSEL: M.V. Ocean Endeavour / M.V. Capibó Eng III
Surface positioning system: Furuno Starfix HP 1500HS / Applan POSMV WaveMaster, Verpos LDS
Underwater positioning system: Sontar/Starfix T1 USBL / Kongsberg EM120, Reson Seabat T-20
Bathymetry: Kongsberg EM1200, Kongsberg EM60 Combi
Morphology and stratigraphy: Edgetech 4200-FS, Edgetech 4200 MP, Kongsberg Chirp and prager, Kongsberg Geosonics
Magnetometer survey: SEB Seaprobe SSS/SBP, Marine Magnetics Seafloor
Geotechnical: Kullenberg Piston Core, Van Veen Grab Sampler, Neptune 3000 CPT

Target burial depth: 1.0m below seabed

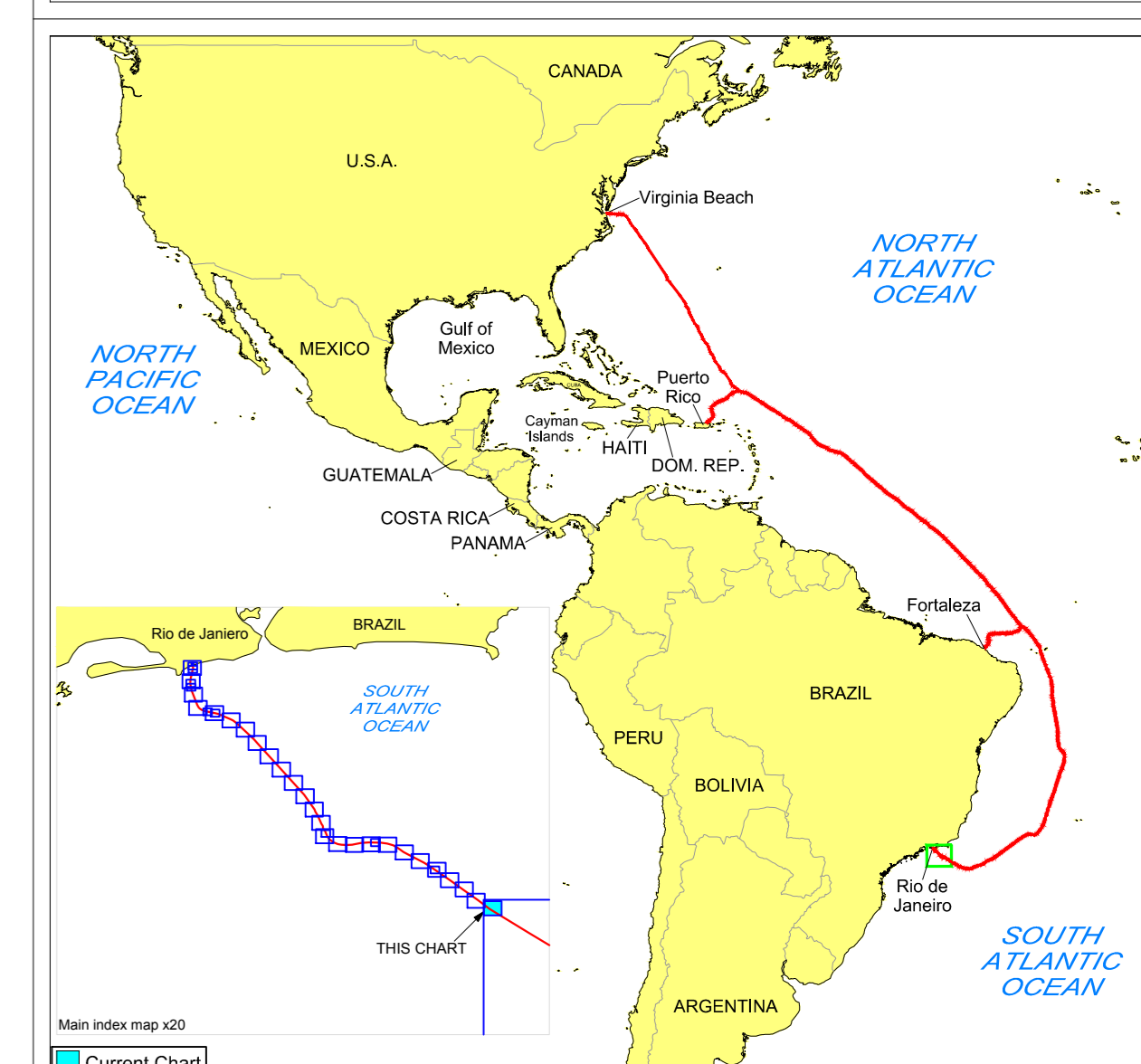
Descriptive Terms and Definitions: The criteria used for interpretation and descriptions are presented in the Survey Results

Multi-beam Processing Parameters: Depths in metres, reduced to LAT

Predictions used from tide stations: Rio de Janeiro, Brazil

GEODETIC PARAMETERS:

Projection: MERCATOR Scale Factor: 1
 Longitude of Origin: 53°W Datum: WGS84
 Standard Parallel: 7°N False Easting: 3 000 000
 Semi-Major Axis (a) (metres): 6378137.000 False Northing: 5 000 000
 Reciprocal Flattening (1/f): 298.257223563



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Survey Date: MAY to AUGUST 2016

Scale: **NATURAL SCALE 1 : 10,000 at 7°N**

(At Mean Low Water of Chart)
 TRUE SCALE 1 : 9168.0m/km

Purchaser: **TELXIUS** (Enabling Connectivity)
 Contractor: **Alcatel-Lucent**
 Surveyor: **Gardline**

Project Name: **BRUSA CABLE ROUTE SURVEY**

Document Title: **SEGMENT 7 NORTH-UP CHART CHART NO. 044 OF 071 (KP 3443.961 - KP 3453.722)**

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REVISION 01