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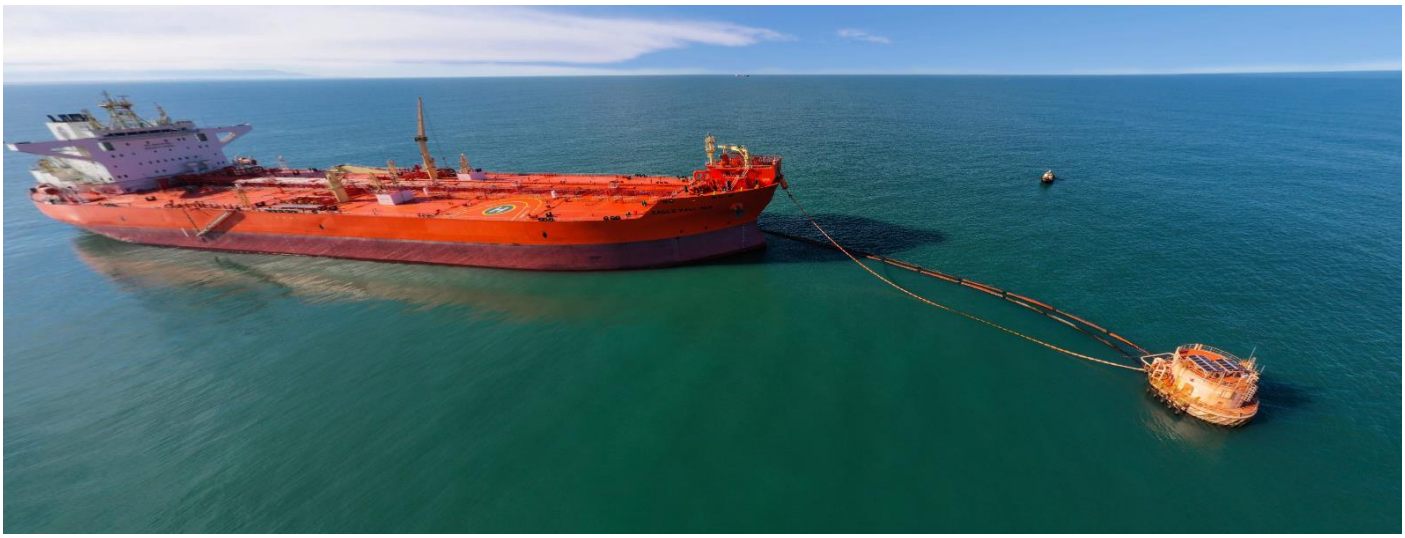
TRANSPETRO

SÃO FRANCISCO DO SUL MARINE TERMINAL
PORT INFORMATION
TEFRAN



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EDITION	REVISION	AMENDMENTS	DATE	PREPARED BY	APPROVED BY
9th	A	Updating of telephone contact numbers, additional procedures and general review	10/05/2022	Rômulo Prazeres	Thobias Possebon
9th	B	Updating the maximum distance between bow to center manifold (BCM)	14/02/2023	Rômulo Prazeres	Thobias Possebon

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CONTENTS

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1. INTRODUCTION

The purpose of this publication is to provide shipowners, charterers and vessel Masters with information on the SÃO FRANCISCO DO SUL MARINE TERMINAL, which is classified as a port despite being a single point mooring (*SPM*) marine terminal. It aims to provide detailed information on communications, requirements for QUALITY, HEALTH, SAFETY, AND THE ENVIRONMENT, mooring and the handling of cargo, as well as other pertinent matters related to the Port of São Francisco do Sul operated by TRANSPETRO.

Petrobras Transporte S.A.- TRANSPETRO is available at any time to receive suggestions, corrections or recommendations on the subjects addressed in this document, which is merely intended to supplement and not to replace or alter any type of national or international legislation, instructions or official publications. Terminal Management appreciates any feedback or complaints that are brought to its attention both with regards to the attitude and behavior of TRANSPETRO personnel, as well as the quality of the services provided.

Petrobras Transporte S.A.- TRANSPETRO and the Terminal's administration are able to offer support to any vessel performing operations at the Terminal as necessary.
Requests for additional copies of this manual may be sent to:

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The most recent version of this Port Information booklet can be found at the following web address: https://transpetro.com.br/transpetro-institucional/nossas-atividades/dutos-e-terminais/informacoes portuarias.htm

2. DEFINITIONS

Spring tide – Conditions under which tides reach their highest levels.

Low tide – Conditions under which the tide reaches its lowest levels within a determined period throughout the year.

IMO – International Maritime Organization

ISPS Code **–** International Ship and Port Facility Security Code

BREAKWAY COUPLING – Automatic hose decoupling device.

VTS (Vessel Traffic Service)

ISGOTT – International Safety Guide for Oil Tankers and Terminals

SOLAS – International Convention for the Safety of Life at Sea

BP (Bollard Pull) - Longitudinal static traction force

GIAONT – Operational Vessel and Terminal Inspection and Monitoring Group.

DWT – Deadweight Tonnage

COW (Crude Oil Washing) - cleaning of cargo tanks using the product transported by the vessel itself

LCP – Local Contingency Plan

ETA – Estimated Time of Arrival

SPM (Single Point Mooring or Single Buoy Mooring)

VHF (Very High Frequency) **–** Radio frequency used in maritime operations.

BEAUFORT SCALE – Scale used to measure the intensity of winds based on ocean conditions.

BUNKER – Marine fuel intended for use in ships.

SLOP – Waste tank.

CRE – Emergency Response Center

CALM (Catenary Anchor Leg Mooring) - system used in the anchoring and installation of single point mooring/subsea hose units.

GANGWAY – Straight metal structure fitted with lateral handrails. A gangway's steps are self-leveling in accordance with the respective slope and its floor area is composed of anti-slip materials. It is placed parallel to the side of the vessel using a retractable platform that is fixed to the deck.

PILOT LADDER – Flexible ladder consisting of rope with wooden and/or rubber steps and designed in compliance with the SOLAS convention.

MARINE PILOT (MOORING MASTER) – Professional holding a bachelor's degree in Nautical Sciences and receiving Second Officer training that assists the Tanker Master during approach maneuvers, mooring/unmooring and, at the discretion of the Terminal, the transfer of petroleum and its derivatives.

SSSCL – Ship/Shore Safety Check List (ISGOTT).

3. NAUTICAL CHARTS AND REFERENCE DOCUMENTS06

3.1 Nautical Charts

The location of the single point mooring, its accessory equipment, and subsea pipelines are shown in the following nautical charts:

Area	Anchoring and Approaching Port	
	Brasil (DHN)	British Admiralty
Anchoring and Approaching Port	1804	555

3.2 Other Publications:

Port Authority Standards and Procedures - RS www.marinha.mil.br/cprs/npcp	Directorate of Ports and Coast - DPC
Navigational support on the South Coast - South Coast Route	Directorate of Hydrography and Navigation - DHN
Admiralty Sailing Directions NP5-South America-Vol.1	The United Kingdom Hydrographic office – UKHO
Guide to Tanker Ports	Shipping Guides Limited - U.K. www.portinfo.co.uk

4. DOCUMENTS AND EXCHANGE OF INFORMATION

The following items must be provided by the Terminal or vessel as indicated in the table.

Information	Prepared by:			Delivered to:			Comments
	Terminal	Vessel	Both	Terminal	Vessel	Both	
Prior to Arrival							
Estimated Arrival (ETA) and Vessel information		X		X			In accordance with I SGOTT
Essential Terminal information	X				X		In accordance with I SGOTT
Prior to transfer of cargo or bunker							
Description of cargo, slop and ballast on board.		X		X			In accordance with I SGOTT
Information essential to operations	X				X		In accordance with I SGOTT
Vessel / onshore Safety Checklist			X			X	In accordance with I SGOTT
During Transfer of Cargo or Bunker							
Repeat Vessel / onshore Safety Checklist			X			X	In accordance with I SGOTT
Once cargo transfer is complete, prior to vessel departure							
Information necessary in unmooring vessel			X			X	Quantity of fuel and water on board
Once unmooring operation is complete, upon the vessel's departure from the Port							
Information regarding vessel's departure from port		X			X		Time at which Marine pilot boards vessel and departure from the Port

5. DESCRIPTION OF THE PORT OR ANCHORAGE

5.1 General Description

The São Francisco do Sul Marine Terminal consists of a 323-ton Single Point Mooring that was manufactured by the company Bluewater (which constitutes the receiving system) and its administrative facilities located on the island of São Francisco do Sul, in the state of Santa Catarina's Ubatuba, near Enseada beach and southwest of the lighthouse located on the island of Paz.

Vessels approaching from the north will observe that, beginning at the point of Caieira, the region's coast of stretches for approximately 18 miles in a general southern direction up to Pontal da Barra, which forms the northern bank of the São Francisco do Sul river. The elevation of the coast at this point is low, which renders the Maratuba mountain, which has a relatively high elevation, visible off in the distance.

The foliage covered Brijituba hill is located south of the point of Caieira approximately a mile and a half from the water.

The Sai and Fora de Itapema islands are located 5.5 and 11 miles from the point of Brijituba, respectively, and a half mile into the sea.

The São Francisco do Sul River flows into the sea through a double-branched delta that forms the island of São Francisco do Sul. The island has a low elevation and is marked by the presence of swampy regions. The northern arm of the delta is called Barra Babitonga or Barra São Francisco and provides the access to the port of São Francisco do Sul, which is located on the island of the same name, approximately six miles upstream.

The southern arm, which is known as Araquari, is approximately 0.5 miles wide and is largely obstructed by sandbars, with the region consequently subject to heavy surf. This branch of the delta may only be navigated by small vessels and crew that are familiar with the region and is completely obstructed approximately 8 miles upstream by a rockfill that connects the local highway and railroad system to the mainland.

5.2 Location

5.2.1 Coordinates

The single point mooring at which vessels destined for the SÃO FRANCISCO DO SUL MARINE TERMINAL must moor is located at the following geographical coordinates:

Latitude:	26° 13' 52" S
Longitude:	048° 25 03" W
Lights:	ISO **A.** FL 0.3 sec. Ecl. 2.7 sec.

- The terminal's single buoy mooring presents the following characteristics:

SINGLE POINT MOORING

Manufacturer: Bluewater
Capacity: Tankers with a Gross Weight Tonnage of up to 200,000 Tons
Hull diameter: 12 meters
Skirt diameter: 15 meters
Height of mooring body: 5 meters
Total height: 15.70 meters

Weight: 323 tons
ABS (American Bureau of Shipping) Certification

The following readings for the São Francisco Terminal's Single Point Mooring are taken at the Operation Control Center (CCO):

- Wind speed and direction;
- Tension in mooring line;
- Alarm indicating leaks in the Single Point Mooring's internal Swivel;
- Sensors for opening and closing of the Single Point Mooring's access doors;
- Readings for the product being handled: flow, temperature and pressure;
- System for measuring distance between vessel and Single Point Mooring;

5.3 Approaching the Terminal

5.3.1 General Description

The João Dias, Grande and Barbosa hills are the landmarks that are first visible to navigators approaching the terminal along the coast during daylight hours. Barbosa, at 280 meters high, is the hill with the highest elevation in the region at which the port of São Francisco do Sul is located and the the closest to the single buoy mooring in a general southeast direction.

When approaching the Terminal, navigators will then pass the lighthouse located on the island of Paz (international number 1437, latitude 26o 11' 00" S, longitude 048 - 29' 00" W, 1 20-sec. white flash, height of light 84 m, range of 26 miles, radio lighthouse not available) and the hills of João Dias, Ubatuba hill and Pão de Açúcar, which is located in the interior of the city and has a cross positioned on its summit and is visible from the coast. The hill Montão de Trigo, which has a slightly lower elevation than Pão de Açúcar and is located immediately to the east, may also be visible from vessels.

Vessels approaching at night and navigating at a distance of less than 15 miles from the coast must moor at the lighthouse located on island of Paz, which vessels will reach shortly after the lighthouse at Caioba Fl. W 5 sec. height 15 M, which is the point of arrival for ships destined for the port of São Francisco do Sul and the São Francisco do Sul Marine Terminal's Single Point Mooring.

The same points located in the region of São Francisco do Sul should be visible to well-positioned vessels approaching from the east and that are bound for the port or São Francisco do Sul Marine Terminal's Single Point Mooring. Additionally, during nighttime approaches the lighthouse located on the island of Paz, which has a range of 26 miles, should also be visible to navigators. During daytime approaches, the island of Paz is visible to the naked eye from a distance of approximately 30 miles. The lighthouse located on the island of Paz is the region's only clear reference point that can distinguished from the glare of the city during nighttime hours and can be seen from a distance of approximately 30 miles.

Navigators approaching from the south, if traveling less than 10 miles from the coast, may use the small islands of Remédios and Tamboretes as a reference in arriving at the port of São Francisco do Sul and the Terminal's Single Point Mooring. As vessels draw closer, the hills Pão de Açúcar, Montão de Trigo, Ubatuba and João Dias are visible, and ships are oriented by the Ilha da Paz lighthouse.

Once navigators have passed the Ponta do Vigia lighthouse, Fl. W 6 sec. 15 M, which is located Itapocoróia, there are no lighthouses with a significant intermediate range in the area. For safety reasons vessels therefore need to navigate past the small islands of Remedios and Tamboretes, sailing outside the 20-meter isobath that is located an average distance of 6 miles from the coast, as there are no isolated hazards located to the east of this line.

When approaching São Francisco do Sul and the mooring facilities for the purposes of carrying out operations at the São Francisco do Sul Marine Terminal, the Ilha da Paz lighthouse and the beacons located on the Terminal's Single Point Moorings will be visible from a distance of approximately 5 miles.

5.3.2 Anchorages

Vessels that require anchoring must position themselves a minimum of 2 miles north of the single buoy mooring. Anchorages for different types of ships are also available. These anchorages are marked on navigational charts and may be used by vessels.

5.3.3 Aids to Navigation

Navigation through the use of radar is safe since points located along the coast offer sharp contours and a solid level of reflection. Radar systems are able to provide consistent coverage in the area and, during foggy conditions, provide orientation to vessels with inoperable radar.
The Single Point Mooring is fitted with an AIS (Automatic Identification System) system that consists of 5 synthetic signals: a single central single located on the Single Point Mooring itself and four additional signals arranged within a 500-meter radius indicating a safe zone.

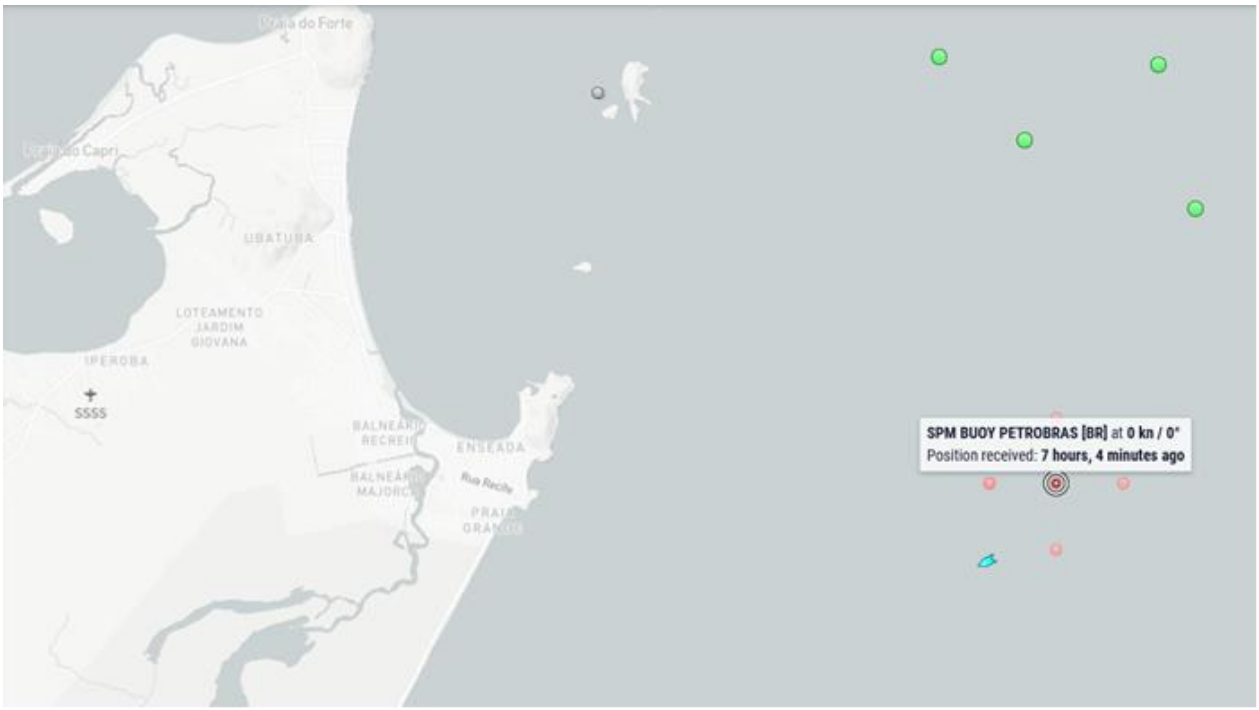


Figure 1: Single Point Mooring's AIS

5.3.4 Bathymetry

The area was surveyed between Enseada beach, which is located in the city of São Francisco do Sul in the west, up to a water depth of 32 meters at the region's eastern end, as shown in figure 2 below.

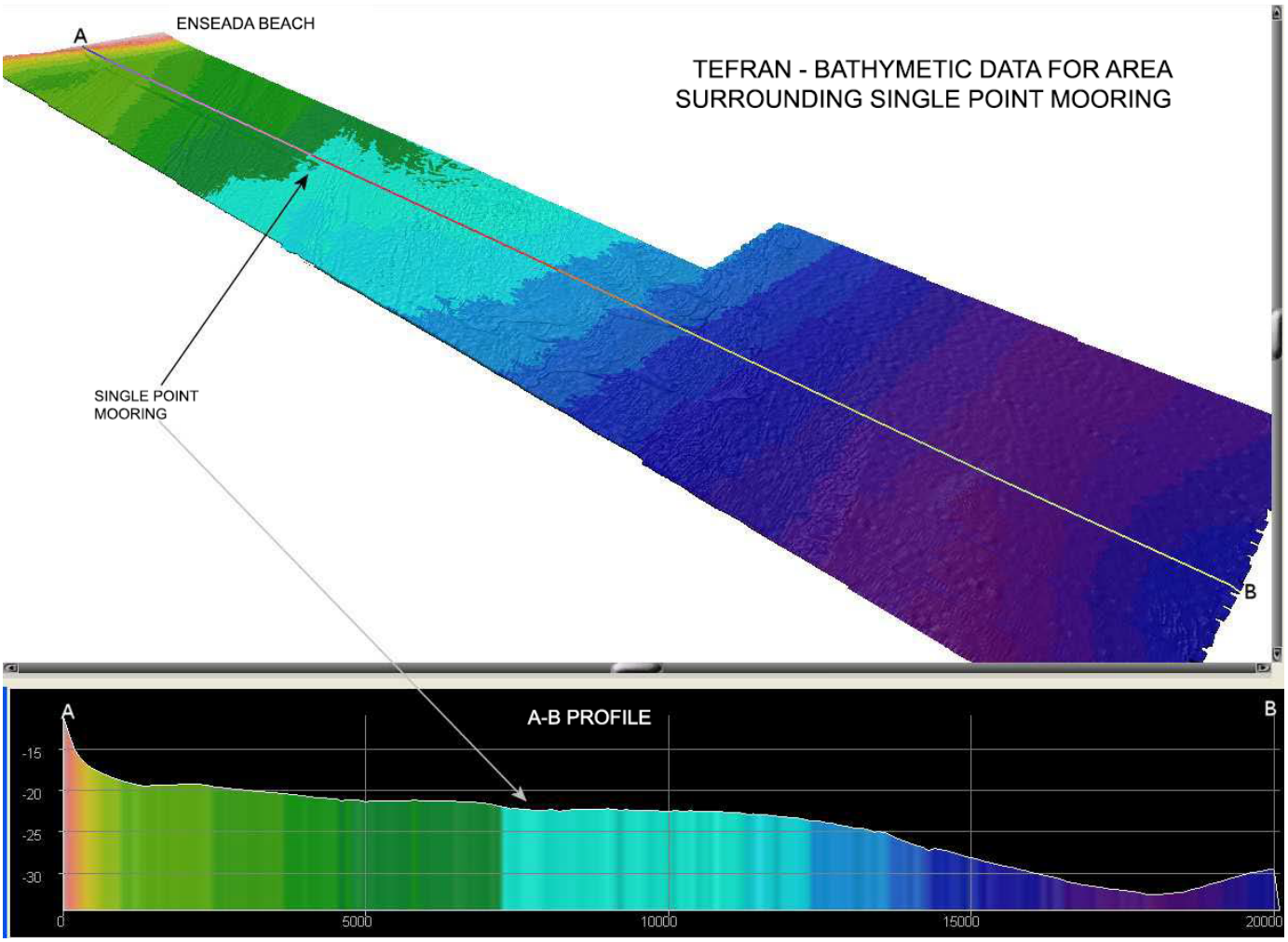


Figure 2 – Bathymetric profile in the area subject to surveying

The area's profile is generally extremely flat; the largest gradients are located near Enseada beach and do not exceed 1.1 degrees. Throughout the remaining area the average gradient does not exceed 0.1 degrees.

5.3.5 Pilotage

The Terminal offers the services of a duly qualified Marine Pilot (Mooring Master and Loading Master). Such a professional will advise the ship's Master with regards to the maneuvers involved in the vessel's approach and mooring and unmooring to the single point mooring, as well as coordinate connection/disconnection operations and cargo transfer.

The use of a Mooring Master and Loading Master is mandatory for all vessels that are scheduled carry out operations involving the loading and unloading of products at the Terminal.

These Marine Pilots (Mooring Master) will provide the vessel's Master with orientations starting at the moment at which the vessel in question embarks from the anchorage.
Mooring Masters and Loading Masters will remain on board the vessel in order to continue to assist the ship during operations. These professionals are responsible for supervising operation of the Terminal's vessels.
It is important to note, however, that each vessel Master is solely responsible for the maneuvers performed. **Marine Pilots (Mooring Master) will be considered to be employees of the shipowner and will not be held responsible or assume joint liability for any occurrences or omissions made during operations.**

The acceptance of the services provided by Marine Pilots (Mooring Master) will imply to the tanker's Master *ipso facto* acceptance of the above-mentioned conditions.

Similarly, Transpetro will not assume any form of liability with regards to damages, accidents, losses or any occurrences or omissions resulting from acceptance of the orientations, opinions, actions or intentions of the Mooring and Loading Master on the part of the vessel's Master. Masters shall be free to agree or disagree with orientations provided by Marine Pilots (Mooring Master) as they deem appropriate, and the opinions of vessel Masters will prevail in such cases.

If the vessel Master would prefer not to accept the above conditions, they must inform the vessel's Agent, providing them with orientations on how to proceed depending on the decisions made by the vessel Master.

Vessels will be held responsible for any costs that are incurred as the result of the Master deciding against orientations from the Mooring or Loading Master.

Additionally, the ship's Master must inform the Marine Pilot (Mooring Master) of any abnormalities or difficulties encountered in relation to the vessel itself, such as defects in navigational and mooring equipment, rudders, malfunctions in engine rooms or boilers or a lack of required equipment that may generate hazards during operations, mooring and the vessel's departure.

Mooring and Loading Masters must be immediately informed of any situation that may pose a threat to the safety of the vessel or system, as well as any operational occurrences that may result in changes in existing operating conditions.

Vessels must be moored in a manner that adheres to criteria for safety in vessels and the single buoy mooring.

Marine Pilot (Mooring Master) will remain on board vessels during throughout the period in which the vessel is moored at the Single Point Mooring and will notify the Terminal Manager of any operational failures through means of the Shift Supervisor. In such cases, it may be decided that the vessel is to be unmoored from the Single Point Mooring and will only be received again after the appropriate corrective measures have been implemented.

Mooring and Loadings Master will provide the vessel Master with written notice of any failure to comply with established operating standards once the vessel has arrived at the Terminal.

5.3.6 Use of Brazilian Flags at Port

The Brazilian flag must remain hoisted on the main mast of domestic and foreign ships while at port.
Ships are cleared to fly the QUEBEC signal flag (request for free pratique).

5.3.7 Tugboats and Port Services

5.3.7.1 Tugboats

There is a single tugboat, with a static traction of 34.07 tons available at the São Francisco do Sul Marine Terminal for the purposes of providing assistance during Pull Back maneuvers.

5.3.7.2 Vessels used in Mooring and Personnel Transport

The terminal's vessels will offer assistance in mooring and unmooring operations, as well as the connecting and disconnecting of hoses, under the orders of the Mooring Master and Loading Master. The Terminal will generally make two vessels available at any given time. In addition to this operational assistance, these watercraft will be used to transport Terminal personnel, agents, port authorities and Brazilian crew members from Tankers flying the Brazilian flag. Foreign crewmembers **are prohibited from boarding / unboarding** at the terminal's facilities in accordance with procedures contained in the terminal's security plan and guidelines from the Brazilian Federal Police.

5.3.7.3 Characteristics of Vessels used in Mooring and Personnel Transport

Vessels used to assist in mooring operations present the following characteristics:

- VHF maritime radio
- GPS – Global positioning system
- Vessel draft not exceeding 2.00 m
- Motor propulsion of 700 hp and vessel speed of 10 knots
- Capacity for a minimum of 16 passengers
- Minimum length of 16m
- Certification to carry out operations on the open sea

5.3.7.4 Use of Terminal Vessels during Nighttime Hours

Except in cases involving a force majeure, the terminal's vessels are not used to transport agents or crew members from the NTs during nighttime hours.

5.3.7.5 Terminal Vessels used to Transport Materials

The transporting of food or materials to Tankers must, as a general rule, not be carried out by terminal vessels, which do not present the characteristics required for this type of activity. Terminal vessels may only be used in such operations upon a prior assessment being carried out and it being determined that normal operations are not affected by terminal vessels providing services to tankers. Furthermore, it must be determined that there are no difficulties or risks that existing during handling of such materials Foreign-flagged vessels must contact their agents in order to contract vessels to perform such activities.

5.3.8 Navigational Risks

Presence of rocks at Itapema and surrounding islands - located at the point of sail at a 316º angle from the lighthouse on the island of Paz and a distance of 9 miles, with rock formations along the water's edge.

Tamboretes Islands - located at the point of sail at a 190º angle from the lighthouse on the island of Paz and a distance of 11.5 to 13 miles. Visible above the surface of the ocean, with rock formations along the water's edge.

Parts of the Remédios islands - located at the point of sail at a 195º angle from the lighthouse on the island of Paz and a distance of 18 miles. Rock formations consistently visible above the surface of the ocean.

Tipitinga Island - located at the point of sail at a 195º angle from the lighthouse on the island of Paz and a distance of 20 miles. Rock formation consistently uncovered, N.N.W rock formation presenting a depth of 7.7 meters (25.2 feet).

Island and Rock Slab at Ilha Dos Lobos - located at the point of sail at a 192º angle from the lighthouse on the island of Paz and a distance of 21 miles.

Rock formation consistently visible above the surface of the ocean, with rocks located along the water’s edge.

Pedra do Lobo Rock Formation - located at the point of sail at a 025º angle from the lighthouse on the island of Paz and a distance of 0.9 miles. Consistently visible above the surface of the ocean.

Pedra da Baleia Rock Formation - located at the point of sail at a 040º angle from the lighthouse on the island of Paz and a distance of 0.8 miles. Consistently visible above the surface of the ocean.

Islands of Sororoca Grande and Sororoca Pequena - located at the point of sail at a 196º angle from the lighthouse on the island of Paz and a distance of 0.5 miles.

Pedra do Cação Rock Formation - located at the point of sail at a 196º angle from the lighthouse on the island of Paz and a distance of 1.8 miles. Consistently visible above the surface of the ocean.

Pedra Filhote do Cação Rock Formation - located at the point of sail at a 200º angle from the lighthouse on the island of Paz and a distance of 1.8 miles. Consistently visible above the surface of the ocean, with a bank located with a depth of 7.5 meters (24.5 feet) to the south.

Rock formation located at the point of sail at a 200º angle from the lighthouse on the island of Paz at a depth of 1.6 meters (5.2 feet) and a distance of 2.63 miles.

Pedra da Corvina rock formation - located at the point of sail at a 200º angle from the lighthouse on the island of Paz at a distance of 1.8 miles. Consistently visible above the surface of the ocean.

João Dias bank - limits marked to the south at the point of sail located at a 295° angle and the limits of the 324° marking, both from the lighthouse on the island of Paz and at respective distances of 1.9 and 2.8 miles, with a minimum depth of 4.3 meters (14.1 feet).

Northern Bank at Cabo João Dias - limits marked to the north at the point of sail at a 304° angle from the lighthouse located on the island of Paz and a distance of 3 to 4 miles. Depth of less than 5 meters (16.3 feet) along its entire length.

Bank with a depth 4.4 meters (14.4 feet) **located at the island of Paz lighthouse's 299° marking** at a distance of 3.1 miles.

Bank with a depth 4.6 meters (15.1 feet) **located at the island of Paz lighthouse's 300° marking** at a distance of 3 miles.

Bank with a depth 5 meters (16.3 feet) **located at the island of Paz lighthouse's 315° marking** at a distance of 4.1 miles.

Bank with a depth 5 meters (16.3 feet) **located at the island of Paz lighthouse's 315° marking** at a distance of 4 miles.

Bank with a depth 4.8 meters (15.7 feet) **located at the island of Paz lighthouse's 321° marking** at a distance of 3.9 miles.

Galharada Bank - bank of a considerable length, the eastern limits of which are marked by the point of sail at a 290° angle from the lighthouse located on the island of Paz at a distance of 4.4 miles. The bank stretches south to the Trincheira lighthouse's 052° marking, and much of its area is frequently submerged. There is a red buoy located at distance of 1.9 miles from the Trincheira lighthouse.

There is a pipeline located in the area **between Pontal and Capri** marked with a maritime boundary on navigational charts. Vessels are prohibited from anchoring in this area. The area is marked by a lighted buoy and beacon.

Vessels are prohibited from navigating and anchoring within the 0.5-mile stretch along each side of the submarine pipelines, which stretch towards the west from the Single Point Mooring to São Francisco do Sul Island's coastal area. This restricted area also includes a 1-mile radius around the Terminal's single buoy mooring.

Navigation through the use of radar is safe since points located along the coast offer sharp contours and a solid level of reflection. Radar systems are able to provide consistent coverage in the area and, during foggy conditions, provide orientation to vessels with inoperable radar.

5.3.9 General Restrictions

Approach and mooring maneuvers may be carried out during daylight hours and at night. This means that maneuvers may be carried out at the terminal 24 hours per day, provided that the following metocean conditions are found in the area of the Terminal:

- MOORING DURING DAYTIME HOURS:
- Wind < 25 knots.
- Visibility > 0.5 nautical miles

- MOORING AT NIGHT:
- Wind < 20 knots.
- Visibility > 1.0 nautical mile

- Unmooring:

There are no restrictions for unmooring operations.

- Unmooring under poor weather conditions:

- Whenever winds in the region reach speeds of 25 knots, the ship and its crew must be placed in a state of alert.
- Whenever winds in the area reach speeds of 30 knots or more than 50 tons of traction is exerted upon mooring lines, unloading operations must be suspended and vessels must prepare to disconnect hoses.
- Whenever winds in the area reach speeds of 35 knots or more than 60 tons of traction is exerted upon mooring lines, the ship must be disconnected and immediately unmoored.
- Mooring and Loading Masters may interrupt operations in situations involving parameters that are lower than those described above, if, upon analyzing the situation, they conclude that continuing operations will pose a risk to the Terminal's facilities, the vessel, its crew, support teams and/or the environment.

See the table provided below for more detailed information:

MAXIMUM ALLOWABLE ENVIRONMENTAL PARAMETERS FOR VESSELS		
ACTIVITY	**DESCRIPTION**	**PIOR CONDIÇÃO ACEITÁVEL**
NIGHTTIME APPROACHES AND MOORING	WAVE HEIGHT/SWELL (METERS)	1,5
	WIND (KNOTS)	20
	CURRENT (KNOTS)	N/A
	VISIBILITY (NAUTICAL MILES)	> 1.0
DAYTIME APPROACHES AND MOORING	WAVE HEIGHT/SWELL (METERS)	< 2.5
	WIND (KNOTS)	25
	CURRENT (KNOTS)	N/A
	VISIBILITY (NAUTICAL MILES)	> 0.5
INTERRUPTING OF PUMPING OPERATIONS	ALTURA DE ONDAS/SWELL (METRO)	3.0
	WIND (KNOTS)	≥ 30
	CURRENT (KNOTS)	N/A
	TENSION ON MOORING LINES (TONS)	≥ 50
DISCONNECTION OF HOSES / UNMOORING	WAVE HEIGHT/SWELL (METERS)	> 3.0
	WIND (KNOTS)	≥ 35
	TENSION ON MOORING LINES (TONS)	≥ 60

5.4 Maneuvering Area

The maneuvering basin used to approach the Terminal's Single Point Mooring extends throughout its peripheral areas within an unlimited radius in the NE and SE quadrants and at a distance of up to 2 miles in the NW and SW quadrants.

Ocean depths the area of the Single Point Moorings may vary between 20 to 25 meters. The following isolines run parallel to the coast:

Isoline	Distance from the Coast
20 meters	4 miles
50 meters	22 miles

Tides in the region surrounding the Single Point Mooring presents the same specific characteristics and irregularities seen in tidal levels at the port of São Francisco do Sul (see Tide Chart - DC 16 - 15). Tidal variations in the area of the SPMs generally occur 40 minutes prior to those seen at the port. Tides in the area have an amplitude that is slightly lower than the tides charted for the above-mentioned port.

5.4.1 Aids to Navigation and Mooring Equipment

The Marine Pilot (Mooring Master) will assist the vessel's Master in correctly positioning the vessel during mooring in order to allow floating hose lines to be connected.

5.4.2 Depth Control

Vessel draft during mooring, loading and unloading operations and unmooring from the Single Point Mooring is limited to 18 meters at TEFRAN year-round.

5.4.3 Maximum Dimensions

Vessels mooring at TEFRAN must have a maximum weight of 200,000 tons.

5.5 Environmental Factors

Weather conditions at the Terminal can generally be considered conducive to operation of vessels.

During the winter months, storm winds are likely to last more than 48 hours.

Additional meteorological information for the area is provided in the following sub-items:

5.5.1 Predominant Winds

Records indicate that the strong winds found in the region originate in the southern quadrant and are generated by the formation of cold fronts unstable weather.

One of the strongest winds ever recorded in the region, which occurred on 05.18.82, reached speeds of approximately 130 km/h, and originated in isolation from the NW quadrant during a short interval of time.
Vessels may only moor to the Single Point Mooring in wind speeds of up to 35 knots to guarantee that the Terminal's system is operated under safe conditions.

Mooring and Loading Masters may assess whether it is necessary to unmoor the vessel in wind conditions that do not exceed these limits.

5.5.2 Wave conditions

Winds originating from the southern quadrant are generally caused by the arrival of cold fronts.

Waves with an amplitude greater than 3.5 meters are rarely recorded in the region. Waves with a height of 2.5 meters generally occur in the region due to winds arriving from the south, particularly during the winter months from June to October.

The maximum limits for wave height/swell with regards to operations carried out by ships moored to the Terminal's SPM is controlled/measured through tension in the mooring cable. These limits are provided in the table contained in item 5.3.9.

5.5.3 Rainfall

The highest levels of rainfall seen in the region generally occurs at dusk and sometimes persists throughout the nighttime hours. This rainfall is more frequent during the spring and summer months. The average annual rainfall in the region is approximately 980 mm. The incidence of hail or snow is historically uncommon in the region.

5.5.4 Thunderstorms

Thunderstorms occur more frequent during the spring and summer months, particularly in the afternoon and early evening. The factors that contribute to the higher incidence of thunderstorms are the arrival of cold fronts and high temperatures seen during daylight hours.

5.5.5 Visibility

Visibility in the region is generally satisfactory; however, lowlying clouds and fog may be present during early morning hours in the autumn and winter months. During the summer months, there is sometimes a dry mist in the area that decreases visibility.

5.5.6 Tidal and Other Currents

It is not possible to precisely correlate the currents seen in the area of the Terminal with local winds since currents, like local waves, are generated by offshore winds that do not always correspond to local winds.

It is, however, through means of observation, possible to predict that increases or decreases in offshore generating winds will correspond to an increase or decrease in the intensity of the local current.

It can also be concluded that, due to the complete absence or decrease in the intensity of winds, the coastal current in the vicinity of the single point mooring is greatly influenced by tidal currents from the Barra do Rio São Francisco bank.

5.5.7 Variations in Water Levels

The average amplitude of the tides present at the Terminal is 1.20 meters (4 feet). Larger variations in water levels of up to 2.00 meters (6.6 feet) are seen during the spring tide. The maximum allowable draft for vessels mooring at TEFRAN (18 meters) was calculated while taking worst case tide conditions into consideration.

6. TERMINAL DESCRIPTION

6.1 General Description

SÃO FRANCISCO DO SUL MARINE TERMINAL consists of the receiving, storage and transfer systems.

The Terminal's Single Point Mooring is permanently connected using two parallel floating Double Carcass Hose strings with a diameter of 20' and a total length of approximately 300 meters (951.2 feet).

At the end of each line that is connected to vessels, there is a special hose with a 16' diameter called a Tanker Rail Hose, that is specifically used to connect to the ship's manifold. The ends of the Tanker Rail Hose are fitted with a butterfly valve and blind flange (standard 16" 150 PSI-ANSI B.16.5 flange).

A double braided polyamide (nylon) mooring hawser with a length of 90 meters, which is fitted with lace-on floats with a circumference of 21", is also connected to the Single Point Mooring.

The single buoy mooring consists of a rotating structure located at the top of the mooring that is intended to be used with mooring lines, to connect floating hoses, and achieve balance within the system, respectively.

The Terminal's Single Point Mooring is anchored using eight mooring chains with a diameter of 76 mm and a length of approximately 300 meters each (2 150 m shots on each R4 grade mooring chain). These anchor chains are arranged in a position that is radial and equidistant to the SPM's body, and a 15-ton HHP model anchor is fitted to the end of each each mooring chain.

The Single Point Mooring's eight anchor chains form a horizontal 40° angle with the connection to the mooring and reach the ocean bottom at a distance of approximately 50 meters from the single point mooring's peripheral area.

There are two 20" diameter submarine Double Carcass hoses that make use of a Chinese Lantern configuration and descend from the bottom of the Single Point Mooring. These hose strings are attached to the subsea manifold that connects the submerged pipelines.

Two 34' diameter steel pipelines connect to the subsea manifold located on the seabed. These pipelines are positioned on the ocean floor and are aligned with the Single Point Mooring's central axis. They connect to the Terminal's storage tanks and stretch for approximately 11.5 km in an east-west direction.

The Terminal's receiving system consists of 2 16" connectors and under normal conditions allows vessels to unload cargo petroleum at a rate of 10,000 m^3/h (5,000 m^3/h per line). The pressure in the ship's unloading manifold during operations is approximately 10 kgf/cm^2 (150 psi).

A beacon has been positioned at the point at which the subsea pipelines reach the coast. This beacon displays ISO A. FL 0.3 sec flashes of light, Ecl. 2.7 sec., which indicates the direction of the pipelines.

The receiving system described above is shown on DHN nautical chart 1804 from the Brazilian Navy.

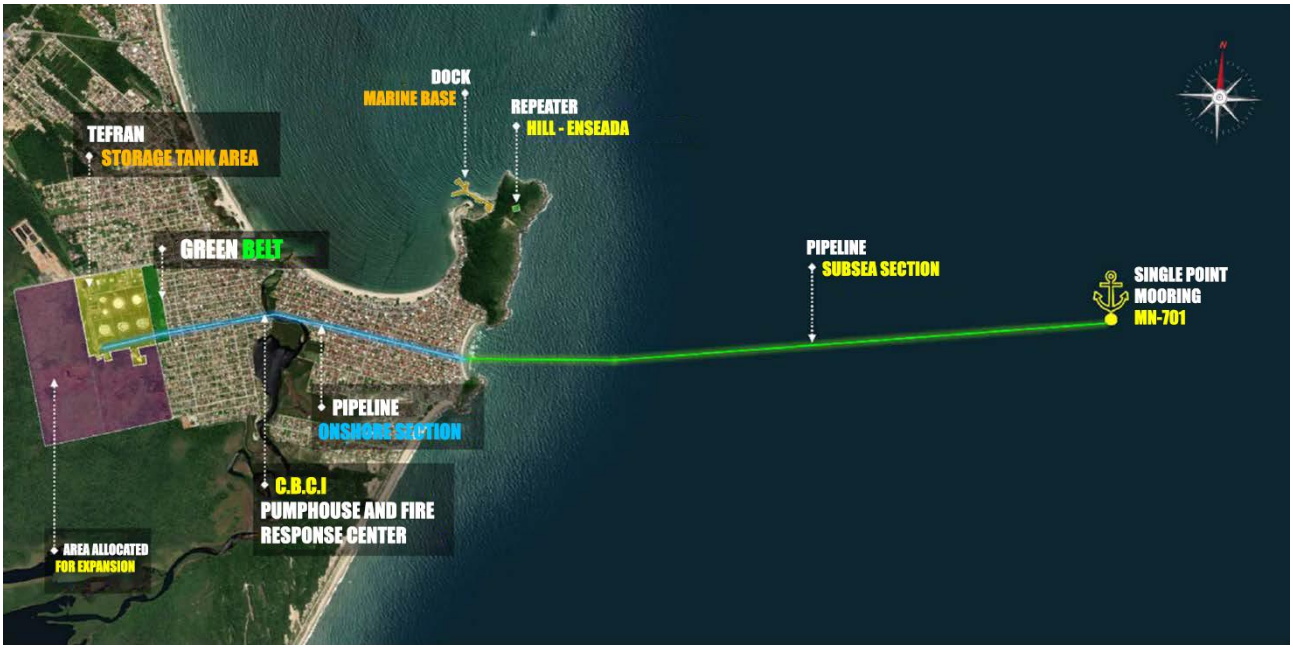


Figure 3: Aerial view of the Terminal's facilities.

6.2 Support Services for TEFRAN's Receiving System

The Terminal's Merlusa and Pampo vessels provide support during mooring operations and connection to the Single Point Mooring, as well as vessel unloading operations. These watercraft were specifically designed and adapted to offer port assistance services. The vessels Merlusa and Pampo are equipped with VHF maritime radio, radar equipment, and GPS.

These vessels' moorings and land support services are located at Enseada point, approximately 4 miles from the single buoy mooring.

This dock facility is also the site of the SÃO FRANCISCO DO SUL MARINE TERMINAL's Maritime Activities office. These offices have a VHF radio, which is set to channel 14, for the purposes of providing support for offshore operations.

6.3 Storage System

Tanks, as well as hose strings and pipelines, are not equipped with a heating system.

6.4 Transfer System

The Terminal's transfer system includes equipment that is needed to transfer the petroleum stored in the storage system to the Presidente Getúlio Vargas Refinery (REPAR) located in Araucária (PR).

The transfer system's pipeline to REPAR allows for an average flow of 2,000 m^3/h and makes use of three primary pumps.

6.5. BALLAST SYSTEM

6.5.1. Ballast Receiving System

Vessels discharging a mixture of water/oil at the Terminal are prohibited from performing conventional tank cleaning operations as TEFRAN does not have a system that can be used for these purposes.

7. PROCEDURES

7.1 VESSEL PROCEDURES PRIOR TO ARRIVAL

Requests from oil tankers must be carried out in a manner that provides their agents and, consequently, the Terminal, with an estimated time of arrival that is as accurate as possible.

7.1.1 Radio Procedures Prior to Arrival

Vessels destined for the SÃO FRANCISCO DO SUL MARINE TERMINAL must send their ETA directly to their agents 72 hours in advance.

7.1.2 Use of VHF Radio

When approaching São Francisco do Sul, vessels must attempt to contact the Terminal using channel 14, providing their ETA a minimum of two hours in advance.

During maneuvers and periods of time at which Tankers are moored at the Terminal, personnel involved in operations must maintain consistent VHF radio contact using channel 14.

7.1.3 Required Conditions for Arriving Vessels

- In order to ensure that maneuvers and operations carried out during approach of the vessel are as safe and efficient as possible, vessels must be capable of a minimum level of performance and offer specific conditions.

- The maximum vessel draft allowed at the Terminal is 18 meters. This condition is intended to ensure that there is sufficient space below the keel even in extreme ocean conditions.

- Vessels mooring at TEFRAN must have a maximum weight of 200,000 tons.

- Vessels must offer satisfactory conditions for maneuvering, particularly with regards to its engine and rudder.

- Ships' engines must offer the appropriate conditions for remaining in a state of readiness throughout the entire period for which the vessel is moored to the Single Point Mooring and beginning operations immediately once required.

- The crane on the vessel's port side unloading manifold must be in perfect working condition and able to hoist a minimum of 10 tons to a height of one meter from the vessel's side.

- The vessel's windlasses (drums, brake system, smith breaks, etc.) must present conditions that allow the ship's messenger line to unwind properly.

- There must be a minimum distance of 0.28 meters between the roller fairleads located on the vessel's bow (or a smaller bow fairlead diameter) in order to allow for passage of the shackle that attaches the Single Point Mooring's mooring line to the ship's messenger line.

- The maximum allowable distance between the bow and center manifold (BCM) is 140 meters for both single point moorings.

- The flanges on the vessel's manifold outlets must be of 150 PSI ANSI-B.16.5 standard, with a 16" (400 mm) diameter.

- The two flanges on the discharge manifold that is to be used must have a minimum 2 meters of spacing, a maximum height of 2 meters above the deck and be positioned 4.5 meters from the vessel's edge in order to allow for proper handling and curvature in the hoses that are to be connected.

- The deck or platform at the front of the manifold must be positioned 900 mm below the height of the manifold flanges. The upper surface of such a structure must consist of a single rounded piece with a minimum radius of 100 mm.

- Failure to comply with any of the above conditions will result in the vessel in question being considered unsuitable for operations at the Terminal and subsequently prohibited from using the Single Point Mooring.

The vessel must make support facilities available to the group of individuals from the Terminal that are to remain on board while the vessel is moored at the Single Point Mooring, including overnight accommodation and meals. This Terminal group generally consists of a minimum of seven persons, 1 Mooring and Loading Master and 6 maneuvering assistants.

Vessels must be fitted with a mooring system at the bow that consists of a 3-inch smith break through which a mooring tail is passed and connected to the end of the line that will serve as the point from which the vessel is moored to the Single Point Mooring.

7.2 PRIORITY IN MOORING OF VESSELS

- The vessel's time of arrival is considered to be the earliest of the moment at which the ship reaches the vicinity of the anchorage (2 nautical miles from the Single Point Mooring) or at which the Marine Pilot (Mooring Master) boards the vessel.

- In the event that mooring is delayed due to unfavorable weather or ocean conditions, and there is more than one vessel present in the area for unloading purposes, chronological order of arrival, or another relevant order, will be used depending on Terminal scheduling and/or needs.

- In such cases vessels may be diverted to other Terminals with a complete or partial load. Such orders are issued by charterers, vessel agents or the Terminal itself.

7.3 PROCEDURES FOR ARRIVAL OF VESSELS

- In cases in which a communications failure occurs, vessels must proceed the scheduled anchorage and await information from the Terminal.

- If weather conditions do not allow Terminal vessels to approach or render operations at the Single Point Mooring impossible, vessels must proceed to the scheduled anchorage.

- Under normal conditions, Terminal vessels will be able to approach the vessel upon its arrival, and the point of approach will be defined by SÃO FRANCISCO DO SUL MARINE TERMINAL Mooring and Loading Masters.

7.4 PROCEDURES DURING VESSEL OPERATIONS

- Once the Marine Pilot (Mooring Master) has boarded the vessel, they will notify crew of the method that is to be used to moor the vessel.

- It is requested that the tanker prepare the crane and ladder on the port side.

- Once deemed appropriate, the Terminal vessels will disembark, one navigating towards a pre-determined point, and the other towards the Single Point Mooring for the purposes of performing a final inspection of floating and subsea equipment and cables.

- The first Terminal vessel will approach the tanker for the purposes of boarding the Mooring and Loading Masters and hose connection personnel, inspecting the vessel, and loading various materials. These activities may be carried out while the vessel approaches the Single Point Mooring, depending on orientations provided by the Marine Pilot (Mooring Master).

7.5. MOORING

- The Marine Pilot (Mooring Master) present on board will provide the vessel Master with orientations. The vessel will then begin approaching the TEFRAN's Single Point Mooring.

- The support vessel, once inspection of the mooring/connection system has been carried out, will begin towing hoses, moving them away from the area used by the vessel for maneuvering purposes.

- At a distance of approximately 200 meters from the Single Point Mooring, a mooring support vessel will approach the tanker's bow in order to receive a towing line and transport it to the shackle on the polypropylene mooring line positioned at the end of the mooring hawser.

- The bow winch or windlass, which is manned by the ship's personnel, will begin to unwind the cable.

- The SÃO FRANCISCO DO SUL MARINE TERMINAL makes use of the following mooring criteria:

A 76 mm diameter mooring line, which is positioned at the end of the mooring hawser, must preferably pass through the vessel's central chock. If this is not possible, the vessel's side roller fairleads may be used depending on the best possible safety conditions offered on board the vessel and connected to the Chain stopper or Bow stopper at the vessel's bow.

7.6. CONNECTING OF HOSES

With the Tanker properly moored and positioned to accommodate the forces created by currents, wind and ocean conditions, the connection support vessel will begin bringing hoses towards the vertical axis of the port side loading crane (this operation must always be carried out on the vessel's port side). The hoses are then hoisted and initially connected to the Terminal's internal line (SOUTH line), as this hose is located at the side of the vessel. Hoses are then connected to the external line (NORTH line). The two floating hose strings are connected to the manifold using a quick release camlock coupling that can be used to disconnect hose in case of emergency.

The electrical isolation between ship and monobuoy is carried out by inserting an electrically discontinuous hose in the second position of the floating string in the ship-monobuoy direction, with the rest of the line formed by electrically continuous hoses aiming at the adequate dissipation of possible accumulated static charges.

7.7. UNLOADING

The following guidelines must be followed on board the vessel both at the start and during unloading operations:

a) The Mooring and Loading Master will determine when to begin pumping.
b) The maximum allowing pumping pressure and flow rate is 10kgf/cm^2 and 5,000m^3/h per line.

c) As a general rule, once unloading is complete, the Tanker must be ballasted up to 40% of its summer deadweight.
d) During unloading, watch must be kept on the vessel's bow and in the area surrounding the hose connection flanges.
e) During unloading operations, terminal personnel (one officer and six riggers) onboard the vessel must be provided with accommodation and food provisions.
f) Operations must be suspended whenever the unfavorable weather conditions described in this manual occur during unloading. Specific cargo unloading instructions will be provided once the vessel has arrived at the Terminal.
g) Flow between the Terminal and vessel will be verified, compared, and broadcast via VHF channel 14 to avoiding any form of irregularity.

7.8. POST-UNLOADING PROCEDURES

- Once unloading is completed, hoses are disconnected, beginning with the external line (NORTH line), in which the vessel's loading crane is used to disconnect the hoses and place them on the surface of the sea for retrieval.

7.9. UNMOORING

During unmooring, the tension in mooring lines is verified and, if necessary, the ship's engine is used to adjust tension on the line. The smith break is then released, disconnecting the 76-mm chain positioned at the end of the mooring hawser, allowing the vessel to move away from the Single Point Mooring.

7.10. RETRIEVAL OF MATERIALS

- Once the vessel has moved away from the Terminal's single buoy mooring, maneuvering is carried out to create space for an unloading zone at which a net containing hose connection and mooring materials is lowered.

- Support personnel and the Mooring and Loading Master then unboard, and the vessel receives clearance from the Terminal to disembark to its scheduled port of call.

7.11. BALLASTING

- Ship ballasting is carried out during unloading operations. Tankers that fail to complete ballasting under any circumstances will be subject to the issuing of a letter of protest and will be held responsible for any occurrences starting at the moment at which the hose strings are disconnected.

7.12. MISCELLANEOUS INFORMATION

- Ancillary accessories used to connect hoses (straps, joints, nuts, bolts, wrenches, cables, etc.) are provided by the Terminal.

- Excessive vessel trim is not permitted during unloading in order to avoid damage to mooring lines,

hoses and the SPM's rotating arms.

- The vessels primary engine and rudder must be kept in conditions that allow the vessel to be maneuvered at any moment, and a nautical officer must remain on the vessel's bridge.

- Once unloading is complete, operators will inspect the vessel's tanks and record their findings using the appropriate forms.

Average time required for operations (in minutes):	
a) Approaching Single Point Mooring	90
b) Unloading materials	10
c) Mooring	20
d) Initial clearance	70
e) Hoisting floating hoses	20
f) Connecting floating hoses	50
g) Final clearance	70
h) Disconnecting hoses	40
i) Unmooring	10
j) Retrieval of materials	10
k) Unboarding personnel	15

7.12.1 Transporting of Crew Members Onshore

Onboard personnel are not permitted onshore for any reason until the vessel has been cleared by port authorities. Luggage and items are subject to inspection by Terminal security and/or Customs officials. These are generally the sole restrictions for personnel that wish to arrive onshore. In adherence to the ISPS Code standards, the boarding and unboarding of foreign crew members must be carried out through the port of São Francisco do Sul. Vessels, however, are prohibited from navigating until the entirety of their crew members are on board. The vessel will be responsible for any expenses and transport costs for crew members that are left onshore.

The vessel Master will be responsible for proper licensing of crew members. The Master will also assume responsibility for the entirety of the risks inherent to the vessel's voyage, boarding and unboarding operations carried out on the open sea, as well as for any expenses that come to be incurred in cases in which the vessel is not able to operate due to a lack of personnel as a result of poor weather conditions, as well as for leaving crew members onshore, unexpected unmooring and navigating without sufficient personnel, or any occurrences or omissions resulting from a failure to properly license crew members.

7.12.2 Visitors

Onboard visits on moored or anchored ships are not permitted unless duly authorized by the vessel Master, Terminal Manager, and the Maritime Police. Any unauthorized persons found onboard or attempting to board the vessel will be reported to the Maritime Police as a matter of obligation.

7.12.5 Clearing of Vessel by Port Authorities

Vessels destined for the SÃO FRANCISCO DO SUL MARINE TERMINAL are subject to inspections from the Port Health Office, Customs, and Maritime Police while calling at the Single Point Mooring. Vessel Agents must make all necessary arrangements in order for such activities to be carried out.

Documents related to vessel clearance at the most recent port of call must be submitted to port authorities.

7.13 National Holidays

All ships in Brazilian ports must bear celebratory flags during Brazilian national holidays occurring on September 7 and November 15.

7.14 Flag for Transport of Dangerous Goods

Oil tankers must bear a BRAVO flag during the daylight hours and a display red light at night while operating at the Terminal.

7.15 Readiness of Vessel Engine Room

Vessels moored at TEFRAN's Single Point Mooring must maintain their engine room in appropriate conditions that allow them to depart from the SPM immediately upon being notified of the need to do so. Vessels must also ensure that their bow winch and loading crane are ready to be operated at any time.

Any repairs that are required must not interfere with this requirement.

A failure to adhere to this requirement will result in the vessel being towed to the Terminal's

anchorage point. In such cases vessels will be held responsible for any expenses incurred during towing. PETROBRAS/TRANSPETRO will not be held responsible for any delays that may result from such activity, regardless of the circumstances that led to the vessel being towed.

7.16 Procedures during Oil Spills

In the event that an oil spill occurs during operations, the vessel must immediately inform the Marine Pilot (Mooring Master) and/or the Operator located at the Terminal's CCO using VHF channel 14.

7.17 Smaller Vessels alongside Tankers

Small vessels are strictly prohibited from remaining on the side or in the vicinity of vessels moored and carrying out operations at the Terminal at all times. Only service vessels or those authorized by port authorities or the Terminal may navigate in the vicinity or alongside vessels, provided that they fulfill all safety requirements.

7.18 Interrupting Operations

Vessel operations must be interrupted in the event of fire or if there are signs of a fire on board, at onshore installations, including the Single Point Mooring, on another ship in the surrounding area or passing at a distance considered to pose a hazard, as well as in any situation that may pose a threat to either the vessel of SPM.

7.19 Load Balance

In addition to maintaining engine rooms ready for immediate operations, vessel loads must remain balanced in a manner that allows them to move away from the Single Point Mooring immediately upon receiving notification to do so.

7.20 Desgasefication

Degasefication of vessels moored at the Single Point Mooring is not permitted.

7.21 Sootblowing

Sootblowing and the cleaning of boiler tubes while the vessel is moored is prohibited. Additionally, care must be taken to ensure that sparks do not escape through the funnel.

7.22 Excessive Smoke

- the discharging of dense smoke through the funnel of vessels moored at the single buoy mooring is prohibited. A failure to comply with such regulations will result in one or more of the following penalties being applied:

- Immediate interruption of the operations in question.

- A fine imposed by the competent authorities.

  Forced unmooring of the vessel from the single point mooring.

- Reporting of the infringement to shipowners;

- The vessel will be charged for any fines, lost time and other expenses related to such penalties.

7.23 Suspending of Operations

Operations may be temporarily suspended during thunderstorms and/or moderate to strong winds.

PETROBRAS/TRANSPETRO is authorized to suspend operations in the event of non-compliance with any of the above-mentioned rules, laws or regulations previously, or Mooring Master and Loading Master have reason to believe that a situation of danger exists in operations.

Oil tankers are expected to comply with all universally accepted and adopted safety regulations and standards for the transport of petroleum products by sea.

Vessel Masters are entitled to interrupt operations if they have reason to believe that they are unsafe, provided that the Terminal is notified in advance.

7.24 SUPPLIES

7.24.1 Fuel

The SÃO FRANCISCO DO SUL MARINE TERMINAL does not have the means to supply vessels with fuel.

7.24.2 Lubricants

The SÃO FRANCISCO DO SUL MARINE TERMINAL does not have the means to supply vessels with lubricants.

7.24.3 Water

The SÃO FRANCISCO DO SUL MARINE TERMINAL does not have the means to supply vessels moored to the Single Point Mooring or anchored offshore with water.

7.25 GENERAL REPAIRS

7.25.1 Naval Repairs

Repairs or maintenance work of any nature that involve or that may come to involve the risk of sparks or other means of ignition must not be carried out while the vessel is moored at the single buoy mooring without written permission from the Marine Pilot (Mooring Master).

Small naval repairs may be carried out by private workshops. Such repairs must be requested through vessel agents 72 hours in advance, provided that they do not render the ship inoperative while moored at the Single Point Mooring.

7.25.2 Repair of Electronic Equipment

Resources for performing radar and radio equipment repairs are available in São Francisco do Sul; however, these repairs must be requested through the vessel Agent 72 hours in advance.

7.25.3 Compensation in Magnetic Compass and Radio Direction Finders

Must be requested through the vessel Agent 72 hours in advance.

7.26. INSPECTION OF PETROLEUM PRODUCTS

Inspections of petroleum products is carried out exclusively with imported products, and inspectors are appointed by the Brazilian Federal Revenue Service. Inspectors board the vessel together with the Marine Pilot (Mooring Master) through Transpetro's Terminal.

7.27 COSTING MATERIALS AND FOOD PROVISIONS

Food provisions and costing materials may be provided through the vessel agent or directly by ship suppliers. The majority of items originate from city of Joinville, although some items can be obtained in São Francisco do Sul. The Terminal will not provide support vessels for the purpose of transporting food provisions or costing materials to be subsequently loaded onto ships.

7.28 MEDICAL AND DENTAL ASSISTANCE

Medical/dental treatments or hospital services can be obtained in São Francisco do Sul. Serious cases are generally referred to Joinville or Curitiba.

7.29 COMPLIANCE WITH ISPS CODE

The São Francisco do Sul Marine Terminal is ISPS Code-certified. The Terminal holds Statement of Compliance No. 093/2005, and corporate security measures that are applicable to vessels and port facilities have been implemented in accordance with requirements from the International Maritime Organization – IMO.

If required, vessels may implement these security measures through the Port Facility Security Officer (PFSO) or through the Terminal's Marine Pilot (Mooring Master).

The Terminal normally operates at safety level one (1). For further information, the Port Facility Security Officer (PFSO) may be contacted using the following telephone number: (47) 99110-0855.

8. ORGANIZATION OF PORT AND ANCHORAGE

8.1. GENERAL INFORMATION REGARDING THE FEDERATIVE REPUBLIC OF BRAZIL

8.1.1 System of Weights and Measures

The international decimal system of weights and measures has been officially adopted throughout Brazil's national territory.

8.2. REGULATIONS AT BRAZILIAN PORTS

- As a general rule, vessels are able to enter Brazilian ports at any time.

- Normally, merchant ships generally receive visits by Brazilian Health Authorities and Custom Services between 7:30 a.m. and 7:00 p.m.; however, they may receive such visits outside of these hours upon a prior request being made and payment of a special designated fee.

- Vessels are prohibited from discharging any form of waste into ports and rivers, as well as at internal anchorages.

8.3. TERMINAL REGULATIONS

8.3.1 Vessel Liability

Vessel masters are held responsible for the vessel safety, including with regards to onboard personnel, and must therefore implement all appropriate safety measures.

8.3.2 Safety Regulations for Tanker Operation

- The SÃO FRANCISCO DO SUL MARINE TERMINAL adopts the standards recommended under the *Safety Guide for Oil Tankers and Terminals* (ISGOTT). Therefore, prior to the start of operations and on several different occasions during unloading operations, safety inspectors may visit the ship and, in the company of the officer designated as being responsible for such inspections, verify and ensure that best practices for safety are being observed not only by the vessel but at onshore installations.

8.3.3 Water Pollution

- Brazilian legislation is very strict with regards to water pollution caused by oil tankers. The release of crude oil or petroleum products into the sea, either in isolation or as part of a mix of ballast water, is punishable by severe fines.

- PETROBRAS/TRANSPETRO is responsible for notifying the Port Authority of any leaks, spills, etc. that have occurred at its facilities, or of which it comes to be aware.

9. EMERGENCY PLANNING & RESPONSE

9.1 Emergency Contact List

The following table provides essential contact information, including landline numbers, cellular phone numbers and Radio Channels/Frequencies

Organization	Service Hours	Telephone	Mobile	VHF/UHF Call Channel	VHF/UHF Talk Channel
Port Authority	24 hours	(47) 3444-2204	(47) 98844-5694	16	TBi
Nautical Advisor	Business Days 7:30 a.m. to 4:30 pm	(51) 2161-5534	(51) 9955-1045	N/A	N/A
Marine Pilot	24 hours	N/A	N/A	14	14
Port Security Supervisor	Business Days 7:30 a.m. to 4:30 pm	N/A	(47) 99110-0855	N/A	N/A
Operational Control Center CCO	24 hours	(47) 3233-5414	(47) 99178-3036	14	14
TEFRAN Administration	Business Days 7:30 a.m. to 4:30 pm	(47) 3233-5414	N/A	N/A	N/A
Military Firefighter Corps	24 hours	(47) 3444-2114	N/A	N/A	N/A
Volunteer Firefighter Brigade	24 hours	(47) 3449-1263	N/A	N/A	N/A
Civil Defense - São Fco. do Sul	24 hours	(47) 3471-2258	N/A	N/A	N/A
Military Police	24 hours	190	N/A	N/A	N/A
IBAMA	8:30 a.m. to 6:00 p.m.	(47) 3433-3760 3444-2448	N/A	N/A	N/A
IMA SC Environmental Institute	8:30 a.m. to 5:00 p.m.	(47) 3431-1441 (48) 3665-4190 OR 0800-644-8500	N/A	N/A	N/A

9.2 Environmentally Sensitive Areas

The Francisco do Sul Marine Terminal's ERP – Emergency Response Plan and areas most sensitive to environmental impacts are organized by page number and include maps of areas that are most impacted by these types of events occurring in the rivers, beaches and cove located on the island of São Francisco do Sul.
The following pages are available in this document:

- Acarai River
- Iperoba River
- Ubatuba River
- Enseada Beach
- Praia Grande

9.3 General Description of Organization of Emergency Response

Specifies the respective responsibilities in responding to potential emergencies involving vessels arriving at the Terminal.

Type of Incident	Organization Responsible	Other Organizations Involved				
Collision at Single Point Mooring	Maritime Authority	Terminal	P&I	Vessel Agent	Civil Defense	ANP
Vessel Grounding	Maritime Authority	Terminal	P&I	Vessel Agent	Civil Defense	ANP
Sinking of Vessel	Maritime Authority	Terminal	P&I	Vessel Agent	Civil Defense	Millitary Firefighter Corps
Fire Onboard Vessel	Maritime Authority	Terminal	Millitary Firefighter Corps	Agent	P&I	Millitary Firefighter Corps
Fire at Single Point Mooring	Maritime Authority	Millitary Firefighter Corps	SUPRG	Agent	Maritime Authority	Millitary Firefighter Corps
Pollution	Maritime Authority	Terminal	P&I	IMA-SC	IBAMA	ANP

9.4 Contingency Plans

9.4.1 – The São Francisco do Sul Marine Terminal's Emergency Response Plan is employed during emergencies occurring at any Terminal facilities. The Terminal's ERP is displayed in all operational areas on bulletin boards located at the entrances to Operational Control Centers (CCOs), as well as maintenance and administrative buildings. The local HSE body is responsible for specifying the Contingency Plans that apply to the vessel's operations at the Single Point Mooring and the respective persons responsible.

Equipment used in emergency response and firefighting efforts shall be kept ready for immediate use on the vessel's deck while the ship is moored at the Terminal. Fire hoses must be extended and placed at the vessel's aft and fore. Firefighting monitors must be positioned towards the ship's manifold.

A pollution response kit must be kept ready for use in the event of an oil spill. Every precaution must be taken in order to prevent petroleum from entering local ocean water.

The SÃO FRANCISCO DO SUL MARINE TERMINAL has an Emergency Response Center (CRE) equipped with modern equipment and a range of facilities that can be used in cases involving accidental pollution. Terminal employees are periodically provided with intensive training that allows them to act in accordance with the SÃO FRANCISCO DO SUL MARINE TERMINAL's EMERGENCY RESPONSE PLAN - ERP. Displayed at strategic points, the Terminal's ERP allows rapid action to be taken in responding to emergencies. Spill containment barriers, oil collectors, and other equipment required in emergency response efforts are available at the Terminal's ERP warehouse. Operational and support vessels anchored at Enseada beach remain on permanent standby.

A tugboat is available at the Terminal which, in addition to assisting in operations, can be used in Pull Back operations. The tugboat is equipped with containment barriers, absorbent barriers, Skimmers (oil collectors) and remains on standby in order to immediately respond to potential oil spills. Two other smaller and faster vessels are also available in the area surrounding the Terminal for the purposes of inspections and offer assistance in deploying barriers.

The terminal has an ambulance that is equipped to provide first aid care. A nurse is available during administrative office hours, a period in which there are greater numbers of people at the Terminal due to the need to perform maintenance services and related works. Remaining cases are referred to the health center located in São Francisco do Sul, approximately 15 km from the Terminal.

9.4.2 Responding to Oil Spills

The SÃO FRANCISCO DO SUL MARINE TERMINAL has an Emergency Response Center (CRE) equipped with modern equipment and a range of facilities that can be used in cases involving accidental pollution.

9.4.3 TEFRAN's Capacity for Responding to Oil Spills

The resources available at the Terminal for responding to oil spills are listed in SÃO FRANCISCO DO SUL MARINE TERMINAL's EMERGENCY RESPONSE PLAN, which is available at all Terminal administrative, operational, and maintenance areas.

9.4.4 Resources available as part of Mutual Support Plans with other Terminals

The resources available at other TRANSPETRO terminals that can be used to respond to pollution emergencies occurring in the vicinity of the Terminal are listed in SÃO FRANCISCO DO SUL MARINE TERMINAL's EMERGENCY RESPONSE PLAN.

9.4.5 Tier 2 Response

Organization designated as responsible for responding to significant pollution events.
Regional TRANSPETRO / PETROBRAS resources are requested during such events. These resources, their respective level of preparedness and manner in which they are engaged are described in SÃO FRANCISCO DO SUL MARINE TERMINAL's EMERGENCY RESPONSE PLAN.

9.4.6 Tier 3 Responses

Organization designated as responsible for responding to large-scale pollution events.
National TRANSPETRO / PETROBRAS resources are requested during such events. These resources, their respective level of preparedness and manner in which they are engaged are described in SÃO FRANCISCO DO SUL MARINE TERMINAL's EMERGENCY RESPONSE PLAN.

9.4.7 Responding to a Large-Scale Incident

SÃO FRANCISCO DO SUL MARINE TERMINAL's EMERGENCY RESPONSE PLANS lists the respective actions and those responsible for each type of event occurring at its installations, along a section of pipeline or onboard vessels that involve third parties. TRANSPETRO / PETROBRAS will make the entirety of the national or international resources to which it has access available during events that are not provided for herein.

10. CONTACT INFORMATION

10.1 Location of Terminal and Points Of Access

SÃO FRANCISCO DO SUL MARINE TERMINAL's primary facilities and administrative offices are located in São Francisco do Sul, Santa Catarina.

The SÃO FRANCISCO DO SUL MARINE TERMINAL can be access by land using the SC - 21 highway, which leaves Joinville in the direction of the coast. The city of São Francisco do Sul at

located at km 40 along the highway. SÃO FRANCISCO DO SUL MARINE TERMINAL is located at km 60 (SC - 301).

The following table presents the distances between SÃO FRANCISCO DO SUL MARINE TERMINAL and the region's major cities:

São Francisco do Sul - SC	20 km
Joinville - SC	60 km
Itajaí - SC	140 km
Blumenau - SC	170 km
Florianópolis (capital) - SC	200 km
Curitiba (capital) - PR	200 km
Paranaguá - PR	150 km

The above mentioned routes are served by paved highways.

10.2 Addresses

SÃO FRANCISCO DO SUL MARINE TERMINAL

Rua Felipe Musse, 803 - Ubatuba, São Francisco do Sul
Santa Catarina - BRAZIL
Postal Code: 89242-000
Tel.: (47) 3233-5414 / 3233-5288
sfsul@transpetro.com.br

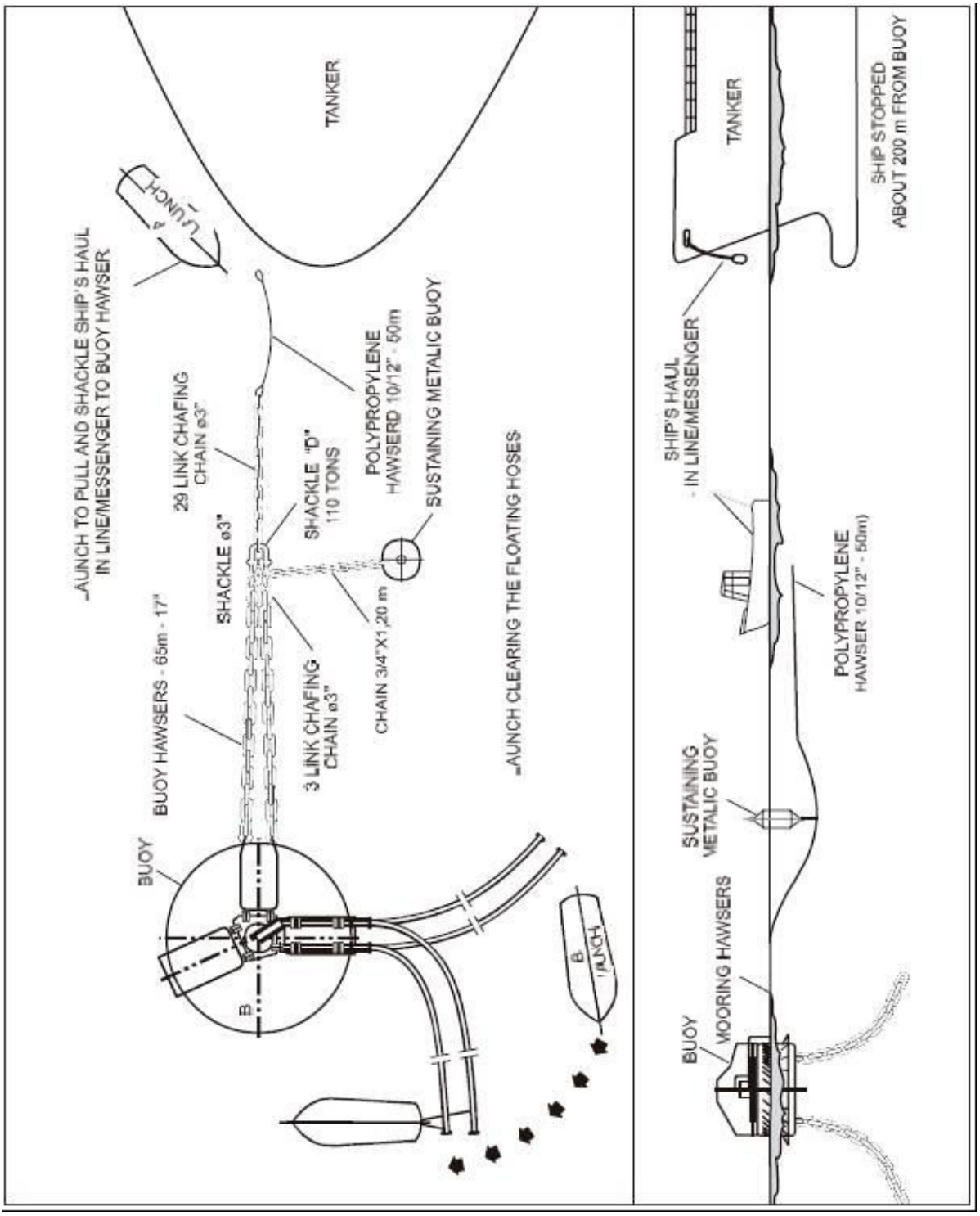
10.3 Terminal Operating Hours

The Terminal's administrative working hours are from 7:30 a.m. to 4:30 p.m., Monday to Friday. The Terminal's Operational Control Center (CCO) continues to operate during periods falling outside the hours and days provided above.A permanent listening watch is maintained on VHF radio.
Moorings and unmooring of tankers may be carried out at any time depending on current metocean conditions.

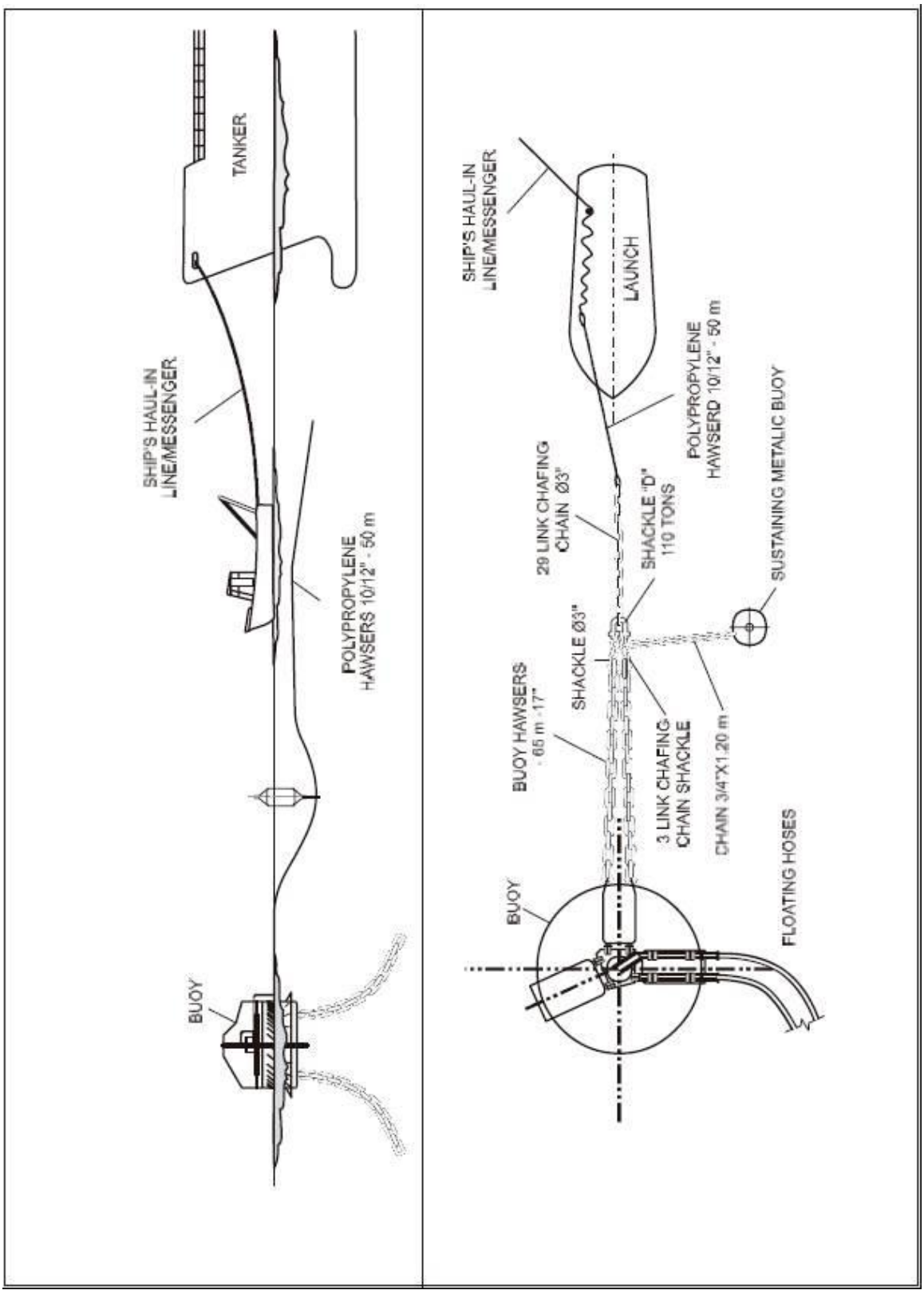
PETROBRAS TRANSPORTE S/A.
TRANSPETRO

APPENDIX

A- APPROACHING THE SINGLE POINT MOORING

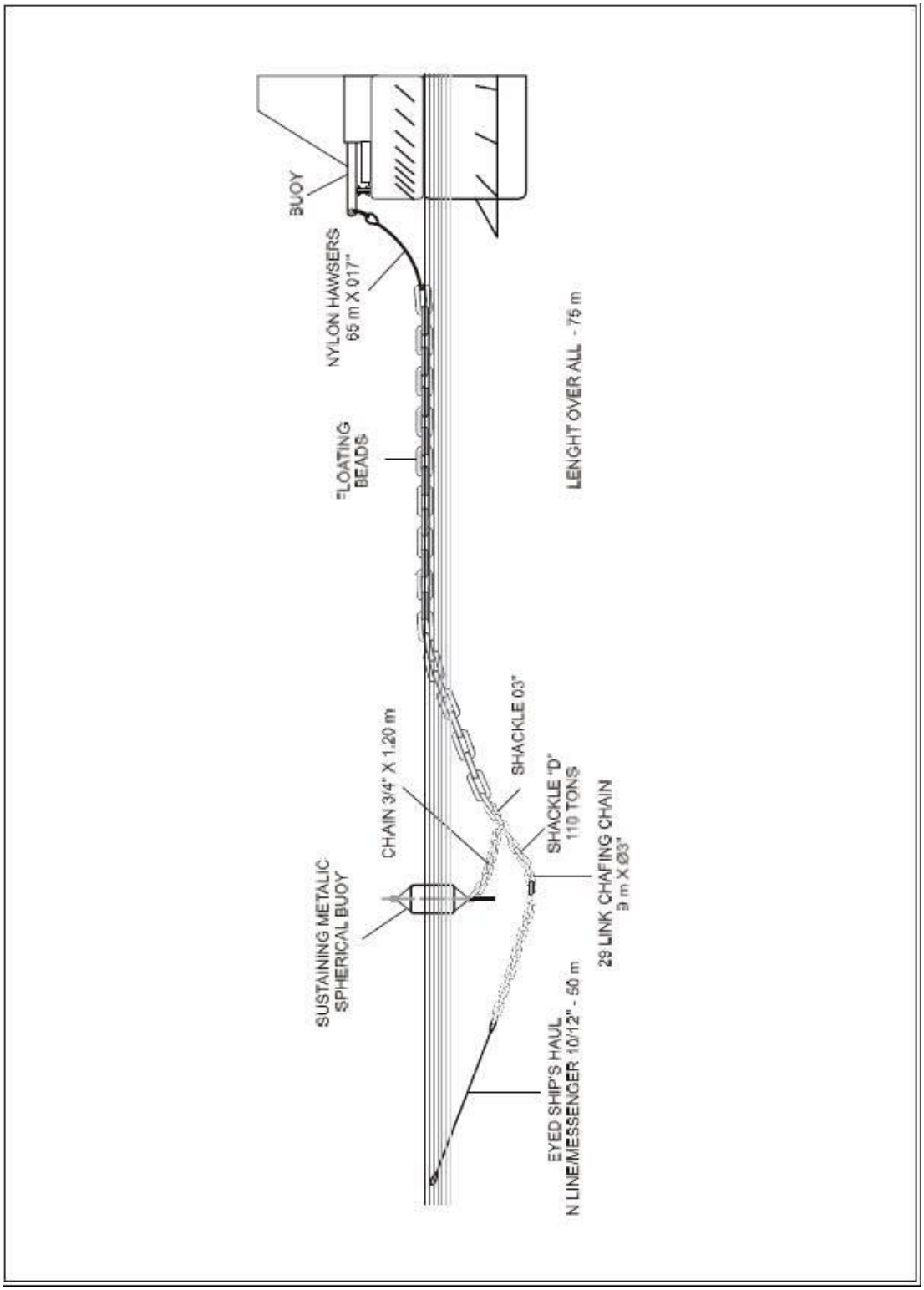


B - VESSEL TRANSPORTING THE TANKER'S MESSENGER LINE TO THE SINGLE POINT MOORING'S MOORING LINE

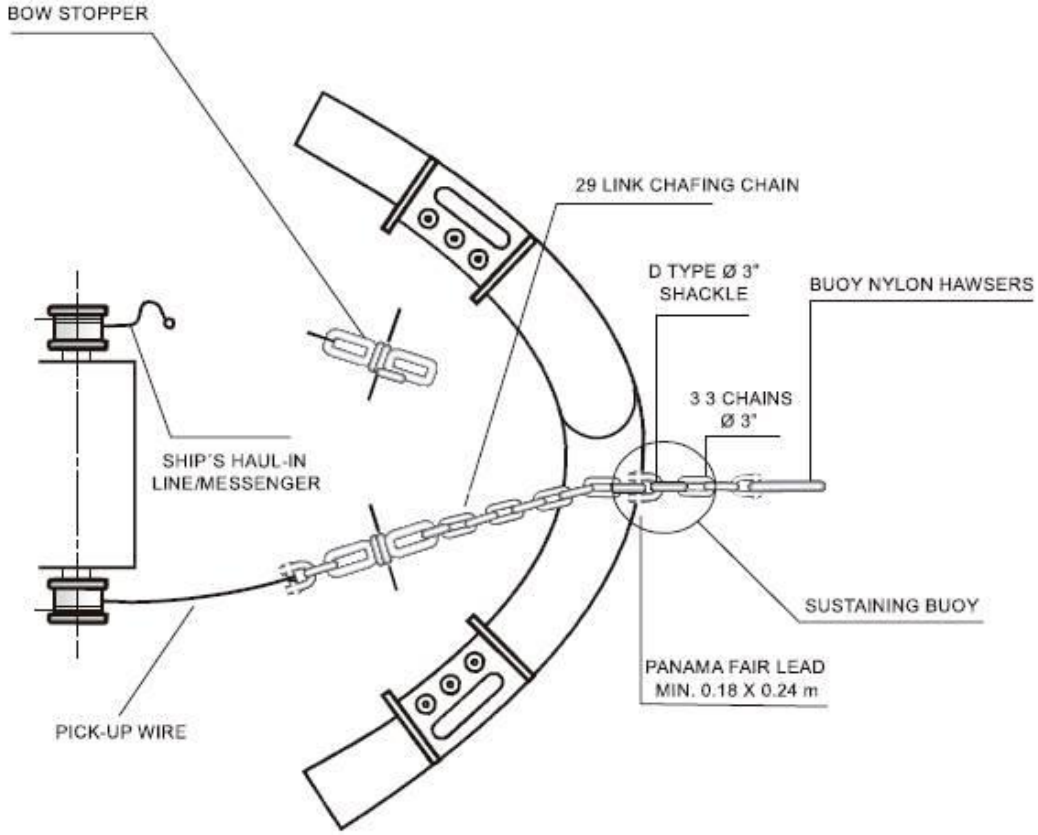


PETROBRAS TRANSPORTE S/A.
TRANSPETRO

C - SINGLE POINT MOORING, MOORING LINES, SUPPORT AND CAPTURE BUOYS, HAWSERS, ETC. – SIDE PROFILE

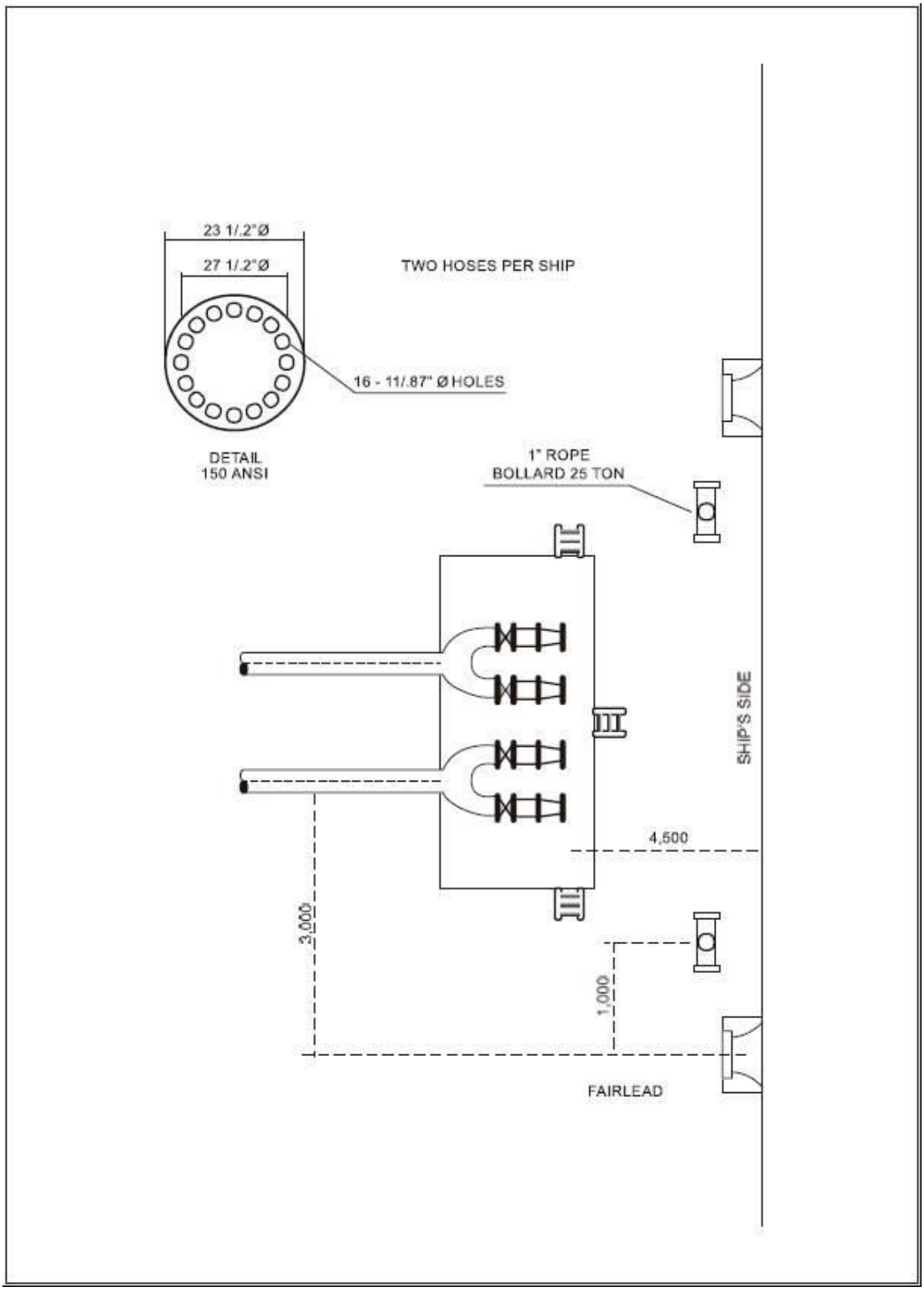


D – MOORING USING THE BOW CHAIN STOPPER

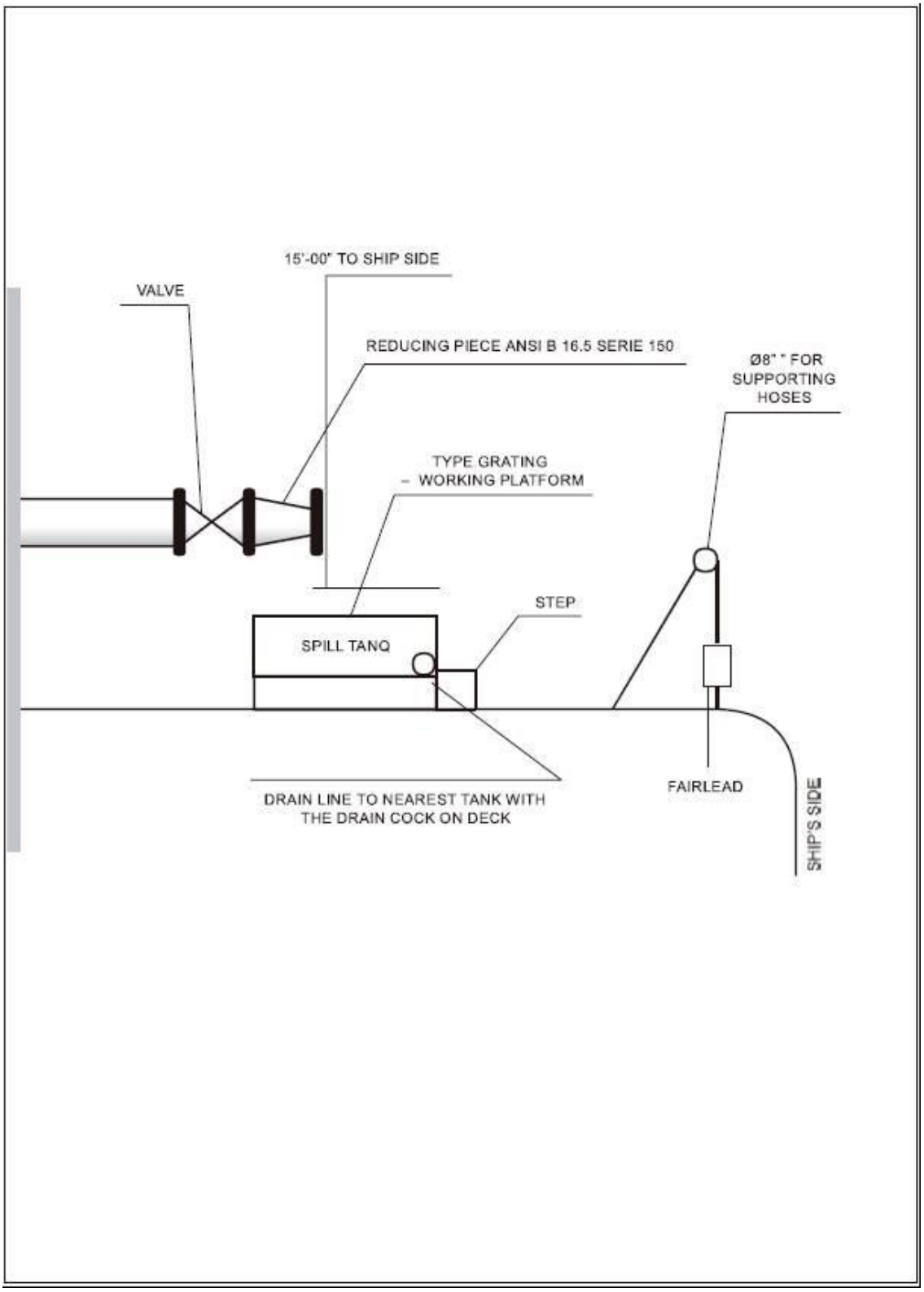


3rd METHOD:
This is the most recommended method, offering grater safety. The attrition chains pass through the central fair lead parallel to each other, and are clinched to the chain tails previously installed on the bow stopper

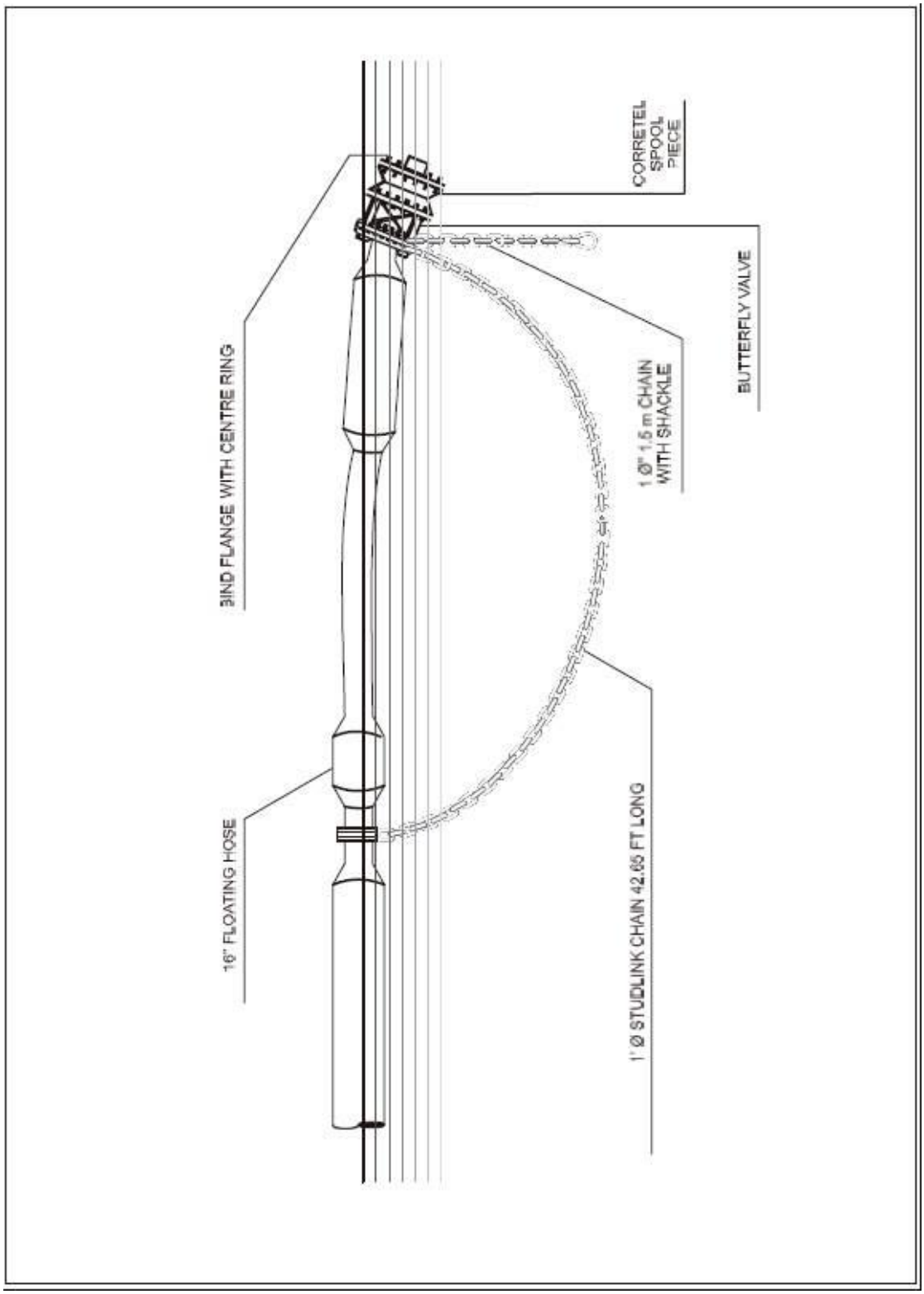
E – RECOMMENDED CARGO OUTLET ARRANGEMENT



F – CROSS SECTION OF CARGO OUTLETS

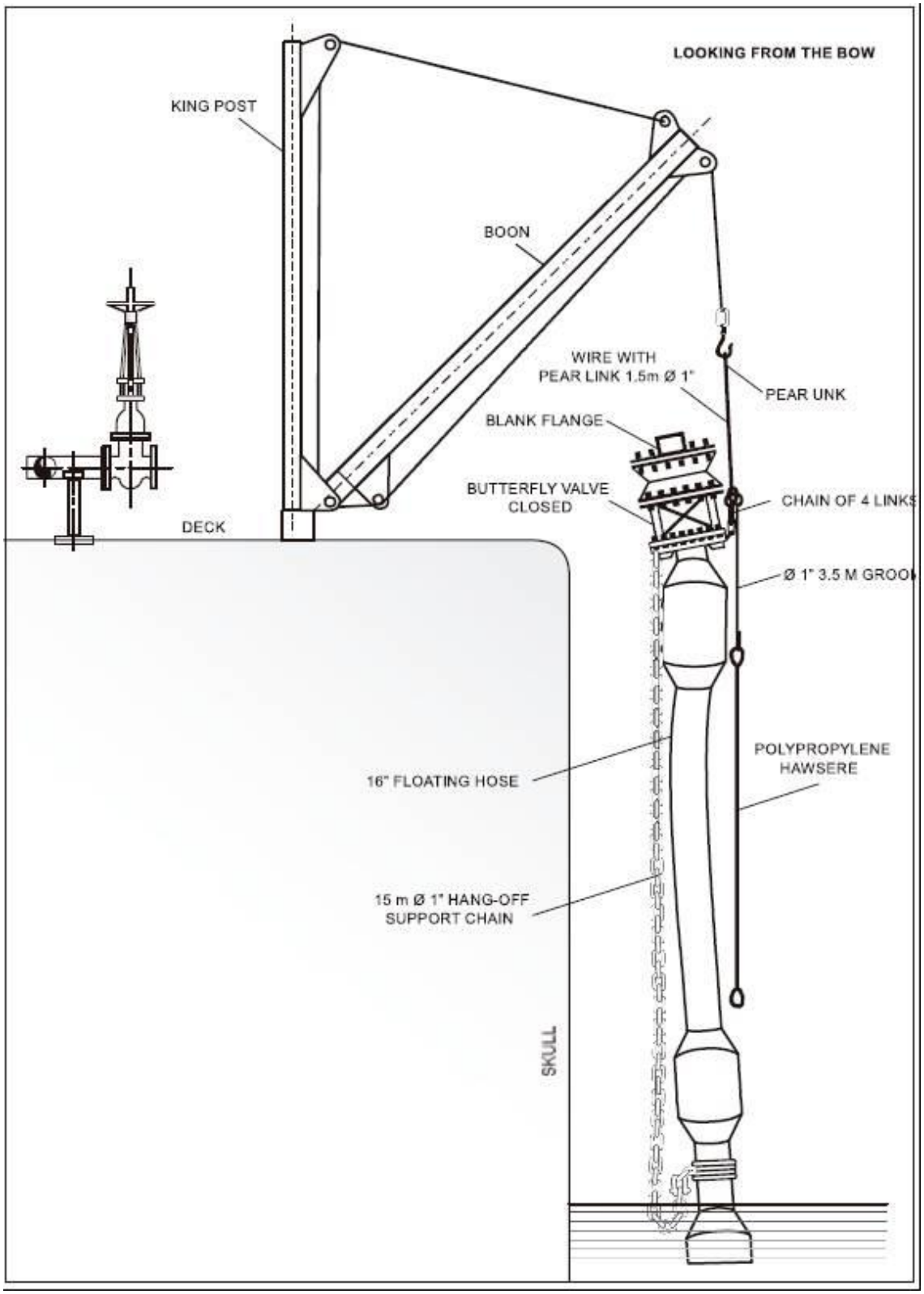


G – FLOATING HOSES, SUPPORT CHAIN, REEL, ETC.



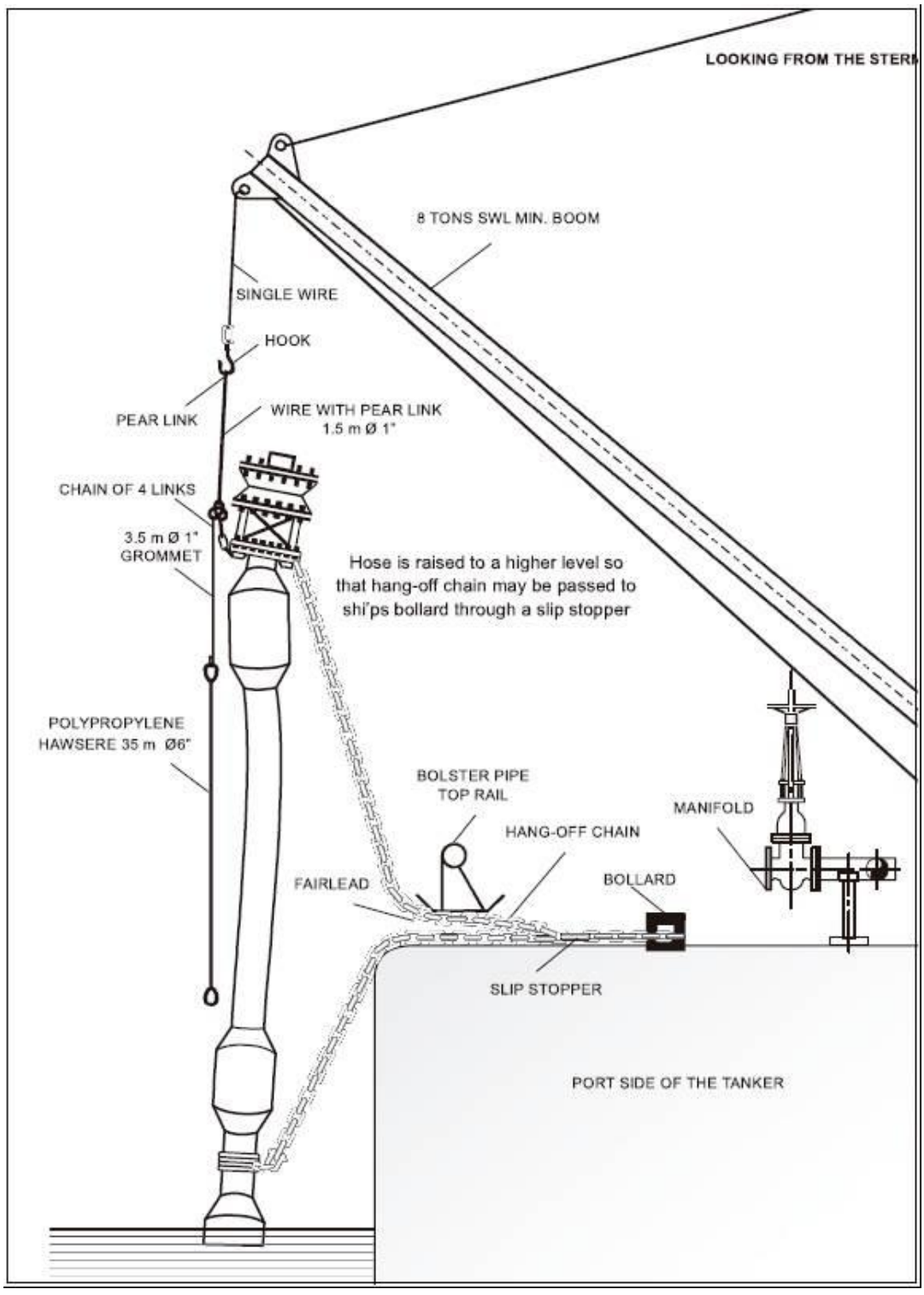
PETROBRAS TRANSPORTE S/A.
TRANSPETRO

H - 1st CONNECTION PHASE



PETROBRAS TRANSPORTE S/A.
TRANSPETRO

I - 2nd CONNECTION PHASE



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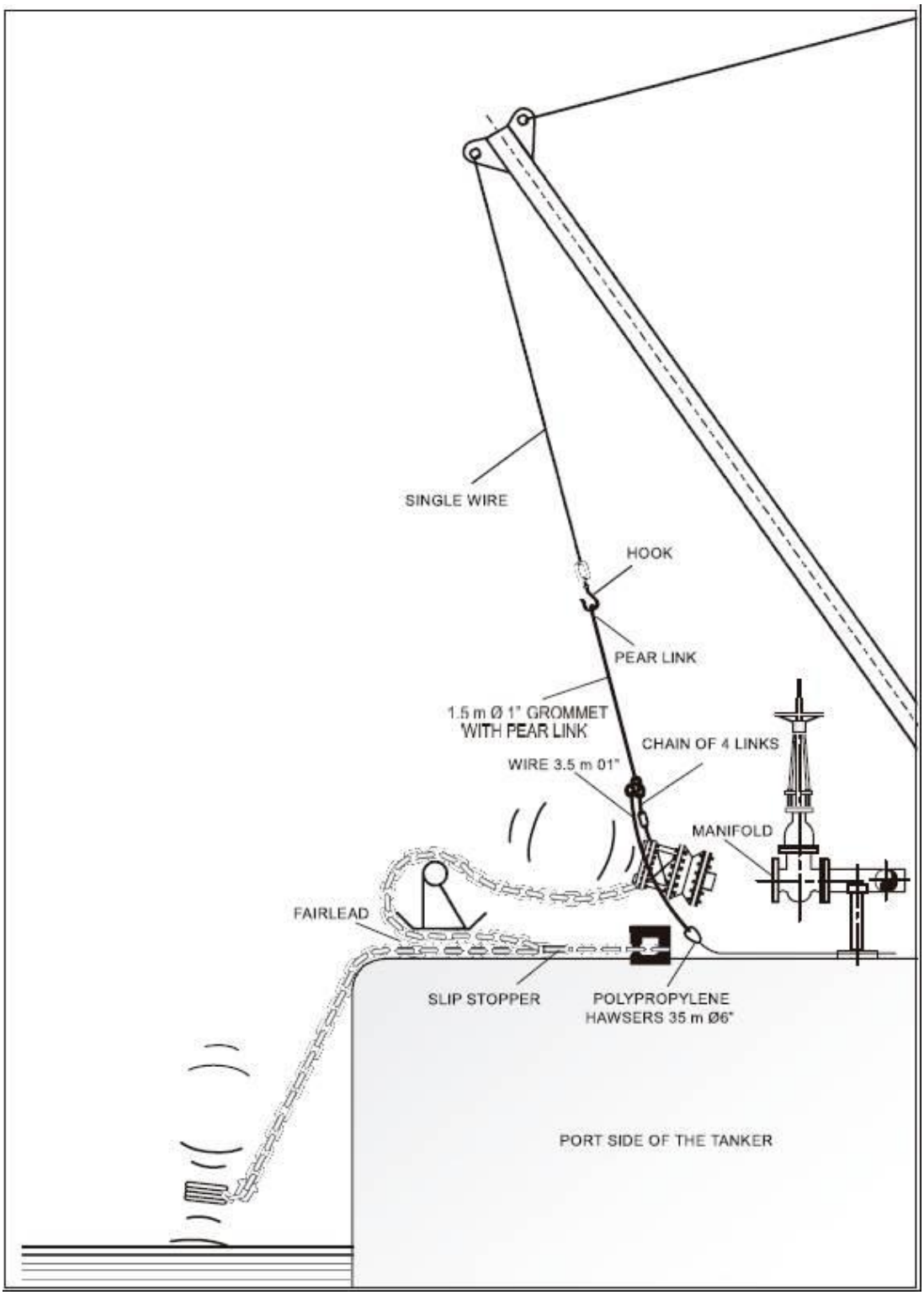
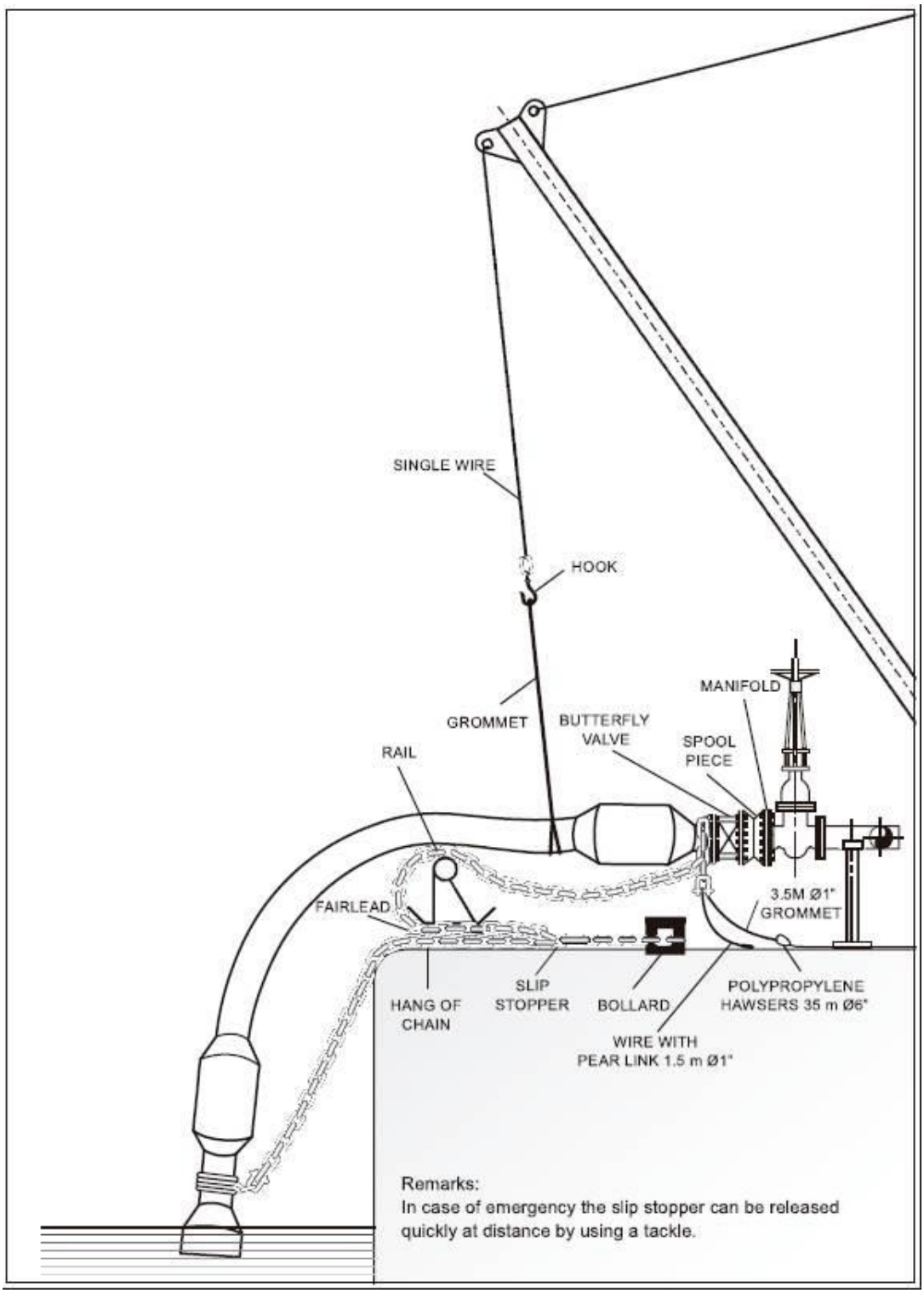
TRANSPETRO

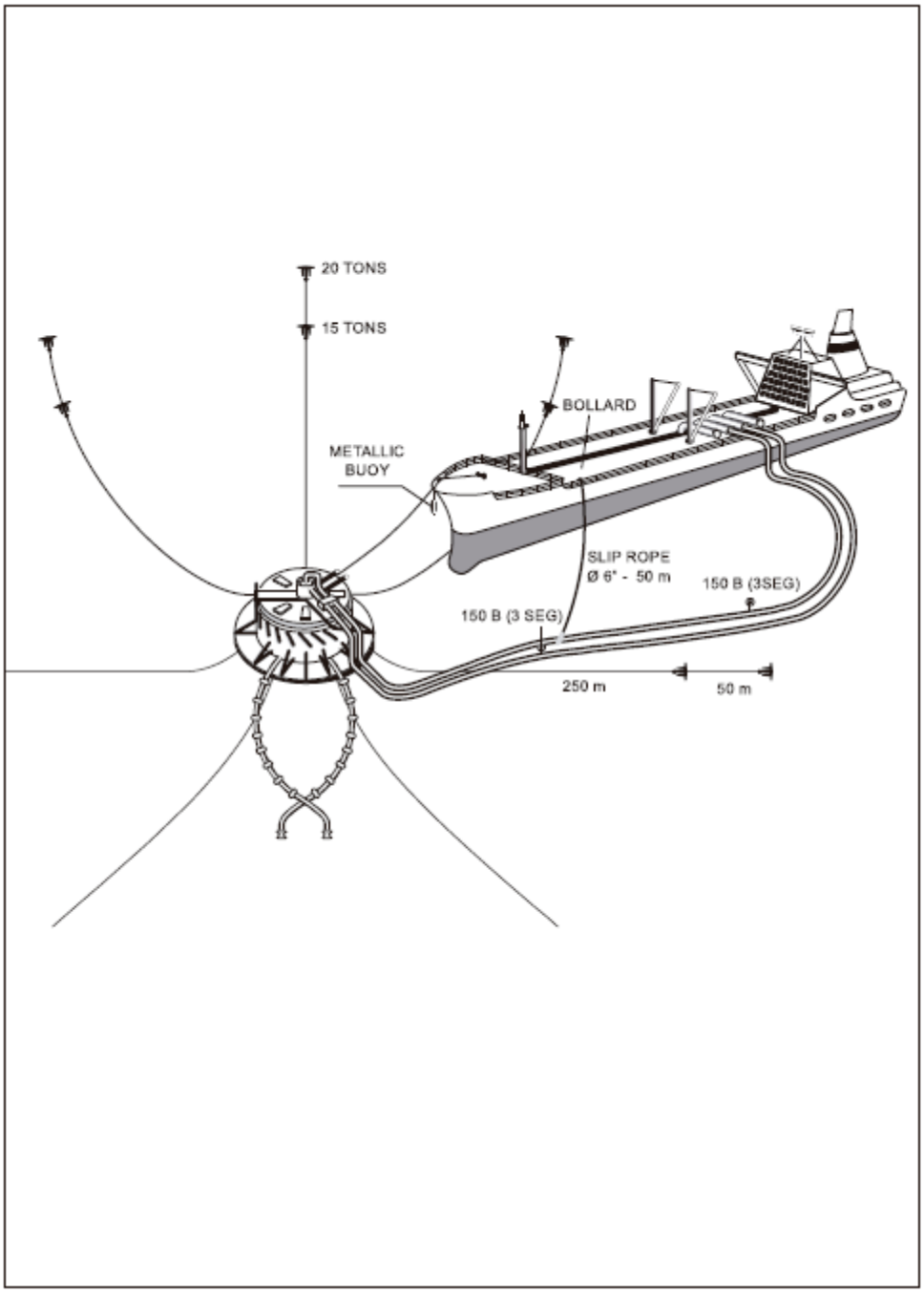
J - 3rd CONNECTION PHASE



L - 4th CONNECTION PHASE

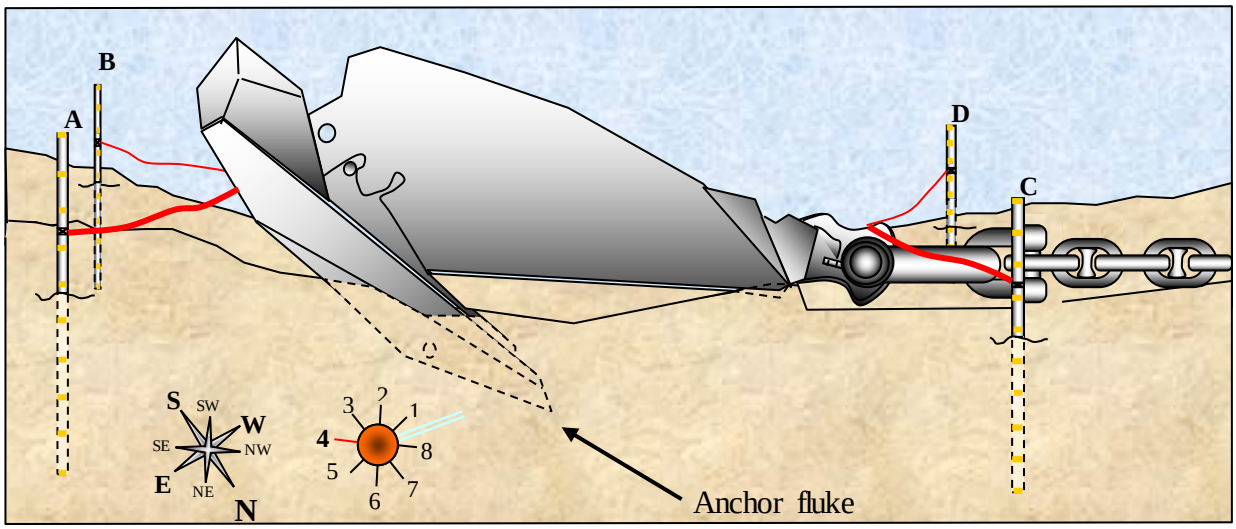


M - GENERAL CONFIGURATION OF THE SPM's MOORING SYSTEM



PETROBRAS TRANSPORTE S/A.
TRANSPETRO

N – HHP ANCHOR



O – COASTAL REGION IN SÃO FRANCISCO DO SUL

PETROBRAS TRANSPORTE S/A.
TRANSPETRO

P - SÃO FRANCISCO DO SUL AND JOINVILLE REGION