

TRIBUNAL MARÍTIMO

ANEXO H

PROCESSO 19.489/2001 - P-36

PLANOS

do Juiz: _____
do: _____
do: _____
do: _____
do: _____
do: _____
do: _____
do: _____
do: _____
do: _____

DISTRIBUIÇÃO

Aos 09 de agosto de dois mil e um.
Secretaria do Tribunal Marítimo foi Distribuído por Processamento Eletrônico de dados os
antes autos.
Do que fiz este termo.



Diretor-Geral da Secretaria
MANOEL MACHADO DOS ANJOS
Diretor-Geral da Secretaria

ANEXO (S)

9º Volume

2001

TRIBUNAL MARÍTIMO

Anexo II
Processo 19489/01 - P 36
PLANOS

Representado(s): _____

AUTUAÇÃO

Aos 09 de ABRIL de dois mil e UM

na Secretaria do Tribunal Marítimo autuo os presentes autos.

Do que fiz este termo

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSE CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartoriais

Diretor - Geral da Secretaria

RECIBO
3083.B
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1987

CERTIDÃO

CERTIFICO que, nesta data foi encerrado o 9º Volume
44 do Anexo II do processo 19489/01
P. 36

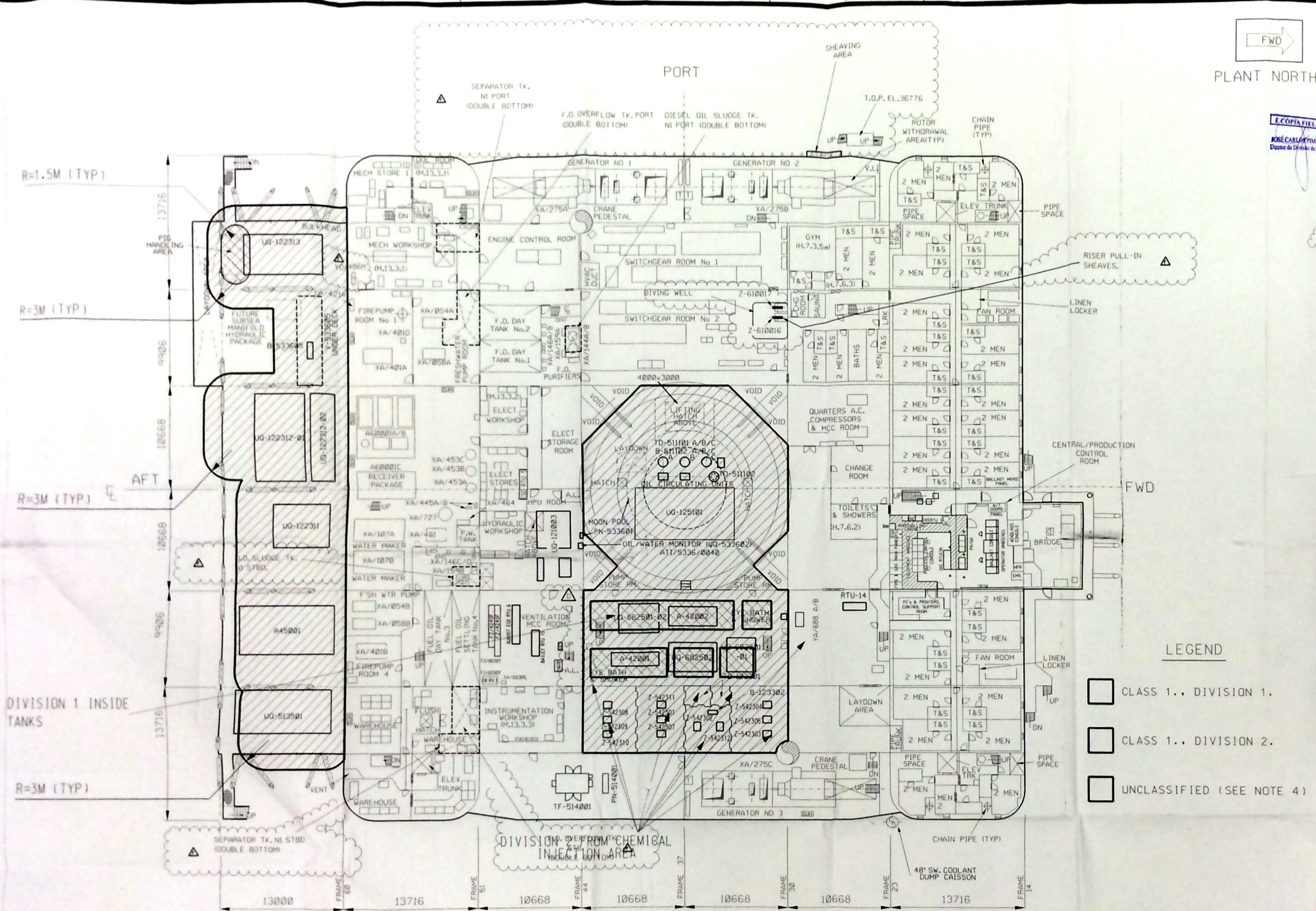
O referido é verdade e dou fê.

Aos 11 de abril de 2004.

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É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços e Cartórios



EQUIP No	DESCRIPTION
A60001A/C	AIR COMPRESSOR SKID
XA/054A/B	FWC CIRC PUMPS
XA/058A/B	FWC HEAT EXCHANGERS
XA/107A/B	WATER MAKERS (REV OSMOSIS)
XA/144A/B	EM GEN DIESEL OIL FEED PUMP
XA/146A/B	GEN SET DIESEL OIL FEED PUMP
XA/146C/D	GEN SET DIESEL OIL FEED PUMP
XA/159A/B	DIESEL OIL PURIFIER SKID
XA/275A/B	URBINE GENERATING SETS
XA/401A/B	FIRE PUMPS
XA/401D	FIRE JOCKEY PUMP
XA/445A/B	HOT WATER CIRCULATING PUMPS
XA/453A-C	FRESH WATER HEATERS
XA/461	FRESH WATER PRESSURE TANK
XA/464	U.V. STERILIZER UNIT
XA/727	P.W. CHORINATING UNIT
YA/421A	BILGE EJECTORS FOR BOTTOM
YD/486H	DELUGE SKID

EQUIP No	DESCRIPTION
A45001	DRAINS TREATMENT PACKAGE
A42001	CHEMICAL INJECTION (W.I.) SKID
A42002	CHEMICAL INJECTION (OIL) SKID
YA/688A/B	REFRIGERANT CONDITIONING UNIT
B-123302	GLYCOL SUMP TANK PUMP
B-51102A/B/C	SEAWATER SUPPLY CAISSON PUMPS A,B,C
B-533605	DRAINS SUMP TANK PUMP
PN-514001	EXPORT POWER SWITCH PANEL
TD-51101A/B/C	SEAWATER SUPPLY CAISSONS
TD-51102	SEAWATER DISPOSAL CAISSON
TF-514001	EXPORT POWER TRANSFORMER
TO-123301	GLYCOL SUMP TANK
UQ-121003	HYDRAULIC POWER PACK UNIT
UQ-122312-02	CRUDE OIL EXPORT PUMPS VALVES PKG
UQ-122313	OIL EXPORT PIG LAUNCHERS
UQ-125101	WATER INJECTION MANIFOLD
UQ-513501	FUEL GAS TREATMENT PACKAGE
UQ-682501-01	CHEMICAL INJ. PACKAGE (OIL PROD.)
UQ-682501-02	CHEMICAL INJ. PACKAGE (OIL PROD.)
UQ-682502	CHEMICAL INJ. PACKAGE (WATER INJ.)
V-533605	DRAINS SUMP TANK
Z-542301/5	DELUGE SKIDS 'J' TO 'N'
Z-542307/12	DELUGE SKIDS 'P' TO 'U'
PN-533601	PROD CAISSON LOCAL PANEL
ATI-5336	MONITOR OIL/WATER UQ-533602
Z-610016	PULL IN SHEAVE
Z-610017	PULL IN SHEAVE

EQUIP No	DESCRIPTION
1010.38-1200-941-AM-950	AREA CLASSIFICATION SCHEDULE
1010.38-5400-947-AM-120	AREA CLASSIFICATION COL'S & RISER PLAT'S
1010.38-5400-947-AM-122	AREA CLASSIFICATION MAIN DECK
1010.38-5400-947-AM-123	AREA CLASSIFICATION ABOVE MAIN DECK
1010.38-5400-947-AM-124	AREA CLASSIFICATION AFT ELEVATION
1010.38-5400-947-AM-125	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-126	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-127	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-128	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-129	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-130	AREA CLASSIFICATION FORECASTLE DECK

DRAWING NUMBER	DRAWING TITLE
1010.38-5400-947-AM-120	AREA CLASSIFICATION COL'S & RISER PLAT'S
1010.38-5400-947-AM-122	AREA CLASSIFICATION MAIN DECK
1010.38-5400-947-AM-123	AREA CLASSIFICATION ABOVE MAIN DECK
1010.38-5400-947-AM-124	AREA CLASSIFICATION AFT ELEVATION
1010.38-5400-947-AM-125	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-126	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-127	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-128	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-129	AREA CLASSIFICATION FORECASTLE DECK
1010.38-5400-947-AM-130	AREA CLASSIFICATION FORECASTLE DECK

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F		GENERALLY REVISED	RH			
E	21/6/99	GENERALLY REVISED A/C	GH	PJS	PS	
D	10/9/98	CORRECTION REVISED A/C	MS	PS	LK	
C	15/12/98	APPROVED FOR CONSTRUCTION	MS	GH	UMH	
B	10/08/98	APPROVED FOR DESIGN	MS	GH	UMH	
A	10/08/98	APPROVED DESIGN	MS	GH	UMH	
D	10/08/98	PRODUCED DRAWING	MS	GH	UMH	

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F		GENERALLY REVISED	RH			
E	21/6/99	GENERALLY REVISED A/C	GH	PJS	PS	
D	10/9/98	CORRECTION REVISED A/C	MS	PS	LK	
C	15/12/98	APPROVED FOR CONSTRUCTION	MS	GH	UMH	
B	10/08/98	APPROVED FOR DESIGN	MS	GH	UMH	
A	10/08/98	APPROVED DESIGN	MS	GH	UMH	
D	10/08/98	PRODUCED DRAWING	MS	GH	UMH	

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F		GENERALLY REVISED	RH			
E	21/6/99	GENERALLY REVISED A/C	GH	PJS	PS	
D	10/9/98	CORRECTION REVISED A/C	MS	PS	LK	
C	15/12/98	APPROVED FOR CONSTRUCTION	MS	GH	UMH	
B	10/08/98	APPROVED FOR DESIGN	MS	GH	UMH	
A	10/08/98	APPROVED DESIGN	MS	GH	UMH	
D	10/08/98	PRODUCED DRAWING	MS	GH	UMH	

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F		GENERALLY REVISED	RH			
E	21/6/99	GENERALLY REVISED A/C	GH	PJS	PS	
D	10/9/98	CORRECTION REVISED A/C	MS	PS	LK	
C	15/12/98	APPROVED FOR CONSTRUCTION	MS	GH	UMH	
B	10/08/98	APPROVED FOR DESIGN	MS	GH	UMH	
A	10/08/98	APPROVED DESIGN	MS	GH	UMH	
D	10/08/98	PRODUCED DRAWING	MS	GH	UMH	

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F		GENERALLY REVISED	RH			
E	21/6/99	GENERALLY REVISED A/C	GH	PJS	PS	
D	10/9/98	CORRECTION REVISED A/C	MS	PS	LK	
C	15/12/98	APPROVED FOR CONSTRUCTION	MS	GH	UMH	
B	10/08/98	APPROVED FOR DESIGN	MS	GH	UMH	
A	10/08/98	APPROVED DESIGN	MS	GH	UMH	
D	10/08/98	PRODUCED DRAWING	MS	GH	UMH	

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F		GENERALLY REVISED	RH			
E	21/6/99	GENERALLY REVISED A/C	GH	PJS	PS	
D	10/9/98	CORRECTION REVISED A/C	MS	PS	LK	
C	15/12/98	APPROVED FOR CONSTRUCTION	MS	GH	UMH	
B	10/08/98	APPROVED FOR DESIGN	MS	GH	UMH	
A	10/08/98	APPROVED DESIGN	MS	GH	UMH	
D	10/08/98	PRODUCED DRAWING	MS	GH	UMH	

THIS DRAWING IS TO BE USED FOR STATED PURPOSE ONLY. REFER TO PLOT PLAN LATEST REV FOR PLANT LAYOUT

- NOTES
- HAZARDOUS AREA CLASSIFICATION IN ACCORDANCE WITH THE AMERICAN PETROLEUM INSTITUTES RECOMMENDED PRACTICE FOR ELECTRICAL INSTALLATIONS AT PETROLEUM FACILITIES, 1st EDITION 1991.
 - EXTENT OF HAZARDOUS AREA CLASSIFICATION IS DEPENDENT ON FINAL EQUIPMENT CONFIGURATION. HAZARDOUS AREA RADII START FROM THE EDGE OF SKID, OR PLATFORM WHERE APPLICABLE.
 - ALL DIMENSIONS INDICATED ARE IN METRES OR PART THEREOF.
 - DELETED.
 - ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE CERTIFIED IN ACCORDANCE WITH RP 500 FOR GAS GROUP D AND TEMPERATURE CLASS T3 (EUROPEAN EQUIVALENT GAS GROUP IIA AND TEMPERATURE CLASS T3).
 - ABBREVIATIONS USED ON THESE AREA CLASSIFICATION DRAWINGS AS DEFINED IN API RP 500 L = HORIZONTAL HAZARD RADIUS. R = HAZARD RADIUS. D = VERTICAL HAZARD RADIUS.
 - THIS DRAWING SUPERSEDES FINCANTIERI DIAGRAM No. G60700030 SHEET 1, REV 'F'.

PLAN ON TANK TOP EL. 36576

P36-RONCATOR FIELD DEVELOPMENT CONTRACT : LQ277

NOBLE DENTON Petromec AMEC

UNIT B36 HAZARDOUS AREA CLASSIFICATION TANK TOP EL 36576 A:B:L:

DRAWING NUMBER DE-3010.38-5400-947-AM-121



NOTES

- HAZARDOUS AREA CLASSIFICATION IN ACCORDANCE WITH THE AMERICAN PETROLEUM INSTITUTES RECOMMENDED PRACTICE FOR ELECTRICAL INSTALLATIONS AT PETROLEUM FACILITIES, RP 500, 1st EDITION 1991.
- EXTENT OF HAZARDOUS AREA CLASSIFICATION IS DEPENDENT ON FINAL EQUIPMENT CONFIGURATION. HAZARDOUS AREA RADIUS START FROM THE EDGE OF SKID, OR PLATFORM WHERE APPLICABLE.
- ALL DIMENSIONS INDICATED ARE IN METRES OR PART THEREOF.
- DELETED.
- ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE CERTIFIED IN ACCORDANCE WITH RP 500 FOR GAS GROUP D AND TEMPERATURE CLASS T3 (EUROPEAN EQUIVALENT GAS GROUP IIA AND TEMPERATURE CLASS T3).
- ABBREVIATIONS USED ON THESE AREA CLASSIFICATION DRAWINGS AS DEFINED IN API RP 500 L = HORIZONTAL HAZARD RADIUS. R = HAZARD RADIUS. D = VERTICAL HAZARD RADIUS.
- RP 500 (SECTION B.6.e) STATES THAT THE AREA AROUND A FLARE TIP NEED NOT BE CLASSIFIED FROM THE STANDPOINT OF INSTALLATION OF ELECTRICAL EQUIPMENT.

8. THIS DRAWING SUPERSEDES INCANTIERI DRAWING No. G60700030 SHEET 5, REV 'F'.

E Cópia fiel do documento original
JOSE CARLOS PROENÇA GUSMÃO
Diretor da Divisão de Engenharia

LEGEND

- CLASS 1., DIVISION 1.
- CLASS 1., DIVISION 2.
- UNCLASSIFIED (SEE NOTE 4)

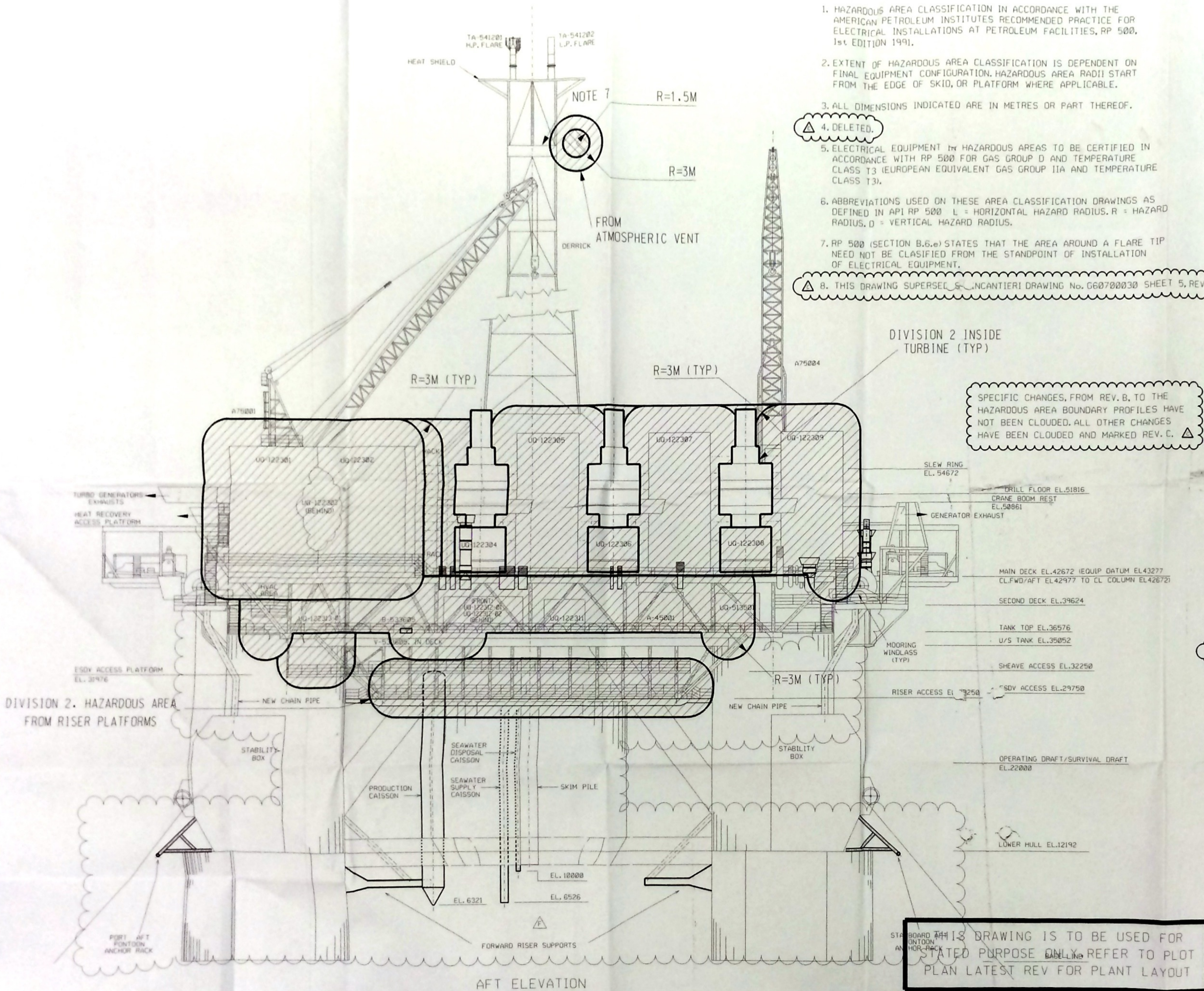
DRAWING NUMBER	DRAWING TITLE
3010.38-1200-941-AM-850	AREA CLASSIFICATION SCHEDULE
3010.38-5400-947-AM-120	AREA CLASSIFICATION COL 5 & RISER PLATFORMS
3010.38-5400-947-AM-121	AREA CLASSIFICATION TANK TOP
3010.38-5400-947-AM-122	AREA CLASSIFICATION MAIN DECK
3010.38-5400-947-AM-123	AREA CLASSIFICATION ABOVE MAIN DECK
3010.38-5400-947-AM-125	AREA CLASSIFICATION STARBOARD SIDE ELEVATION
3010.38-5400-947-AM-126	AREA CLASSIFICATION SECOND DECK

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
F	21/6/99	GENERALLY REVISED	HA	PS	PS	
E	21/6/99	REVISED A/C	LA	PS	PS	
U	10/9/98	GENERALLY REVISED A/C	LA	PS	PS	
C	5/10/98	APPROVED FOR CONSTRUCTION	MS	AJR		
C	16/09/97	DISAPPROVED FOR DESIGN	DP	DP	DP	
B	16/09/97	DISAPPROVED FOR DESIGN	DP	DP	DP	
A	16/09/97	DISAPPROVED FOR DESIGN	DP	DP	DP	
O	22/08/97	PROJECT REV I.D.C.	GH	DP	JR	

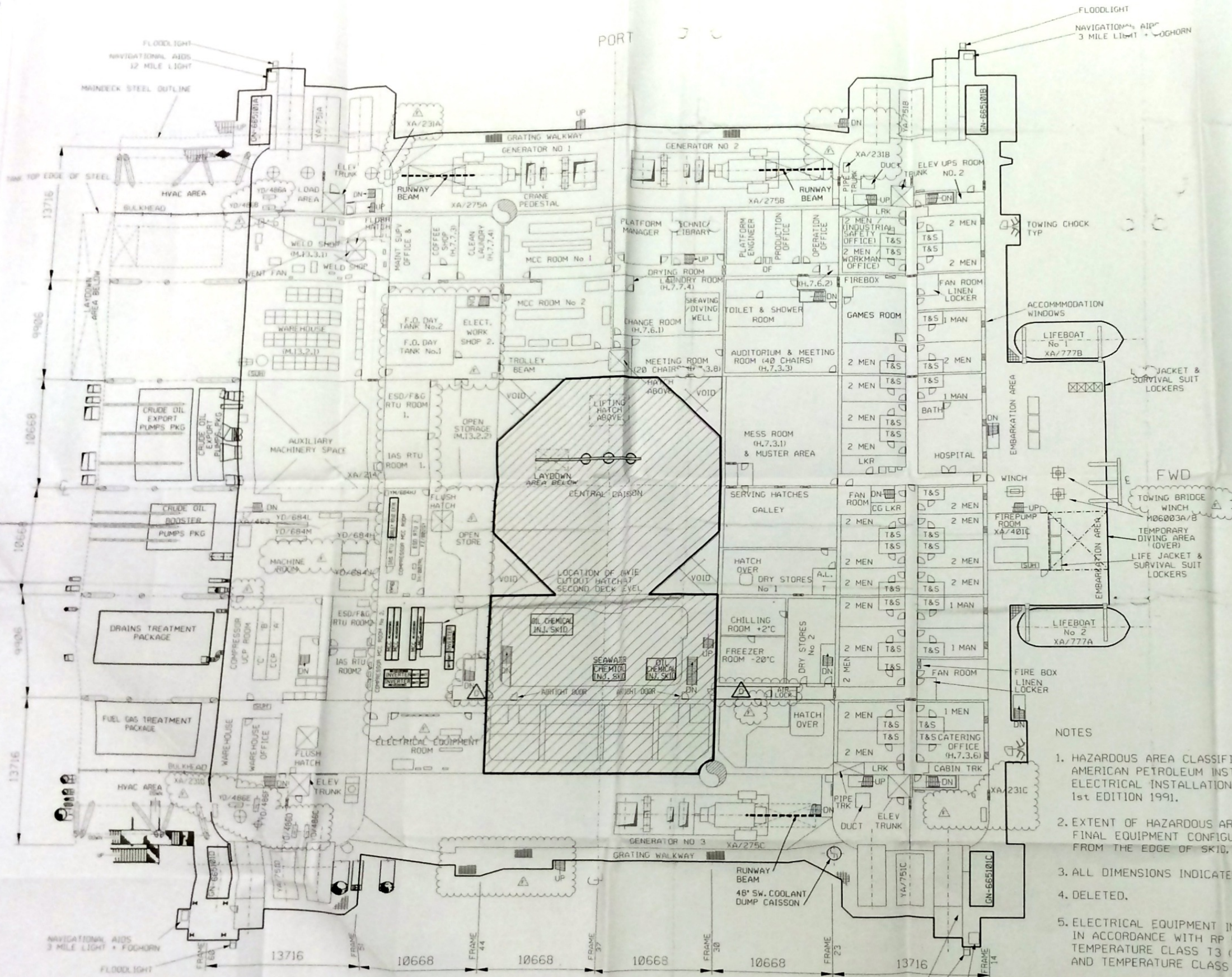
BRASIL	P36-RONCADOR FIELD DEVELOPMENT CONTRACT : L0277
NOBLE DENTON	Petromec
AMEC	

TITLE	DRAWN/DATE	CH
UNIT P36 PLOT PLAN	CH	
UNIT P36 HAZARDOUS AREA CLASSIFICATION	DP	
AFT ELEVATION	22-08-97	
APPROVED/DATE	16-09-97	
SCALE	1:200	

DRAWING NUMBER 3010.38-1200-200-AM-002
DE-3010.38-5400-947-AM-124 C



THIS DRAWING IS TO BE USED FOR
STATED PURPOSE ONLY. REFER TO PLOT
PLAN LATEST REV FOR PLANT LAYOUT



STARBOARD
PLAN ON SECOND DECK
EL. 39624

THIS DRAWING IS TO BE USED FOR
STATED PURPOSE ONLY, REFER TO PLOT
PLAN LATEST REV FOR PLANT LAYOUT

EQUIP No	DESCRIPTION
M06003A/B	TOWING BRIDLE WINCH
XA/214	AIR COMPRESSORS LUBE OIL TANK
XA/275A/B	TURBINE GENERATING SET
XA/275C	TURBINE GENERATING SET
XA/401C	FIRE PUMP
XA/463	SEA WATER PRESSURE SET
XA/777A/B	LIFEBOAT
XA/231C/D	MOORING WINDLASS LUBE OIL TANK
XA/231A/B	MOORING WINDLASS LUBE OIL TANK
YA/751A/B	MOORING WINCH
YA/751C/D	MOORING WINCH
YD/486A	DELUGE SKID
YD/486B	DELUGE SKID
YD/486C	DELUGE SKID
YD/486D	DELUGE SKID
YD/486E	DELUGE SKID
YD/486F	DELUGE SKID
YD/684H	AIR HANDLING UNIT
YD/684J	AIR HANDLING UNIT
YD/684L	AIR CONDITIONING UNIT
YD/684M	AIR CONDITIONING UNIT

LIST OF NEW EQUIPMENT

GN-665101A	MOORING WINCHES
GN-665101B	MOORING WINCHES
GN-665101C	MOORING WINCHES
GN-665101D	MOORING WINCHES
UG-542501	CENTRALISED CO2 SYSTEM

É COPIA FIEL DO DOCUMENTO ORIGINAL
JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Carreiros
LEGEND

- ☐ CLASS 1.. DIVISION 1.
- ☐ CLASS 1.. DIVISION 2.
- ☐ UNCLASSIFIED (SEE NOTE 4)

DRAWING NUMBER	DRAWING TITLE
3010.38-1200-941-AM-850	AREA CLASSIFICATION SCHEDULE
3010.38-5400-947-AM-120	AREA CLASSIFICATION COL'S & RISER PLACES
3010.38-5400-947-AM-121	AREA CLASSIFICATION TANK TOP
3010.38-5400-947-AM-122	AREA CLASSIFICATION MAIN DECK
3010.38-5400-947-AM-123	AREA CLASSIFICATION ABOVE MAIN DECK
3010.38-5400-947-AM-124	AREA CLASSIFICATION AFT ELEVATION
3010.38-5400-947-AM-125	AREA CLASSIFICATION STARBOARD SIDE ELEVATION

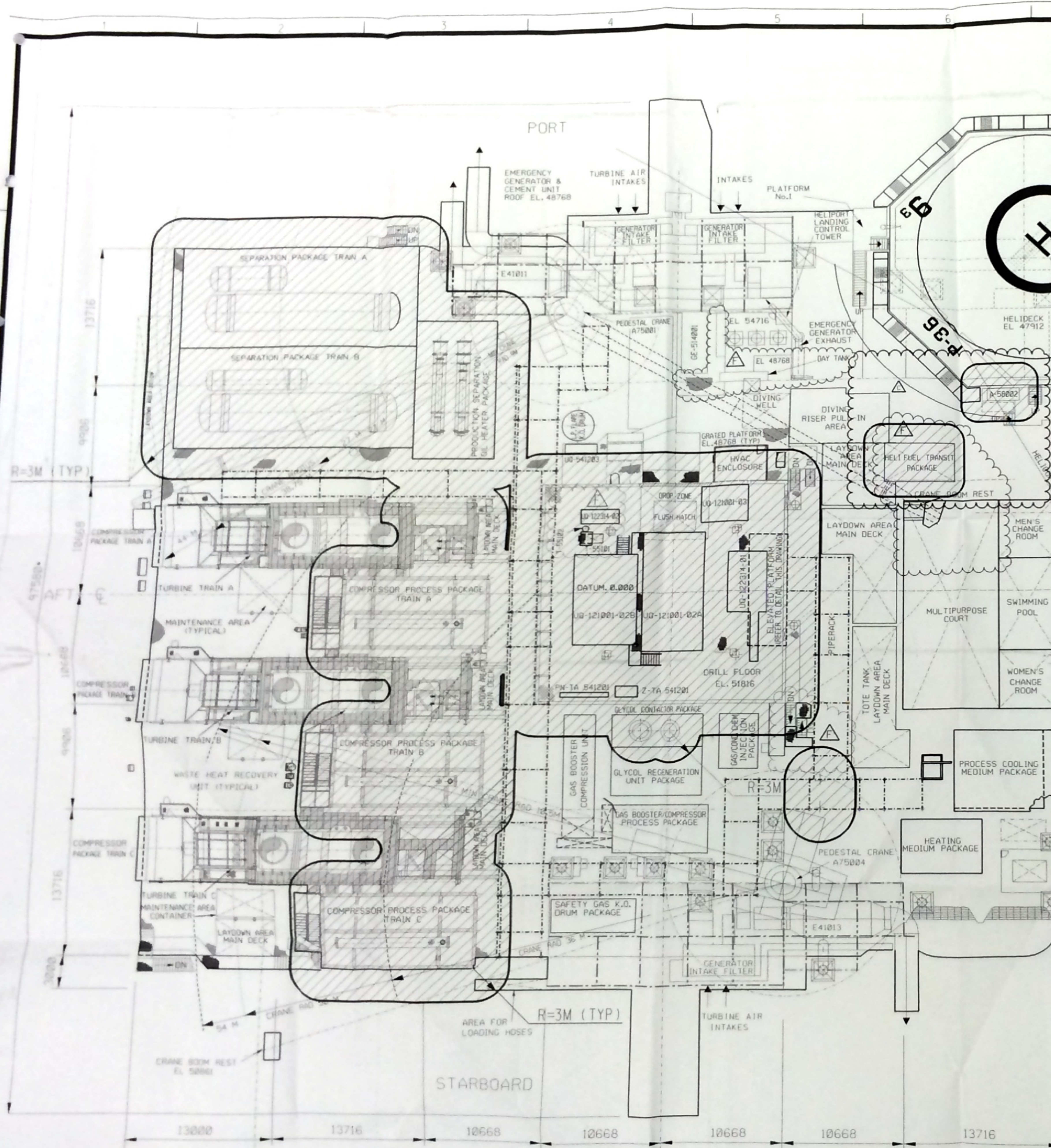
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLIENT
D	8.12.98	ISSUED A/C	PC	DP	DMH	
B	09.09.97	RE-ISSUED FOR DESIGN	SJR	DP	DMH	
A	16.09.97	ISSUED FOR DESIGN	MS	DP	JR	

BRASOIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT : L0277

NOBLE DENTON Petromec AMEC

TITLE	DRAWN/DATE
UNIT P36 HAZARDOUS AREA CLASSIFICATION SECOND DECK EL. 39624 A.B.L.	M.S.
	CHECKED/DATE
	DP 22-08-97
	APPROVED/DATE
	JR 16-09-97
	SCALE
	1:200

- NOTES
- HAZARDOUS AREA CLASSIFICATION IN ACCORDANCE WITH THE AMERICAN PETROLEUM INSTITUTES RECOMMENDED PRACTICE FOR ELECTRICAL INSTALLATIONS AT PETROLEUM FACILITIES, RP 500, 1st EDITION 1991.
 - EXTENT OF HAZARDOUS AREA CLASSIFICATION IS DEPENDENT ON FINAL EQUIPMENT CONFIGURATION. HAZARDOUS AREA RADIUS START FROM THE EDGE OF SKID, OR PLATFORM WHERE APPLICABLE.
 - ALL DIMENSIONS INDICATED ARE IN METRES OR PART THEREOF.
 - DELETED.
 - ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE CERTIFIED IN ACCORDANCE WITH RP 500 FOR GAS GROUP D AND TEMPERATURE CLASS T3 (EUROPEAN EQUIVALENT GAS GROUP IIA AND TEMPERATURE CLASS T3).
 - ABBREVIATIONS USED ON THESE AREA CLASSIFICATION DRAWINGS AS DEFINED IN API RP 500 L = HORIZONTAL HAZARD RADIUS. R = HAZARD. RADIUS. D = VERTICAL HAZARD RADIUS.
 - THIS DRAWING SUPERSEDES FINCANTIERI DIAGRAM No. 060700030 SHEET 2 REV.F.



- NOTES
- HAZARDOUS AREA CLASSIFICATION IN ACCORDANCE WITH THE AMERICAN PETROLEUM INSTITUTE'S RECOMMENDED PRACTICES FOR ELECTRICAL INSTALLATIONS AT PETROLEUM FACILITIES, RP 500, 1st EDITION 1991.
 - EXTENT OF HAZARDOUS AREA CLASSIFICATION IS DEPENDENT ON FINAL EQUIPMENT CONFIGURATION. HAZARDOUS AREA RADIUS START FROM THE EDGE OF SKID, OR PLATFORM WHERE APPLICABLE.
 - ALL DIMENSIONS INDICATED ARE IN METRES OR PART THEREOF.
 - DELETED.
 - ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE CERTIFIED IN ACCORDANCE WITH RP 500 FOR GAS GROUP D AND TEMPERATURE CLASS T3 (EUROPEAN EQUIVALENT GAS GROUP IIA AND TEMPERATURE CLASS T3).
 - ABBREVIATIONS USED ON THESE AREA CLASSIFICATION DRAWINGS AS DEFINED IN API RP 500 L = HORIZONTAL HAZARD RADIUS, R = HAZARD RADIUS, D = VERTICAL HAZARD RADIUS.
 - RP 500 (SECTION B.6.6) STATES THAT THE AREA AROUND A FLARE TIP NEED NOT BE CLASSIFIED FROM THE STANDPOINT OF INSTALLATION OF ELECTRICAL EQUIPMENT.
 - THIS DRAWING SUPERSEDES FINCIANTIERI DRAWING No. 060700030 SHEET 4, REV 'F'.

THIS DRAWING IS TO BE USED FOR STATED PURPOSE ONLY, REFER TO PLOT PLAN LATEST REV FOR PLANT LAYOUT

LIST OF EXISTING EQUIPMENT

EQUIP No	DESCRIPTION
A75001	PORT DECK CRANE
A75004	STARBOARD DECK CRANE
E41011	WASTE HEAT RECOVERY UNIT
E41013	WASTE HEAT RECOVERY UNIT
GE-514001	AUXILIARY GENERATOR
T-55101	FW PLANT CHEMICAL TANK
T-55102	FW EXPANSION TANK
A-58002	HELICOPTER DISPENSING SKID

LIST OF NEW EQUIPMENT INCORPORATED

EQUIP No	DESCRIPTION
PN-TA 541201	FLARE PANEL
TA-541201	HP FLARE TIP
TA-541202	LP FLARE TIP
UO-121001-02A/B	FLOWLINE LAUNCHER PACKAGE
UO-121001-03	FLOWLINE RECEIVERS PACKAGE
UO-122314-01	GAS EXPORT PIG LAUNCHERS PACKAGE
UO-122314-02	FUEL GAS EXPORT PIG LAUNCHERS PACKAGE
UO-512501-02	EXPANSION VESSELS PACKAGE
UO-541203	VENT SNUFFING PACKAGE
Z-TA-541201	PILOT GAS SKID

LIST OF EXISTING EQUIPMENT (CONTD.)

A-58002	HELIFUEL DISPECER R A 58002
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LEGEND

1. DENOTES OVERALL DIMENSIONS
- CLASS 1.. DIVISION 1.
- CLASS 1.. DIVISION 2.
- UNCLASSIFIED (SEE NOTE 4)

3010.38-1200-941-AM-850	AREA CLASSIFICATION SCHEDULE
3010.38-5400-947-AM-120	AREA CLASSIFICATION FOR 'S' & 'P' RISER
3010.38-5400-947-AM-121	AREA CLASSIFICATION TANK TOP
3010.38-5400-947-AM-122	AREA CLASSIFICATION MAIN DECK
3010.38-5400-947-AM-124	AREA CLASSIFICATION AFT ELEVATION
3010.38-5400-947-AM-125	AREA CLASSIFICATION STARBOARD SIDE ELEVATION
3010.38-5400-947-AM-126	AREA CLASSIFICATION PORT SIDE ELEVATION

REV	DATE	DESCRIPTION OF REVISION	DRN BY	CHK BY	APPD BY	APPD CLTEN
F	21/06/99	GENERALLY REVISED	PC	PS	PJS	
E	21/06/99	REVISED AFC	CH	PS	LK	
D	10/09/97	GENERALLY REVISED	LK	PS	LK	
C	15/12/97	APPROVED FOR CONSTRUCTION	MS	AJH	LK	
B	10/09/97	APPROVED FOR CONSTRUCTION	MS	NJB	LK	
A	10/09/97	REVISED IN D.C.	NJB	JP	JP	
O	01/06/97	REVISED IN D.C.	CH	JP	JP	

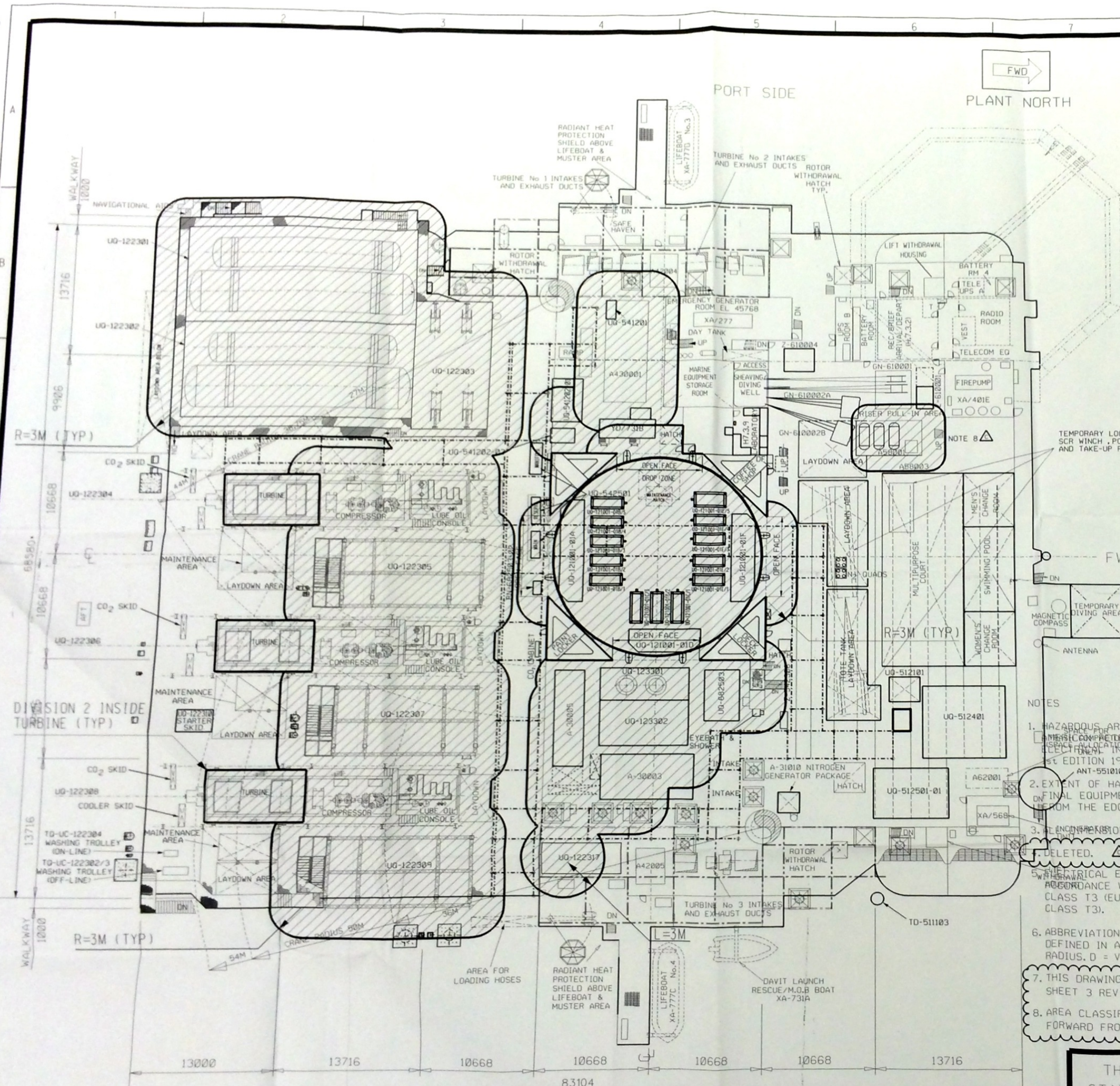
P36-RONCATOR FIELD DEVELOPMENT
CONTRACT : L0277

BRASOIL NOBLE DENTON Petromec AMEC

UNIT B36 HAZARDOUS AREA CLASSIFICATION ABOVE MAIN DECK EL 46024 & ABOVE EL 51816 A.B.L.

SCALE 1:200

DRAWING NUMBER DE-3010.38-5400-200-AMK-003



LIST OF NEW EQUIPMENT INCORPORATED CONT.

2-610004	CONTROL CABINET
GN-610001	MAIN RISER PULL-IN WINCH SKID
2-610001	MAIN RISER PULL-IN WINCH P/PACK

SPECIFIC CHANGES, FROM REV. B, TO THE HAZARDOUS AREA BOUNDARY PROFILES HAVE NOT BEEN CLOUDED. ALL OTHER CHANGES HAVE BEEN CLOUDED AND MARKED REV. C.

LIST OF EXISTING EQUIPMENT

EQUIP No.	DESCRIPTION
A42004	W.I. HYPOCHLORINATOR PORT
A42005	W.I. HYPOCHLORINATOR STARBOARD
A43001	HP FLARE KO DRUM SKID
A58001	HELLI FUEL TRANSIT PACKAGE
A58003	HELICOPTER REFUEL PUMP SKID
A62001	TRASH COMPACTOR PACKAGE
XA/277	EMERGENCY GENERATING SET
XA/401E	FIRE PUMP
XA/568	INCINERATOR UNIT
XA/731A	RESCUE BOAT
XA/777C/D	LIFEBOAT

LIST OF EXISTING EQUIPMENT TO BE UP-GRADED

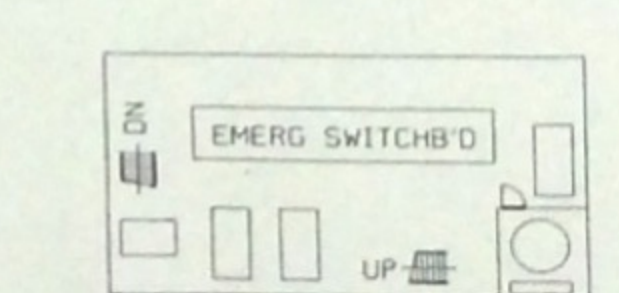
A-30003	GAS BOOSTER/COMPRESSOR PROCESS PACKAGE
MODIFIED LP/FLASHGAS PROCESS SKID	
A-30005	GAS BOOSTER COMPRESSOR PACKAGE
(MODIFIED LP/FLASHGAS COMPRESSOR)	

LIST OF EXISTING EQUIPMENT RELOCATED

A-31010	NITROGEN GENERATOR PACKAGE
YD/731B	MATRIX SEPARATOR

LIST OF NEW EQUIPMENT INCORPORATED

PN-682503-02	GAS CORROSION INHIBITOR ICD UNIT
TD-511103	48" SW COOLANT DUMP CAISSON
TO-UC-122302/3	WASHING TROLLEY (OFF-LINE)
TO-UC-122304	WASHING TROLLEY (ON-LINE)
TO-UC-121001-01A/C	FLOWLINE MANIFOLDS & CHOKE VALVES PACKAGE
UQ-122301	SEPARATION PACKAGE TRAIN A
UQ-122302	SEPARATION PACKAGE TRAIN B
UQ-122303	PROD SEPARATOR OIL HEATERS
UQ-122304	TURBINE /COMPRESSOR PACKAGE TRAIN A
UQ-122305	COMPRESSOR PROCESS PACKAGE TRAIN A
UQ-122306	TURBINE /COMPRESSOR PACKAGE TRAIN B
UQ-122307	COMPRESSOR PROCESS PACKAGE TRAIN B
UQ-122308	TURBINE /COMPRESSOR PACKAGE TRAIN C
UQ-122309	COMPRESSOR PROCESS PACKAGE TRAIN C
UQ-122310	TURBINE STARTER SKID
UQ-122311	SAFETY GAS KO DRUM PACKAGE
UQ-123301	GLYCOL CONTACTOR TOWERS PACKAGE
UQ-123302	GLYCOL REGENERATION UNIT PACKAGE
UQ-512101	CAISSON PUMPS ANTI-FOULING UNIT
UQ-512401	COOLING MEDIUM PACKAGE
UQ-512501-01	HEATING MEDIUM PACKAGE
UQ-541202-01	LP FLARE KO DRUM PACKAGE
UQ-541202-02	LP FLARE PUMP SKID
UQ-682503	GAS/COND. CHEM. INJ. PACKAGE
2-542306	DELUGE SKID 'D'
UQ-542501	CENTRALISED CO2 SYSTEM



EMERGENCY GENERATOR ROOM EL 48768

LEGEND

- CLASS 1.. DIVISION 1.
- CLASS 1.. DIVISION 2.
- UNCLASSIFIED (SEE NOTE 4)

- NOTES
- HAZARDOUS AREA CLASSIFICATION IN ACCORDANCE WITH THE INTERNATIONAL PETROLEUM INSTITUTES RECOMMENDATION FOR HAZARDOUS AREA CLASSIFICATION INSTALLATIONS AT PETROLEUM FACILITIES, RP 500, 1ST EDITION 1991.
 - EXTENT OF HAZARDOUS AREA CLASSIFICATION IS DEPENDENT ON FINAL EQUIPMENT CONFIGURATION. HAZARDOUS AREA RADIUS START FROM THE EDGE OF SKID, OR PLATFORM WHERE APPLICABLE.
 - LENGTHS INDICATED ARE IN METRES OR PART THEREOF.
 - DELETED.
 - ELECTRICAL EQUIPMENT IN HAZARDOUS AREAS TO BE CERTIFIED IN ACCORDANCE WITH RP 500 FOR GAS GROUP D AND TEMPERATURE CLASS T3 (EUROPEAN EQUIVALENT GAS GROUP IIA AND TEMPERATURE CLASS T3).
 - ABBREVIATIONS USED ON THESE AREA CLASSIFICATION DRAWINGS AS DEFINED IN API RP 500. L = HORIZONTAL HAZARD RADIUS. R = HAZARD RADIUS. D = VERTICAL HAZARD RADIUS.
 - THIS DRAWING SUPERSEDES FINCANTIERI DRAWING No. G60700030 SHEET 3 REV 'F'.
 - AREA CLASSIFICATION FOR PACKAGE A580001 & A380003 CARRIED FORWARD FROM FINCANTIERI DRAWING No. G60700030 SHEET REV 'F'.

THIS DRAWING IS TO BE USED FOR STATED PURPOSE ONLY, REFER TO PLOT PLAN LATEST REV FOR PLANT LAYOUT

REFERENCE DRAWINGS

NO.	DESCRIPTION
1010.38-1200-941-AMK-950	AREA CLASSIFICATION SCHEDULE
1010.38-5400-947-AMK-120	AREA CLASSIFICATION COL 'S' & RISER PLATF'S
1010.38-5400-947-AMK-121	AREA CLASSIFICATION TANK TOP
1010.38-5400-947-AMK-123	AREA CLASSIFICATION ABOVE MAIN DECK
1010.38-5400-947-AMK-124	AREA CLASSIFICATION AFT ELEVATION

REVISIONS

REV	DATE	DESCRIPTION OF REVISION	DRN	CHK	APPD	BY	CLIENT
F		GENERALLY REVISED	PC	PS	PJS		
E	21/6/99	REVISED AS NOTED AFC	GH	PS	PJS		
D	10/9/98	REVISED AS NOTED AFC	LK	PS	LK		
C	15/12/97	APPROVED FOR CONSTRUCTION	MS	AJH	LK		
B	15/08/97	APPROVED FOR DESIGN	NJB	DP	JR		
A	16/07/97	APPROVED FOR DESIGN	NJB	DP	JR		
0	16/07/97	PRELIMINARY I.D.C.	GH	DP	JR		

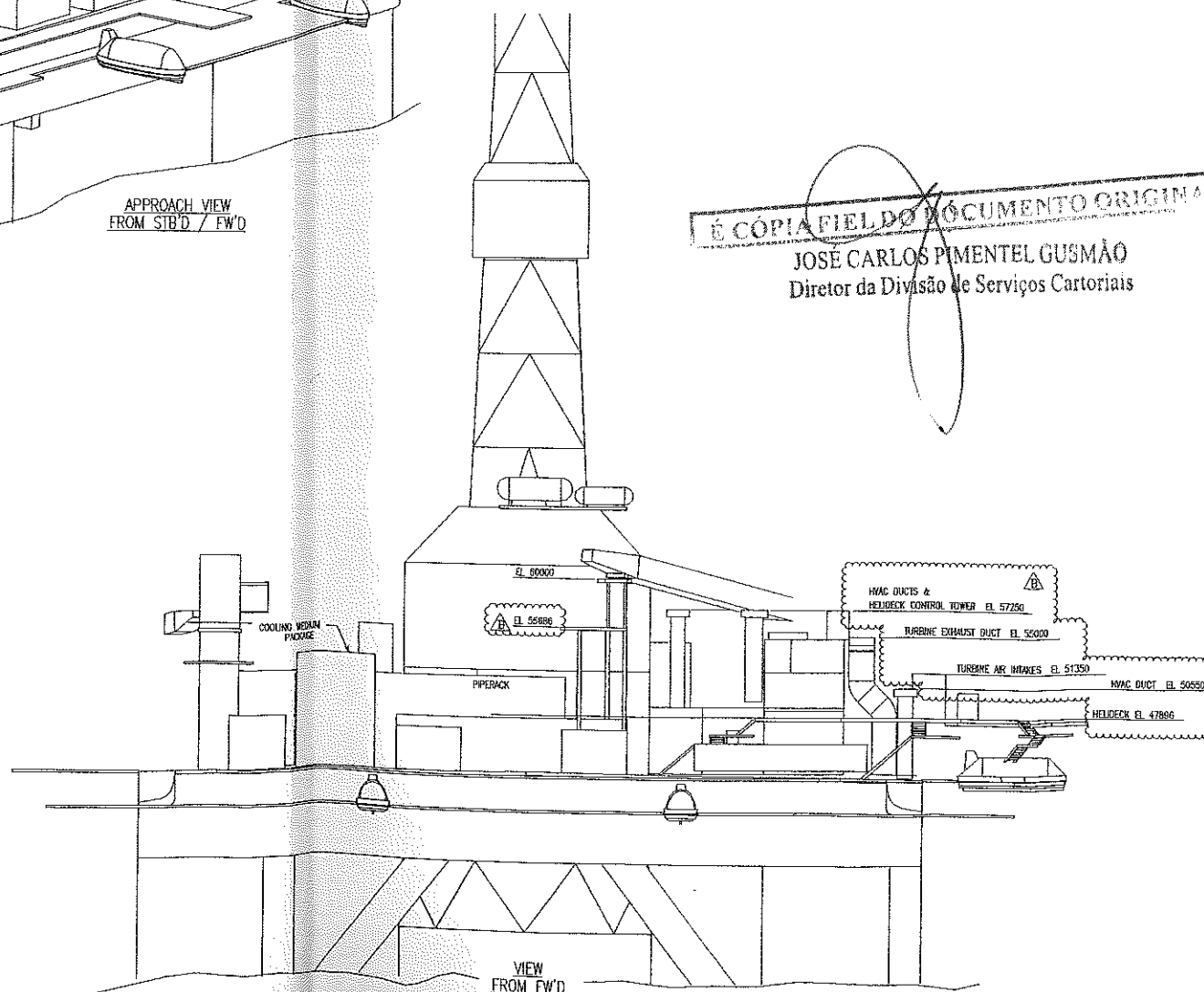
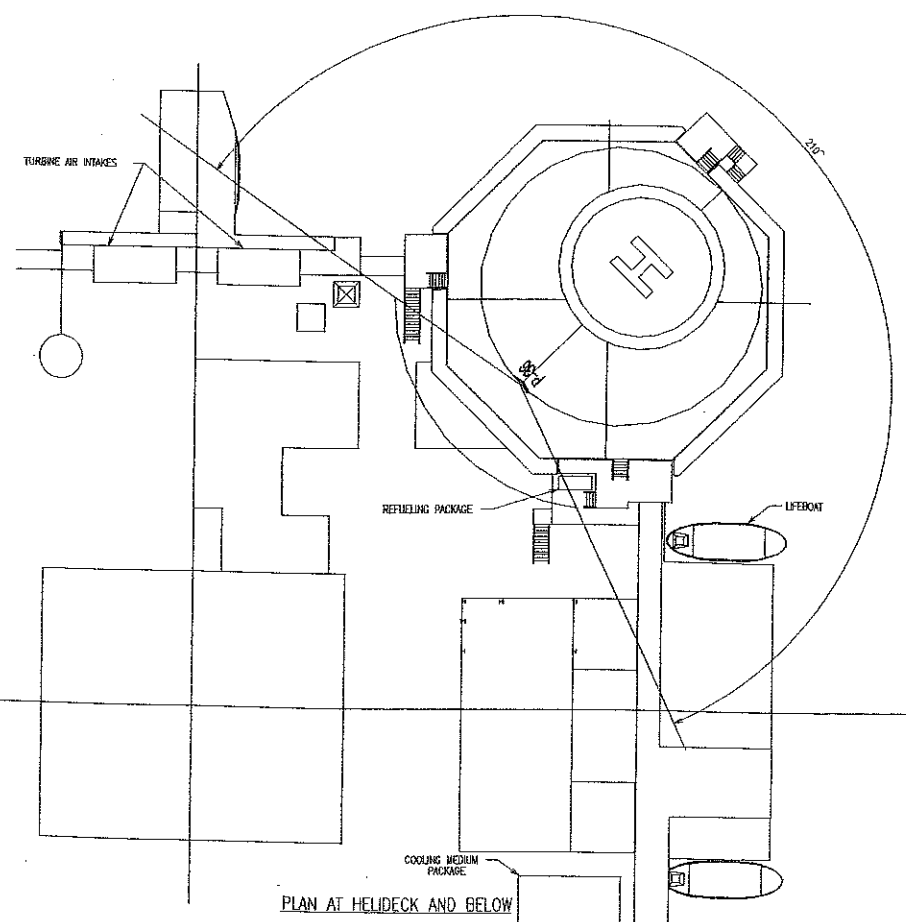
P36-RONCADOR FIELD DEVELOPMENT CONTRACT : L0277

BRASIL	NOBLE DENTON	Petromec	AMEC
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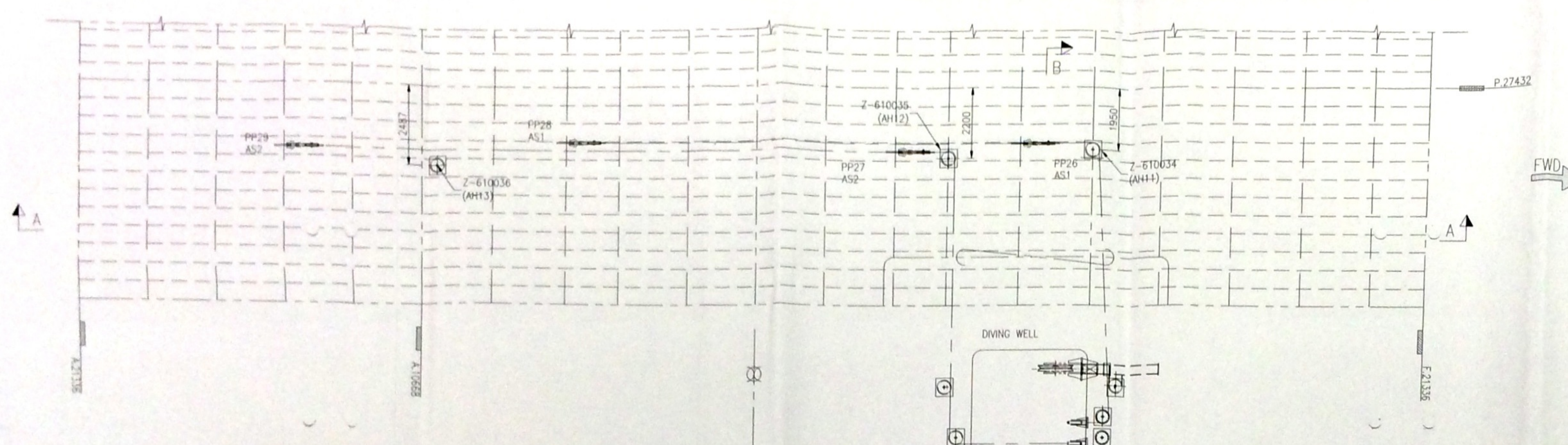
UNIT P36 HAZARDOUS AREA CLASSIFICATION MAIN DECK

TITLE	EL 42672 A.B.L.
DRAWN/DATE	N.S.B.
CHECKED/DATE	N.S.B.
APPROVED/DATE	L.K.
SCALE	1:2000

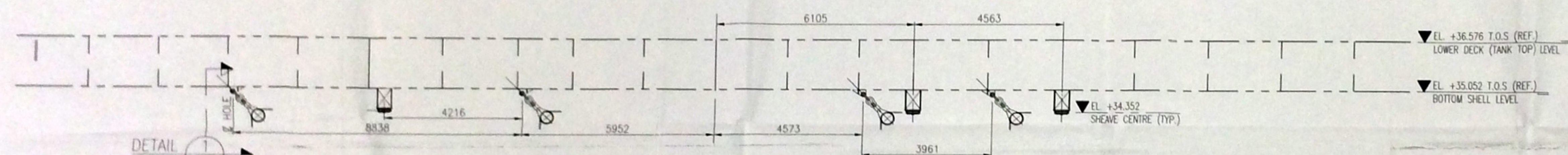
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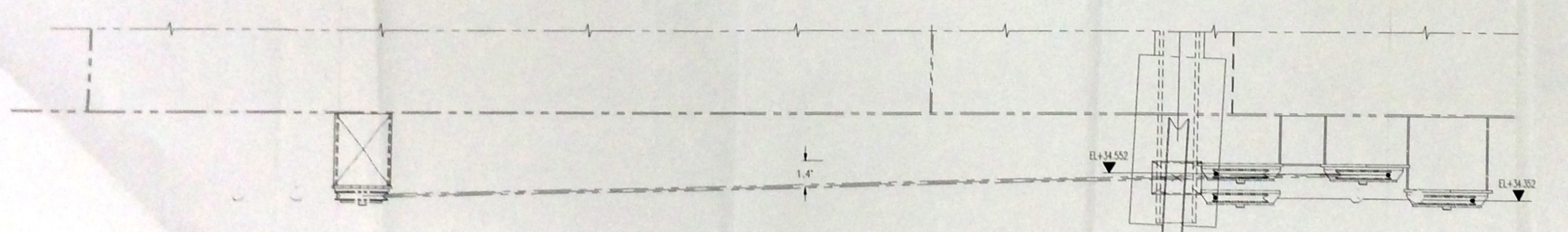
DRAWING NUMBER				DRAWING TITLE					
REFERENCE DRAWINGS									
B	8/6/99	REISSUED FOR INFORMATION	LK	PS	BF				
A	7/5/99	ISSUED FOR INFORMATION	LK	PS	OH				
REV.	ISSUE DATE	DESCRIPTION OF REVISION	DWN BY	CHK BY	APP'D BY	APPROV. CLIENT			
			P36-RONCADOR FIELD DEVELOPMENT CONTRACT : L0277						
									
TITLE						DRAWN/DATe			
HELIDECK GEOMETRY AND APPROACH VIEWS						L. KIRBY			
						CHECKED/DATe PS			
						APPROVED/DATe OH			
SCALE						1:200			
DRAWING NUMBER						REV			
DF-301A 3R-1200-200-AWK-200						B			



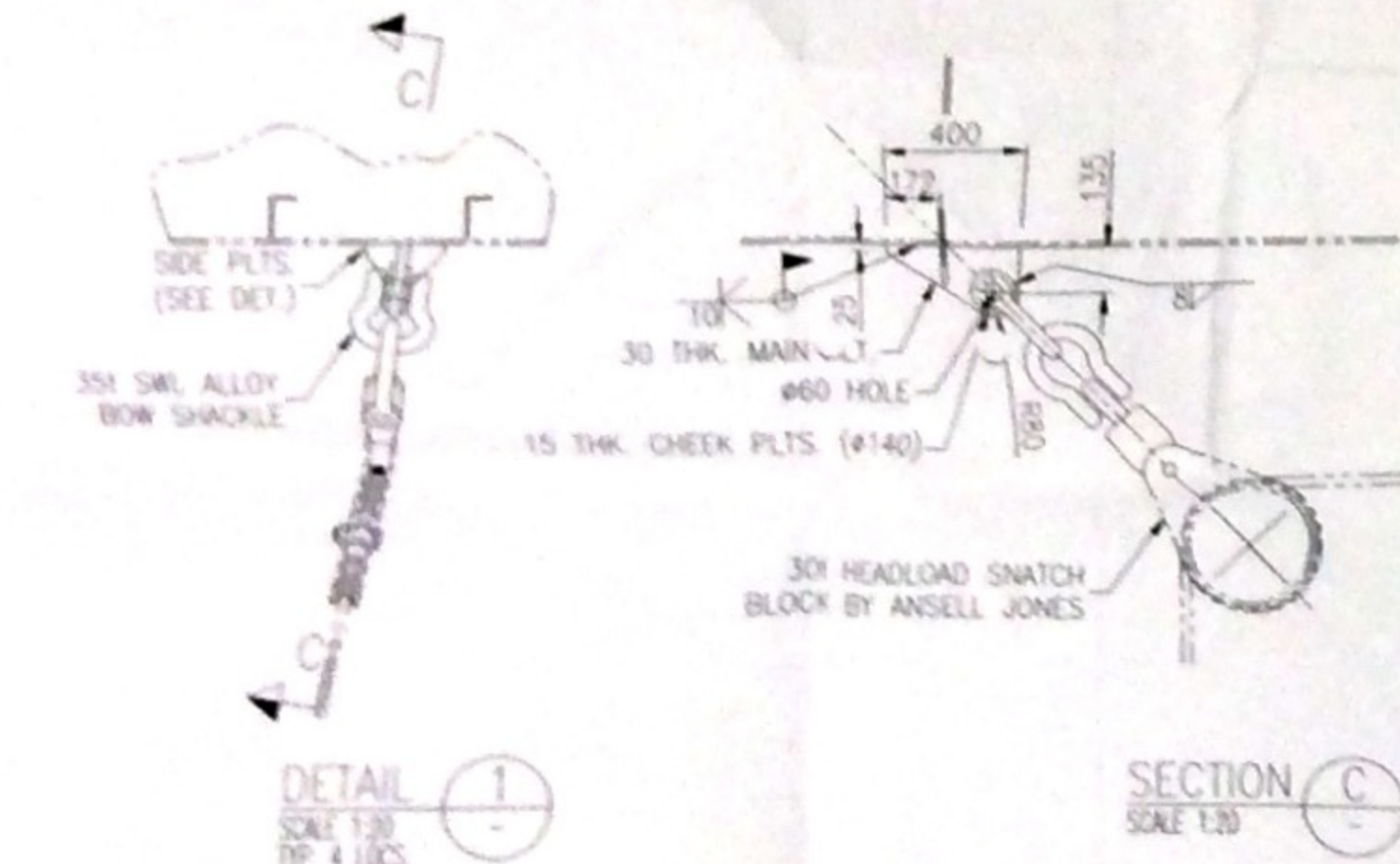
PART PLAN ON BOTTOM SHELL



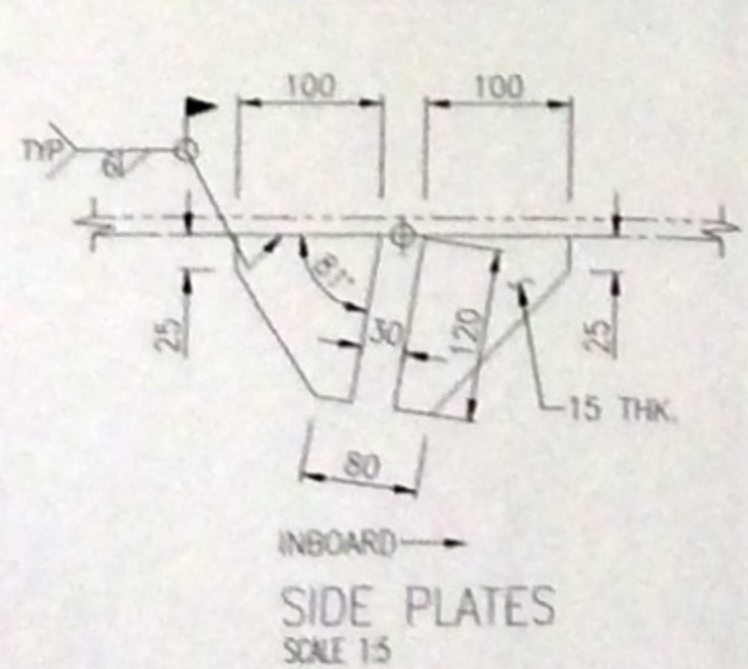
SECTION A-A



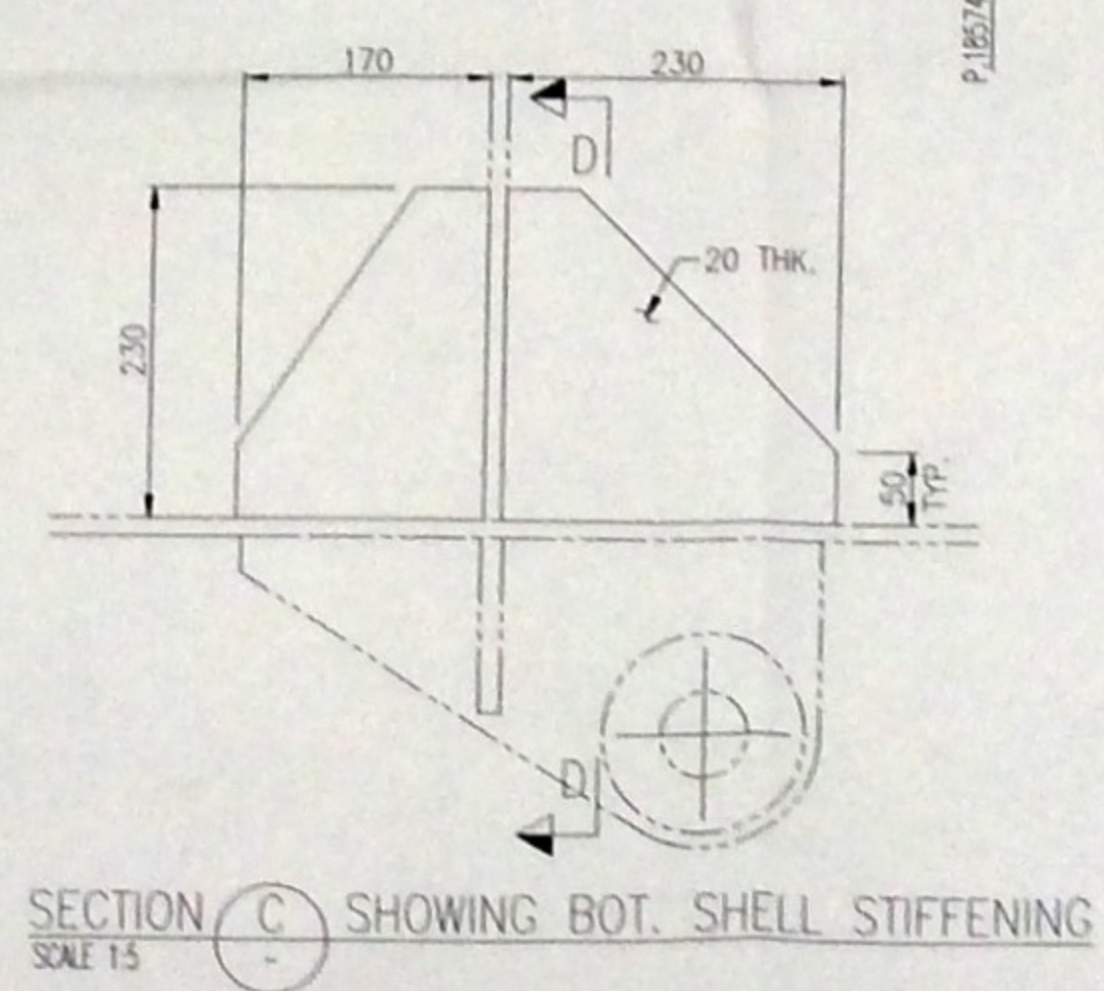
SECTION B-B
SCALE 1:20



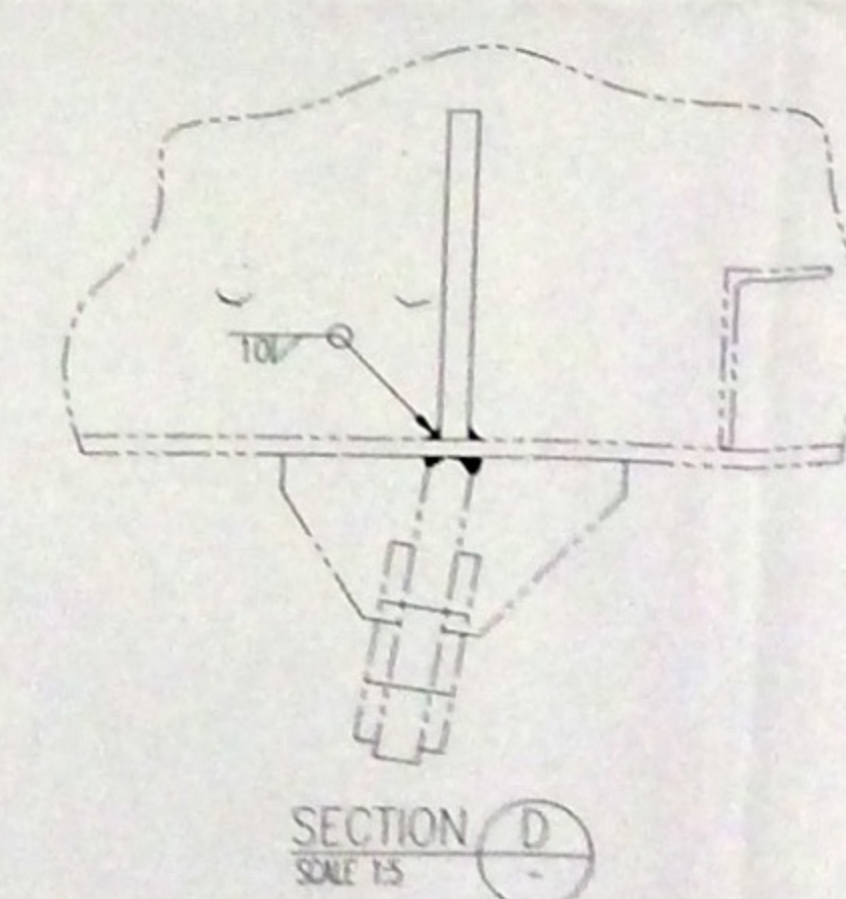
SECTION C
SCALE 1:20



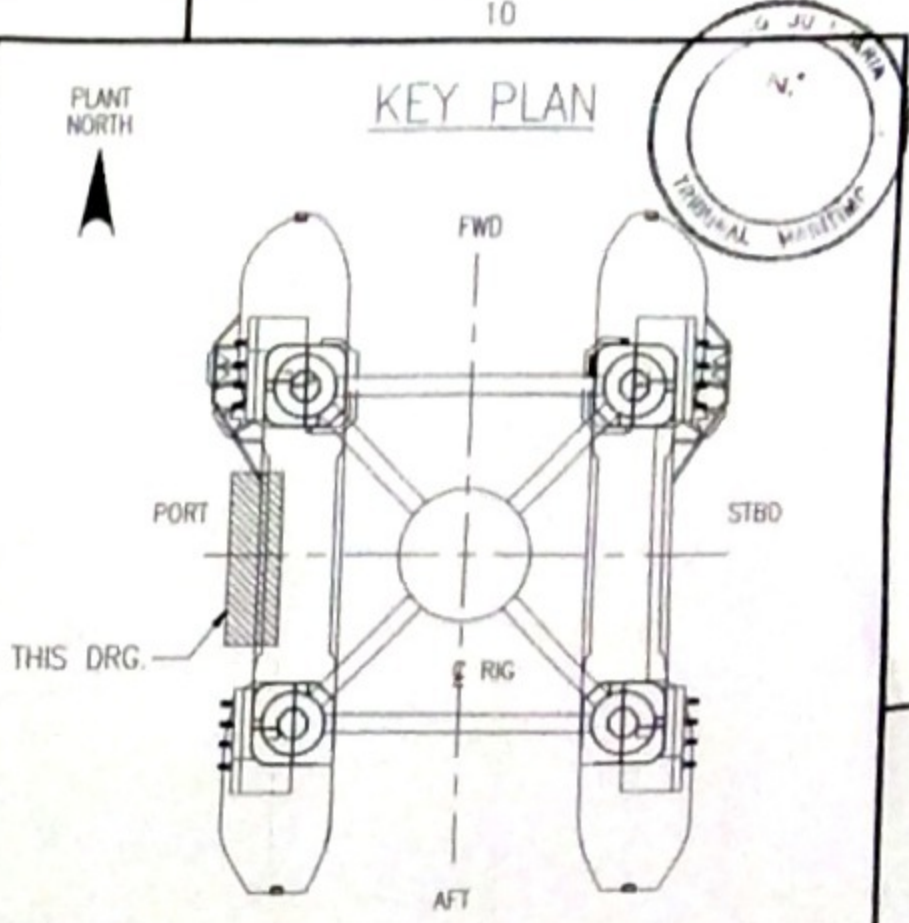
SECTION C
SCALE 1:5



SECTION C SHOWING BOT. SHELL STIFFENING
SCALE 1:5



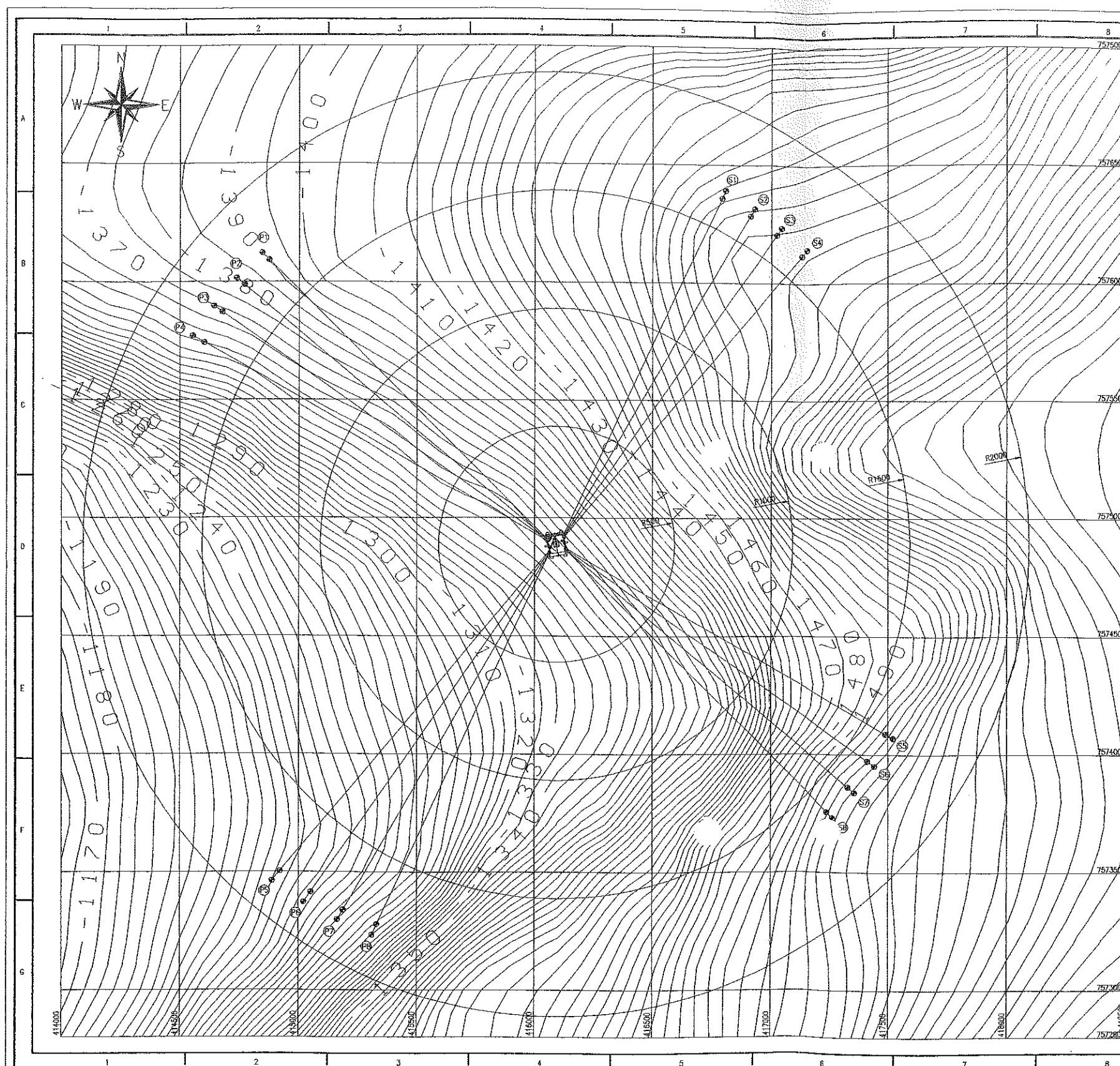
SECTION D
SCALE 1:5



- NOTES
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01
 2. ALL STEEL SHOWN ON THIS DRAWING TO BE CLASSIFIED AS PRIMARY STRUCTURES (REF. DRG. No. NBD-300-01, NOTE 12) UNO.

E COPIA FIEL DO DOCUMENTO ORIGINAL
JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartográficos

DRAWING NUMBER		DRAWING TITLE	
P36-RONCADOR FIELD DEVELOPMENT		CONTRACT No. 7/15/2150	
BR BRASOIL		NOBLE DENTON	
P36-RONCADOR FIELD DEVELOPMENT		CONTRACT No. 7/15/2150	
NOBLE DENTON		Petromec	
AMEC		AMEC	
TITLE		DRAWN/DATE	
STEEL CATENARY RISERS		SCE/JAN/99 98	
AUXILIARY PULL-IN SYSTEM		AT/NOV 99	
PAD-EYE AND SHEAVE BLOCK LAYOUT AND SUPPORT		AT/NOV 99	
SCALE		1:75 (A1)	
DRAWING NUMBER		REV	
DE-3010.38-1320-140-NBD-390-14		8	



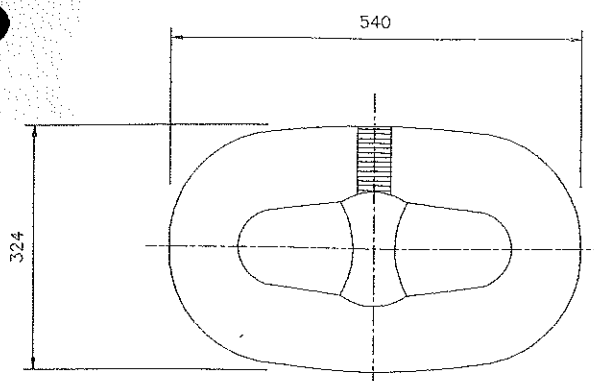
ID	LINE LENGTH (m)	WATER DEPTH (m)	TOUCHDOWN POSITION		ANCHOR POSITIONS	
			EAST (m)	NORTH (m)	EAST (m)	NORTH (m)
S1	2198	1493.00	416790.02	7576363.69	416802.45	7576396.78
S2	2198	1502.00	416908.80	7576290.08	416926.79	7576321.23
S3	2198	1506.00	417022.83	7576210.32	417043.39	7576239.68
S4	2198	1509.00	417130.09	7576121.79	417153.04	7576149.14
S5	2198	1507.00	417489.32	7574092.47	417520.24	7574074.61
S6	2198	1512.00	417412.91	7573976.53	417442.05	7573956.12
S7	2198	1513.00	417329.94	7573865.78	417357.09	7573843.00
S8	2198	1510.00	417240.40	7573760.27	417265.55	7573735.12
P1	2198	1390.00	414874.10	7576095.23	414844.20	7576125.13
P2	2198	1378.00	414769.87	7575990.67	414736.97	7576018.48
P3	2198	1369.00	414676.40	7575875.78	414640.78	7575900.72
P4	2198	1356.00	414590.24	7575753.83	414551.82	7575776.02
P5	2198	1231.00	414922.71	7573507.86	414888.41	7573466.98
P6	2198	1248.00	415051.44	7573418.97	415021.65	7573376.42
P7	2198	1268.00	415187.45	7573343.94	415162.27	7573300.32
P8	2198	1291.00	415329.32	7573283.64	415308.67	7573239.37

- NOTES
1. UNITS: HEADING 350°
 2. RIG CENTRE COORDINATES:
416092.0 E
7574993.0 N
WATER DEPTH AT RIG CENTRE: 1362m
 3. WATER DEPTHS ARE APPROXIMATE
 4. LINE LENGTH IS NOMINAL AND INCLUDES 9m ALLOWANCE FOR SHACKLES.

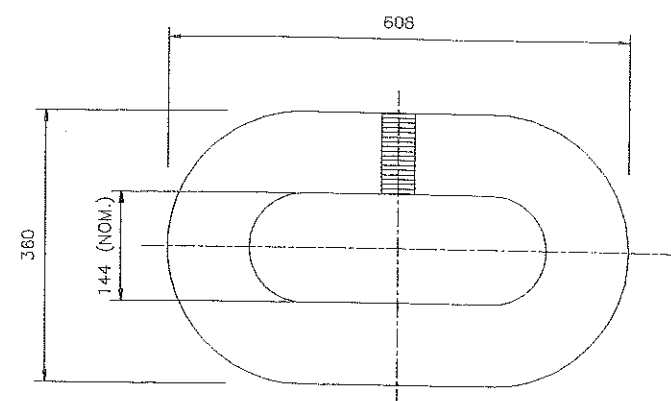
É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS RIMENDEL GUSMÃO
Diretor da Divisão de Serviços Cartoriais

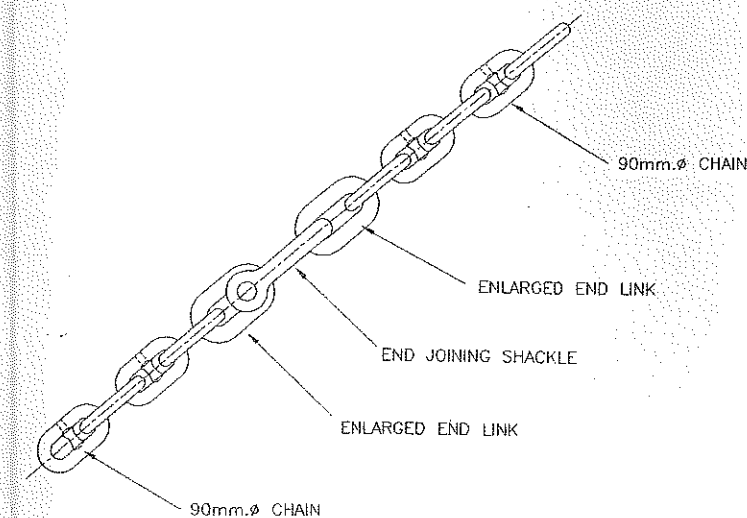
DRAWING NUMBER		DRAWING TITLE	
REFERENCE DRAWINGS			
Q	16.11.96	ISSUED A/C FOLLOWING RELOCATION	SOE
C	08.10.97	A/D	RHS MSE AT
B	12.09.98	A/D	RHS MSE AT
A	07.08.06	FOR COMMENT	RHS MSE AT
Q	22.07.98	DC	RHS MSE AT
REV	ISSUE DATE	DESCRIPTION OF REVISION	DOWN BY
BR BRADON		P36-RONCADOR FIELD DEVELOPMENT	
NORLE DENTON		CONTRACT No.: 7/15/2150	
Petromisc		AMC	
TITLE		DRAWN/DATE	
MOORING SYSTEM-LAYOUT AND ANCHOR PATTERN		RHS/JUL.97	
SCALE		CHECKED/DATE	
1:7500 (A1)		APPROVED/DATE	
DRAWING NUMBER		REV	
DE-3010.38-1320-962-NBD-336-01		D	



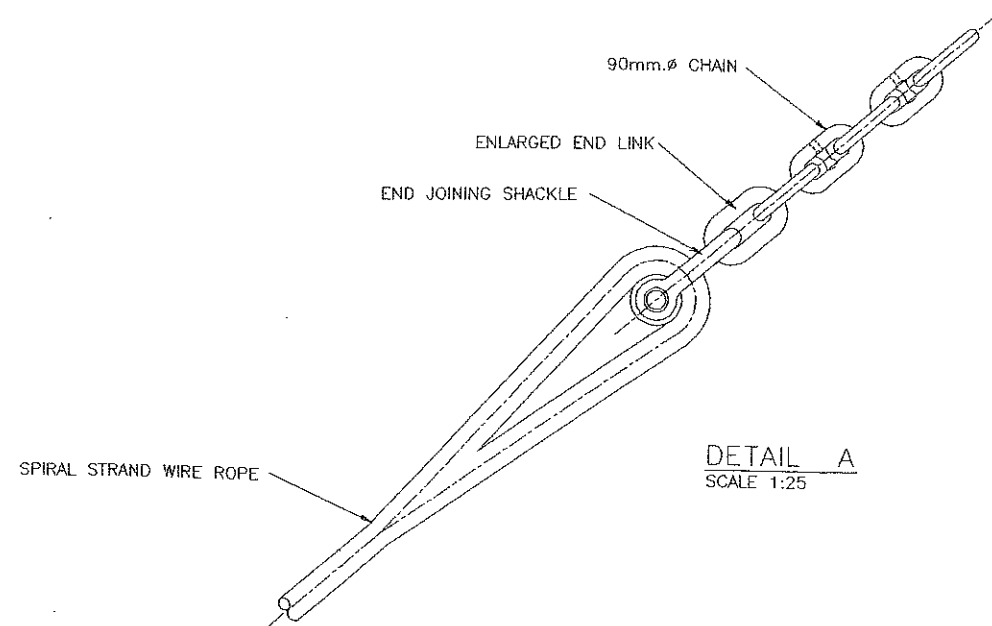
TYPICAL COMMON LINK
SCALE 1:5



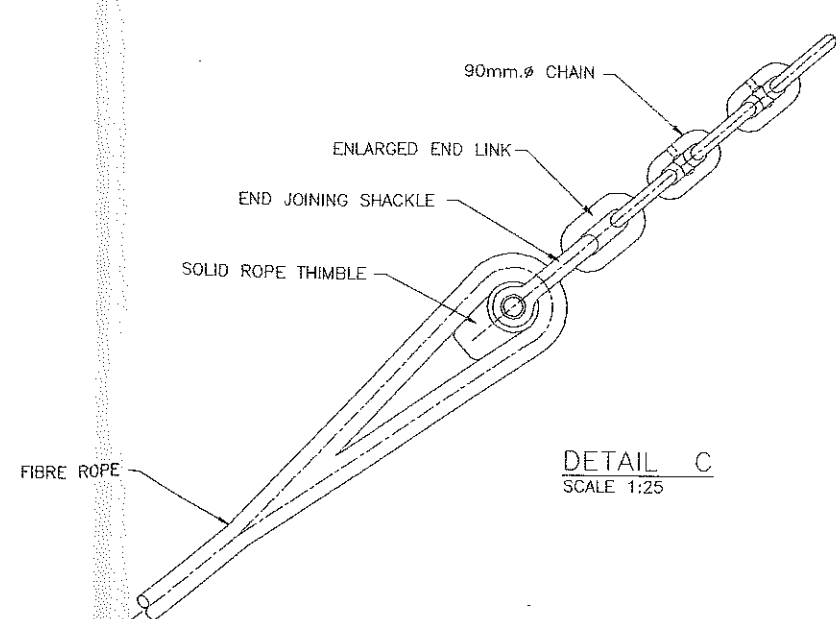
TYPICAL ENLARGED END LINK
SCALE 1:5



DETAIL B
SCALE 1:25



DETAIL A
SCALE 1:25



DETAIL C
SCALE 1:25

NOTES

1. DETAILS OF ANCHOR CONNECTIONS TO BE SPECIFIED BY ANCHOR INSTALLATION CONTRACTORS

3095

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartoriais

DE-3010.38-1320-962-NBD-337-01 MOORING LINES- COMPONENT DETAILS SHEET 1 OF 2

DRAWING NUMBER DRAWING TITLE

REFERENCE DRAWINGS

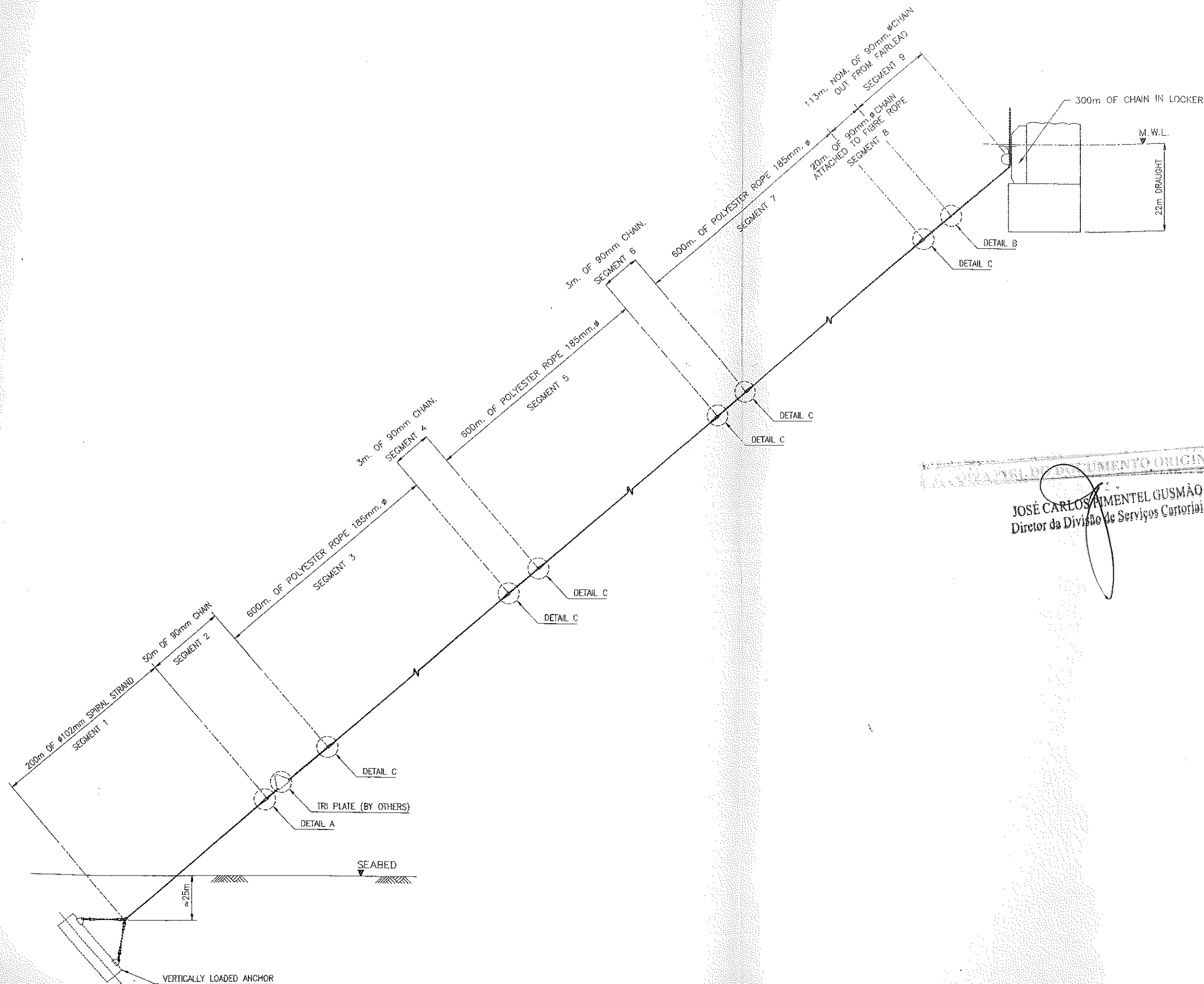
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVAL DATE
C	04.10.99	FINAL ISSUE	SCE	AT	AT	
B	10.11.98	AFC	SCE	AT	AT	
A	08.10.97	AFC	RHS	AT	AT	
O	12.9.97	IOC	RHS	AT	AT	

BR BRASOL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DENTON Petromec AMEC

TITLE	DRAWN/DATE
	RHS/OCT.97
	CHECKED/DATE
	AT/OCT.99
	APPROVED/DATE
	AT/OCT.99
	SCALE
	N.T.S.

DRAWING NUMBER DE-3010.38-1320-962-NBD-337-02 REV C



NOTES

1. ALL LENGTHS ARE NOMINAL STRETCHED LENGTHS.
2. COMPONENT LENGTHS ARE FROM EYE TO EYE.
3. FIBRE ROPE IS POLYESTER PARALLEL STRAND BRAIDED ROPE 185mmØ NOMINAL & 1000tne M.B.L.
4. POLYESTER ROPE SHALL BE AS PER PETROBRAS SPEC. ET-3000.00-6651-962-PGT-001 DATED MARCH 1998
5. ALL CHAIN TO BE R4 GRADE STUDLINK.
6. WIRE ROPE TO BE SPIRAL-STRAND, 102mm NOMINAL DIAMETER, MBL=1000tne.
7. ALL SHACKLES SHALL BE AS PER PETROBRAS SPEC. ET-3000.00-6651-962-PGT-001 DATED MARCH 1998

9C-3010.38-1320-962-NBD-337-02 MOORING LINES- COMPONENT DETAILS SHEET 2 OF 2

DRAWING NUMBER DRAWING TITLE

REFERENCE DRAWINGS

REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVED CLIENT
C	04.10.99	FINAL ISSUE	SCE	AT	AT	
B	18.11.98	AFD	SCE	AT	AT	
A	01.10.97	AFD	RHS	AT	AT	
D	12.9.97	ADC	RHS	AT	AT	

BR BRAZIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No :- 7/15/2150

NOBLE DENTON **Petromec** **AMEC**

TITLE
MOORING LINES-
COMPONENT DETAILS
SHEET 1 OF 2

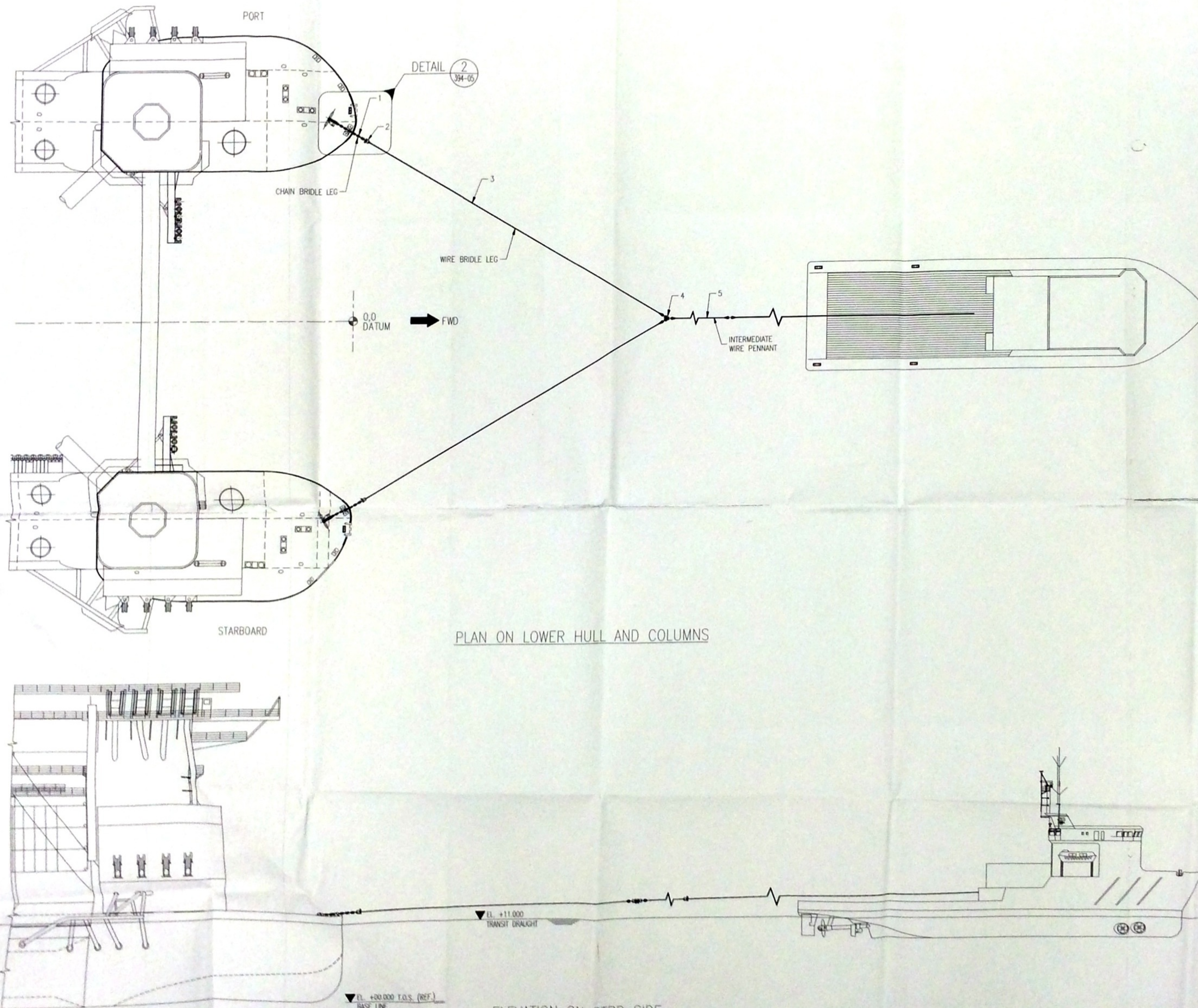
DRAWN/DATE
RHS/OCT.97

CHECKED/DATE
AT/OCT.99

APPROVED/DATE
AT/OCT.99

SCALE
N.T.S.

DRAWING NUMBER
DE-3010.38-1320-962-NBD-337-01



NOTES

- THIS ARRANGEMENT IS SPECIFIC FOR INSHORE TOWAGE FROM QUEBEC TO SEPT ISLES AND OCEANOGRAPHIC SURVEY FROM RIO DE JANEIRO TO RONCADOR FIELD.
- TOWING SYSTEM DESIGNED FOR A TUG OF MAX BOLLARD PULL OF 165 TONNES.
- FOR TUG WITH B.P. GREATER THAN 165 TONNES THE TOWING BRIDLE WILL NEED TO BE MODIFIED.
- USE OF EXISTING EQUIPMENT IS SUBJECT TO SATISFACTORY SURVEY.
- REFER TO THE FOLLOWING DOCUMENTS FOR AS BUILT MODIFICATIONS TO TOWING SYSTEM:
WDTP No. 1550003-05
1550003-11
1550003-10

FSK-D-H No. 241
373
381

E Cópia Fiel do Documento Original

JOSÉ CARLOS FOMENTEL GUSMÃO
Diretor da Divisão de Serviços Costeiros

EQUIPMENT LIST TABLE (USING EXISTING TOW EQUIPMENT)

ITEM	DESCRIPTION	QTY	MBL
1	87mm GRADE U2 STUD CHAIN WITH END LINKS AT EACH END.	5.5m 2 OFF	393t
2	130t SWL BOLT TYPE GREEN PIN ANCHOR SHACKLE.	5 OFF	650t
3	Ø77mm WIRE ROPE WITH HARD EYE AT EACH END *	48m 2 OFF	390t
4	TRIANGULAR PLATE SWL 130t	1 OFF	430t

EQUIPMENT LIST TABLE (NEW TOW EQUIPMENT)

ITEM	DESCRIPTION	QTY	SWL
5	77mm WIRE ROPE WITH HARD EYE AT EACH END *	40m	75t

* WIRE 6x41 (16+8/8+8+1) WARRINGTON + IWRC (1770 N/mm²)

DRAWING NUMBER	DRAWING TITLE
DE-3010.38-1320-140-NBD-394-08	TOWING ARRANGEMENTS
DE-3010.38-1320-140-NBD-394-05	MAIN TOWING SYSTEM DETAILS
DE-3010.38-1320-140-NBD-394-02	SECONDARY TOWING SYSTEM

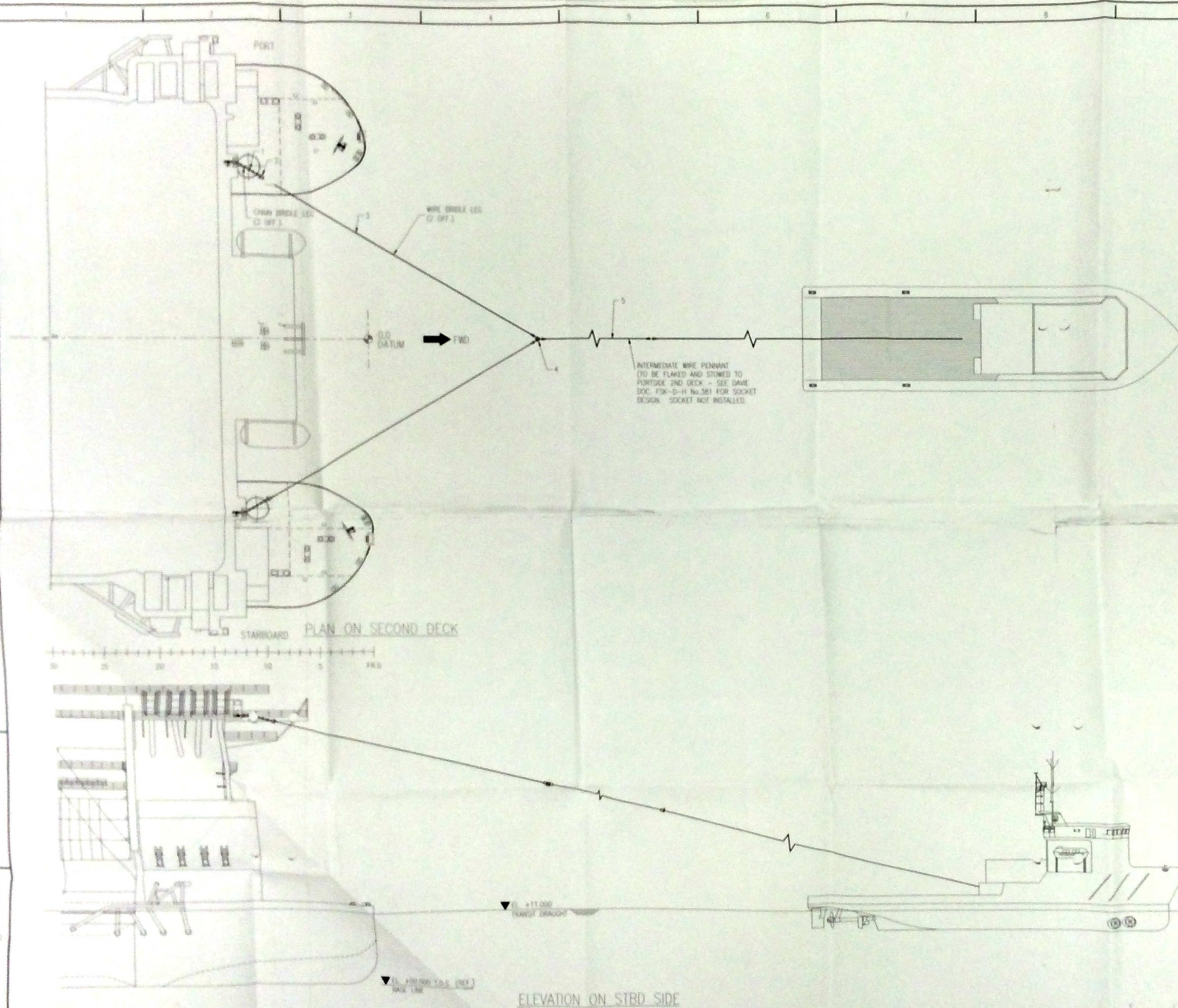
REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVED CLIENT
B	22.11.99	ISSUED AS BUILT	SCE	AT	AT	
A	12.08.99	RE-ISSUED AFC	JOH	AT	JO	
Q	07.05.99	ISSUED AFC	SCE	MSE	JO	

BR BRASOIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No. - 7/15/2150

NOBLE DENTON Petromec AMEC

TITLE TOWING AND MOORING ARRANGEMENT MAIN TOWING SYSTEM	DATE SCE/MAY/99 CHECKED/DATE AT/ NOV 99 APPROVED/DATE AT/ NOV 99 SCALE 1:250
--	---

DRAWING NUMBER
DE-3010.38-1320-140-NBD-394-01
REV
B



NOTES

1. THIS ARRANGEMENT IS SPECIFIC FOR RIGS FROM QUEBEC TO SLEPT ISLES AND OCEAN RIDGE DE JARERO TO RIVACADOR FIELD
2. TOWING SYSTEM DESIGNED FOR A TUG OF MAX. DOLLARD PULL OF 165 TONNES
3. USE OF EXISTING EQUIPMENT IS SUBJECT TO SATISFACTORY SURVEY
4. DIMENSIONS & LOCATIONS OF TOWING BRACKET AS PER PETROBRAS SURVEY DATED 11/5/99

JOSE CARLOS VASCONCELOS GUIMARÃES
Especial da Divisão de Serviços Gerais

EQUIPMENT LIST TABLE (USING EXISTING OR EQUIPMENT)

ITEM	DESCRIPTION	QTY	MR.
1	87mm GRADE U2 STUD CHAIN WITH END LINKS AT EACH END	5.5m 2 OFF	593
2	130t SWL BOLT TYPE GREEN PIN ANCHOR SHACKLE	5 OFF	650t
3	ø77mm. WIRE ROPE WITH HARD EYE AT EACH END	48m 2 OFF	390t
4	TRIANGULAR PLATE SWL 130t	1 OFF	430t

EQUIPMENT LIST TABLE (NEW TOW EQUIPMENT)

ITEM	DESCRIPTION	QTY	UNIT
5	#77mm WIRE HOPE WITH HARD EYE AT EACH END *	100m	SPRM

* 例題 5.41 (10+8/2+2=1) 無次元化
+ 例題 (1/10) 2/(mm²)

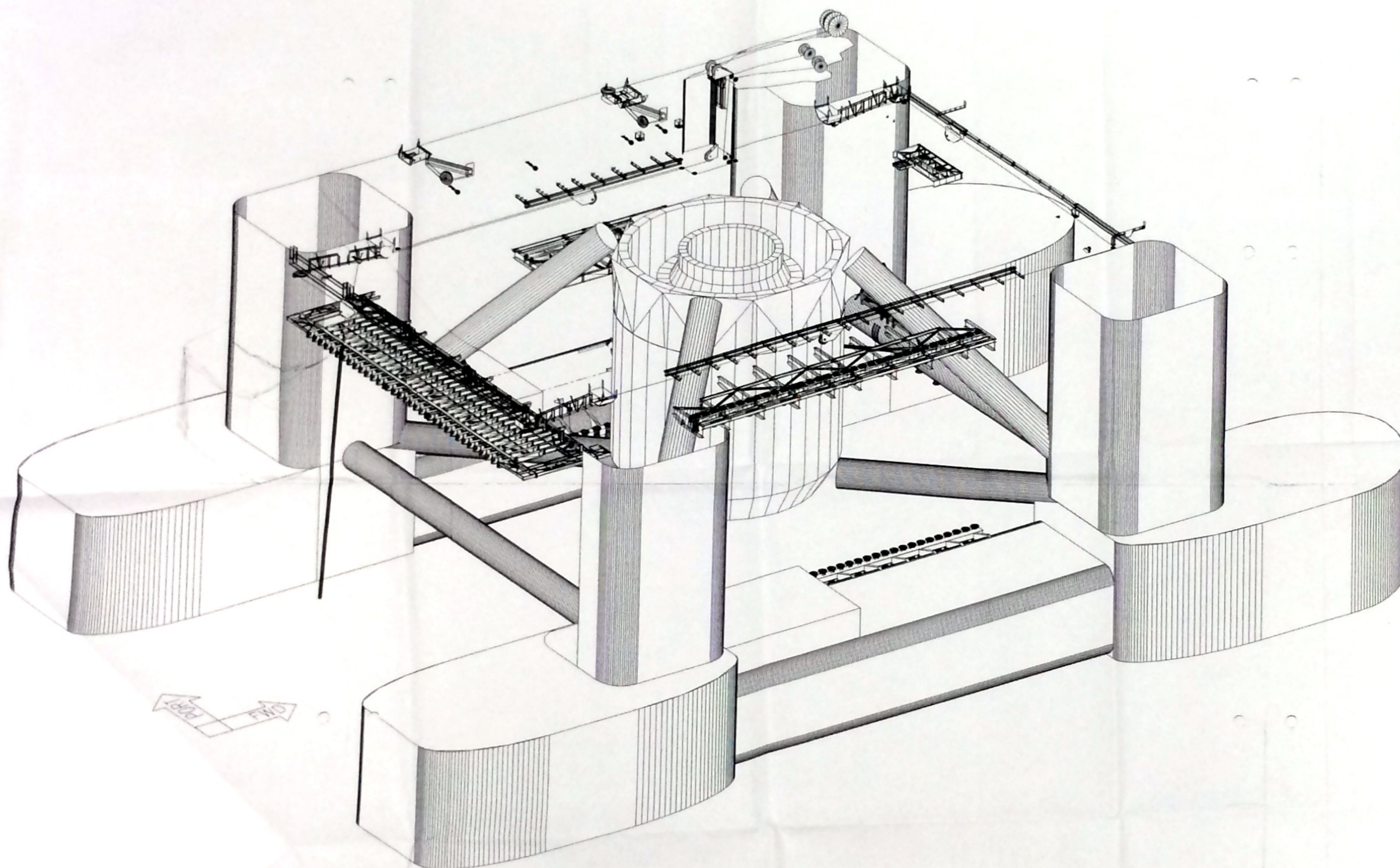
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 BR	BRASOIL	P36-RONCADOR FIELD DEVELOPMENT CONTRACT No. - 7/15/2150
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NOBLE DENTON Petromec AMEC

DATE	ISSUED/DATE
TOWING AND MOORING ARRANGEMENT	15/ MAY 99
	ISSUED/DATE
SECONDARY TOWING SYSTEM	11/ NOV 99
	APPROVED/DATE
	17/ NOV 99
	SCALE
	1:250 UNO

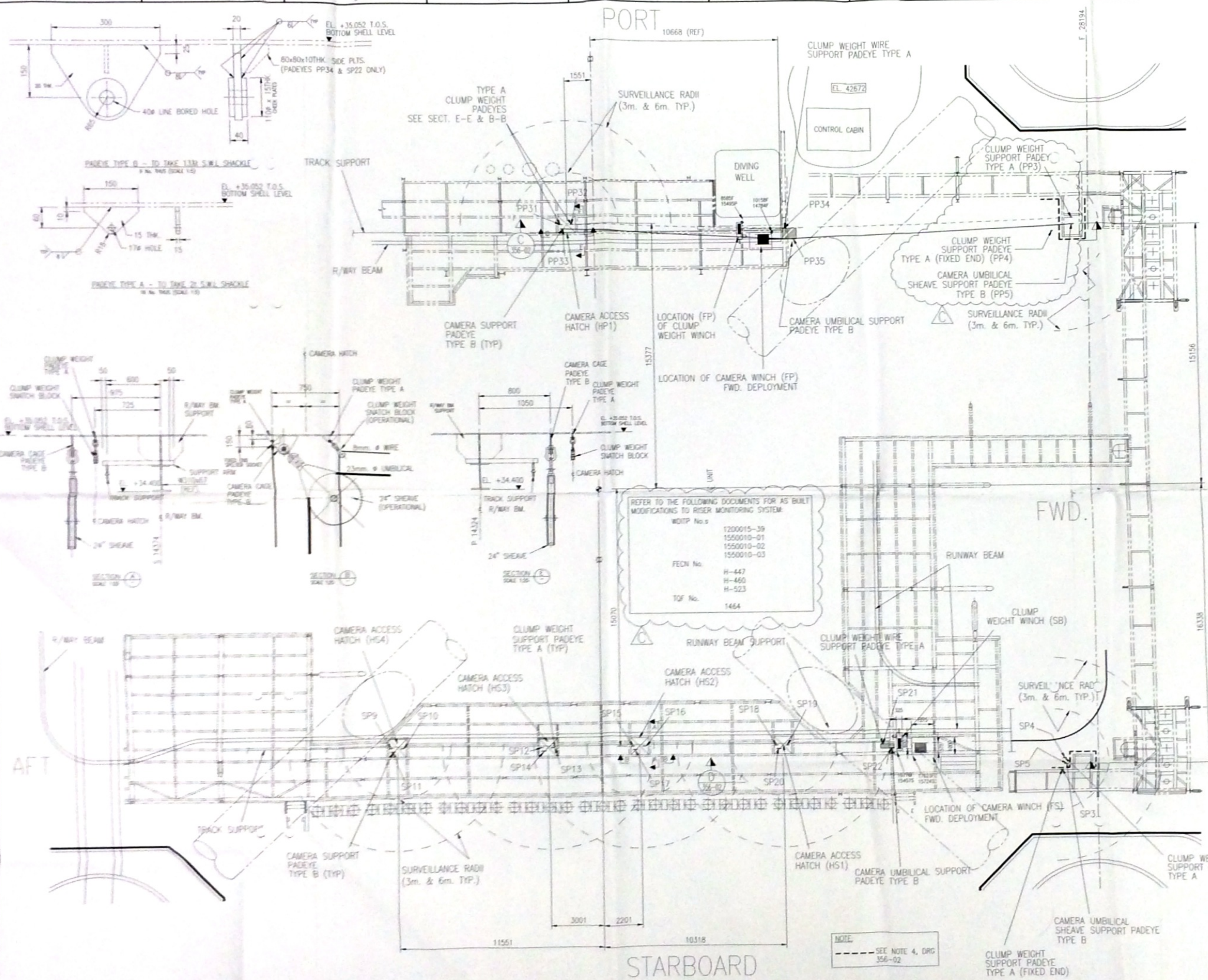
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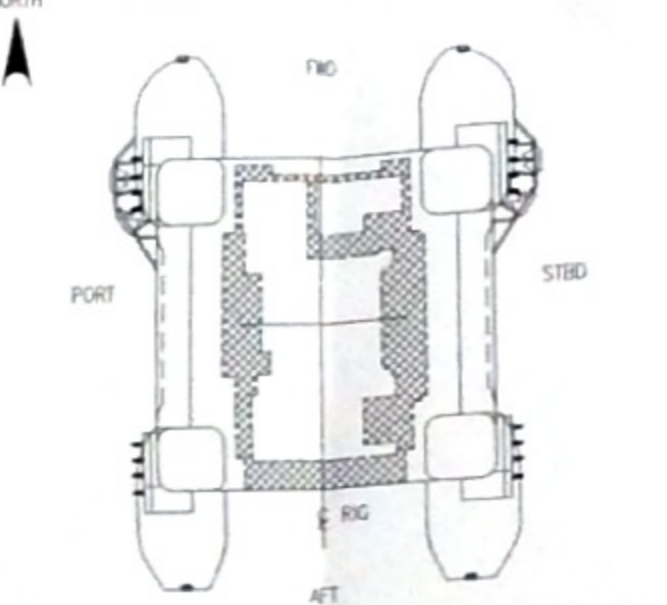
DRAWING NUMBER	REV
DE-3010.38-6000-966-NBD-393-16	

N.T.S.

DRAWING NUMBER	REV
DE-3010.38-6000-966-NBD-393-16	



KEY PLAN - EL. 29.750
SPIDER DECK SHELL



NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01.
2. FINAL LOCATIONS OF PAIDEYES TO BE DETERMINED ON SITE.
3. ALL MATERIAL SHOWN ON THIS DRG. TO BE PRIMARY STRUCTURE (REF. DRG. NBD-300-01, NOTE 12).
4. ADJUSTABLE TRACK SUPPORT ARMS FOR 3t ELECTRIC HOIST & TROLLEY TO BE CLAMPED BEYOND CAMERA ACCESS HATCH BOUNDARIES TO AVOID POSSIBLE CLASHES WITH CLUMP WEIGHT WIRE SNATCH BLOCKS.

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL COSTA
Desenho de Engenharia de Engenharia Civil

- (FP) = FORWARD PORT
(FS) = FORWARD STARBOARD
(PS) = PORTSIDE
(SB) = STARBOARD
(HP) = PORT HATCH
(HS) = STARBOARD HATCH

REFER TO THE FOLLOWING DOCUMENTS FOR AS BUILT MODIFICATIONS TO RISER MONITORING SYSTEM:

WOTP No.	1200015-39
FECH No.	1550010-01
	1550010-02
	1550010-03
TOF No.	1464

DRAWING NUMBER	DRAWING TITLE
DE-3010.38-1320-140-NBD-300-01	WHICH SUPPORTS - STBD
DE-3010.38-1320-140-NBD-300-02	WHICH SUPPORTS - PORT
DE-3010.38-1320-140-NBD-300-03	PAIDEYE SCHEDULE
DE-3010.38-1320-140-NBD-300-04	RUNWAY BEAM
DE-3010.38-1320-140-NBD-300-05	RISER MONITORING SYSTEM SECTIONS

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVED CLIENT
1	22.11.99	ISSUED AS BUILT	AT	AT	AT	
2	28.02.99	REVISED A/C	AT	AT	AT	
3	14.01.99	A/C	AT	AT	AT	
4	08.10.98	SP	AT	AT	AT	

BR BRASOIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No - 7/15/2150

NOBLE DENTON Petromec AMEC

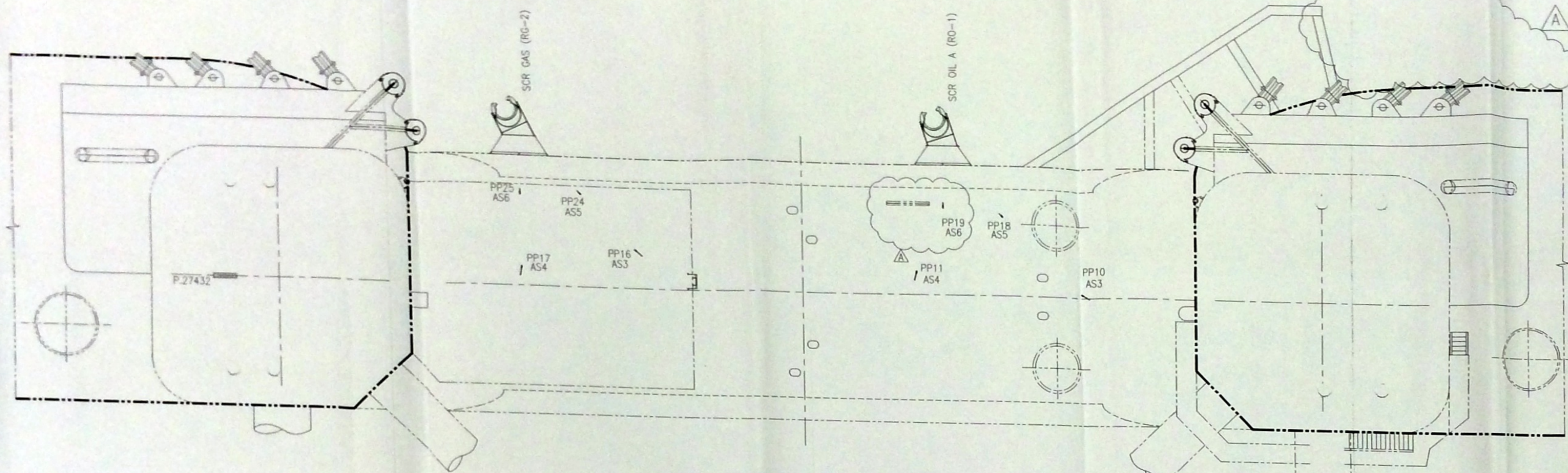
TITLE RISER MONITORING SYSTEM
PLAN ON SPIDERDECK

DRAWN/DATE RJS/SEP 98
CHECKED/DATE AT/25.11.99
APPROVED/DATE AT/25.11.99

SCALE 1:100

DRAWING NUMBER DE-3010.38-1320-140-NBD-356-01

NOTE
--- SEE NOTE 4, DRG 356-02



PLAN ON LOWER HULL & COLUMNS

SCR AUXILIARY PULL-IN PADEYES AT PONTOON LEVEL

PADEYE	HOLE CENTRE COORDINATES			ROTATION (°)	MAX. LOAD (Te)
	X (+FWD)	Y (+PORT)	Z (+UP)		
PP10	15259	27607	9356	150	22
PP11	6148	28629	9356	75	22
PP12			CANCELLED		
PP13			CANCELLED		
PP14			CANCELLED		
PP15			CANCELLED		
PP16	-9133	28448	12392	140	22
PP17	-15206	28383	12392	80	22

SCR AUXILIARY PULL-IN PADEYES AT BOTTOM SHELL LEVEL

PADEYE	HOLE CENTRE COORDINATES			ROTATION (°)	MAX. LOAD (Te)
	X (+FWD)	Y (+PORT)	Z (+UP)		
PP26	8534	25594	34906	0	22
PP27	4573	25344	34906	0	22
PP28	-5952	25594	34906	0	22
PP29	-14790	25344	34906	0	22

TEMPORARY SCR PADEYES AT PONTOON LEVEL

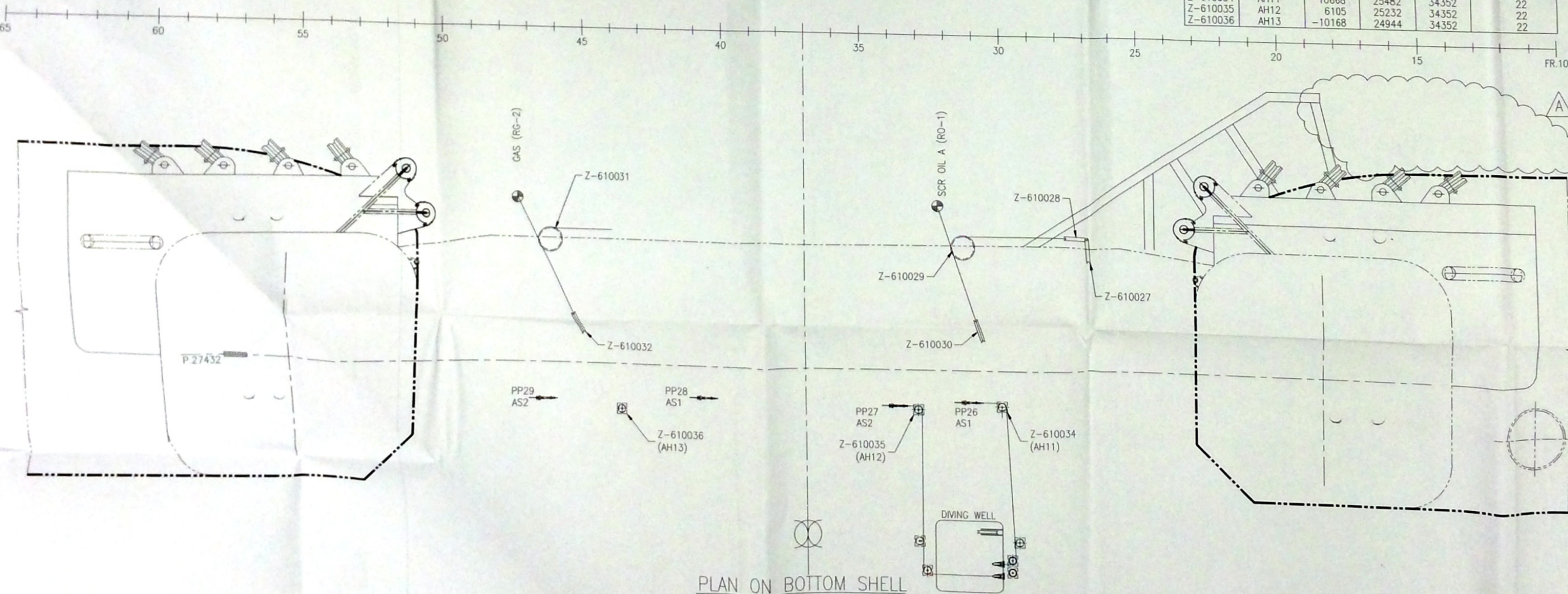
PADEYE	HOLE CENTRE COORDINATES			ROTATION (°)	MAX. LOAD (Te)
	X (+FWD)	Y (+PORT)	Z (+UP)		
PP18	10774	31644	9306	315	22
PP19	7620	32112	9286	270	22
PP20			CANCELLED		
PP21			CANCELLED		
PP22			CANCELLED		
PP23			CANCELLED		
PP24	-12086	32371	12342	315	22
PP25	-15239	32294	12342	270	22

SCR MAIN PULL-IN SHEAVES

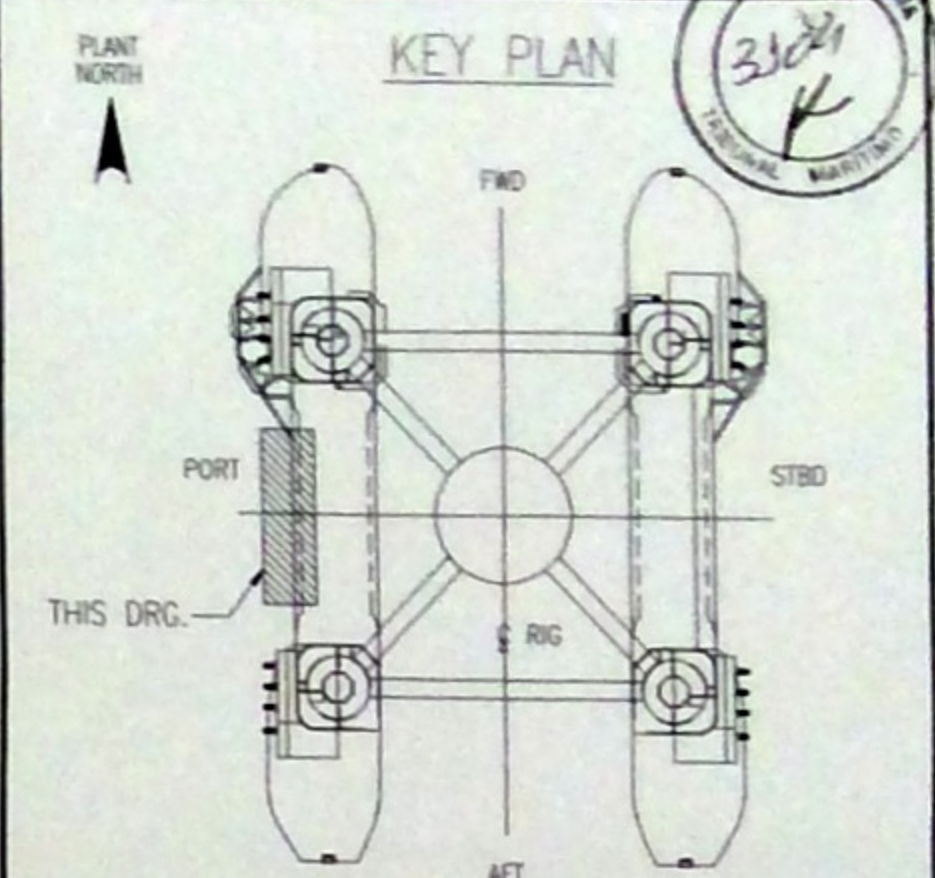
TAG No.	SHORT CODE	SHEAVE CENTRE COORDINATES			MAX. LOAD (Te)
		X (+FWD)	Y (+PORT)	Z (+UP)	
Z-610027	M4	15389	35241	43447	225
Z-610028	M5	14819	34869	34636	215
Z-610029	M6	8623	34202	34040	245
Z-610030	M7	9465	29737	33440	245
Z-610031	M8	-14032	34202	34040	255
Z-610032	M9	-12499	29746	33440	245

SCR AUX. PULL-IN SHEAVES AT BOTTOM SHELL LEVEL

TAG No.	SHORT CODE	SHEAVE CENTRE COORDINATES			MAX. LOAD (Te)
		X (+FWD)	Y (+PORT)	Z (+UP)	
Z-610034	AH11	10668	25482	34352	22
Z-610035	AH12	6105	25232	34352	22
Z-610036	AH13	-10168	24944	34352	22



PLAN ON BOTTOM SHELL



NOTES

- ALL PADEYE COORDINATES AND ANGLES ARE NOMINAL. EXACT COORDINATES AND ANGLES TO BE DETERMINED ON SITE DURING SCR PULL-IN SYSTEM COMMISSIONING.
- MAXIMUM LOADS APPLY ONLY TO MAXIMUM PULL-IN LINE LOAD CONDITIONS. OPERATOR TO ENSURE THAT PADEYES ARE NOT TO BE USED FOR ANY OTHER APPLICATION WITHOUT PRIOR LOAD CAPACITY VERIFICATION.
- PADEYE IDENTIFICATION CODE AND MAXIMUM LOAD TO BE MARKED ON BOTTOM SHELL/PONTOON TOP BY THE FABRICATOR, ADJACENT TO EACH PADEYE WITH WHITE CAPITAL LETTERS e.g. PP10 22Te

É COPIA FIEL DO DOCUMENTO ORIGINAL
KEY TO ANGLES USED:

JOSÉ CARLOS FERNANDES OTSMAO
Diretor de Divisão de Serviços Técnicos

DE-3010.38-6000-966-NBD-392-03 SCR PULL-IN SYSTEM PLANS
DRAWING NUMBER DRAWING TITLE

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKD BY	APPROV BY	APPROV CLIENT
A	22.11.99	ISSUED AS BUILT	IGH	AT	AT	
D	31.03.99	A.F.C.	SCE	AT	AT	

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKD BY	APPROV BY	APPROV CLIENT

BR BRASOIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No. 7/15/2150

NOBLE DENTON Petromec AMEC

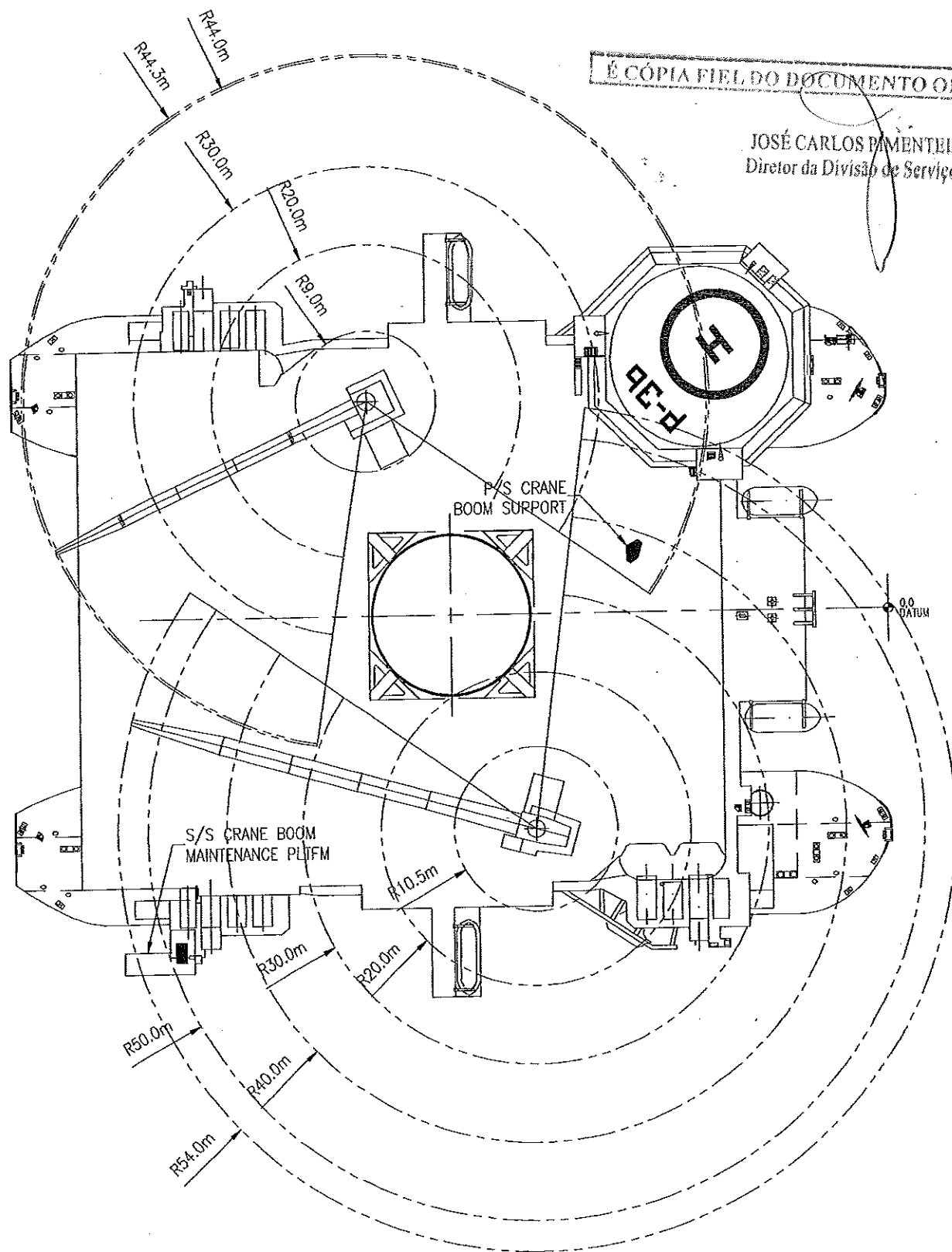
SCR PULL-IN SYSTEM
SHEAVE & PADEYES SCHEDULE
SCALE 1:125 (A1)

DRAWING NUMBER DE-3010.38-1320-140-NBD-390-19



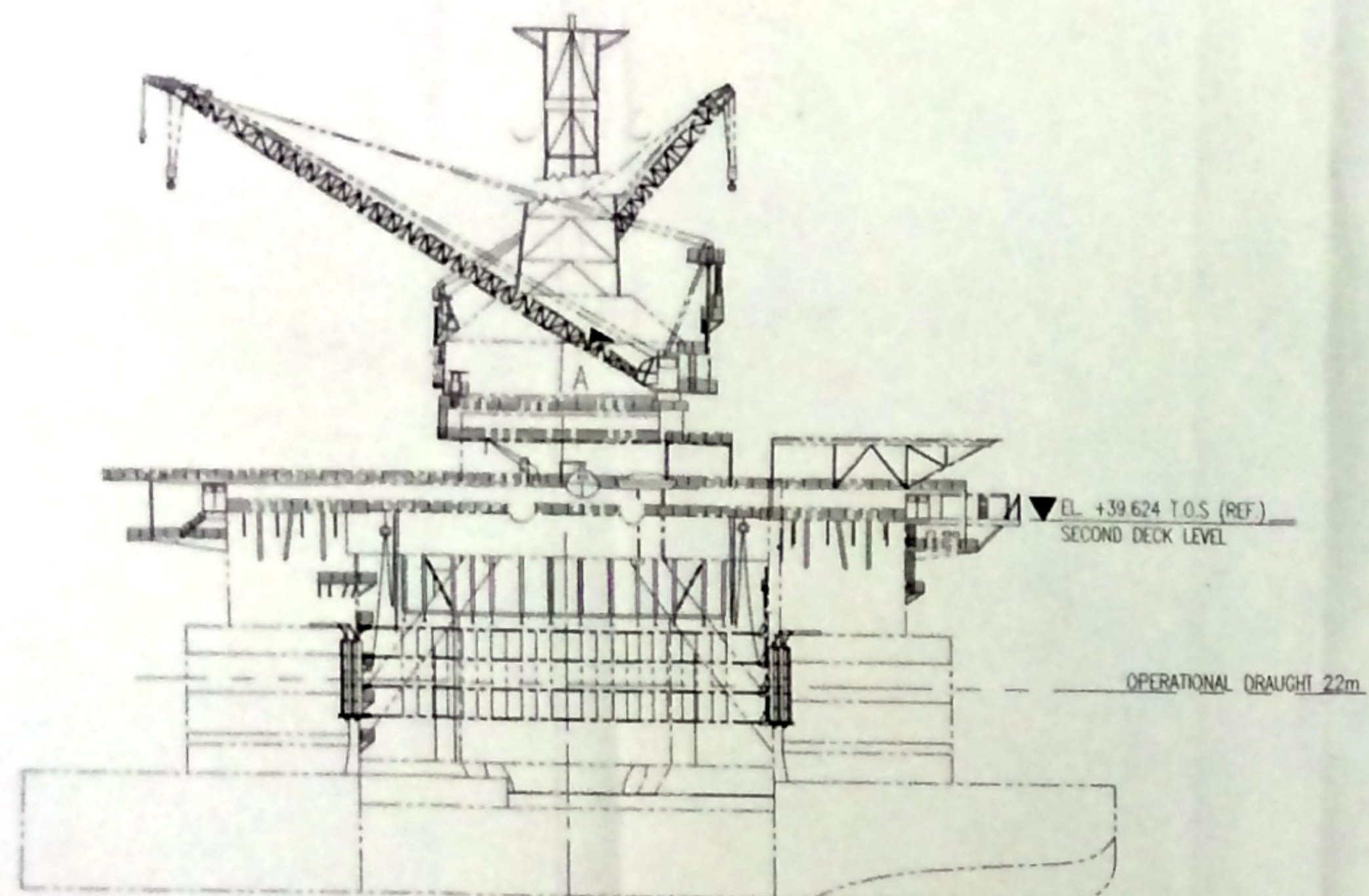
É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartoriais

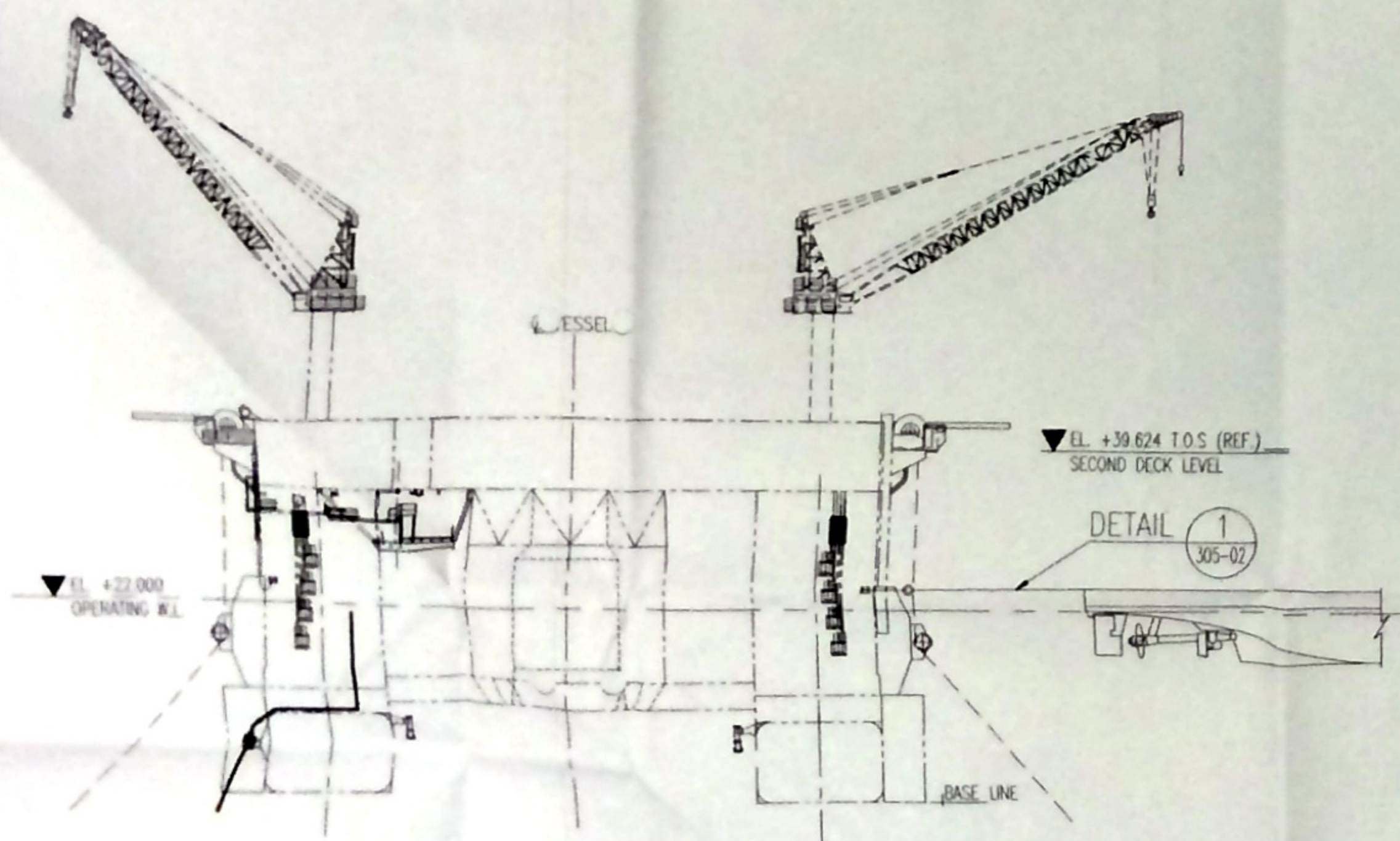


CRANE OPERATIONS PLAN

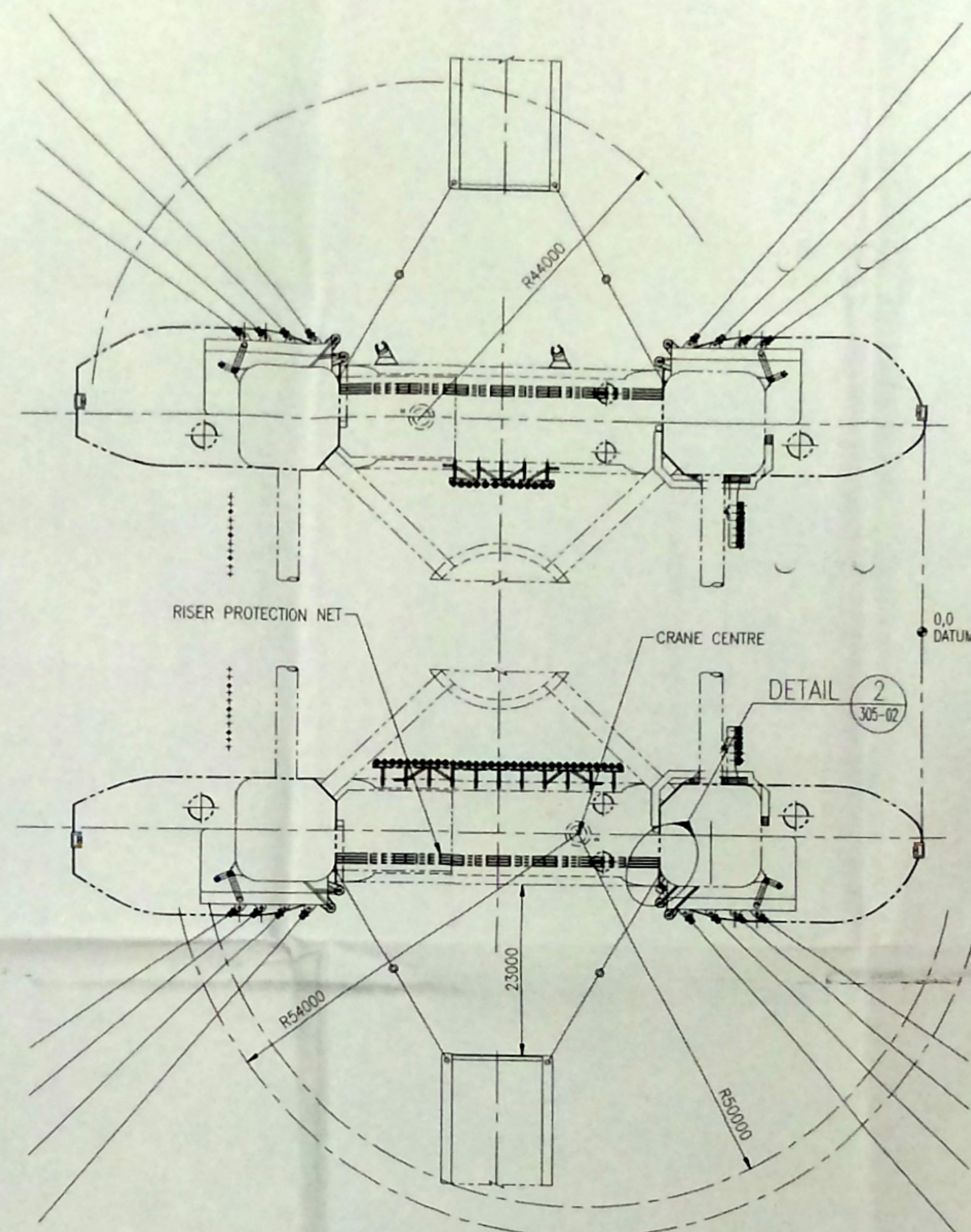
(SHEET 1 OF 2)



ELEVATION ON STBD SIDE LKG. INBOARD
(PORT SIDE SIMILAR)



SECTION A-A



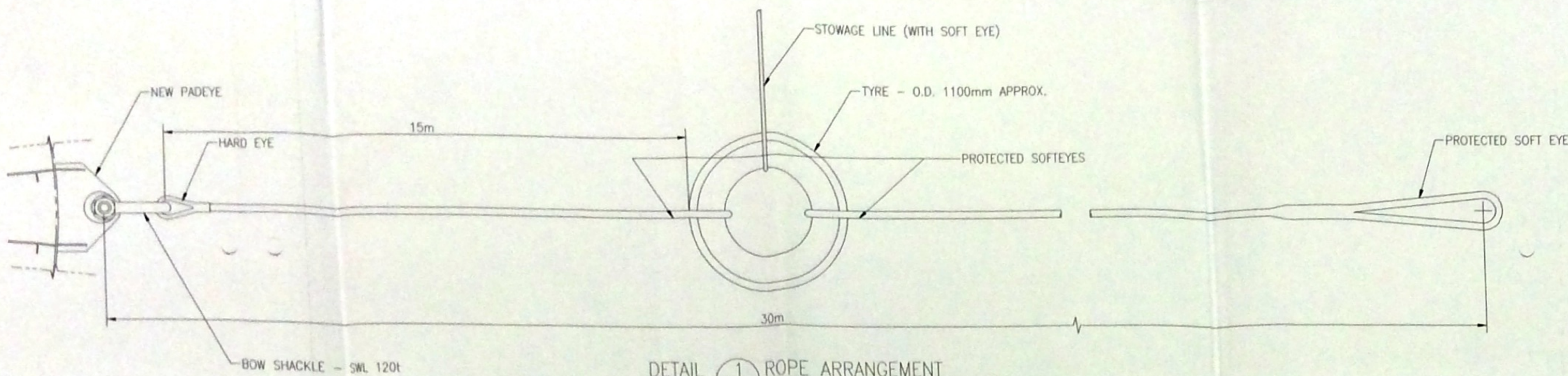
PLAN ON LOWER HULL & COLUMNS

NOTES

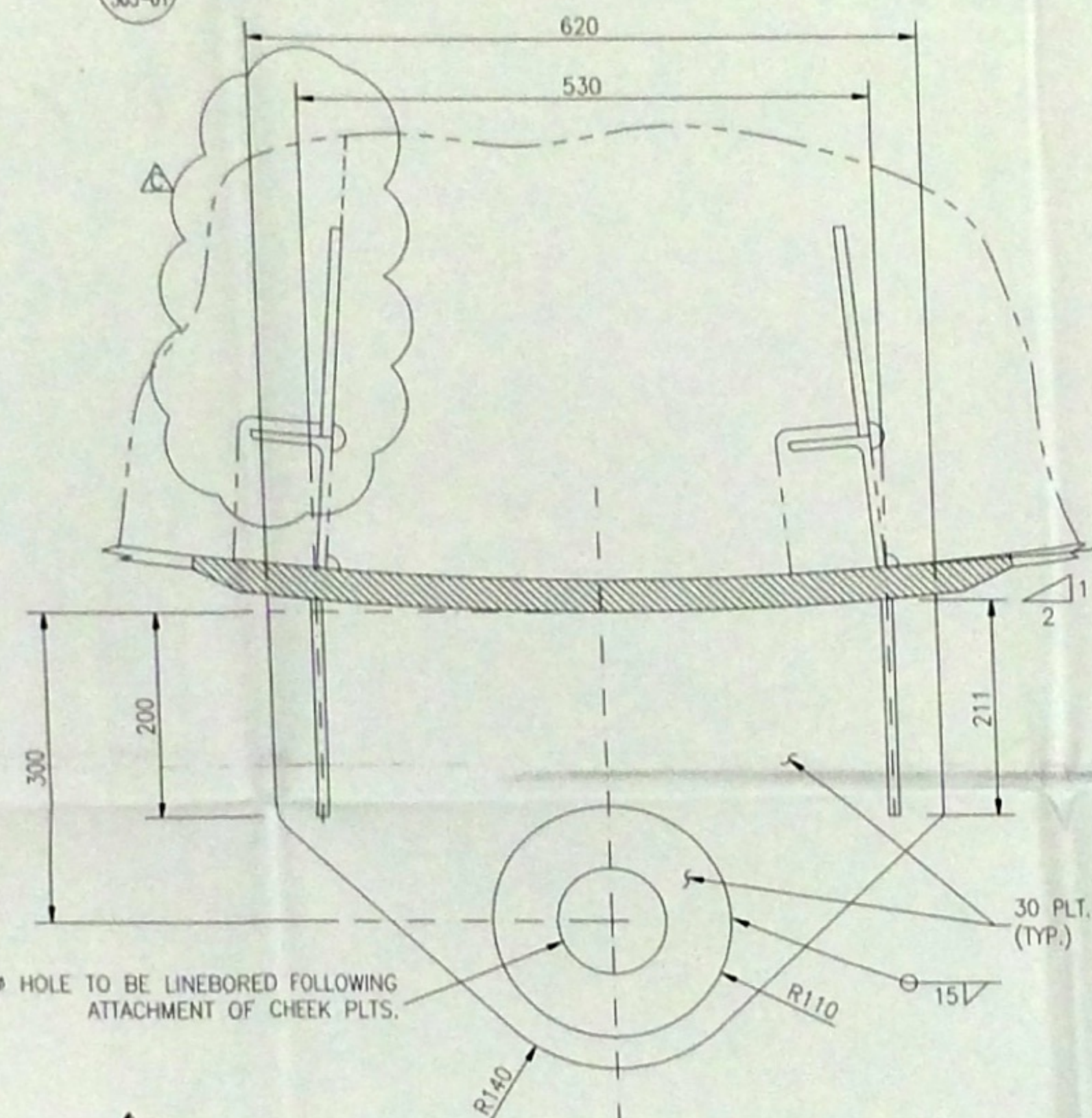
1. THIS DRAWING IS TO BE READ IN CONJUNCTION
WITH GENERAL NOTES DRG.
DE-3010.38-1320-140-NBD-300-01

É COPIA FIEL DO DOCUMENTO ORIGINAL
JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor de Desenho de Serviços Costeiros

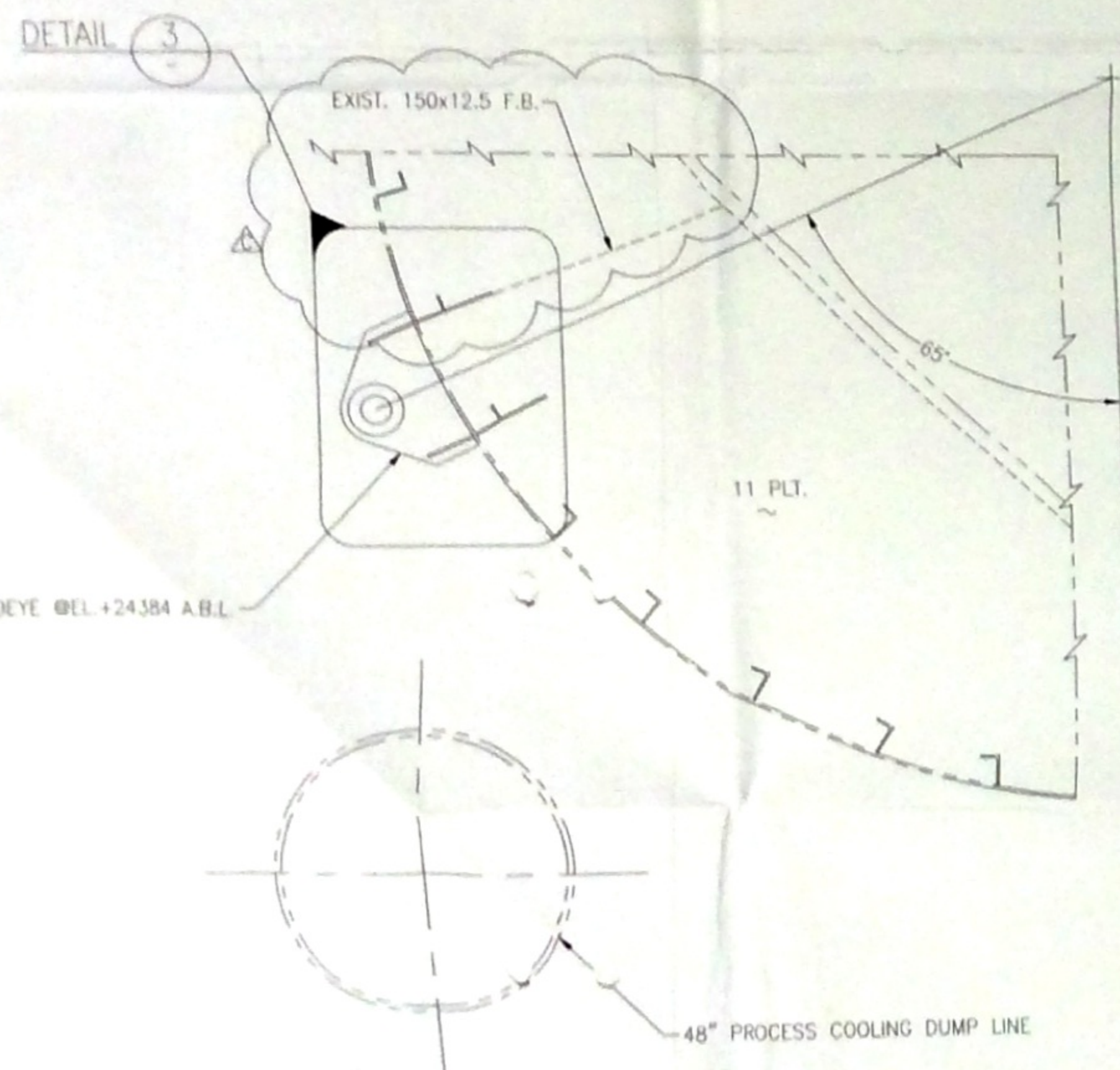
DE-3010.38-1322-140-NBD-305-02		SUPPLY BOAT MOORING SYSTEM - DETAILS			
DRAWING NUMBER		DRAWING TITLE			
REFERENCE DRAWINGS					
REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY
C	04.10.99	ISSUED AS BUILT	SCE	AT	AT
B	10.06.98	A.F.C.	SCE	MSE	AT
A	20.03.98	A.F.D.	RHS	MSE	AT
D	16.01.98	L.D.C.	SCE	MSE	AT
BR BRASOL		P36-RONCADOR FIELD DEVELOPMENT			
NOBLE DENTON		CONTRACT No. 7/15/2150			
Petromec		AMEC			
TITLE		DRAWN/DATE			
SUPPLY BOAT MOORING SYSTEM		SCE/FEB.98			
CHECKED/DATE		AT/OCT.99			
APPROVED/DATE		AT/OCT.99			
SCALE		1:500 (A1)			
DRAWING NUMBER		REV			
DE-3010.38-1322-140-NBD-305-01		C			



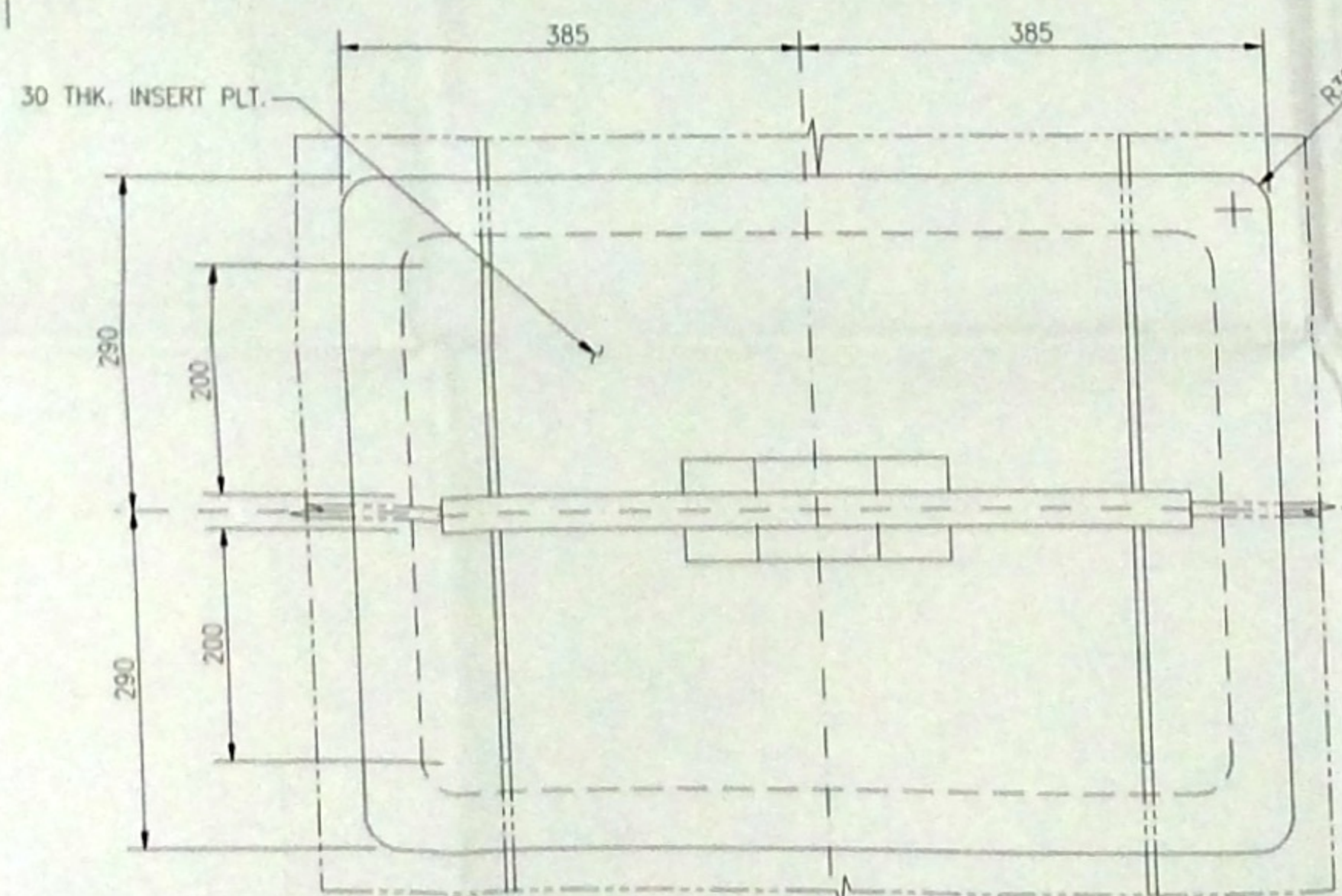
DETAIL 1 ROPE ARRANGEMENT
305-01



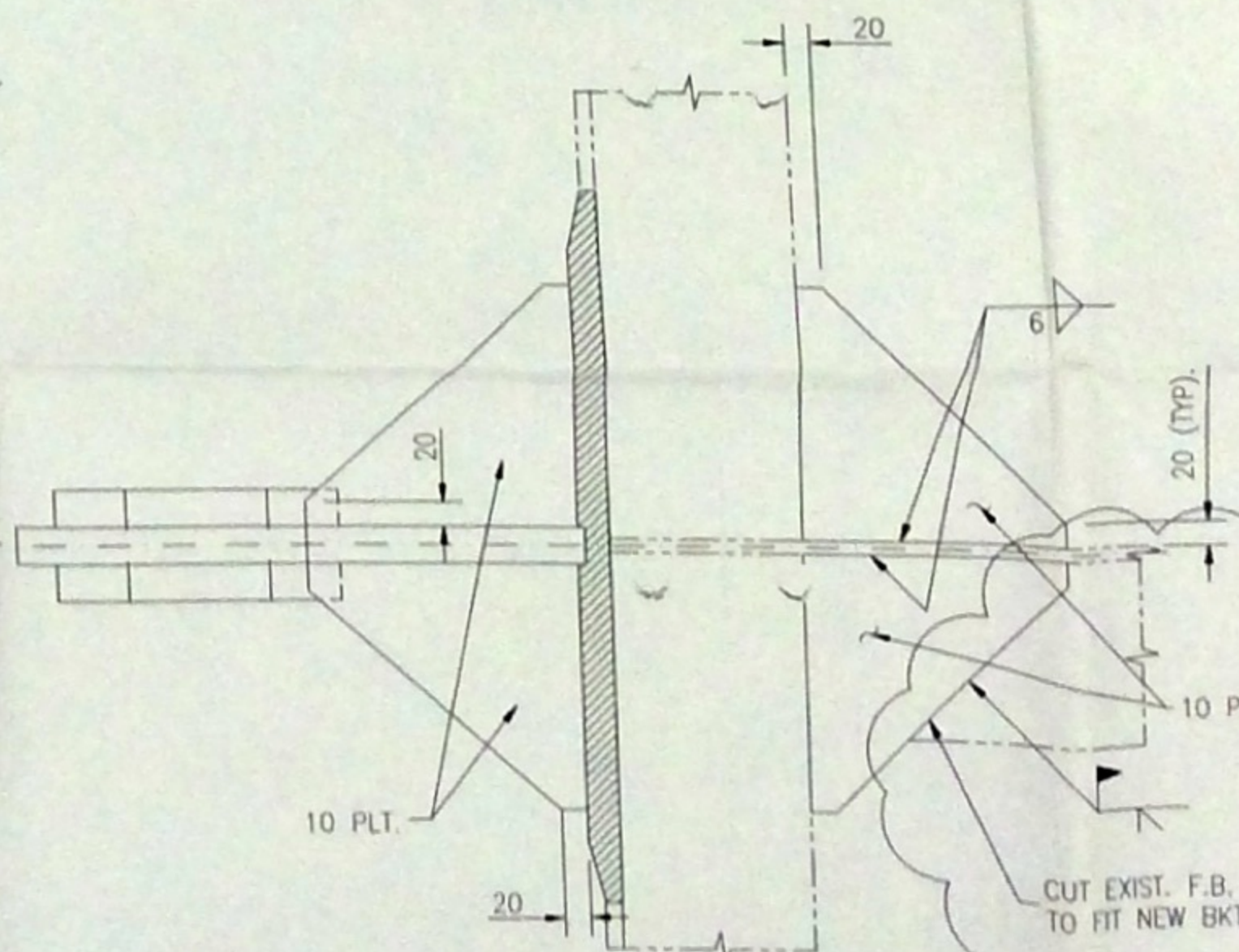
DETAIL 3 PADEYE DETAIL
SCALE 1:5 4 LOCATIONS



DETAIL 2 EL 24,384 A.B.L.
305-01 TYP. 4 LOC.



SECTION A



SECTION B

EQUIPMENT LIST		
ITEM	QTY	SWL
PADEYES	4	120te
SHACKLES	4 OFF	120te
NYLON ROPE	AS REQ.	M.B.L.120te
TYRE	4 OFF	φ>1000mm
STOWAGE LINE	AS REQ.	5te

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-305-01.
2. ALL CAPACITIES ARE SWL.
3. EXISTING LINES TO BE USED WHERE POSSIBLE.
4. EXISTING PADEYE @ S.3048 OFF CL. COLUMN, EL.+32004 A.B.L. TO BE REMOVED - INSERT PLT. TO REMAIN
5. CLEATS TO BE PROVIDED AT SECOND DECK LEVEL FOR TEMPORARY SUPPORT OF LINE AND TYRE
6. ALL WELDS TO BE FULL PENETRATION U.N.O.
6. REFER TO SQF-D1-PE-1358

E CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FONSECA GUSMÃO
Diretor da Divisão de Serviços Cartoriais

DE-3010.38-1320-140-NBD-305-01 SUPPLY BOAT MOORING SYSTEM - PLANS AND ELEVATIONS

DRAWING NUMBER DRAWING TITLE

REFERENCE DRAWINGS

REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY	CHKD BY	APPRD BY	APPRD CLIENT
C	04.10.99	ISSUED AS BUILT	SCE	AT	AT	
B	10.06.98	A.F.C.	SCE	MSE	AT	
A	20.03.98	A.F.D.	RHS	MSE	AT	
O	16.01.98	I.D.C.	SCE	MSE	AT	

BR BRASOIL

P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No. 7/15/2150

NOBLE DENTON

Petromec

AMEC

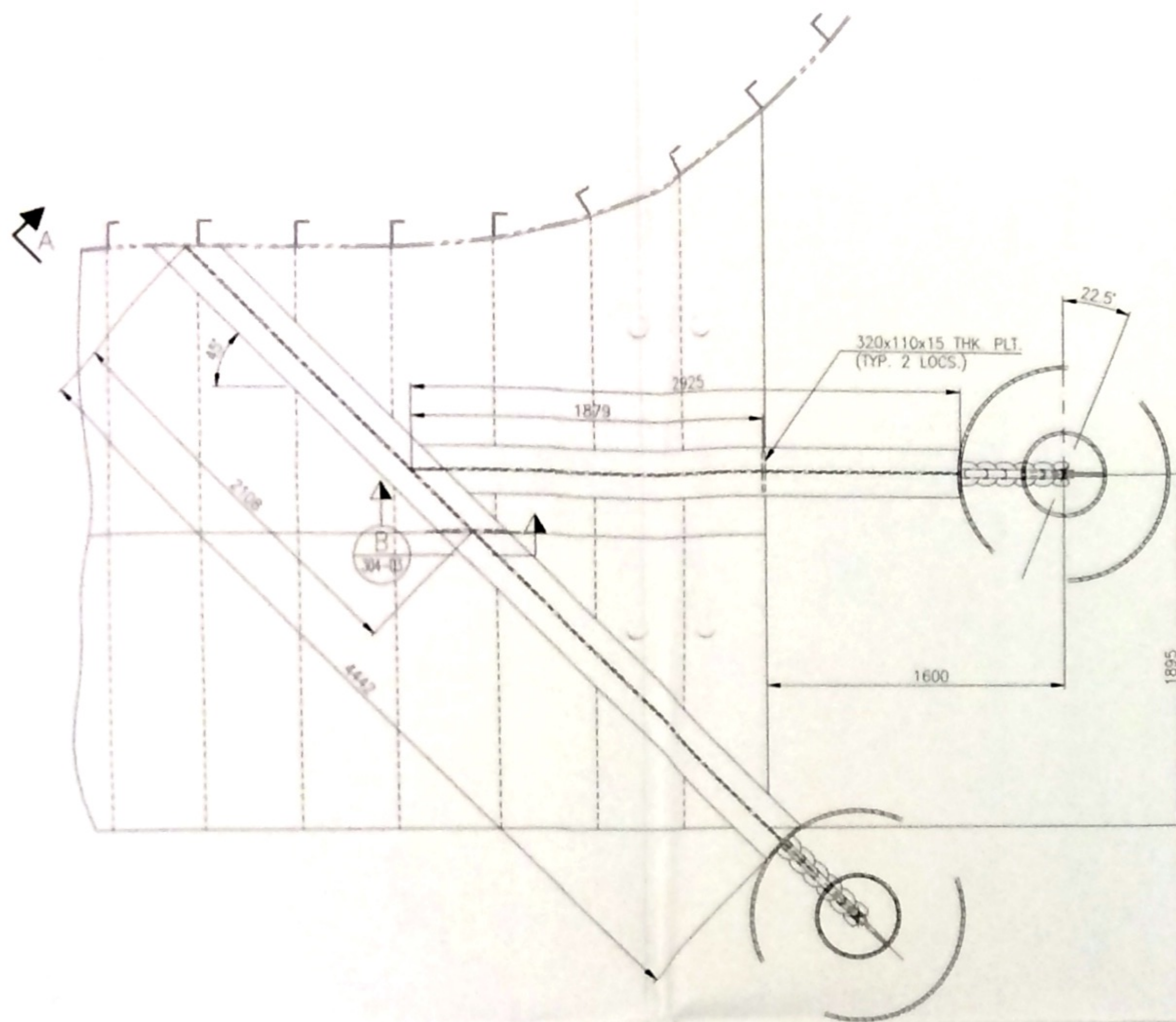
TITLE
SUPPLY BOAT
MOORING SYSTEM

DETAILS

DRAWN/DATE	SCE/FEB.98
CHECKED/DATE	AT/OCT.99
APPROVED/DATE	AT/OCT.99
SCALE	1:20 (A1)

DRAWING NUMBER DE-3010.38-1322-140-NBD-305-02

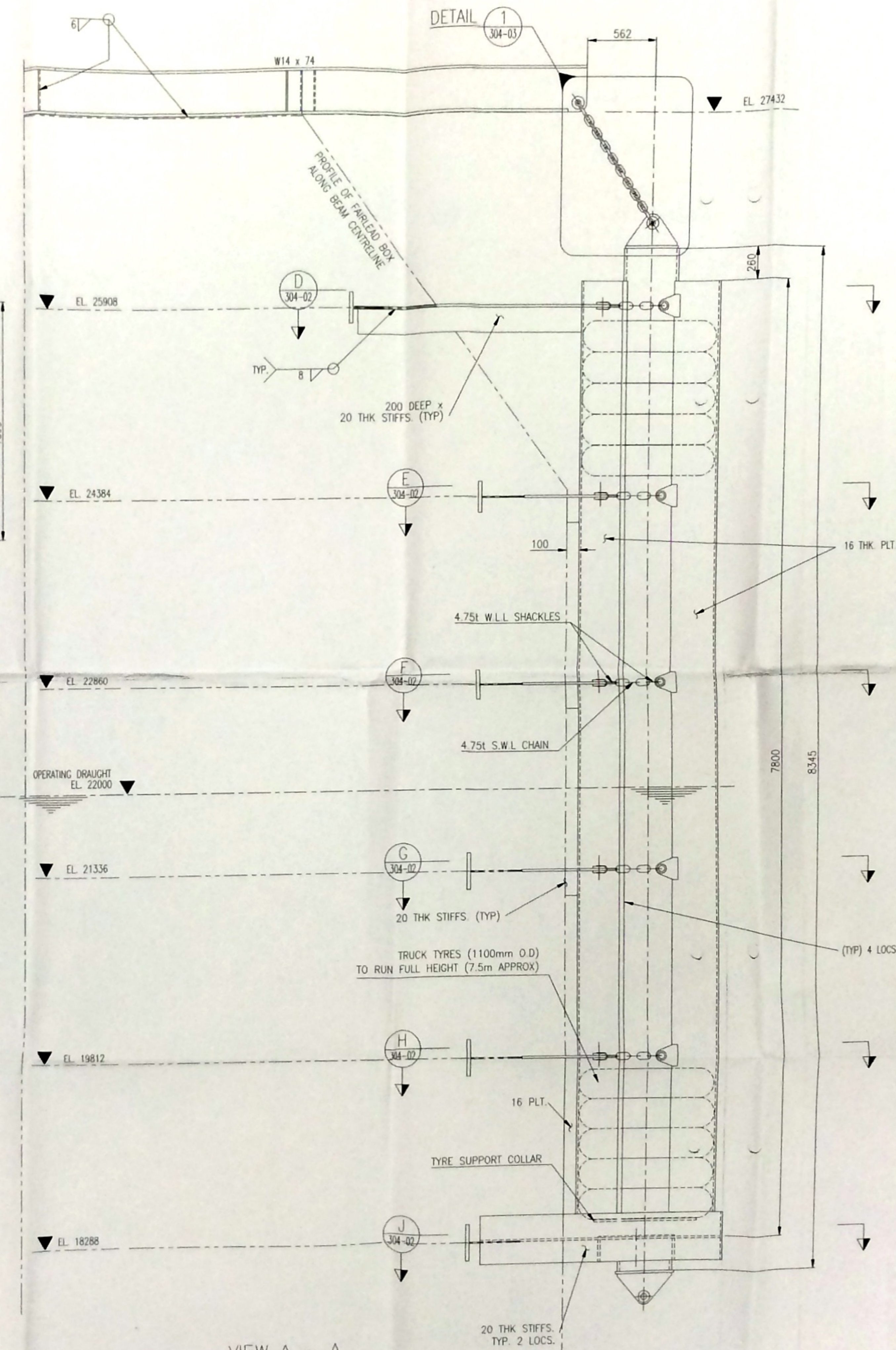
[illegible]



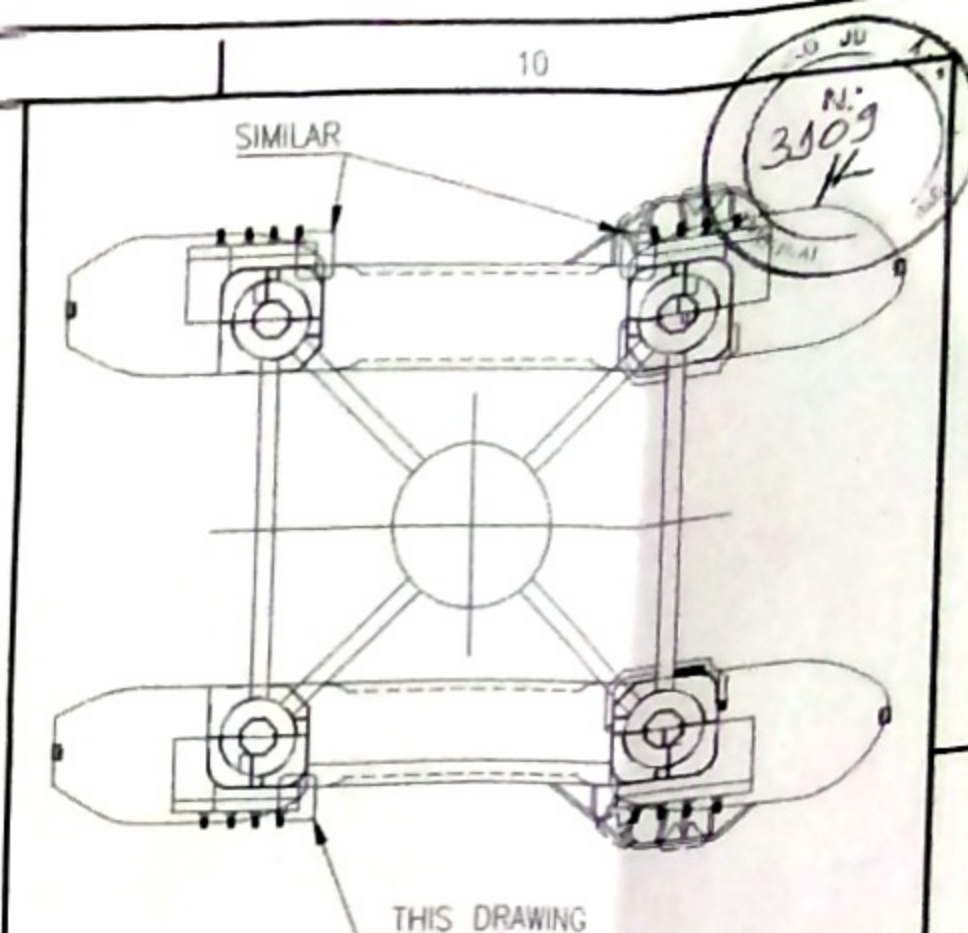
PLAN AT EL. 27432

STBD/AFT COLUMN SHOWN

PORT/AFT & PORT FWD COLUMNS ARE SIMILAR.



VIEW A - A

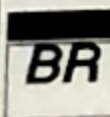


KEYPLAN

NOTES

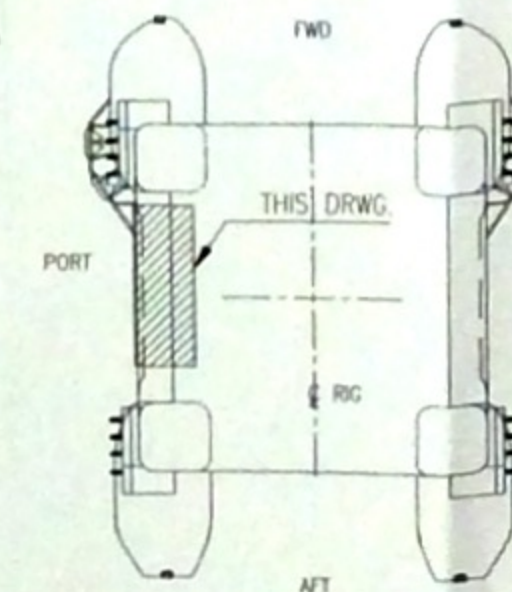
1. ALL STEEL DENOMINATIONS ARE IN ACCORDANCE WITH RINA RULES
2. ALL STEEL TO BE GRADE 36 TYPE S FOR $t < 30\text{mm}$; TYPE SS FOR $t \geq 30\text{mm}$, UNLESS NOTED OTHERWISE.

E COPIA FIEL DO DOCUMENTO ORIGINAL
JOSÉ CARLOS PIMENTEL DUARTE
Diretor da Divisão de Projeto e Construção

DE-3010.38-1320-140-NBD-304-03		FENDERS - STBD/FWD - GA			
DE-3010.38-1320-140-NBD-304-02		FENDERS - P/A, S/A - DETAILS			
DE-3010.38-1320-140-NBD-304-04		FENDERS - STBD/FWD - DETAILS			
DRAWING NUMBER		DRAWING TITLE			
REFERENCE DRAWINGS					
C	04.10.99	ISSUED AS BUILT		RCH	AT AT
B	22.05.98	AFC		RHS	AT AT
A	06.03.98	AFD		SCE	AML MSE
D	30.12.97	IDC		SCE	AML MSE
REV	ISSUE DATE	DESCRIPTION OF REVISION		DRAWN BY	CHKD BY APPD BY APPROVED BY
 BR		P36-RONCADOR FIELD DEVELOPMENT			
		CONTRACT No :- 7/15/2150			
 NOBLE DENTON		Petromec		 AMEC	
TITLE				DRAWN/DATE	
FENDERS				SCE/DEC.97	
STBD/AFT. PORT/AFT & PORT/FWD COLUMNS				CHECKED/DATE	
				AT/OCT.99	
				APPROVED/DATE	
				AT/OCT.99	
GENERAL ARRANGEMENT				SCALE	
				1:20	
DRAWING NUMBER				REV	
DE-3010.38-1320-140-NBD-304-01				C	

NORTH PLANT

KEY PLAN - EL.35.052
BOTTOM SHELL LEVEL



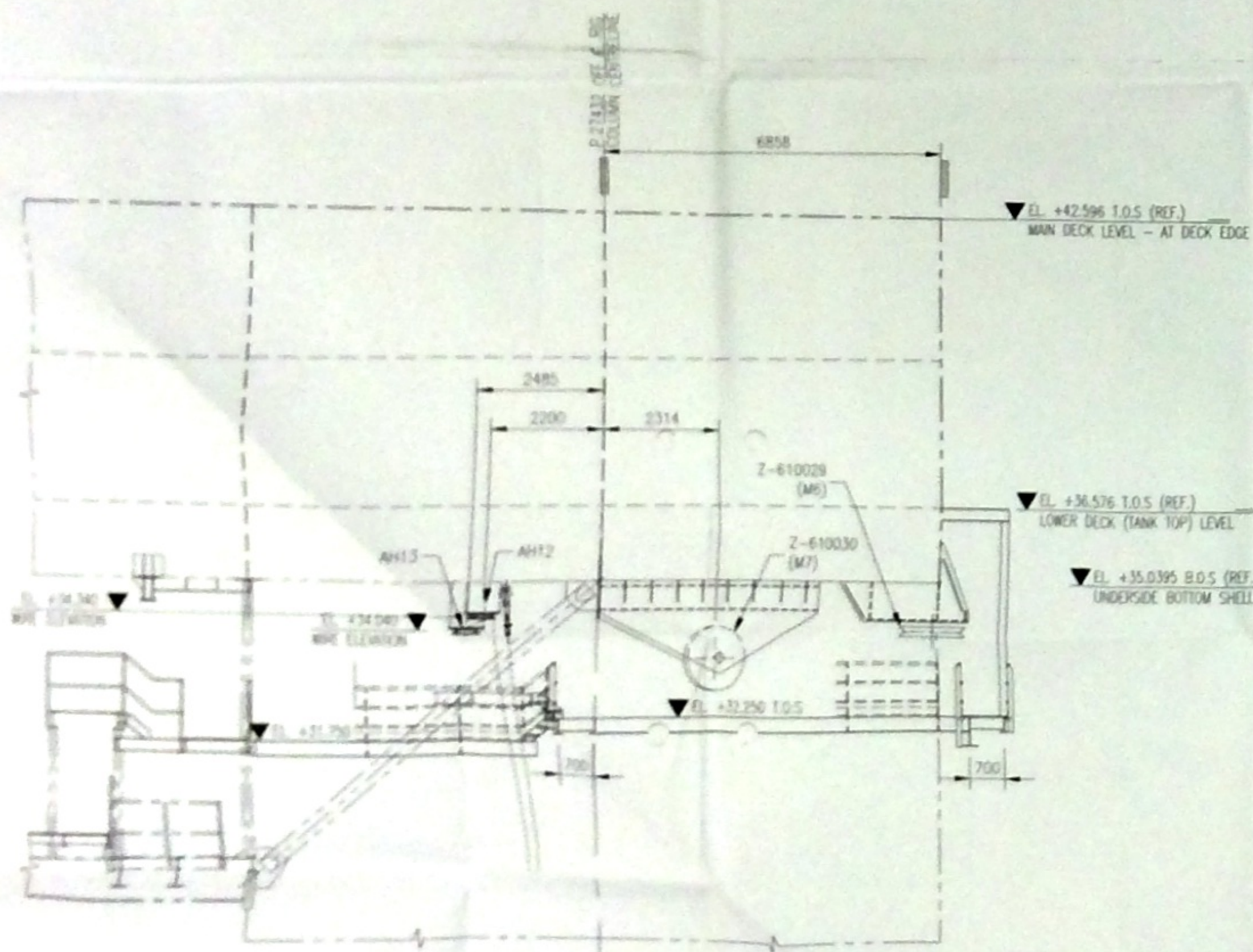
NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01
 - REFER TO THE FOLLOWING DOCUMENTS FOR AS BUILT MODIFICATIONS TO SCR ACCESS PLATFORMS
- WDTP No.s 1200013 1210055-26
1550008-17
- FSK-D-H No.s 347 361
FECN No.s H484 H517

É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS FAVENEL GUSMÃO
Diretor de Divisão de Serviços Carreiros

PLAN UNDER PORTSIDE BOTTOM SHELL (EL.+35.052 T.O.S.)



SECTION B-B

SECTION C-C

PORTSIDE LIFEBOAT
(CENTRELINE AT F.1765)

EXIST. WALKWAY
SUPPORT AT F.15138
TO BE CUT BACK TO
HANDRAILING LEVEL

EL. +39.624 T.O.S. (REF.)
SECOND DECK LEVEL

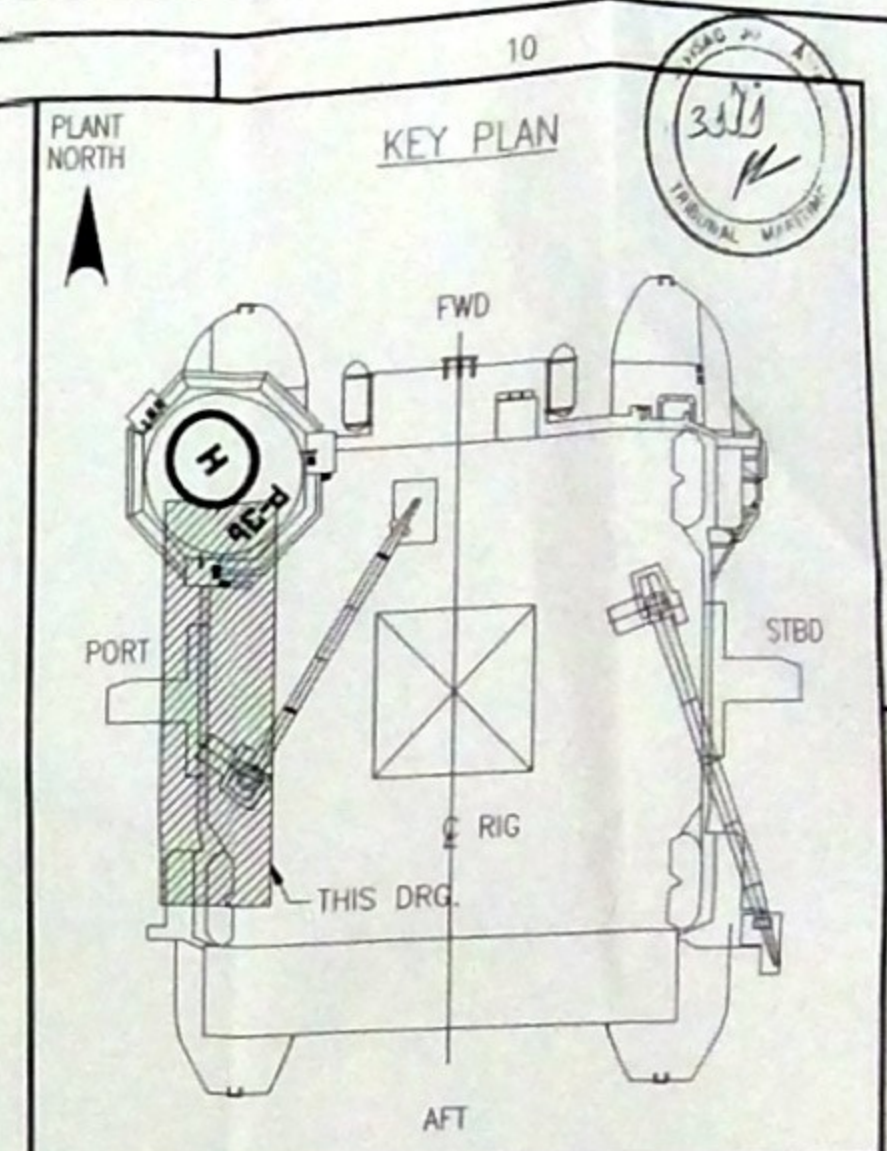
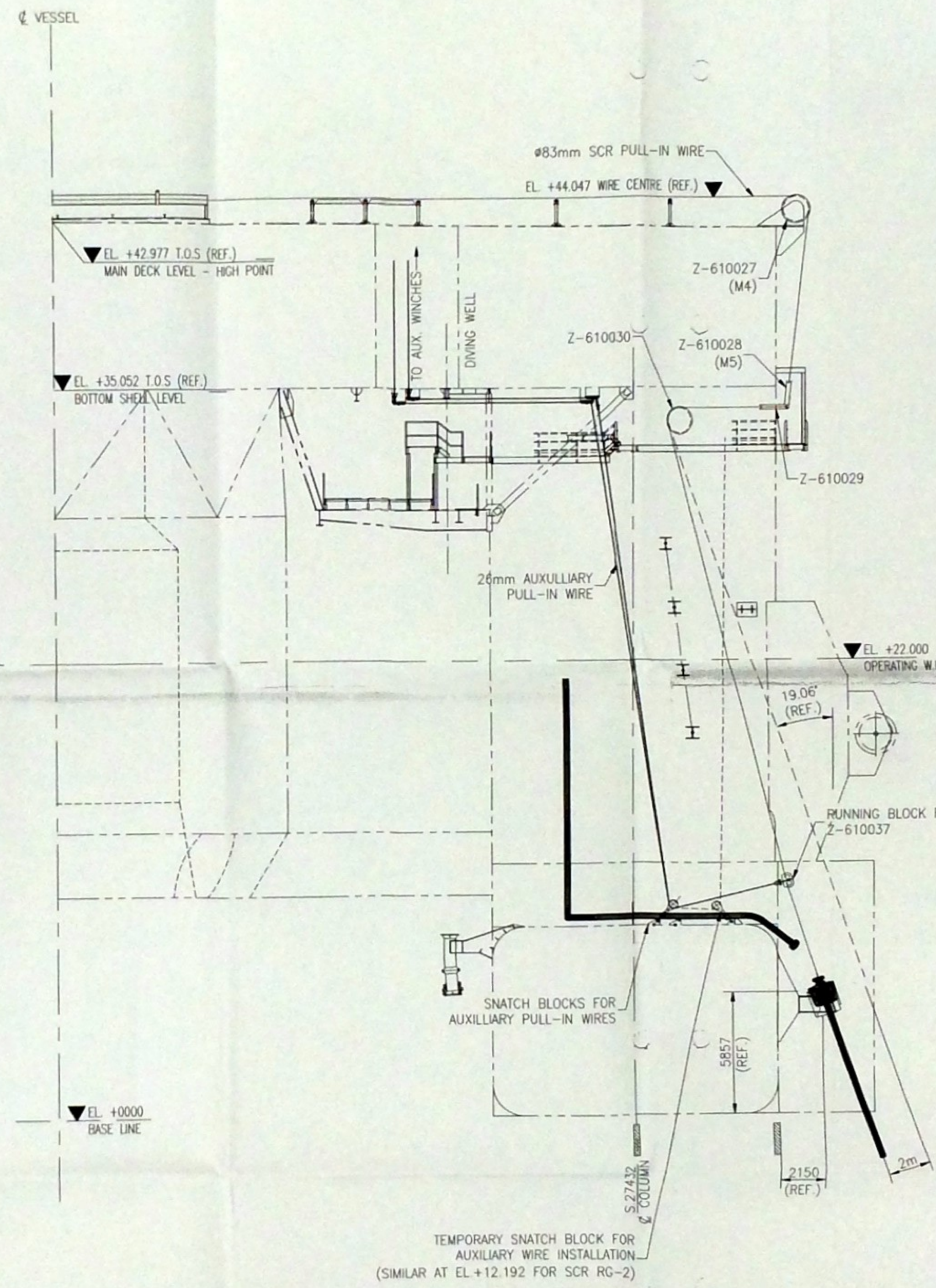
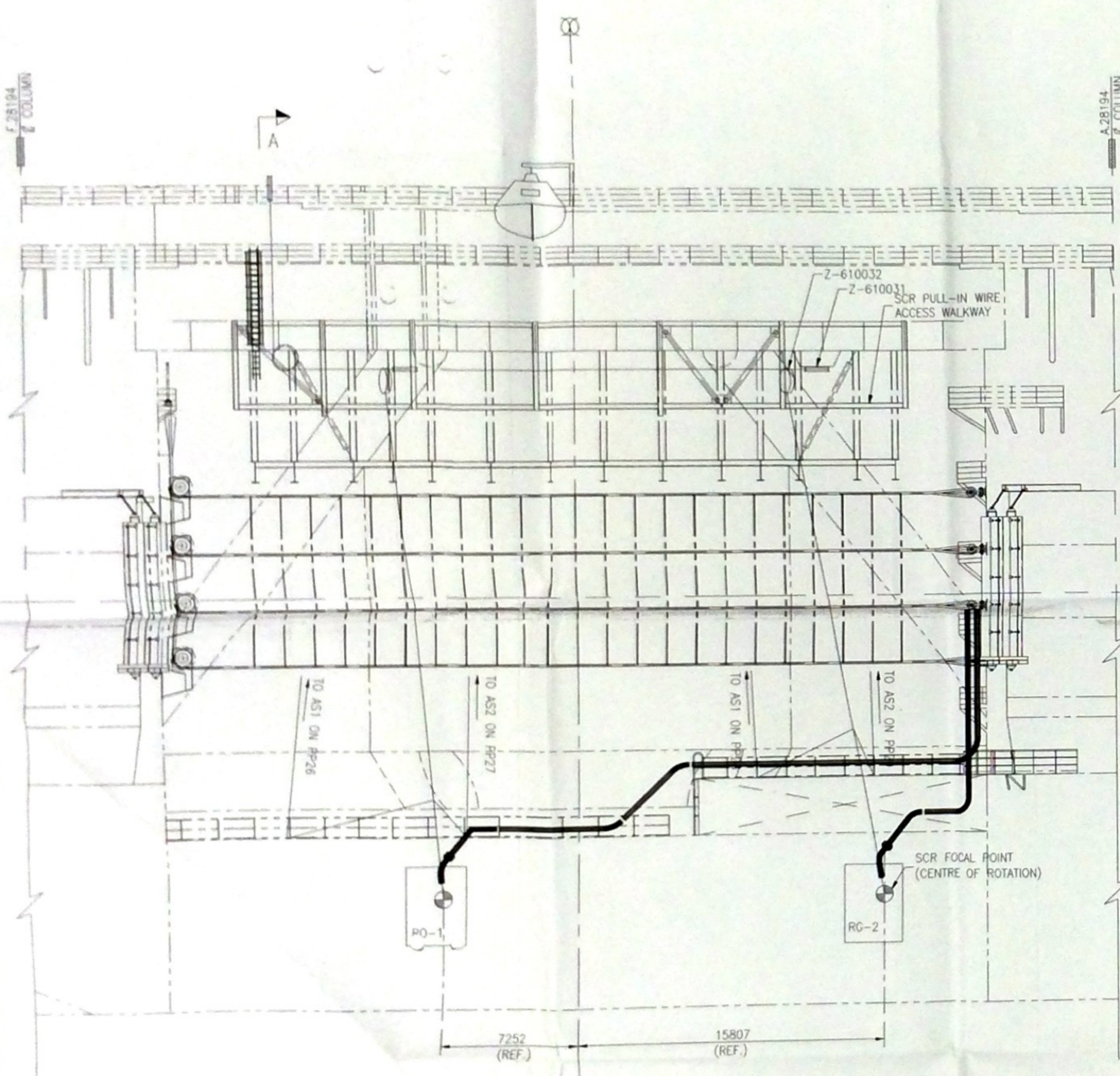
EL. +36.576 T.O.S. (REF.)
LOWER DECK (TANK TOP) LEVEL

EL. +35.0395 B.O.S. (REF.)
UNDERSIDE BOTTOM SHELL

DRAWING NUMBER	DRAWING TITLE
DE-3010.38-1320-941-NBD-368-01	INCINATION OF UNIT - WORST DRAINAGE CONDITION
DE-3010.38-6000-966-NBD-392-07	SCR PULL-IN SYSTEM - WALKWAY SECTIONS (2)
DE-3010.38-6000-966-NBD-392-06	SCR PULL-IN SYSTEM - WALKWAY SECTIONS (1)
DE-3010.38-6000-966-NBD-392-05	SCR PULL-IN SYSTEM - WALKWAY PLANS
DE-3010.38-6000-966-NBD-392-03	STEEL CATENARY RISER PULL-IN SYSTEM PLANS
DE-3010.38-6000-966-NBD-360-01	RISER PULL-IN ARRANGEMENT SHEAVE LAYOUT

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVED CLIENT
D	22.11.99	RE-ISSUED AS BUILT	EDH	AT	AT	
C	06.10.99	ISSUED AS BUILT	EDH	AT	AT	
B	06.04.99	AFC - ELIMINATED SCRS RD-2, RD-3	SCE	AT	AT	
A	30.11.98	AFC	SCE	AT	AT	
D	20.11.98	ADC	SCE	AT	AT	

BR BRASOIL	P36-RONCADOR FIELD DEVELOPMENT
NOBLE DENTON	CONTRACT No. 7/15/2150
Petromec	AMEC
TITLE	STEEL CATENARY RISERS PULL-IN SYSTEM
WALKWAYS ARRANGEMENT	
DRAWING NUMBER	DE-3010.38-6000-966-NBD-392-04
SCALE	1:75 (A1)
DATE	SCE/JAN 98
CHECKED/DATE	AT/NOV 99
APPROVED/DATE	AT/NOV 99



NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01

CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO

Director da Divisão de Serviços Cartográficos

HOLDS

1. REMOVED

DE-3010.38-1320-140-NBD-302-04	SCR PULL-IN SYSTEM - WALKWAYS ARRANGEMENT
DE-3010.38-1320-140-NBD-302-04	SCR PULL-IN SYSTEM - WALKWAYS ARRANGEMENT
DE-3010.38-1320-140-NBD-302-01	SCR PULL-IN SYSTEM - LAYOUT AT MAIN DECK
DE-3010.38-1320-140-NBD-302-03	SCR PULL-IN SYSTEM PLANS
DE-3010.38-1320-140-NBD-300-19	SCR PULL-IN SYSTEM SHEAR AND PADIES SCHEDULE
DE-3010.38-1320-140-NBD-300-02	STEEL CATENARY RISER GENERAL ARRANGEMENT

DRAWING NUMBER	DRAWING TITLE
DE-3010.38-1320-140-NBD-302-04	SCR PULL-IN SYSTEM - WALKWAYS ARRANGEMENT
DE-3010.38-1320-140-NBD-302-04	SCR PULL-IN SYSTEM - WALKWAYS ARRANGEMENT
DE-3010.38-1320-140-NBD-302-01	SCR PULL-IN SYSTEM - LAYOUT AT MAIN DECK
DE-3010.38-1320-140-NBD-302-03	SCR PULL-IN SYSTEM PLANS
DE-3010.38-1320-140-NBD-300-19	SCR PULL-IN SYSTEM SHEAR AND PADIES SCHEDULE
DE-3010.38-1320-140-NBD-300-02	STEEL CATENARY RISER GENERAL ARRANGEMENT

REV	DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVED CLIENT
D	06.10.98	ISSUED AS BUILT	IGH	AT	AT	
C	31.03.99	A.F.C. - ELIMINATED SORS RO-2, RO-3	SCE	AT	AT	
B	08.12.98	A.F.C.	SCE	AT	AT	
A	28.09.98	A.F.D.	SCE	AT	AT	
O	08.09.98	L.D.C.	SCE	AT	AT	

BR BRASOIL	P36-RONCADOR FIELD DEVELOPMENT CONTRACT No. - 7/15/2150
NOBLE DENITION	Petromec
AMEC	
TITLE	STEEL CATENARY RISERS PULL-IN SYSTEM
DRAWN/DATE	SCE/SEP.98
CHECKED/DATE	AT / OCT 99
APPROVED/DATE	AT / OCT 99
SCALE	1:150 (A1)
DRAWING NUMBER	DE-3010.38-6000-966-NBD-392-02
REV	D

TEMPORARY OVERHEAD WIRE SUPPORT ABOVE ACCESS WALKWAY EL+32.004 T.O.S.

WIRE SUPPORT AT DIAGONAL BRACE LOCATED AT EL+33.690

HATCH COVER OMITTED FOR CLARITY

PORT

WIRE SUPPORT AT WALKWAY COLUMN LOCATED AT EL+33.800

TEMPORARY OVERHEAD WIRE SUPPORT ABOVE ACCESS WALKWAY EL+32.004 T.O.S.

Z-610012 BLOCK D

Z-610013 BLOCK G

Z-61002 (AH3)

Z-610020 (AH2)

Z-610040 (AH6)

Z-610011 BLOCK B

Z-610010 BLOCK C

INTERMEDIATE WIRE SUPPORTS

AFT

Z-610016 BLOCK M2

Z-610017 BLOCK M1

Z-610023 AV1

CN-610022A

CN-610002B

CN-610001

PART PLAN ON MAIN DECK

16000 (REF)

INTERMEDIATE WIRE SUPPORTS

FWD

Z-610041 (AH8)

Z-610042 (AH9)

Z-610043 (AH10)

TEMPORARY OVERHEAD WIRE SUPPORT AT ACCESS WALKWAY EL+32.004 T.O.S.

STARBOARD

PLAN ON BTM. SHELL EL. 35.052

AUXILIARY WIRE RIGGING SEQUENCE :
AV1+AV3+AH4+AH5+AH7+AH9+BLOCK F+BLOCK E
+BLOCK D+BLOCK G+M3+M1

SHEAVE PIN

P.19474

P.18095

Z-610022 (AH7)

Z-610022 (AH7)

F.31552

FWD RISERS

P.20574 COLUMN FACE

P.19074 (NOM)

P.18097 DOUBLE BTM WEB

EL+35.052 (REF) BOTTOM SHELL

550 (NOM)

260 WIRE ROPE

MAIN PULL-IN WIRE TRAY

SECTION D SCALE 1:20

SECTION E SCALE 1:20

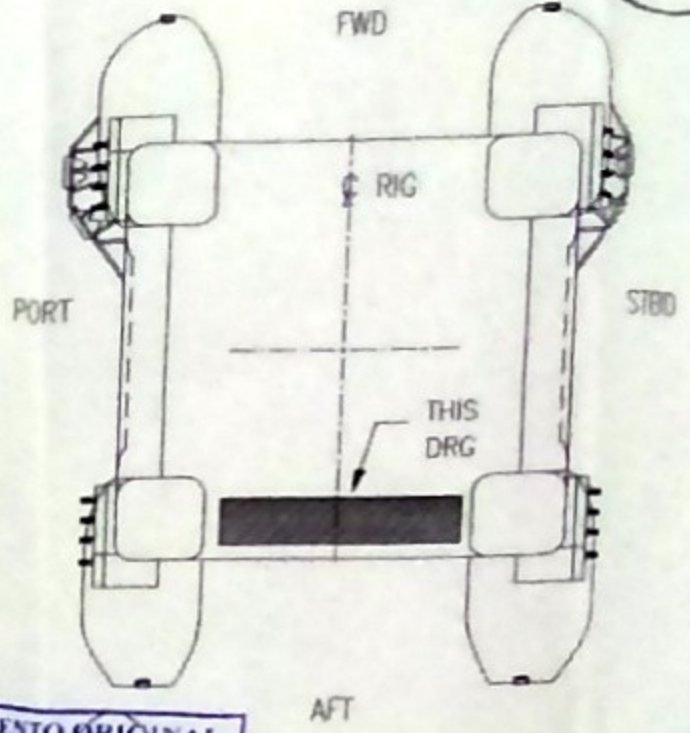
SECTION C SCALE 1:20

SECTION F SCALE 1:20

SECTION H SCALE 1:20

KEY PLAN

PLANT NORTH



É COPIA FIEL DO DOCUMENTO ORIGINAL

NOTES
JOSE CARLOS PIMENTEL GUSMÃO
Diretor de Engenharia de Superfície Cartográfica

- THIS DRAWING TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01
- THIS DRAWING TO BE READ IN CONJUNCTION WITH SHEAVE LAYOUT DRG. DE-3010.38-6000-966-NBD-360-01
- LOCATIONS OF INTERMEDIATE WIRE SUPPORTS ARE NOMINAL
- AUX. SHEAVE SHORT CODE
A AUXILIARY
H HORIZONTAL
V VERTICAL
T TOP/UPPER
B BOTTOM/LOWER
S SNATCH BLOCK
- TEMPORARY WALKWAY WIRE PROTECTION GUIDES AND OVERHEAD WIRE SUPPORTS TO BE ASSEMBLED IN THE FIELD

HOLDS LIST

- RELEASED REV 'B'
- RELEASED REV 'B'
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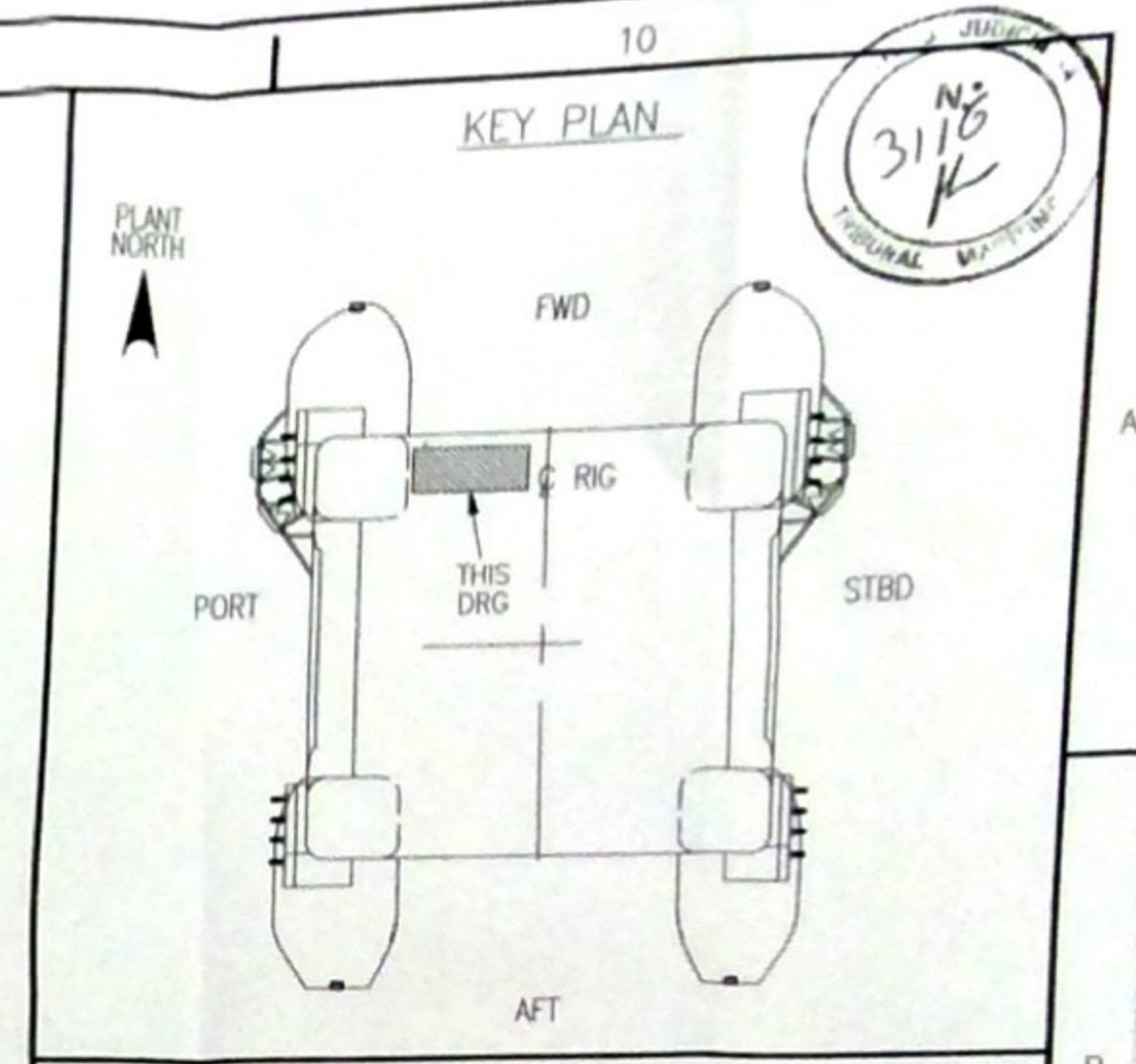
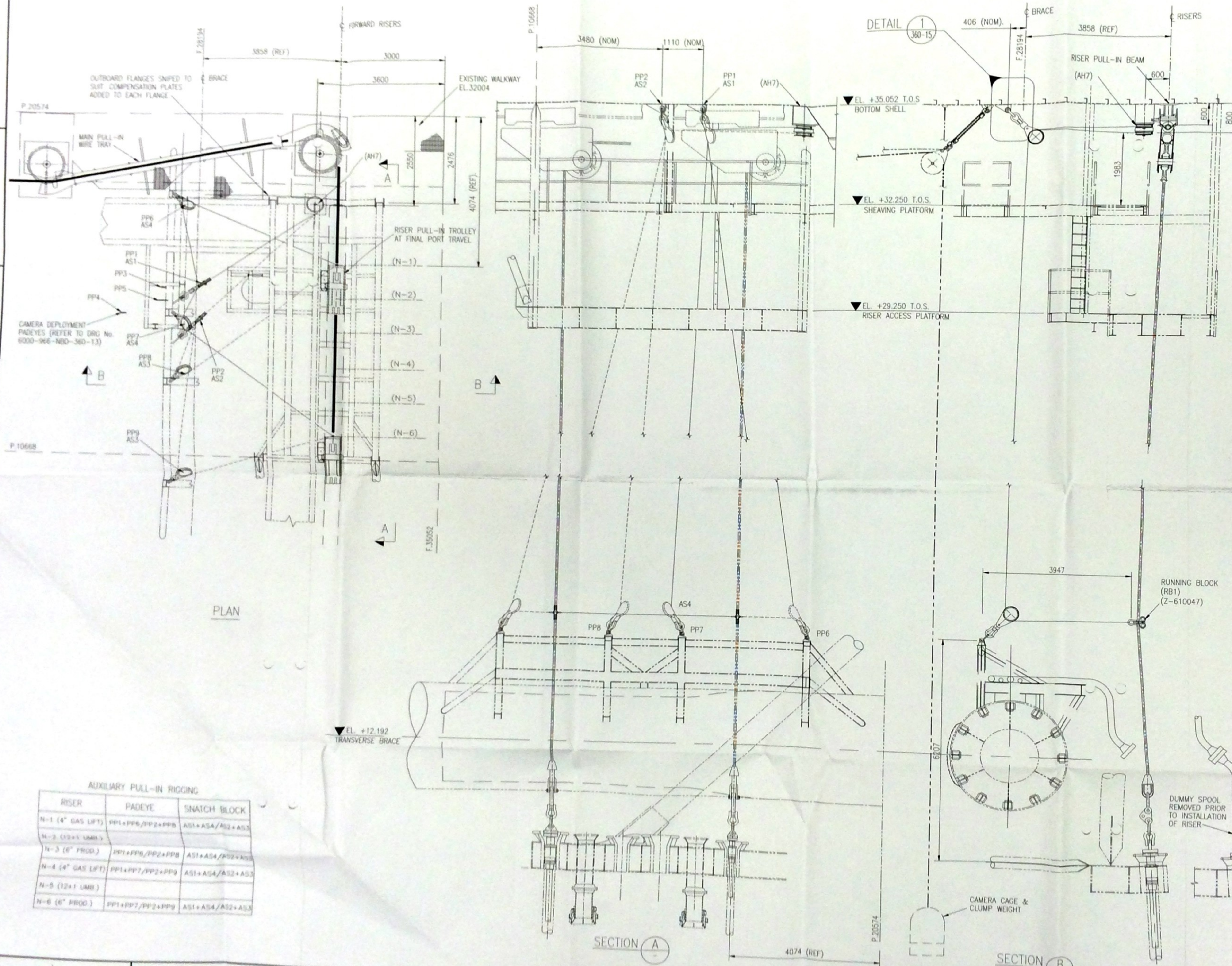
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DE-3010.38-6000-966-NBD-393-02	AUX. PULL-IN SYS. FWD RISERS
DE-3010.38-6000-966-NBD-393-05	AUX. PULL-IN SYS. FWD PORT RISERS
DE-3010.38-6000-966-NBD-393-07	AUX. PULL-IN SYS. FWD STBD RISERS
DE-3010.38-6000-966-NBD-393-06	AUX. PULL-IN SYS. FWD STBD RISERS
DE-3010.38-6000-966-NBD-393-01	RISER PULL-IN ARRANGEMENT SHEAVE LAYOUT

DATE	DESCRIPTION OF REVISION	DRAWN BY	CHECKED BY	APPROVED BY	APPROVAL CLIENT
C 22.11.99	ISSUED AS BUILT	RGH	AT	AT	
B 27.05.99	ISSUED AFC	RGH	AT	AT	
A 16.11.98	AFD	RHS	AT	AT	
D 24.09.99	I.D.C.	RHS	RWS		

BRASOIL P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No. 7/15/2150

NOBLE DENTON Petromec AMEC

FILE
RISER PULL-IN SYSTEM
INSTALLATION OF MAIN PULL-IN
WIRE ON AFT SIDE
SCALE 1:200
DRAWING NUMBER
DE-3010.38-6000-966-NBD-393-04



NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01
2. ALL WIRE/STRUCTURAL CLASHES TO BE RESOLVED DURING COMMISSIONING ON SITE

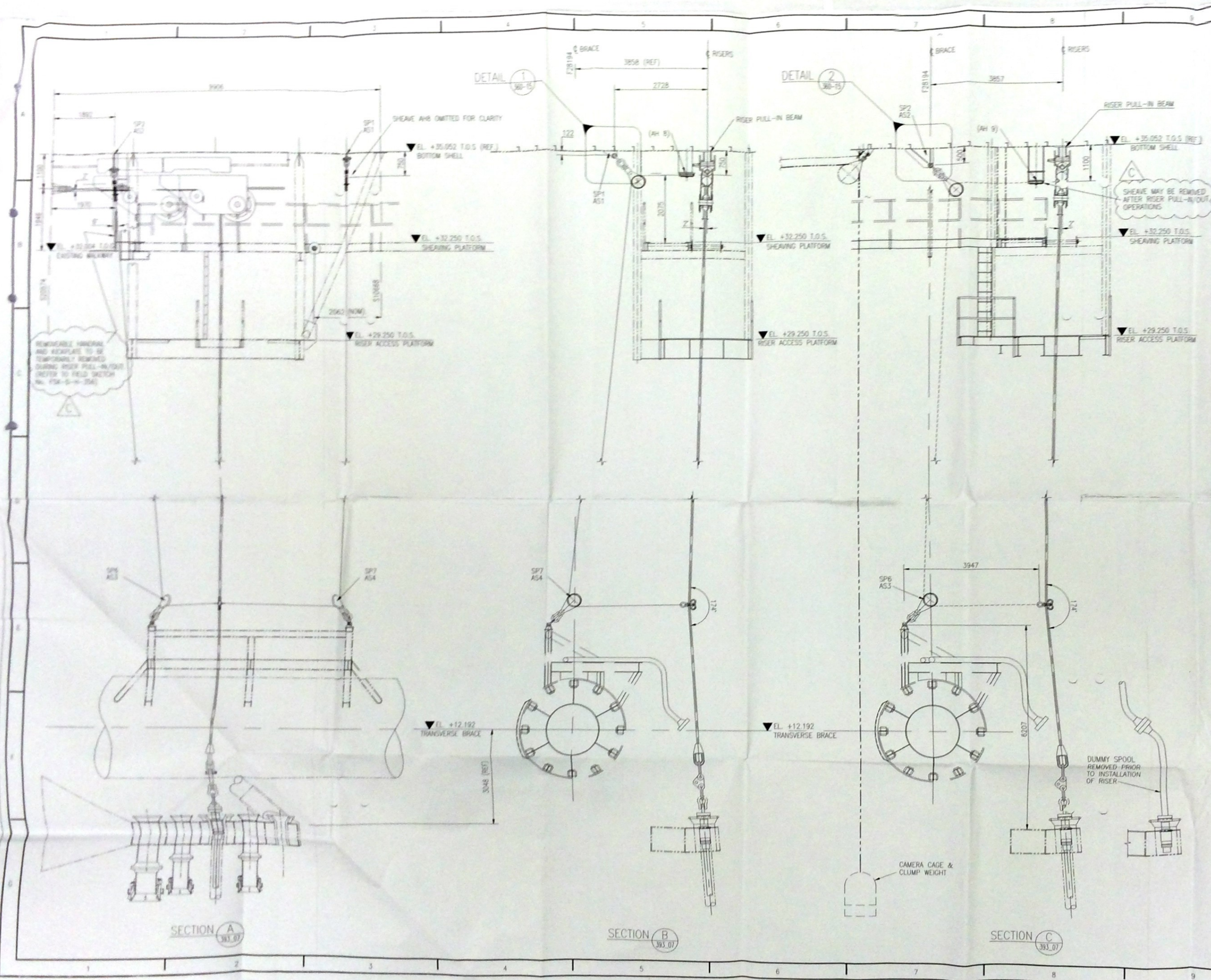
ECÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartográficos

HOLDS LIST

1. RELEASED REV B

DE-3010.38-1320-140-NBD-356-01		RISER MONITORING SYSTEM PLAN ON SPIDER DECK	
DE-3010.38-6000-966-NBD-360-13/14		RISER PULL-IN ARRANGEMENT PALETTE SCHEDULES	
DE-3010.38-6000-966-NBD-360-09		RISER PULL-IN FWD. AUX. SYS. PLANS, SEC. DET.	
DE-3010.38-6000-966-NBD-360-01		RISER PULL-IN ARRANGEMENT SHEAVE LAYOUT	
DRAWING NUMBER		DRAWING TITLE	
REFERENCE DRAWINGS			
C	22.11.99	ISSUED AS BUILT	IGH AT AT
B	27.05.99	AFC	SCE AT AT
A	04.11.98	AFD	RHS RWS RWS
D	01.10.99	I.D.C	RHS RWS RWS
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY CHKD BY APPD BY APPD CLIENT
BR		P36-RONCADOR FIELD DEVELOPMENT	
BRASOIL		CONTRACT No :- 7/15/2150	
NOBLE DENTON		Petromec	
		AMEC	
TITLE		DRAWN/DATE	
AUXILIARY PULL-IN SYSTEM		RHS/NOV.98	
FWD. PORT RISERS		CHECKED/DATE	
		AT/NOV 99	
		APPROVED/DATE	
		AT/NOV 99	
		SCALE	
		1:50	
DRAWING NUMBER		REV	
DE-3010.38-6000-966-NBD-393-05		C	



NOTES

- THIS DRAWING TO BE READ IN CONJUNCTION WITH GENERAL NOTES Dwg. DE-3010.38-1320-140-NBD-300-01
- ALL WIRE/STRUCTURAL CLASHES TO BE RESOLVED DURING COMMISSIONING ON SITE.

HOLDS LIST

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B	27.05.99	AFC	SCE	AT	AT	
A	02.11.98	AFD	RHS	RWS	RWS	
D	01.10.98	I.D.C	RHS	RWS	RWS	

REFERENCE DRAWINGS	
DRAWING NUMBER	DRAWING TITLE
DE-3010.38-1320-140-NBD-300-01	RISER MONITORING SYSTEM PLAN ON SPEER DECK
DE-3010.38-6000-966-NBD-393-01	AUX. PULL-IN SYS. FWD. STARBOARD RISERS PLAN
DE-3010.38-6000-966-NBD-393-01/1A	RISER PULL-IN ARRANGEMENT PICTURE SCHEDULES
DE-3010.38-6000-966-NBD-393-01	RISER PULL-IN ARRANGEMENT SHEAVE LAYOUT

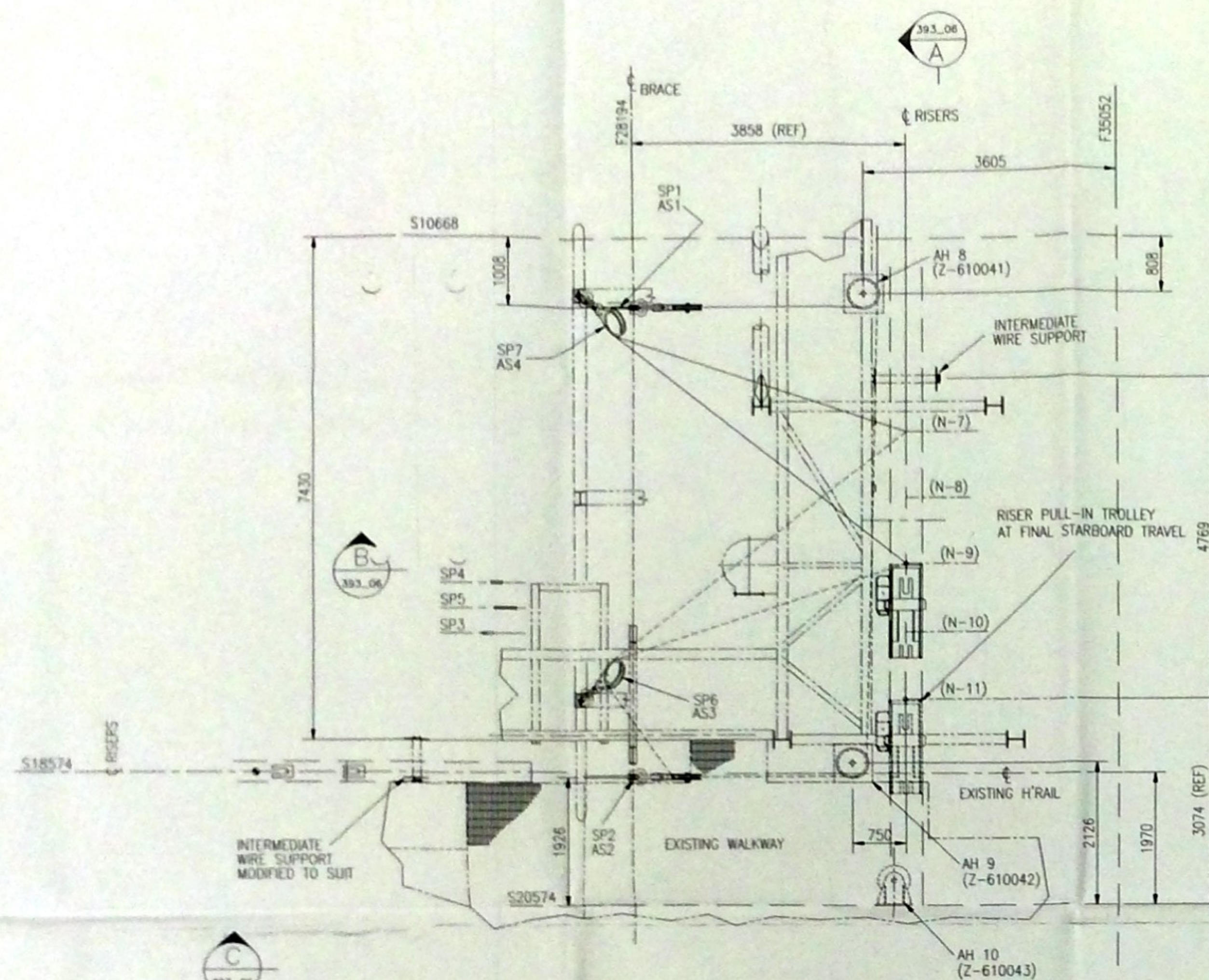
P36-RONDADOR FIELD DEVELOPMENT
CONTRACT No. - 7/15/2150

AUXILIARY PULL-IN SYSTEM
FWD. STARBOARD RISERS
SECTIONS

DATE: 10/15/98
CHECKED: AT/NOV 99
APPROVED: AT/NOV 99
SCALE: 1:50

DRAWING NUMBER
DE-3010.38-6000-966-NBD-393-06

REV
C

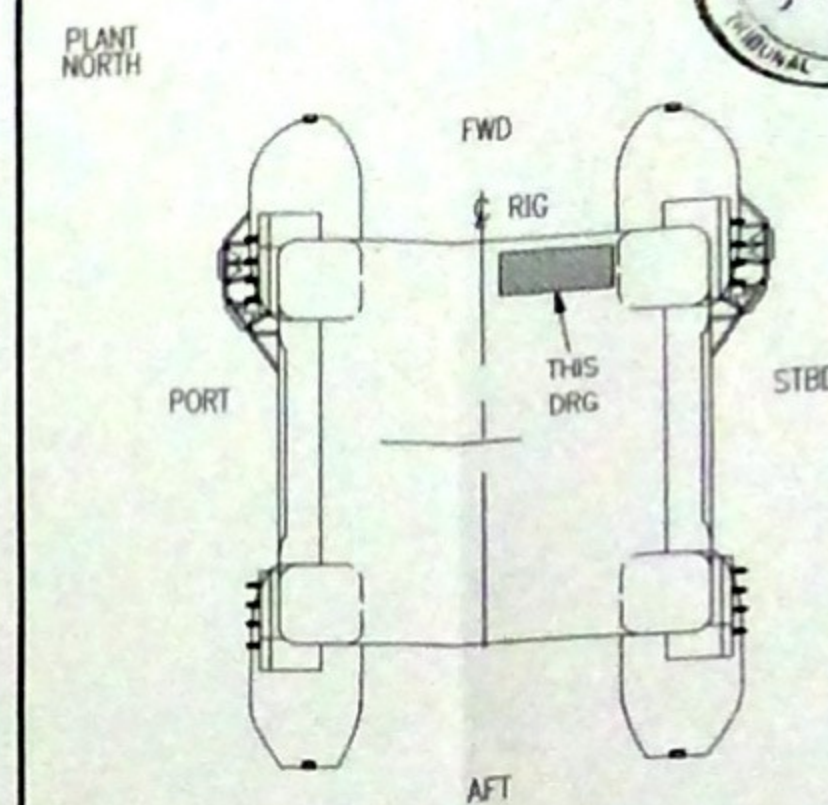


PLAN

AUXILIARY PULL-IN RIGGING

RISER	PADEYE	SNATCH BLOCK
N-7 (4" GAS LIFT)	SP1+SP7/SP2+SP6	AS1+AS4/AS2+AS3
N-8 (12+1 UMB.)		
N-9 (6" PROD.)	SP1+SP7/SP2+SP6	AS1+AS4/AS2+AS3
N-10 (5+1 UMB.)		
N-11 (6" WTR INJ.)		

KEY PLAN



NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG. DE-3010.38-1320-140-NBD-300-01

E Cópia Fiel do Documento Original

JOSÉ CARLOS FIDEL GUSMÃO
Diretor da Divisão de Engenharia

HOLDS LIST

1. RELEASED REV 'A'

DE-3010.38-6000-966-NBD-360-13/14	RISER PULL-IN SYSTEM PADEYE SCHEDULE
DE-3010.38-6000-966-NBD-393-06	AUX. PULL-IN SYS/FWD/STARBOARD RISERS SECTS.
DE-3010.38-6000-966-NBD-360-01	RISER PULL-IN ARRANGEMENT SHEAVE LAYOUT

DRAWING NUMBER	DRAWING TITLE
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REFERENCE DRAWINGS

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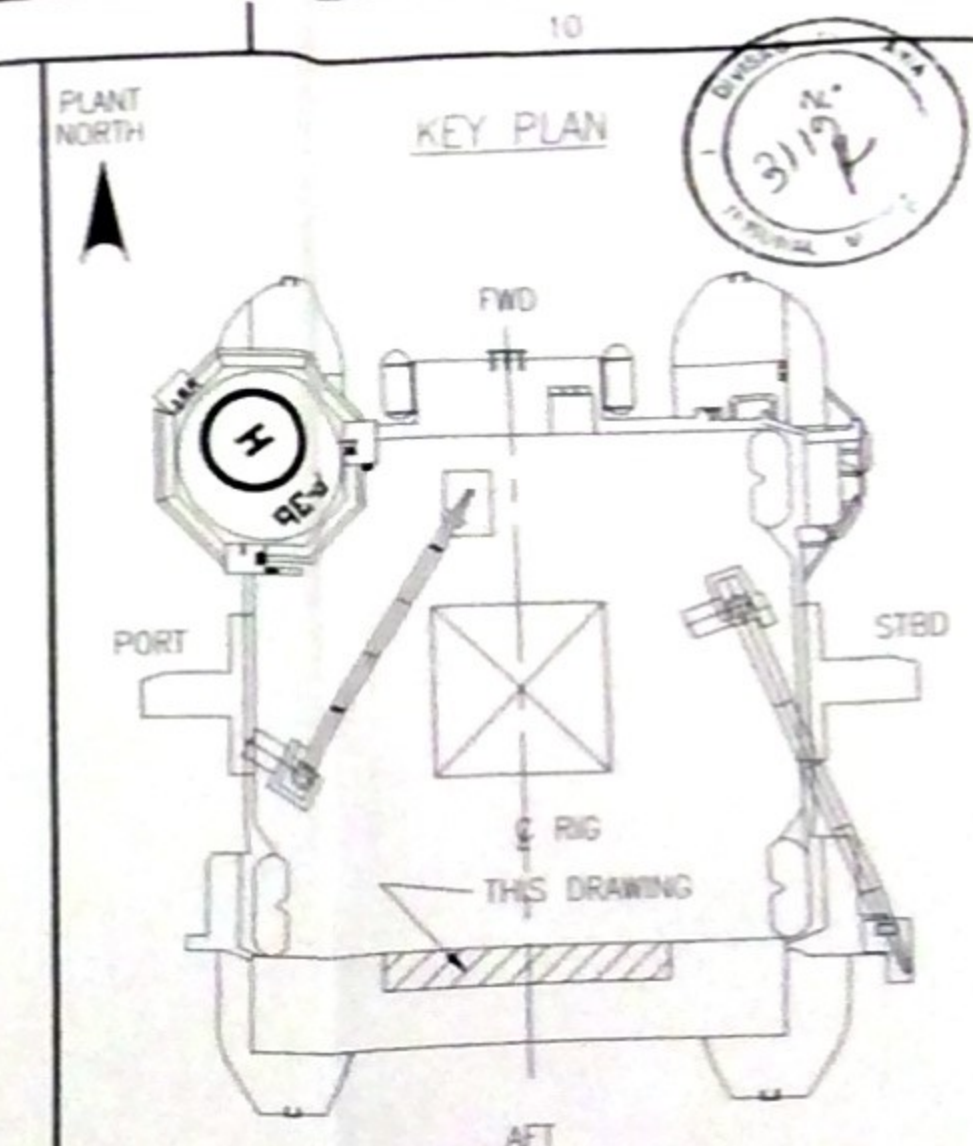
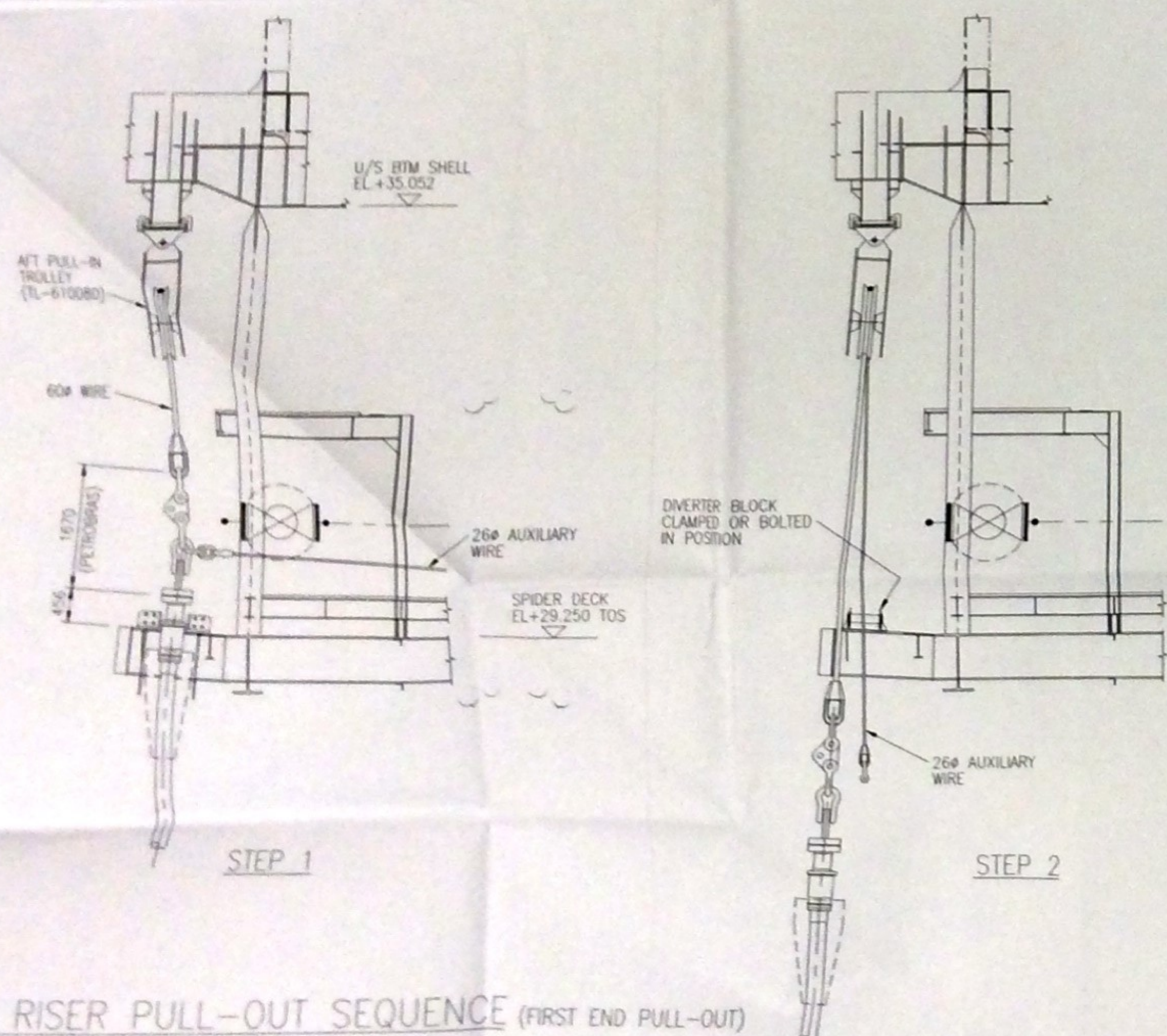
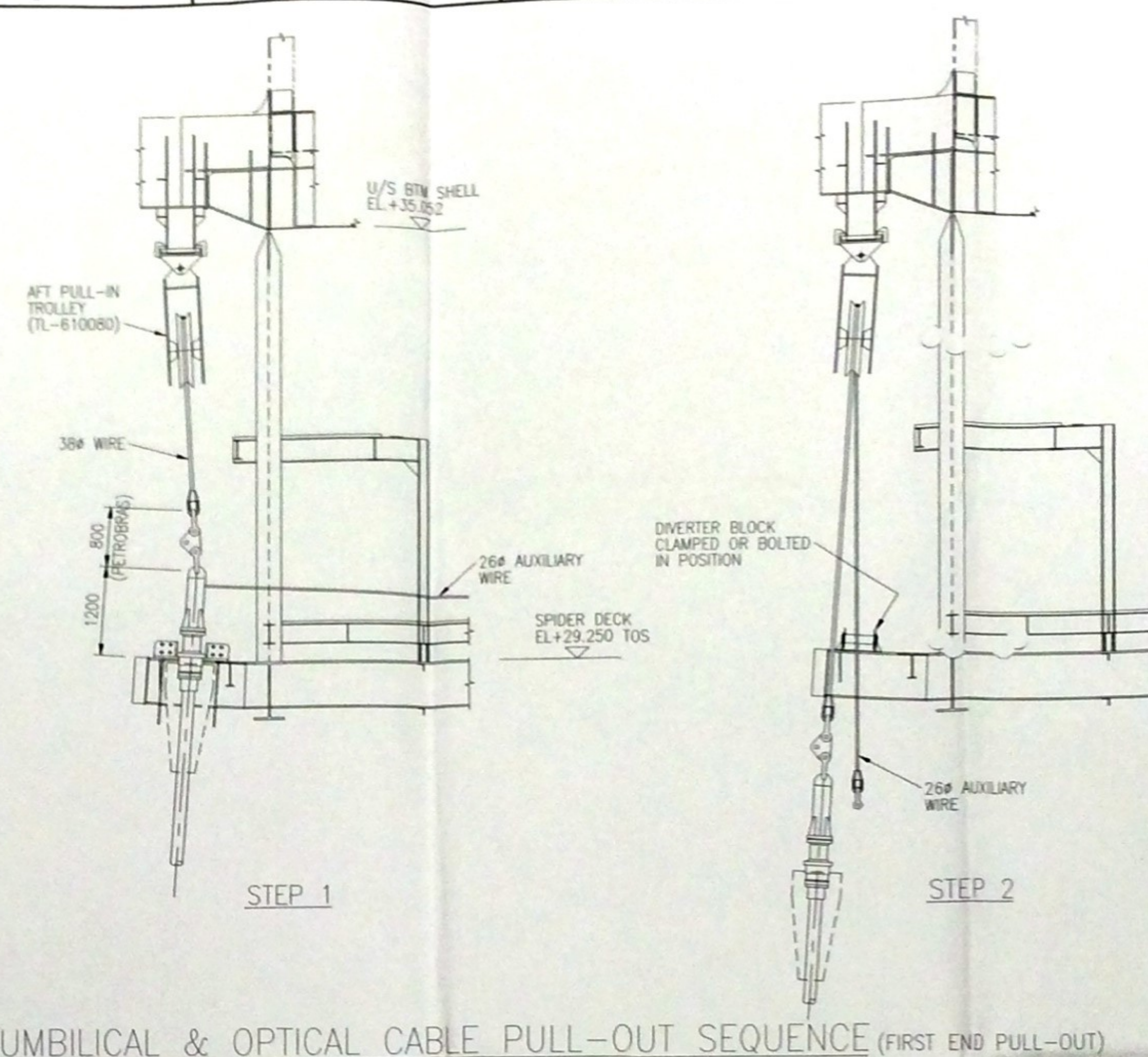
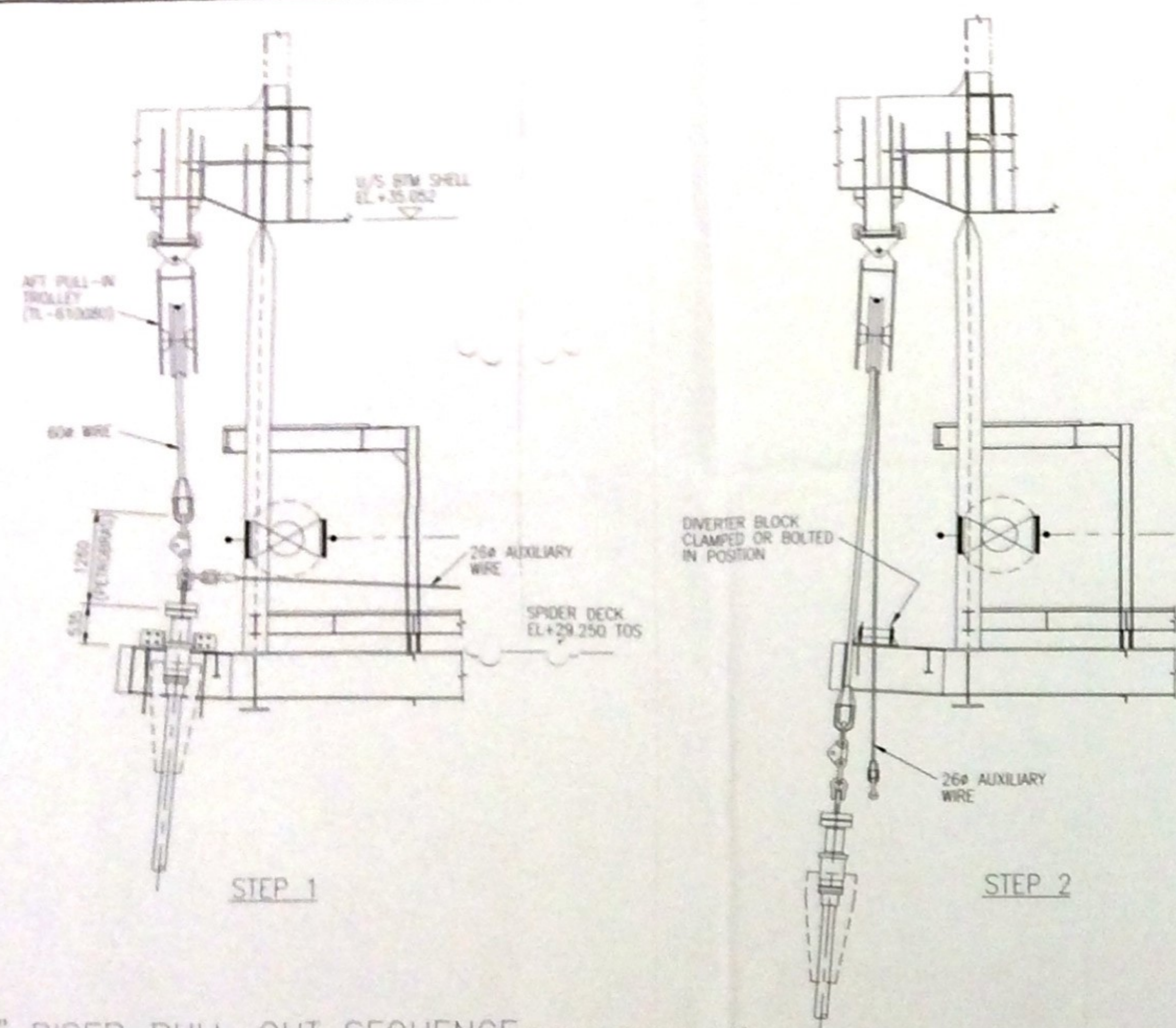
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D	02.11.98	AFD	RHS	AT	AT	

BR BRASOIL	P36-RONCADOR FIELD DEVELOPMENT
	CONTRACT No : 7/15/2150

NOBLE DENTON	Petromec	AMEC
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TITLE	DRAWN/DATE
AUXILIARY PULL-IN SYSTEM	RHS/SEP.98
FWD. STARBOARD RISERS	CHECKED/DATE
PLAN	AT/25.11.99
	APPROVED/DATE
	AT/25.11.99
	SCALE
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DRAWING NUMBER	REV
DE-3010.38-6000-966-NBD-393-07	B



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JOSÉ CARLOS FIDELTEL GUSMÃO
Diretor da Divisão de Serviços Camarados

[illegible]

BR BRASOIN

 NOBLE
DENTON

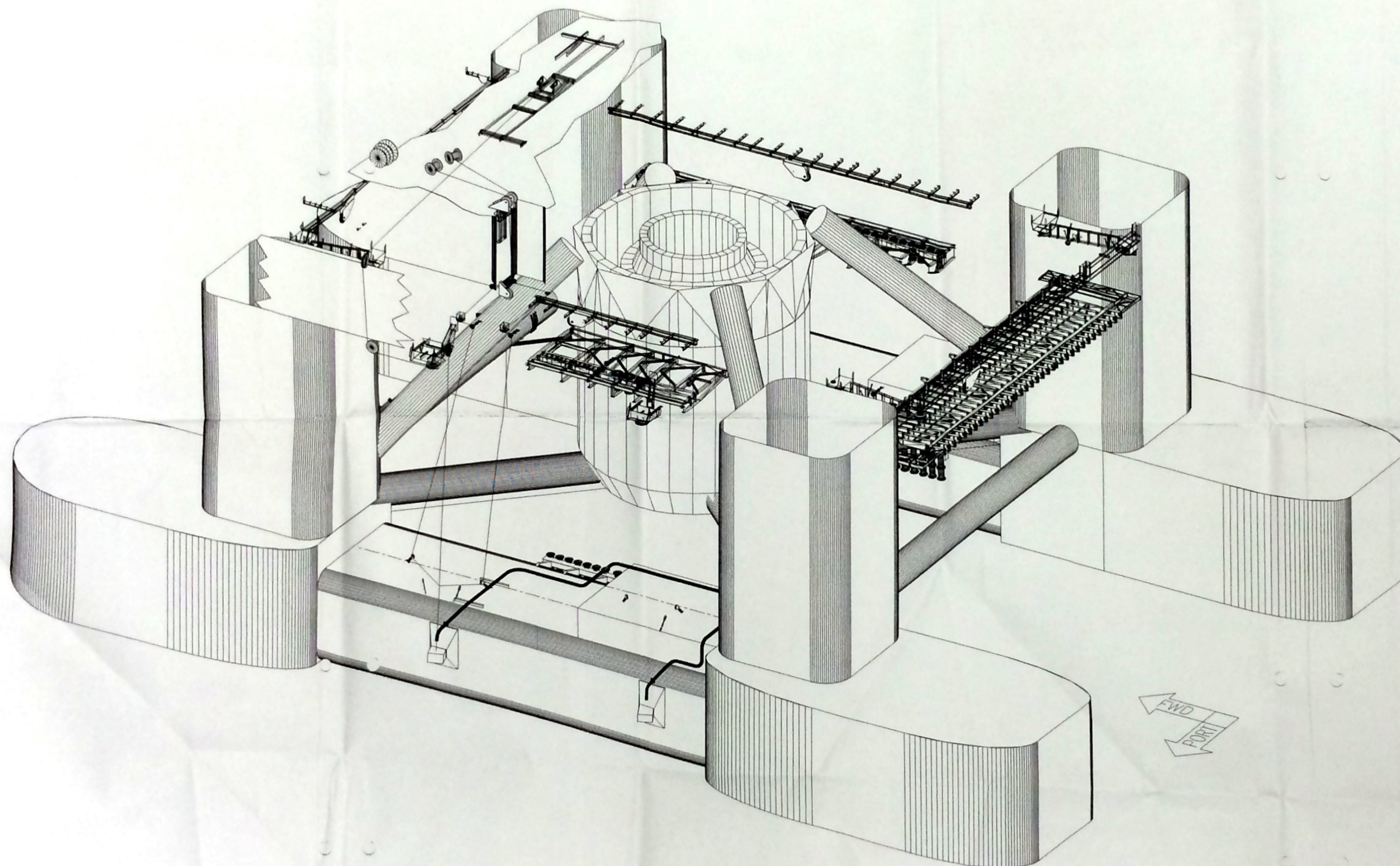
P36-RONCADOR FIELD DEVELOPMENT
CONTRACT No. 7/15/2150

Petromer **1983**

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TITLE	DRAWING/DATE
RISER PULL-OUT PROCEDURES	IGH 15.04.99
AFT	CHECKED/DATE
	AT/JUN 99
	APPROVED/DATE
	AT/JUN 99
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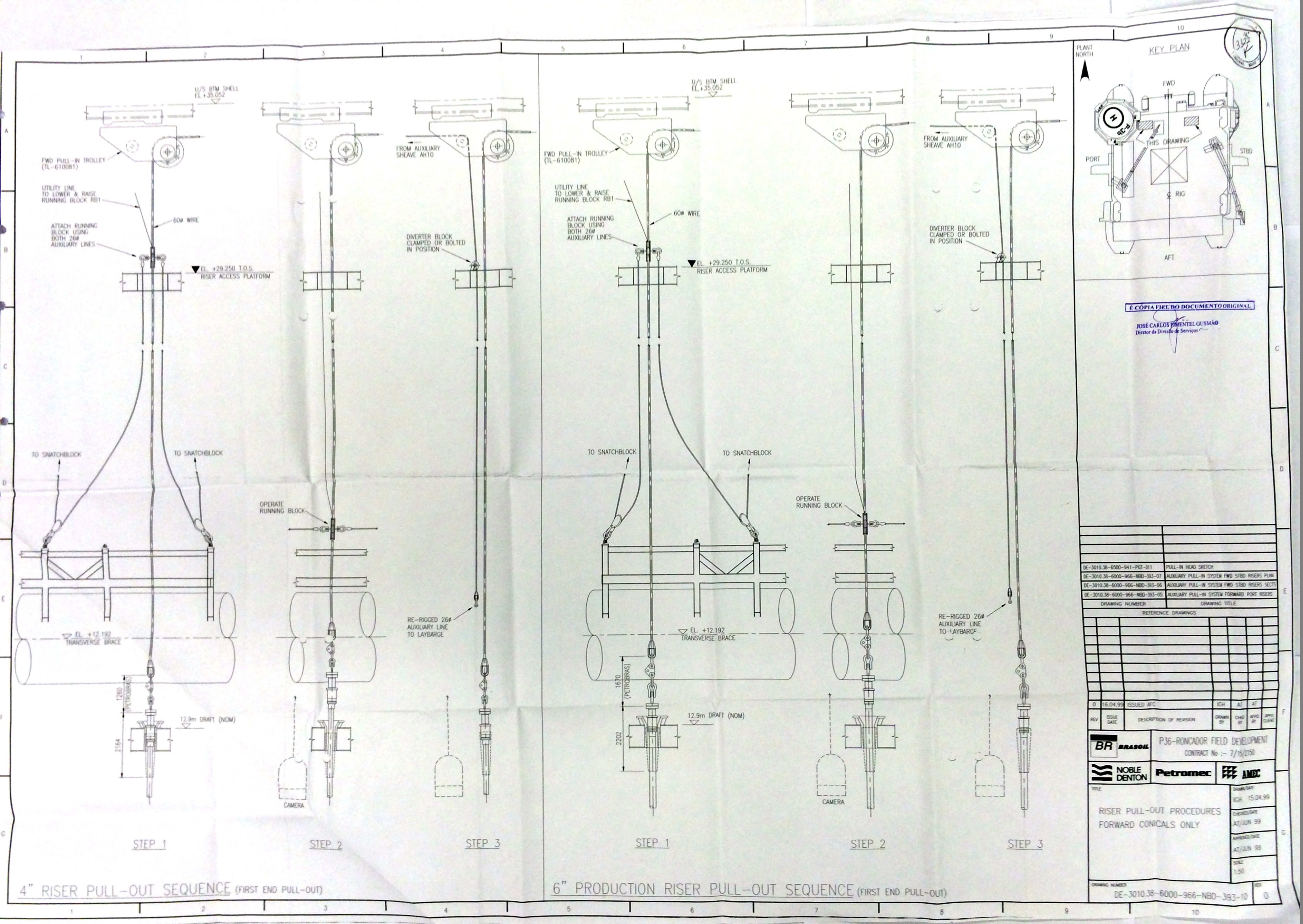
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VIEW SHOWING PULL-IN OF SCR OIL A

DRAWING NUMBER		DRAWING TITLE	
REFERENCE DRAWINGS			
0	15.10.99	FINAL ISSUE	SCE AT AT
REV	ISSUE DATE	DESCRIPTION OF REVISION	DRAWN BY CHKD BY APPD BY APPD CLIENT
BR BRASOL		P36-RONCADOR FIELD DEVELOPMENT CONTRACT No ~ 7/15/2150	
NOBLE DENTON		Petromec	AMEC
TITLE		DRAWN/DATE	
PULL-IN PROCEDURE OF SCR OIL "A"		SCE/AUL 99	
		CHECKED/DATE	
		AT/OCT 99	
		APPROVED/DATE	
		AT/OCT 99	
		SCALE	
		N.T.S.	
DRAWING NUMBER		REV	
DE-3010.38-600-966-NBD-393-17		0	

3033
 JOSE CARLOS MENTEL GEMAS
 Diretor da Divisão de Serviços Custódia



REFERENCE DOCUMENTS

- 1 - MANUFACTURERS LIST WHOSE INTELLIGENT PIGS WERE USED AS A REFERENCE TO THE DESIGN OF RECEIVERS AND LAUNCHERS
- 1) BRITISH GAS
- 2) PIPETRONIX (ULTRASONIC TYPE)
- 3) TUBOSCOPE
- 4) VETCO

F. Cópia fiel do documento original

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartográficos

PART LIST

ITEM	DESCRIPTION
1	PIPELINE (Ø12")
2	ELECTRIC INSULATING JOINT (PROCHIND TYPE)-(NOTE 10)
3	PRESSURE EQUALIZING IN THE BODY OF THE VALVE
4	PIG SIG
5	MAIN LINE BLOCK VALVE (THROUGH CONDUIT)
6	CONCENTRIC REDUCER
7	DRAIN (NOTE 11)
8	PRESSURE GAUGING
9	RECEIVER OR LAUNCHER CHAMBER (Ø16")
10	VENT
11	PIG TRAP CLOSURE
12	BY-PASS VALVE
13	BRANCH CONNECTION VALVE
14	BY-PASS PIPING (Ø8")
15	BRANCH CONNECTION PIPING (INLET/OUTLET)(Ø12") (NOTE 3)
16	PRESSURE EQUALIZING PIPING Ø 3/4"
17	SUPPORTS (NOTE 9)
18	ECCENTRIC REDUCER
19	FLANGED CONNECTION Ø 2" MIN. (NOTE 13)

GENERAL NOTES

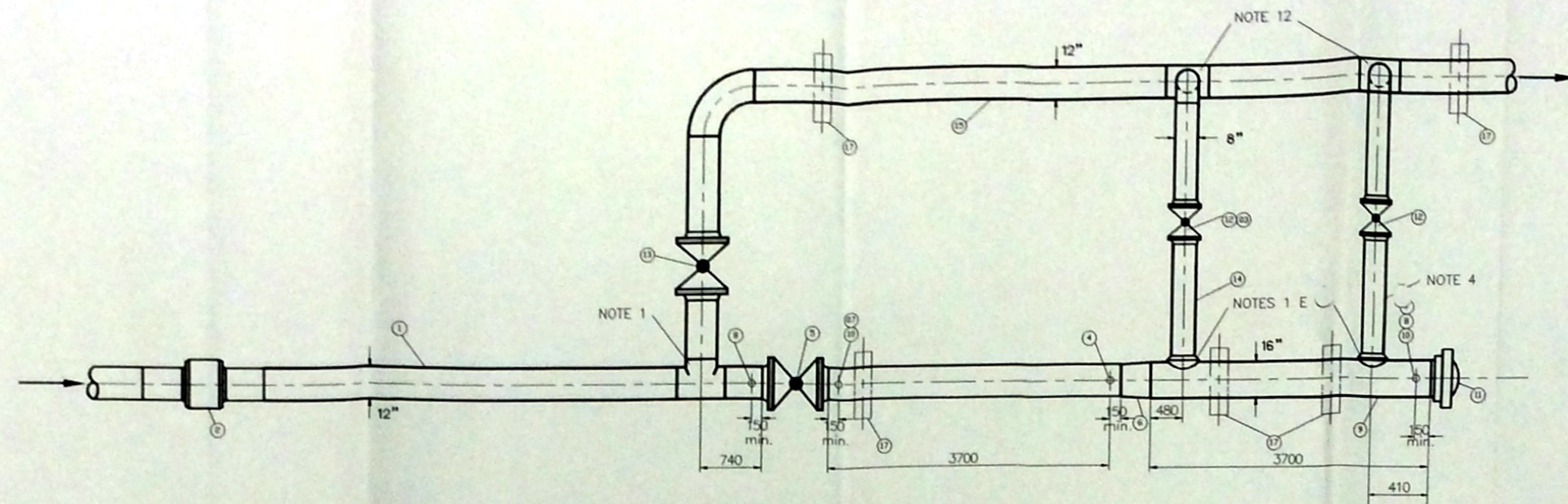
- 1 - PIG GUIDE BARS ACCORDING TO DETAIL 2
- 2 - VENT, DRAIN AND PRESSURE GAUGE ACCORDING TO DETAIL 1.
- 3 - BRANCH DIAMETER ACCORDING TO DESIGN.
- 4 - THE DIAMETER OF THE BY-PASS PIPING IS EQUAL THE ITEM NUMBER 14.
- 5 - INDICATED INSTRUMENTS CORRESPOND TO THE MINIMUM TO BE INSTALLED.
- 6 - MAIN VALVES TYPE WILL BE DEFINED BY DESIGN.
- 7 - DIMENSION "A" CORRESPONDS TO THE BIGGER INTELLIGENT PIG EXISTING ON THE MARKET, ACCORDING TO MANUFACTURERS LISTED ABOVE.
- 8 - THE MAIN LINE VALVE BORE SHALL BE EQUAL TO THE INTERNAL DIAMETERS OF ADJOINING PIPE AND WELDING FITTINGS.
- 9 - QUANTITY, LOCATION AND TYPE OF LAUNCHERS AND RECEIVERS' SUPPORTS, ACCORDING TO PIPING SUPPORT DESIGN.
- 10 - THE ELECTRIC INSULATING JOINT SHALL BE FITTED IN A STRAIGHT PIPE SECTION, JUST ABOVE THE GROUND, AFTER THE PIPELINE EMERGENCE, AND BEFORE THE FIRST SUPPORT OF THE AERIAL PIPING INSTALLATION.
- 11 - THE DRAIN DIAMETER SHALL BE 3".
- 12 - TYPE OF CONNECTION (TEE, WELDOLET, WELDED BRANCH WITHOUT REINFORCEMENT, ETC.) ACCORDING TO DESIGN.
- 13 - FLANGED CONNECTION FOR PULL PIGS.
- 14 - PIPING MATERIAL ACCORDING TO DESIGN SPECIFICATION (ANSI/ASME B-31.8).
- 15 - MATERIAL FOR INSTALLING INSTRUMENTS ACCORDING TO DESIGN SPECIFICATION (API RP-550).
- 16 - LAUNCHERS AND RECEIVERS MUST HAVE 1% SLOPE TO PROVIDE A GOOD PRODUCT DRAINAGE.
- 17 - PIG SIG INSTRUMENT SHALL BE CAPABLE OF BEING ACTUATED BY FOAM PIG.
- 18 - DIMENSION IN MILLIMETERS, UNLESS OTHERWISE INDICATED.

REV	DESCRIPTION	DATE	DESIGN	CHECK	APPROV
1	THE INFORMATION CONTAINED IN THIS DOCUMENT IS PROPRIETARY PROPERTY AND MAY NOT BE USED FOR ANY PURPOSE OTHER THAN THAT SPECIFICALLY INDICATED HEREIN.				

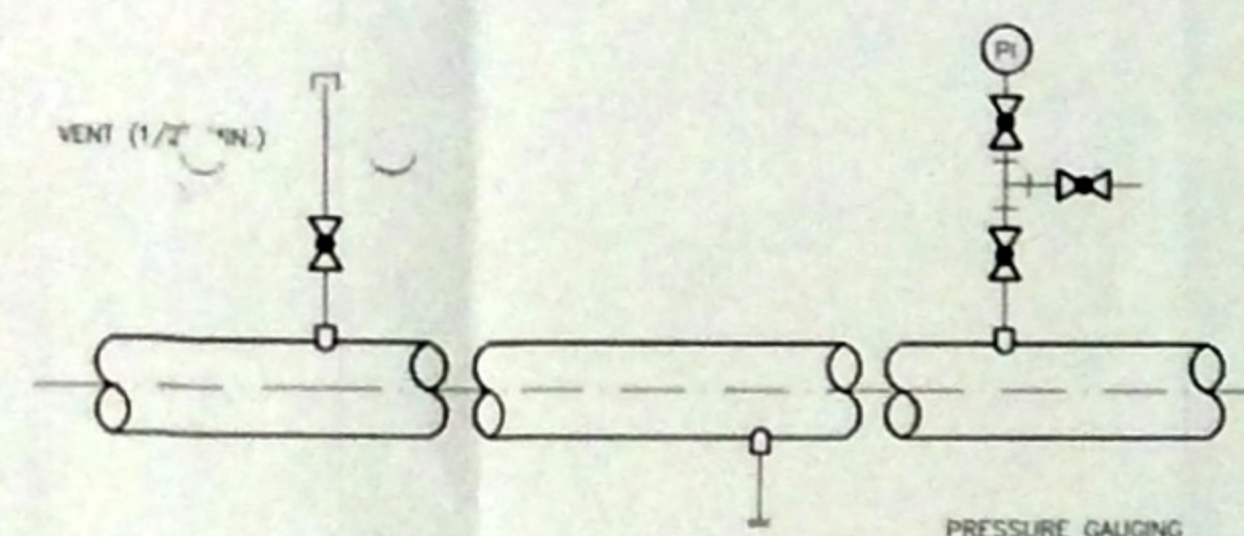
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SOFTWARE: AUTOCAD 2000

PETROBRAS **ENGENHARIA**

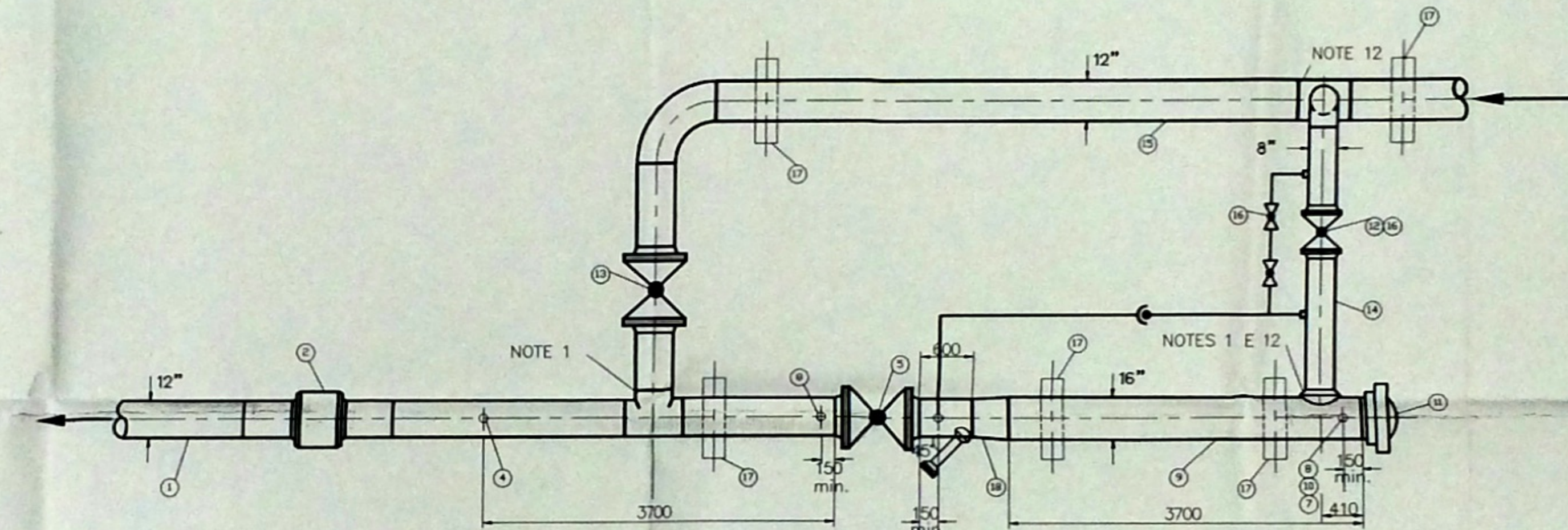
CLIENT:	TRANSPORTADORA SAN MARCOS
JOB:	MUTUN - ZOFRAQAQ GAS PIPELINE
AREA:	GAS PIPELINE
TITLE:	LAUNCHER AND RECEIVER TRAP FOR INTELLIGENT PIGS
DESIGN:	EGE/EDUT
DATE:	APR/10/2001
APPROV:	J. EDUARDO
SHEET:	01 of 01
FILE:	I-DE-7000-14-6521-940-PEN-004



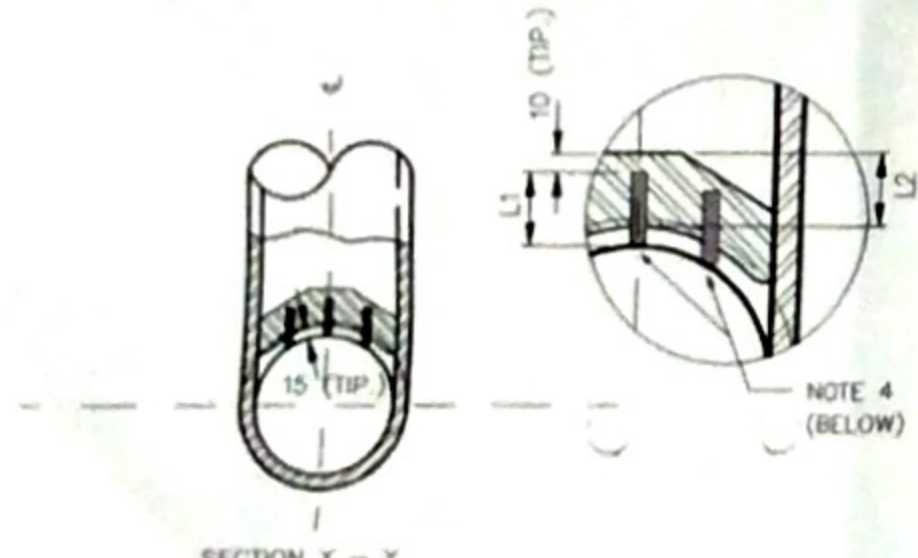
RECEIVER
(PLAN)



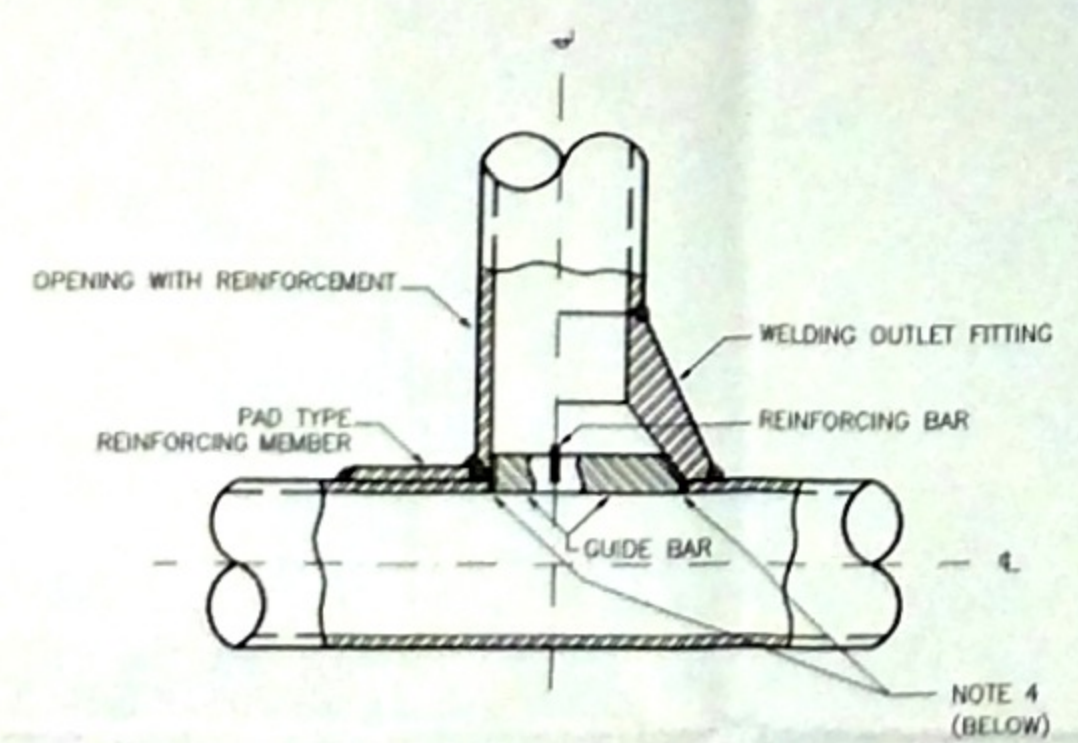
DETAIL 1



LAUNCHER
(PLAN)



DETAIL 2

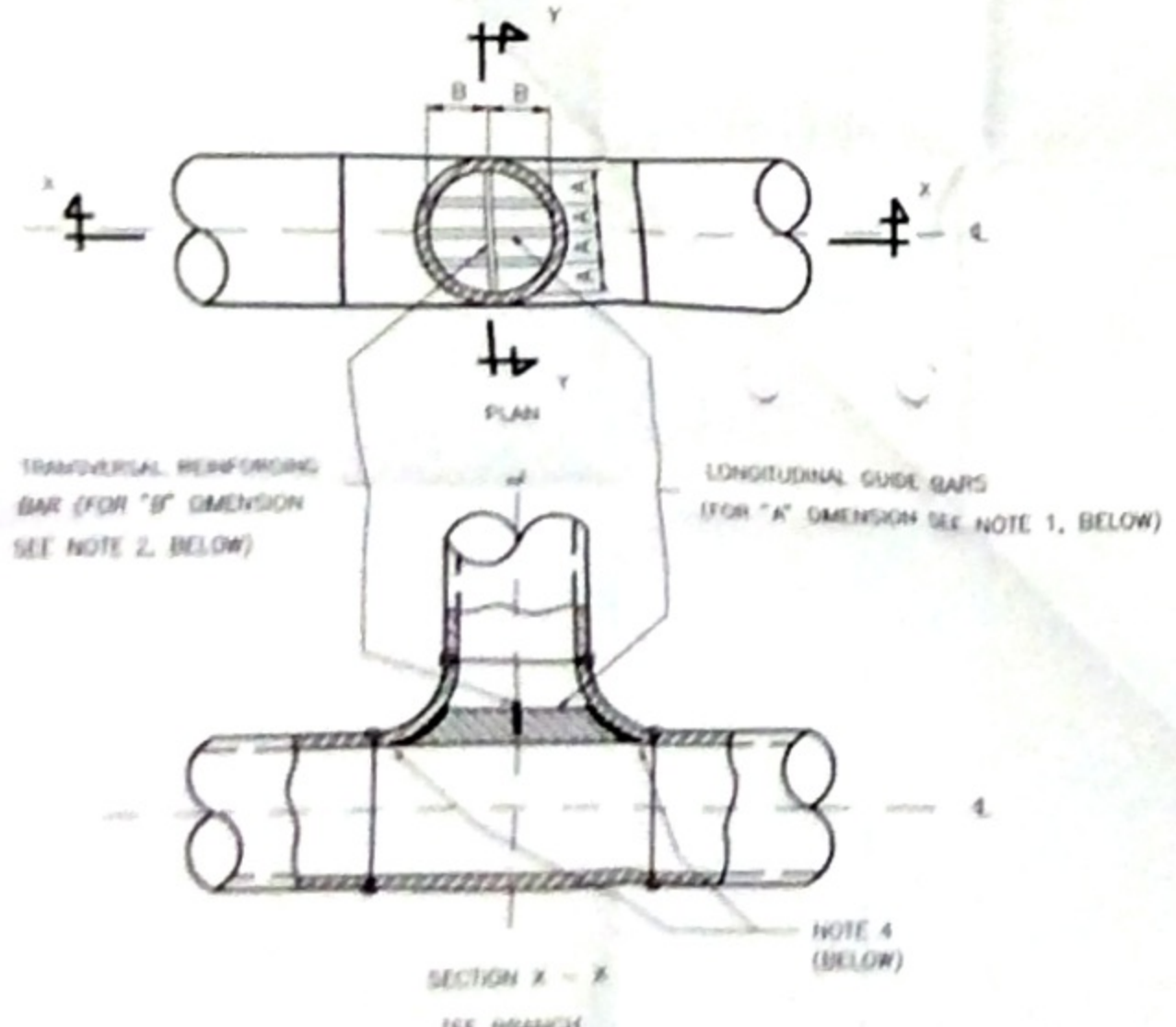


NOTES OF DETAIL 2:

- 1- LONGITUDINAL GUIDE BARS SHALL BE SPACED ACCORDING TO THE FOLLOWING INFORMATION:
FOR BRANCHES FROM 12" USE 3 BARS INSERTED AT INTERVALS "A" = 1/4 OF PIPE BRANCH INTERNAL DIAMETER
- 2- TRANSVERSAL REINFORCING BARS SHALL BE SPACED ACCORDING TO THE FOLLOWING INFORMATION:
FOR BRANCHES FROM 12" USE 1 BAR CENTERED INTO THE BORE OF THE PIPE BRANCH
- 3- THE BARS SHALL BE ADJUSTED AND FITTED TO THE BRANCH IN A PIPE-SHOP BEFORE BEING SENT TO THE FIELD FOR PIPE LINE INSTALLATION
- 4- THE BOTTOM EDGE OF THE GUIDE BARS SHALL BE FITTED WITH ACCURACY TO THE BRANCH A JOINING TO THE PIPE INSIDE DIAMETER, IN ORDER TO ALLOW THE FREE PIG RUNNING ACROSS THE BRANCH
- 5- THE FILLET WELDS CONNECTION OF THE BARS TO THE FITTINGS SHALL BE MADE ALL AROUND THE BAR CONTOUR
- 6- THE FILLET WELDS CONNECTION OF THE BARS THEMSELVES SHALL BE MADE ALL AROUND THE BAR CONTOUR
- 7- THE DEPOSITED WELD METAL SHALL HAVE MECHANICAL PROPERTIES AT LEAST EQUAL TO THOSE OF THE FITTING TO WHICH THE BAR IS ATTACHED
- 8- DRAWING WITHOUT SCALE

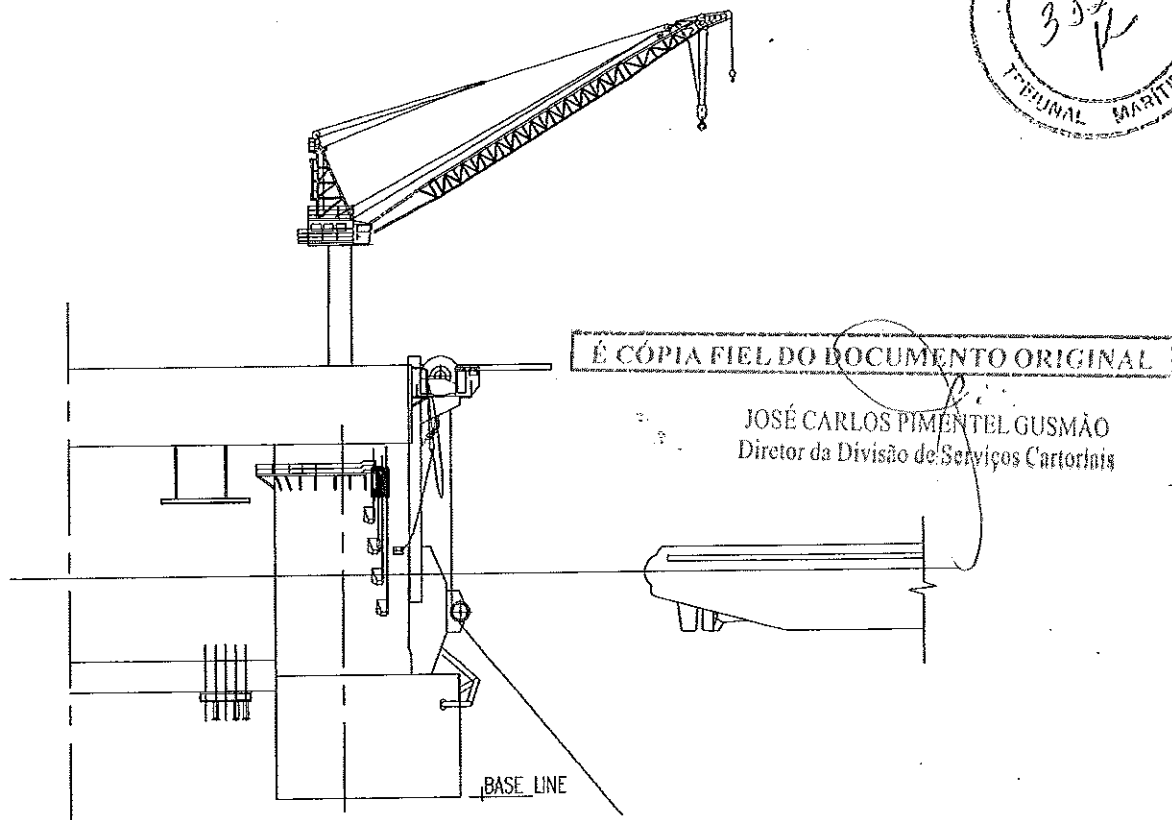
ASTM-A-36 CARBON STEEL GUIDE BARS SHALL BE BUILT IN ACCORDANCE WITH THE FOLLOWING DIMENSIONS

BRANCH DIAMETER	THICKNESS	WIDTH	
		LONGITUDINAL BARS (L1)	TRANSVERSAL BARS (L2)
12"	9.5	40	30

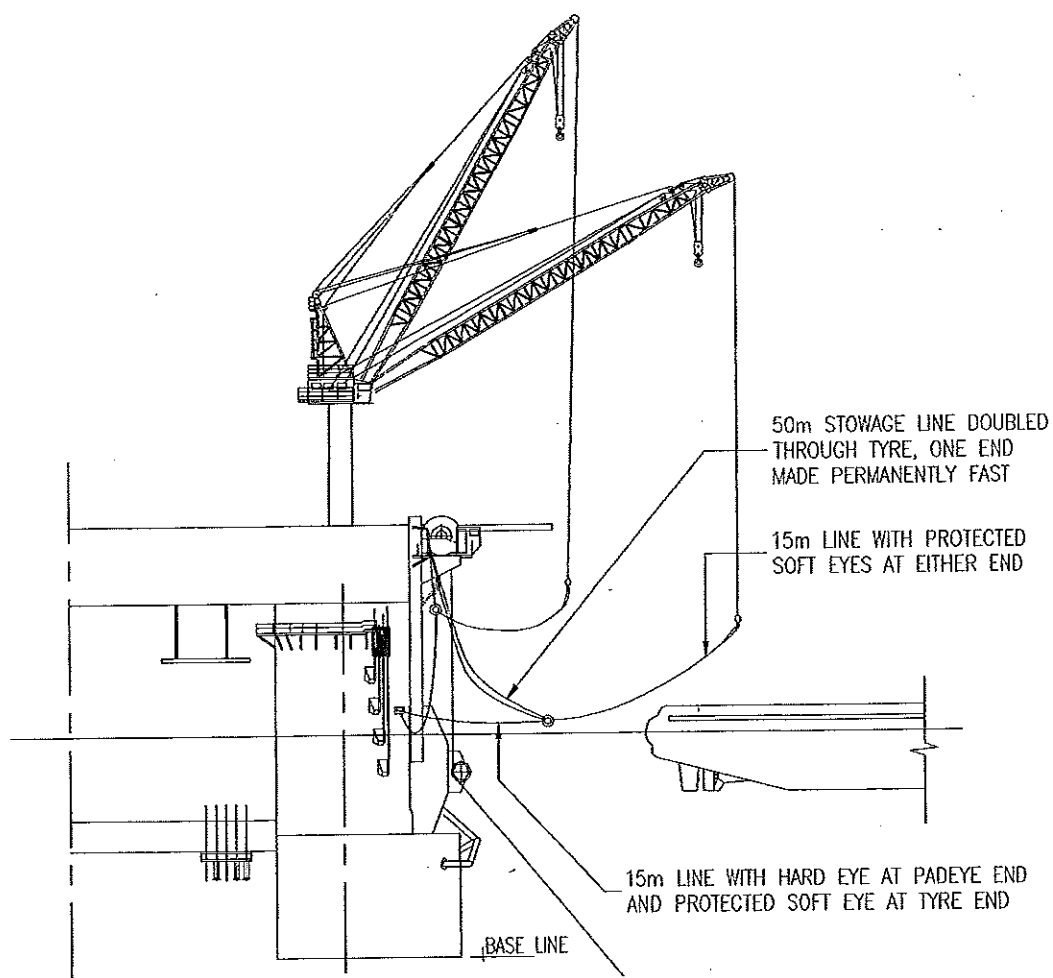


SECTION X - X
TEE BRANCH

No. 3524
 P. 1
 TRIBUNAL MARITIMO



STOWAGE OF MOORING LINE AT SECOND DECK LEVEL



TRANSFER OF MOORING LINE FROM RIG TO SUPPLY VESSEL

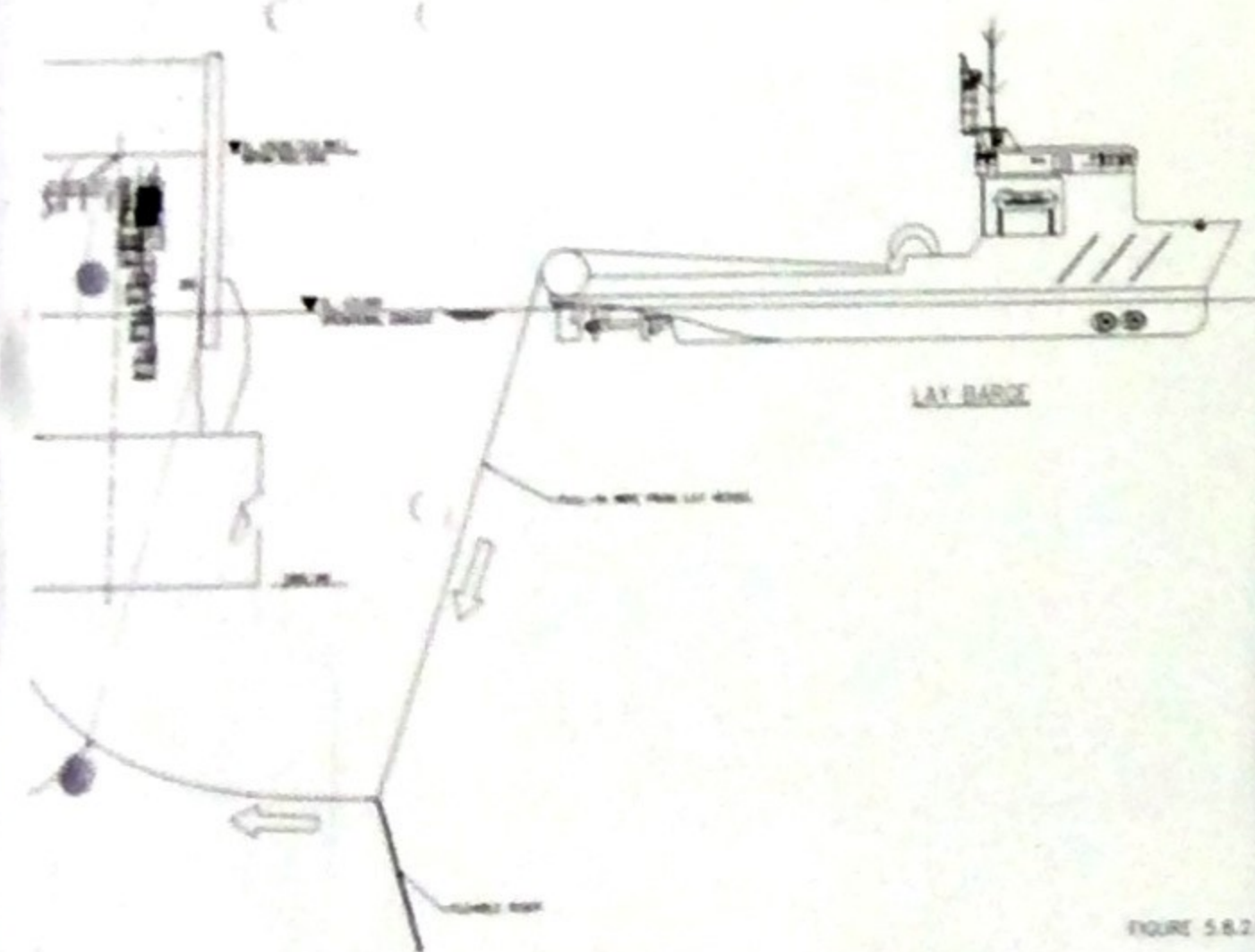


FIGURE 5.8.2.1b

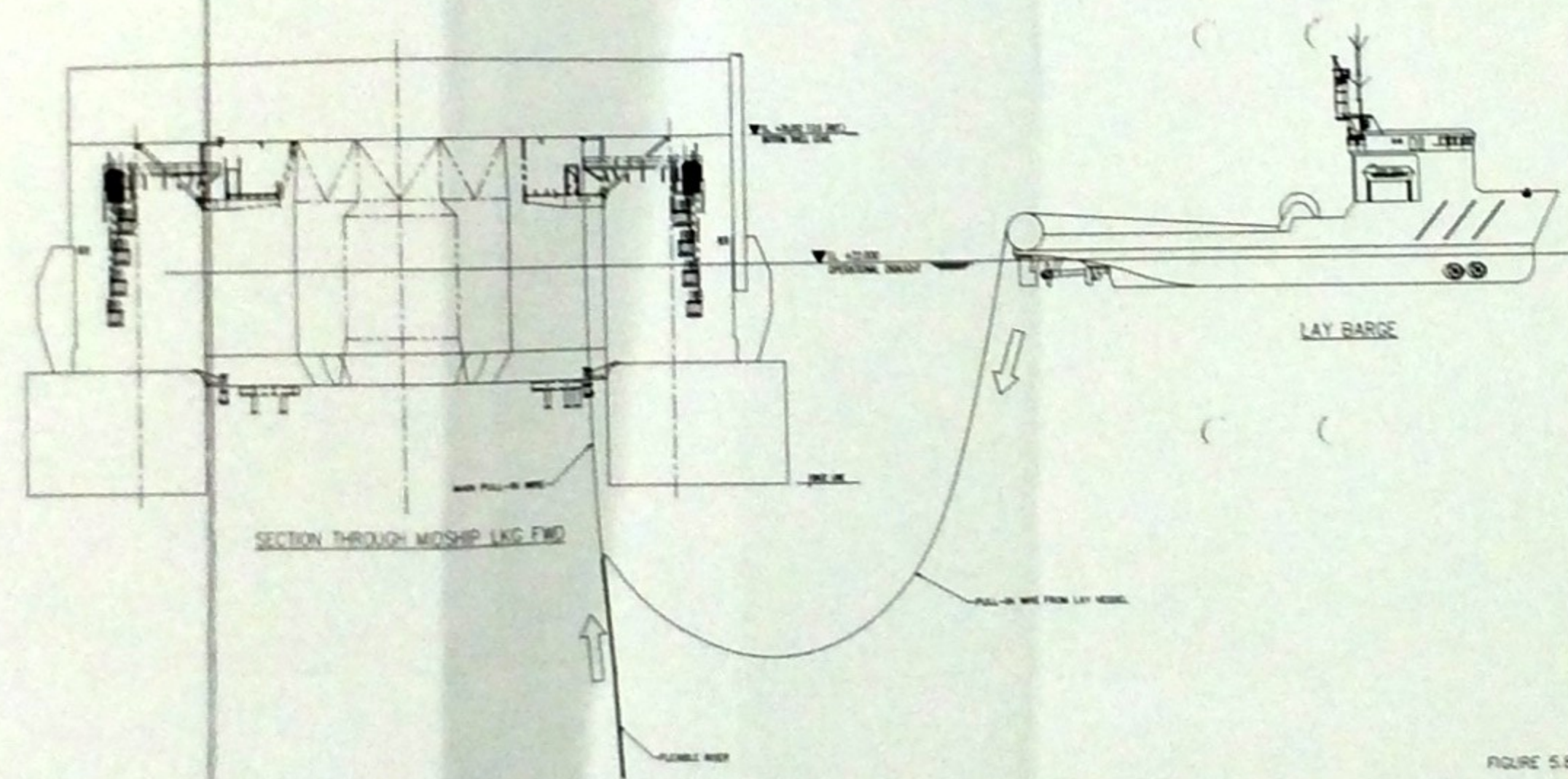


FIGURE 5.8.2.2



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JOSÉ CARLOS PINHEIRO GUSMÃO
Donatário da Divisão de Serviços Capatais

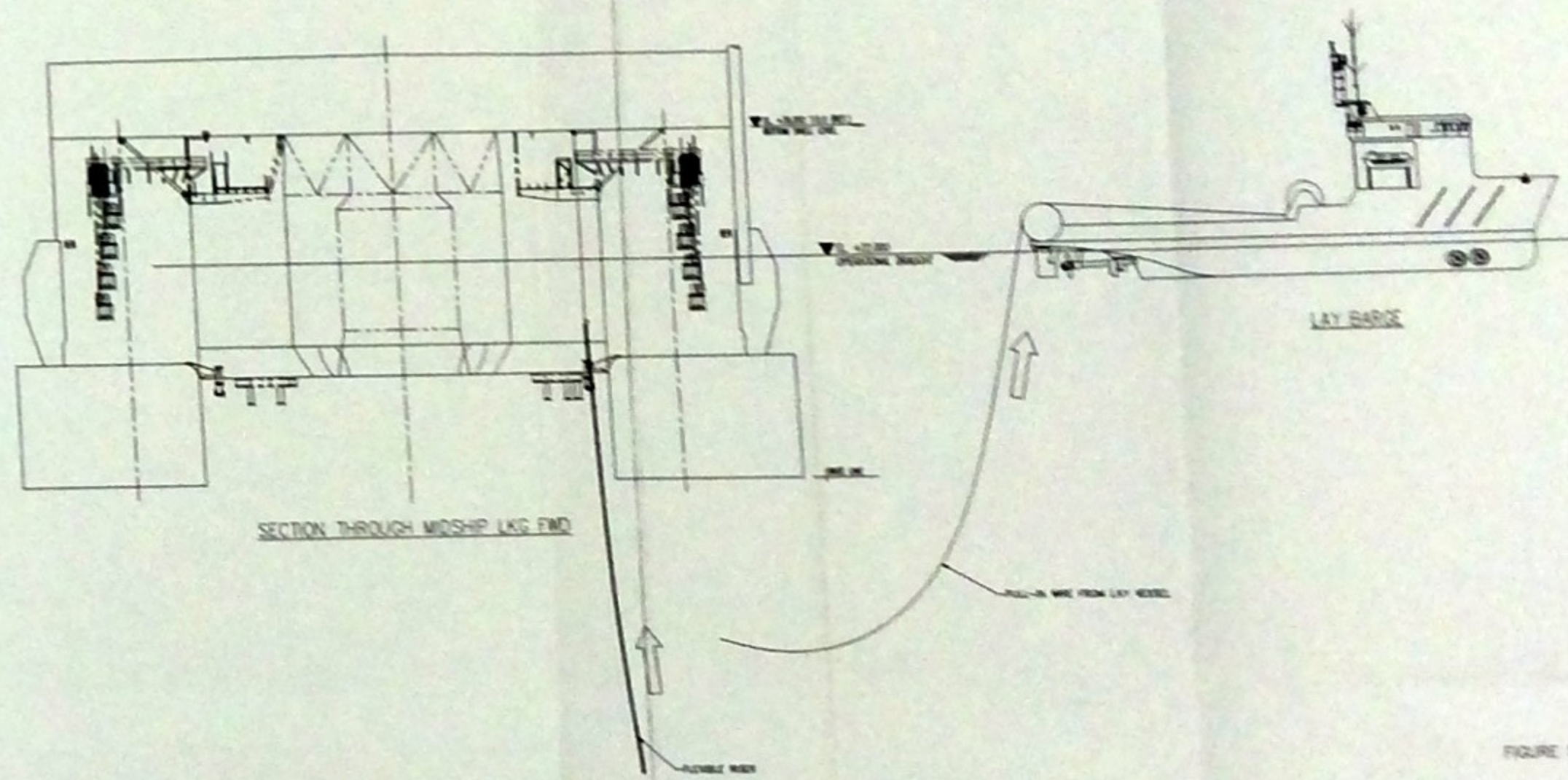
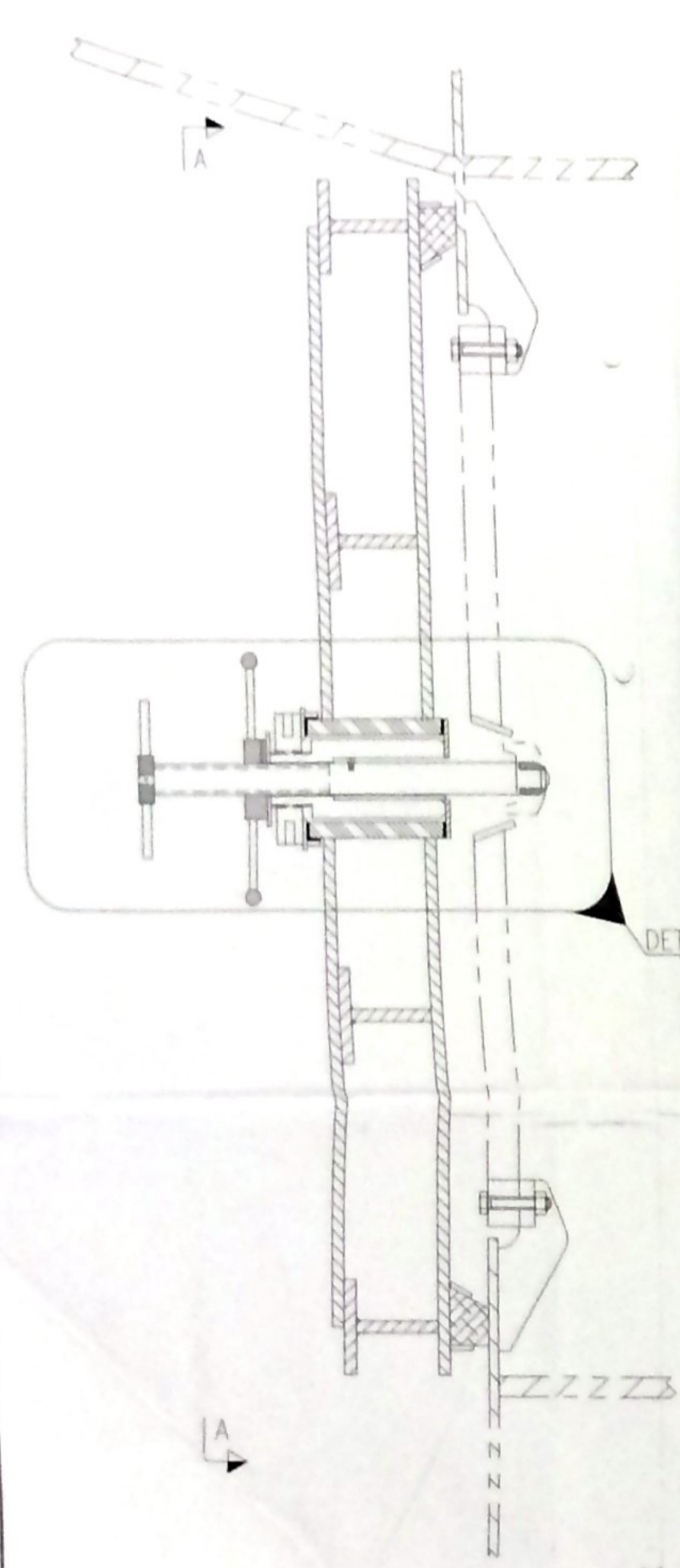
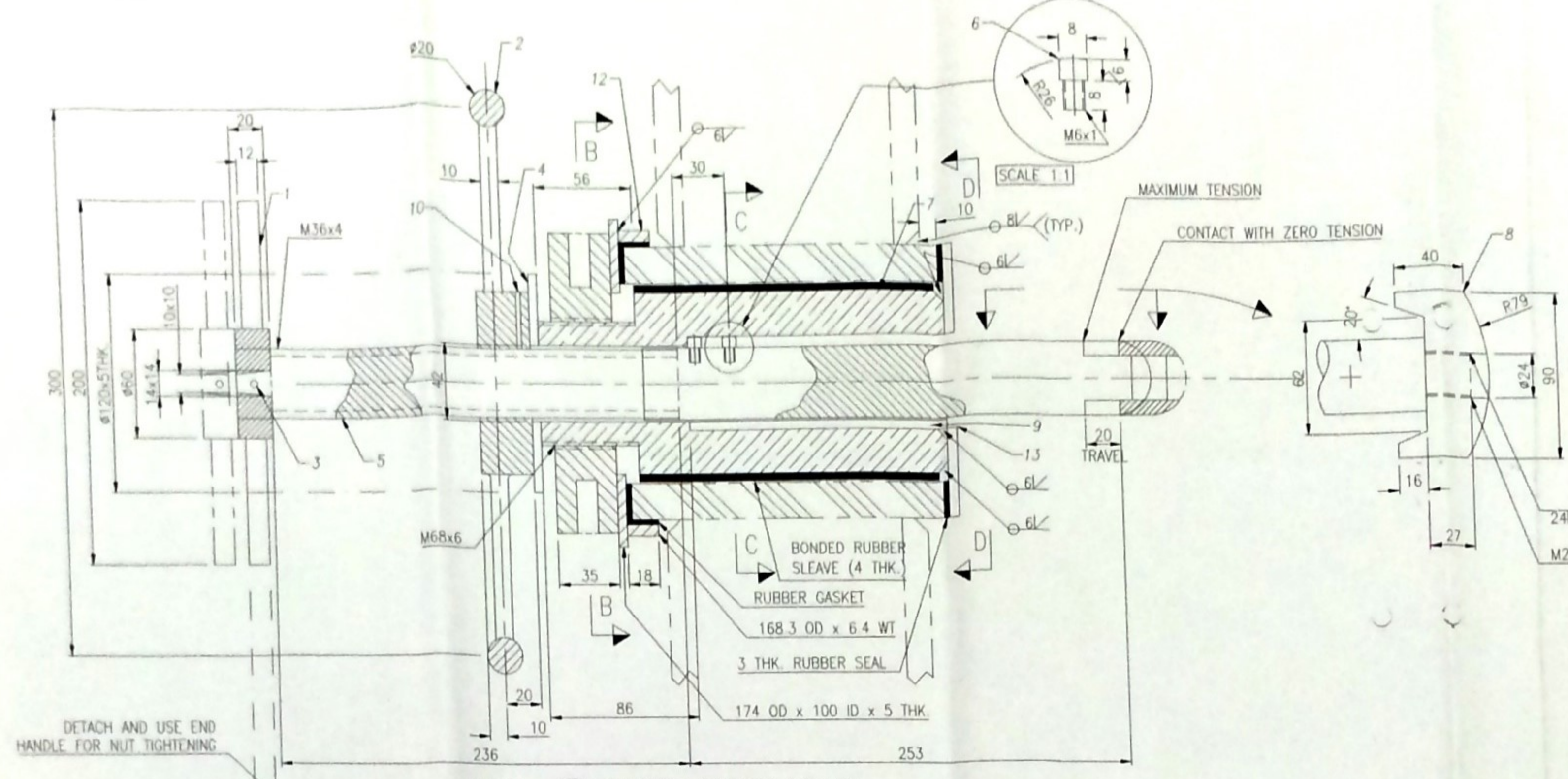


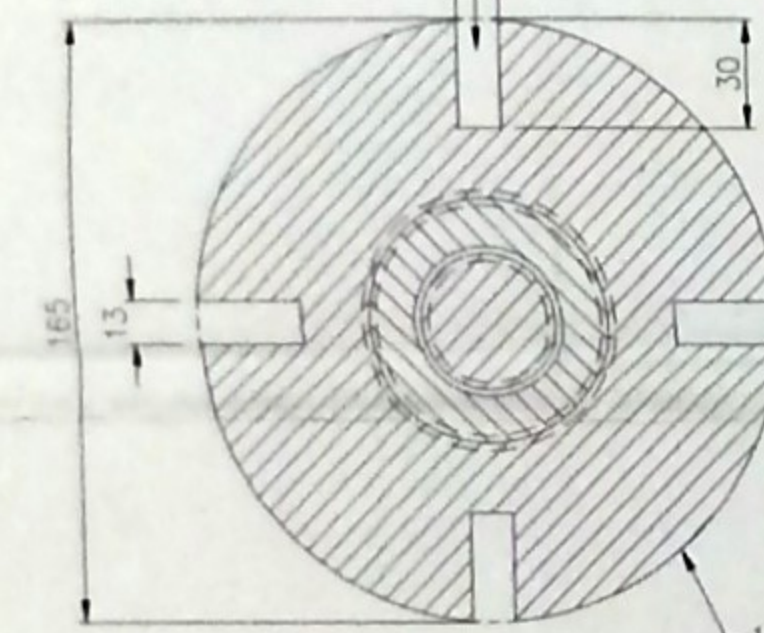
FIGURE 5.8.2.3



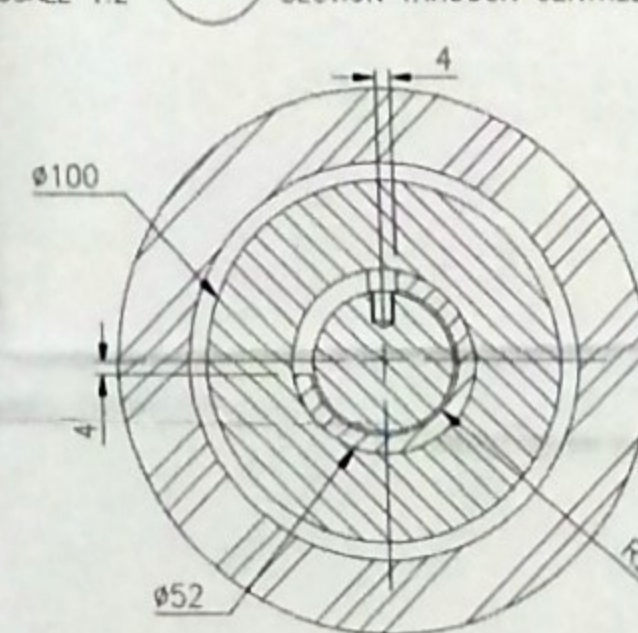
DETAIL 1 TYPICAL COVER PLATE ASSY
SCALE 1:5



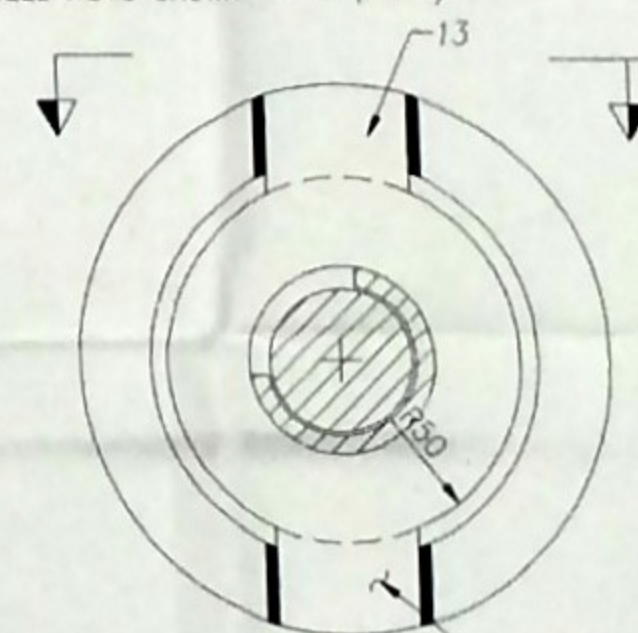
DETAIL 3 COVER FIXATION DEVICE
SCALE 1:2
SECTION THROUGH CENTRELINE - STEEL ITEMS SHOWN HEAVY (U.N.O.)



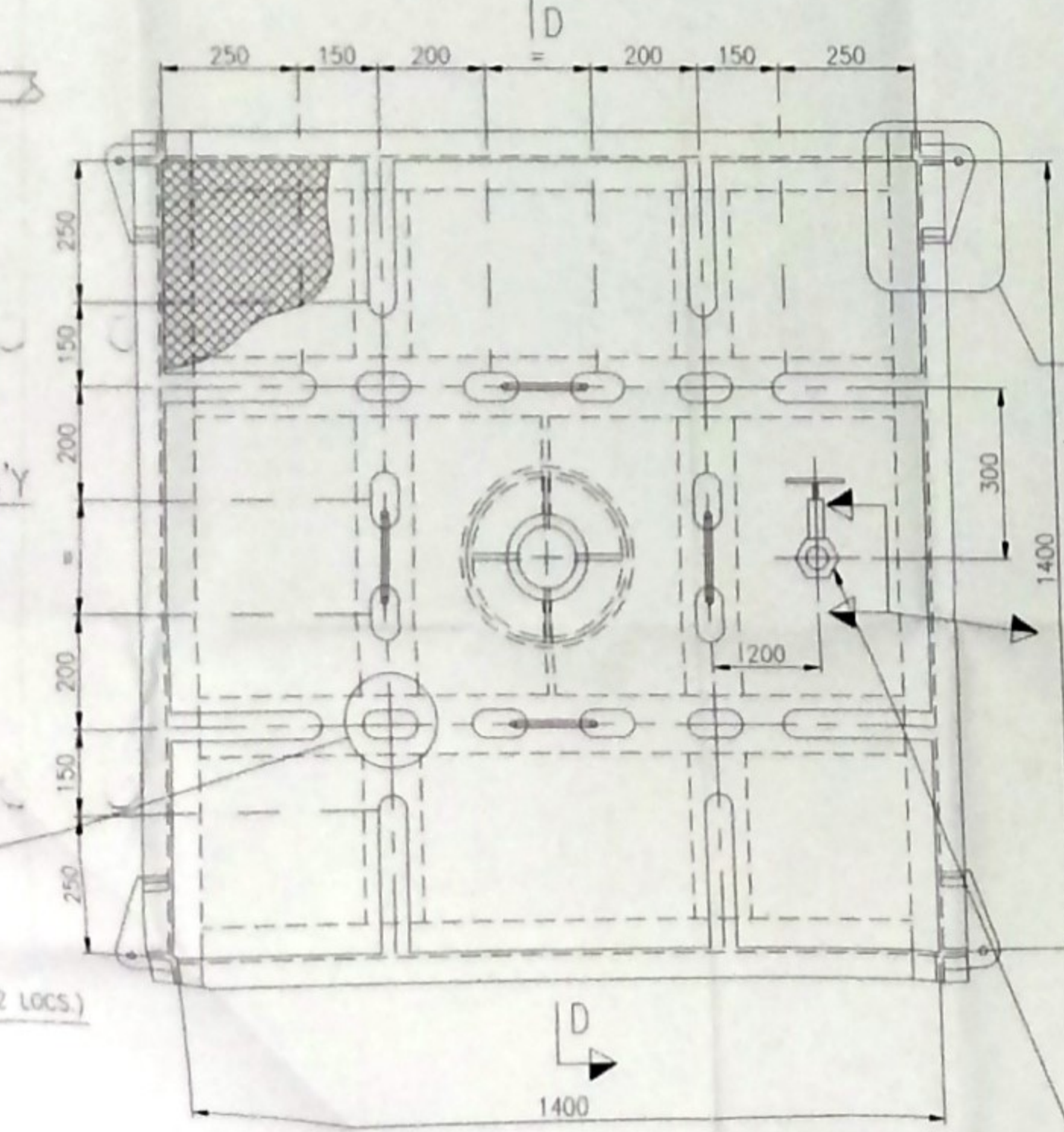
SECTION B-B



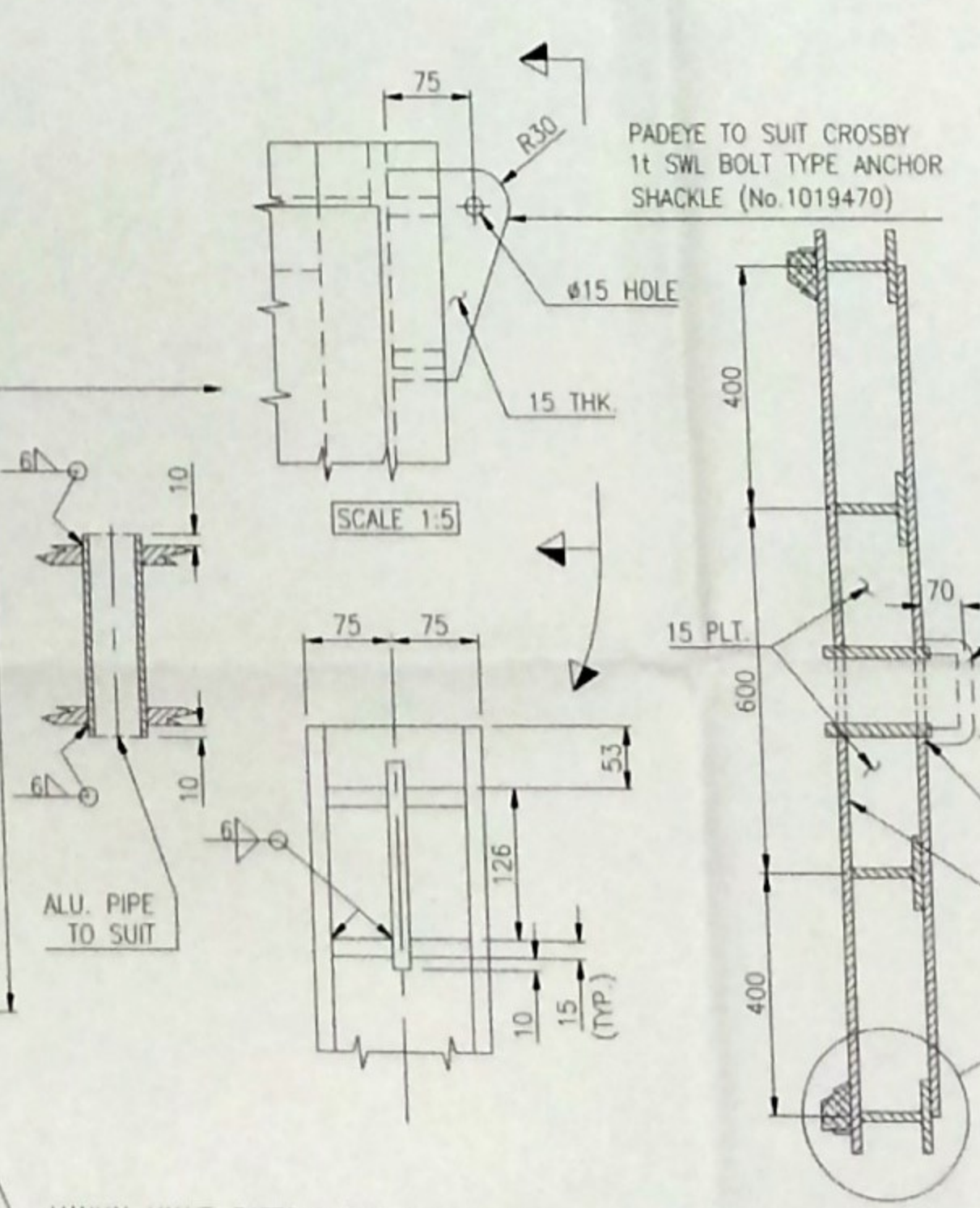
SECTION C-C



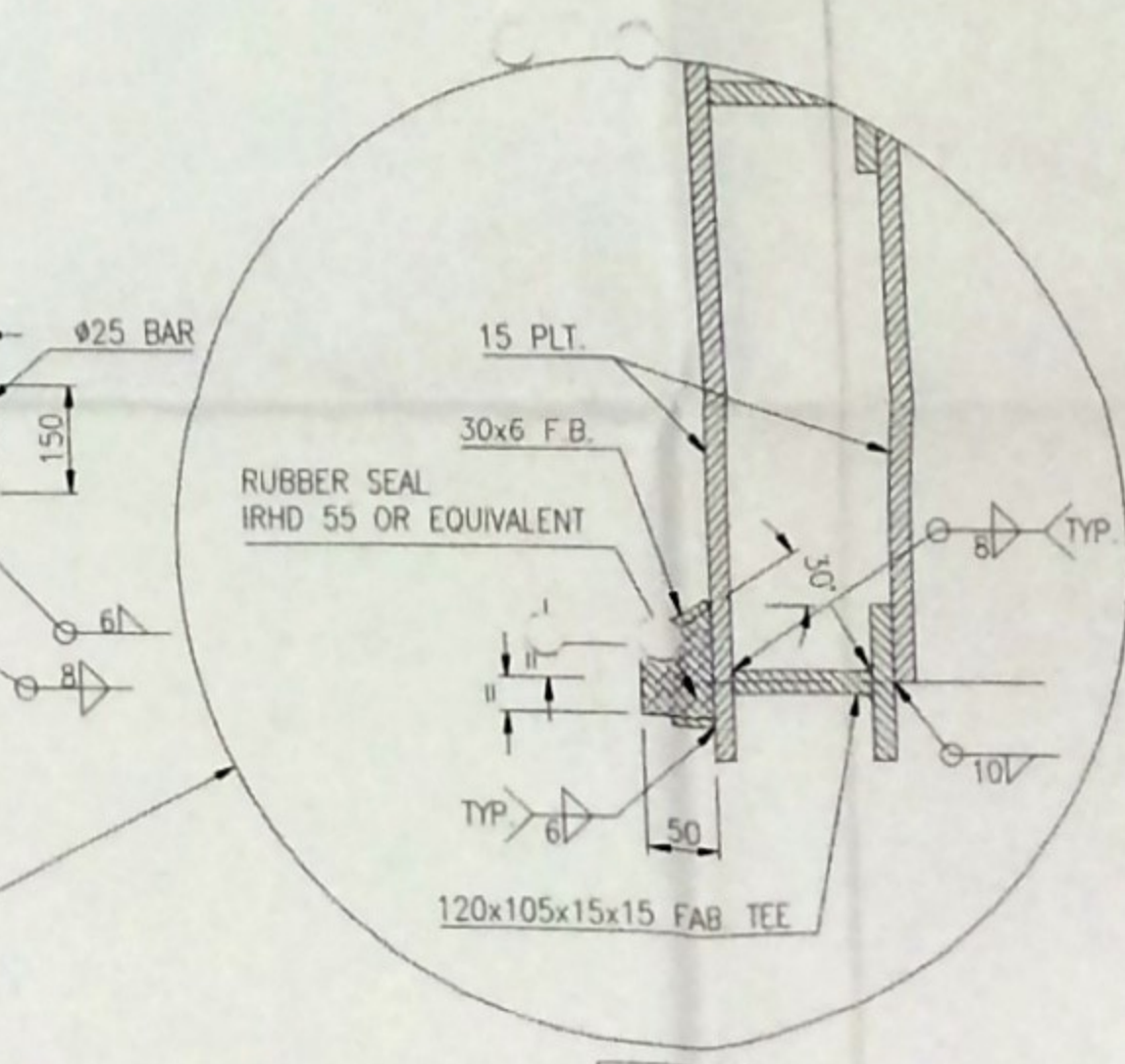
SECTION D-D



SECTION A-A
SCALE 1:10

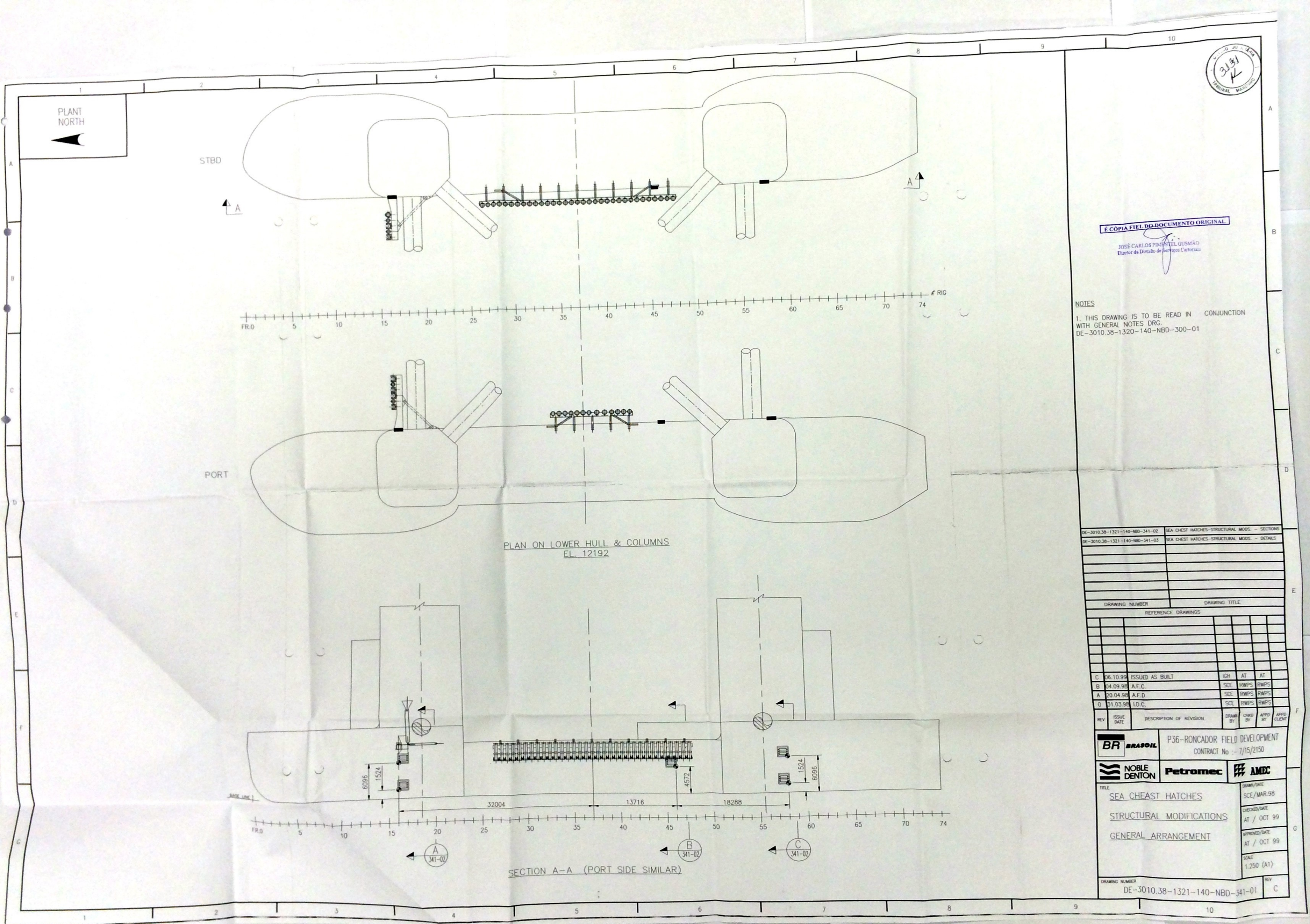


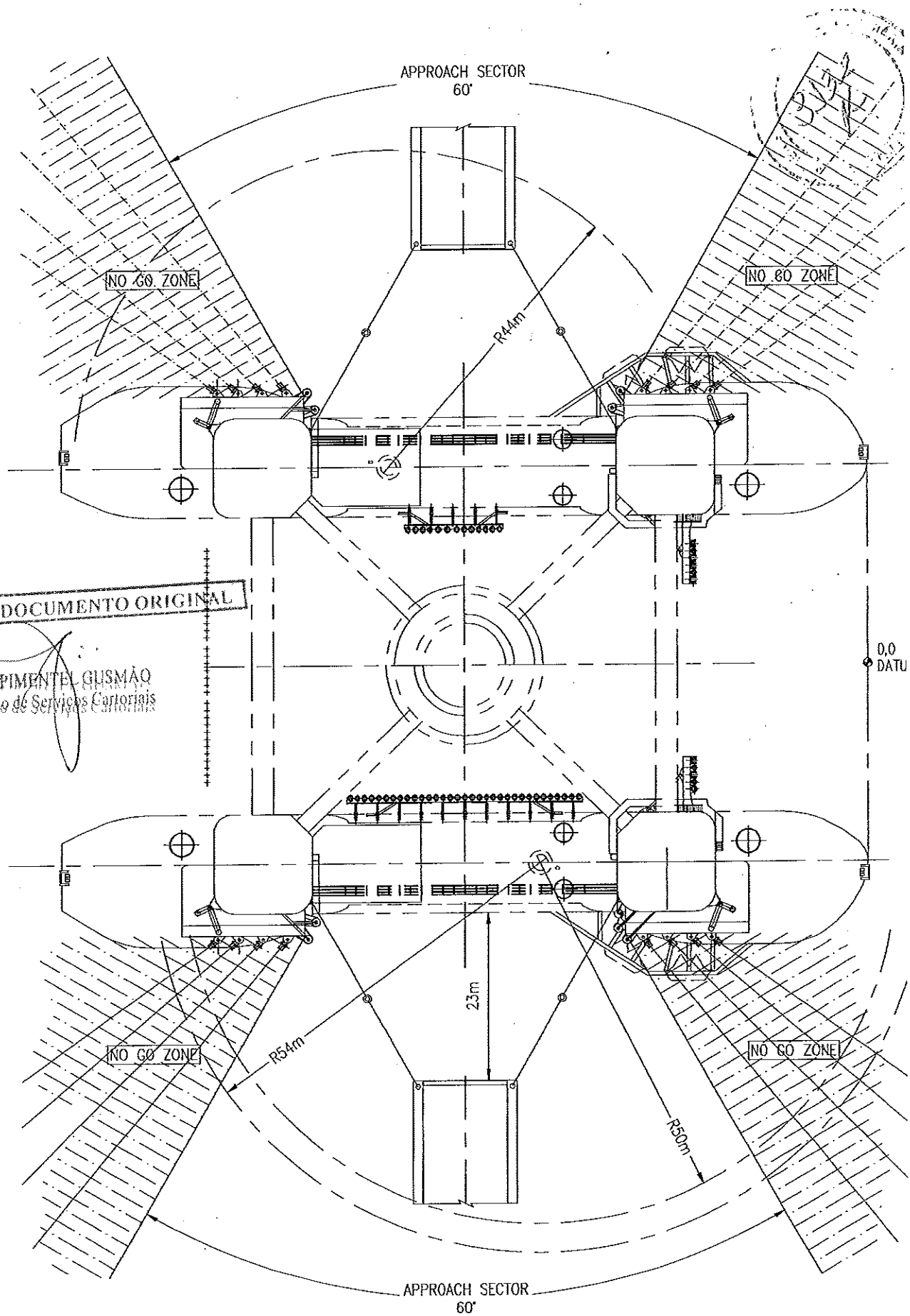
MANUAL VALVE, RATED 3 BAR, 20mm BORE.
FIXED BOTH SIDES WITH INSULATING WASHERS



SECTION D-D
SCALE 1:10

COVER FIXATION DEVICE MATERIAL	
ITEM No	DESCRIPTION
1	TWO BAR HANDLE-Ø60x20 BOSS, 12 HANDLES, KEYWAY 14x14 TO 10x10 TAPER
2	FOUR SPOKE WHEEL-CENTRELINE DIA 300, Ø10 SPOKES ON Ø100x30 THREADED BOSS - M36x4
3	Ø4 COTTER PIN
4	Ø120xØ42x5 THK. WASHER
5	638 LG. BAR INCL. 20 LG. SQ. KEY TO FIT ITEM 1, 180 LG. M36x4 THREAD, Ø40x400 SECTION & 27 LG. M24x3 THREAD.
6	STUD-THREAD 8mm LG. x M6x1
7	BOSS-327 LG., 100 Ø.D x 52 I.D FOR 297mm LENGTH, 42 I.D FOR 30mm.
8	END STOCK
9	TUBULAR INSERT WITH MILLED OUT SECTION 52 Ø.D x 5 W.T x 297 LG.
10	Ø5mm GREASING HOLE AND GREASE NIPPLE
11	Ø165 M68x8 NUT
12	WASHER WITH FLANGE
13	END PLATE - SHAPED TO PREVENT ROTATION
TOTAL	
27.461	
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JOSE CARLOS PIMENTEL GUSMAO Diretor da Divisao de Servicos Cartograficos	
NOTES	
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH GENERAL NOTES DRG DE-3010.38-1320-140-NBD-300-01	
2. COVER PLATE STRUCTURE TO BE ENTIRELY ALUMINIUM GRADE 5083. FIXING DEVICE TO BE STEEL (YIELD=350N/mm²)	
3. ALL ALUMINIUM AND STEEL COMPONENTS TO BE INSULATED FOR CATHODIC PROTECTION WITH RUBBER SEALS AS SHOWN.	
4. ALUMINIUM STRUCTURE TO BE WELDED WITH RING APPROVED ALUMINIUM WELD METAL	
DE-3010.38-1321-140-NBD-341-01 SEA CHEST HATCHES-STRUCTURAL MODS. - GA	
DE-3010.38-1321-140-NBD-341-02 SEA CHEST HATCHES-STRUCTURAL MODS. - SECTIONS	
DRAWING NUMBER	
DRAWING TITLE	
REFERENCE DRAWINGS	
C 06.10.99 ISSUED AS BUILT	
B 04.09.98 A.F.C.	
A 30.04.98 A.F.D.	
D 31.03.98 I.D.C.	
REV	ISSUE DATE
DESCRIPTION OF REVISION	DRAWN BY
CHD BY	APPD BY
APPD CLIENT	
BR BRASOIL	
P36-RONCADOR FIELD DEVELOPMENT	
CONTRACT No - 7/15/2150	
NOBLE DENTON	
Petromec	
AMEC	
TITLE	
SEA CHEST HATCHES	
STRUCTURAL MODIFICATIONS	
DETAILS	
DRAWN/DATE	
SCE/MAR 98	
CHECKED/DATE	
AT / OCT 99	
APPROVED/DATE	
AT / OCT 99	
SCALE	
1:5 (A1)	
DRAWING NUMBER	
DE-3010.38-1321-140-NBD-341-03	





É CÓPIA FIEL DO DOCUMENTO ORIGINAL

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartográficos

DATA: 12/03/90
Número: 300

DADOS dos POÇOS		TESTES dos POÇOS
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Consumo:	13.841	m3/d	Perda	403		Ratelo	13438	m3/d	Total TP	13188	m3/d	Eficiência Operac.	97,1%
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Observações	
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- LECONIA DEL MONDO CUPATO ORIGINAL

SOS: Amazon River

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Planejamento e Estatística

DATA: 13/03/01
Número: 301

DADOS dos POÇOS	TESTES dos POÇOS
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Final:	13.528	m3/d	Perda	128		Rateio	13400	m3/d	Total TP	1	m3/d	Eficiência Operac.	99,1%
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[illegible]

- É CÓPIA FIEL DO DOCUMENTO ORIGINAL

17
SOS - Amazon River
JOSE CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Terceiros Cantoriais

DATA: 14/03/01
Número: 362

DADOS dos POÇOS	TESTES dos POÇOS
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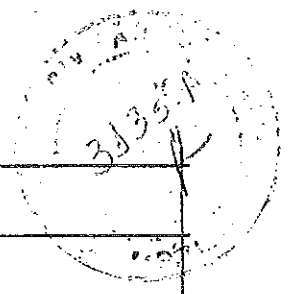
Potencial:	13.526	m3/d	Perda	172		Rateio	13354	m3/d	Total TP	13188	m3/d	Eficiência Operac.	98,7%
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Observações	
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- É CÓPIA FIEL DO DOCUMENTO ORIGINAL

(SOS: Amazon River

JOSÉ CARLOS PIMENTEL GUSMÃO
Diretor da Divisão de Serviços Cartoriais



CERTIDÃO

CERTIFICO que, nesta data for encerrado o 9º Simp
rel ao anexo B do processo 19489/05
7. 36

O referido é verdade e dou fé.

Aos 11 de abril de 200 7.

[Handwritten signature]

É CÓPIA FIEL DO ORIGINAL

JOSÉ CARLOS DE MATEUS TEL. GUSMÃO
Diretor da Divisão de Assessoria e Cartórios