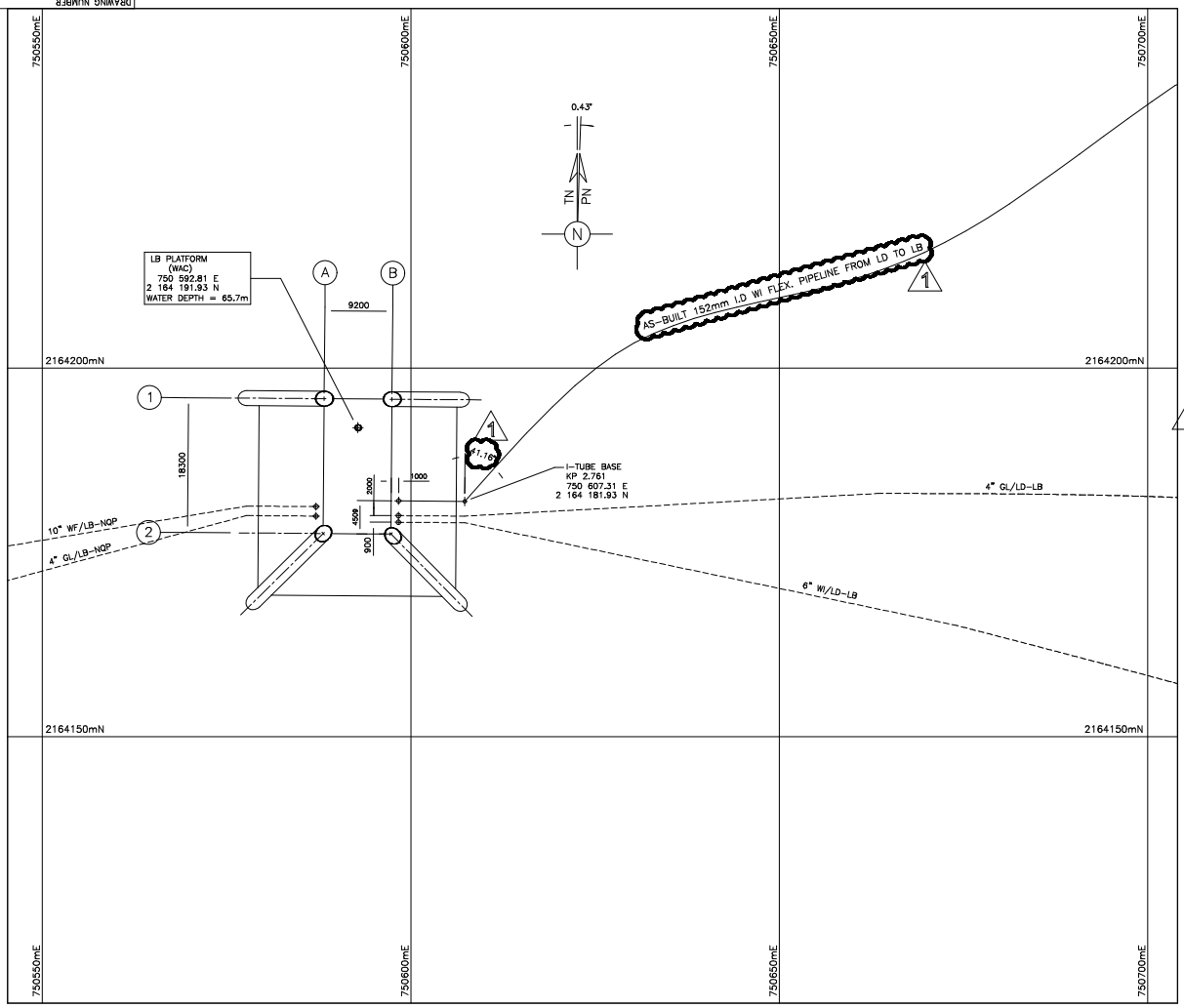


DRAWING NUMBER 10182-S2-PL-ENG-DWG-21420

CADFILE : 10182-21420 -

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND COORDINATES ARE IN METRES.
2. ALL COORDINATES ARE BASED ON UNIVERSAL TRANSVERSE MERCATOR PROJECTION ON EVEREST 1830 SPHEROID, ZONE 42 CENTRAL MERIDIAN 69° EAST ON BOMBAY HIGH DATUM.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE LOCATION OF THE EXISTING PLATFORMS AND PIPELINES ARE BASED ON THE PRE-ENGINEERING SURVEY DRAWINGS BY FUGRO SURVEY INDIA PVT.LTD.
5. [redacted]

AS-BUILT

LEGEND

- AS-BUILT I-TUBE AND FLEX. PIPELINE
- AS-BUILT RISER AND ROPE PIPELINE
- EXISTING PIPELINE

TN – TRUE NORTH
PN – PLATFORM NORTH
WF – WELL FLUID
WI – WATER INJECTION
GL – GASLIFT
WAC – WELL ARRAY CENTER

REFERENCE DRAWINGS/DOCUMENTS

S.NO.	DWG./DOC. NO.	REV. NO.	TITLE
1	10182-S2-PL-ENG-DWG -21000	–	DRAWING INDEX
2	10182-S2-PL-ENG-DWG -21002	–	FIELD LAYOUT BOMBAY HIGH FIELD
3	10182-S2-PL-ENG-DWG -21315	–	FLEXIBLE PIPELINE ALIGNMENT 152mm LD WI FROM LD TO LB
4	10182-S2-PL-ENG-DWG -21802	–	LB PLATFORM (152mm LD WI FROM LD TO LB) 168mm O.D I-TUBE ASSEMBLY

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
1	AS-BUILT	BAS	GMS	PVE	24.06.10
0	ISSUED FOR CONSTRUCTION	THAVA	NA	SI	04.9.09
A	ISSUED FOR CLIENT REVIEW	THAVA	NA	SI	01.7.09

ONGC (OW)	ONGC (OD)	LEIGHTON	INTECSEA

OWNER : OIL & NATURAL GAS CORPORATION LTD.
ENGG. SECTION, E&C DIVISION
MRBC, MUMBAI

CONSULTANT :

CONTRACTOR : LEIGHTON CONTRACTORS INDIA Pvt. Ltd.

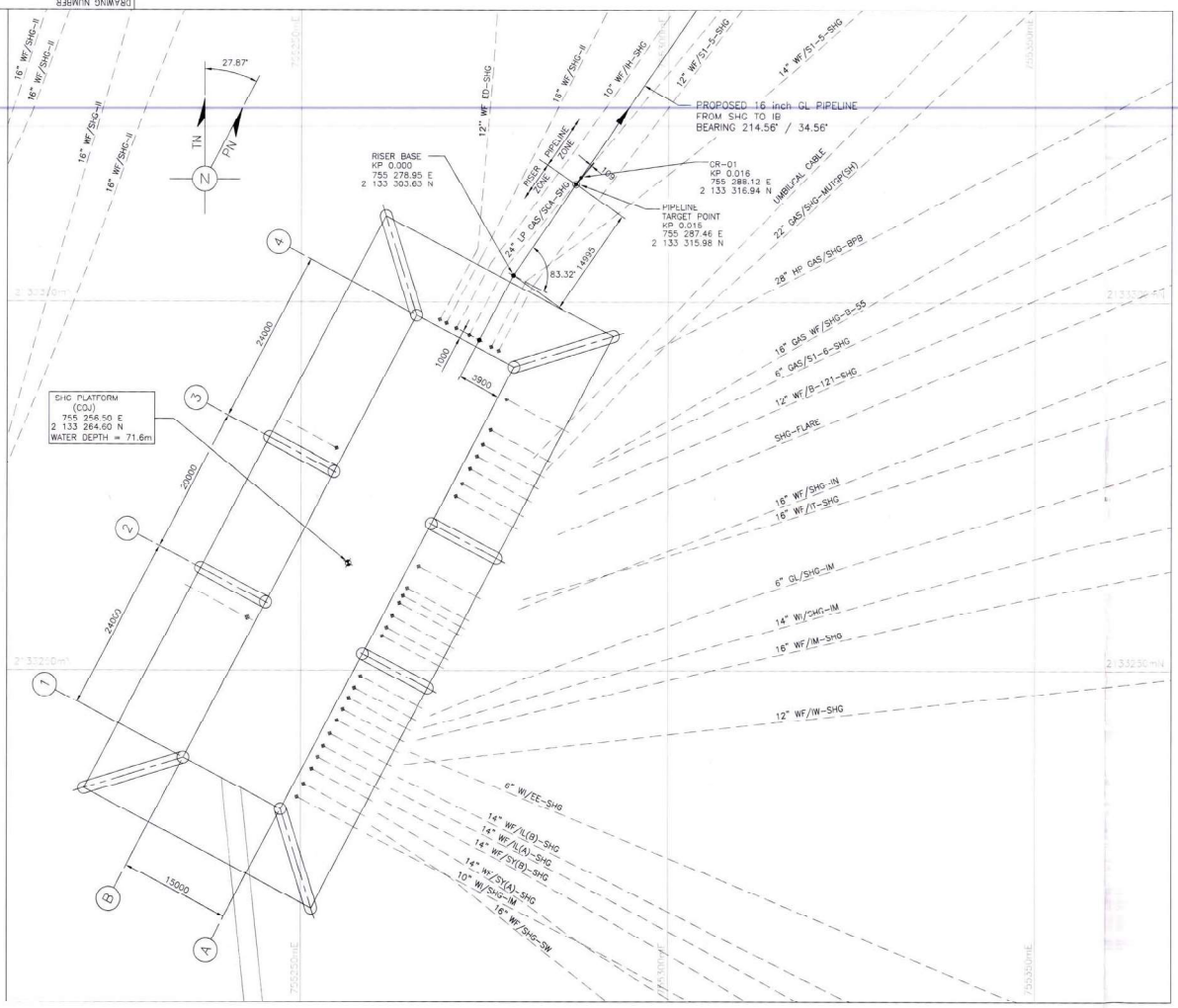
PROJECT : PIPELINE REPLACEMENT PROJECT-2

TITLE : LB PLATFORM
PIPELINE APPROACH AND DEPARTURE
(FLEXIBLE PIPELINE)

SCALE	DRAWING NUMBER	REV.
1 : 250	10182-S2-PL-ENG-DWG-21420	1

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

DRAWING NUMBER 10182-PL-ENG-DWG-0154



THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

10182-0154 -

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND COORDINATES ARE IN METRES.
2. ALL COORDINATES ARE BASED ON UNIVERSAL TRANSVERSE MERCATOR PROJECTION ON EVEREST 1830 SPHEROID, ZONE 42 CENTRAL MERIDIAN 69° EAST ON BOMBAY HIGH DATUM.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE LOCATION OF THE EXISTING PLATFORMS AND PIPELINES ARE BASED ON THE PRE-ENGINEERING SURVEY DRAWINGS BY FUGRO SURVEY INDIA PVT.LTD.
5. CARE SHALL BE EXERCISED WHILE LAYING THE PIPELINE IN THE VICINITY OF EXISTING FACILITIES SUCH THAT THE LAYING OPERATION CAUSES NO DAMAGE WHATSOEVER TO THE EXISTING FACILITIES.

LEGEND

——— PROPOSED RISER AND RIGID PIPELINE
– – – – EXISTING PIPELINE

TN – TRUE NORTH
PN – PLATFORM NORTH
WF – WELL FLUID
GL – GASLIFT
COJ – CENTER OF JACKET

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev. No.	TITLE
1	10182-PL-ENG-DWG-0146	-	DRAWING INDEX
2	10182-PL-ENG-DWG-0148	-	FIELD LAYOUT – BOMBAY HIGH FIELD
3	10182-PL-ENG-DWG-0150	-	SHG PLATFORM – 16" GL RISER ASSEMBLY DRAWING
4	10182-PL-ENG-DWG-0153	-	PIPELINE ALIGNMENT – 16" GL FROM SHG TO IB
5	10182-PL-ENG-DWG-0149B-1 & 2	-	RISER ARRANGEMENT FOR 16" GL FROM SHG TO IB PIPELINE
6	10182-PL-ENG-DWG-0154	-	16" GL FROM SHG TO IB PIPELINE CROSSING DETAILS
7	10182-PL-ENG-DWG-0150	-	SHG PLATFORM 16" GL RISER ASSEMBLY
8	0193-PL-ENG-DWG-0157-15	-	SHG PLATFORM (16" GL) RISER ASSEMBLY TYPICAL DETAILS

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
D	ISSUED FOR CONSTRUCTION	THAVA	NA	SI	9.07.09
A	ISSUED FOR CLIENT REVIEW	HAS	NA	SI	23.12.08

ONGC (OW)	ONGC (OD)	LEIGHTON	INTEC
17/7/09	9/7/09		

OWNER : OIL & NATURAL GAS CORPORATION LTD.
ENGG. SECTION. E&C DIVISION
MHBC, MUMBAI

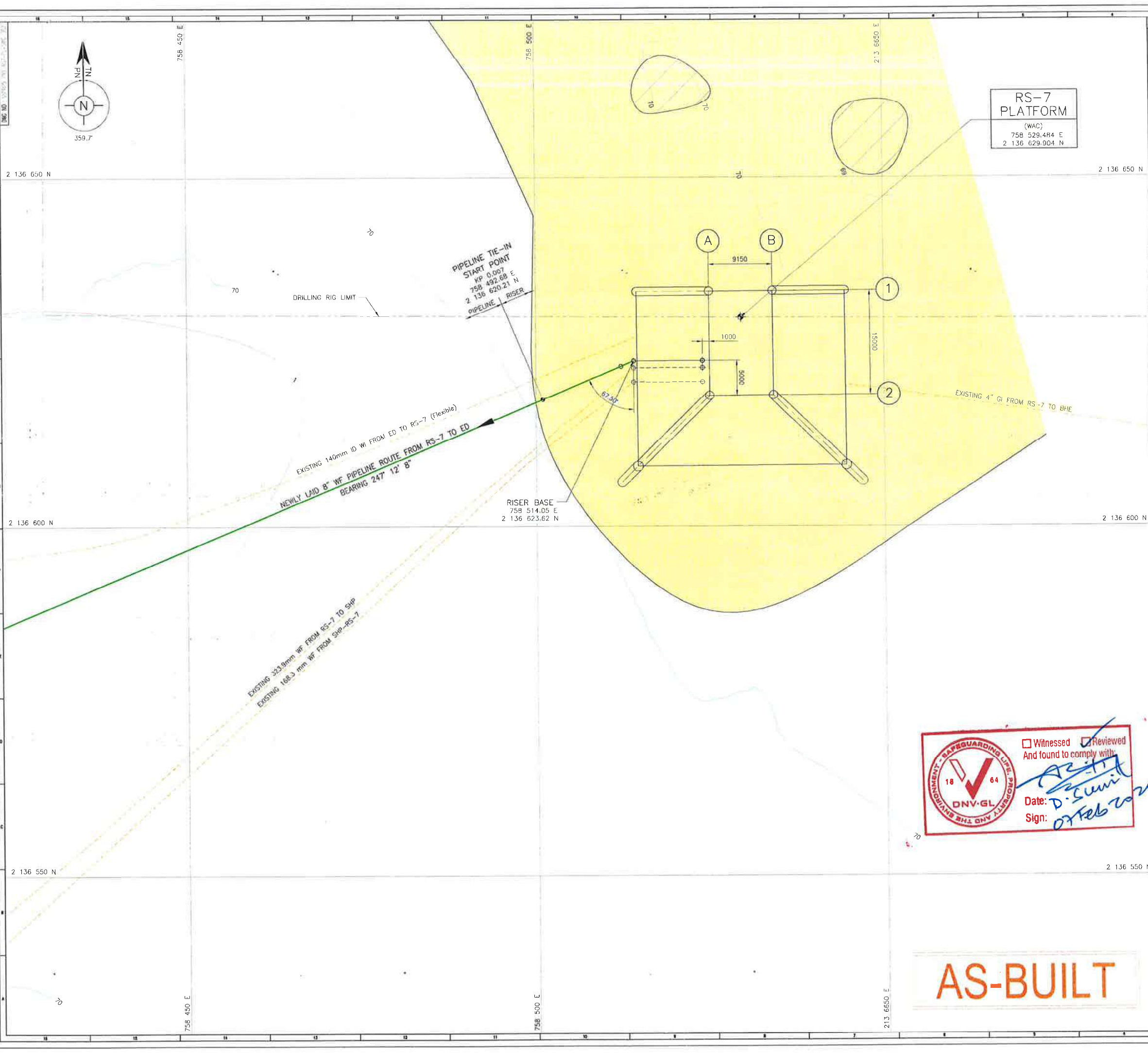
CONSULTANT :

CONTRACTOR : LEIGHTON CONTRACTORS INDIA Pvt. Ltd.

PROJECT : PIPELINE REPLACEMENT PROJECT-2

TITLE : SHG PLATFORM
PIPELINE APPROACH AND DEPARTURE
(RIGID PIPELINE)

SCALE	DRAWING NUMBER	REV
1 : 250	10182-PL-ENG-DWG-0154	0



Witnessed / Reviewed
And found to comply with
Date: 07 Feb 2020
Sign:

AS-BUILT

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND COORDINATES ARE IN METRES.
2. THE UTM CO-ORDINATES ARE BASED ON THE DATUM MUMBAI HIGH GRID, SPHEROID EVEREST 1830, UTM PROJECTION CENTRAL MERIDIAN 69° E.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE CO-ORDINATES AND LOCATION OF THE EXISTING PLATFORMS AND PIPELINES/CABLE ARE BASED ON THE PRE-ENGINEERING SURVEY DRAWINGS BY FUGRO SURVEY (INDIA) PVT.LTD.
5. CARE SHALL BE EXERCISED WHILE LAYING THE PIPELINE IN THE VICINITY OF EXISTING FACILITIES SUCH THAT THE LAYING OPERATION CAUSES NO DAMAGE WHATSOEVER TO THE EXISTING FACILITIES.
6. CONTRACTOR SHALL LAY THE PIPELINE COMPLYING WITH TOLERANCES AS PER ONGC SPECIFICATION NO. 2015 REV.1.
7. EXISTING PIPELINE CROSSING BURIAL SHALL BE RE-CONFIRMED DURING PRE-CONSTRUCTION SURVEY.

TABLE-1

SL. NO.	LOCATION	PLATFORM LOCATION EASTING	PLATFORM LOCATION NORTHING	PLATFORM ORIENTATION	REMARKS
1	RS-7	758 529.484	2 136 629.904	359.7°	WAC

LEGENDS

BATHYMETRY AND SEABED FEATURES

- PROPOSED PIPELINE ROUTE
- PROPOSED OTHER PIPELINE ROUTE
- PROPOSED UMBILICAL
- EXPOSED PIPELINE
- BURIED PIPELINE
- ANCHOR SCAR / DRAG MARK
- 155nT — MAGNETIC ANOMALY IN NANO TESLA
- SPUDCAN DEPRESSION / JACK UP FOOT PRINTS
- SEABED DEPRESSION
- MEDIUM TO HIGH REFLECTIVE SEABED
- 54 — MINOR CONTOUR WITH DEPTH IN METRES
- 7 — ISOPACH AT 1 METRE INTERVALS

TP	TURNING POINT	WF	WELL FLUID
IP	INTERSECTION POINT	WI	WATER INJECTION
COJ	CENTER OF JACKET	GL	GASLIFT
CPC	CENTER POINT OF CURVE	WAC	WELL ARRAY CENTER

4	J-MCP-18-057/R1/REV.0	-	PRE-ENGINEERING SURVEY FOR PIPELINE REPLACEMENT PROJECT-5 (PRP-5)
3	SSPRP5-PRT-ED-PL-DWG-3522	-	8" WF ED PIPELINE APPROACH & DEPARTURE (RS-7 TO ED PIPELINE)
2	SSPRP5-PRT-R12-PL-DWG-3483	-	PIPELINE ALIGNMENT DRAWING FOR 8" WF (RS-7 TO ED PIPELINE)
1	SSPRP5-PRT-PL-DWG-3300	-	DRAWING INDEX

REFERENCE DRAWINGS/DOCUMENTS

PERITUS	SFSB	ONGC (OD)	ONGC (OW)
DATE: 20.12.2019	DATE: 20.12.2019	DATE:	DATE:

REV.	DATE	DESCRIPTION	DRWN	CHKD	APPRD	PM	SFSB
Z	20.12.19	AS-BUILT	AJA	MSA	MAA	WMR	SC
Z	05.07.19	AS-BUILT	MAM	MSA	MAA	WMR	SC
2	19.02.19	APPROVED FOR CONSTRUCTION	AJA	MSA	MAA	WMR	MRH
1	18.01.19	APPROVED FOR CONSTRUCTION	OBY	MSA	MAA	WMR	MRH
0	26.09.18	ISSUED FOR COMMENTS	AJA	MSA	MAA	WMR	MRH

PERITUS

CLIENT: OIL AND NATURAL GAS CORPORATION LIMITED

CONTRACTOR: sapura energy

CONSULTANT: Peritus

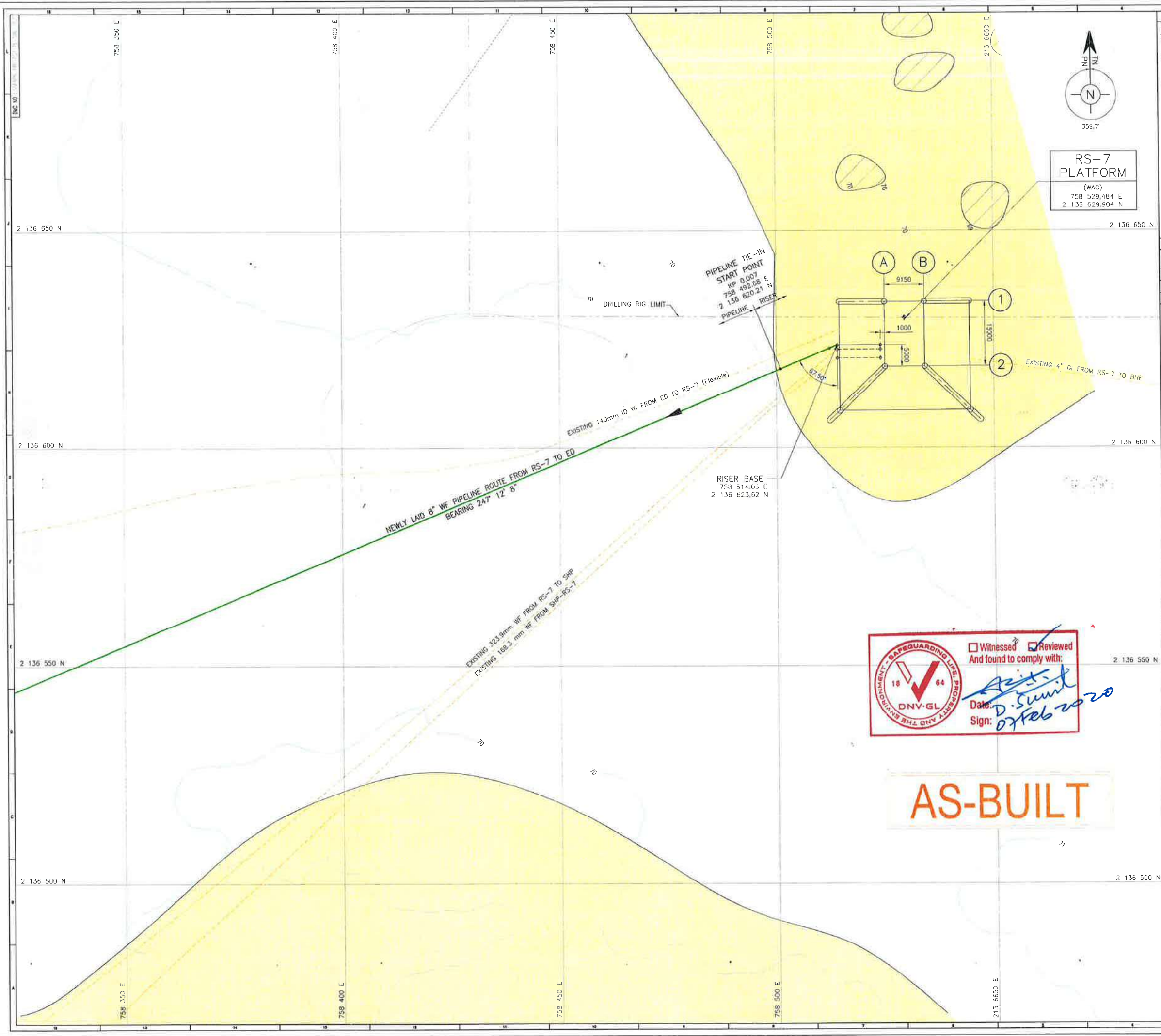
PROJECT TITLE: SUBSEA WELLS' & PIPELINE REPLACEMENT PROJECT-V

DRAWING TITLE: 8" WF RS-7 PIPELINE APPROACH & DEPARTURE (RS-7 TO ED PIPELINE)

LOCATION: MHS

CLIENT CONTRACT No: | SIZE: A1 | SCALE: 1:250

PROJECT CODE: 21-00129 | DRAWING No: SSPRP5-PRT-RS7-PL-DWG-3521 | SHEET NO. 1 OF 2 | REV. NO. Z



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND COORDINATES ARE IN METRES.
2. THE UTM CO-ORDINATES ARE BASED ON THE DATUM MUMBAI HIGH GRID, SPHEROID EVEREST 1830, UTM PROJECTION CENTRAL MERIDIAN 69° E.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE CO-ORDINATES AND LOCATION OF THE EXISTING PLATFORMS AND PIPELINES/CABLE ARE BASED ON THE PRE-ENGINEERING SURVEY DRAWINGS BY FUGRO SURVEY (INDIA) PVT.LTD.
5. CARE SHALL BE EXERCISED WHILE LAYING THE PIPELINE IN THE VICINITY OF EXISTING FACILITIES SUCH THAT THE LAYING OPERATION CAUSES NO DAMAGE WHATSOEVER TO THE EXISTING FACILITIES.
6. CONTRACTOR SHALL LAY THE PIPELINE COMPLYING WITH TOLERANCES AS PER ONGC SPECIFICATION NO. 2015 REV.1.
7. EXISTING PIPELINE CROSSING BURIAL SHALL BE RE-CONFIRMED DURING PRE-CONSTRUCTION SURVEY.

TABLE-1

SL. NO.	LOCATION	PLATFORM LOCATION		PLATFORM ORIENTATION	REMARKS
		EASTING	NORTHING		
1	RS-7	758 529.484	2 136 629.904	359.7°	WAC

LEGENDS

BATHYMETRY AND SEABED FEATURES

- PROPOSED PIPELINE ROUTE
- PROPOSED OTHER PIPELINE ROUTE
- PROPOSED UMBILICAL
- EXPOSED PIPELINE
- BURIED PIPELINE
- ANCHOR SCAR / DRAG MARK
- 155nT MAGNETIC ANOMALY IN NANO TESLA
- SPUDCAN DEPRESSION / JACK UP FOOT PRINTS
- SEABED DEPRESSION
- MEDIUM TO HIGH REFLECTIVE SEABED
- 54 MINOR CONTOUR WITH DEPTH IN METRES
- 7 ISOPACH AT 1 METRE INTERVALS

TP	TURNING POINT	WF	WELL FLUID
IP	INTERSECTION POINT	WI	WATER INJECTION
COJ	CENTER OF JACKET	GL	GASLIFT
CPC	CENTER POINT OF CURVE	WAC	WELL ARRAY CENTER

4	J-MCP-18-057/R1/REV.0	-	PRE-ENGINEERING SURVEY FOR PIPELINE REPLACEMENT PROJECT-5 (PRP-5)
3	SSPRP5-PRT-ED-PL-DWG-3522	-	8" WF ED PIPELINE APPROACH & DEPARTURE (RS-7 TO ED PIPELINE)
2	SSPRP5-PRT-R12-PL-DWG-3483	-	PIPELINE ALIGNMENT DRAWING FOR 8" WF (RS-7 TO ED PIPELINE)
1	SSPRP5-PRT-PL-DWG-3300	-	DRAWING INDEX

REFERENCE DRAWINGS/DOCUMENTS

DATE: 20.12.2019	DATE: 20.12.2019	DATE:	DATE:
PERITUS	SFSB	ONGC (OD)	ONGC (OW)

REV.	DATE	DESCRIPTION	DRWN	CHKD	APPRD	PM	SFSB
Z	20.12.19	AS-BUILT	AJA	MSA	MAA	WMR	SC
Z	05.07.19	AS-BUILT	MAM	MSA	MAA	WMR	SC
2	19.02.19	APPROVED FOR CONSTRUCTION	AJA	MSA	MAA	WMR	MRH
1	18.01.19	APPROVED FOR CONSTRUCTION	OBY	MSA	MAA	WMR	MRH
0	26.09.18	ISSUED FOR COMMENTS	AJA	MSA	MAA	WMR	MRH
			PERITUS				

CLIENT: OIL AND NATURAL GAS CORPORATION LIMITED

CONTRACTOR: sapura energy

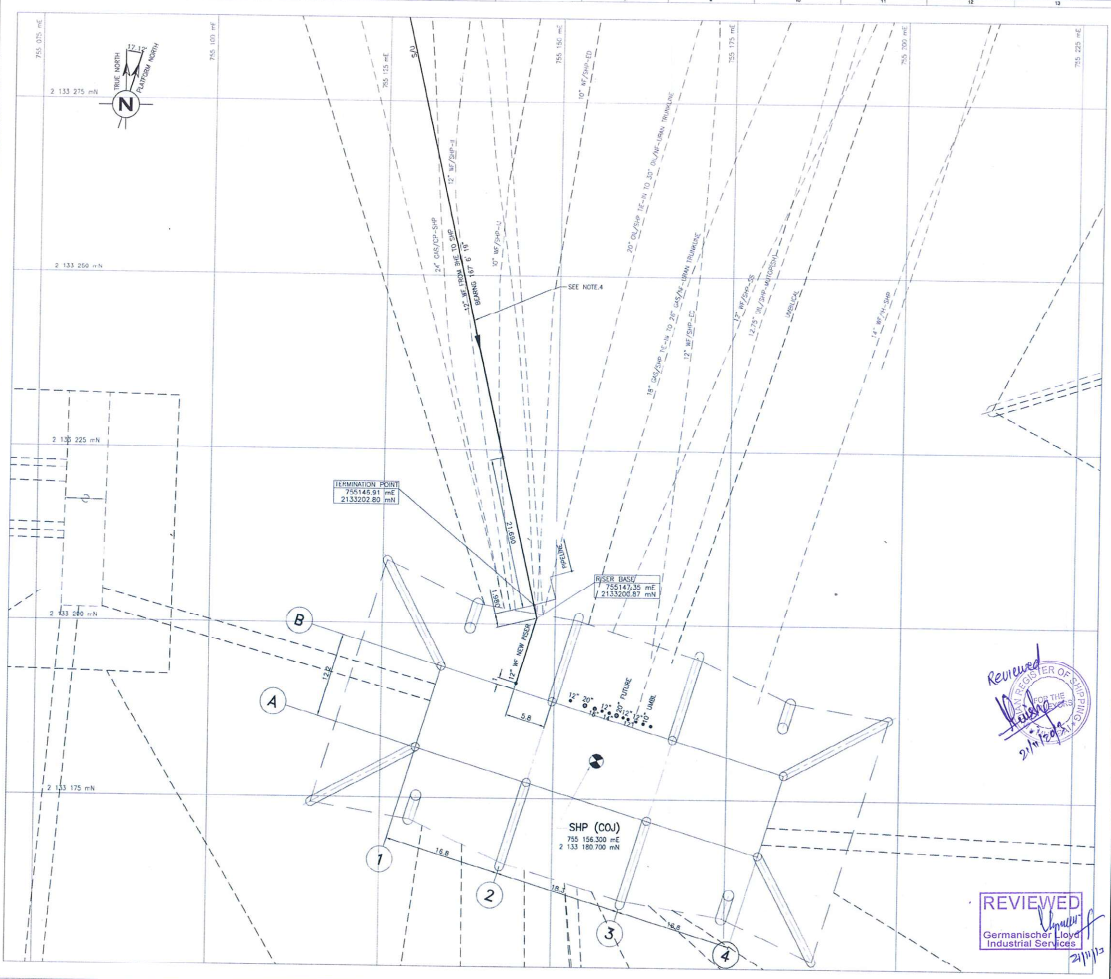
CONSULTANT: Peritus

PROJECT TITLE: SUBSEA WELLS' & PIPELINE REPLACEMENT PROJECT-V

DRAWING TITLE: 8" WF RS-7 PIPELINE APPROACH & DEPARTURE (RS-7 TO ED PIPELINE)

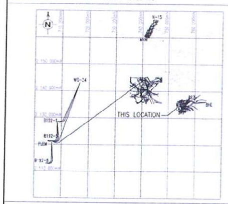
LOCATION: MHS

CLIENT CONTRACT No:		SIZE: A1	SCALE: 1:400	
PROJECT CODE: 21-00129	DRAWING No: SSPRP5-PRT-RS7-PL-DWG-3521		SHEET NO. 2 OF 2	REV. NO. Z



C11800-11-J-DW-0607
CLIENT DRAWING No.
14-0236-01-P-0-030
JPK DRAWING No.

KEY PLAN



NOTES

1. ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE NOTED.
2. THE UTM COORDINATES ARE BASED ON THE CM 69; ZONE 42N, EVEREST 1830 – MUMBAI HIGH DATUM.
3. ORIENTATION OF THE PLATFORM IS WITH RESPECT TO TRUE NORTH
4. TIE-IN SPOOL AND RISER SHALL BE INSTALLED WITH WELDED CONNECTION (STALK-ON METHOD)
5. START-UP & LAY-DOWN ENDS OF THE PIPELINE AS SHOWN ON THE DRAWING IS INDICATIVE ONLY. THE START-UP & LAY-DOWN SYNERGY CAN BE ALTERED BY THE OFFSHORE INSTALLATION CONTRACTOR DEPENDING ON SITE & WEATHER CONDITIONS.
5. THE NEW 12" RISER AT SHP PLATFORM SHALL BE INSTALLED AS THE REPLACEMENT OF 14" WI RISER.

LEGEND

———	PROPOSED PIPELINE
– – – –	EXISTING PIPELINE
COJ	CENTRE OF JACKET
S/U	START-UP
WI	WATER INJECTION

REFERENCE DRAWINGS

No.	DRAWING TITLE	NO
1	OVERALL FIELD LAYOUT	C11800-11-J-DW-0001
2	PIPELINE TIE-IN SPOOL DETAIL AT SHP PLATFORM 12" WF FROM BHE TO SHP	C11800-11-J-DW-0431

0 2.5 5 10 15 20 25m
PAPER SCALE

REV	DATE	REVISIONS	DRN.	D.D CHK	ORG. ENG.	ENG. APPT.	PROJ. APPT.
Z	02.08.13	AS BUILT	AK	WHD	LY	RM	BD
2	31.05.12	APPROVED FOR CONSTRUCTION	TR	DS	WS	PDN	BD
1	23.04.12	ISSUED FOR APPROVAL	DS	ALF	WS	PDN	BD
0	01.03.12	ISSUED FOR COMMENT	DS	ALF	WS	PDN	BD
A	05.01.12	ISSUED FOR IDC	DS	WHD	WS	PDN	BD

JPK	SWIBER	ONGC-OD	ONGC-OW

AS BUILT

OIL AND NATURAL GAS CORPORATION LTD. INDIA

CONSORTIUM OF " SWIBER OFFSHORE INDIA PVT. LTD & SWIBER OFFSHORE CONSTRUCTION PTE. LTD "

TRADING DIVISION OF PT WOOD GROUP INDONESIA

Reviewed
FOR THE REGISTER OF SHIPPING
21/11/2013

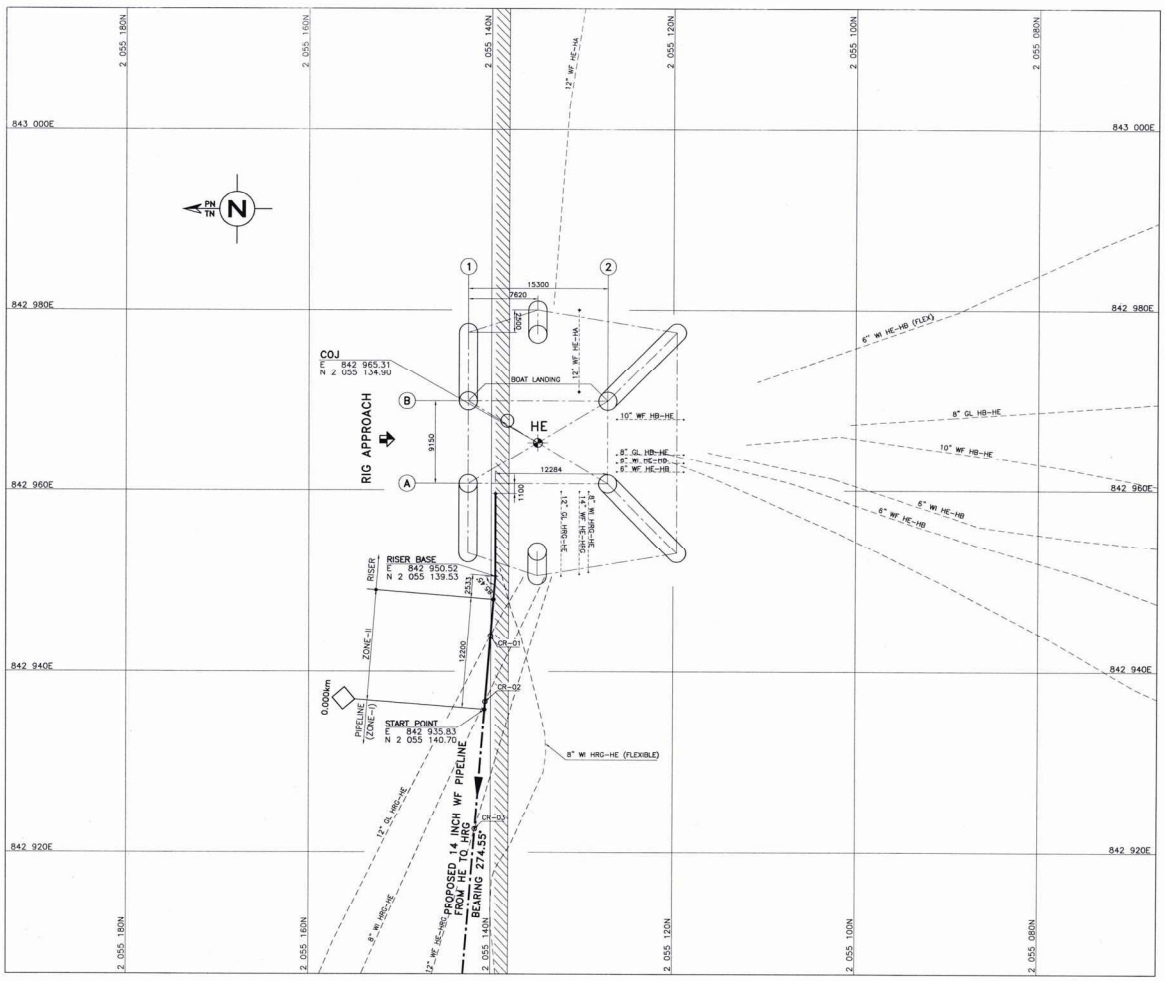
REVIEWED
Germanischer Lloyd
Industrial Services
21/11/13

PROJECT TITLE:
CLUSTER-7 PIPELINES PROJECT

DRAWING TITLE:
SHP PLATFORM PIPELINE APPROACH AND DEPARTURE

SCALE	SIZE	DRAWING No.	SHEET No.	REV
1:250	A1	C11800-11-J-DW-0607	1 OF 1	Z

DRAWING NUMBER C17029-54-1-HE-4105



THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

FILE : C17029-54-1-HE-4105 | F-56-095-1/0-C17029

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND CO-ORDINATES ARE IN METRES.
2. THE UTM CO-ORDINATES ARE BASED ON THE EVEREST 1830 SPHEROID, UTM ZONE 42N, CENTRAL MERIDIAN 69° EAST ON HEERA FIELD.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. ALL DIMENSIONS ARE AT JACKET WORKING POINT EL (+) 10.030m

LEGEND

———	PROPOSED RISER/ZONE-II
—·—	PROPOSED PIPELINE
- - - -	EXISTING RISER/PIPELINE
◇	KILOMETER POST
TN	TRUE NORTH
PN	PLATFORM NORTH
COJ	CENTER OF JACKET
km	KILOMETER
WF	WELL FLUID
WI	WATER INJECTION
GL	GAS LIFT

ACCEPTED BY LTHE. DC.
SIGN:
DATE: 09-01-18

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No	Rev No.	TITLE
1	C17029-54-1-GEN-1000	–	DRAWING INDEX
2	C17029-54-1-HE-3205	–	HE PLATFORM – 14 INCH WF RISER ASSEMBLY DRAWING
3	C17029-54-0-GEN-4003	–	PIPELINE ALIGNMENT DRAWING 14 INCH WF HE TO HRG
4	PRP4-52-PPG-HE-HRG-PLR-DRW-7005	C0	14" WF PIPELINE APPROACH DETAILS AT PLATFORM HE

APPROVED

LTHE-BANGALORE	LTHE	ONGC-OD	ONGC-OW

REV	DESCRIPTION	DRN	CHKD	APPD	PM	DATE
0	ISSUED FOR APPROVAL	PB	KSN/DK	PVG	JSN	09.01.18

CLIENT
OIL & NATURAL GAS CORPORATION LTD. INDIA

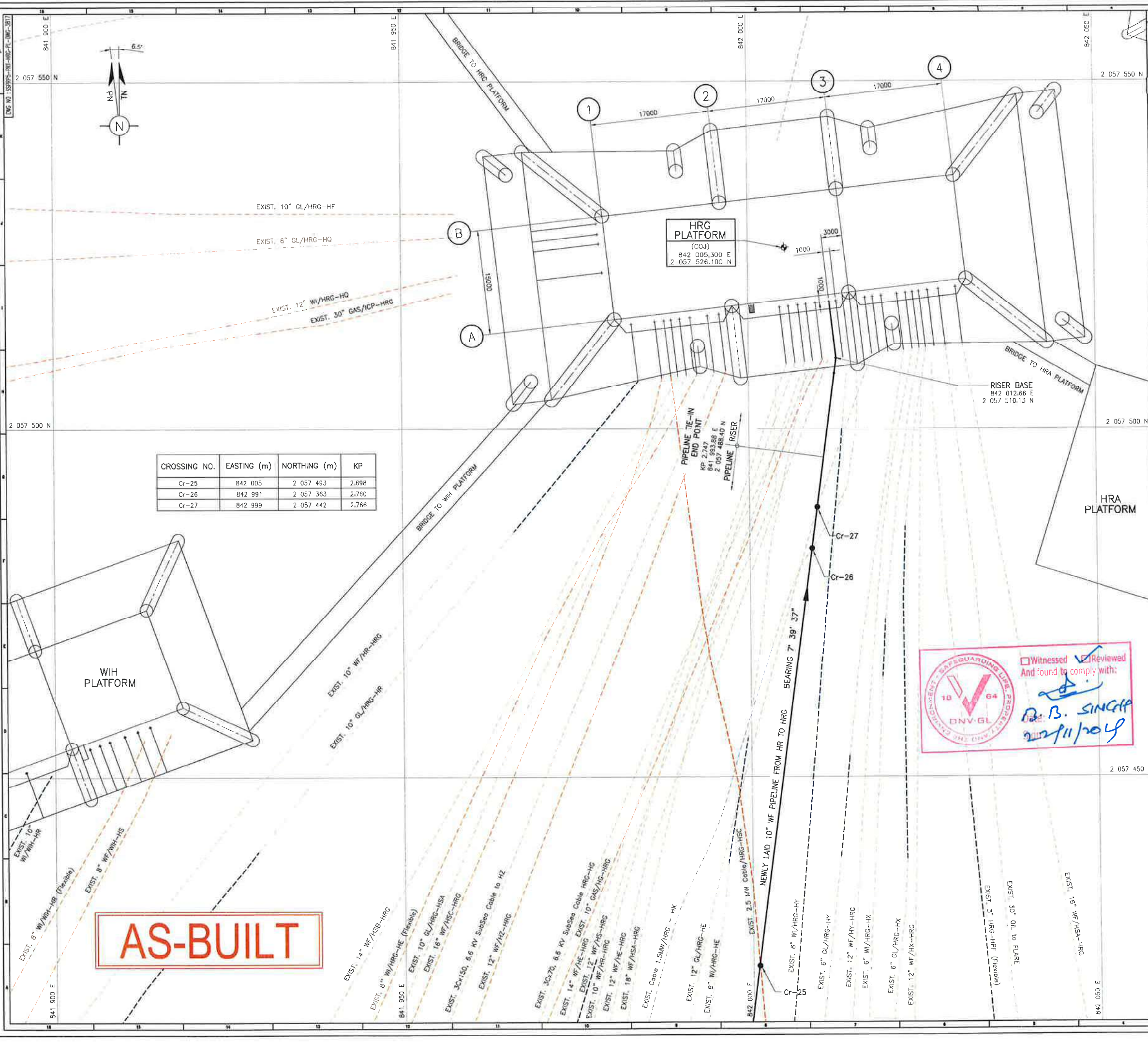
EPC CONTRACTOR & ENGG CONSULTANT
L&T HYDROCARBON ENGINEERING

PROJECT: BALANCE WORK FOR PIPELINE REPLACEMENT PROJECT-4

TITLE: HE PLATFORM PIPELINE APPROACH AND DEPARTURE DRAWING

SCALE: 1:200 | TOTAL NO. OF SHTS.: 1 OF 1

DRAWING NUMBER C17029-54-1-HE-4105 | REV. 0



CROSSING NO.	EASTING (m)	NORTHING (m)	KP
Cr-25	842 005	2 057 493	2.698
Cr-26	842 991	2 057 363	2.760
Cr-27	842 999	2 057 442	2.766

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND COORDINATES ARE IN METRES.
2. THE UTM CO-ORDINATES ARE BASED ON THE DATUM SHORE GRID, SPHEROID EVEREST 1830, UTM PROJECTION CENTRAL MERIDIAN 69° E.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE CO-ORDINATES AND LOCATION OF THE EXISTING PLATFORMS AND PIPELINES/CABLE ARE BASED ON THE PRE-ENGINEERING SURVEY DRAWINGS BY FUGRO SURVEY (INDIA) PVT.LTD.
5. CARE SHALL BE EXERCISED WHILE LAYING THE PIPELINE IN THE VICINITY OF EXISTING FACILITIES SUCH THAT THE LAYING OPERATION CAUSES NO DAMAGE WHATSOEVER TO THE EXISTING FACILITIES.
6. CONTRACTOR SHALL LAY THE PIPELINE COMPLYING WITH TOLERANCES AS PER ONGC SPECIFICATION NO. 2015 REV. 1.
7. PIPELINE CROSSING BURIAL SHALL BE RE-CONFIRMED DURING PRE-CONSTRUCTION SURVEY.

TABLE-1

SL. NO.	PLATFORM	PLATFORM LOCATION		PLATFORM ORIENTATION	REMARKS
		EASTING	NORTHING		
1	HRG	842 005.300	2 057 526.100	6.5°	COJ
-	-	-	-	-	-

LEGENDS

BATHYMETRY AND SEABED FEATURES

- PROPOSED PIPELINE ROUTE
- EXPOSED PIPELINE
- BURIED PIPELINE
- ANCHOR SCAR / DRAG MARK
- MINOR CONTOUR WITH DEPTH IN METRES
- MAJOR CONTOUR WITH DEPTH IN METRES
- MAGNETIC ANOMALY IN NANO TESLA
- SONAR CONTACT WITH DIMENSIONS IN METRES (emb : No measurable height)
- SPUDCAN DEPRESSION / JACK UP FOOT PRINTS
- ISOPACH AT 1 METRE INTERVALS
- SEDIMENT RIBBON
- SEABED DEPRESSION
- MEDIUM REFLECTIVE SEABED

TP	TURNING POINT	WF	WELL FLUID
IP	INTERSECTION POINT	WI	WATER INJECTION
COJ	CENTER OF JACKET	GL	GASLIFT
CPC	CENTER POINT OF CURVE	WAC	WELL ARRAY CENTER

4	J-MGP-18-057/R1/REV.0	-	PRE-ENGINEERING SURVEY FOR PIPELINE REPLACEMENT PROJECT-5 (PRP-5)
3	SSPRP5-PRT-HR-PL-DWG-3816	-	10" WF HR PLATFORM PIPELINE APPROACH & DEPARTURE (HR TO HRG PIPELINE)
2	SSPRP5-PRT-R30-PL-DWG-3814	-	PIPELINE ALIGNMENT DRAWING FOR 10" WF HR TO HRG
1	SSPRP5-PRT-PL-DWG-3300	-	DRAWING INDEX

REFERENCE DRAWINGS/DOCUMENTS

DATE: 20.11.2019	DATE: 20.11.2019	DATE:	DATE:
PERITUS	SFSB	ONGC (OD)	ONGC (OW)

Witnessed / Reviewed And found to comply with: D. B. SINGH 2?/11/2019 DNV·GL

REV.	DATE	DESCRIPTION	DRWN	CHKD	APPRD	PM	SFSB
Z	20.11.19	AS-BUILT	MAM	MSA	MAA	WMR	SC
Z	12.07.19	AS-BUILT	MAM	MSA	MAA	WMR	SC
1	30.04.19	APPROVED FOR CONSTRUCTION	MAM	MSA	MAA	WMR	MRH
0	27.03.19	ISSUED FOR COMMENTS	OBY	MSA	MAA	WMR	MRH
			PERITUS				

CLIENT: OIL AND NATURAL GAS CORPORATION LIMITED

CONTRACTOR: sapura energy

CONSULTANT: Peritus

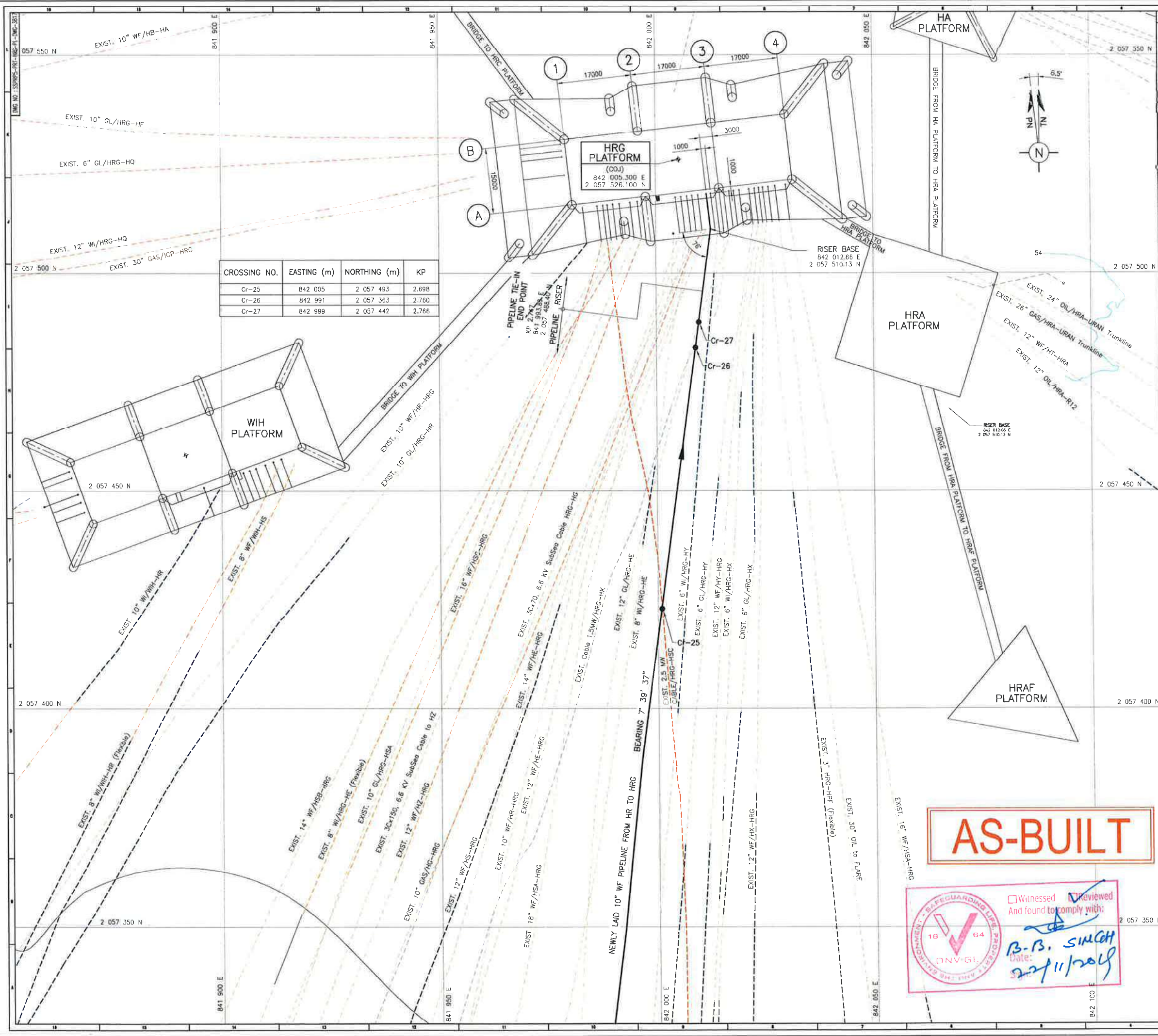
PROJECT TITLE: SUBSEA WELLS' & PIPELINE REPLACEMENT PROJECT-V

DRAWING TITLE: 10" WF HRG PLATFORM PIPELINE APPROACH & DEPARTURE (HR TO HRG PIPELINE)

LOCATION: HEERA

CLIENT CONTRACT No: | SIZE: A1 | SCALE: 1:250

PROJECT CODE: 21-00129 | DRAWING No: SSPRP5-PRT-HRG-PL-DWG-3817 | SHEET NO. 1 OF 2 | REV. NO. Z



CROSSING NO.	EASTING (m)	NORTHING (m)	KP
Cr-25	842 005	2 057 493	2.698
Cr-26	842 991	2 057 363	2.760
Cr-27	842 999	2 057 442	2.766

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND COORDINATES ARE IN METRES.
2. THE UTM CO-ORDINATES ARE BASED ON THE DATUM SHORE GRID, SPHEROID EVEREST 1830, UTM PROJECTION CENTRAL MERIDIAN 69° E.
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE CO-ORDINATES AND LOCATION OF THE EXISTING PLATFORMS AND PIPELINES/CABLE ARE BASED ON THE PRE-ENGINEERING SURVEY DRAWINGS BY FUGRO SURVEY (INDIA) PVT.LTD.
5. CARE SHALL BE EXERCISED WHILE LAYING THE PIPELINE IN THE VICINITY OF EXISTING FACILITIES SUCH THAT THE LAYING OPERATION CAUSES NO DAMAGE WHATSOEVER TO THE EXISTING FACILITIES.
6. CONTRACTOR SHALL LAY THE PIPELINE COMPLYING WITH TOLERANCES AS PER ONGC SPECIFICATION NO. 2015 REV. 1.
7. PIPELINE CROSSING BURIAL SHALL BE RE-CONFIRMED DURING PRE-CONSTRUCTION SURVEY.

TABLE-1

SL. NO.	PLATFORM	PLATFORM LOCATION		PLATFORM ORIENTATION	REMARKS
		EASTING	NORTHING		
1	HRG	842 005.300	2 057 526.100	6.5°	COJ
-	-	-	-	-	-

LEGENDS

BATHYMETRY AND SEABED FEATURES

- PROPOSED PIPELINE ROUTE
- EXPOSED PIPELINE
- BURIED PIPELINE
- ANCHOR SCAR / DRAG MARK
- 54 — MINOR CONTOUR WITH DEPTH IN METRES
- 55 — MAJOR CONTOUR WITH DEPTH IN METRES
- 155nT — MAGNETIC ANOMALY IN NANO TESLA
- SC05 (2.0 x 1.7 x nmh) — SONAR CONTACT WITH DIMENSIONS IN METRES (nmh : No measurable height)
- SPUDCAN DEPRESSION / JACK UP FOOT PRINTS
- ISOPACH AT 1 METRE INTERVALS
- SEDIMENT RIBBON
- SEABED DEPRESSION
- MEDIUM REFLECTIVE SEABED

TP	TURNING POINT	WF	WELL FLUID
IP	INTERSECTION POINT	WI	WATER INJECTION
COJ	CENTER OF JACKET	GL	GASLIFT
CPC	CENTER POINT OF CURVE	WAC	WELL ARRAY CENTER

4	J-MGP-18-057/R1/REV.0	-	PRE-ENGINEERING SURVEY FOR PIPELINE REPLACEMENT PROJECT-5 (PRP-5)
3	SSPRP5-PRT-HR-PL-DWG-3816	-	10" WF HR PLATFORM PIPELINE APPROACH & DEPARTURE (HR TO HRG PIPELINE)
2	SSPRP5-PRT-R30-PL-DWG-3814	-	PIPELINE ALIGNMENT DRAWING FOR 10" WF HR TO HRG
1	SSPRP5-PRT-PL-DWG-3300	-	DRAWING INDEX

REFERENCE DRAWINGS/DOCUMENTS

DATE: 20.11.2019	DATE: 20.11.2019	DATE:	DATE:
PERITUS	**SFSB**	**ONGC (OD)**	**ONGC (OW)**

REV.	DATE	DESCRIPTION	DRWN	CHKD	APPRO	PM	SFSB
Z	20.11.19	AS-BUILT	MAM	MSA	MAA	WMR	SC
Z	12.07.19	AS-BUILT	MAM	MSA	MAA	WMR	SC
1	30.04.19	APPROVED FOR CONSTRUCTION	MAM	MSA	MAA	WMR	MRH
0	27.03.19	ISSUED FOR COMMENTS	OBY	MSA	MAA	WMR	MRH
			PERITUS				

CLIENT: OIL AND NATURAL GAS CORPORATION LIMITED

CONTRACTOR: sapura energy

CONSULTANT: Peritus

PROJECT TITLE: SUBSEA WELLS' & PIPELINE REPLACEMENT PROJECT-V

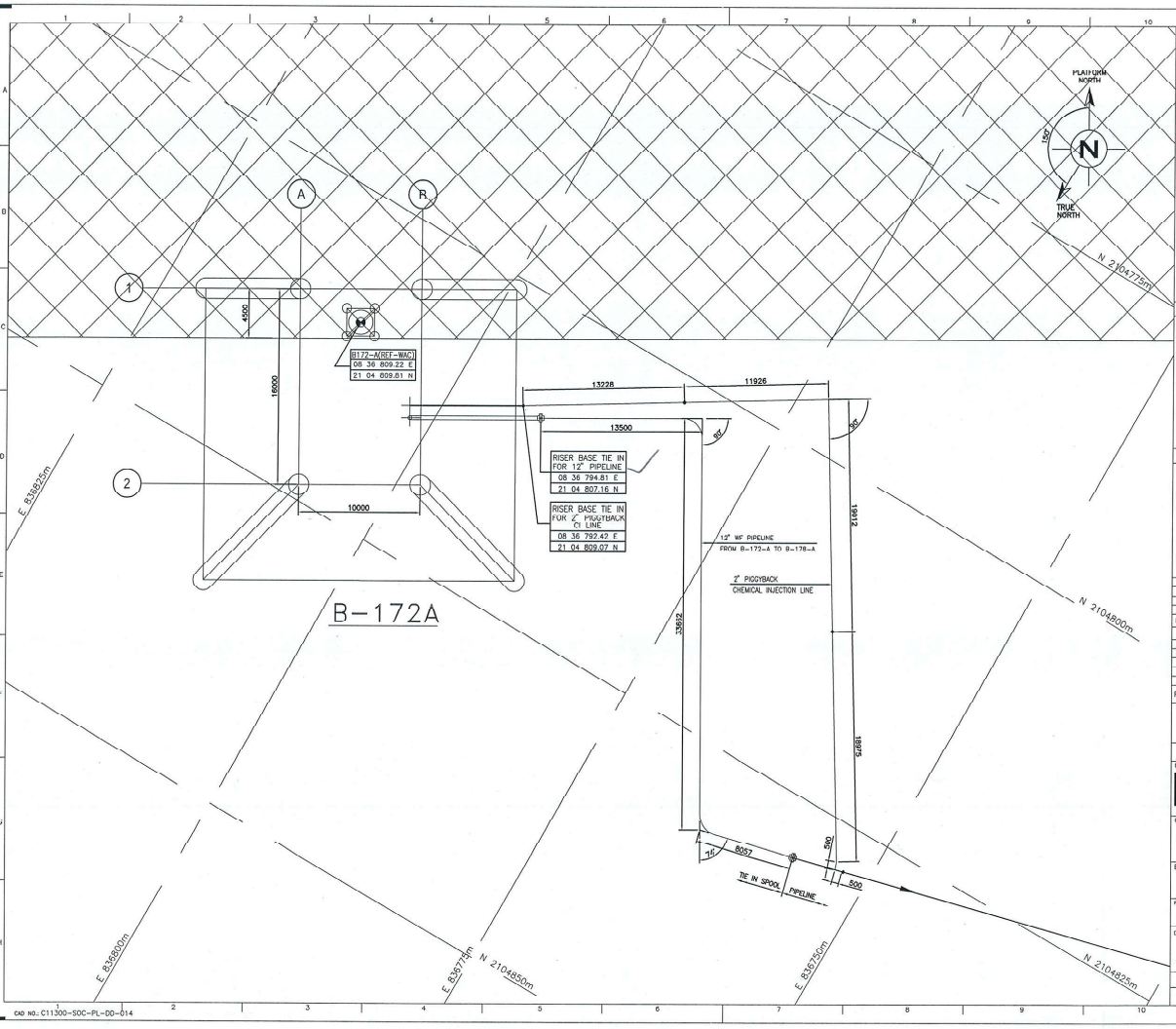
DRAWING TITLE: 10" WF HRG PLATFORM PIPELINE APPROACH & DEPARTURE (HR TO HRG PIPELINE)

LOCATION: HEERA

CLIENT CONTRACT No:

SIZE: A1 | SCALE: 1:400

PROJECT CODE: 21-00129 | DRAWING No: SSPRP5-PRT-HRG-PL-DWG-3817 | SHEET NO. 2 OF 2 | REV. NO. Z



NOTES

1. ALL DIMENSIONS ARE IN MILIMETERS UNLESS SPECIFIED AND COORDINATES ARE IN METERS.
2. ALL COORDINATES ARE BASED ON UNIVERSAL TRANSVERSE MERCATOR (UTM) PROJECTION ON EVEREST SPHEROID 1830 C (INDIAN). UTM ZONE 42N SHORE GRID AND CENTRAL MERIDIAN 69 EAST.
3. ALL WATER DEPTHS ARE WITH RESPECT TO CHART DATUM.

INDUSTRIAL SERVICES
INDIA
31302

KEY PLAN

LEGEND

0 000 000mN	=	UTM GRID PROJECTION
COJ	=	CENTER OF JACKET
KP	=	KILOMETER POST
WAC	=	WELL ARRAY CENTER
WF	=	WELL FLUID
CI	=	CHEMICAL INJECTION
	=	RIG CLEARANCE ZONE

NO.	DRAWING TITLE	DRAWING NUMBER
4	AS BUILT 10" I-TUBE ASSEMBLY DWG. AT B-172A(FROM B-178A)	0566-B172A-B-DW-8137
3	AS BUILT 12" RISER ASSEMBLY DWG. AT B-172A(TO B-178A)	0566-B172A-B-DW-8130
2	PIPELINE ALIGNMENT DWG. 12" WF FROM B172-A TO B178-A	C11300-SOC-PL-DD-057-01
1	OVERALL FIELD LAYOUT FOR B-193-A SUBSEA PIPELINES	C11300-SOC-PL-DD-009

REFERENCE

REV	DATE	DESCRIPTION	FCM STATUS	BY	CHKD	APPD
X	23.12.13	AS BUILT	SO	PPS	PNP	PNP

AEM	SWIBER	ONGC-OD	ONGC-OW

OWNER: OIL AND NATURAL GAS CORPORATION LIMITED INDIA

CONTRACTOR: Swiber Offshore Construction Pte Ltd, Singapore 609930

ENGINEERING CONSULTANT: AkerSolutions

PROJECT: B193-SUB-SEA PIPELINES PROJECT

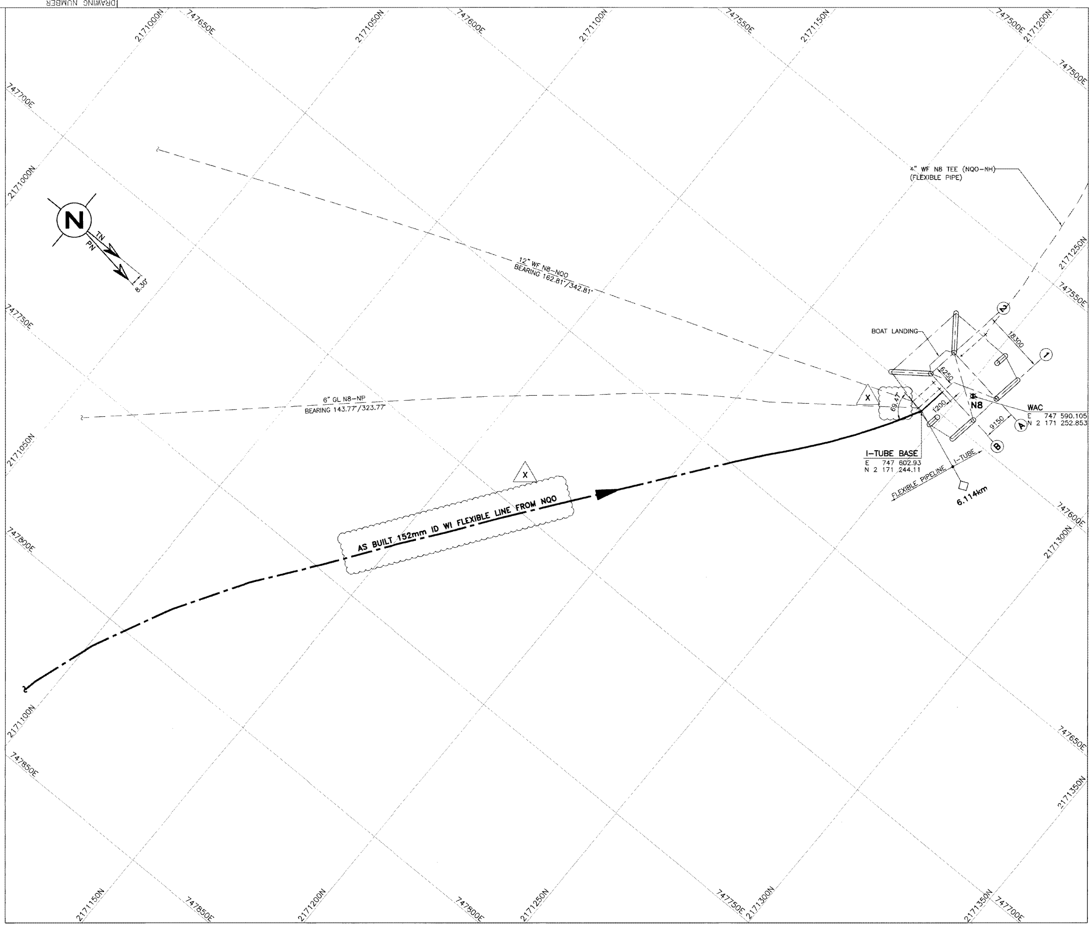
DWG. TITLE: PLATFORM APPROACH & DEPARTURE DRAWING FOR B-172-A PLATFORM

SCALE	DRAWING NUMBER	Sheet No.	REV.
1:150	C11300-SOC-PL-DD-014	1 OF 1	X

CAD NO.: C11300-SOC-PL-DD-014

© 2008 AKER SOLUTIONS. NO PART OF THIS DOCUMENT OR THE INFORMATION IT CONTAINS MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF AKER SOLUTIONS

PBD501-54-1-4055
DRAWING NUMBER



THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

CADFILE : 4055–N8 | LTV5042–3/0

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND CO–ORDINATES ARE IN METRES.
2. THE EXISTING PIPELINE DIA SHOWN ARE IN INCHES.
3. ALL CO–ORDINATES ARE BASED ON UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ON EVEREST 1830 SPHERIOD, ZONE 42 CENTRAL MERIDIAN 69° EAST ON BOMBAY HIGH DATUM.
4. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
5. DELETED
6.
7.
8. ALL DIMENSIONS ARE AT JACKET WORKING POINT. (X)

AS BUILT

LEGEND

———	AS BUILT RISER
—·—·—	AS BUILT PIPELINE
— — —	EXISTING LINE / RISER
◇	KILOMETRE POST
WAC	WELL ARRAY CENTER
EL	ELEVATION
WI	WATER INJECTION
km	KILOMETRE
M	METRE
TYP	TYPICAL
TN	TRUE NORTH
PN	PLATFORM NORTH
W.P	JACKET WORKING POINT

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	PBD501–54–1–1000	–	DRAWING INDEX (3 SHEETS)
2	PBD501–54–0–2001	–	FIELD LAYOUT BOMBAY HIGH FIELD
3	PBD501–54–1–3021	–	N8 PLATFORM–559mm (22") I–TUBE ASSEMBLY DRAWING
4	PBD501–54–0–4030	–	FLEXIBLE PIPELINE ALIGNMENT DRAWING 152mm ID WI NQ0 TO N8 (3 SHEETS)

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
X	AS BUILT	[signature]	[signature]	[signature]	10.10.06
0	APPROVED FOR CONSTRUCTION	SW	PVG	SB	19.11.05
C2	RE–ISSUED FOR CLIENT'S COMMENTS	SW	PVG	SB	18.11.05
C1	ISSUED FOR CLIENT'S COMMENTS	SW	PVG	SB	14.10.05

ONGC (OW)	ONGC (OD)	L & T	L&T–VALDEL
		[signature]	[signature]

OIL & NATURAL GAS CORPORATION LTD.
OFFSHORE WORKS DIVISION
MUMBAI REGION

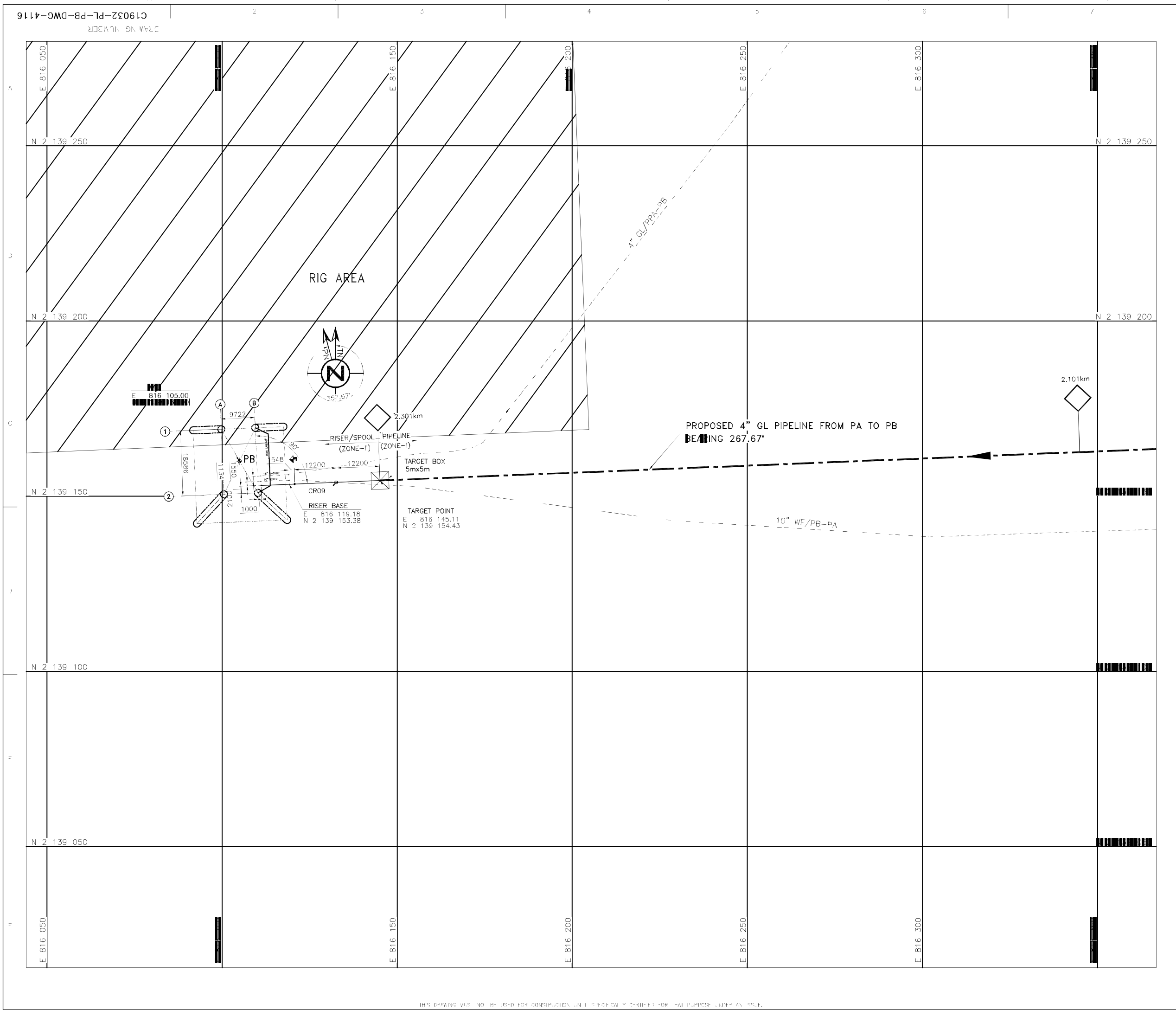
CONTRACTOR : **CONSORTIUM OF LARSEN & TOUBRO LIMITED AND GLOBAL INDUSTRIES OFFSHORE L.L.C.**

LARSEN & TOUBRO LIMITED
OGSP, MUMBAI

VALDEL
L&T–Valdel Engineering Private Limited
19, Primrose Road, Bangalore–560 025
INDIA

TITLE : **PIPELINE REPLACEMENT PROJECT**
N8 PLATFORM
PIPELINE APPROACH AND DEPARTURE DRAWING

SCALE	DRAWING NUMBER	REV
1:500	PBD501–54–1–4055	X



NOTES

1. ALL DIMENSIONS ARE IN mm, AND CO-ORDINATES IN METRES. WATER DEPTHS INDICATED ARE IN METRES AND DECIMETRES WITH RESPECT TO CHART DATUM.
2. PIPELINE ROUTE IS BASED ON PRE-ENGINEERING SURVEY REPORT BY "FUGRO SURVEY (INDIA) PVT. LTD."
3. THE PIPELINE BEARINGS ARE WITH REFERENCE TO TRUE NORTH.
4. THE UTM CO-ORDINATES ARE BASED ON THE DATUM WGS-84, UTM PROJECTION, CM 069°E, ZONE 42N.
5. EXISTING PLATFORM JACKET SIZE AND RISER LOCATION DIMENSIONS ARE AT JACKET WORKING POINT EL (+) 9.600m (CHART DATUM).

LEGEND

———	PROPOSED RISER/SPOOL
— · —	PROPOSED PIPELINE
	EXISTING PIPELINE
	EXPOSED PIPELINE
———	BURIED PIPELINE
◇	KILOMETER POST
TN	TRUE NORTH
PN	PLATFORM NORTH
WAC	WELL ARRAY CENTER
km	KILOMETER
WF	WELL FLUID
WI	WATER INJECTION
GL	GAS LIFT

REFERENCE DRAWINGS/DOCUMENTS

S.No	DWG/DOC. No.	Rev No.	TITLE
1	C19032-PL-GEN-DWG-1000	–	DRAWING INDEX
2	C19032-PL-GEN-DWG-2007	–	FIELD LAYOUT – PANNA
3	C19032-PL-PA-DWG-3216	–	RISER ASSEMBLY DRAWING (PA TO PB) FOR 4" GL PB
4	C19032-PL-GEN-DWG-4008	–	PIPELINE ALIGNMENT DRAWING 4" GL PA TO PB

APPROVED

SUNIL BALWANT DESHPANDE — ROHIT PANT — ONGC-OD

BHASKAR MALLICK — ONGC-OW

ACCEPTED BY L&T DC
SIGN:
DATE: 04.04.2023

L&T-Engg — L&T-Project

REV	DESCRIPTION	DRN	CHKD	APPD	DEM	DATE
0	ISSUED FOR APPROVAL	MAR	MMC/DVG	PVG	SSA	04.04.23
C1	ISSUED FOR CLIENT COMMENTS	MAR	MMC/DVG	PVG	SSA	28.03.23

CLIENT

OIL & NATURAL GAS CORPORATION LTD. INDIA

EPC CONTRACTOR & ENGG CONSULTANT

L&T Energy Hydrocarbon — LARSEN & TOUBRO LIMITED

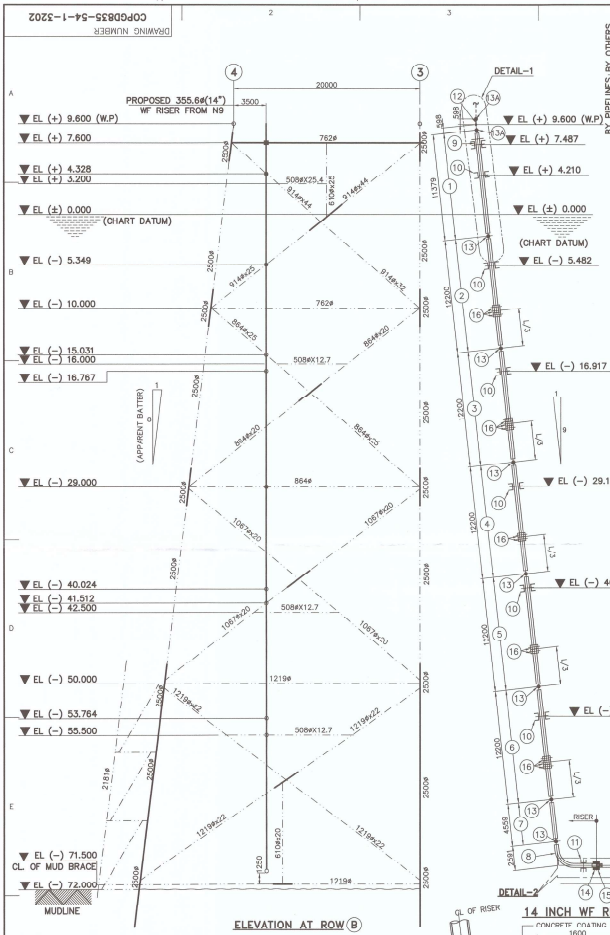
PROJECT: PIPELINE REPLACEMENT PROJECT VII (PRP-VII RTR)

TITLE: PIPELINE APPROACH AND DEPARTURE DRAWING (PA TO PB) FOR PB PLATFORM

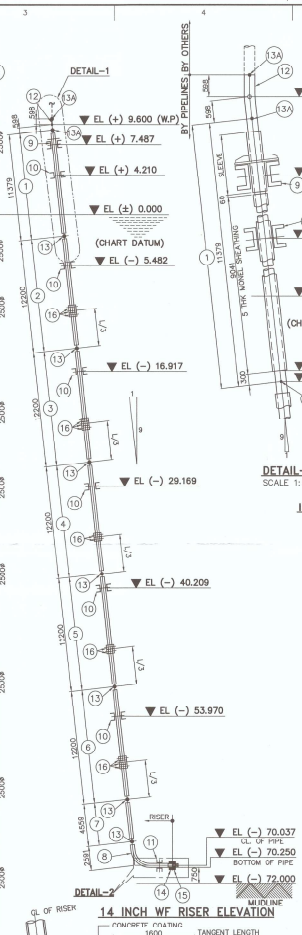
SCALE: 1:500 | TOTAL NO. OF SHTS.: 1 OF 1

DRAWING NUMBER: C19032-PL-PB-DWG-4116 | REV. 0

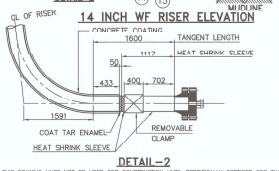
DRAWING NUMBER COPGDB35-54-1-3202



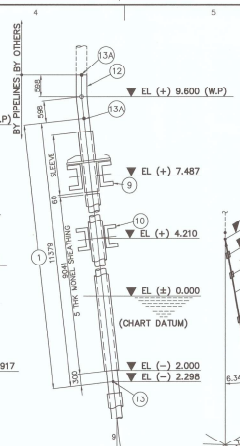
ELEVATION AT ROW (B)



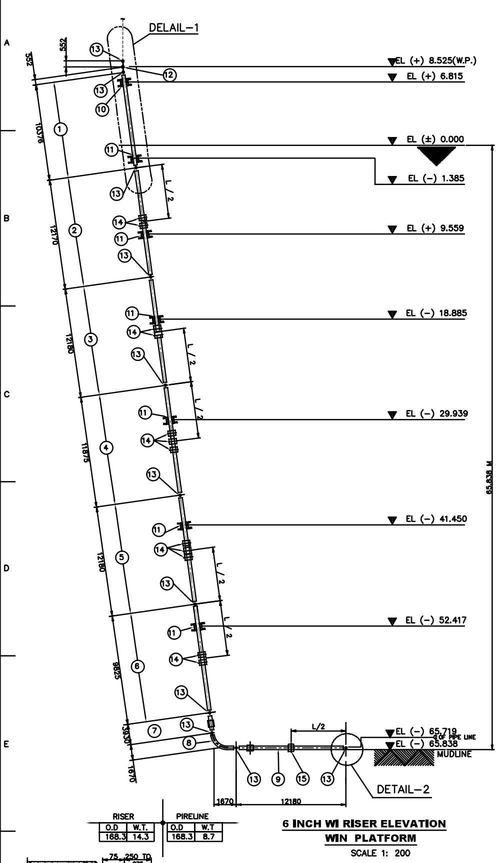
14 INCH WF RISER ELEVATION



DETAIL−2

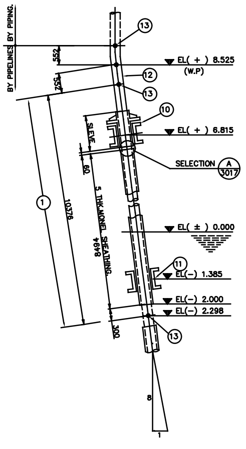

BY PIPELINES BY OTHERS
EL (+) 9.600 (W.P)
EL (+) 7.487
EL (+) 4.210
EL (±) 0.000
(CHART DATUM)
EL (−) 2.000
EL (−) 2.298
SLEEVE
SHEATHING
MONEL
1 1379
1 1379
1 1379

9170-54-1-3003
DRAWING NUMBER

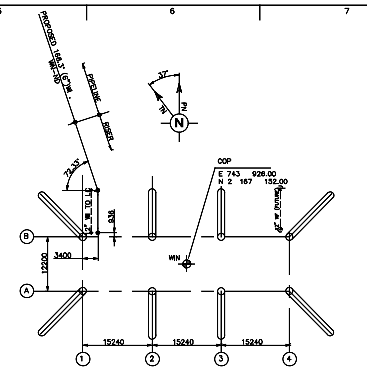


6 INCH WI RISER ELEVATION
WIN PLATFORM
SCALE 1: 200

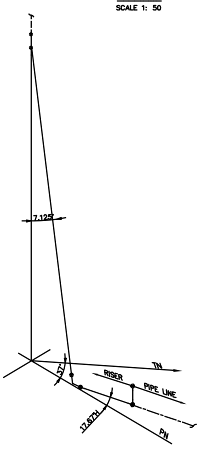
RISER		PIPELINE	
O.D	W.T.	O.D	W.T.
168.3	14.3	168.3	8.7



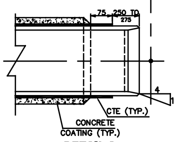
DETAIL - 1
SCALE 1: 50



KEY PLAN
AT EL(+) 8.525
SCALE 1: 400



ISOMETRIC VIEW OF RISER
SCALE 1: 400



DETAIL-2

RISER MATERIAL SCHEDULE					
SL. NO.	DESCRIPTION	QUANTITY	APPROX. LENGTH (M.)	TAG. NO.	REMARKS.
1	168.3ø x 14.3 WT RISER PIPE COMPLETE WITH MONEL CLADDING. AND HANGER SUPPORT.	1	10.376	WN / R6 / M	RISER JOINT FOR SPLASH ZONE REFER DRAWINGS 9170-54-1-3016 & 9170-54-1-3017
2	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 25mm CONCRETE. COATING AND 2 CENTRAL ANODES.	1	12.170	---	CONCRETE COATED PIPE
3	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 25mm CON.COATING COATING AND 2 CENTRAL ANODES.	1	12.180	---	CONCRETE COATED PIPE
4	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 25mm CONCRETE. COATING AND 3 CENTRAL ANODES.	1	11.875	---	CONCRETE COATED PIPE
5	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 25mm CONCRETE. COATING AND 3 CENTRAL ANODES.	1	12.180	---	CONCRETE COATED PIPE
6	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 25mm CON.COATING COATING AND 2 CENTRAL ANODES.	1	9.825	---	CONCRETE COATED PIPE
7	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 25mm CON.COATING LENGTH CUT TO SUIT.	1	3.930	---	CONCRETE COATED PIPE.THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER
8	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING .	1	---	WN / R6 /01	BEND ANGLE 83.21°
9	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODES.	1	12.180	---	THE FILED WELD END OF PIPE JOINT SHALL BE BEVELLED TO SUIT PIPE LINE WALL THICKNESS.
10	HANGER SUPPORT.	1	---	---	FOR DETAILS REFER DRAWING 9170-54-1-2035
11	RISER GUIDES.	6	---	---	FOR DETAILS REFER DRAWING 9170-54-1-2036 AND 2037
12	TRANSITION BEND.	1	---	HF / R10 /08	COATING TO COMPLY WITH ONGC SPECIFICATION 2005 REV.-0 BEND ANGLE 7.125°
13	FIELD JOINT.	11	---	---	TO COMPLY WITH ONGC SPECFICATION 2005,REV.-0 2019 REV-1
14	ANODES (TYPE - VIII)	12	---	---	387mm LONG,EACH 12.40Kg.
15	ANODES, ZONE-II (TYPE - II)	1	---	---	387mm LONG,EACH 15.61 Kg.

THIS DRAWING MUST NOT BEUSED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

CADFILE : 3606-HRG | FK5042-3/2

NOTES

1. ALL DIMENSIONS ARE IN mm.AND LEVELS ARE IN METERES UNO.
2. ALL LEVELS ARE RELATED TO CHART DATUM.
3. INSTALATION CONTRACTOR SHALL ENSURE THAT EDGE OF ALL ANODES AND FIELD JOINTS TO HAVE A MINIUM CLEARANCE OF 500mm. FROM THE CENTRE LINE OF CLAMP / GUIDE.
4. THE HANGER FLANGE SHALL BE FIELD WELDED TO THE RISER SLEEVE AFTER LEVEL.ADJUSTMENT OF RISER DURING INSTALATION.
5. MONEL SHEET FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT(LENGTH) OF 10.355 M.FOR 6" WIN.RISER.
6. INSTALATION CONTRACTOR SHALL PREPARE THE CONCRETE SURFACE OF THE RISER SMOOTH AND EVEN FOR A MINIUM DISTANCE OF 200mm. ON EITHER SIDE OF RISER GUIDE LOCATION.
7. INSTALATION CONCRETOR SHALL ENSURE THAT THE RISER IS ADEQUENTLY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALATION OF THE RISER AND RETRIVE IT TO THE SURFACE.
8. THE OVER ALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEA BED LVL. SHALL BE MEASURED PRIOR TO THE RISER ASSEMBLY.
9. RISER ASSEMBLY CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTH AND MARK RISER TITLE ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
10. NO OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VERY DEPENDING ON FEILD MEASURMENTS AND INDIVIDUAL RISER PIPE LENGTH.
11. THE RISER / PIPELINE SHALL BE CONTINUOUSLY SUPPORTED BY SEA BED AFTER RISER BEND.
12. DURING INSTALATION MDL SHALL ENSURE THAT DESIGNED RISER SPANS ARE MAINTAINED.
13. ONLY DEVALLATION ON ACCOUNT OF PRE-ENGINEERING SURVEY OUTPUT SHALL BE ENSURED BY MAL WITHOUT ANY TIME & COST EFFECT.

LEGEND

ø	— DIAMETER	EL.	— ELEVATION
WT.	— WALL THICKNESS	L.	— PIPE JOINT LENGTH
CTE.	— COAL TAR ENAMEL.	TYP.	— TYPICAL.
mm.	— MILLIMETERE	GL.	— GAS LIFT
TN,	— TRUE NORTH	PN.	— PLATFORM NORTH.
COP.	— CENTER OF OLATFORM	THK.	— THICKNESS.
W.P.	— WORKING POINT.	NO.	— NUMBER.
O.D.	— OUTSIDE DIAMETER.	Kg.	— KILOGRAM.
UNO.	— UNLESS NOTED OTHRWISE.		

REFERENCE DRAWING/DOCUMENTS

S.NO	DRG/DOC. NO.	Rev No	TITLE
1.	9170-54-1-1000	--	DRAWING INDEX.
2.	9170-54-1-2022	--	WIN PLATFORM -LOCATION OF RISER CLAMPS
3.	9170-54-1-2035 2036 & 2037	--	RISER CLAMP DETAILS. (3 SHEETS.)
4.	9170-54-1-3016	--	RISER ASSMBLY -TYP.MONEL SHEATHING DETAIL
5.	9170-54-1-3017	--	TYPICAL RISER DETAILS
6.	9170-54-1-4011	--	PIPELINE ALIGNMENT DRAWING. 6 INCH WI WIN TO ND.
7.	9170-54-1-4019	--	PIPELINE APPROACH AND DEPARTURE DRAWING. (SHT.1 OF 3)
8.	9170-54-1-5003	--	TYPICAL KNEE BRACE DETAIL FOR RISERS.
8.	9170-54-102	--	DATA SHEET FOR RISER AND TRANSITION BED.
9.	2005	0	ONGC GEN. SPECIFICATION FOR PROTECTIVE COATING.
10.	2012	1	ONGC.SPEC.FOR COAL TAR ENAMEL COATING OF SUBMIRINE PIPELINES.
11.	2013	0	ONGC.SPEC.FOR CONCRETE WEIGHT COATING OF OF SUBMIRINE PIPELINES.
12.	2014	0	ONGC.SPEC.FOR FEILD JOINT COATING OF OF SUBMIRINE PIPELINES.
13.	2015	1	ONGC.SPEC.FOR INSTALATION OF SUBMIRINE PIPELINES AND RELATED FACILITIES.
14.	2019	1	ONGC.SPEC.FOR WELDING.

REV.	DESCRIPTION	DRN	CHKD	APPD.	DATE
A	DRAWING MADE AS BUILT.				7.9.2000
0	APPROVED FOR CONSTRUCTION.				30.09.99
C2	RE-ISSUED FOR CLIENTS COMMENTS.	GS.	VK.	KSR.	01-09.99
C1	ISSUED FOR CLIENTS COMMENTS.	GS.	VK.	KSR.	25.08.99

KPI	MDL	ONGC

OIL & NATURAL GAS CORPARATION LTD
ENGG. SECTION E&C DIVISION
MRBC MUMBAI

MAZAGON DOCK LIMITED

CLAMP-ON RELATED MODIFICATIONS & PIPELINES PROJECT (CRMP)

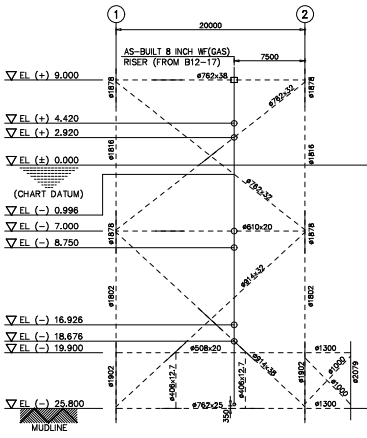
Kvaerner process (India) Limited
19, Primrose ROAD, Bangalore-560 025
INDIA

KVAERNER

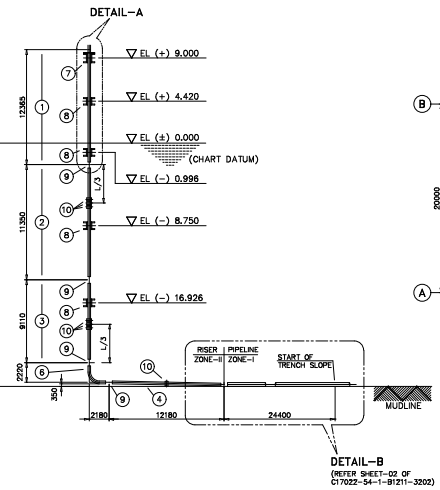
TITLE : WIN PLAT FORM
6 INCH WI RISER ASSEMBLY DRAWING.

SCALE	DRAWING NUMBER	REV
1 : 200	9170-54-1-3003	A

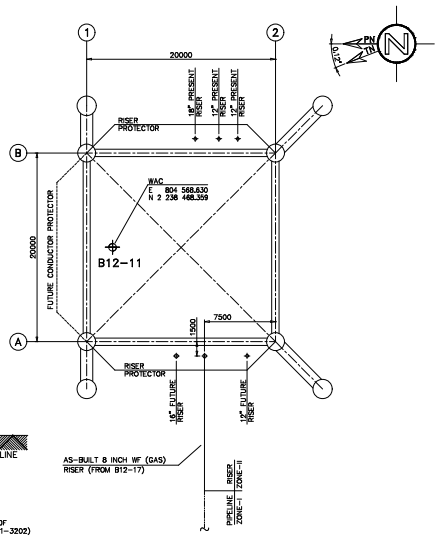
DRAWING NUMBER C17022-54-1-B1211-3202



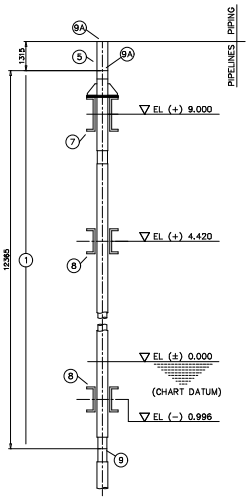
ELEVATION AT ROW (A)



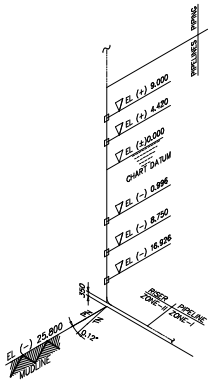
DETAIL-B
(REFER SHEET-02 OF C17022-54-1-B1211-3202)



KEY PLAN
AT EL (+) 9.000



DETAIL-A
SCALE NTS



ISOMETRIC VIEW OF RISER
SCALE : NTS

RISER MATERIAL SCHEDULE

SL No.	DESCRIPTION	QUANTITY	LENGTH (m)	TAG No.	REMARKS
1	219.1ø x 22.2 WT RISER PIPE COMPLETE WITH 5mm MONEL CLADDING AND HANGER SUPPORT	1	12.365	B12-11/RB/M	—
2	219.1ø x 22.2 WT RISER PIPE WITH 3mm 3LPP & 30mm CONCRETE COATING AND 3 ECCENTRIC ANODES	1	11.350	—	—
3	219.1ø x 22.2 WT RISER PIPE WITH 3mm 3LPP & 30mm CONCRETE COATING AND 3 ECCENTRIC ANODES	1	9.110	—	—
4	219.1ø x 22.2 WT RISER PIPE WITH 3mm 3LPP & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.180	—	—
5	219.1ø x 22.2 WT RISER PIPE	1	1.315	—	—
6	219.1ø x 22.2 WT RISER BEND WITH 2.5mm HEAT SHRINK SLEEVE & 30mm CONCRETE COATING	1	—	B12-11/RB/WF/01	BEND ANGLE 90° (BEND RADIUS 1095.5mm WITH 1000mm TANGENT LENGTH ON BOTH SIDES)
7	HANGER SUPPORT	1	—	—	—
8	RISER GUIDES	4	—	—	—
9	FIELD JOINT	5	—	—	—
9A	FIELD JOINT	2	—	—	—
10	ANODE (TYPE-A)	7	—	—	—
11	CONCRETE MATTRESS (10m×2.5m×0.5m)	1	—	—	—

MATERIAL GRADE FOR RISER PIPES AND BENDS : API 5L Gr. X60 (C.S NACE), SEAMLESS

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

FILE : C17022-54-1-B1211-3202 | F-50-095-1/0-C17022

NOTES

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. THE UTM CO-ORDINATES ARE BASED ON THE EVEREST 1830 SPHEROID, UTM ZONE 42N, CENTRAL MERIDIAN 69° EAST ON MUMBAI HIGH DATUM

LEGEND

ø	– DIAMETER	WF	– WELL FLUID
WT	– WALL THICKNESS	PN	– PLATFORM NORTH
mm	– MILLIMETRE	EL	– ELEVATION
m	– METRE	TYP	– TYPICAL
WAC	– WELL ARRAY CENTER	TN	– TRUE NORTH
U.N.O	– UNLESS NOTED OTHERWISE	HSS	– HEAT SHRINK SLEEVE
3LPP	– THREE LAYER POLY PROPYLENE	HDPF	– HIGH DENSITY POLYURETHANE FOAM
L	– PIPE LENGTH		
THK	– THICKNESS		

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	C17022-54-1-GEN-1000	–	DRAWING INDEX
2	C17022-54-1-B1211-3202	–	B12-11 PLATFORM – 8 INCH WF RISER ASSEMBLY DRAWING (SHT-02)
3	C17022-54-1-B1211-3102	–	B12-11 PLATFORM – LOCATION OF 8 INCH WF RISER AND RISER CLAMPS

AS-BUILT

REV	DESCRIPTION	DRN	CHKD	APPD	PM	DATE
X	AS-BUILT	PB	KSN/RP	PVG	SB	17.09.18
0	ISSUED FOR APPROVAL	PB	KSN/RP	PVG	SB	06.02.18

CLIENT
OIL & NATURAL GAS CORPORATION LTD. INDIA

EPC CONTRACTOR & ENGG CONSULTANT
L&T HYDROCARBON ENGINEERING

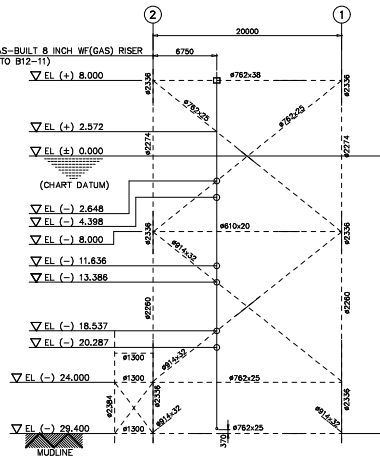
PROJECT: TRANSPORTATION & INSTALLATION – DAMAN DEVELOPMENT PROJECT

TITLE:
B12-11 PLATFORM
8 INCH WF RISER ASSEMBLY DRAWING

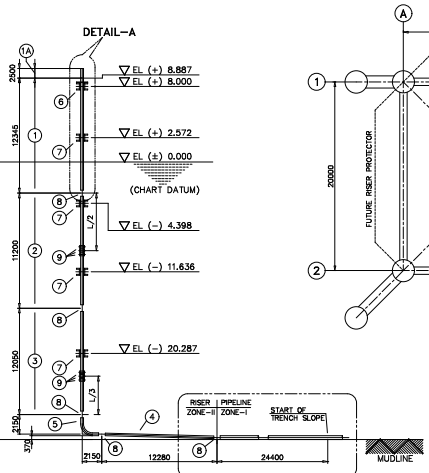
SCALE: 1:200 | TOTAL NO. OF SHTS.: 01 OF 02

DRAWING NUMBER C17022-54-1-B1211-3202 | REV. X

DRAWING NUMBER C17022-54-1-B1217-3201

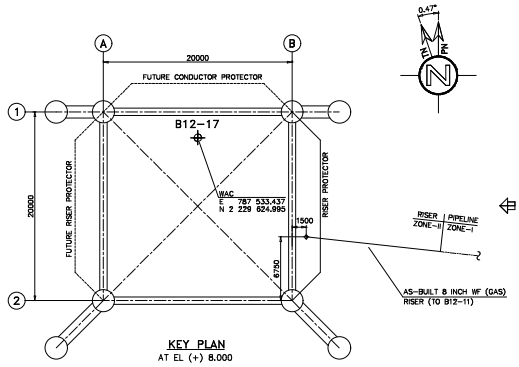


ELEVATION AT ROW (B)

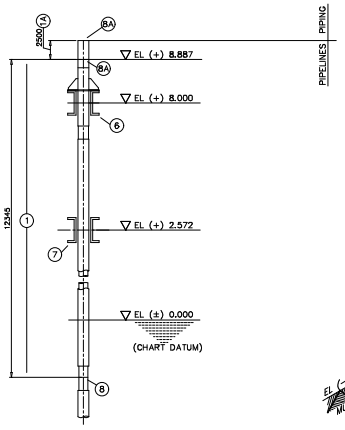


RISER ELEVATION

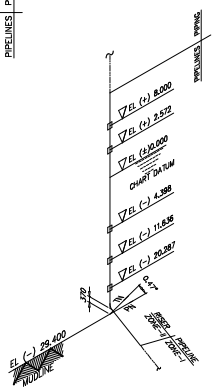
DETAIL-B
(REFER SHEET-02 OF C17022-54-1-B1217-3201)



KEY PLAN
AT EL (+) 8.000



DETAIL-A
SCALE NTS



ISOMETRIC VIEW OF RISER
SCALE : NTS

RISER MATERIAL SCHEDULE

SL No.	DESCRIPTION	QUANTITY	LENGTH (m)	TAG No.	REMARKS
1	219.1ø x 22.2 WT RISER PIPE COMPLETE WITH 5mm MONEL CLADDING AND HANGER SUPPORT	1	12.345	B12-17/ RB/M	—
1A	219.1ø x 22.2 WT RISER PIPE	1	2.500	—	—
2	219.1ø x 22.2 WT RISER PIPE WITH 3mm 3LPP & 30mm CONCRETE COATING AND 3 CENTRAL ANODES	1	11.200	—	—
3	219.1ø x 22.2 WT RISER PIPE WITH 3mm 3LPP & 30mm CONCRETE COATING AND 3 ECCENTRIC ANODES	1	12.050	—	—
4	219.1ø x 22.2 WT RISER PIPE WITH 3mm 3LPP & 30mm CONCRETE COATING	1	12.280	—	CONCRETE COATED ZONE-II PIPE
5	219.1ø x 22.2 WT RISER BEND WITH 2.5mm HEAT SHRINK SLEEVE & 30mm CONCRETE COATING	1	—	B12-17/RB/ WF/01	BEND ANGLE 90° (BEND RADIUS 1095.5mm WITH 1000mm TANGENT LENGTH ON BOTH SIDES)
6	HANGER SUPPORT	1	—	—	—
7	RISER GUIDES	4	—	—	—
8	FIELD JOINT	5	—	—	—
8A	FIELD JOINT	2	—	—	—
9	ANODE	6	—	—	—
10	CONCRETE MATTRESS (10m×2.5m×0.5m)	5	—	—	—

MATERIAL GRADE FOR RISER PIPES AND BENDS : API 5L Gr. X60 (C.S NACE), SEAMLESS

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

FILE : C17022-54-1-B1217-3201 | F-50-095-1/0-C17022

NOTES

1. ALL DIMENSIONS ARE IN MM AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. THE UTM CO-ORDINATES ARE BASED ON THE EVEREST 1830 SPHEROID, UTM ZONE 42N, CENTRAL MERIDIAN 69° EAST ON MUMBAI HIGH DATUM

LEGEND

ø	– DIAMETER	WF	– WELL FLUID
WT	– WALL THICKNESS	PN	– PLATFORM NORTH
mm	– MILLIMETRE	EL	– ELEVATION
m	– METRE	TYP	– TYPICAL
WAC	– WELL ARRAY CENTER	TN	– TRUE NORTH
U.N.O	– UNLESS NOTED OTHERWISE	HSS	– HEAT SHRINK SLEEVE
3LPP	– THREE LAYER POLY PROPYLENE	HDPF	– HIGH DENSITY POLYURETHANE FOAM
L	– PIPE LENGTH		
THK	– THICKNESS		

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	C17022-54-1-GEN-1000	–	DRAWING INDEX
2	C17022-54-1-B1217-3201	–	B12-17 PLATFORM – 8 INCH WF RISER ASSEMBLY DRAWING (SHT-02)
3	C17022-54-1-B1217-3101	–	B12-17 PLATFORM – LOCATION OF 8 INCH WF RISER AND RISER CLAMPS

AS-BUILT

REV	DESCRIPTION	DRN	CHKD	APPD	PM	DATE
X	AS-BUILT	PB	KSN/RP	PVG	SB	17.09.18
0	ISSUED FOR APPROVAL	PB	KSN/RP	PVG	SB	06.02.18

CLIENT
OIL & NATURAL GAS CORPORATION LTD. INDIA

EPC CONTRACTOR & ENGG CONSULTANT
L&T HYDROCARBON ENGINEERING

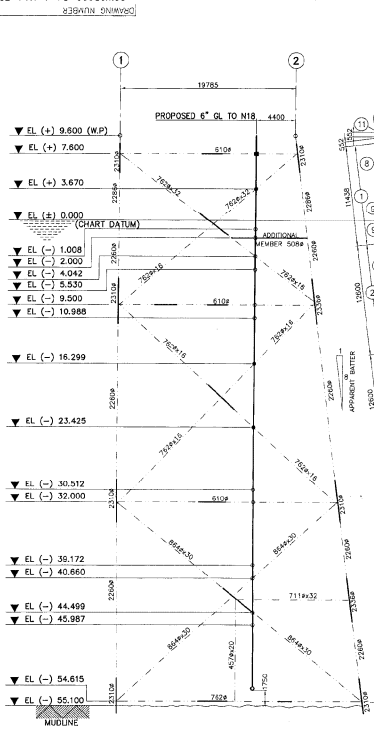
PROJECT: TRANSPORTATION & INSTALLATION – DAMAN DEVELOPMENT PROJECT

TITLE:
B12-17 PLATFORM
8 INCH WF RISER ASSEMBLY DRAWING

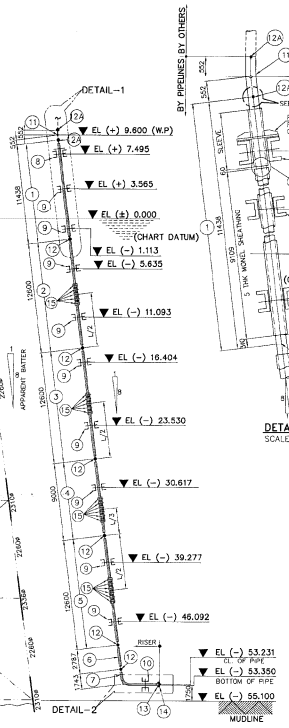
SCALE: 1:200 | TOTAL NO. OF SHTS.: 01 OF 02

DRAWING NUMBER C17022-54-1-B1217-3201 | REV. X

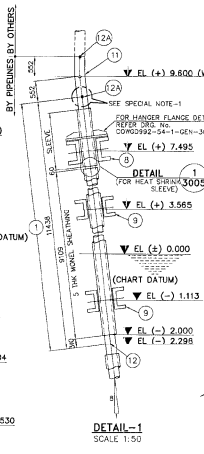
DRAWING NUMBER COWGD992-54-1-N14-3204



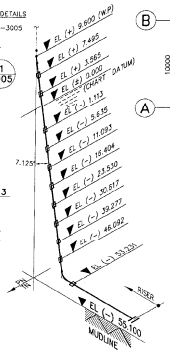
ELEVATION AT ROW (A)



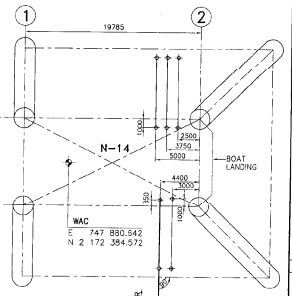
6 INCH GL RISER ELEVATION



DETAIL-1
SCALE 1:50



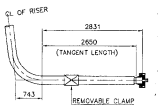
ISOMETRIC VIEW OF RISER



KEY PLAN
AT EL. (+) 9.600 (W.P)

SPECIAL NOTE:

1. PRIOR TO LOAD OUT A MIN RTJ FLANGE OF # 900 SHALL BE WELDED TO THE TOP OF THE SPLASH ZONE RISER PIPE COMPLETE WITH BLIND FLANGE, STUDS AND NUTS TO PREVENT INGRESS OF SEA WATER INSIDE THE RISER. THE SAME SHALL BE CUT AND REMOVED PRIOR TO THE WELDING OF TRANSITION BEND.



DETAIL-2
SCALE 1:50

AS-BUILT

FILE : 3204-N14-N18 | LTV-5042-1-COWGD992/

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. RISER FABRICATION CONTRACTOR SHALL ENSURE THAT EDGE OF ALL ANODES AND FIELD JOINTS TO HAVE A MINIMUM CLEARANCE OF 500mm FROM THE EDGE OF CLAMP/GUIDE.
4. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 11.438m FOR 6 INCH GL N-14 (TO N-18) BHSD
5. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE FOR A PROPER FITUP OF RISER CLAMPS.
6. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. RISER FABRICATION AGENCY SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF CONSTRUCTION.
7. JACKET ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION, SHALL BE RE-LOCATED AT THE NEAREST SUITABLE LOCATION.
8. HANGER CLAMP AND ALL OTHER CLAMPS IN THE SPLASH ZONE AREA SHALL BE PAINTED AS PER THE PAINTING SCHEME SPECIFIED IN SPEC. NO. 2005, REV-2 COLOUR OF THE FINISHED COAT SHALL BE YELLOW.
9. ALL CLAMPS BELOW SPLASH ZONE SHALL BE PAINTED IN WHITE COLOUR FOR EASY IDENTIFICATION BY DIVERS.
10. THE TEMPORARY SUPPORT CLAMP AT MUD BRACE ELEVATION SHALL BE REMOVED BY THE PIPELINE RE-IN CONTRACTOR.

REVIEWED

LEGEND

#	– DIAMETER	TYP	– TYPICAL
WT	– WALL THICKNESS	WF	– WELL FLUID
mm	– MILLIMETRE	GL	– GAS LIFT
TN	– TRUE NORTH	PN	– PLATFORM NORTH
WAC	– WELL ARRAY CENTER	THK	– THICKNESS
W.P	– WORKING POINT	No	– NUMBER
O.D	– OUTSIDE DIAMETER	kg	– KILOGRAM
EL	– ELEVATION	UNO	– UNLESS NOTED OTHERWISE

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	COWGD992-54-1-GEN-1000	–	DRAWING INDEX
2	COWGD992-54-1-GEN-3001 3002 & 3003	–	RISER CLAMP DETAILS
3	COWGD992-54-1-GEN-3004	–	RISER ASSEMBLY TYPICAL MONEL SHEATHING DETAILS
4	COWGD992-54-1-GEN-3005	–	RISER ASSEMBLY TYPICAL HANGER SLEEVE AND FLANGE DETAILS
5	COWGD992-54-1-GEN-3006	–	REMOVABLE RISER SUPPORT DETAILS
6	COWGD992-54-1-M14-1104	–	N-14 PLATFORM (TO N-18) – LOCATION OF 6 INCH GL RISER AND RISER CLAMPS
7	2005	2	ONGC GENERAL SPECIFICATION FOR PROTECTIVE COATING
8	2009 F	6	FUNCTIONAL SPECIFICATION FOR WELDING AND NDT
9	2012	1	ONGC SPECIFICATION FOR COAL TAR ENAMEL COATING OF SUBMARINE PIPELINES
10	2013	1	ONGC SPECIFICATION FOR CONCRETE WEIGHT COATING OF SUBMARINE PIPELINES
11	2014	0	ONGC SPECIFICATION FOR FIELD JOINT COATING OF SUBMARINE PIPELINES
12	2015	1	ONGC SPECIFICATION FOR INSTALLATION OF SUBMARINE PIPELINES AND RELATED FACILITIES

APPROVED

LTV	L&T	ONGC–OD	ONGC–OW

REV	DESCRIPTION	DRN	CHKD	APPD	PM	DATE
1	RE-ISSUED FOR APPROVAL	DVG	KSN/SGS	PVG	JR	27.01.11
0	ISSUED FOR APPROVAL	DVG	KSN/SGS	PVG	JR	30.09.10
C1	ISSUED FOR CLIENT'S COMMENTS	YKA	KSN/SGS	PVG	JR	22.09.10

OWNER

OIL & NATURAL GAS CORPORATION LTD. INDIA

EPC CONTRACTOR

LARSEN & TOUBRO LIMITED E&C UPSTREAM, MUMBAI

ENGINEERING CONSULTANT

VALDEL

L&T-Valdel Engineering Limited
19, Primrose road, Bangalore-560 025
INDIA

PROJECT: 04 WELL PLATFORMS FOR WHN RE-DEVELOPMENT PROJECT

TITLE:

N-14 PLATFORM (TO N-18)
6 INCH GL RISER ASSEMBLY DRAWING

SCALE: 1 : 200 | TOTAL NO. OF SHTS.: 1

DRAWING NUMBER: COWGD992-54-1-N14-3204 | REV. 1

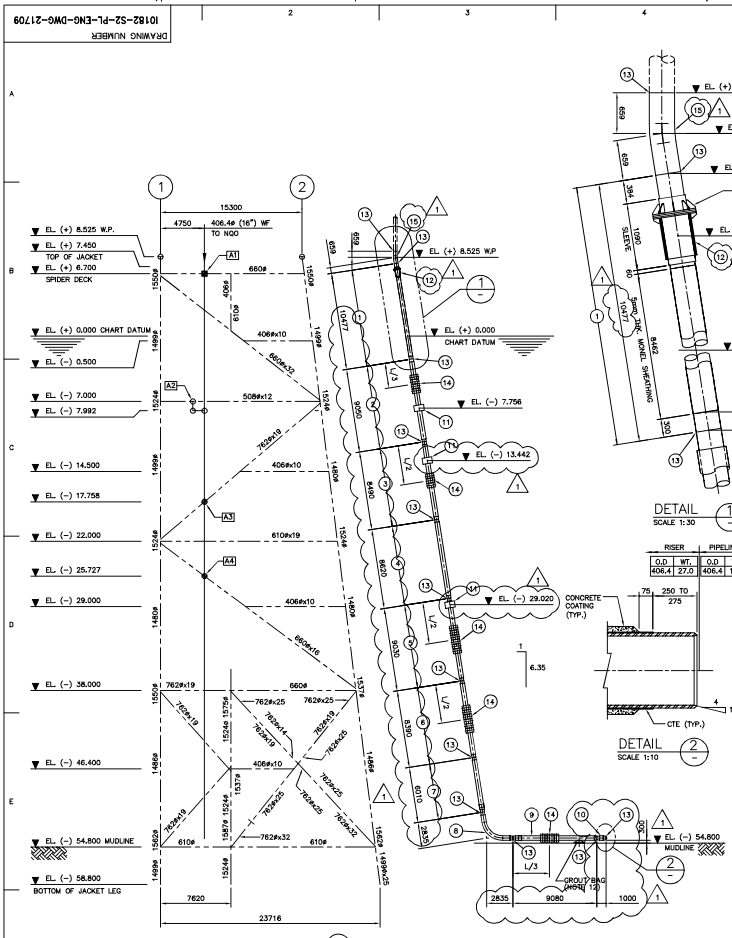
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

RISER MATERIAL SCHEDULE

SL No.	DESCRIPTION	QUANTITY	APPROX. LENGTH (m)	TAG No.	REMARKS
1	168.3ø x 18.3 WT RISER PIPE COMPLETE WITH MONEL CLADDING AND HANGER SUPPORT	1	11.438	N-14 (TO N-18) /R6/M	RISER JOINT FOR SPLASH ZONE REFER DRAWINGS. COWGD992-54-1-GEN-3004 & 3005
2	168.3ø x 18.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 5 CENTRAL ANODES.	1	12.600	—	CONCRETE COATED PIPE
3	168.3ø x 18.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 5 CENTRAL ANODES.	1	12.600	—	CONCRETE COATED PIPE
4	168.3ø x 18.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 8 ECCENTRIC ANODES.	1	9.000	—	CONCRETE COATED PIPE
5	168.3ø x 18.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 6 CENTRAL ANODES.	1	12.600	—	CONCRETE COATED PIPE
6	168.3ø x 18.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING.	1	2.787	—	CONCRETE COATED PIPE THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER.
7	168.3ø x 18.3 WT RISER LOWER BEND WITH 4.75mm CTE & 30mm CONCRETE COATING	1	—	N-14 (TO N-18) /R6/01	BEND ANGLE 82.875° TANGENT LENGTH 2650mm TOWARDS PIPELINE.
8	HANGER SUPPORT	1	—	—	FOR DETAILS REFER DRAWING. COWGD992-54-1-GEN-3001
9	RISER GUIDES	9	—	—	FOR DETAILS REFER DRAWING. COWGD992-54-1-GEN-3002 & 3003
10	TEMPORARY RISER SUPPORT CLAMP	1	—	—	FOR DETAILS REFER DRAWING. COWGD992-54-1-GEN-3006
11	168.3ø x 18.3 WT TRANSITION BEND	1	—	N-14 (TO N-18) /R6/02	BEND ANGLE 7.125° COATING TO COMPLY WITH ONGC SPECIFICATION 2005 REV-2.
12	FIELD JOINT	6	—	—	TO COMPLY WITH ONGC SPECIFICATION 2009 F REV-6 & 2014 REV-0 RESPECTIVELY.
12A	FIELD JOINT	2	—	—	TO COMPLY WITH ONGC SPECIFICATION 2009 F REV-6 & 2005 REV-2 RESPECTIVELY.
13	6" WN RTJ FLANGE-ANSI # 1500 ASTM A694 F60 (NACE)	1	—	—	COMPLETE WITH STUD, NUT AND RTJ GASKETS.
14	6" BLIND FLANGE-ANSI # 1500 ASTM A 105 (NACE) WITH NIPPLE AND PLUG FOR TESTING / BLEEDING	1	—	—	COMPLETE WITH STUD, NUT AND RTJ GASKETS.
15	ANODES (TYPE –I)	22	—	—	398 mm LONG, EACH 16.70 kg.

MATERIAL GRADE FOR RISER PIPES AND BEADS : API 5L Gr. X60 (C.S NACE), SEAMLESS

DRAWING NUMBER 10182-S2-PL-ENG-DWG-21709

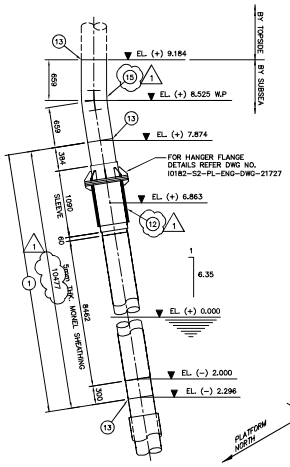


ELEVATION AT ROW (A)

SCALE 1:200

16" WF RISER ELEVATION

SCALE 1:200



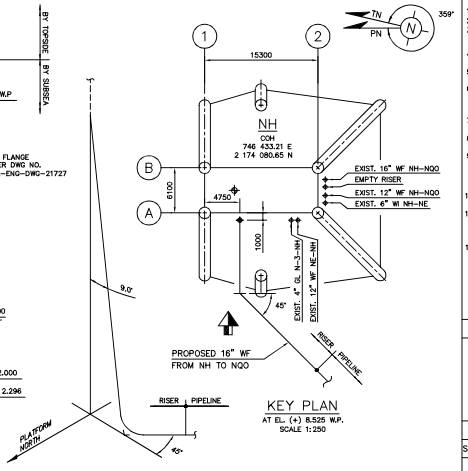
DETAIL 1

SCALE 1:30

RISER		PIPELINE	
O.D	WT.	O.D	WT.
406.4	27.0	406.4	15.9

DETAIL 2

SCALE 1:10



ISOMETRIC VIEW OF RISER

N.T.S.

KEY PLAN

AT EL. (+) 8.525 W.P.

SCALE 1:250

MATERIAL SCHEDULE FOR RISER

NO.	DESCRIPTION	QTY.	APPROX. LENGTH/ SIZE	TAG NO.	REMARKS
1	406.4ø x 27.0 WT RISER PIPE WITH 5mm THK. MONEL SHEATHING AND HANGER SUPPORT	1	10.477m	–	MONEL SHEATHED PIPE
2	406.4ø x 27.0 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 4 ECCENTRIC ANODES	1	9.050m	–	CONCRETE COATED PIPE
3	406.4ø x 27.0 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 3 CENTRAL ANODES	1	8.490m	–	CONCRETE COATED PIPE
4	406.4ø x 27.0 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	8.620m	–	CONCRETE COATED PIPE
5	406.4ø x 27.0 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 6 CENTRAL ANODES	1	9.030m	–	CONCRETE COATED PIPE
6	406.4ø x 27.0 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 6 CENTRAL ANODES	1	8.390m	–	CONCRETE COATED PIPE
7	406.4ø x 27.0 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	6.010m	–	CONCRETE COATED PIPE 1
8	406.4ø x 27.0 WT 5D BEND, 2032mm RADIUS, 1000mm TANGENT LENGTH WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	5.120	–	BEND ANGLE 83.7°
9	406.4ø x 27.0 WT RISER PIPE (ZONE II) WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 4 ECCENTRIC ANODES	1	9.080m	–	CONCRETE COATED PIPE
10	406.4ø x 27.0 WT RISER PIPE (ZONE II) WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	1.000m	–	CONCRETE COATED PIPE 1
11	RISER GUIDES	3	–	–	FOR DETAILS REFER DWG. NO. 10182-S2-PL-ENG-DWG-21503 & 21504
12	1 HANGER SUPPORT	1	–	–	FOR DETAILS REFER DRAWING 10182-S2-PL-ENG-DWG-21502
13	FIELD JOINT	12	–	–	–
14	ANODES (TYPE S2-46)	23	–	–	500mm LONG EACH 39.5kg
1 15	406.4ø x 27.0 WT 5D TRANSITION BEND, 2032mm RADIUS, WITH 500mm TANGENT LENGTH	1	–	–	BEND ANGLE 9.0° COATING TO COMPLY WITH ONGC SPECIFICATION 2005, REV-2

CADFILE : 10182-21709 –

NOTES

1. ALL DIMENSIONS ARE IN MILMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. INSTALLATION CONTRACTOR SHALL ENSURE THAT EDGE OF ALL ANODES AND FIELD JOINTS TO HAVE A MINIMUM CLEARANCE OF 500mm FROM THE EDGE OF CLAMP/GUIDE.
4. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 10.286m FOR 16" WF RISER.
5. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE. FOR A PROPER FITUP OF RISER CLAMPS.
6. INSTALLATION CONTRACTOR SHALL ENSURE THAT THE RISER IS ADEQUATELY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALLATION OF THE RISER AND RETRIEVE IT TO THE SURFACE (BID REQUIREMENT).
7. THE OVERALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
8. THE CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTHS AND MARK ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
9. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. INSTALLATION CONTRACTOR SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. JACKET ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION SHALL BE RE-LOCATED AT THE NEAREST SUITABLE LOCATION.
11. PRIOR TO INSTALLATION OF RISER THE BOAT LANDING AND BARGE BUMPER SHALL BE REMOVED AND RETREVED IF NECESSARY. THE BOAT LANDING AND BARGE BUMPER SHALL BE MODIFIED, IF NECESSARY AND RE-INSTALLED AFTER RISER INSTALLATION AS PER BID REQUIREMENT.
12. REFER TO DRAWING 10182-S2-PL-ENG-DWG-21905 FOR GROUT BAG SUPPORT DETAILS

AS-BUILT

LEGEND

■ – HANGER CLAMP (HC)	PN – PLATFORM NORTH
● – FIXED CLAMP (FC)	WI – WATER INJECTION
○ – ADJUSTABLE CLAMP (AC)	WF – WELL FLUID
W.P – WORKING POINT	GL – GAS LIFT
TN – TRUE NORTH	COH – CENTER OF HELIDECK

REFERENCE DRAWINGS/DOCUMENTS

S.NO.	DWG./DOC. NO.	REV. NO.	TITLE
1	10182-S2-PL-ENG-DWG-21001	–	DRAWING INDEX
2	10182-S2-PL-ENG-DWG-21502, 21503 & 21504	–	RISER CLAMP DETAILS
3	10182-S2-PL-ENG-DWG-21507	–	TYPICAL KNEE BRACE DETAIL FOR RISERS
4	10182-S2-PL-ENG-DWG-21009	–	RISER PIPE COATING SCHEDULE
5	10182-S2-PL-ENG-DWG-21305	–	PIPELINE ALIGNMENT 16" WF FROM NH TO NQO
6	10182-S2-PL-ENG-DWG-21409	–	NH PLATFORM PIPELINE APPROACH AND DEPARTURE
7	10182-S2-PL-ENG-DWG-21531	–	NH PLATFORM – LOCATION OF 16" WF RISER & RISER CLAMPS
8	10182-S2-PL-ENG-DWG-21727	–	NH PLATFORM – 16" WF RISER HANG OFF SLEEVE DETAIL
9	10182-S2-PL-ENG-DWG-21905	–	16" WF FROM NH TO NQO PIPELINE CROSSING DETAILS

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
1	AS-BUILT	BAS	GMS	PVE	04.06.10
0	ISSUED FOR CONSTRUCTION	TOP	YWF	SI	16.9.09
A	ISSUED FOR CLIENT REVIEW	AJ	YWF	SI	10.8.09

ONGC (OW)	ONGC (OD)	LEIGHTON	INTECSEA

OWNER : OIL & NATURAL GAS CORPORATION LTD. ENGG. SECTION, E&C DIVISION MRBC, MUMBAI

CONSULTANT : INTECSEA

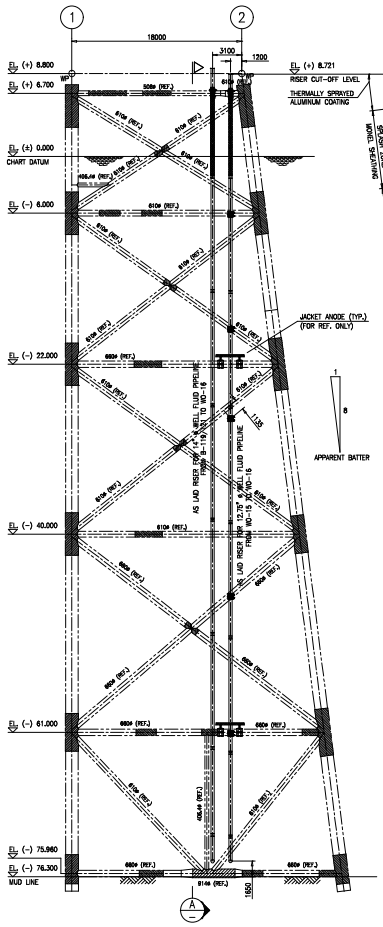
CONTRACTOR : LEIGHTON CONTRACTORS INDIA Pvt. Ltd.

PROJECT : PIPELINE REPLACEMENT PROJECT-2

TITLE : NH PLATFORM 16" WF RISER ASSEMBLY

SCALE	DRAWING NUMBER	REV.
AS SHOWN	10182-S2-PL-ENG-DWG-21709	1

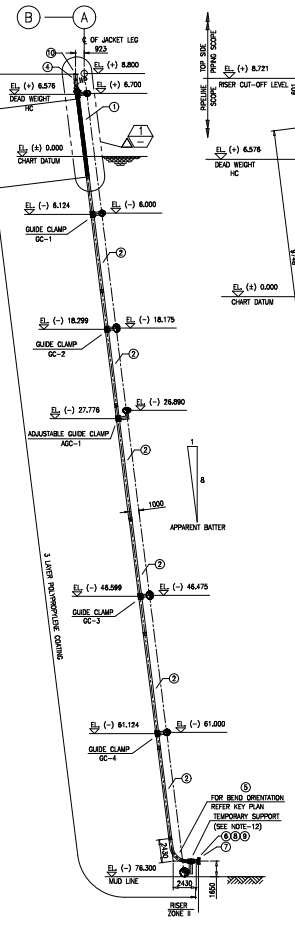
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.



VERTICAL FRAMING ALONG ROW – A

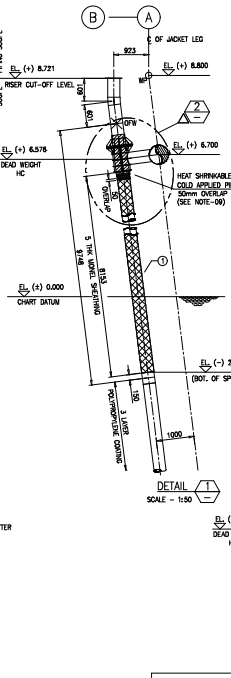
SCALE – 1:200

TOTAL STAND-OFF ANODES REQD. FOR RISER = 2 NOS.
NET WEIGHT/ ANODE = 350 KG.
REFER NOTE – 11



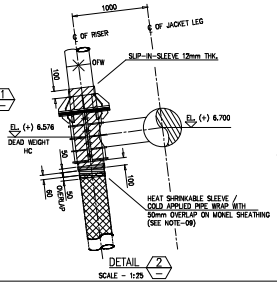
VIEW A

SCALE – 1:200



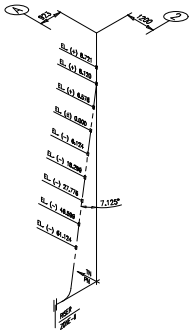
DETAIL 1

SCALE – 1:50



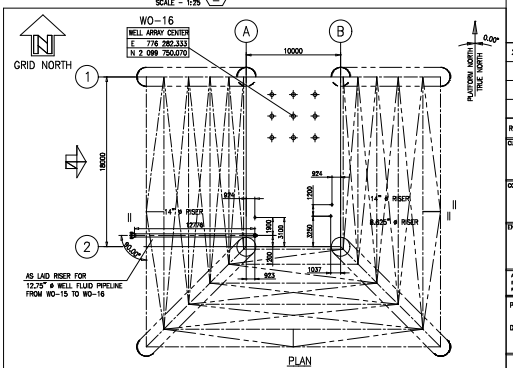
DETAIL 2

SCALE – 1:25



ISOMETRIC VIEW OF RISER

SCALE: NTS



PLAN

SCALE – 1:200

PLAN AT EL. (+) 8.800 (W.P.)

BILL OF MATERIALS

ITEM NO.	SIZE	THICKNESS/ RATING	MATERIAL	DESCRIPTION	QUANTITY
1.	323.9mm O.D.	23.8mm W.T.	API 5L Gr. X60, NACE	5mm THK. MONEL COATED C.S. PIPE	9.748m
2.	323.9mm O.D.	23.8mm W.T.	API 5L Gr. X60, NACE	3.0mm 3 LAYER POLYPROPYLENE COATED C.S. PIPE.	70.836m
~~3.~~	~~323.9mm O.D.~~	~~23.8mm W.T.~~	~~API 5L Gr. X60, NACE~~	~~C.S. PIPE~~	~~0.923m~~
4.	323.9mm O.D.	23.8mm W.T.	API 5L Gr. X60, NACE	7.125° TRANSITION BEND (R=1619.5) AT WO-16 (TANGENT LENGTH = 500mm)	1 No.
5.	12.75" ø	23.8mm W.T.	API 5L Gr. X60, NACE	82.0° RISER BOTTOM BEND (R=1619.5)(TANGENT LENGTH = 1000mm) 2.0mm POLYPROPYLENE HEAT SHRINKABLE SLEEVE COATED	1 No.
6.	12.75" ø	1500 #	ASTM A694 Gr. F-60 NACE ANSI B16.5	W.N. R.T.J. FLANGE TO SUIT PIPE 323.9mm O.D. x 23.8mm W.T. (ID = 276.3mm)	1 No.
7.	12.75" ø	1500 #	ASTM A694 Gr. F-60 NACE ANSI B16.5	CARBON STEEL RTJ. BLIND FLANGE	1 No.
8.	STUD BOLT 2.00"ø×610mm LG.	FOR 12.75"-1500 # R.T.J. FLANGE	ASTM A193 GR.B7M ASTM A194 GR.2HM	STUD BOLT WITH 2 HEXAGONAL HEAVY NUTS (XYLAN COATED)	16 Nos.
9.	12.75" ø	1500 #	SOFT IRON/ZINC PLATED ANSI B16.20	OCTAGONAL RING JOINT GASKET (R-58)	1 No.
10.	425mm ø	12 THK.	ASTM A36	CAP PLATE	1 No.

NOTES

1. ALL DIMENSIONS ARE IN mm, ELEVATIONS AND CO-ORDINATES ARE IN METRES UNO.
2. ALL ELEVATION ARE RELATED TO CHART DATUM.
3. THIS DRAWING IS PRESENTED IN UTM CO-ORDINATES, BASED ON EVEREST 1830, ZONE-42 NORTH, CENTRAL MERIDIAN 069°.
4. ALL DIMENSIONS, ELEVATIONS ARE VERIFIED.
5. ~~THE DEAD WEIGHT HANGER CLAMP SHALL BE FIELD WELDED TO THE RISER AFTER LEVEL ADJUSTMENT OF THE RISER DURING INSTALLATION.~~
6. MONEL SHEATHED RISER PIPE JOINT (LENGTH) ARE MINIMUM LENGTH OF 9.748m.
7. ~~THE OVERALL LENGTH OF THE RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.~~
8. ~~THE PIPE JOINT LENGTHS SHALL BE MEASURED AND MARKED ON COATED JOINT PIPES ONSHORE PRIOR TO TRANSPORTATION.~~
9. RISER EXTENDING ABOVE MONEL SHEATH ARE COATED BY THERMALLY SPRAYED ALUMINIUM COATING IN ACCORDANCE WITH EIL SPECIFICATION NO. A108-01-06-42-15A-SP-02 REV. 2 "SPECIFICATION FOR THERMALLY SPRAYED ALUMINIUM COATING", FOLLOW COLOUR SCHEME OF CORRESPONDING PIPING. HEAT SHRINKABLE SLEEVE / COLD APPLIED PIPE WRAP ARE APPLIED WITH 50mm OVERLAP AT THE INTERFACE ZONE BETWEEN MONEL SHEATHING AND RISER PIPE.
10. THE FIELD JOINTS COATING ARE POLYPROPYLENE HEAT SHRINK SLEEVE.
11. SACRIFICIAL ANODES REQUIRED FOR RISERS (STAND-OFF TYPE) ARE UNIFORMLY INSTALLED ALONG THE JACKET FACE NEAREST TO THE RISER (TYPICAL ANODE ARRANGEMENT FOR RISER AS PER DRAWING NO. 1229-N-0002.)
12. ~~TEMPORARY SUPPORT TO BE REMOVED AFTER INSTALLATION OF THE SPOOL PIECE BY PIPELINE CONTRACTOR.~~
13. THE FIELD JOINTS ARE HAVE A MINIMUM CLEARANCE OF 500mm FROM THE CENTER LINE OF CLAMP/GUIDE.
14. PIPE WITH POSITIVE TOLERANCE WALL THICKNESS ARE USED FOR RISER IN SPLASH ZONE SECTION.
15. PIPE WITH POSITIVE TOLERANCE WALL THICKNESS ARE USED FOR MANUFACTURE OF BENDS AS PER EIL SPECIFICATION NO. 6-71-0022 REV. 2.

LEGEND

1	ITEM MARK	✕	OFFSHORE WELD (OFW)
1	WELD NO.	✳	CUTTING ALLOWANCE AT OFF SHORE

REFERENCE DRAWINGS

DRAWING NO.	TITLE
1229-N-1101	AS LAID 12.75" ø WELL FLUID PIPELINE FROM WO-15 TO WO-16 MONEL SHEATHING DETAILS ON RISER AT WO-16
1229-N-0002	TYPICAL STAND-OFF ANODE ARRANGEMENT FOR RISER
1229-N-1001	WO-16 PLATFORM JACKET VERTICAL FRAMING ALONG ROW A & B
1229-N-1002	WO-16 PLATFORM JACKET VERTICAL FRAMING ALONG ROW 1 & 2
1229-M-1036	WO-16 PLATFORM JACKET ANODE LOCATION AT ELEVATION ROWS A & B
1229-M-1037	WO-16 PLATFORM JACKET ANODE LOCATION AT ELEVATION ROWS 1 & 2
1229-M-1038	WO-16 PLATFORM JACKET ANODE LOCATION AT PLAN EL. (-) 6.000M & EL. (-) 72.000M
1229-M-1039	WO-16 PLATFORM JACKET ANODE LOCATION AT PLAN EL. (-) 40.000M & EL. (-) 61.200M
1229-M-1040	WO-16 PLATFORM JACKET ANODE LOCATION AT PLAN EL. (-) 75.960

REV.	DATE	DESCRIPTION	DRN.	CHKD.	REVD.	APPD.
2X	17.05.13	AS BUILT	DGW	AAJ	TR/AJK	AM/SB
2	21.08.12	REVISED AS MARKED & RE-ISSUED AS AFC	DGW	AAJ/NP	TR/AJK	AM/SB
1	04.05.12	REVISED BASED ON LATEST JACKET CONFIGURATION & ISSUED AS AFC	DGW	AAJ/NP	TR/AJK	AM/SB
0	11.04.12	ISSUED FOR APPROVAL	DGW	AAJ/NP	TR/AJK	AM/SB

CLIENT:

OIL & NATURAL GAS CORPORATION LTD.

CONTRACTOR:

National Petroleum Construction Company

ENGINEERING SUB-CONTRACTOR:

NPCC ENGINEERING LIMITED
MUMBAI, INDIA

ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING, OR OTHERWISE WITHOUT THE PRIOR PERMISSION OF NPCC ENGINEERING LIMITED MUMBAI, INDIA.

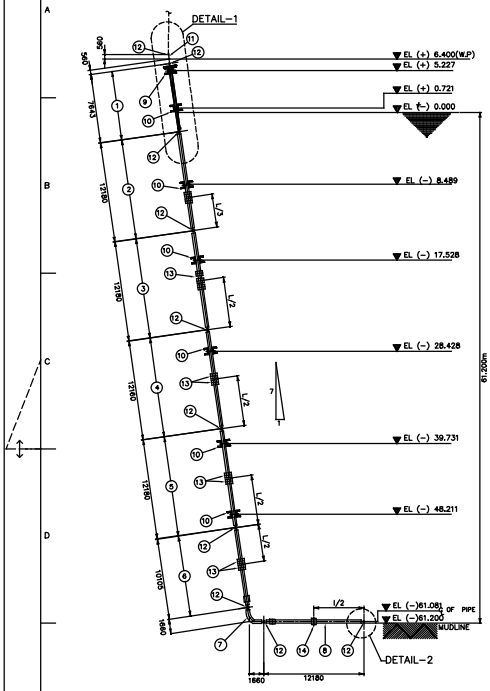
PROJECT TITLE: WO-16 CLUSTER & SB-14 WELLHEAD PLATFORMS PROJECT

DRAWING TITLE: AS LAID 12.75" ø WELL FLUID PIPELINE FROM WO-15 TO WO-16 RISER GA & DETAILS AT WO-16

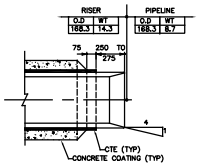
SCALE	DRAWING NUMBER	SHEET	REV
1 : 200	1229-N-1001	1/1	2X

841 MM X 594 MM – SIZE A1

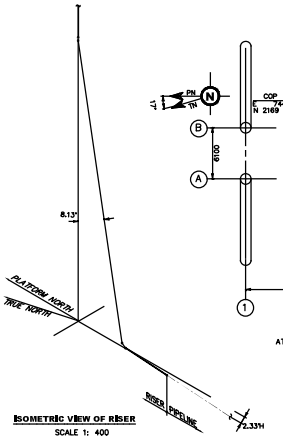
DRAWING NUMBER 9170-54-1-3004



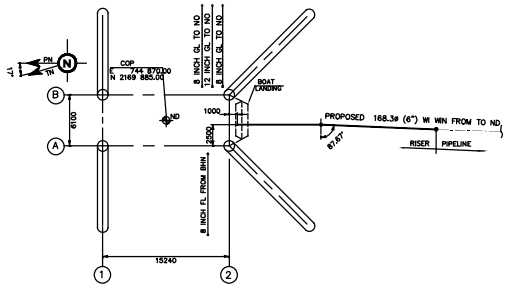
6 INCH WI RISER ELEVATION
ND PLATFORM
SCALE 1: 200



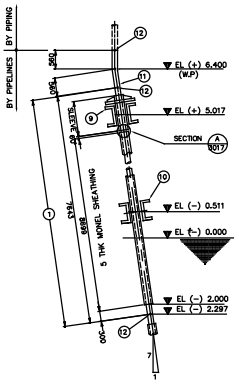
DETAIL-2



ISOMETRIC VIEW OF RISER
SCALE 1: 400



KET PLAN
AT EL. (+) 6.400
SCALE 1:200



DETAIL-1
SCALE 1: 50

RISER MATERIAL SCHEDULE

SL. NO.	DESCRIPTION	QUANTITY	APPROX. LENGTH (M.)	TAG. NO.	REMARKS.
1	168.3 ø x 14.3 WT.RISER PIPE. COMPLETE WITH MONEL CLADDING. AND HINGER SUPPORT.	1	7.643	ND/R6/M	RISER JOINT FOR SPLASH ZONE REFER DRAWINGS 9170-54-1-3016 & 9170-54-1-3017
2	168.3 ø x 14.3 WT.RISER PIPE. WITH 4.75mm CTE & 25mm CONCRETE. COATING AND 2 ECCENTRIC ANODES.	1	12.180	---	CONCRETE COATED PIPE
3	168.3 ø x 14.3 WT.RISER PIPE. WITH 4.75mm CTE & 25mm CONCRETE. COATING AND 3 CENTRAL ANODES.	1	12.180	---	CONCRETE COATED PIPE
4	168.3ø x 14.3 WT.RISER PIPE. WITH 4.75mm CTE & 25mm CONCRETE. COATING AND 2 CENTRAL ANODES.	1	12.160	---	CONCRETE COATED PIPE
5	168.3 ø x 14.3 WT.RISER PIPE WITH WITH 4.75mm CTE & 25mm CONCRETE. COATING AN 2 CENTRAL ANODES.	1	12.180	---	CONCRETE COATED PIPE
6	114.3 ø x 11.1 WT.RISER PIPE WITH 4.75mm CTE & 25mm CONCRETE. COATING LENGTH CUT TO SUIT AND 2 CENTRAL ANODES.	1	10.105	---	CONCRETE COATED PIPE.THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER.
7	168.3ø x 14.3 WT.RISER LOWER BEND WITH 4.75mm CTE & 25mm CONCRETE. COATING	1	----	ND/R6/01	BEND ANGLE 81.88°
8	168.3 ø x 14.3 WT.RISER PIPE(ZONE-II) WITH 4.75mm CTE & 30mm CONCRETE. COATING AND 1 CENTRAL ANODE	1	12.180	----	THE FIELD WELD END OF PIPE JOINT SHALL BE BEVELLED TO SUIT PIPELINE WALL THICKNESS
9	HANGER SUPPORT	1	----	---	FOR DETAILS REFER DRAWING 9170-54-1-2035
10	RISER GUIDES	6	---	---	FOR DETAILS REFER DRAWING 9170-54-1-2036 & 2037
11	TRANITION BEND	1	---	ND/R6/02	COATING TO COMPLY WITH ONGC SPECIFICATION 2005,REV-0 BEND ANGLE 8.13°
12	FIELD JOINT	10	---	----	TO COMPLY WITH ONGC SPECIFICATION 2014,REV-0 & 2019,REV-1.
13	ANODES (TYPE-VIII)	11	---	---	387mm LONG,EACH 12.40 Kg.
14	ANODES, ZONE - II (TYPE - II)	1	---	---	387mm LONG, EACH 15.61Kg

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

CADFILE : 3004-ND | FK3042-3/2

NOTES

1. ALL DIMENSIONS ARE IN mm.AND LEVELS ARE IN METERES UNO.
2. ALL LEVELS ARE RELATED TO CHART DATUM.
3. INSTALATION CONTRACTOR SHALL ENSURE THAT EDGE OF ALL ANODES AND FIELD JOINTS TO HAVE A MINIMUM CLEARANCE OF 500mm. FROM THE CENTRE LINE OF CLAMP / GUIDE.
4. THE HANGER FLANGE SHALL BE FIELD WELDED TO THE RISER SLEEVE AFTER LEVEL.ADJUSTMENT OF RISER DURING INSTALATION.
5. MONEL SHEET FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT(LENGTH) OF 8.225M.FOR 6" ND RISER.
6. INSTALATION CONTRACTOR SHALL PREPARE THE CONCRETE SURFACE OF THE RISER SMOOTH AND EVEN FOR A MINIMUM DISTANCE OF 200mm. ON EITHER SIDE OF RISER GUIDE LOCATION.
7. INSTALATION CONCRETOR SHALL ENSURE THAT THE RISER IS ADEQUENTLY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALATION OF THE RISER AND RETRIVE IT TO THE SURFACE.
8. THE OVER ALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEA BED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
9. RISER ASSEMBLY CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTH AND MARK RISER TITLE ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
10. NO OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VERY DEPENDING ON FEILD MEASURMENTS AND INDIVIDUAL RISER PIPE LENGTH.
11. THE RISER / PIPELINE SHALL BE CONTINUOUSLY SUPPORTED BY SEA BED AFTER RISER BEND.
12. DURING INSTALATION MDL SHALL ENSURE THAT DESIGNED RISER SPANS ARE MAINTAINED.

LEGEND

ø	— DIAMETER	EL.	— ELEVATION
WT.	— WALL THICKNESS	L.	— PIPE JOINT LAYER
CTE.	— COAL TAR ENAMEL.	TYP.	— TYPICAL.
mm.	— MILLIMETERE	WI	— WATHER INJECTION
TN,	— TRUE NORTH	PN.	— PLATFORM NORTH.
COP.	— CENTER OF PLATFORM	THK.	— THICKNESS.
W.P.	— WORKING POINT.	NO.	— NUMBER.
O.D.	— OUTSIDE DIAMETER.	Kg.	— KILOGRAM.
UNO.	— UNLESS NOTED OTHRWISE.		

REFERENCE DRAWING/DOCUMENTS

S.NO	ORG/DOC. NO.	Rev No	TITLE
1.	9170-54-1-1000	--	DRAWING INDEX.
2.	9170-54-1-2033	--	ND PLATFORM LOCATION OF RISER AND RISER CLAMPS
3.	9170-54-1-2035 2036 & 2037	--	RISER CLAMP DETAILS. (3 SHEETS.)
4.	9170-54-1-3016	--	RISER ASSMBLY -TYP.MONEL SHEATHING DETAIL
5.	9170-54-1-3017	--	RISER ASSMBLY - TYPICAL RISER DETAILS
6.	9170-54-1-401	--	PIPELINE ALIGNMENT DRAWING. 6 INCH WI ND TO ND
7.	9170-54-1-409	--	PIPELINE APPROACH AND DEPARTURE DRAWING (SH.1 OF 3.)
8.	9170-54-1-503	--	TYPICAL KNEE BRACE DETAIL FOR RISERS.
9	9170-54-102	--	DATA SHEET FOR RISER AND TRANSITION BED.
10	2003	0	ONGC GEN. SPECIFICATION FOR PROTECTIVE COATING.
11	2012	1	ONGC.SPEC.FOR COAL TAR ENAMEL COATING OF SUBMRINE PIPELINES.
12	2013	0	ONGC.SPEC.FOR CONCRETE WEIGHT COATING OF OF SUBMRINE PIPELINES.
13	2014	0	ONGC.SPEC.FOR FIELD JOINT COATING OF OF SUBMRINE PIPELINES.
14	2015	1	ONGC.SPEC.FOR INSTALATION OF SUBMRINE PIPELINES AND RELATED FACILITIES.
15	2019	1	ONGC.SPEC.FOR WELDING.

AS BUILT

REV.	DESCRIPTION	DRN	CHKD	APPD.	DATE
A	DRAWING MADE AS BUILT.				7.9.2000
0	APPROVED FOR CONSTRUCTION.				30.09.99
C2	ISSUED FOR CLIENT'S COMMENTS.	GS	RS	KSR	31.08.99
C1	ISSUED FOR CLIENT'S COMMENTS.	GS	RS	KSR	25.08.99

KPI	MDL	ONGC(E&P)	ONGC

OIL & NATURAL GAS CORPARATION LTD
ENGG. SECTION E&C DIVISION
MRBC MUMBAI

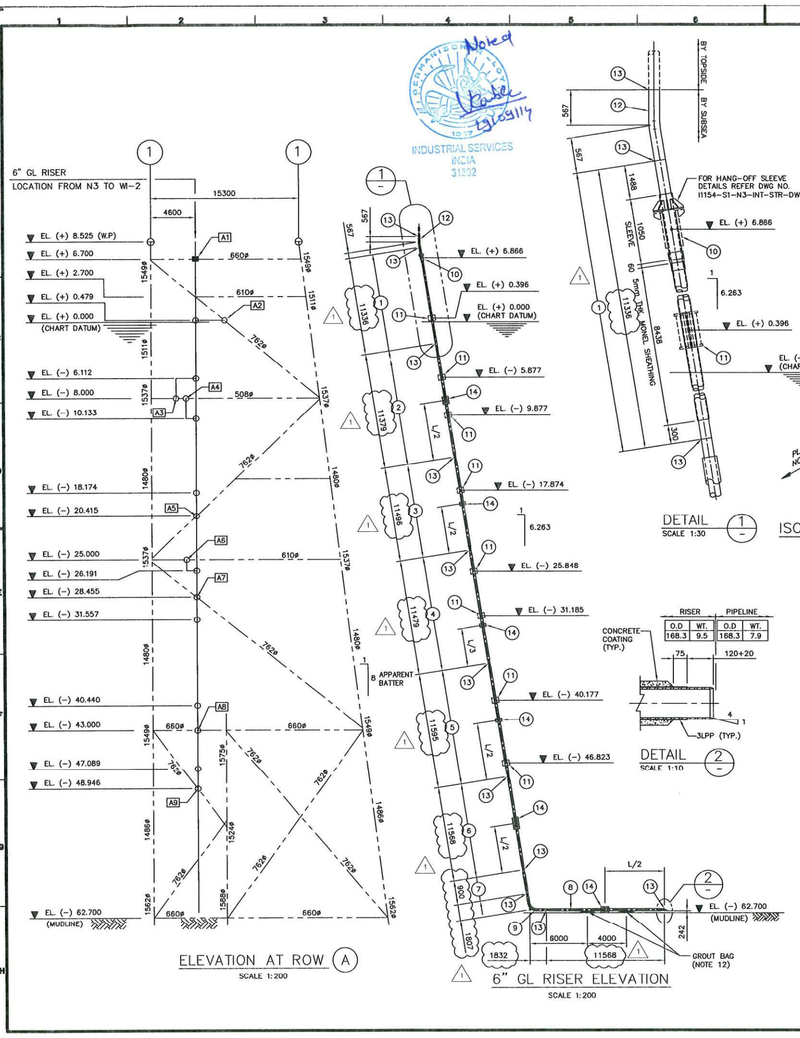
MAZAGON DOCK LIMITED

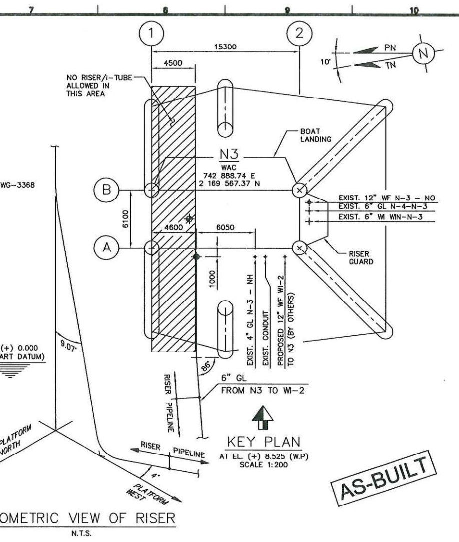
CLAMP-ON RELATED MODIFICATIONS & PIPELINES
PROJECT (CRMP)

Kvaerner process (India) Limited
19, Primrose ROAD, Bangalore-560 025
INDIA
KVAERNER

TITLE : ND PLAT FORM
6 INCH WI RISER ASSEMBLY DRAWING.

SCALE	DRAWING NUMBER	REV.
1 : 200	9170-54-1-3004	A





MATERIAL SCHEDULE FOR RISER

NO.	DESCRIPTION	QTY.	APPROX. LENGTH/ SIZE	TAG NO.	△1 REMARKS
1	168.3ø x 14.3 WT RISER PIPE WITH 5mm THK. MONEL SHEATHING AND HANGER SUPPORT	1	11.336m	–	MONEL SHEATHED PIPE
2	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND CLUSTER OF 2 CENTRAL ANODES	1	11.379m	–	CONCRETE COATED PIPE
3	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	11.496m	–	CONCRETE COATED PIPE
4	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	1	11.479m	–	CONCRETE COATED PIPE
5	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	11.595m	–	CONCRETE COATED PIPE
6	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND CLUSTER OF 3 CENTRAL ANODES	1	11.588m	–	CONCRETE COATED PIPE
7	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING, AND LENGTH CUT TO SUIT	1	0.900m	–	THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER
8	168.3ø x 9.5 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND CLUSTER OF 2 CENTRAL ANODES	1	11.568m	–	THE FIELD WELD END OF PIPE JOINT SHALL BE INTERNALLY CHAMFERED TO SUIT PIPELINE WALL THICKNESS
9	168.3ø x 9.5 WT 5D BEND, 841.5mm RADIUS, 1000mm TANGENT LENGTH WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING	1	3.410m	–	BEND ANGLE 80.95°
10	HANGER SUPPORT	1	–	–	FOR DETAILS REFER DRAWING I1154-S1-GEN-INT-STR-DWG-3272
11	RISER GUIDES	8	–	–	FOR DETAILS REFER DWG. NO. I1154-S1-GEN-INT-STR-DWG-3273 & 3274
12	168.3ø x 14.3 WT 5D TRANSITION BEND, 841.5mm RADIUS, WITH 500mm TANGENT LENGTH	1	1.133m	–	BEND ANGLE 9.07° COATING TO COMPLY WITH ONGC SPECIFICATION 2005, REV-3
13	FIELD JOINT	11	–	–	TO COMPLY WITH ONGC SPECIFICATION 2009 F REV-7 & 2014 REV-0 INCLUDING ADDENDUM RESPECTIVELY
14	ANODES (TYPE S1-3)	10	–	–	350mm LONG EACH 12.4kg

NOTES

1. ALL DIMENSIONS ARE IN MILIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. INSTALLATION CONTRACTOR SHALL ENSURE MINIMUM CLEARANCE OF 500mm (END TO END) BETWEEN THE FOLLOWING.
   - FIELD JOINT AND THE CLAMP
   - FIELD JOINT AND THE ANODE
   - CLAMP AND THE ANODE
4. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 10.392 m FOR 6" GL RISER.
5. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE FOR A PROPER FITUP OF RISER CLAMPS.
6. INSTALLATION CONTRACTOR SHALL ENSURE THAT THE RISER IS ADEQUATELY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALLATION OF THE RISER AND RETRIEVE IT TO THE SURFACE (BID REQUIREMENT).
7. THE OVERALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
8. THE CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTHS AND MARK ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
9. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. INSTALLATION CONTRACTOR SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. JACKET ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION SHALL BE RE-LOCATED AT THE NEAREST SUITABLE LOCATION.
11. PRIOR TO INSTALLATION OF RISER THE BOAT LANDING AND BARGE BUMPER SHALL BE REMOVED AND RETRIEVE IF NECESSARY. THE BOAT LANDING AND BARGE BUMPER SHALL BE MODIFIED. IF NECESSARY AND RE-INSTALLED AFTER RISER INSTALLATION AS PER BID REQUIREMENT.
12. REFER TO DRAWING NO. I1154-S1-R14-INT-PLE-DWG-3465 FOR GROUT BAG SUPPORT DETAILS.
13. MINIMUM GAP BETWEEN TWO ADJACENT ANODE IN THE CLUSTER SHALL BE 75mm TO 90mm END TO END OF THE ANODES.
14. THE UTM CO-ORDINATES ARE BASED ON THE EVEREST 1830 SPHEROID, UTM ZONE 42, CENTRAL MERIDIAN 69° EAST ON MUMBAI HIGH DATUM.
15. INSTALLATION CONTRACTOR IF NECESSARY SHALL DO SUITABLE ADJUSTMENTS TO THE LOCATION OF THE RISER ANODES AT SITE BASED ON THE ACTUAL METROLOGY AND ACTUAL PIPE JOINT LENGTHS.

LEGEND

- ■ – HANGER CLAMP (HC)
- ● – FIXED CLAMP (FC)
- ○ – ADJUSTABLE CLAMP (AC)
- W.P – WORKING POINT
- TN – TRUE NORTH
- PN – PLATFORM NORTH
- WI – WATER INJECTION
- WF – WELL FLUID
- GL – GAS LIFT
- WAC – WELL ARRAY CENTER

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev.	TITLE
9	I1154-S1-GEN-FUG-PLE-RPT-3102	–	PRE-ENGINEERING SURVEY PRP-3 PHASE-1 MUMBAI HIGH, HEERA, NEELAM AND BASSIEN FIELDS WEST COAST OF INDIA
8	I1154-S1-GEN-INT-PLE-DWG-3501	–	RISER PIPE COATING SCHEDULE
7	I1154-S1-R16-INT-PLE-DWG-3465	–	SUBMARINE PIPELINE CROSSING DETAILS – 6" GL N3 TO WI-2
6	I1154-S1-R16-INT-PLE-DWG-3407	–	PIPELINE ALIGNMENT DRAWING – 6" GL N3 TO WI-2
5	I1154-S1-N3-INT-PLE-DWG-3431	–	N3 PLATFORM – PIPELINE APPROACH AND DEPARTURE
4	I1154-S1-GEN-INT-PLE-DWG-3530	–	TYPICAL KNEE BRACE DETAIL FOR RISERS
3	I1154-S1-N3-INT-STR-DWG-3310	–	N3 PLATFORM – LOCATION OF 6" GL RISER AND RISER CLAMPS
2	I1154-S1-GEN-INT-STR-DWG-3272, 3373 TO 3274	–	RISER CLAMP DETAILS
1	I1154-S1-GEN-INT-STR-DWG-3271	–	GENERAL NOTES FOR RISER CLAMPS

REVISION

REV.	DESCRIPTION	PEM STATUS	DRN.	CHKD.	APPD.	DATE
			RRK	GMS	YSB	
1	AS BUILT		RRK	GMS	KB	26.06.14
0	APPROVED FOR CONSTRUCTION		AJ	MA	MM	19.02.13
B	RE-ISSUED FOR CLIENT REVIEW		SLI	MA	NA	21.12.12
A	ISSUED FOR LEIGHTON REVIEW		FND	MA	NA	23.10.12

INTECSEA	LEIGHTON	ONGC-OD	ONGC-OW
[signature]	YSB		

OWNER : OIL AND NATURAL GAS CORPORATION LIMITED

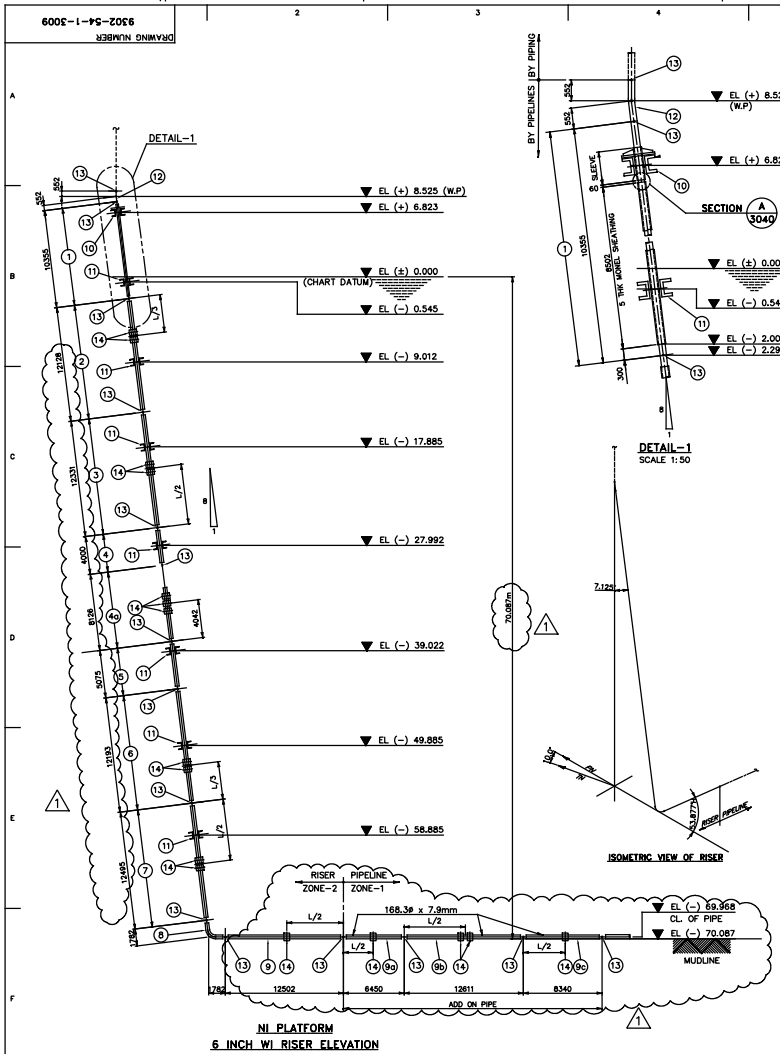
CONTRACTOR : Leighton India Contractors Pvt Ltd

CONSULTANT : INTECSEA WorleyParsons Group

PROJECT : PIPELINE REPLACEMENT PROJECT-3

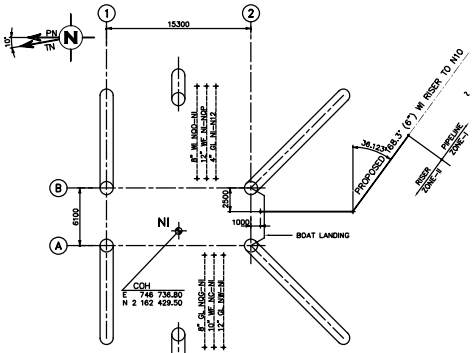
TITLE : N3 PLATFORM 6" GL RISER ASSEMBLY

SCALE	DRAWING NUMBER	REV
AS SHOWN	I1154-S1-N3-INT-PLE-DWG-3341	1



DETAIL-1
SCALE 1:50

ISOMETRIC VIEW OF RISER



KEY PLAN
AT EL (+) 8.525 (W.P)

RISER MATERIAL SCHEDULE

SL NO	DESCRIPTION	QUANTITY	LENGTH (m)
1	168.3ø x 14.3 WT RISER PIPE COMPLETE WITH MONEL CLADDING AND HANGER SUPPORT	1	10.355
2	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.128
3	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 CENTRAL ANODES	1	12.331
4	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING	1	4.000
4a	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 3 ECCENTRIC ANODES	1	8.126
5	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING LENGTH CUT TO SUIT	1	5.075
6	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.193
7	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 CENTRAL ANODES	1	12.495
8	168.3ø x 14.3 WT RISER LOWER BEND WITH 4.75mm CTE & 30mm CONCRETE COATING (BEND ANGLE 85.8°)	1	—
9	168.3ø x 14.3 WT RISER PIPE (ZONE-II) WITH 4.75mm CTE & 30mm CONCRETE COATING AND 3 CENTRAL ANODE	1	12.502
9a	168.3ø x 8.7 WT PIPELINE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	6.450
9b	168.3ø x 8.7 WT PIPELINE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 CENTRAL ANODE	1	12.611
9b	168.3ø x 8.7 WT PIPELINE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	8.340
10	HANGER SUPPORT	1	—
11	RISER GUIDES	7	—
12	168.3ø x 14.3 WT TRANSITION BEND (BEND ANGLE 7.125°)	1	—
13	FIELD JOINT	15	—
14	ANODES (TYPE-III) (348MM LONG, EACH 14.25 KG)	16	—

MATERIAL GRADE FOR RISER PIPES AND BENDS : API 5L Gr. X52, SEAMLESS

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE RELATED TO CHART DATUM.

AS BUILT

LEGEND

ø – DIAMETER	EL – ELEVATION
WT – WALL THICKNESS	TYP – TYPICAL
CTE – COAL TAR ENAMEL	WI – WATER INJECTION
mm – MILLIMETRE	PN – PLATFORM NORTH
TN – TRUE NORTH	THK – THICKNESS
COH – CENTER OF HELIDECK	NO. – NUMBER
W.P – WORKING POINT	Kg – KILOGRAM
O.D – OUTSIDE DIAMETER	
UNO – UNLESS NOTED OTHERWISE	

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	9302-54-1-1000	–	DRAWING INDEX
2	9302-54-1-2028	–	NI PLATFORM-LOCATION OF RISER AND RISER CLAMPS
3	9302-54-1-2040 & 9302-54-1-2042	–	RISER CLAMP DETAILS (2 SHEETS)
4	9302-54-1-3040	–	RISER ASSEMBLY – TYPICAL MONEL SHEATHING DETAIL
5	9302-54-1-3041	–	RISER ASSEMBLY – TYPICAL DETAILS
6	9302-54-0-4015	–	PIPELINE ALIGNMENT DRAWING 6 INCH WI TO NI
7	9302-54-1-4024	–	NI PLATFORM – PIPELINE APPROACH AND DEPARTURE DRAWING
8	9302-54-1-3035	–	TYPICAL KNEE BRACE DETAIL FOR RISERS
9	9302-54-101	–	DATA SHEET FOR LOW PIPES FOR RISERS AND ZONE-II LINE PIPES, DOC. No. 9302-54-501
10	9302-54-102	–	DATA SHEET FOR RISER & TRANSITION BEND, DOC. No. 9302-54-502
11	2005	1	ONGC GENERAL SPECIFICATION FOR PROTECTIVE COATING
12	2012	1	ONGC SPEC. FOR COAL TAR ENAMEL COATING OF SUBMARINE PIPELINES
13	2013	1	ONGC SPEC. FOR CONCRETE WEIGHT COATING OF SUBMARINE PIPELINES
14	2014	1	ONGC SPEC. FOR FIELD JOINT COATING OF SUBMARINE PIPELINE
15	2015	1	ONGC SPECIFICATION FOR INSTALLATION OF SUBMARINE PIPELINES AND RELATED FACILITIES
18	2009 FS	1	ONGC SPECIFICATION FOR WELDING AND NDT

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
1	AS BUILT	VST	RGP	KGR	08.02.05
0	APPROVED FOR CONSTRUCTION	SVV	PVG	SB	02.02.04
C2	ANODES ADDED AND RE-ISSUED FOR CLIENT'S COMMENTS	SVV	PVG	SB	25.11.03
C1	ISSUED FOR CLIENT'S COMMENTS	SVV	PVG	SB	18.09.03

ONGC (OW) | ONGC (OD) | L&T | VALDEL

OIL & NATURAL GAS CORPORATION LTD.
ENGG. SECTION, E&C DIVISION
MRBC, MUMBAI

LARSEN & TOUBRO LIMITED
OGSP, MUMBAI

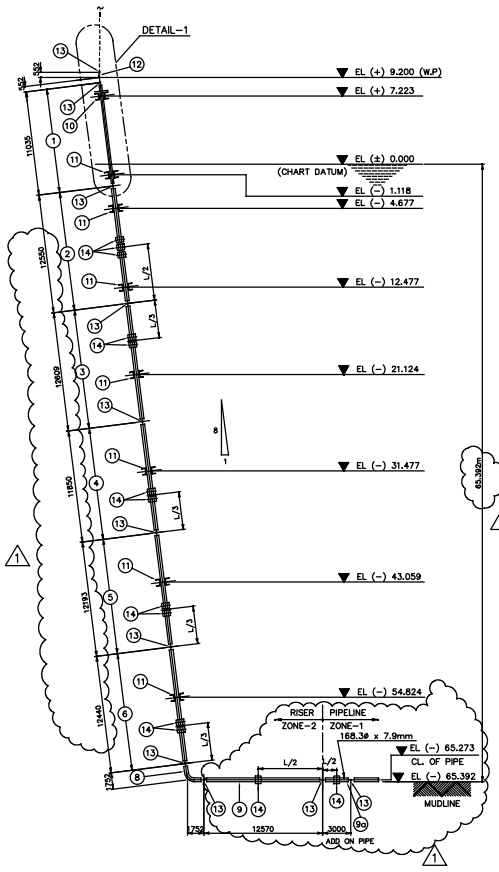
VAL DEL Engineers & Constructors
(Formerly John Brown Technologies)
16, Primrose Road, Bangalore-560 025

TITLE : N-9 & N-10 WELL PLATFORMS PROJECT
NI PLATFORM
6 INCH WI RISER ASSEMBLY DRAWING

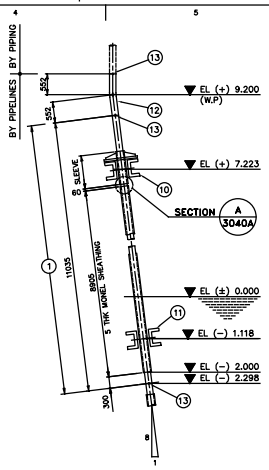
SCALE	DRAWING NUMBER	REV
1:200	9302-54-1-3009	1

DRAWING NUMBER 9302-54-1-3009

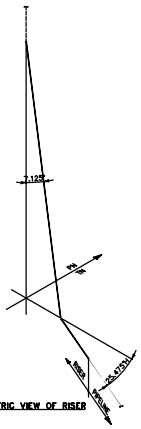
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.



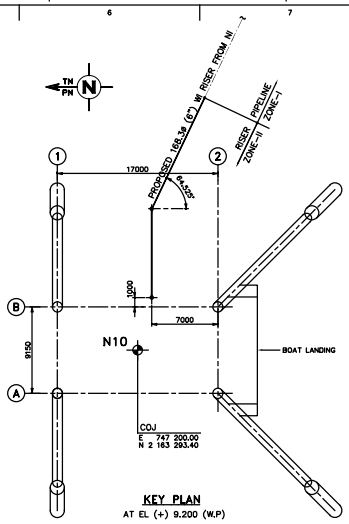
N10 PLATFORM
6 INCH WI RISER ELEVATION



DETAIL-1
SCALE 1:50



ISOMETRIC VIEW OF RISER



KEY PLAN
AT EL (+) 9.200 (W.P)

RISER MATERIAL SCHEDULE

SL NO	DESCRIPTION	QUANTITY	APPROX. LENGTH (m)
1	168.3ø x 14.3 WT RISER PIPE COMPLETE WITH MONEL CLADDING AND HANGER SUPPORT	1	11.035
2	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 3 CENTRAL ANODES	1	12.550
3	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.609
4	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	11.850
5	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.193
6	168.3ø x 14.3 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.440
8	168.3ø x 14.3 WT RISER LOWER BEND WITH 4.75mm CTE & 30mm CONCRETE COATING (BEND ANGLE 83.571)	1	—
9	168.3ø x 14.3 WT RISER PIPE (ZONE-II) WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.570
9a	168.3ø x 7.9 WT PIPELINE PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	3.000
10	HANGER SUPPORT	1	—
11	RISER GUIDES	7	—
12	168.3ø x 14.3 WT TRANSITION BEND (BEND ANGLE 7.125°)	1	—
13	FIELD JOINT	12	—
14	ANODES (TYPE-III) (348MM LONG EACH 14.25 kGS)	13	—

MATERIAL GRADE FOR RISER PIPES AND BENDS : API 5L Gr. X52, SEAMLESS

GADFILE : 3010-N10 | FV5042-3/4

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE RELATED TO CHART DATUM.

AS BUILT

LEGEND

ø	– DIAMETER	EL	– ELEVATION
WT	– WALL THICKNESS	L	– PIPE JOINT LENGTH
CTE	– COAL TAR ENAMEL	TYP	– TYPICAL
mm	– MILLIMETRE	WI	– WATER INJECTION
TN	– TRUE NORTH	PN	– PLATFORM NORTH
COJ	– CENTER OF JACKET	THK	– THICKNESS
W.P	– WORKING POINT	NO.	– NUMBER
O.D	– OUTSIDE DIAMETER	Kg	– KILOGRAM
UNO	– UNLESS NOTED OTHERWISE		

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	9302-54-1-1000	–	DRAWING INDEX
2	9302-54-1-2029	–	N10 PLATFORM-LOCATION OF RISER AND RISER CLAMPS
3	9302-54-1-2040, 2041 & 2042A	–	RISER CLAMP DETAILS (3 SHEETS)
4	9302-54-1-3040A	–	RISER ASSEMBLY – TYPICAL MONEL SHEATHING DETAIL (N10 & RISERS)
5	9302-54-1-3041	–	RISER ASSEMBLY – TYPICAL DETAILS
6	9302-54-0-4015	–	PIPELINE ALIGNMENT DRAWING 8.0KM W.R.T. N10
7	9302-54-1-4020	–	N10 PLATFORM – PIPELINE APPROACH AND DEPARTURE DRAWING
8	9302-54-1-2035	–	TYPICAL KNEE BRACE DETAIL FOR RISERS
9	9302-54-101	–	DATA SHEET FOR LINE PIPES FOR RISERS AND ZONE-II LINE PIPES, DOC. NO. 9302-54-501
10	9302-54-102	–	DATA SHEET FOR RISER & TRANSITION BEND, DOC. NO. 9302-54-502
11	2005	1	ONGC GENERAL SPECIFICATION FOR PROTECTIVE COATING
12	2012	1	ONGC SPEC. FOR COAL TAR ENAMEL COATING OF SUBMARINE PIPELINES.
13	2013	1	ONGC SPEC. FOR CONCRETE WEIGHT COATING OF SUBMARINE PIPELINES.
14	2014	1	ONGC SPEC. FOR FIELD JOINT COATING OF SUBMARINE PIPELINES.
15	2015	1	ONGC SPECIFICATION FOR INSTALLATION OF SUBMARINE PIPELINES AND RELATED FACILITIES
16	2009 FS	1	ONGC SPECIFICATION FOR WELDING & NDT

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
1	AS BUILT	VST	RGP	KGR	08.02.05
0	APPROVED FOR CONSTRUCTION	SVV	PVG	SB	02.02.04
C2	RE-ISSUED FOR CLIENT'S COMMENTS	SVV	PVG	SB	22.09.03
C1	ISSUED FOR CLIENT'S COMMENTS	SVV	PVG	SB	07.08.03

ONGC (OW)	ONGC (OD)	L&T	VALDEL

OIL & NATURAL GAS CORPORATION LTD.
ENGG. SECTION, E&C DIVISION
MRBC, MUMBAI

LARSEN & TOUBRO LIMITED
OGSP, MUMBAI

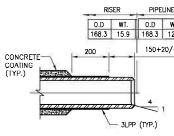
VAL DEL
Engineers & Constructors
(Formerly John Brown Technologies)
16, Primrose Road, Bangalore-560 025
India

TITLE : N-9 & N-10 WELL PLATFORMS PROJECT
N10 PLATFORM
6 INCH WI RISER ASSEMBLY DRAWING

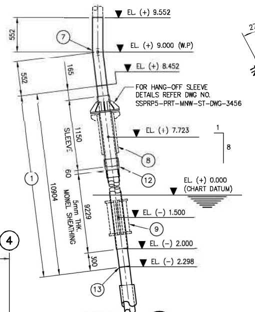
SCALE	DRAWING NUMBER	REV
1:200	9302-54-1-3010	1

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

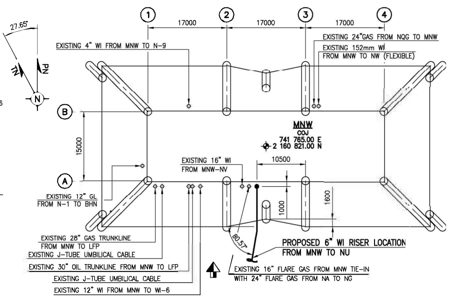
DRAWING NUMBER
9302-54-1-3010



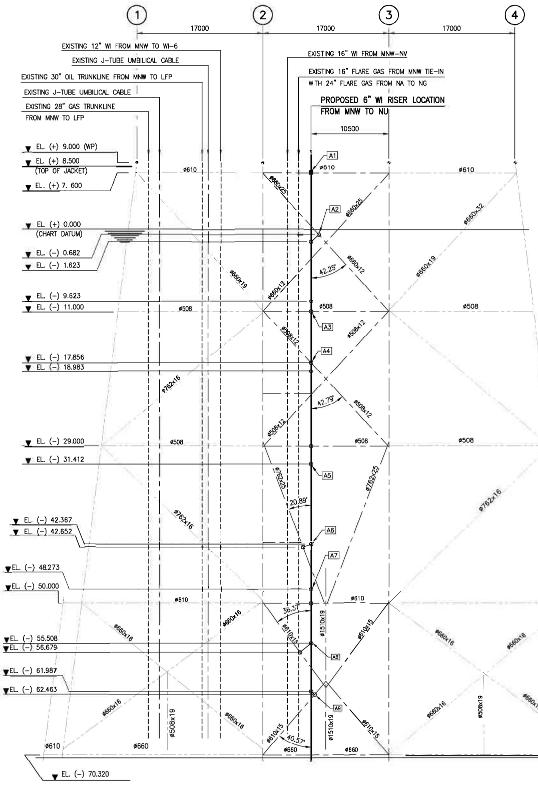
DETAIL 2
SCALE 1:10



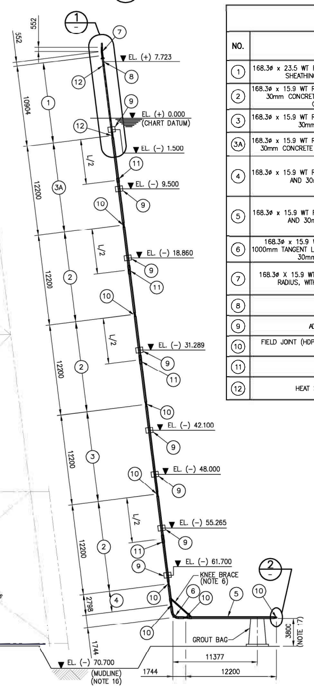
DETAIL 1
SCALE 1:30



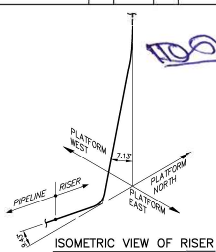
KEY PLAN
AT EL. (+) 9.000 (W.P)
SCALE 1:400



ELEVATION AT ROW A
SCALE 1:250



RISER ELEVATION
SCALE 1:250



ISOMETRIC VIEW OF RISER

MATERIAL SCHEDULE FOR RISER

NO.	DESCRIPTION	QTY.	APPROX. LENGTH/SIZE	TAG NO.	REMARKS
1	168.3ø x 23.5 WT RISER PIPE WITH 5mm THK. MONEL SHEATHING AND HANGER SUPPORT	1	10.904m	–	API 5L X-60 (NACE SMLS), MONEL SHEATHED PIPE
2	168.3ø x 15.9 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND CLUSTER OF 2 CENTRAL ANODES	3	12.200m	–	API 5L X-60 (NACE SMLS), CONCRETE COATED PIPE
3	168.3ø x 15.9 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING	1	12.200m	–	API 5L X-60 (NACE SMLS), CONCRETE COATED PIPE
3A	168.3ø x 15.9 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.200m	–	API 5L X-60 (NACE SMLS), CONCRETE COATED PIPE
4	168.3ø x 15.9 WT RISER PIPE WITH 2.5mm THK. 3LPP, AND 30mm CONCRETE COATING	1	2.798m	–	API 5L X-60 (NACE SMLS), CONCRETE COATED PIPE THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER
5	168.3ø x 15.9 WT RISER PIPE WITH 2.5mm THK. 3LPP AND 30mm CONCRETE COATING	1	12.200m	–	API 5L X-60 (NACE SMLS), CONCRETE COATED PIPE THE FIELD WELD END OF PIPE JOINT SHALL BE INTERNALLY CHAMFERED TO SUIT PIPELINE WALL THICKNESS
6	168.3ø x 15.9 WT 5D BEND, 841.5mm RADIUS, 1000mm TANGENT LENGTH WITH 2.5mm THK. HSS, AND 30mm CONCRETE COATING	1	3.219m	–	API 5L X-60 (NACE SMLS), BEND ANGLE 82.97°
7	168.3ø X 15.9 WT 5D TRANSITION BEND, 841.5mm RADIUS, WITH 500mm TANGENT LENGTH	1	1.105m	–	API 5L X-60 (NACE SMLS), BEND ANGLE 7.13° COATING TO COMPLY WITH ONGC SPECIFICATION 2005, REV-6
8	HANGER CLAMP	1	–	–	FOR DETAILS REFER DRAWING SSPRP5-PRT-GEN-ST-DWG-3358
9	ADJUSTABLE CLAMP	8	–	–	FOR DETAILS REFER DWG. NO. SSPRP5-PRT-GEN-ST-DWG-3360
10	FIELD JOINT (HDPF INFILL FOR CONCRETE COATED SECTION)	8	–	–	TO COMPLY WITH ONGC SPECIFICATION 2014 REV-0 INCLUDING ADDENDUM
11	ANODES	7	–	–	30 THK x 500mm LONG EACH 17.77kg
12	HEAT SHRINK SLEEVE (HSS)	2	–	–	–

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. CONTRACTOR SHALL ENSURE MINIMUM CLEARANCE OF 500mm (END TO END) BETWEEN THE FOLLOWING.
   - –FIELD JOINT AND THE CLAMP
   - –FIELD JOINT AND THE ANODE
   - –CLAMP AND THE ANODE
4. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 10.904m FOR 6" WI RISER.
5. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE FOR A PROPER FITUP OF RISER CLAMPS.
6. CONTRACTOR SHALL ENSURE THAT THE RISER IS ADEQUATELY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALLATION OF THE RISER AND RETRIEVE IT TO THE SURFACE (BID REQUIREMENT).
7. THE OVERALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
8. THE CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTHS AND MARK ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
9. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. INSTALLATION CONTRACTOR SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. JACKET ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION SHALL BE RE-LOCATED AT THE NEAREST SUITABLE LOCATION.
11. PRIOR TO INSTALLATION OF RISER THE RISER GUARD OR BOAT LANDING MAY BE REMOVED AND RETRIEVE IF NECESSARY. THE RISER GUARD OR BOAT LANDING SHALL BE MODIFIED IF NECESSARY AND RE-INSTALLED AFTER RISER INSTALLATION AS PER BID REQUIREMENT.
12. MINIMUM GAP BETWEEN TWO ADJACENT ANODE IN THE CLUSTER SHALL BE 75mm TO 90mm END TO END OF THE ANODES.
13. THE UTM CO-ORDINATES ARE BASED ON THE DATUM MUMBAI HIGH GRID, SPHEROID EVEREST 1830, UTM PROJECTION CENTRAL MERIDIAN 69°E.
14. CONTRACTOR IF NECESSARY SHALL DO SUITABLE ADJUSTMENTS TO THE LOCATION OF THE RISER ANODES AT SITE BASED ON THE ACTUAL METROLOGY AND ACTUAL PIPE JOINT LENGTHS.
15. THE NUMBER OF ANODES SPECIFIED IN THIS DRAWING SHALL BE CONFIRMED IN CATHODIC PROTECTION SYSTEM DESIGN REPORT FOR PIPELINE AND RISER AND EXPANSION SPOOL.
16. FINAL LEVEL SHALL BE CONFIRMED PRIOR FOR RISER INSTALLATION.
17. DISTANCE TO BE FINALIZED DEPENDING JACKET MUDMAT CLEARANCE.
18. RISER SECTION ABOVE SPLASH ZONE SHALL BE PAINTED AS PER SPECIFICATION NO. 2005 REV 6.
19. WHEREVER WELDING OF PIPES OF DIFFERENT WALL THICKNESS ARE INVOLVED, 1:4 INTERNAL TAPER SHALL BE PROVIDED AT THE WELDING END OF THE HIGHER THICKNESS PIPE/BEND.
20. GROUT BAG SUPPORT IS REQUIRED AS THERE ARE EXISTING PIPELINE CROSSINGS NEAR THE RISER BOTTOM BEND. DETAILS OF PIPELINE CROSSING SHALL BE REFERRED TO PIPELINE CROSSING DETAILS FOR 6" WT MNW TO NU SSPRP5-PRT-R9-PL-DWG-3582.

LEGENDS

■	HANGER CLAMP (HC)	COJ	CENTRE OF JACKET
●	FIXED CLAMP (FC)	TB	TRANSITION BEND
○	ADJUSTABLE CLAMP (AC)	L	LENGTH
W.P	WORKING POINT	WF	WELL FLUID
TN	TRUE NORTH	GL	GAS LIFT
PN	PLATFORM NORTH	DBLR. PL.	DOUBLER PLATE
U.N.O	UNLESS NOTED OTHERWISE	A1	TYPE OF CLAMP MARKING
WAC	WELL ARRAY CENTER		

REFERENCE DRAWINGS/DOCUMENTS

SL.NO	DRG/DOC.NO	REV.	TITLE
13	SSPRP5-PRT-R9-PL-DWG-3582	–	PIPELINE CROSSING DETAILS FOR 6" WI (MNW TO NU PIPELINE)
12	SSPRP5-PRT-R9-PL-DWG-3349	–	PIPELINE ROUTE AND MARINE SURVEY CORRIDOR FOR PROPOSED 6" WI (MNW TO NU PIPELINE)
11	SSPRP5-PRT-GEN-PL-DWG-3589	–	ANODE DETAIL FOR PIPELINES
10	SSPRP5-PRT-MNW-PL-DWG-3529	–	6" WI MNW PLATFORM PIPELINE APPROACH & DEPARTURE (MNW TO NU PIPELINE)
9	SSPRP5-PRT-GEN-PL-DWG-3469	–	RISER ASSEMBLY TYPICAL MONEL SHEATHING DETAILS
8	SSPRP5-PRT-MNW-PL-DWG-3402	–	6" WI MNW RISER AND CLAMP LOCATION (MNW TO NU PIPELINE)
7	SSPRP5-PRT-MNW-ST-DWG-3375	–	6" WI RISER CLAMP DETAILS AT MNW (MNW TO NU PIPELINE)
6	SSPRP5-PRT-GEN-ST-DWG-3360	–	RISER CLAMP DETAILS – ADJUSTABLE CLAMP
5	SSPRP5-PRT-GEN-ST-DWG-3359	–	RISER CLAMP DETAILS – FIXED CLAMP
4	SSPRP5-PRT-GEN-ST-DWG-3358	–	RISER CLAMP DETAILS – HANGER CLAMP
3	SSPRP5-PRT-GEN-PL-DWG-3357	–	GENERAL NOTES FOR RISER CLAMPS
2	SSPRP5-PRT-MNW-PL-DWG-3320	–	MNW PLATFORM – KEY PLAN FOR RISER LOCATION (MNW TO NU PIPELINE)
1	SSPRP5-PRT-PL-DWG-3300	–	DRAWING INDEX

PERITUS	SFSB	ONGC (OD)	ONGC (OW)
DATE: 02.08.2019	DATE: 02.08.2019	DATE:	DATE:

06.04.2020

REV.	DATE	DESCRIPTION	DRWN	CHKD	APPRD	PM	SFSB
Z	02.08.2019	AS-BUILT	MSI	MSA	MAA	WMR	SC
1	19.12.2018	APPROVED FOR CONSTRUCTION	AJA	MSA	MAA	WMR	MRH
0	19.09.2018	ISSUED FOR COMMENTS	MAM	MSA	MAA	WMR	MRH

(DRWN / CHKD / APPRD / PM: PERITUS)

AS-BUILT

CLIENT: OIL AND NATURAL GAS CORPORATION LIMITED

CONTRACTOR: sapura energy

CONSULTANT: Peritus

PROJECT TITLE: SUBSEA WELLS' & PIPELINE REPLACEMENT PROJECT–V

DRAWING TITLE: 6" WI MNW RISER ASSEMBLY (MNW TO NU PIPELINE)

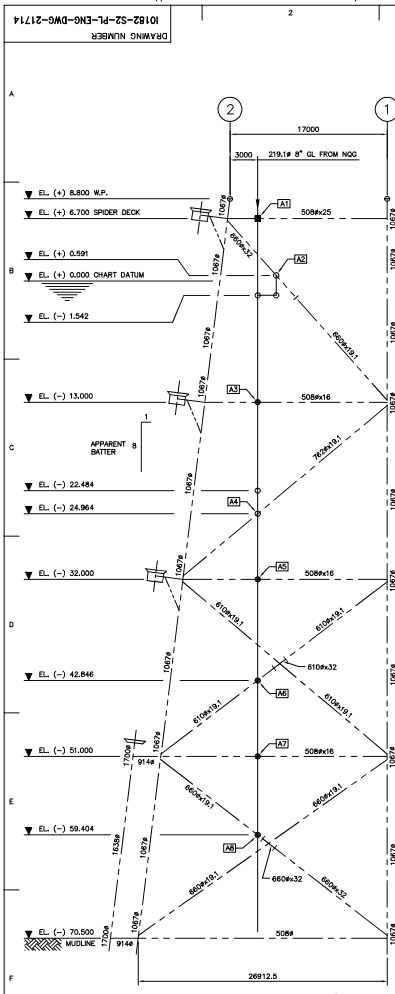
LOCATION: MHN

CLIENT CONTRACT No: | SIZE: A1 | SCALE: AS SHOWN

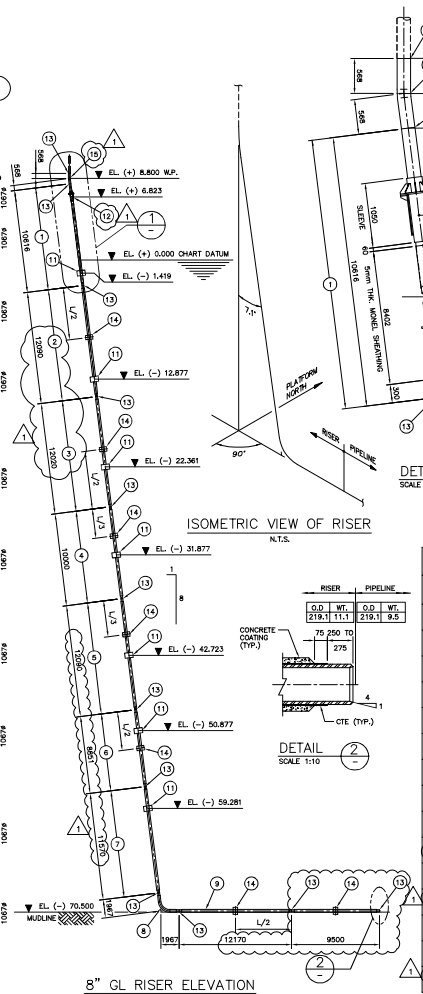
PROJECT CODE: 21-00129 | DRAWING No: SSPR5-PRT-MNW-PL-DWG-3429 | SHEET NO. 1 OF 1 | REV. NO. Z

DWG NO : SSPRP5-PRT-MNW-PL-DWG-3429

DRAWING NUMBER
10182-S2-PL-ENG-DWG-21714

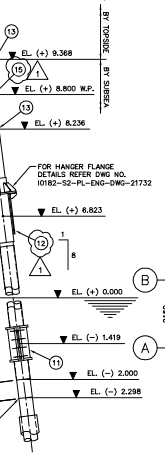


ELEVATION AT ROW (B)
SCALE 1:200

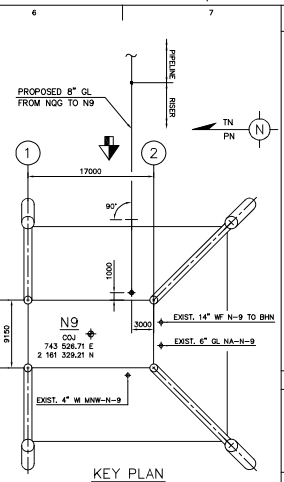


8" GL RISER ELEVATION
SCALE 1:200

ISOMETRIC VIEW OF RISER
N.T.S.



DETAIL (1)
SCALE 1:30



KEY PLAN
AT EL. (+) 8.800 (W.P.)
SCALE 1:250

DETAIL (2)
SCALE 1:10

MATERIAL SCHEDULE FOR RISER

NO.	DESCRIPTION	QTY.	APPROX. LENGTH/SIZE	TAG NO.	REMARKS
1	219.1ø x 15.9 WT RISER PIPE WITH 5mm THK. MONEL SHEATHING AND HANGER SUPPORT	1	10.616m	–	MONEL SHEATHED PIPE
2	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.090m	1	CONCRETE COATED PIPE
3	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.020m	–	CONCRETE COATED PIPE
4	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	10.000m	–	CONCRETE COATED PIPE
5	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	1	12.090m	–	CONCRETE COATED PIPE
6	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	8.851m	1	CONCRETE COATED PIPE
7	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	11.570m	–	CONCRETE COATED PIPE 1
8	219.1ø x 11.1 WT 5D BEND, 1095.5mm RADIUS, 1000mm TANGENT LENGTH WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	3.840m	–	BEND ANGLE 82.9°
9	219.1ø x 11.1 WT RISER PIPE (ZONE II) WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.170m	–	CONCRETE COATED PIPE
10	219.1ø x 11.1 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	9.500m	–	CONCRETE COATED PIPE
11	RISER GUIDES	7	–	–	FOR DETAILS REFER DWG. NO. 10182-S2-PL-ENG-DWG-21503 & 21504
12	HANGER SUPPORT	1	–	–	FOR DETAILS REFER DRAWING 10182-S2-PL-ENG-DWG-21502
13	FIELD JOINT 1	12	–	–	– 1
14	ANODES (TYPE S2-43)	7	–	–	480mm LONG EACH 23.6kg
15	219.1ø x 15.9 WT 5D TRANSITION BEND, 1095.5mm RADIUS, WITH 500mm TANGENT LENGTH	1	–	–	BEND ANGLE 7.1° COATING TO COMPLY WITH ONGC SPECIFICATION 2005, REV-2

CADFILE : 10182-21714 –

NOTES

1. ALL DIMENSIONS ARE IN MILMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. INSTALLATION CONTRACTOR SHALL ENSURE THAT EDGE OF ALL ANODES AND FIELD JOINTS TO HAVE A MINIMUM CLEARANCE OF 500mm FROM THE EDGE OF CLAMP/GUIDE.
4. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 10,616m FOR 8" GL RISER.
5. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE FOR A PROPER FITUP OF RISER CLAMPS.
6. INSTALLATION CONTRACTOR SHALL ENSURE THAT THE RISER IS ADEQUATELY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALLATION OF THE RISER AND RETRIEVE IT TO THE SURFACE (BID REQUIREMENT).
7. THE OVERALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
8. THE CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTHS AND MARK ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
9. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. INSTALLATION CONTRACTOR SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. JACKET ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION SHALL BE RE-LOCATED AT THE NEAREST SUITABLE LOCATION.
11. PRIOR TO INSTALLATION OF RISER THE BOAT LANDING AND BARGE BUMPER SHALL BE REMOVED AND RETREVED IF NECESSARY. THE BOAT LANDING AND BARGE BUMPER SHALL BE MODIFIED, IF NECESSARY AND RE-INSTALLED AFTER RISER INSTALLATION AS PER BID REQUIREMENT.

AS-BUILT

LEGEND

■ – HANGER CLAMP (HC)	PN – PLATFORM NORTH
● – FIXED CLAMP (FC)	WI – WATER INJECTION
○ – ADJUSTABLE CLAMP (AC)	WF – WELL FLUID
W.P – WORKING POINT	GL – GAS LIFT
TN – TRUE NORTH	COJ – CENTER OF JACKET

REFERENCE DRAWINGS/DOCUMENTS

S.NO.	DWG./DOC. NO.	REV. NO.	TITLE
1	10182-S2-PL-ENG-DWG-21001	–	DRAWING INDEX
2	10182-S2-PL-ENG-DWG-21502, 21503 & 21504	–	RISER CLAMP DETAILS
3	10182-S2-PL-ENG-DWG-21007	–	TYPICAL KNEE BRACE DETAIL FOR RISERS
4	10182-S2-PL-ENG-DWG-21009	–	RISER PIPE COATING SCHEDULE
5	10182-S2-PL-ENG-DWG-21307	–	PIPELINE ALIGNMENT 8" GL FROM NQG TO N9
6	10182-S2-PL-ENG-DWG-21414	–	N9 PLATFORM PIPELINE APPROACH AND DEPARTURE
7	10182-S2-PL-ENG-DWG-21536	–	N9 PLATFORM – LOCATION OF 8" GL RISER & RISER CLAMPS
8	10182-S2-PL-ENG-DWG-21732	–	N9 PLATFORM – 8" GL RISER HANG-OFF SLEEVE DETAIL

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
1	AS-BUILT	BAS	GMS	PVE	04.06.10
0	ISSUED FOR CONSTRUCTION	AJ	YWF	SI	9.9.09
A	ISSUED FOR CLIENT REVIEW	AJ	YWF	SI	24.8.09

ONGC (OW)	ONGC (OD)	LEIGHTON	INTECSEA

OWNER : OIL & NATURAL GAS CORPORATION LTD. ENGG. SECTION, E&C DIVISION MRBC, MUMBAI

CONSULTANT : INTECSEA Worley Parsons Group

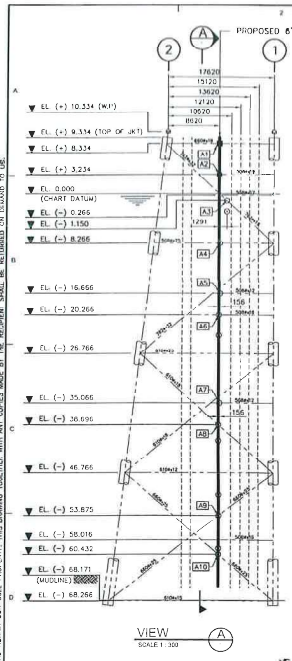
CONTRACTOR : LEIGHTON CONTRACTORS INDIA Pvt. Ltd.

PROJECT : PIPELINE REPLACEMENT PROJECT-2

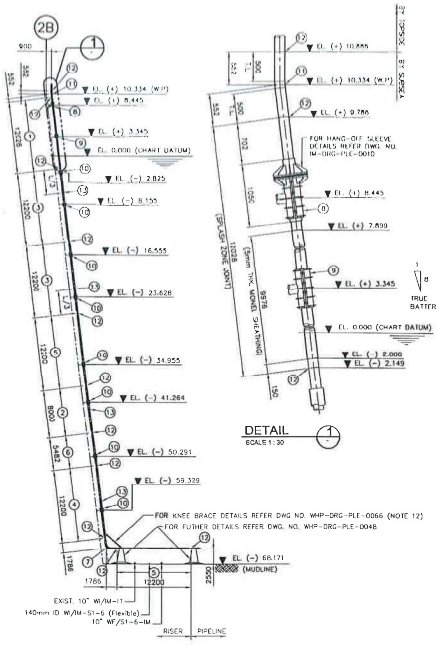
TITLE : N9 PLATFORM 8" GL RISER ASSEMBLY

SCALE	DRAWING NUMBER	REV.
AS SHOWN	10182-S2-PL-ENG-DWG-21714	1

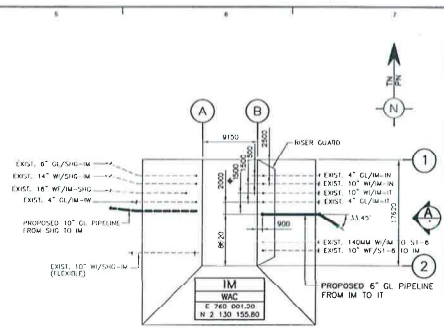
THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.



VIEW (A)
SCALE 1 : 300

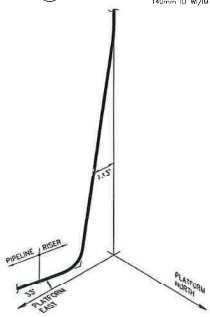


SECTION (A)
SCALE 1 : 300



DETAIL (1)
SCALE 1 : 30

KEY PLAN
SCALE 1 : 300



ISOMETRIC VIEW OF RISER
N.T.S

MATERIAL SCHEDULE FOR RISER

NO.	DESCRIPTION	QTY.	APPROX. LENGTH/ SIZE	TAG NO.	REMARKS
1	168.3ø x 14.3 WT RISER PIPE WITH 2.5mm THK. MONEL SHEATHING, AND HANGER SUPPORT	1	12.028m	–	MONEL SHEATHED PIPE
2	168.3ø x 14.3 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 CENTRIC ANODE	1	8.000m	–	THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER
3	168.3ø x 14.3 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	2	12.200m	–	–
4	168.3ø x 14.3 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING AND 1 CENTRIC ANODE	1	12.200m	–	–
5	168.3ø x 14.3 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING	2	12.200m	–	–
6	168.3ø x 14.3 WT RISER PIPE WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING	1	5.482m	–	THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER
7	168.3ø x 14.3 WT 5D BEND, 841.5mm RADIUS, 1000mm TANGENT LENGTH WITH 2.5mm THK. 3LPP, 30mm CONCRETE COATING	1	3.235m	–	BEND ANGLE 84.06°
8	HANGER CLAMP	1	–	–	FOR DETAILS REFER DRAWING WHP-DRG-PLE-0017
9	FIXED CLAMPS	1	–	–	FOR DETAILS REFER DWG. NO. WHP-DRG-PLE-0018
10	ADJUSTABLE CLAMPS	8	–	–	FOR DETAILS REFER DWG. NO. WHP-DRG-PLE-0019
11	168.3ø x 14.3 WT 5D TRANSITION BEND, AND 841.5mm RADIUS WITH 500mm TANGENT LENGTH	1	1.105m	–	BEND ANGLE 7.12 COATING TO COMPLY WITH ONGC SPECIFICATION 2005, REV-5
12	FIELD JOINT (HDPE INFILL FOR CONCRETE COATED SECTION)	11	–	–	TO COMPLY WITH ONGC SPECIFICATION 2005 F REV-7 & 2014 REV-0, INCLUDING ADDENDUM RESPECTIVELY
13	ANODES	4	–	–	500mm LONG EACH 15.9kg

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES (+/-).
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. THE UTM COORDINATES ARE BASED ON THE SPHEROID EVERSTEST 1830C DATUM, UTM ZONE 42 N, CENTRAL MERIDIAN 69° EAST, MUMBAI HIGH GRID.
4. THE CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTHS AND MARK ON COATED PIPE JOINTS, INSIDE(IF PRIOR TO FABRICATION).
5. FABRICATION CONTRACTOR SHALL ENSURE THE FOLLOWING MINIMUM CLEARANCE (END TO END) WHEREVER POSSIBLE.
   - 500mm BETWEEN RISER FIELD JOINT AND THE CLAMP
   - 500mm BETWEEN FIELD JOINT AND THE ANODE
   - 500mm BETWEEN CLAMP AND THE ANODE
   - 300mm BETWEEN SPLASH ZONE FIELD JOINT AND THE CLAMP
6. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 12.028m FOR 6" GL IM RISER.
7. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE FOR A PROPER FITUP OF RISER CLAMPS.
8. THE OVERALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
9. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. INSTALLATION CONTRACTOR SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF FABRICATION.
10. ANCHOR ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION SHALL BE RE-LOCATED TO THE NEAREST SUITABLE LOCATION.
11. INSTALLATION CONTRACTOR IF NECESSARY SHALL DO SUITABLE ADJUSTMENTS TO THE LOCATION OF THE RISER ANODES AT SITE BASED ON THE ACTUAL METHODLOY AND ACTUAL PIPE JOINT LENGTHS.
12. INSTALLATION CONTRACTOR SHALL ENSURE THAT THE RISER IS ADEQUATELY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALLATION OF THE RISER AND RETRIEVE IT TO THE SURFACE (BID REQUIREMENT).
13. PRIOR TO INSTALLATION OF RISER THE RISER GUARD SHALL BE REMOVED AND RETRIEVED IF NECESSARY. THE RISER GUARD SHALL BE MODIFIED, IF NECESSARY AND RE-INSTALLED AFTER INSTALLATION AS PER BID REQUIREMENT.
14. ALL PIPES ARE TO BE API 5L X60 NACE.
15. REFER TO WHP-DRG-PLE-0048 FOR CROSSING DETAILS.

LEGENDS

■	– HANGER CLAMP (HC)	PN	– PLATFORM NORTH
●	– FIXED CLAMP (FC)	WI	– WATER INJECTION
○	– ADJUSTABLE CLAMP (AC)	WF	– WELL FLUID
WP	– WORKING POINT	GL	– GAS LIFT
TN	– TRUE NORTH	WAC	– WELL ARRAY CENTRE

U.N.O. – UNLESS NOTED OTHERWISE

HOLDS

REFERENCE DRAWINGS/DOCUMENTS

DRAWING NO.	REV.	TITLE
M-DRC-PLE-0012	1	6" GL IM PLATFORM PIPELINE APPROACH & DEPARTURE (IM TO IT)
M-DRC-PLE-0010	1	6" GL IM RISER & WAC-OFF SLEEVE DETAILS (IM TO IT)
M-DRC-PLE-0004	–	6" GL IM RISER & CLAMP LOCATION (IM TO IT GL PIPELINE)
WHP-DRG-PLE-0066	–	TYPICAL KNEE BRACE DETAILS
WHP-DRG-PLE-0061	1	RISER PIPE COATING SCHEDULE
WHP-DRG-PLE-0003	1	PIPELINE ALIGNMENT DRAWING FOR 6" GL IM-IT
WHP-DRG-PLE-0020	1	RISER ASSEMBLY TYPICAL MONEL SHEATHING DETAILS
WHP-DRG-PLE-0019	–	RISER CLAMP DETAILS – ADJUSTABLE CLAMPS
WHP-DRG-PLE-0018	–	RISER CLAMP DETAILS – FIXED CLAMP
WHP-DRG-PLE-0017	–	RISER CLAMP DETAILS – HANGER CLAMP
WHP-DRG-PLE-0016	–	GENERAL NOTES FOR RISER CLAMP
RPT-TRDO-10-101-002	0	PRE-ENGINEERING SUBMIT REPORT FOR 6" GL IM RISER FOR PIPELINE FROM IM TO IT (A PORTION OF TRDO IM)

DATE:	1.7.16	DATE: 29-08-16	DATE:	DATE: 30-07-2016
ASM	SKM	CHKD(DD)		APPROVED

REV	DESCRIPTION	DATE	DRAWN	CHKD.	APPD.	IM APPROVAL
1	APPROVED FOR CONSTRUCTION (AFC)	10.05.2016	MSE	KK	MIT	GRK	MY	PSG
B	ISSUED FOR APPROVAL (IFA)	NOT ISSUED	KS	KK	MIT	GRK	MY	PSG
A	ISSUED FOR CLIENT REVIEW/COMMENTS (IFR)	22.07.2016	KS	KK	MIT	GRK	MY	PSG

CLIENT: ONGC — OIL AND NATURAL GAS CORPORATION LTD. INDIA

CONTRACTOR: Kalpataru Power Transmission Limited

CONSULTANT: Aker Solutions — AKER SOLUTIONS (INDIA) PVT. LTD.

PROJECT: MUMBAI HIGH SOUTH REDEVELOPMENT PHASE-III PROJECT (MHSRD-III)

TITLE: 6" GL IM RISER ASSEMBLY (IM TO IT GL PIPELINE)

LOCATION	DOCUMENT TYPE	DISCIPLINE
MHS	DRG	PLE

DRG FILENAME: IM-DRG-PLE-0008.dwg — SCALE: AS SHOWN

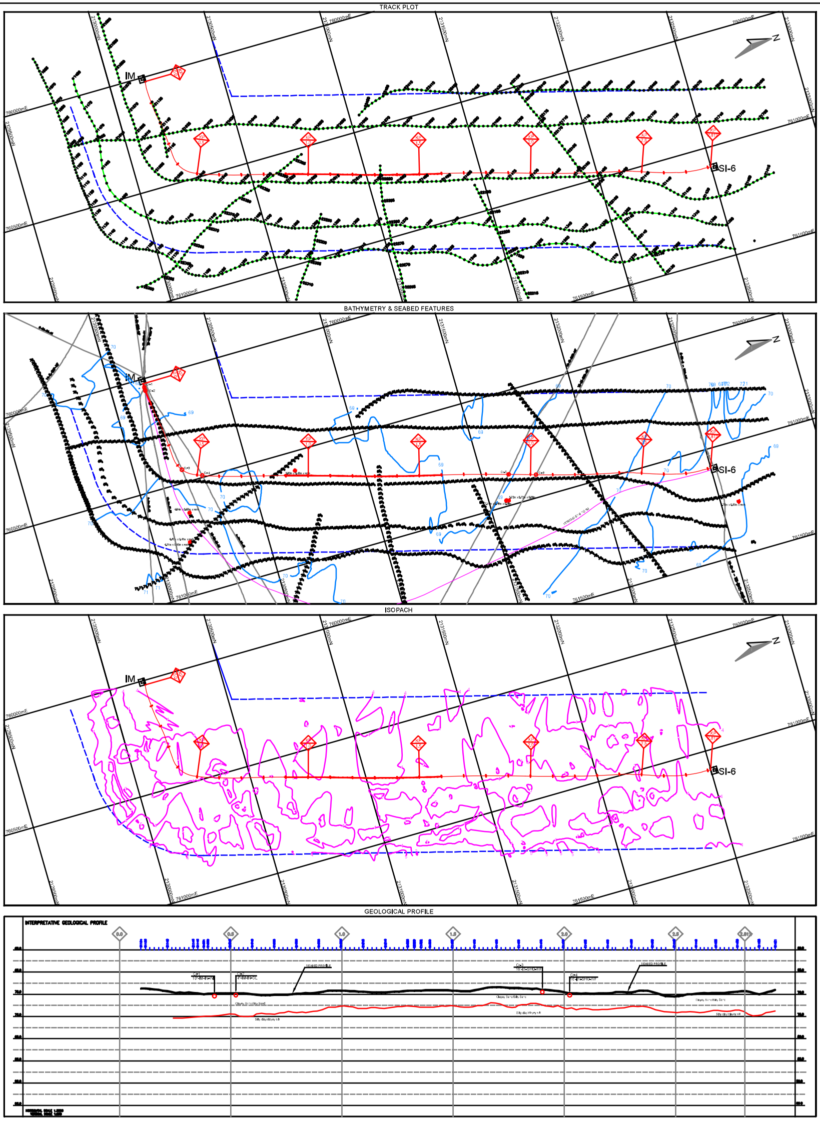
DRAWING NO.: IM-DRG-PLE-0008 — SHT NO. 1 OF 1 — REV NO. 1

THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREON ARE THE SOLE PROPERTY OF ONGC

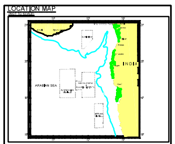
THIS DRAWING MUST NOT WITHOUT OUR CONSENT BE SHOWN TO ANY PERSON OUTSIDE THE RECIPIENT FIRM OR BE COPIED OR USED FOR THE PURPOSE OF MANUFACTURING ANY ARTICLE SHOWN IN THE DRAWING AND THE COPYRIGHT IN THE DRAWING SHALL BE AND REMAIN OUR SOLE PROPERTY. THIS DRAWING TOGETHER WITH ANY COPIES MADE BY THE RECIPIENT SHALL BE RETURNED ON REQUEST TO US.

Latest update – Monday, May 16, 2016

R:\SKM\SKM 236 – MHSRD Phase III\Working\WRDG PIPELINE – RISER ASSEMBLY DRAWINGS\IM-DRG-PLE-0008.dwg



LOCATION MAP



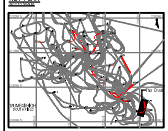
NOTE

GEODETIC PARAMETERS

LEGEND

SEABED FEATURES

KEY PLAN



Vessel Name

M.U.V.KAMRUP

Client

Oil & Natural Gas Corporation Limited
MRBC, Mumbai.

Main Contractor

Iranian Offshore Engineering
And Construction Company

Survey Contractor

Coastal Marine Construction & Engineering Ltd.

Project

As Built & Cathodic Protection Survey
for Pipeline Routes
ONGC's RSPPM Project, Mumbai High

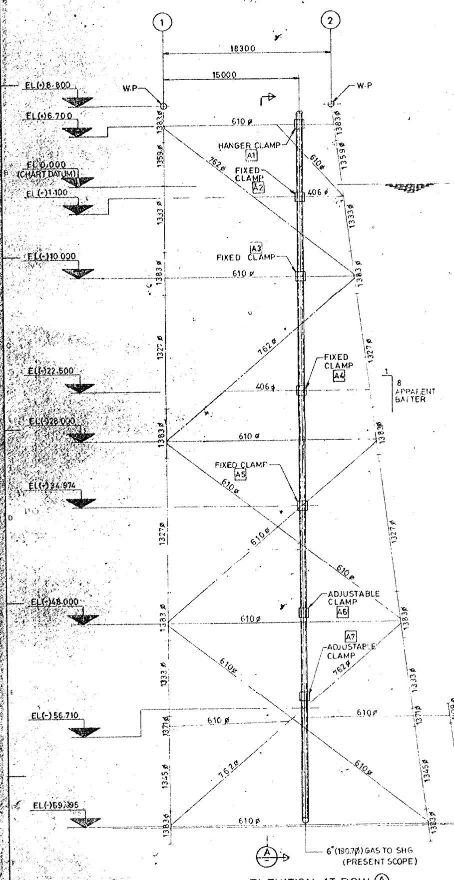
Drawing Title

AS BUILT PIPELINE ROUTE SURVEY
FOR 140mm ID FLEXIBLE PL FROM IM TO S1-6
KP 0.000 to KP 2.812

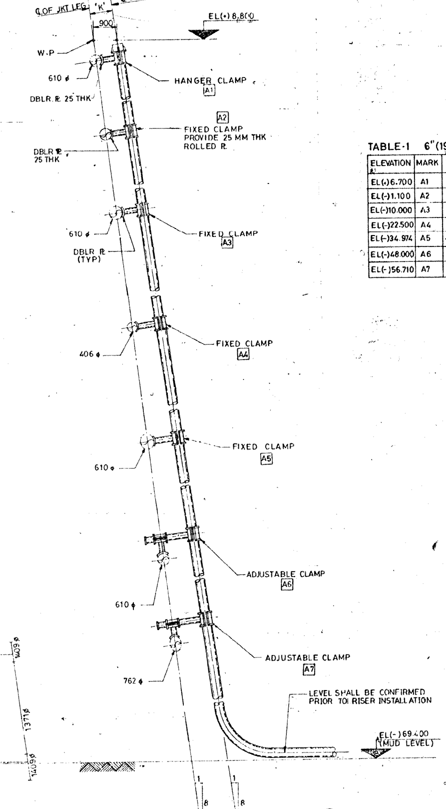
Scale — Horizontal 1 : 3000; SCALE Vt. 1 : 250

Drawing Number

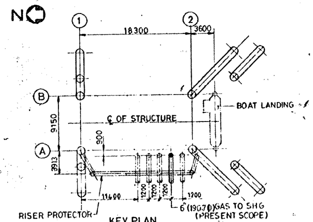
																	PC	DPC	DPG	A.HDP	HDCC	DATE
CM	06	08	15	0	0	0	1	D	D	2	5	01	Df	01	2	0	PHM	PPS	JR	HKR	Cdr. AS	12/07/07



ELEVATION AT ROW (A)



SECTION (A)



KEY PLAN
(AT EL(+)8.800)

TABLE-1 6"(190.7 Ø) RISER

ELEVATION	MARK	TYPE	D	K	RISER CLAMP BOLT Ø	RISER CLAMP HOLE Ø	RISER CLAMP S1	CLAMP ON STRUT STRUT d1 x t1	CLAMP ON STRUT BOLT Ø	CLAMP ON STRUT HOLE Ø	CLAMP ON STRUT S2	CLAMP ON STRUT STRUT d2 x t2
EL(+)6.700	A1	H C	253	CONST.	16	18	115	219.1Ø x 23.01	-	-	-	-
EL(-)1.100	A2	F C	248	"	"	"	"	219.1Ø x 23.01	-	-	-	-
EL(-)10.000	A3	F C	302	"	"	"	"	219.1Ø x 18.3	-	-	-	-
EL(-)22.500	A4	F C	302	"	"	"	"	"	-	-	-	-
EL(-)34.974	A5	F C	302	"	"	"	"	"	-	-	-	-
EL(-)48.000	A6	AC	302	"	"	"	"	"	16	18	115	273.1Ø x 12.7
EL(-)56.710	A7	AC	302	"	"	"	"	"	"	"	"	"

SHOP DRAWING
SIGN: [signature] PROJ. REF. 404
DATE 25.3.94
NPCC ENGG. SECT.

APPROVED AS BUILT
REV. 1X

NOTES

1. ALL DIMENSIONS ARE IN mm AND LEVELS ARE IN METRES U.N.O.
2. RISER SHOWN IN FIRM LINE IS IN PRESENT SCOPE OF WORK.
3. CLAMPS FOR FUTURE RISERS ARE NOT PROVIDED.
4. ALL CLAMPS SHALL BE INSTALLED AT YARD TRUE TO THEIR ALIGNMENT & ORIENTATION CONFORMING TO APPROVED DRAWINGS. ACCURATE CHECKS SHALL BE MADE TO DETECT ANY POSSIBLE MISALIGNMENT AND CORRECTIVE ACTION TO BE TAKEN BEFORE LOADOUT. CLAMPS SHALL BE KEPT IN CLOSED POSITION WITH ALL BOLTS LIGHTLY TIGHTENED.
5. 'D' IS THE INTERNAL DIA OF THE ROLLED PLATE
6. FOR d1xt1; d2xt2; S1; S2; BOLT; HOLE; REFER RISER CLAMP DETAIL DRAWINGS.
7. RISER CLAMPS SHALL BE PAINTED AS PER SPEC GS-13.

REFERENCE DRAWINGS

DRAWING NO	TITLE
9023.73.1.1401	JKT VERT FRMG ROW A & B
9023.73.1.1107 A	RISER CLAMP DETAILS
9023.73.1.1108 A	RISER CLAMP DETAILS

NATIONAL PETROLEUM CONSTRUCTION COMPANY
NPCC

NPCC DRAWING NUMBER			
404_N_1031			
SHT. NO	1	REV. NO.	1X

INTER DISCIPLINE CHECK

PROCESS			
MECHANICAL			
ELECTRICAL			
INSTRUMENTATION			
STRUCTURAL CIVIL			
PIPING			
PIPELINE			
SUBMITTED TO	APPROVED OR REVISE	INITIALS	DATE

APPROVED FOR CONSTRUCTION

ISSUE	JBEI	L & T	ONGC
0	7/7/94	7/7/94	7/7/94

JOHN BROWN
John Brown Engineering (India) Pvt. Ltd.
19, Primrose Road, Bangalore-560 025
India

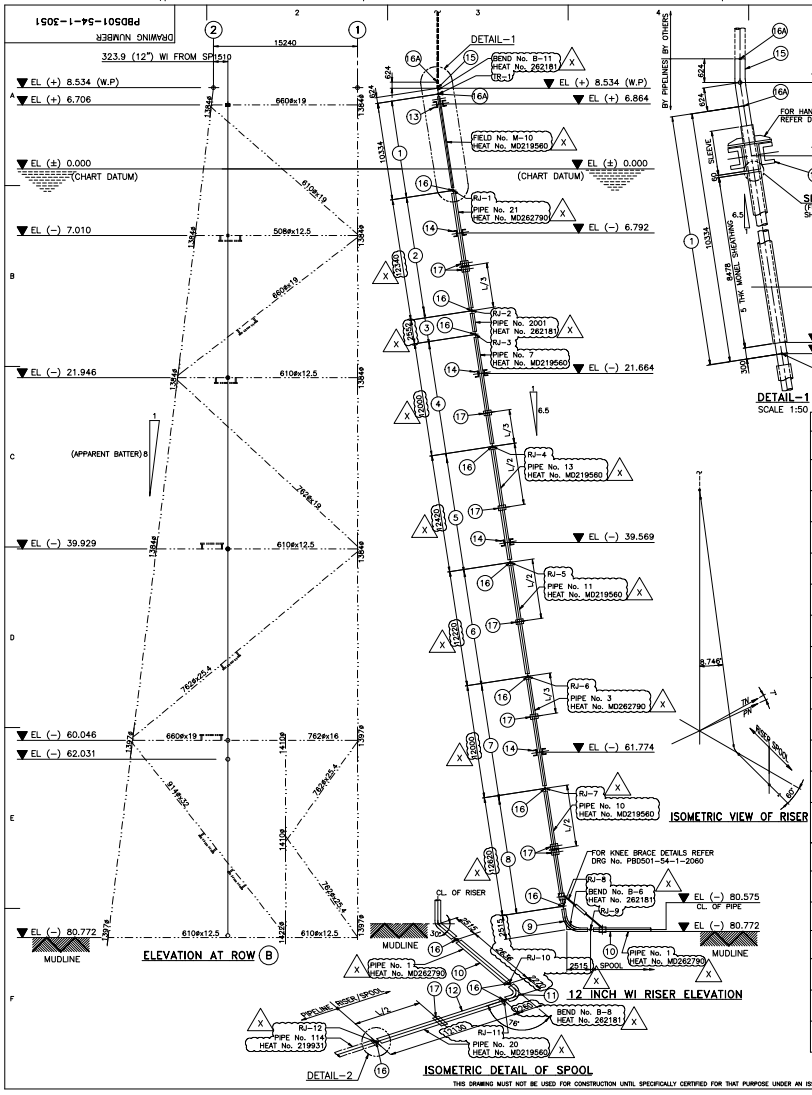
LARSEN & TOUBRO LIMITED
'S1-SAND' PROJECT
ONGC, INDIA

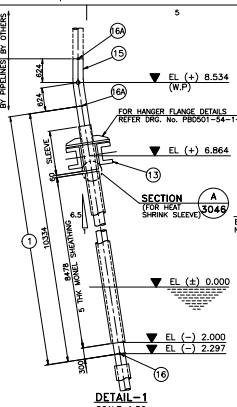
RISER CLAMP LOCATION ON JACKET
S1_6 WELL PLATFORM

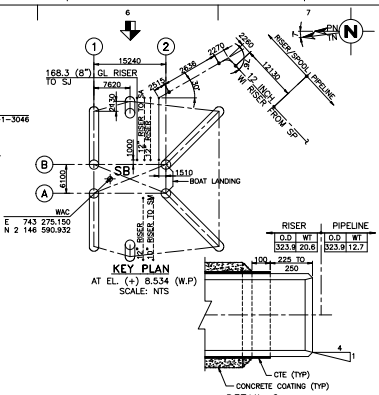
DRAWING No. 9023-73.1.1417
ISSUE: 0 | 0A | 0B | 0X | 1X

ISSUE	DESCRIPTION	DRN	CHK	APP
	AS BUILT BY NPCC	RKP		
0D	REVISED AS PER [illegible]	M.S		
0A	ISSUED FOR REFERENCE.	M.S		
0	APPROVED FOR CONSTRUCTION	SSRB	HV	
C1	FOR CLIENTS COMMENTS		HV	
1X	REVISED AS BUILT	RKP		
A1	FOR INTERNAL CHECK		HV	

SCALE: 1:200
DRAWN BY: V.V.Ramanan
CHECKED BY: [signature]
APPROVED BY: [signature] 9/3/94







RISER MATERIAL SCHEDULE

SL NO	DESCRIPTION	QUANTITY	APPROX. LENGTH (m)	TAG NO.	REMARKS
1	323.9# x 20.6 WT RISER PIPE COMPLETE WITH MONEL CLADDING AND HANGER SUPPORT	1	10.334	SB(SP)/R12/M	RISER JOINT FOR SPLASH ZONE REFER DRAWINGS PBD501-54-1-3045 AND PBD501-54-1-3046
2	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.340	—	CONCRETE COATED PIPE
3	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING	1	2.252	—	CONCRETE COATED PIPE X
4	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	1	12.000	—	CONCRETE COATED PIPE
5	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1 X	12.420	—	CONCRETE COATED PIPE
6	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.220	—	CONCRETE COATED PIPE
7	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	1	12.000	—	CONCRETE COATED PIPE
8	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 CENTRAL ANODES	1	12.620	—	CONCRETE COATED PIPE
9	323.9# x 20.6 WT RISER LOWER BEND WITH 4.75mm CTE & 30mm CONCRETE COATING	1	—	SB(SP)/R12/01	BEND ANGLE 85.64°
10	323.9# x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING	1 X	2.636	—	CONCRETE COATED PIPE
11	323.9# x 20.6 WT RISER SPOOL BEND WITH 4.75mm CTE & 30mm CONCRETE COATING	1	—	SB(SP)/R12/02	BEND ANGLE 76°
12	323.9# x 20.6 WT LINE PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1 X	12.130	—	CONCRETE COATED PIPE X
13	HANGER SUPPORT	1	—	—	FOR DETAILS REFER DRAWING PBD501-54-1-2063
14	RISER GUIDES	4	—	—	FOR DETAILS REFER DRAWING PBD501-54-1-2064 & 2065
15	323.9# x 20.6 WT TRANSITION BEND	1	—	SB(SP)/R12/03	BEND ANGLE 8.75°
16	FIELD JOINT	12	—	—	—
16A	FIELD JOINT	2	—	—	—
17	ANODES (TYPE-I)	9	—	—	422mm LONG, EACH 33.2 kg

MATERIAL GRADE FOR RISER PIPES AND BENDS : API 5L Gr. X-60 (CS), SEAMLESS.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

GADFILE 3051-SB(SP) | LVS042-3/0

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.

DELETED.

AS-BUILT

LEGEND

- ■ HANGER CLAMP (HC)
- ● FIXED CLAMP (FC)
- ○ ADJUSTABLE CLAMP (AC)
- W.P WORKING POINT
- TN TRUE NORTH
- PN PLATFORM NORTH
- WI WATER INJECTION

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	PBD501-54-1-1001	–	DRAWING INDEX (2 SHEETS)
2	PBD501-54-1-2060	–	TYPICAL KNEE BRACE DETAILS FOR RISERS
3	PBD501-54-1-2063, 2064 & 2065	–	RISER CLAMP DETAILS
4	PBD501-54-1-2071	–	SB PLATFORM- LOCATION OF 12 INCH WI RISER AND RISER CLAMPS
5	PBD501-54-1-3045	–	RISER ASSEMBLY - TYPICAL MONEL SHEATHING DETAILS
6	PBD501-54-1-3046	–	RISER ASSEMBLY - TYPICAL DETAILS
7	PBD501-54-0-4121	–	PIPELINE ALIGNMENT DRAWING 12 INCH WI SP-SB (2 SHEETS)
8	PBD501-54-1-4142	–	SB PLATFORM - PIPELINE APPROACH AND DEPARTURE DRAWING

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
X	AS BUILT	AV	SVV	PVG	25.04.07
0	APPROVED FOR CONSTRUCTION	AGS	PVG	SB	24.02.06
C1	ISSUED FOR CLIENT'S COMMENTS	AGS	PVG	SB	24.01.06

ONGC (OW)	ONGC (OD)	L & T	L&T-VALDEL

making tomorrow brighter

OIL & NATURAL GAS CORPORATION LTD.
OFFSHORE WORKS DIVISION
MUMBAI REGION

CONTRACTOR : CONSORTIUM OF LARSEN & TOUBRO LIMITED AND GLOBAL INDUSTRIES OFFSHORE L.L.C.

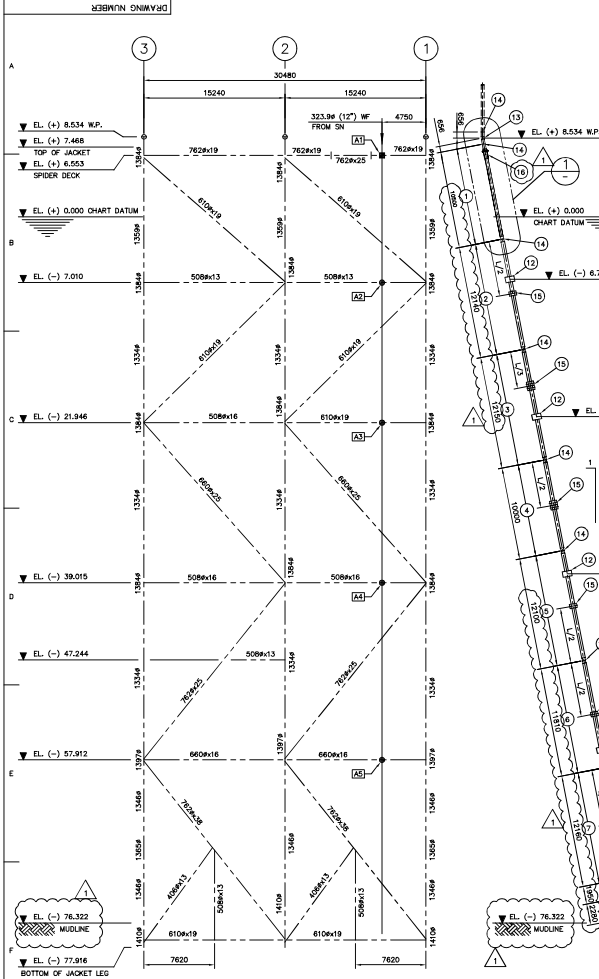
LARSEN & TOUBRO LIMITED
OGSP, MUMBAI

VALDEL
L&T-Valdel Engineering Limited
19, Primrose Road, Bangalore - 560 025
INDIA

TITLE : PIPELINE REPLACEMENT PROJECT
SB PLATFORM (FROM SP)
12 INCH WI RISER ASSEMBLY DRAWING

SCALE	DRAWING NUMBER	REV
1:200	PBD501-54-1-3051	X

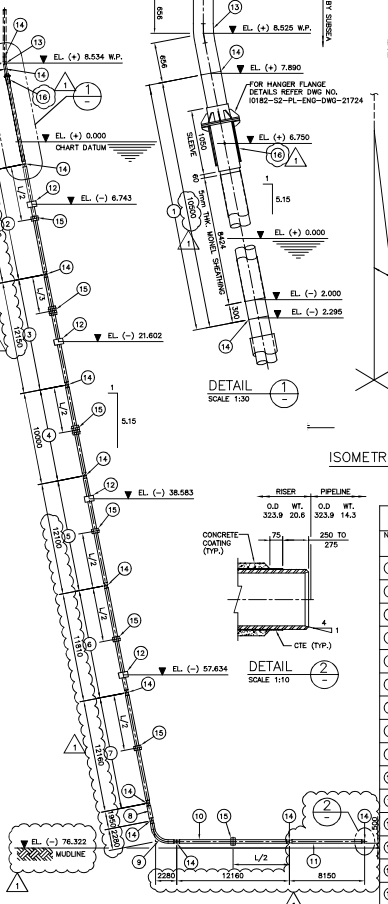
DRAWING NUMBER 10182-S2-PL-ENG-DWG-21706



ELEVATION AT ROW (B)

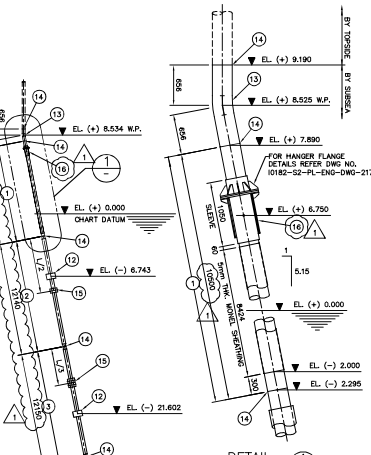
SCALE 1:200

SKIRT MEMBERS NOT SHOW FOR CLARITY



12" WF RISER ELEVATION

SCALE 1:200

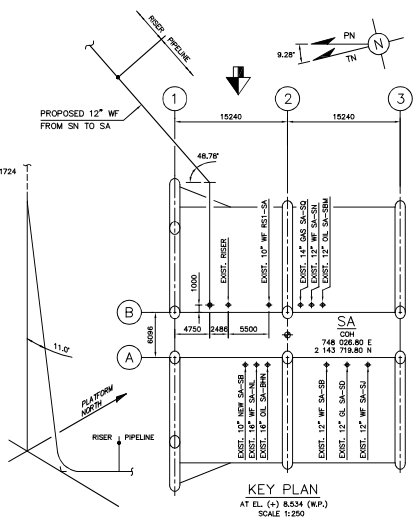


DETAIL 1

SCALE 1:30

DETAIL 2

SCALE 1:10



KEY PLAN

AT EL. (+) 8.534 (W.P.)

SCALE 1:250

ISOMETRIC VIEW OF RISER

N.T.S.

MATERIAL SCHEDULE FOR RISER

NO.	DESCRIPTION	QTY.	APPROX. LENGTH/ SIZE	TAG NO.	REMARKS
1	323.9ø x 23.8 WT RISER PIPE WITH 5mm THK. MONEL SHEATING AND HANGER SUPPORT	1	10.500m	–	MONEL SHEATHED PIPE
2	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.140m	1	CONCRETE COATED PIPE
3	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.150m	–	CONCRETE COATED PIPE
4	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 2 CENTRAL ANODES	1	10.000m	–	CONCRETE COATED PIPE
5	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.100m	–	CONCRETE COATED PIPE
6	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	11.810m	1	CONCRETE COATED PIPE
7	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.160m	–	CONCRETE COATED PIPE
8	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	1.950m	–	THE JOINT LENGTH SHALL BE PREPARED TO MATCH TOTAL LENGTH OF RISER
9	323.9ø x 20.6 WT 5D BEND, 1619.5mm RADIUS, 1000mm TANGENT LENGTH WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	4.560m	–	BEND ANGLE 81.8°
10	323.9ø x 20.6 WT RISER PIPE (ZONE II) WITH 4.75mm THK. CTE, 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	12.160m	–	THE FIELD WELD END OF PIPE JOINT SHALL BE INTERNALLY CHAMFERED TO SUIT PIPELINE WALL THICKNESS
11	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm THK. CTE, 30mm CONCRETE COATING	1	8.150m	–	CONCRETE COATED PIPE
12	RISER GUIDES	4	–	–	FOR DETAILS REFER DWG. NO. 10182-S2-PL-ENG-DWG-21503
13	323.9ø x 23.8 WT 5D TRANSITION BEND, 1619.5mm RADIUS, WITH 500mm TANGENT LENGTH	1	–	–	BEND ANGLE 11.0° COATING TO COMPLY WITH ONGC SPECIFICATION 2005, REV-2
14	FIELD JOINT	13	–	–	TO COMPLY WITH ONGC SPECIFICATION 2009 F REV-6 & 2014 REV-0 RESPECTIVELY
15	ANODES (TYPE S2-46)	9	–	–	470mm LONG EACH 35.8kg
16	HANGER SUPPORT	1	–	–	FOR DETAILS REFER DRAWING 10182-S2-PL-ENG-DWG-21502

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN ISSUE.

CADFILE : 10182-21706 –

NOTES

1. ALL DIMENSIONS ARE IN MILMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3. INSTALLATION CONTRACTOR SHALL ENSURE THAT EDGE OF ALL ANODES AND FIELD JOINTS TO HAVE A MINIMUM CLEARANCE OF 500mm FROM THE EDGE OF CLAMP/GUIDE.
4. MONEL SHEATH FABRICATION CONTRACTOR SHALL USE RISER PIPE JOINT (LENGTH) OF MINIMUM LENGTH 10,375m FOR 12" WF RISER.
5. CONTRACTOR TO ENSURE UNIFORM CONCRETE SURFACE FOR THE RISER PIPE. FOR A PROPER FITUP OF RISER CLAMPS.
6. INSTALLATION CONTRACTOR SHALL ENSURE THAT THE RISER IS ADEQUATELY BRACED (KNEE BRACE) AT RISER LOWER BEND AND SHALL REMOVE THE SAME AFTER INSTALLATION OF THE RISER AND RETRIEVE IT TO THE SURFACE (BID REQUIREMENT).
7. THE OVERALL LENGTH OF RISER SECTION FROM HANGER CLAMP TO SEABED LEVEL SHALL BE MEASURED PRIOR TO RISER ASSEMBLY.
8. THE CONTRACTOR SHALL MEASURE THE PIPE JOINT LENGTHS AND MARK ON COATED PIPE JOINTS ONSHORE PRIOR TO TRANSPORTATION.
9. NO. OF FIELD JOINTS INDICATED IN THE RISER MATERIAL SCHEDULE IS TENTATIVE AND MAY VARY DEPENDING ON FIELD MEASUREMENTS AND INDIVIDUAL RISER PIPE LENGTH. INSTALLATION CONTRACTOR SHALL SUBMIT THE FINAL RISER MAKE UP BASED ON THE PIPE LENGTH PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. JACKET ANODES, IF REQUIRED TO BE REMOVED FOR RISER INSTALLATION SHALL BE RE-LOCATED AT THE NEAREST SUITABLE LOCATION.
11. PRIOR TO INSTALLATION OF RISER THE BOAT LANDING AND BARGE BUMPER SHALL BE REMOVED AND RETREIVE IF NECESSARY. THE BOAT LANDING AND BARGE BUMPER SHALL BE MODIFIED, IF NECESSARY AND RE-INSTALLED AFTER RISER INSTALLATION AS PER BID REQUIREMENT.
12. REFER TO DRAWING 10182-S2-PL-ENG-DWG-21903 FOR GROUT BAG SUPPORT DETAILS.

AS-BUILT

LEGEND

- ■ – HANGER CLAMP (HC)
- ● – FIXED CLAMP (FC)
- ○ – ADJUSTABLE CLAMP (AC)
- W.P – WORKING POINT
- TN – TRUE NORTH
- PN – PLATFORM NORTH
- WI – WATER INJECTION
- WF – WELL FLUID
- GL – GAS LIFT
- COH – CENTER OF HELIDECK

REFERENCE DRAWINGS/DOCUMENTS

S.NO.	DWG./DOC. NO.	REV. NO.	TITLE
1	10182-S2-PL-ENG-DWG-21001	–	DRAWING INDEX
2	10182-S2-PL-ENG-DWG-21502 & 21503	–	RISER CLAMP DETAILS
3	10182-S2-PL-ENG-DWG-21007	–	TYPICAL KNEE BRACE DETAIL FOR RISERS
4	10182-S2-PL-ENG-DWG-21009	–	RISER PIPE COATING SCHEDULE
5	10182-S2-PL-ENG-DWG-21303	–	PIPELINE ALIGNMENT 12" WF FROM SN TO SA
6	10182-S2-PL-ENG-DWG-21406	–	SA PLATFORM PIPELINE APPROACH AND DEPARTURE
7	10182-S2-PL-ENG-DWG-21528	–	SA PLATFORM – LOCATION OF 12" WF RISER & RISER CLAMPS
8	10182-S2-PL-ENG-DWG-21724	–	SA PLATFORM – 12" WF RISER HANG-OFF SLEEVE DETAIL
9	10182-S2-PL-ENG-DWG-21903	–	12" WF FROM SN TO SA PIPELINE CROSSING DETAILS.

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
1	AS-BUILT	BAS	GMS	PVE	04.06.10
0	ISSUED FOR CONSTRUCTION	TOP	YWF	SI	11.9.09
A	ISSUED FOR CLIENT REVIEW	AJ	YWF	SI	10.8.09

ONGC (OW) | ONGC (OD) | LEIGHTON | INTECSEA

OWNER : OIL & NATURAL GAS CORPORATION LTD. ENGG. SECTION, E&C DIVISION MRBC, MUMBAI

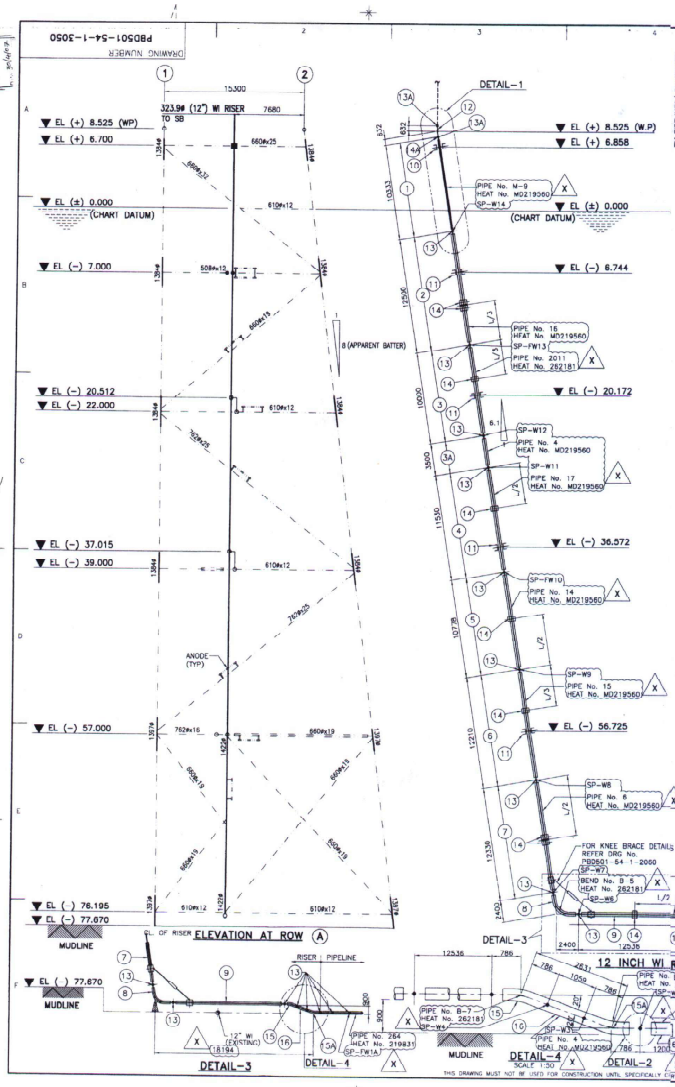
CONSULTANT : INTECSEA WorleyParsons Group

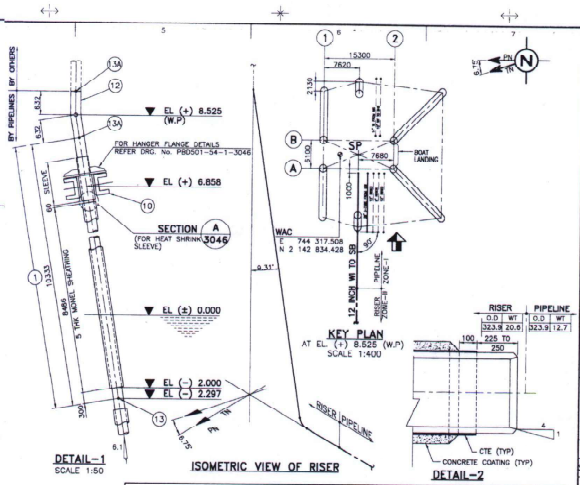
CONTRACTOR : LEIGHTON CONTRACTORS INDIA Pvt. Ltd.

PROJECT : PIPELINE REPLACEMENT PROJECT-2

TITLE : SA PLATFORM 12" WF RISER ASSEMBLY

SCALE	DRAWING NUMBER	REV.
AS SHOWN	10182-S2-PL-ENG-DWG-21706	1





RISER MATERIAL SCHEDULE

SL NO	DESCRIPTION	QUANTITY	APPROX. LENGTH (m)	TAG NO.	REMARKS
1	323.9ø x 20.6 WT RISER PIPE COMPLETE WITH MONEL CLADDING AND HANGER SUPPORT	1	10.333	SP/R12/M	RISER JOINT FOR SPLASH ZONE REFER DRAWINGS PBD501-54-1-3040 AND PBD501-54-1-3046
2	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 ECCENTRIC ANODES	1	12.500	—	CONCRETE COATED PIPE
3	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	1	10.000	—	CONCRETE COATED PIPE
3A	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING	1	3.500	—	CONCRETE COATED PIPE
4	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1	11.530	—	CONCRETE COATED PIPE
5	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1 / X	10.778	—	CONCRETE COATED PIPE
6	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 ECCENTRIC ANODE	1	13.210	—	CONCRETE COATED PIPE
7	323.9ø x 20.6 WT RISER PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING AND 2 CENTRAL ANODES	1	12.330	—	CONCRETE COATED PIPE / X
8	323.9ø x 20.6 WT RISER LOWER BEND WITH 4.75mm CTE & 30mm CONCRETE COATING	1	—	SP/R12/01	BEND ANGLE 80.69°
9	323.9ø x 20.6 WT RISER PIPE(ZONE-II) WITH 4.75mm CTE & 30mm CONCRETE COATING AND 1 CENTRAL ANODE	1 / X	12.536	—	CONCRETE COATED PIPE
10	HANGER SUPPORT	1	—	—	FOR DETAILS REFER DRAWING PBD501-54-1-2063
11	RISER GUIDES	4	—	—	FOR DETAILS REFER DRAWING PBD501-54-1-2064 & 2065
12	323.9ø x 20.6 WT TRANSITION BEND	1	—	SP/R12/02	BEND ANGLE 9.31°
13	FIELD JOINT	X / 15	—	—	—
3A	FIELD JOINT	2	—	—	—
14	ANODES (TYPE-1)	9	—	—	422mm LONG, EACH 33.2 kg.
15	323.9ø x 20.6 WT LR BEND WITH 4.75mm CTE & 30mm CONCRETE COATING	1	—	SP/R12/03	BEND ANGLE 20°
15A	323.9ø x 20.6 WT LR BEND WITH 4.75mm CTE & 30mm CONCRETE COATING	1	—	SP/R12/04	BEND ANGLE 20°
16	323.9ø x 20.6 WT PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING	1	1.050	—	CONCRETE COATED PIPE
16A	323.9ø x 20.6 WT PIPE WITH 4.75mm CTE & 30mm CONCRETE COATING	1 / X	1.200	—	CONCRETE COATED PIPE

MATERIAL GRADE FOR RISER PIPES AND BENDS : API 5L Gr. X-60 (CS), SEAMLESS.

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL SPECIFICALLY CERTIFIED FOR THAT PURPOSE UNDER AN

CADFILE : 3050-SP | LTV5042-3/0

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN METRES U.N.O.
2. ALL LEVELS ARE WITH RESPECT TO CHART DATUM.
3.
4.
5.
6.
7.
8.
9.
10.
11.

DELETED.

X AS-BUILT

LEGEND

- ■ HANGER CLAMP (HC)
- ● FIXED CLAMP (FC)
- ○ ADJUSTABLE CLAMP (AC)
- W.P WORKING POINT
- TN TRUE NORTH
- PN PLATFORM NORTH
- WI WATER INJECTION

REFERENCE DRAWINGS/DOCUMENTS

S.No	DRG/DOC. No.	Rev No.	TITLE
1	PBD501-54-1-1001	-	DRAWING INDEX (2 SHEETS)
2	PBD501-54-1-2060	-	TYPICAL KNEE BRACE DETAILS FOR RISERS
3	PBD501-54-1-2061, 2064 & 2065	-	RISER CLAMP DETAILS
4	PBD501-54-1-2070	-	SP PLATFORM - LOCATION OF 12 INCH WI RISER AND RISER CLAMPS
5	PBD501-54-1-3045	-	RISER ASSEMBLY - TYPICAL MONEL SHEATHING DETAILS
6	PBD501-54-1-3046	-	RISER ASSEMBLY - TYPICAL DETAILS
7	PBD501-54-0-4121	-	PIPELINE ALIGNMENT DRAWING 12 INCH WI FROM SP TO SB (2 SHEETS)
8	PBD501-54-1-4141	-	SP PLATFORM - PIPELINE APPROACH AND DEPARTURE DRAWING

REV.	DESCRIPTION	DRN.	CHKD.	APPD.	DATE
X	AS BUILT	AV	SVV	PVG	25.04.07
0	APPROVED FOR CONSTRUCTION	AGS	PVG	SD	24.02.06
C1	ISSUED FOR CLIENT'S COMMENTS	ADS	PVG	SD	30.01.06

ONGC (OW)	ONGC (OD)	L & T	L&T-VALDEL

OIL & NATURAL GAS CORPORATION LTD.
OFFSHORE WORKS DIVISION
MUMBAI REGION

CONTRACTOR : CONSORTIUM OF LARSEN & TOUBRO LIMITED AND GLOBAL INDUSTRIES OFFSHORE L.L.C.

LARSEN & TOUBRO LIMITED
OOSP, MUMBAI

VALDEL
L&T-Valdel Engineering Limited
19, Primrose Road, Bangalore-560 025

TITLE : PIPELINE REPLACEMENT PROJECT
SP PLATFORM
12 INCH WI RISER ASSEMBLY DRAWING

SCALE	DRAWING NUMBER	REV
1:200	PBD501-54-1-3050	X

SP

9